PLAN IMPLEMENTATION

Plan implementation encompasses activities that draw on the inventory data, trends, and implications to define a program of transportation investment and identify strategies that the MPO will use to implement, support, and further develop the program.

A. Project Identification & Definition

For this update of the LRTP, the needs assessment and project identification processes were initiated through a set of Transportation Issues Forums aimed at engaging local transportation stakeholders, interested parties, and members of the public in the discussion of transportation issues and solutions.

The Forums—one each in PennDOT Districts 2-0 and 3-0—engaged attendees through presentations provided by the PennDOT District staff and long range plan mapping, featuring a "Cluster Analysis" of comment data collected by the STC and PennDOT. (See **Appendix E** for details about the Cluster Analysis and its use in the planning process.)

In preparation for the Forum meetings, the comments and clusters were mapped both at the county-level and in detail, with each cluster given its own inset map over an aerial background. The individual comments were listed and reviewed for trends, then examined against overlays of safety issues, pavement and bridge needs, etc. Project ideas and solutions were identified, along with currently programmed projects and existing planning efforts that had already identified the issue. Samples of this mapping are provided in **Appendix E** within the Cluster Analysis documentation.

The county-level mapping and detailed cluster maps formed the primary interaction point for the Transportation Issues Forums. Participants were asked to review the mapping, and agree with ("like") an existing idea by placing a star sticker next to the project idea. Some participants preferred to write additional ideas on the mapping that were, in turn, "liked" by others. As a result of the Forums, many of the concerns expressed in the STC and PennDOT comments were affirmed. In addition, new areas of concern were identified, and twenty (20) new project ideas were identified.

B. Candidate Transportation Project Lists

1. Initial Listings

The Candidate Project List (Candidate List) was an early stage listing of projects destined to be considered in the LRTP project scoring and selection process. The initial list was formed from projects on the 2011 LRTP Fiscally Constrained and Illustrative Projects Lists. The SEDA-COG MPO staff reviewed these lists, and projects that had been constructed or were in construction, as well as those in project development and programmed on the TIP, were removed from the Candidate List. These projects were not reconsidered in the scoring and selection process. Projects that were programmed on the Twelve Year Program (TYP) or were included in the 2011 Fiscally Constrained List remained in the Candidate List for re-evaluation in the project scoring and selection process.

New projects were added to the Candidate List from the following sources:

- Transportation Issues Forum – Twenty (20) projects were added to the Candidate List based on feedback from the Transportation Issues Forum and Comment Cluster Analysis. Projects were added for 7 of the 8 MPO counties.

- MPO Roadway Safety Reviews – Four (4) highway and intersection safety projects in Clinton and Mifflin Counties were identified through the MPO's roadway safety review process, which involved PennDOT District 2-0 staff in evaluating high crash locations.

- Susquehanna Greenways Partnership – Six (6) recreational trails projects were submitted, based on priority and the recommendations from feasibility studies and master plans.

- 2014 PA Statewide LRTP, PA OnTrack – Seven (7) projects that had been submitted for the PA On Track Plan were submitted by the SEDA-COG MPO staff. The projects included several rail projects and highway corridor/signal projects.

2. County Priorities

The full Candidate Project List contained 81 projects. To reflect county priorities, the county-level Steering Committee representatives were asked to review the Candidate Projects in their counties and indicate their top 10 project priorities. These priority projects were fed into the Project Scoring and Selection Process. The remaining Candidate Projects (those outside the Top 10) were not scored but were placed on the plan's Illustrative Project List.

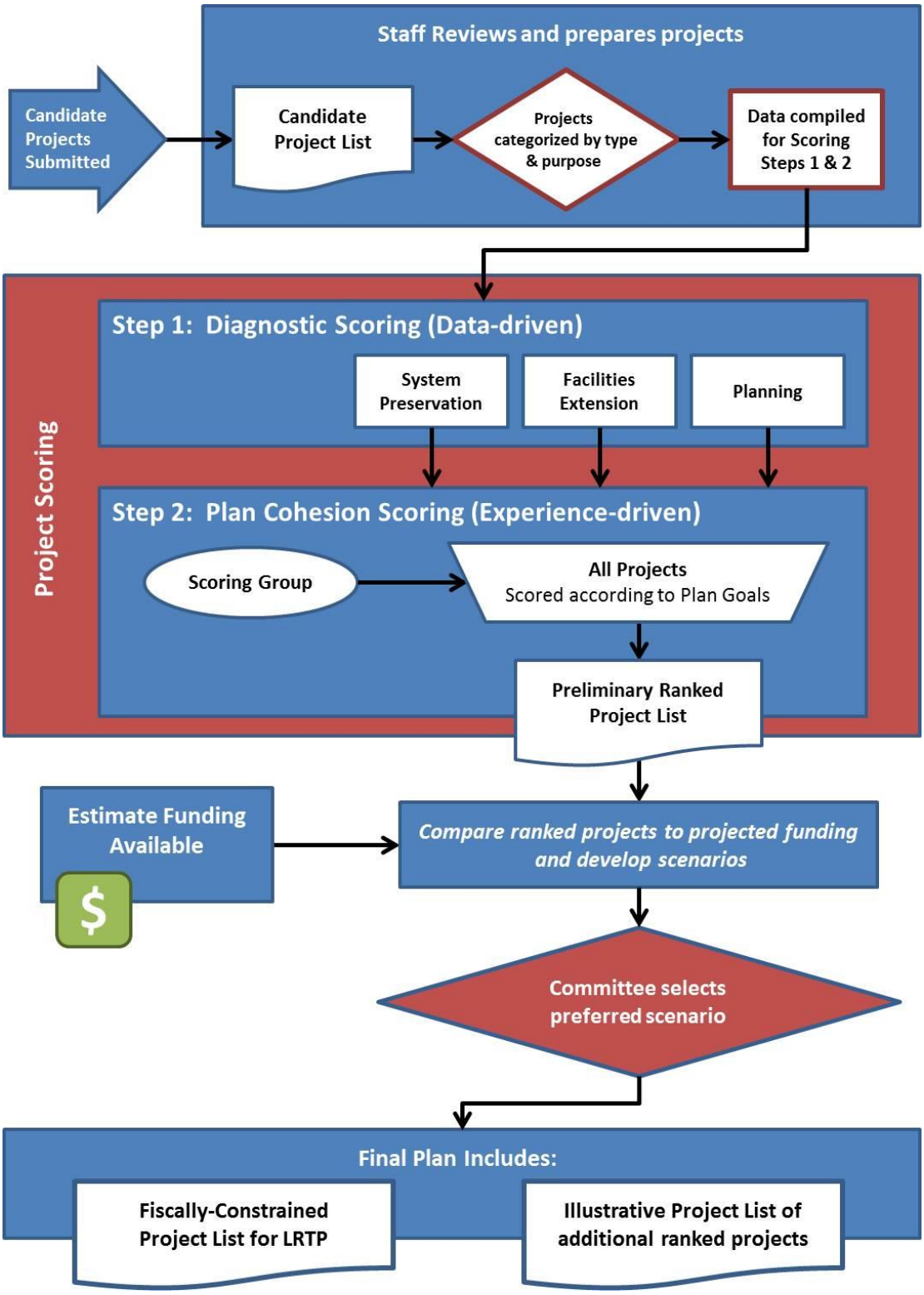
3. Project Scoring & Selection Process

The Project Scoring and Selection Process was created to ensure that the projects in the LRTP served to implement the plan goals. The Process Flow Chart is illustrated in **Figure 56**. Process mechanics and methods—including scoring criteria descriptions, scales, and weightings—are provided in **Appendix D**.

The SEDA-COG MPO staff developed the process framework for the 2011 LRTP, and some revisions were made for the 2016 LRTP Update. The Steering Committee vetted and affirmed the changes, then delegated its implementation to a Project Scoring Sub-Committee.

The 10-member Scoring Sub-Committee met twice. The first meeting was held in December 2015 as an orientation to the scoring process, project webmap tool, and the Decision Lens web application. Project scoring in Decision Lens was completed independently by the sub-committee members during a three-week period. The Sub-Committee met once more in January 2016 to review and finalize the scoring results.

Figure 56. Project Scoring and Selection Flowchart



4. Fiscal Guidance

a. 2017 Procedural & Financial Guidance

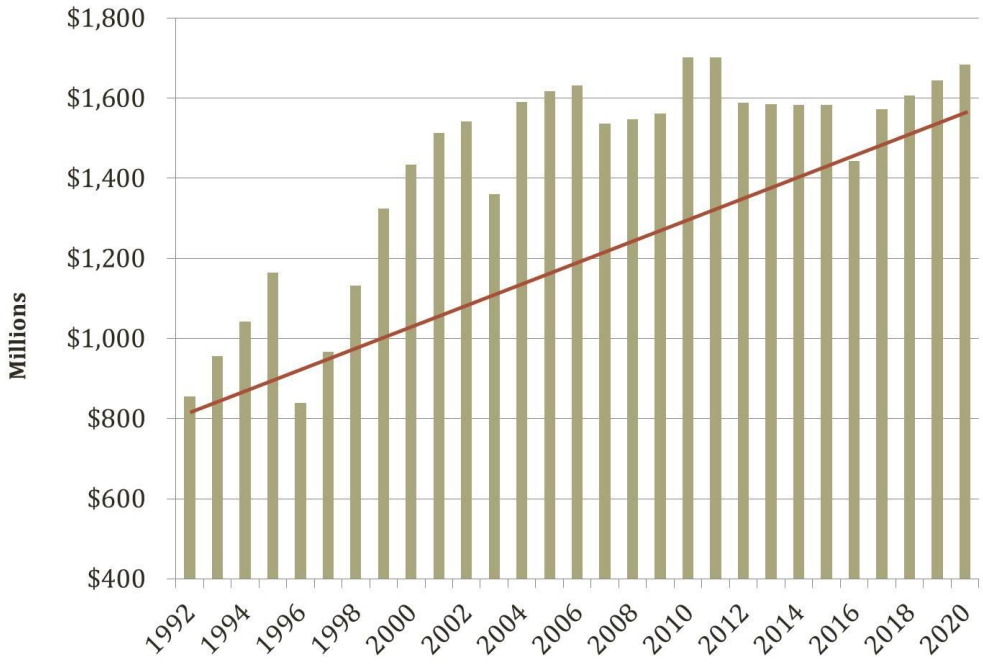
Procedural and Financial Guidance issued by PennDOT for the 2017 Transportation Program development process was referenced when forming the fiscal assumptions for the LRTP. Particularly, this guidance provides the estimated amount of federal and state funding (revenue) available in the MPO's allocation over the 4-year TIP period.

b. Historic Revenue Analysis

To estimate revenue beyond the TIP period, an evaluation of Pennsylvania's historical transportation revenues was completed. Data on Pennsylvania's federal and state transportation revenues were provided by PennDOT Central Office.

Figure 57 illustrates the federal revenue from 1992 to 2016, along with the financial guidance for 2017 to 2020. Between 1992 and 2020, revenues grew at the rate of +2.5% per year (compound growth). Based on this statewide trend, and growth of +2.6 per year in SEDA-COG MPO's FAST Act allocation (2017 to 2020), federal revenues were escalated by +2.4% per year (compounded) from 2020 to 2040.

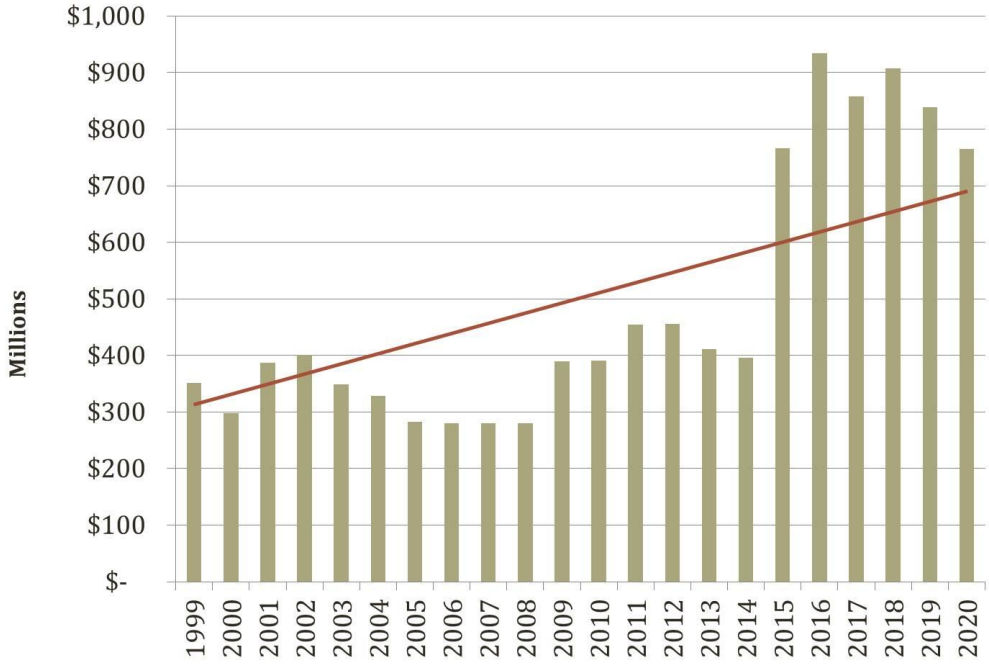
Figure 57. Pennsylvania Federal Transportation Revenue, 1992-2010



Source: PennDOT Program Center, 2016.

Figure 58 illustrates the state revenue from 1999 to 2016, along with the financial guidance for 2017 to 2020. Between 1999 and 2020, revenues grew at the rate of +3.8% per year (compound growth). However, considering the trend for decreasing revenue in the 2017-2020 period, state revenues were assumed to be flat (no growth or decline) from 2020 to 2040.

Figure 58. Pennsylvania State Transportation Revenue, 1999-2020



Source: PennDOT Program Center, 2016.

The resulting revenue available during the 2017 to 2040 period was calculated as shown in **Table 31**, according to the particular federal and State funding stream. The LRTP anticipates $1.49 billion Year of Expenditure (YOE) dollars in total federal and state funding. To summarize the resources and assumptions made in this forecast:

- Years 2017 to 2020 – Revenue available during the TIP period was obtained from Pennsylvania's 2017 Transportation Program Financial Guidance.

- Years 2021 through 2028 – Revenue available during the 2nd and 3rd 4-year periods of the TYP are based on the Year 2020 amounts, with escalation of 2.4% per year applied to federal funding streams, and 0.0% per year applied to State funding streams.

- Years 2029 through 2040 – Revenue available during the Plan period are based on the Year 2028 amounts, with escalation of 2.4% per year applied to federal funding streams, and 0.0% per year applied to state funding streams.

Along with this LRTP update, the SEDA-COG MPO is also updating the TIP and TYP. The 2017 TIP update will identify projects for the 2017-2020 timeframe and will ensure that the four years are within the fiscal constraints of the latest financial guidance. Public meetings and coordination are being completed concurrently for the LRTP and TIP updates.

Table 31. Transportation Revenue Available

	First 4-Years of the Twelve Year Program (TYP) Transportation Improvement Program (TIP)				Second 4-Years of TYP	Third 4-Years of TYP	Long Range Plan Period	TOTALS
FUNDING	**2017**	**2018**	**2019**	**2020**	**2021-2024**	**2025-2028**	**2029-2040**	**2017-2040**
Base Allocation								
NHPP Allocation	15,932,000	16,459,000	17,042,000	17,642,000	74,904,923	82,358,834	299,594,000	523,932,757
STBG Allocation	6,887,000	6,999,000	7,086,000	7,215,000	30,633,659	33,682,065	122,524,000	215,026,724
State Highway	20,924,000	22,192,000	19,902,000	18,014,000	72,056,000	72,056,000	216,168,000	441,312,000
State Bridge	7,026,000	7,421,000	6,363,000	5,796,000	23,184,000	23,184,000	69,552,000	142,526,000
Off-System Bridge	2,705,000	2,705,000	2,705,000	2,705,000	11,484,969	12,627,857	45,936,000	80,868,826
Safety (HSIP)	2,127,000	2,188,000	2,247,000	2,314,000	9,824,849	10,802,536	39,296,000	68,799,385
Base Allocation Total	55,601,000	57,964,000	55,345,000	53,686,000	222,088,400	234,711,292	793,070,000	1,472,465,692
Federal Transit	0	0	0	0	0	0	0	0
State Transit	878,000	878,000	878,000	878,000	3,512,000	3,512,000	10,536,000	21,072,000
TOTAL	56,479,000	58,842,000	56,223,000	54,564,000	225,600,400	238,223,292	803,606,000	1,493,537,692

Notes:

1. 2017 to 2020 revenue based on Pennsylvania's 2017 Transportation Program Financial Guidance.
2. 2020 to 2040 revenue estimated based on 2.4% per year escalation in federal funding; no increase in State funding.

c. *Scorecard of Influence*

The PennDOT Secretary of Transportation's plan for investment in the 2017 TIP prioritizes asset management types of projects—i.e., those that address SD bridges and poor pavement conditions on the National Highway System. The investment plan for each Planning Partner has been structured into PennDOT's "Scorecard of Influence." The Scorecard provides a spreadsheet based assessment of the condition of highways and bridges and sets spending targets for the available flexible funds (NHPP, STP, State Highway, and State Bridge).

Based on the SEDA-COG MPO's current performance related to bridges and highways, the following guidelines are being utilized with the 2017 TIP and TYP update:

- Structurally Deficient Bridges – 40% of the flexible funds must be used for bridges, based on the percentage of NHS (non-interstate) bridges with SD deck area in the region.

- Highway – 12% of the flexible funds must be used for reconstruction/full rehabilitation of roadways. This is based on percentage of roadways with poor Overall Pavement Index (OPI), past design life, and out of cycle pavements.

- Capacity Projects – No limitation is prescribed in using flexible funds for capacity expansion projects within the SEDA-COG MPO. This is based on the NHS (non-interstate) percentage of SD deck area, and roadways with poor IRI and OPI all being within acceptable thresholds.

As an operating assumption, it is anticipated that the condition of the system will be maintained such that a similar spending allocation can be assumed for the 2029-2040 Plan Period of the LRTP.

d. *Asset Management Implementation*

While the 2017 TIP/TYP identifies spending according to a specific project mix that meets the asset management guidelines, a different approach was taken for the 2029-2040 Plan Period, since specifying projects is problematic at such a long range. Based on guidance from the PennDOT Program Center and with agreement of the LRTP Steering Committee, 90% of SEDA-COG MPO's 2029-2040 revenue allocation was set aside in line item reserve as a representative amount for asset management types of projects. This amounted to $713,763,000 during the Plan Period. For the remaining 10% of the MPO's allocation ($78,635,000), projects from the prioritized list of Scored Projects were selected for funding to create the Fiscally-Constrained Project List.

5. Fiscal Constraint

The LRTP fiscally constrained project list identifies priority projects within the SEDA-COG MPO region that are not currently listed in the 2017 TIP/TYP and would be set for funding in the 2029-2040 timeframe.

Planning-level project cost estimates for projects on the Scored List were compiled from various PennDOT and MPO sources and adjusted to 2016 dollars. Where a cost was not available, a cost estimate (in 2016 dollars) was prepared based on the project type, description, and engineering cost estimation practices. The fiscal guidance requires cost estimates to be made to the year of expenditure

(YOE) based on a cost inflation of 3.0% per year (compounded). The average YOE for the Plan Period is 2035, so all project costs were inflated to 2035 dollars for use in the fiscal constraint exercise.

6. Fiscally Constrained Project List

Projects from the Scored List were systematically selected for funding according to the scoring/ranking, project type, funding eligibility, county priorities, and resulting project mix.

Figure 59 illustrates the locations of the 37 Fiscally Constrained Long Range Plan Projects. The point icons reflect the project type, and each point is keyed to the project listing in **Table 34**. The distribution of projects by Project Type and County are given in Error! Reference source not found. and **Table 33,** respectively.

While each county took a slightly different approach in developing their priorities, a majority of the projects put forward were asset management types of projects, and this is reflected in the fiscal constraint. A reasonable distribution of projects and dollar value across the counties was achieved.

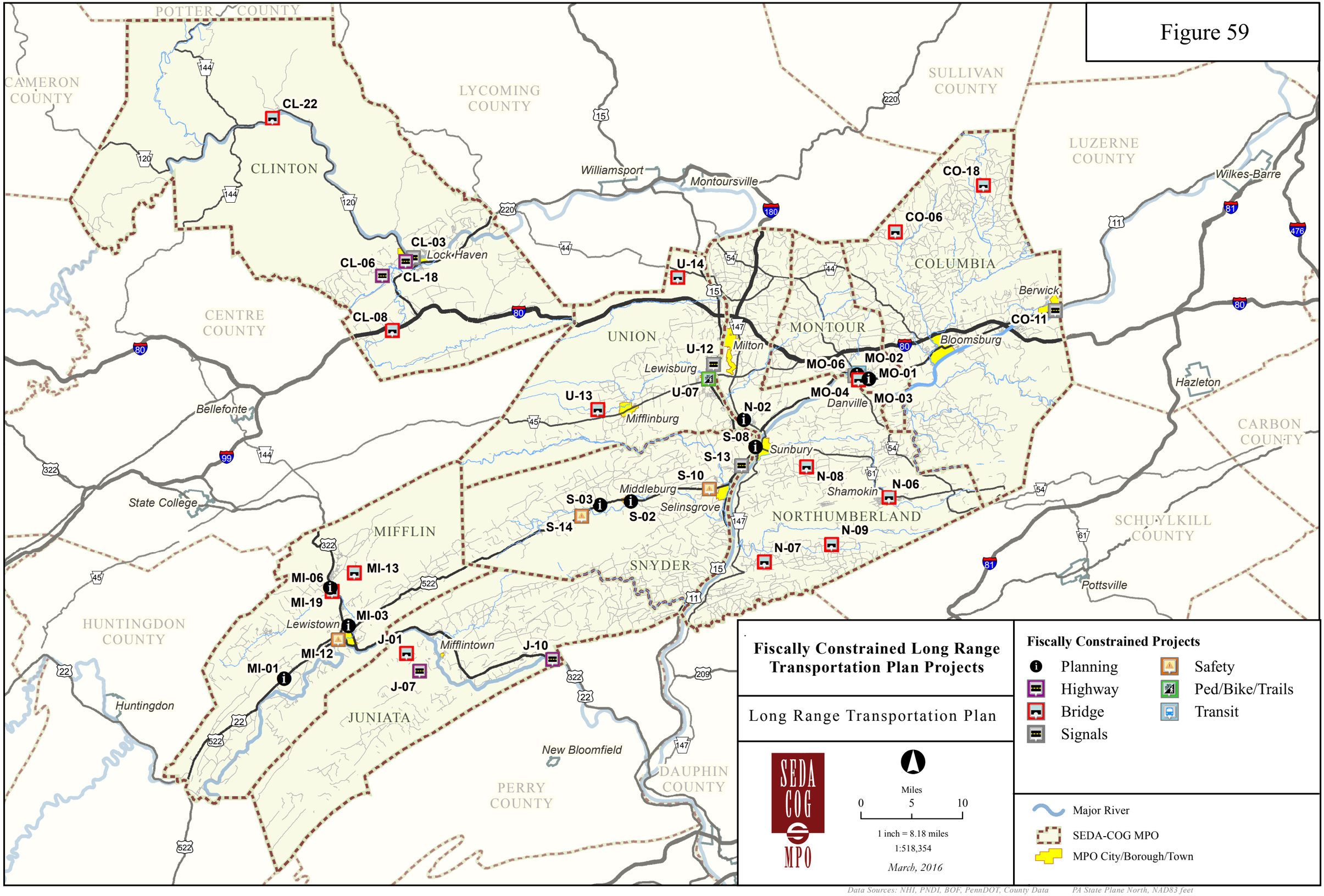
Table 32. Distribution of Fiscally Constrained Projects by Project Type

Project Type	Projects	Dollar Value
Planning	9	2,454,000
Facilities Extension	0	0
System Preservation	26	74,536,000
Highway	4	18,621,000
Bridge (State)	2	5,785,000
Bridge (Local)	12	22,723,000
Signals	5	13,822,000
Safety	3	13,585,000
TAP/Trails	1	877,000
Transit	1	768,000
TOTAL	**37**	**78,635,000**

Table 33. County Distribution of Fiscally-Constrained Projects

County	Projects	Dollar Value
Clinton	5	17,686,000
Columbia	3	7,175,000
Juniata	3	9,825,000
Mifflin	6	9,609,000
Montour	5	4,508,000
Northumberland	5	6,334,000
Snyder	6	14,453,000
Union	4	9,045,000
TOTAL	**37**	**78,635,000**

Figure 59



Fiscally Constrained Long Range Transportation Plan Projects

Long Range Transportation Plan

SEDA COG MPO

Miles
0 5 10
1 inch = 8.18 miles
1:518,354
March, 2016

Fiscally Constrained Projects

- Planning
- Highway
- Bridge
- Signals
- Safety
- Ped/Bike/Trails
- Transit

Major River
SEDA-COG MPO
MPO City/Borough/Town

Data Sources: NHI, PNDI, BOF, PennDOT, County Data PA State Plane North, NAD83 feet

Table 34. Fiscally Constrained Project List

Cty ID	Project Title	County	Description/Project Need	Project Type	Project Cost Estimate (2035 Dollars)
CL-03	SR 150 (High Street/Bellefonte Avenue) Reconstruction	Clinton	Road rehabilitation including sub-base, walkways, turning radius at Fairview and Huston Streets, and retaining wall.	System Pres - Highway	$ 8,768,000
CL-06	SR 150 and SR 2020 (Lusk Run Road) Intersection - New access road to Keystone Central Drive Intersection	Clinton	New access will create a bus staging area and remove congestion from Rt. 150 and Lusk run road.	System Pres - Highway	$ 957,000
CL-08	Fishing Creek Bridge Decking (SR 2004, segment 82)	Clinton	Replace bridge decking.	System Pres - Bridge	$ 3,349,000
CL-18	Downtown Lock Haven Signal and Pedestrian Upgrades, SR 0150	Clinton	Improve pedestrian safety and traffic flow.	System Pres - Signal	$ 4,009,000
CL-22	Bucktail School Access Bridge, Chapman Township	Clinton	Chapman Twp Bridge. Deck replacement needed (Span 2 - 80% delamination). Provides access to High, Jr High, Elementary for Keystone Central School District.	System Pres - Bridge	$ 603,000
CO-06	County Bridge # 86 over West Branch Shingle Run In Pine Township	Columbia	The Township has been requesting this bridge to be updated as they cannot take their heavy road equipment across the bridge. The bridge is one of the main routes to the township building as well as having a residential development area just before the bridge. This then requires the township to do a long detour with their equipment to do any work on the road from the state route to these residential dwellings.	System Pres - Bridge	$ 1,429,000
CO-11	US 11 Berwick Traffic Signal Updates/Modernization	Columbia	Update, repair, and modernize the Berwick traffic signal system along US 11 through Berwick Borough.	System Pres - Signal	$ 4,431,000
CO-18	Bridge Bundling	Columbia	2 bridges in Sugarloaf Twp, 1 Fishing Creek Twp, 1 Stillwater Borough - candidate for current TIP	System Pres - Bridge	$ 1,315,000
J-01	Sheesley Road Bridge Replacement	Juniata	Replace bridge.	System Pres - Bridge	$ 929,000
J-07	SR 0035 Mifflintown Area	Juniata	Resurfacing of PA 35, Mifflintown Area, Fermanagh Township, Segment 380 to 560	System Pres - Highway	$ 2,508,000
J-10	US 22 WILLIAM PENN HWY	Juniata	Resurfacing of US 22 from Pfoutz Valley Road to County Line	System Pres - Highway	$ 6,388,000
MI-01	US Route 22 Corridor/Transportation Study	Mifflin	This would look at both the North and South corridors connecting Huntingdon and Snyder Counties. This combines 2 studies that were recommended in the comprehensive plan. The northern corridor looks at improved access to the corridor between Lewistown and Snyder County, which is linked to Selinsgrove. The southern portion looks at how to improve traffic capacity from Lewistown to Huntingdon. The study would build on issues noted in the County Comprehensive Plan to improve safety along the entire 522 corridor. The southern corridor aspect would link to a study completed in the past few years for Huntingdon and Blair Counties.	Planning	$ 526,000
MI-03	Mill Road Mitigation Plan	Mifflin	Further explore recommendations identified in the comprehensive plan. The focus of the study will be to evaluate current and future transportation needs and deficiencies in the area of Mill Road and the Electric Ave. interchange including ways to improve safety, capacity constraints, land use conflicts and improved access management. The ramp exiting off the Electric Ave. at the southeast quadrant ends within approximately 45 feet of Mill Road, which is also part of the State highway system. This situation leads to conflicts as drivers exiting from US Route 322 onto Electric Ave. must compete with vehicles entering Electric Ave. from Mill Road. At the same time this is occurring, there are competing interests for the turning lane in the middle of Electric Ave. Within approximately 290 feet of the Mill Road entrance there is a corresponding ramp across Electric Ave. that goes back onto Route 322. The turning lane serves vehicles both making left hand turns onto the Route 322 ramp and onto Mill Road. This situation has resulted in accidents and near misses for drivers trying to determine who can use the center turning lane.	Planning	$ 175,000
MI-06	Route 322 Interchange Improvement Study	Mifflin	Further explores recommendations in the County Comprehensive Plan. Interchanges at Burnham, Electric Avenue, Walnut Street and Charles Street are substandard and impact accessibility. They do not meet current AASHTO standards.	Planning	$ 351,000
MI-12	Juniata Street/Reservoir/Bratton/ Fourth Street Safety Improvement	Mifflin	Address crash history and intersection safety for 5-leg intersection in high crash corridor. Consider roundabout installation or street closure/networking to address needs.	System Pres - Safety	$ 2,088,000
MI-13	Honey Creek Road (SR 1002) Bridge Bundle	Mifflin	Three posted/SD bridges within 2 miles of each other along Honey Creek Road (SR 1002). Two bridges are on TYP, but are not in development. Add the third if cost savings can be realized. Two bridges are concrete arch type. One (posted) is steel/stringer/girder type.	System Pres - Bridge	$ 2,436,000
MI-19	Replacement of the Kishacoquillas Creek Bridge in Brown Township	Mifflin	The Bridge was built around 1920 and provides the only access into a neighborhood of approximately 150 homes. The bridge has an ADT of 800, and is a Single Lane, Two Span, Concrete encased steel I-Beam bridge 109 feet in length. The bridge is narrow and has a poor alignment creating sharp curves and limited sight distance at both approaches, which causes all traffic to stop prior to crossing the bridge. The age, poor condition, and alignment of the bridge necessitate replacement.	System Pres - Bridge	$ 4,033,000

Table 34. Fiscally Constrained Project List

Cty ID	Project Title	County	Description/Project Need	Project Type	Project Cost Estimate (2035 Dollars)
MO-01	Spruce Street Improvement Project	Montour	Further definition of project need and potential remedies required.	Planning	$ 175,000
MO-02	US 11 Corridor Congestion and Safety Study	Montour	"Smart Transportation" study of land use/transportation interactions in the US 11 Corridor. Include operations along SR 54 and other network streets in Danville, PA.	Planning	$ 351,000
MO-03	Major Medical Activity Centers Coordinated Transit Expansion	MULTIPLE	Explore potential options for expansion/modification/coordination/etc.—under direct consultation with transit providers, operators, and county commissioners—to meet unmet needs related to major medical centers and other medical activity centers. The service options may expand and better coordinate transit systems for accessing Geisinger and other medical activity centers within and beyond the SEDA-COG MPO region.	Transit	$ 768,000
MO-04	Railroad Street Bridge Rehab.	Montour	Rehabilitate SD local bridge along Railroad Street.	System Pres - Bridge	$ 2,337,000
MO-06	US 11 & PA 54 Traffic Signal Enhancements	Montour	Update/enhance signals and hardware; consider preemption, adaptive, detection, battery backup, pedestrian accommodations.	System Pres - Signal	$ 877,000
N-02	Northumberland Borough Truck Circulation Improvements	Northumberland	Identify and implement low-cost projects aimed at improving and/or mitigating truck circulation issues, with an eye toward post-CSVT needs.	Planning	$ 175,000
N-06	Bridge #73 City of Shamokin	Northumberland	Superstructure replacement is needed. Average daily traffic is 7,200 vehicles per day. PennDOT is doing the design for this project.	System Pres - Bridge	$ 4,037,000
N-07	Bridge #100 Jackson Township	Northumberland	Total replacement is needed. PennDOT is doing the design for this project.	System Pres - Bridge	$ 728,000
N-08	Bridge #192 Rockefeller Township	Northumberland	Total replacement is needed. PennDOT is doing the design for this project.	System Pres - Bridge	$ 710,000
N-09	Bridge #78 Upper Mahanoy Township	Northumberland	Total replacement is needed. PennDOT is doing the design for this project.	System Pres - Bridge	$ 684,000
S-02	Study of Permanent Detour of Middleburg on SR 522	Snyder	Study to determine the feasibility of an alternative route around Middleburg Borough to eliminate heavy truck traffic within the borough.	Planning	$ 175,000
S-03	SR 522 Improvements	Snyder	Study to determine highway upgrades and the possibility of turn lanes or 'go arounds' in various areas that create backups in high volume areas (i.e. near Wood Mode, Smalsh Barrick Road, etc.).	Planning	$ 175,000
S-08	US 11/15 Corridor Revitalization and Master Plan	Snyder	"Smart Transportation" study of land use/transportation interactions in the US 11/15 Corridor post-CSVT. Address safety, changing signal system needs, street space usage.	Planning	$ 351,000
S-10	US 522/Salem Road/University Avenue Safety Improvement	Snyder	Address crash history issues at ISIP intersection. Consider roadway safety review and potential resolutions to traffic and pedestrian/bike issues.	System Pres - Safety	$ 3,049,000
S-13	US 11 & 15 Traffic Signal Enhancements, Hummel's Wharf to Shamokin Dam	Snyder	Update/enhance signals and hardware; consider preemption, adaptive, detection, battery backup, pedestrian accommodations.	System Pres - Signal	$ 2,255,000
S-14	SR 522 Safety Improvements	Snyder	Improved Pedestrian safety in the 522 corridor including Middleburg, Beavertown, and a look at Beaver Springs which will include lighting, handicap accessibility, marked crossings, walkability, and in town traffic control slowing devices, etc.	System Pres - Safety	$ 8,448,000
U-07	Buffalo Valley Rail Trail, At-Grade Crossing of US 15	Union	Design and construct at-grade rail-trail crossing of US 15 to incorporate median refuge and crossing signal (if warranted).	TAP/Trails	$ 877,000
U-12	US 15 Traffic Signal Enhancements, Bucknell to Zeigler Road	Union	Update/enhance signals and hardware with video detection, emergency preemption, adaptive signal system.	System Pres - Signal	$ 2,250,000
U-13	County Bridge #21 (T-374 Shuck Rd.) bridge replacement	Union	Replace bridge. Serves a rural agricultural area on a lower volume road and provides access for farm vehicles, delivery and logging trucks.	System Pres - Bridge	$ 3,288,000
U-14	County Bridge #1 (T-526 Rd.) bridge replacement	Union	Replace bridge. Provides access to rural farming and forest area in Gregg Township on a lower volume township road.	System Pres - Bridge	$ 2,630,000

7. Illustrative Project List

The LRTP Illustrative Project List (**Table 35**) includes projects that do not fit within the Fiscally Constrained Plan but are to be carried along for future consideration and selection for funding, as the program evolves. The Illustrative List is formed from the following:

- Scored Projects that did not fit within the 2016 LRTP Fiscal Constraint.
- Candidate Projects that were not part of the county top 10 lists.
- Projects from the 2011 LRTP Fiscally Constrained List that were re-evaluated and did not fit within the 2016 LRTP Fiscal Constraint – These projects were added at the request and with approval of the LRTP Steering Committee.

8. Transportation Program Expenditures

A full breakdown of the TIP/TYP and Plan Period expenditures according to the federal and state funding streams is provided in **Table 36**. The following acronyms and terms for the funding streams are used:

NHPP – National Highway Performance Program (Federal)
STBG – Surface Transportation Block Grant (Federal)
State Highway – PA State Highway Funds (State)
State Bridge – PA State Bridge Funds (State)
Off-System Bridge – For all bridges, including those not on the Federal-Aid System (Federal)
Safety HSIP – Highway Safety Improvement Program (Federal)

A listing of TYP projects is included in **Appendix F**. The programmed dollars for the CSVT projects were filtered and accounted separately, as these amounts represent discretionary/spike allocations that are not part of the regular "base allocation." The table also provides a measure of revenue utilization (% Utilization). For the second and third 4-year periods of the TYP, the % Utilization below 100% is likely a reflection of the LRTP's revenue forecasting assumptions, which escalated the federal funding streams.

Table 35. Illustrative Project List

Cty ID	Project Title	County	Description/Project Need	Project Type	Project Cost Estimate (2035 Dollars)	Notes
CL-01	SR 64 Widening and Curve Straightening	Clinton	DOI project includes minor safety consideration (guiderail updates), but does not directly address concerns.	System Preservation	$ 1,017,000	2011 LRTP Fiscally Constrained
CL-02	North Fairview Street Betterment (SR 1024)	Clinton	SR 1024 Resurfaced in 2011. Address safety concerns at SR 150 intersection.	System Pres - Highway	$ 3,288,000	
CL-04	SR 2022 (Sugar Run Road) Widening Study	Clinton		Planning	$ 1,017,000	2011 LRTP Fiscally Constrained
CL-05	SR 120 and SR 144 Intersection	Clinton	DOI Resurfacing Project through intersection in 2019. Does not include intersection improvements since ROW would be required.	System Preservation	$ 1,524,000	2011 LRTP Fiscally Constrained
CL-07	Old Hill Road Bridge on T-537 (Over Fishing Creek)	Clinton		System Preservation	$ 203,000	2011 LRTP Fiscally Constrained
CL-12	High Speed Interchange at I-80 and SR 220 (Future I-99) Design	Clinton	I-99 missing link in Clinton County.	Facilities Extension	$ 277,755,000	Project cost exceeds total program allocation
CL-15	US 220 Widening, I-80 to Salona	Clinton	I-99 missing link in Clinton County. Widening of US 220 to 4-lane cross-section from I-80 Interchange to existing 4-lane, limited access section near Salona.	Facilities Extension	$ 39,564,000	Monitor corridor post-Auction Road improvements. The need/justification for future improvements may change.
CL-19	Bike/Ped Trail connecting Lock Haven and Jersey Shore	Clinton [Lycoming]	Identified in Clinton County Greenway and Open Space Plan, Susquehanna Greenway Strategic Plan, Valley Vision 2020.	TAP/Trails	$ 12,515,000	
CL-21	Peale Avenue Bridge, Mill Hall, Deck Replacement	Clinton	Adjacent box beams are failing. Needs new beams and decking.	System Pres - Bridge	$ 4,712,000	DRAFT TIP carries construction $ in 2023-24, as part of Twelve Year Program.
CO-01	County Bridge # 92 Sam Eckman Covered Bridge Rehabilitation in Pine/Greenwood Twp	Columbia	Did preservation work in 2013.	System Pres - Bridge	$ 1,918,000	Local bridge Preservation done in 2013
CO-02	County Bridge # 50 over Catawissa Creek	Columbia	Bridge #50 has a very deep water hole that requires diving equipment for inspection of its piers. There is scour occurring. This is a school bus route.	System Pres - Bridge	$ 3,332,000	Local bridge
CO-03	County Bridge # 48 over Catawissa Creek	Columbia	This bridge is near the Lake Glory campgrounds. Though the road is marked for limited weight, campers still continue to try to reach the campground to end up backing up to go around to the proper entrance. In addition, a Christmas tree farmer continues to use the bridge though marked appropriately for weight. There is another covered bridge (#31) near Knoebels Grove that also becomes an issue for campers trying to enter the campground for the park. A study for these two bridges would help to find better solutions while maintaining the integrity of the two covered bridges.	System Pres - Bridge	$ 5,085,000	Alternatives study suggested by engineer for County Bridges #11, 31 and 48 (see CO-03 and CO-08).
CO-04	County Bridge # 57 over Montour Run	Columbia		System Preservation	$ 1,545,000	2011 LRTP Fiscally Constrained
CO-05	County Bridge # 141 over Green Creek in Jackson Township	Columbia	Other detours available - might be a candidate for demolition when/if ever closed.	System Pres - Bridge	$ 1,526,000	Local bridge Reasonable detour available; Potential candidate for closure/demolition
CO-07	County Bridge # 136 over Raven Creek	Columbia		System Preservation	$ 1,769,000	2011 LRTP Fiscally Constrained
CO-08	County Bridge # 11 Esther Furnace Covered Bridge	Columbia	Engineer is suggesting a study for alternatives along with Bridge #31.	System Pres - Bridge	$ 2,960,000	Alternatives study suggested by engineer for County Bridges #11, 31 and 48 (see CO-03 and CO-08).
CO-14	Bike/Ped Trail connecting Bloomsburg and Catawissa	Columbia	Identified in North Branch Canal Trail Feasibility Study, Susquehanna Greenway Strategic Plan, Columbia County Comprehensive Recreation, Parks, Greenways and Open Space Plan, Valley Vision 2020, Creating Safe, Walkable and Healthy Communities in the Middle Susquehanna Region. Part of 500-mile Susquehanna Greenway (Lake Ontario to Chesapeake Bay).	TAP/Trails	$ 6,242,000	
J-06	SR 0075 Honey Grove Resurfacing	Juniata	Resurfacing of SR 75, Honey Grove to Spruce Hill, Spruce Hill and Tuscarora Townships.	System Pres - Highway	$ 8,299,000	Cost exceeds available $
J-08	SR 0035, Smith Rd to Snyder Co.	Juniata	Resurfacing of SR 35, Smith Road to Snyder County, Line Fayette and Monroe Townships .	System Pres - Highway	$ 10,624,000	
J-09	SR 0035, Huntingdon to Tuscarora	Juniata	Resurfacing of SR 35, Huntingdon County Line to Tuscarora Township, Lack and Tuscarora Township .	System Pres - Highway	$ 10,228,000	Cost exceeds available $

Table 35. Illustrative Project List

Cty ID	Project Title	County	Description/Project Need	Project Type	Project Cost Estimate (2035 Dollars)	Notes
MI-04	Havice Creek Bridge Replacement Project	Mifflin	The proposed project is the replacement of the existing structurally deficient and functionally obsolete bridge carrying Havice Valley Road (T-463) over Havice Creek in Armagh Township, Mifflin County. T-463 provides the only permanent access to farms and several homes, a number of seasonal cabins and provides a secondary access to Poe Valley State Park, Poe Paddy Recreational area and the Bald Eagle State Forest. T-463 is closed from the eastern end during the winter months. The existing bridge is a 18'-6" center to center of bearing steel I-beam bridge with a curb to curb width of 18'-0". Significant deterioration to the existing superstructure and substructure has made replacement of the existing bridge necessary. A precast concrete box culvert is anticipated for the replacement bridge.	System Pres - Bridge	$ 1,718,000	Local bridge
MI-17	Downtown Lewistown Streetscape Improvement	Mifflin	Continue streetscape project started in 2004 on Market, Main and Water Streets.	TAP/Trails	$ 2,630,000	
MI-18	Replacement of the Treaster Run Bridge in Armagh Township.	Mifflin	The Bridge was built in 1915, has an ADT of 200, and is a Single Lane, Single Span, Reinforced Concrete Arch Bridge 40 feet in length. The bridge is narrow and has a "hump" in the middle causing poor sight distance for oncoming traffic. The bridge is deteriorating and is starting to undermine due to the mis-alignment with the stream. The age, poor condition, and alignment of the bridge necessitate replacement.	System Pres - Bridge	$ 2,630,000	Local bridge > 20'. No local match committed.
N-01	Collaborative Community Transit Service	MULTIPLE	Explore potential options for expansion of transit services—under direct consultation with transit providers, operators, and county commissioners—to meet unmet transportation needs. The project is intended to identify and meet public transportation needs when they emerge.	Transit	$ 3,945,000	
N-03	Bike/Ped Trail connecting Watsontown, Milton, and East Lewisburg	Northumberland	Identified in Warrior Run Pathways Plans, Northumberland County Greenway Plan, Valley Vision 2020, Susquehanna Greenway Strategic Plan.	TAP/Trails	$ 9,380,000	
N-04	Bike/Ped Trail connecting Northumberland and Sunbury	Northumberland	Identified in Building Safe Walkable and Healthy Communities in the Middle Susquehanna Region, Lake Augusta Gateway Corridor Plan, Susquehanna Greenway Strategic Plan.	TAP/Trails	$ 10,658,000	
N-10	SEEDCO Rail Extension	Northumberland	Rail Extension is needed into the SEEDCO Industrial Park in Coal Township to continue industrial development. Site selectors are requesting rail access in 50% of Requests For Information.	Rail	$ 7,540,000	RAIL PROJECT
S-01	Mill Road Signalization and Turn Lanes	Snyder	Realignment of Mill/App intersection, roundabout or other improvements being considered as part of CSVT Southern Section Final Design, to potentially reduce the number of bridges required in the CSVT.	Facilities Extension	$ 1,524,000	2011 LRTP Fiscally Constrained
S-04	SR 35 Safety Improvements	Snyder	Improved pedestrian safety in Freeburg, Mt. Pleasant Mills, and Richfield boroughs on the SR 35 corridor including lighting handicap accessibility, marked crossings, in town traffic control slowing devices, etc.	System Pres - Safety	$ 5,543,000	Conduct site inventory to better define the issues.
S-11	Bike/Ped Trail connecting Shamokin Dam and Selinsgrove	Union / Snyder	Identified in Valley Vision 2020, and Susquehanna Greenway Strategic Plan, Susquehanna River Sports Park Feasibility Study. Part of 500-mile Susquehanna Greenway (Lake Ontario to Chesapeake Bay).	TAP/Trails	$ 2,351,000	
S-12	Rehabilitation of Norfolk Southern Railroad Bridge over Susquehanna River	Northumberland/Snyder	Rehabilitate 3,500 foot railroad bridge across Susquehanna River, east of Selinsgrove. This is the only access to rail in Snyder County.	Rail	$ 163,548,000	RAIL PROJECT
U-09	Bike/Ped Trail connecting Montgomery and Allenwood	Union	Identified in Greenway Plans for Lycoming and Union counties, Valley Vision 2020, and Susquehanna Greenway Strategic Plan. Feasibility study done for Lycoming portion; Union is advancing feasibility study. Part of 500-mile Susquehanna Greenway (Lake Ontario to Chesapeake Bay).	TAP/Trails	$ 1,754,000	
U-10	Bike/Ped Trail connecting Lewisburg and Shamokin Dam	Union / Snyder	Identified in Greenway Plans for Union County, Valley Vision 2020, and Susquehanna Greenway Strategic Plan, Susquehanna River Sports Park Feasibility Study. Part of 500-mile Susquehanna Greenway (Lake Ontario to Chesapeake Bay).	TAP/Trails	$ 4,936,000	
U-11	Railroad Expansion for Great Stream Commons and Timber Run Industrial Park	Union	Would provide rail service to 400 acre mixed-use business and industrial park.	Rail	$ 8,327,000	RAIL PROJECT

Table 36. Transportation Program Expenditures

		Transportation Improvement Program (TIP)				Second 4-Years of TYP	Third 4-Years of TYP	Long Range Plan Period	TOTALS
FUNDING		**2017**	**2018**	**2019**	**2020**	**2021-2024**	**2025-2028**	**2029-2040**	**2017-2040**
Projects									
NHPP		64,608,684				70,568,000	70,568,000	28,135,000	233,879,684
STBG		28,073,156				28,860,000	28,860,000	12,252,000	98,045,156
State Highway		265,497,000				267,791,976	72,018,000	22,085,000	627,391,976
CSVT		182,994,339				194,918,637	0	0	377,912,976
State Highway - CSVT		82,502,661				72,873,339	72,018,000	22,085,000	249,479,000
State Bridge		26,606,000				23,170,960	23,145,000	7,639,000	80,560,960
Off-System Bridge		10,716,488				10,820,000	10,820,000	4,594,000	36,950,488
Safety (HSIP)		7,259,400				3,702,400	0	3,930,000	14,891,800
Total Projects		402,760,728				404,913,336	205,411,000	78,635,000	1,091,720,064
Total Projects - CSVT		219,766,389				209,994,699	205,411,000	78,635,000	713,807,088
Reserve Line Items									
NHPP		2,466,316				0		269,635,000	272,101,316
STBG		2,113,844				0		110,272,000	112,385,844
State Highway		0				0		194,551,000	194,551,000
State Bridge		0				0		62,597,000	62,597,000
Off-System Bridge		103,512				0		41,342,000	41,445,512
Safety (HSIP)		3,116,600				14,809,600		35,366,000	53,292,200
Total Reserve		7,800,272				14,809,600		713,763,000	736,372,872
Total Projects + Reserve		410,561,000				625,133,936		792,398,000	1,828,092,936
Total Projects - CSVT + Reserve		227,566,661				430,215,299		792,398,000	1,450,179,960
Total Base Allocation		222,596,000				456,799,692		793,070,000	1,472,465,692
% Utilization		102.2%				94.2%		99.9%	98.5%

C. Implementation Strategies

Beyond the identification of projects for future construction, the SEDA-COG MPO has developed a framework of implementation strategies that identifies staff activities designed to accomplish the plan goals. The listing is, in essence, a summary of the major points and recommendations of the LRTP, As such, it provides context for both directing and assessing the MPO's activities during the life of the LRTP.

The strategies listed in **Table 37** reflect updates and reformatting since the strategies were first developed for the 2011 LRTP. New strategies and steps are listed at the last page of the table, and are given a value of "New" in the Time Period column. Many of the implementation steps were drawn from the comprehensive plans for the eight counties in the MPO. (A listing of transportation strategies recommended in the county comprehensive plans is included in **Appendix B**).

Where possible, strategies are tagged with a relevant performance measure so that the success of the measures can be monitored over future updates. Performance measures listed in italics are proposed measures and require additional development to implement.

The activities are listed by the time period for their implementation. "Ongoing" indicates an activity that will be underway on a continuing basis for the life of the plan. "Near term" items are activities that can be completed within the next five years, before the next plan update. "Mid-term" items will take from five to ten years to complete, and "Long term" items are anticipated to take ten years or longer.

The symbols given under "Partners" are scaled to indicate relevance. A large dot (●) indicates that partner has a central role in carrying out the measure, while a small dot (•) indicates a supporting role.

Figure 37. Implementation Plan

Time Period	SEDA-COG MPO Long Range Transportation Plan Strategies and Implementation Items	Partners				Associated Performance Measures
		PennDOT	MPO Members	Municipalities and Stakeholders	WATS MPO & other Planning Partners	
Ongoing	Continue to work with PennDOT, members and stakeholders to identify required projects within the region, and methods for advancing them to the TIP.	●	●	●	●	*Spending guidelines for preservation and SD bridge use*
Ongoing	Continue to work with members and PennDOT to incorporate the LPN project development process and smart transportation land use contexts.	●	●	●		*Projects through LPN process*
Ongoing	Continue to work with Districts to identify funding for bridge preservation and major bridge projects, as well as locally owned bridge projects and local preservation projects.	●	●	●		*SD Bridge Rates, Preservation Funding, Rate of SD on*
Ongoing	Continue to work with Districts in identifying funding to maintain or reduce portions of the network with poor IRI and out of cycle (or poor OPI).	●	●	●		*Pavement with Poor IRI*
Ongoing	Continue to monitor identified performance measures identified in plan and prepare summaries on an annual basis.	●	●	●		*All*
Ongoing	Continue to provide information on current issues related to Marcellus Shale to MPO members.	●	●		●	
Ongoing	Continue to host LTAP sessions, and otherwise circulate related information to MPO members.	●	●	●	●	*Sessions Held* *Annual Attendees*
Ongoing	Identify the current status of and complete other inventories needed to advise the planning process, such as bike and pedestrian facilities, employment centers, freight facilities, informal park and ride locations, pipelines etc.	●	●	●		*Miles of Pedestrian and Bicycle Facilities*
Ongoing	Coordinate with the Districts to develop and maintain an agreed upon listing of the Business Plan Network, and regularly update figures for maintenance work backlogs.	●				

Figure 37. Implementation Plan

Time Period	SEDA-COG MPO Long Range Transportation Plan Strategies and Implementation Items	Partners				Associated Performance Measures
		PennDOT	MPO Members	Municipalities and Stakeholders	WATS MPO & other Planning Partners	
Ongoing	Continue to brief MPO members on new tools, applications, and funding opportunities.	●	●			
Ongoing	Continue to work with members, local stakeholders and project sponsors to identify local projects for continuing programs including ARC Local Access Roads, Rail Freight Assistance, Transportation Alternatives, ARLE, Green Light-Go, and other sources.	●	●	●		
Ongoing	Continue to participate in District led safety initiatives, including work with Districts to identify suitable locations for linear treatments, and appropriate levels of funding as part of the TIP update cycles. Continue facilitating road safety reviews and identify safety issues for LPN forms.	●	●	●		*Fatal Crashes* *Serious Injury Crashes* *Crashes by Type*
Ongoing	Continue to support MPO members in developing comprehensive plans, greenway plans, corridor plans and otherwise carrying out their planning process.	●	●			*Plans/updates completed*
Ongoing	Continue to work with Districts to proactively identify opportunities to preserve and protect cultural, environmental and historic resources and integrate them into programmed projects.	●	●	●		
Ongoing	Continue to work with Districts in identifying, prioritizing and funding ITS and other innovative treatments.	●	●			
Ongoing	Continue to support the development of alternative fuel networks in the SEDA-COG region.	●	●	●	●	*Number of Facilities or* *Fuel Consumption*
Ongoing	Continue outreach and monitoring efforts outlined in Public Participation Plan. Maintain Public Participation Plan update schedule.	●	●			

Figure 37. Implementation Plan

Time Period	SEDA-COG MPO Long Range Transportation Plan Strategies and Implementation Items	Partners				Associated Performance Measures
		PennDOT	MPO Members	Municipalities and Stakeholders	WATS MPO & other Planning Partners	
Ongoing	Support the continued development of rail served industry at appropriate locations.	●	●	●	●	*Rail Freight by cars/tons*
Ongoing	Continue to monitor employment in plan updates.					*Employment, Manufacturing & Extraction Related Sectors.*
Ongoing	Continue to identify local candidates for support through LTAP technical assistance.	●	●	●	●	*Tech Assist Incidents*
Ongoing	Work with members and PennDOT to identify and advance appropriate studies that can be addressed through the UPWP process.	●	●	●		
Near	Complete the inventory of locally owned bridges between 8' and 20' in length.	●	●	●		
Near	Administer and maintain a process for providing context and zoning information in the screening process.	●	●	●		*Projects through LPN Process*
Near	Work with members and PennDOT to develop and maintain and inventory of assets and locations for which the smart transportation context has been determined.	●	●			*Projects with Defined Context in Inventory from All Sources*
Near	Work with Transit providers and the Williamsport MPO to update the Coordinated Public Transit - Human Services Transportation Plan.	●	●	●	●	*Transit Trips by Provider* *Out-of-County Trips by Provider*
Near	Develop core transportation network(s) within the SEDA-COG MPO region using the economic centers methodology developed by PennDOT or an appropriate alternative. Use the evaluation to advise transportation planning decisions, ensuring that the regional asset maintenance program preserves access to regional transportation, care and employment centers.	●	●	●	●	*IRI, OPI or SD deck area on prioritized routes*

Figure 37. Implementation Plan

Time Period	SEDA-COG MPO Long Range Transportation Plan Strategies and Implementation Items	Partners				Associated Performance Measures
		PennDOT	MPO Members	Municipalities and Stakeholders	WATS MPO & other Planning Partners	
Near	Through update of Coordinated Public Transit-Human Services Transportation Plan, develop a plan to inventory and survey informal carpool locations, and use the data to help interested service providers implement services such as vanpools or ride matching.	●	●	●	●	*Mode Choice*
Near	Work with Districts to develop and post mapping showing local posted and bonded roads, and posted bridges, beginning with the counties most impacted by Shale Activities.	●	●			*IRI, OPI or SD deck area on prioritized routes vs unposted routes on same BPN level*
Near	Use employment data to identify major freight centers within the region.	●	●	●		
Near	Work with PennDOT Bureau of Maintenance & Operations (BOMO) and Districts to identify and develop a method for identifying crashes involving non-motorized vehicles.	●				*Crashes or fatal crashes involving non-motorized vehicles*
Mid	Complete the local asset data collection process being implemented by PennDOT.	●	●	●		*Municipalities Completed*
Mid	Work with PennDOT to identify future ITS applications, using data from weather events, roadway closure system and other sources.	●	●			*ITMS Installations or Motorist Passing/Viewing Active Messages*
Mid	Work with MPO members to implement a prioritized network for non-motorized vehicles.	●	●	●		*Crashes or fatal crashes involving non-motorized vehicles*
Mid	Identify locations or facilities where rapid changes in traffic may make more frequent counts desirable.	●	●	●		
Mid	Work with Districts to implement and maintain a standardized method for measuring congestion and projecting future volumes.	●				*Miles of congested roadway*

Figure 37. Implementation Plan

Time Period	SEDA-COG MPO Long Range Transportation Plan Strategies and Implementation Items	Partners				Associated Performance Measures
		PennDOT	MPO Members	Municipalities and Stakeholders	WATS MPO & other Planning Partners	
Mid	Work with Joint Rail Authority to implement measures to maximize coordination between local and railroad planning efforts.	●	●	●		
Mid	Consider development of an access measure for permitted wells, considering routes to water sources, NHS and interstate systems and active rail lines.	●	●	●		
Mid	Identify facilities on the Interstate and NHS where prioritization to improve compliance with current criteria is desirable.	●	●			*Count of Facilities not Meeting Criteria*
Mid	Develop and program corridor level studies as appropriate to address conditions.	●	●	●		*Congestion or condition on prioritized corridors compared to system avg.*
Mid	Use employment data to develop information on the major travel patterns for each identified employment center and between counties.	●	●	●		*Employment by sector* *% jobs located in growth areas*
Mid	Develop corridor studies or access assessments as appropriate to evaluate serviceability of connections from major employment and freight centers to NHS and Interstate systems.	●	●	●		*IRI, OPI or SD deck area on prioritized routes vs other routes on same BPN level*
Mid	Develop criteria for and complete an inventory of regional attractions.	●	●	●		
Long	Conduct a review of county hazard mitigation plans and summarize trends significant at the regional level, and evaluate their applicability for a regional transportation security evacuation plan.	●	●	●		
Long	Conduct an inventory of existing sidewalk facilities and use it to identify critical gaps in the network.	●	●	●		*Miles of Pedestrian Facilities*
Long	Develop new accessibility measures that can be applied to attractions and freight centers.	●	●	●		

Figure 37. Implementation Plan

Time Period	SEDA-COG MPO Long Range Transportation Plan Strategies and Implementation Items	Partners				Associated Performance Measures
		PennDOT	MPO Members	Municipalities and Stakeholders	WATS MPO & other Planning Partners	
Long	Perform access inventories identifying for routes connecting attractions to NHS roadways.	●	●	●		
New	Participate in the development of a multi-agency Greenway and Trail Authority.	●	●	●	●	
New	Examine the establishment of a bike/ped advisory committee at the MPO level.	●	●	●		
New	Facilitate coordinated land use-transportation study of CSVT impacts.	●	●	●		
New	Support municipalities with CSVT local access interchanges in efforts to plan/prepare for land use and transportation impacts.	●	●	●		