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# Capital Improvements Plan

Mount Joy Township, Lancaster County PA

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# Introduction

Mount Joy Township and its Traffic Impact Fee Advisory Committee updated the Land Use Assumptions Report and Roadway Sufficiency Analysis Report in order to revise the traffic impact fee in compliance with the requirements of the Municipal Planning Code (MPC). These updates to the original 2004 reports are intended to evaluate a reasonable land use build-out scenario and associated traffic projections for a ten-year planning horizon. Revisions to the Capital Improvements Plan (CIP) take into account the recommendations of the Roadway Sufficiency Analysis, improvements made since 2004, and additional considerations that were incorporated into the March 2013 Official Map. All transportation improvements included in the CIP are contained in the Transportation Service Area (TSA) shown in Figure 1.

Transportation improvements contained in the CIP are intended to maintain the Township's preferred level of service (LOS), which is LOS D. Each improvement considers actions necessary to maintain a LOS D in existing and base conditions that do not account for new development as identified in the Land Use Assumptions Report, which cannot be funded by traffic impact fees. Improvements to address the projected traffic conditions resulting from new development are eligible to be funded by the fees. The Roadway Sufficiency Analysis sets forth the basis to differentiate between eligible and ineligible improvements.

The remainder of this report addresses the necessary components of a CIP as set forth in §504-A(e)(i) of the MPC:

- (i) A description of the existing highways, roads and streets within the transportation service area and the road improvements required to update, improve, expand or replace such highways, roads and streets in order to meet the preferred level of service and usage and stricter safety, efficiency, environmental or regulatory standards *not attributable to new development*. [emphasis added]
- (ii) A plan specifying the road improvements within the transportation service area *attributable to forecasted pass-through traffic* so as to maintain the preferred level of service after existing deficiencies identified by the roadway sufficiency analysis have been remedied. [emphasis added]
- (iii) A plan specifying the road improvements or portions thereof within the transportation service area *attributable to the projected future development*, consistent with the adopted land use assumptions, in order to maintain the preferred level of service after accommodation for pass-through traffic and after existing deficiencies identified in the roadway sufficiency analysis have been remedied. [emphasis added]
- (iv) The projected costs of the road improvements to be included in the transportation capital improvements plan, calculating separately for each project by the following categories:
  - (A) The costs or portion thereof associated with correcting existing deficiencies as specified in subparagraph (i).
  - (B) The costs or portions thereof attributable to providing road improvements to accommodate forecasted pass-through trips as specified in subparagraph (ii).
  - (C) The costs of providing necessary road improvements or portions thereof attributable to projected future development as specified in subparagraph (iii); provided that no more than 50% of the cost of the improvements to any highway, road or street which qualifies as a State Highway or portion of the rural State Highway System as provided in section 102 of the act of June 1, 1945 (P.L. 1242, No. 428), known as the "State Highway Law" may be included.
- (v) A projected timetable and proposed budget for constructing each road improvement contained in the plan.



- (vi) The proposed source of funding for each capital improvement included in the road plan. This shall include anticipated revenue from the Federal Government, State government, municipality, impact fees and any other source. The estimated revenue for each capital improvement in the plan which is to be provided by impact fees shall be identified separately for each project.

## Improvements

Figure 2 lists the costs for the improvements recommended in the Roadway Sufficiency Analysis in order to mitigate 2014 Existing, 2024 Base, and 2024 Projected Conditions deficiencies, respectively. The improvements contained in Figure 2 have been specified to meet LOS D for the TSA as set forth in the MPC.

*The approval of the CIP by the Board of Supervisors in no way obligates the Township to complete all of the roadway improvements it contains. The improvements contained in the initial CIP may change over time due to changes in the land use assumptions. Furthermore, the improvements may not be completed due to lack of available funding from state and federal programs and/or lack of revenue generated by the collection of impact fees. Note that improvements to state or federal-aid highways must be approved by PENNDOT and in some cases the Federal Highway Administration before the project can be completed. Improvements may vary based on these necessary approvals.*

Although some improvements designated in the CIP may not be implemented due to the reasons listed above, they cannot be excluded per the MPC. The identification of improvements must be objective based on the results of the required background analyses (i.e., the Land Use Assumptions Report and the Roadway Sufficiency Analysis) rather than being subjectively determined. These improvements are necessary to improve roadway capacity in the TSA to LOS D and are not comprehensive of all needed capacity improvements within Mount Joy Township.

There may be other improvements identified by the Township as higher priorities such as safety, reconstruction of existing roads, widening of shoulders, public transportation, and bicycle and pedestrian facilities. Although these types of improvements may be higher priorities of the Township and/or PennDOT, they cannot be funded by impact fees. Therefore, safety and maintenance improvements must be implemented through other mechanisms.

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## Cost Estimates

Cost estimates were assessed for the engineering/design, right-of-way acquisition, and construction aspects of each improvement in the CIP. A 10% contingency was added to each of the estimates to account for unexpected costs associated with each project. These estimates are included in Figure 2 for the 2014 Existing, 2024 Base and 2024 Projected Conditions improvements located in the TSA.

Two improvement scenarios were explored in the 2004 CIP: “Existing Transportation Network” and “Existing Transportation Network with Merts Drive Extension”. The latter scenario factored in new roadway construction that would alleviate current and anticipated traffic volumes on Cloverleaf Road. Critical strides have been made since that time to relocate the eastbound Route 283 off-ramp and extend Merts Drive (to be renamed North Conifer Drive) between the new off-ramp and Cloverleaf Road.

This Roadway Sufficiency Analysis updates the 2004 scenarios noted above. As regional planning has matured and private development has progressed in the Township, the scenarios have evolved to incorporate a broader focus and are now called “With New Roads” and “Without New Roads”. The primary objectives of the With New Roads



option are to “reduce motorists’ dependency on Cloverleaf Road...[and] create a more direct route between Route 743 and the residential areas to the southeast.” The CIP is designed around the decision to implement this scenario, which is generally consistent with the approach used in the 2004 plan. The majority of the programmed transportation improvements involve intersections, but the following roadway projects key to the “With New Roads” scenario are also included:

- ▲ Construct new eastbound off-ramp for the Route 283/Cloverleaf Road interchange [“B” on Figure 1]
- ▲ Extend Eagle Parkway from the Campus Road/Schwanger Road intersection to Route 230 [“F” on Figure 1]
- ▲ Construct North Conifer Drive between relocated eastbound Route 283/Cloverleaf Road off-ramp and Cloverleaf Road [“L” on Figure 1]
- ▲ Extend Buckingham Boulevard between Route 241 and Old Hershey Road [“T” on Figure 1]
- ▲ Widen Route 230 for additional through lane(s) generally between Anchor Road and Cloverleaf Road to achieve LOS D [included in #8, #9, #10, #11, & #12 on Figure 1]

### Cost Estimate Summary

- ▲ Costs of 2014 Existing Condition improvements total: \$681,340
- ▲ Costs of 2024 Base Condition improvements total: \$0
- ▲ Costs of 2024 Projected Condition improvements total: \$23,983,947
  - ▼ \$8,868,266 to be funded by impact fees (37.0% of total)
  - ▼ \$15,115,681 to be funded by other sources (63.0% of total)

**TOTAL OF ALL IMPROVEMENTS = \$24,665,287**

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## Funding Sources and Implementation Schedule

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The MPC stipulates that a CIP must identify funding sources for each improvement, and provide a timetable for when it will be completed. In addition to impact fees, federal, state, and Township funds are considered as viable funding sources for the capital improvements. Recognizing that nearly all of the improvements involve state roads, the CIP pays adheres to MPC §504-A(e)(1)(iv)(C) which limits 50% of the total costs of the 2024 Projected Conditions improvements in the traffic impact fee equation.

As shown in Figure 3, the CIP assumed that the funding for 2014 Existing and 2024 Base Conditions improvements would be the responsibility of the Township. If additional sources of funding become available for these improvements, the CIP can be amended to reflect these changes as often as once per year. For Projected Conditions improvements involving only Township roads, it is assumed that 100% of the costs can be funded with traffic impact fees. Where Projected Conditions improvements involve a state road(s), no more than 50% of the cost can be funded by impact fees. The remaining 50% needs to be funded by another source(s).

Many factors contribute to the prioritization of the roadway improvements, some of which are beyond control of the Township. The most influential factors are summarized to include:



- ▲ **Ease of Implementation** – since the Township will be required to return impact fees designated for a particular improvement if construction is not started within three years of its scheduled date in the CIP, then “low hanging fruit” projects will generally be prioritized higher.
- ▲ **Availability of Future Funds** – a lack of sufficient funding can significantly delay a project or group of projects and impact implementation of the plan.
- ▲ **Likelihood of Land Development** – the potential for development on a large parcel may have a significant impact on the transportation network. However, if it is not likely to be developed later into the ten-year planning horizon, then the improvements associated with development of the site should be prioritized lower. On the other hand, improvements associated with or proximate to a development that is expected to be constructed in the next several years should warrant higher priority.
- ▲ **Physical Constraints** – Improvements that may be hampered by environmental or right-of-way constraints should be given a higher priority. Because extensive review, permitting, and/or land acquisition may be necessary, the design stage for such projects should begin early in order keep such projects on track.

Since all but one of the study area intersections programmed with improvements to accommodate the 2024 Projected Condition include at least one state highway (#21 – Schwanger Road/Campus Road and Eagle Parkway), state and federal funding will play a crucial role. Acquiring federal and state funding can take significant amounts of time to obtain, so it is recommended that the Township take steps to secure these funds immediately. As these dollars become available for a given project, the implementation schedule can be reassessed and the CIP revised accordingly.

One project in particular, #18 – Cloverleaf Road and Steelway Drive/PA 283 WB Ramps, is expected to rely heavily on federal and state funding to bring to fruition. The construction of two new ramps for the Cloverleaf Road interchange and other associated improvements is estimated to cost \$10,946,864 and would require the complete replacement of the PA 283 bridge decks (which are not included in the cost estimate for improvement #18). Due to the magnitude of this project and the challenge of securing the additional funds, a lower proportion of impact fee money is programmed into the improvement funding schedule for #18 in Figure 3. An 80/20 split between federal/state transportation dollars and impact fees deviates from the standard 50/50 split because of these differentiating circumstances. This atypical arrangement is proposed as part of the balancing act between funding the Capital Improvements Plan and the risk of overburdening the impact fee payers.

Because of the uncertainty created by the above factors, Figure 3 in the original CIP assumed a start date of 2004 for obtaining funding on all projects. Completion dates of 2011 were assumed for engineering, 2012 for right-of-way acquisition, and 2013 for construction. As part of this update, actual timelines for projects that are in the process or realistically programmed are provided. All other improvements that have not been initiated will have a similar logic applied to them as in the 2004 CIP. A start date of 2014 for obtaining funding will be used, as will 2022 for engineering, 2023 for right-of-way acquisition, and 2023 for construction. The Township is not restricted from beginning projects before the scheduled time, yet will be penalized if construction of a certain project is commenced more than three years later than the scheduled construction date. Therefore, this plan allows the greatest flexibility and can be revised as often as once a year with more accurate timelines as circumstances become clearer.



## Future Revisions to the CIP

To ensure consistency between land use changes and roadway improvements, the CIP should be reviewed and updated periodically. After adoption of the CIP and the traffic impact fee ordinance, the Township may make revisions to the CIP under certain conditions. §504-A(e)(4) of the MPC authorizes the Board of Supervisors to request that the Traffic Impact Fee Advisory Committee review the CIP and impact fee no more frequently than once a year and recommend changes based only on the following:

- (i) New subsequent development which has occurred in the [Township].
- (ii) Capital improvements contained in the [CIP], the construction of which has been completed.
- (iii) Unavoidable delays beyond the responsibility or control of the municipality in the construction of capital improvements contained in the plan.
- (iv) Significant changes in the land use assumptions.
- (v) Changes in the estimated costs of the proposed transportation capital improvements, which may be recalculated by applying the construction cost index as published in the American City/County Magazine or the Engineering News Record.
- (vi) Significant changes in the projected revenue from all sources listed needed for the construction of the transportation capital improvements.

This plan may require revision if impact fees are spent on improvements that are not identified in the CIP. The MPC allows the Township to use traffic impact fees on improvements within the TSA that are not on the CIP. Municipalities are also permitted to provide a credit towards an applicant's impact fee for the costs of alternative projects that were not on the CIP but are completed at the applicant's expense. The criteria in MPC §505-A(d) apply to such situations:

- (1) The applicant has provided written consent to use of its collected impact fees, or the provision of such credit against the applicant's impact fees, for specific transportation projects which are not included in the [CIP].
- (2) The alternative transportation projects, whether highway or multimodal, have as their purpose the reduction of traffic congestion or the removal of vehicle trips from the roadway network.
- (3) The municipality amends its [CIP] components...to provide replacement of the collected impact fees transferred to transportation projects outside the approved [CIP] from sources other than impact fees or developer contributions within three years of completion of the alternative projects to which the transferred fees were applied or for which credit was provided...

## Traffic Impact Fee Determination

To update the per-trip impact fee for a new development within the TSA, the total improvement costs attributable to new development (determined in Figure 3) is divided by the total number of P.M. peak hour trips generated by the anticipated land developments identified in the Land Use Assumptions Report. It is estimated that a total cost of \$8,868,266 will be attributable to new development in the TSA and can be funded by impact fees. A pro rata share of the cost to create the Roadway Sufficiency Analysis Report also may be assessed to the impact fee. Based on a review of the existing, base, and projected improvement costs, 37.0% of that total is attributable to new



development. Therefore, 37.0% of the cost to complete the Roadway Sufficiency Analysis Report (total cost: \$7,267) can be included in the overall amount used to derive the traffic impact fee (\$2,689).

After combining the pro-rated cost of preparing the Roadway Sufficiency Analysis and the applicable portions of the estimates to construct the transportation improvements, the adjusted total cost attributable to new development is \$8,870,955. The calculation for the P.M. peak hour trip impact fee is shown below:

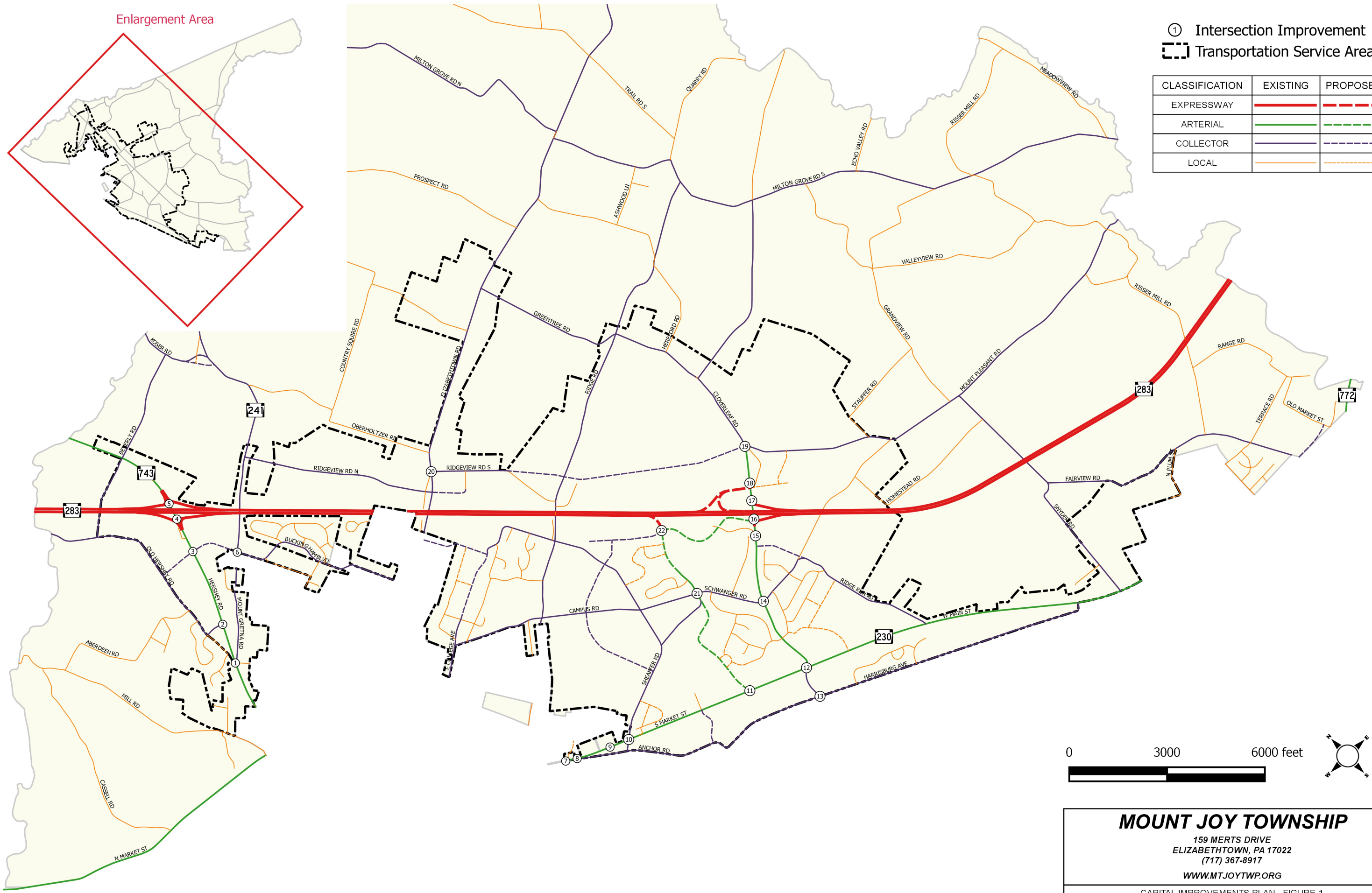
$$\frac{\$8,870,955 \text{ (Costs attributable to new development)}}{5,023 \text{ (New P.M. peak trips generated by new development in TSA)}} = \$1,766$$



Enlargement Area

- ① Intersection Improvement
- ⬡ Transportation Service Area

CLASSIFICATION	EXISTING	PROPOSED
EXPRESSWAY		
ARTERIAL		
COLLECTOR		
LOCAL		



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CAPITAL IMPROVEMENTS PLAN - FIGURE 1

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TRANSPORTATION IMPROVEMENTS - DECEMBER 2015

**FIGURE 2: COST ESTIMATE OF IMPROVEMENTS**

Map #	Location	Existing Improvements		Base Improvements		Projected Improvements	
		Description	Price	Description	Price	Description	Price
1	Route 743, Holly Street and Route 241	Modify traffic signal timings	\$6,000			Construct dual-lane roundabout	\$663,730
						ROW Acquisition	\$73,350
						Utility Relocation	\$84,505
						Inspection/Legal/Mobilization (18.5%)	\$122,790
						Survey and Engineering (15%)	\$99,560
		Contingency (10%)	\$600			Contingency (10%)	\$104,393
		<b>TOTAL</b>	<b>\$6,600</b>			<b>TOTAL</b>	<b>\$1,148,328</b>
2	Route 743 and Veterans Drive					Signalize intersection	\$133,000
						Utility Relocation	\$10,000
						Inspection/Legal/Mobilization (18.5%)	\$24,605
						Survey and Engineering (15%)	\$19,950
						Contingency (10%)	\$18,756
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$206,311</b>
3	Route 743 and Buckingham Boulevard					Signalize intersection	\$160,000
						Construct WB right turn lane	\$57,839
						Construct 2nd NB thru lane	\$356,500
						Construct SB left turn lane	\$136,230
						ROW Acquisition	\$13,776
						Utility Relocation	\$40,000
						Inspection/Legal/Mobilization (18.5%)	\$131,455
				Survey and Engineering (15%)	\$106,585		
				Contingency (10%)	\$100,239		
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$1,102,624</b>
4	Route 743 and PA 283 EB Ramps	Signalize intersection	\$160,000			Add SB left turn phase	\$10,000
		Utility Relocation	\$10,000				
		Inspection/Legal/Mobilization (18.5%)	\$29,600				
		Survey and Engineering (15%)	\$24,000				
		Contingency (10%)	\$22,360			Contingency (10%)	\$1,000
		<b>TOTAL</b>	<b>\$245,960</b>			<b>TOTAL</b>	<b>\$11,000</b>
5	Route 743 and PA 283 WB Ramps					Modify traffic signal timings	\$6,000
						Contingency (10%)	\$600
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$6,600</b>
6	Route 241 and Buckingham Boulevard					Construct EB & WB left turn lanes	\$249,012
						Implement all-way stop control	\$1,000
						ROW Acquisition	\$5,740
						Utility Relocation	\$10,000
						Inspection/Legal/Mobilization (18.5%)	\$46,252
				Survey and Engineering (15%)	\$37,502		
				Contingency (10%)	\$34,951		
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$384,457</b>
7	Route 230 and Carey Lane					Convert WB right to shared thru/rt	\$18,910
						Construct 2nd WB receiving lane	\$119,295
						Inspection/Legal/Mobilization (18.5%)	\$25,568
						Survey and Engineering (15%)	\$20,731
				Contingency (10%)	\$18,450		
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$202,954</b>
8	Route 230 and Anchor Road					Construct 2nd WB thru lane	\$741,520
						Utility Relocation	\$40,000
						Inspection/Legal/Mobilization (18.5%)	\$137,181
						Survey and Engineering (15%)	\$111,228
						Contingency (10%)	\$102,993
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$1,132,922</b>

**FIGURE 2: COST ESTIMATE OF IMPROVEMENTS**

Map #	Location	Existing Improvements		Base Improvements		Projected Improvements	
		Description	Price	Description	Price	Description	Price
9	Route 230 and Market Street Square					Convert WB right to shared thru/rt	\$18,910
						Construct 2nd WB receiving lane	\$119,295
						<i>Inspection/Legal/Mobilization (18.5%)</i>	\$25,568
						<i>Survey and Engineering (15%)</i>	\$20,731
						<i>Contingency (10%)</i>	\$18,450
						<b>TOTAL</b>	<b>\$202,954</b>
10	Route 230 and Scheaffer Road					Modify traffic signal timings	\$6,000
						Construct 2nd WB thru lane	\$741,520
						Utility Relocation	\$100,000
						<i>Inspection/Legal/Mobilization (18.5%)</i>	\$138,291
						<i>Survey and Engineering (15%)</i>	\$112,128
						<i>Contingency (10%)</i>	\$109,794
				<b>TOTAL</b>	<b>\$1,207,733</b>		
11	Route 230 and Eagle Parkway					Signalize intersection	\$120,000
						Construct 2nd WB thru lane	\$741,520
						Construct SB left & right turn lanes	\$194,069
						ROW Acquisition	\$2,296
						Utility Relocation	\$70,000
						<i>Inspection/Legal/Mobilization (18.5%)</i>	\$195,284
				<i>Survey and Engineering (15%)</i>	\$158,338		
				<i>Contingency (10%)</i>	\$148,151		
				<b>TOTAL</b>	<b>\$1,629,658</b>		
12	Route 230 and Cloverleaf Road/Colebrook Road					Modify traffic signal timings	\$6,000
						Add WB left turn phase	\$10,000
						Construct 2nd EB/WB thru lane	\$1,251,620
						Construct NB right turn lane	\$157,389
						ROW Acquisition	\$22,960
						Utility Relocation	\$130,000
				<i>Inspection/Legal/Mobilization (18.5%)</i>	\$263,627		
				<i>Survey and Engineering (15%)</i>	\$213,751		
				<i>Contingency (10%)</i>	\$205,535		
				<b>TOTAL</b>	<b>\$2,260,882</b>		
13	Colebrook Road and Harrisburg Avenue					Signalize intersection	\$160,000
						Synchronize with Cloverleaf signals	\$10,000
						Construct NB & SB left turn lanes	\$249,012
						ROW Acquisition	\$170,000
						Utility Relocation	\$40,000
						<i>Inspection/Legal/Mobilization (18.5%)</i>	\$77,517
				<i>Survey and Engineering (15%)</i>	\$62,852		
				<i>Contingency (10%)</i>	\$76,938		
				<b>TOTAL</b>	<b>\$846,319</b>		
14	Cloverleaf Road and Schwanger Road	Modify traffic signal timings	\$6,000				
		<i>Contingency (10%)</i>	\$600				
		<b>TOTAL</b>	<b>\$6,600</b>			<b>TOTAL</b>	<b>\$0</b>
15	Cloverleaf Road and Merts Drive	Signalize intersection	\$120,000			Remove traffic signal	\$1,000
		Utility Relocation	\$10,000			Close intersection	\$9,575
		<i>Inspection/Legal/Mobilization (18.5%)</i>	\$22,200			<i>Inspection/Legal/Mobilization (18.5%)</i>	\$1,956
		<i>Survey and Engineering (15%)</i>	\$18,000			<i>Survey and Engineering (15%)</i>	\$1,586
		<i>Contingency (10%)</i>	\$17,020			<i>Contingency (10%)</i>	\$1,412
		<b>TOTAL</b>	<b>\$187,220</b>			<b>TOTAL</b>	<b>\$15,529</b>

**FIGURE 2: COST ESTIMATE OF IMPROVEMENTS**

Map #	Location	Existing Improvements		Base Improvements		Projected Improvements	
		Description	Price	Description	Price	Description	Price
16	Cloverleaf Road and PA 283 EB Ramps	Signalize intersection	\$160,000			Reconstruct EB ramp as N. Conifer	\$122,295
						Provide EB left, thru & right lanes	\$186,165
						Construct NB left & right turn lanes	\$194,069
						Construct SB right turn lane	\$57,839
		Inspection/Legal/Mobilization (18.5%)	\$29,600			Inspection/Legal/Mobilization (18.5%)	\$103,668
		Survey and Engineering (15%)	\$24,000			Survey and Engineering (15%)	\$84,055
		Contingency (10%)	\$21,360			Contingency (10%)	\$74,809
		<b>TOTAL</b>	<b>\$234,960</b>			<b>TOTAL</b>	<b>\$822,900</b>
17	Cloverleaf Road and PA 283 WB Ramps					Remove traffic signal	\$1,000
						Convert off-ramp to right turn only	\$2,300
						Inspection/Legal/Mobilization (18.5%)	\$611
				Survey and Engineering (15%)	\$495		
				Contingency (10%)	\$441		
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$4,846</b>
18	Cloverleaf Road and Steelway Drive/PA 283 WB Ramps					Signalize intersection	\$160,000
						Construct NB & SB left turn lanes	\$260,736
						Construct WB cloverleaf on & offramps	\$6,091,050
						ROW Acquisition	\$1,218,460
						Utility Relocation	\$40,000
						Inspection/Legal/Mobilization (18.5%)	\$1,204,680
						Survey and Engineering (15%)	\$976,768
				Contingency (10%)	\$995,169		
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$10,946,864</b>
19	Cloverleaf Road and Mt. Pleasant Road					Construct EB right turn lane	\$46,406
						ROW Acquisition	\$8,610
						Utility Relocation	\$10,000
						Inspection/Legal/Mobilization (18.5%)	\$8,585
						Survey and Engineering (15%)	\$6,961
						Contingency (10%)	\$8,056
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$88,618</b>
20	Elizabethtown Road and Ridgeview Road South					Construct EB right turn lane	\$46,406
						ROW Acquisition	\$8,610
						Utility Relocation	\$10,000
						Inspection/Legal/Mobilization (18.5%)	\$8,585
						Survey and Engineering (15%)	\$6,961
						Contingency (10%)	\$8,056
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$88,618</b>
21	Schwanger Road/Campus Road and Eagle Parkway					Signalize intersection	\$160,000
						Restripe for NB & EB left turn lanes	\$550
						Construct SB right turn lane	\$57,839
						Inspection/Legal/Mobilization (18.5%)	\$40,402
				Survey and Engineering (15%)	\$32,758		
				Contingency (10%)	\$29,155		
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$320,704</b>
22	Conifer Drive, Eagle Parkway and PA 283 EB Off-ramp					Signalize intersection	\$160,000
						Construct EB right turn lane	\$57,839
						Construct WB left turn lane	\$136,230
						Construct NB channelized right turn	\$57,839
						Construct SB left & right turn lanes	\$194,069
						Provide WB & NB left turn lanes	\$272,460
						ROW Acquisition	\$57,400
						Inspection/Legal/Mobilization (18.5%)	\$162,511
						Survey and Engineering (15%)	\$131,766
				Contingency (10%)	\$123,011		
		<b>TOTAL</b>				<b>TOTAL</b>	<b>\$1,353,125</b>

**FIGURE 3: IMPROVEMENT FUNDING**

Map #	Location	Road ID #	Proposed Improvement(s)	Costs Attributable to:			Total Costs	Proposed Funding		Project Schedule	
				Existing Deficiencies	Base Conditions	New Development					
1	Route 743, Holly Street and Route 241	SR 0743 T-610 SR 0241	Modify traffic signal timings Construct dual-lane roundabout					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$6,600	RIGHT-OF-WAY	2023
								IMPACT FEES	\$574,164	CONSTRUCTION	2023
								OTHER	\$574,164		
				\$6,600		\$1,148,328	\$1,154,928	TOTAL	\$1,154,928		
2	Route 743 and Veterans Drive	SR 0743 T-301	Signalize intersection					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2015
								MUNICIPALITY	\$103,155	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$103,155	CONSTRUCTION	2016
								OTHER	\$0		
						\$206,311	\$206,311	TOTAL	\$206,311		
3	Route 743 and Buckingham Boulevard	SR 0743 T-333	Signalize intersection Construct WB right turn lane Construct 2nd NB thru lane Construct SB left turn lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2018
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2019
								IMPACT FEES	\$551,312	CONSTRUCTION	2020
								OTHER	\$551,312		
						\$1,102,624	\$1,102,624	TOTAL	\$1,102,624		
4	Route 743 and PA 283 EB Ramps	SR 0743 SR 0283	Signalize intersection Add SB left turn phase					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$245,960	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$5,500	CONSTRUCTION	2023
								OTHER	\$5,500		
				\$245,960		\$11,000	\$256,960	TOTAL	\$256,960		
5	Route 743 and PA 283 WB Ramps	SR 0743 SR 0283	Modify traffic signal timings					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$3,300	CONSTRUCTION	2023
								OTHER	\$3,300		
						\$6,600	\$6,600	TOTAL	\$6,600		
6	Route 241 and Buckingham Boulevard	SR 0214 T-333	Construct EB & WB left turn lanes Implement all-way stop control  (western part of intersection in Elizabethtown Borough)					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2018
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2019
								IMPACT FEES	\$192,228	CONSTRUCTION	2020
								OTHER	\$192,228		
						\$384,457	\$384,457	TOTAL	\$384,457		
7	Route 230 and Carey Lane	SR 0230	Convert WB right to shared thru/rt Construct 2nd WB receiving lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$101,477	CONSTRUCTION	2023
								OTHER	\$101,477		
						\$202,954	\$202,954	TOTAL	\$202,954		

**FIGURE 3: IMPROVEMENT FUNDING**

Map #	Location	Road ID #	Proposed Improvement(s)	Costs Attributable to:			Total Costs	Proposed Funding		Project Schedule	
				Existing Deficiencies	Base Conditions	New Development					
8	Route 230 and Anchor Road	SR 0230 SR 4018	Construct 2nd WB thru lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$566,461	CONSTRUCTION	2023
								OTHER	\$566,461		
								<b>TOTAL</b>	<b>\$1,132,922</b>		
9	Route 230 and Market Street Square	SR 0230	Convert WB right to shared thru/rt Construct 2nd WB receiving lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$101,477	CONSTRUCTION	2023
								OTHER	\$101,477		
								<b>TOTAL</b>	<b>\$202,954</b>		
10	Route 230 and Scheaffer Road	SR 0230 T-888	Modify traffic signal timings Construct 2nd WB thru lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$603,867	CONSTRUCTION	2023
								OTHER	\$603,867		
								<b>TOTAL</b>	<b>\$1,207,733</b>		
11	Route 230 and Eagle Parkway	SR 0230	Signalize intersection Construct 2nd WB thru lane Construct SB left & right turn lanes					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2021
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2021
								IMPACT FEES	\$814,829	CONSTRUCTION	2022
								OTHER	\$814,829		
								<b>TOTAL</b>	<b>\$1,629,658</b>		
12	Route 230 and Cloverleaf Road/ Colebrook Road	SR 0230 SR 4025	Modify traffic signal timings Add WB left turn phase Construct 2nd EB/WB thru lane Construct NB right turn lane Underground gasoline storage tank/Structure demolition					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2023
								IMPACT FEES	\$1,130,441	CONSTRUCTION	2023
								OTHER	\$1,130,441		
								<b>TOTAL</b>	<b>\$2,260,882</b>		
13	Colebrook Road and Harrisburg Avenue	SR 4025 SR 4018	Signalize intersection Synchronize with Cloverleaf signals Construct NB & SB left turn lanes  (southern part of intersection is in West Donegal Township)					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2023
								IMPACT FEES	\$423,160	CONSTRUCTION	2023
								OTHER	\$423,160		
								<b>TOTAL</b>	<b>\$846,319</b>		
14	Cloverleaf Road and Schwanger Road	SR 4025 T-843	Modify traffic signal timings					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$6,600	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$0	CONSTRUCTION	2023
								OTHER	\$0		
								<b>TOTAL</b>	<b>\$6,600</b>		

**FIGURE 3: IMPROVEMENT FUNDING**

Map #	Location	Road ID #	Proposed Improvement(s)	Costs Attributable to:			Total Costs	Proposed Funding		Project Schedule	
				Existing Deficiencies	Base Conditions	New Development					
15	Cloverleaf Road and Merts Drive	SR 4025 T-833	Signalize intersection Remove traffic signal Close intersection					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2016
								MUNICIPALITY	\$187,220	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$7,765	CONSTRUCTION	2018
								OTHER	\$7,765		
				\$187,220		\$15,529	\$202,749	TOTAL	\$202,749		
16	Cloverleaf Road and PA 283 EB Ramps	SR 4025 SR 0283	Signalize intersection Reconstruct EB ramp as N. Conifer Provide EB left, thru & right lanes Construct NB left & right turn lanes Construct SB right turn lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2016
								MUNICIPALITY	\$234,960	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$411,450	CONSTRUCTION	2018
								OTHER	\$411,450		
				\$234,960		\$822,900	\$1,057,860	TOTAL	\$1,057,860		
17	Cloverleaf Road and PA 283 WB Ramps	SR 4025 SR 0283	Remove traffic signal Convert off-ramp to right turn only					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$2,423	CONSTRUCTION	2023
								OTHER	\$2,423		
						\$4,846	\$4,846	TOTAL	\$4,846		
18	Cloverleaf Road and Steelway Drive/PA 283 WB Ramps	SR 4025 T-834 SR 0283	Signalize intersection Construct NB & SB left turn lanes Construct cloverleaf ramp for WB					FEDERAL	\$8,757,491	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2023
								IMPACT FEES	\$2,189,373	CONSTRUCTION	2023
								OTHER	\$0		
						\$10,946,864	\$10,946,864	TOTAL	\$10,946,864		
19	Cloverleaf Road and Mt. Pleasant Road	SR 4025 SR 4010	Construct EB right turn lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2023
								IMPACT FEES	\$44,309	CONSTRUCTION	2023
								OTHER	\$44,309		
						\$88,618	\$88,618	TOTAL	\$88,618		
20	Elizabethtown Road and Ridgeview Road South	SR 4008 T-889	Construct EB right turn lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2022
								MUNICIPALITY	\$0	RIGHT-OF-WAY	2023
								IMPACT FEES	\$44,309	CONSTRUCTION	2023
								OTHER	\$44,309		
						\$88,618	\$88,618	TOTAL	\$88,618		
21	Schwanger Road/Campus Road and Eagle Parkway	T-843 T-887	Signalize intersection Restripe for NB & EB left turn lanes Construct SB right turn lane					FEDERAL	\$0	FUNDING	2014
								PENNDOT	\$0	ENGINEERING	2021
								MUNICIPALITY	\$0	RIGHT-OF-WAY	n/a
								IMPACT FEES	\$320,704	CONSTRUCTION	2022
								OTHER	\$0		
						\$320,704	\$320,704	TOTAL	\$320,704		



**FIGURE 3: IMPROVEMENT FUNDING**

**Costs Attributable to:**

Map #	Location	Road ID #	Proposed Improvement(s)	Costs Attributable to:			Total Costs	Proposed Funding		Project Schedule	
				Existing Deficiencies	Base Conditions	New Development					
22	Conifer Drive, Eagle Parkway and PA 283 EB Off-ramp	SR 0283	Signalize intersection					FEDERAL	\$0	FUNDING	2014
			Construct EB right turn lane					PENNDOT	\$0	ENGINEERING	2016
			Construct WB left turn lane					MUNICIPALITY	\$0	RIGHT-OF-WAY	2018
			Construct NB channelized right turn					IMPACT FEES	\$676,562	CONSTRUCTION	2018
			Construct SB left & right turn lanes					OTHER	\$676,562		
			Provide WB & NB left turn lanes			\$1,353,125	\$1,353,125	TOTAL	\$1,353,125		

	Existing Deficiencies	Base Conditions	New Development	Total Costs	
<b>TOTALS:</b>	<b>\$681,340</b>	<b>\$0</b>	<b>\$23,983,947</b>	<b>\$24,665,287</b>	<b>\$8,868,266 Applicable to Impact Fee</b>