

TRAFFIC PLANNING

Est. 1989



AND DESIGN, INC.

Capital Improvements Plan

West Whiteland Township

Chester County, PA

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EXHIBITS

- Exhibit 1: Transportation Service Area (TSA)**
- Exhibit 2: Capital Improvements Plan (CIP)**

INTRODUCTION

West Whiteland Township, through the transportation impact fee advisory committee and hired engineering consultants, has completed a Land Use Assumptions Report and a Roadway Sufficiency Analysis Report in order to determine and adopt a traffic impact fee in compliance with the requirements of the Municipalities Planning Code (MPC). A Transportation Service Area (TSA) has been defined as shown in Exhibit 1. The next step, as documented in this report, is to prepare a Capital Improvements Plan (CIP) based on the improvements that were identified in the Roadway Sufficiency Analysis.

The growth projections for the Township are documented in the Land Use Assumptions Report. The Land Use Assumptions Report, prepared by Theurkauf Design and Planning, was adopted by the West Whiteland Township Board of Supervisors on June 17, 2015. The Roadway Sufficiency Analysis and Capital Improvement Plan have been completed to ensure that the Township is equipped to provide the necessary infrastructure to accommodate the expected growth as outlined in the Land Use Assumptions Report.

The purpose of the Roadway Sufficiency Analysis was to determine the impact of the traffic that will be generated by the “new” developments in the TSA that were identified in the Land Use Assumptions Report. The Roadway Sufficiency Analysis identified roadway improvements that will be necessary to maintain a preferred level of service (LOS) for the study area intersections. A preferred overall intersection LOS C and lane group LOS D was established for the West Whiteland Township TSA. **The improvements that were identified in the Roadway Sufficiency Analysis to maintain the preferred LOS in 2015 Existing and 2025 Base Conditions cannot be funded by traffic impact fees.** Traffic impact fees, however, may be used to fund the improvements that were identified for 2025 Projected Conditions.

The remainder of this report addresses the necessary components of a CIP as stipulated in the MPC. A summary of the necessary components is as follows:

- “A description of the roadway improvements that were identified in the Roadway Sufficiency Analysis in order to update the existing intersections and roadways in the TSAs so as to maintain the preferred LOS (overall intersection LOS C and lane group LOS D).”
- “A plan specifying the road improvements within the TSAs *attributable to forecasted pass-through traffic* so as to maintain the preferred LOS after existing deficiencies identified by the Roadway Sufficiency Analysis have been remedied.”
- “A plan specifying the road improvements or portions thereof within the TSAs *attributable to the projected future development*, consistent with the adopted land use assumptions, in order to maintain the preferred LOS after accommodation for pass-through traffic and after existing deficiencies identified by the Roadway Sufficiency Analysis have been remedied.”
- “Projected costs of the road improvements to be included in the transportation capital improvements plan, calculated separately for each project by the following categories:
 - “The costs or portion thereof associated with correcting existing deficiencies”;
 - “The costs or portions thereof attributable to providing road improvements to accommodate forecasted pass-through trips”;
 - “The costs of providing necessary road improvements or portions thereof attributable to projected future development”
- “A projected timetable and proposed budget for constructing each road improvement contained in the plan”;
- “The proposed source of funding for each capital improvement included in the road plan.”

IMPROVEMENTS

Exhibit 2 lists the costs for the improvements recommended in the Roadway Sufficiency Analysis in order to mitigate 2015 Existing, 2025 Base, and 2025 Projected Conditions deficiencies, respectively. The improvements contained in Exhibit 2 were strictly identified in order to meet the preferred level of service (LOS) for the TSA as required by 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 identified in the CIP may not be implemented due to the reasons listed above, they cannot be excluded due to the requirements contained in the legislation. The identification of improvements must be objective, based on the requirements of the legislation rather than being subjective.

The improvements identified in the CIP do not necessarily represent the highest priorities for roadway improvements in West Whiteland Township. There may be other improvements over time that may be higher priorities for the Township such as safety, reconstruction of existing roads, widening of shoulders, public transportation and bicycle and pedestrian facilities. In many instances, safety and maintenance of existing facilities may be higher priorities of the Township and PennDOT. Unfortunately, these types of improvements are not permitted under the MPC to be funded with impact fees. Therefore, safety and maintenance improvements must be implemented through other studies and funding mechanisms.

COST ESTIMATES

Cost estimates were prepared in order to estimate the funding necessary to complete the engineering/design, right-of-way acquisition and construction phases for each improvement in the CIP. A ten percent contingency was included in each of the cost estimates to account for additional unexpected costs associated with each project. Cost estimates for each improvement are included in Exhibit 2 for the 2015 Existing, 2025 Base, and 2025 Projected Conditions.

The costs for the improvements that were recommended in the Roadway Sufficiency Analysis are summarized as follows:

- Costs of 2015 Existing Condition improvements total \$7,000.00
- Costs of 2025 Base Condition improvements total \$4,246,000.00
- Costs of 2025 Projected Condition improvements total \$24,391,500.00
-\$5,092,950.00 “attributable” to new development to be funded by impact fees
-\$19,298,550.00 to be funded by “other” sources
- **Total of all improvements = \$28,644,500.00**

FUNDING SOURCES AND IMPLEMENTATION SCHEDULE

The MPC stipulates that a CIP must identify funding sources for each improvement, and provide a timetable for when construction will be completed. In addition to impact fees, federal, state, and Township funds are considered as viable funding sources for the capital improvements. The MPC legislation and amendments stipulate that when improvements involve state roads, only 50% of the total costs of the Projected Condition improvements from the Roadway Sufficiency Analysis Report can be included. This was accounted for in the identification of funding for the recommended roadway improvements.

As shown in Exhibit 2, the CIP assumed that the funding for 2015 Existing and 2025 Base 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 funding of the projected improvements involving minor improvements on State roads, it was assumed to be 50% attributable to

new development and, therefore, funded by impact fees and 50% funded by “other” sources. For funding of the projected improvements involving major improvements on State roads, it was assumed to be 20% attributable to new development and, therefore, funded by impact fees and 80% funded by “other” sources. ***Therefore, in Exhibit 2, two columns are shown for the costs of the 2025 Projected Improvements. Column one shows the “costs attributable to new development” and Column two shows the “remaining” costs.*** In order for the 2025 Projected Improvements to be completed, the Township should begin to secure funding from State and Federal sources to account for the “remaining” costs of projected improvement costs.

Many factors contribute to the prioritization of the roadway improvements. The ease of implementation is a large consideration in the prioritization since the Township will be required to return impact fee funds that are designated for an improvement if construction is not started within three years of its scheduled date in the CIP. The availability of future funds was also taken into consideration in developing the timetable because a lack of sufficient funding can significantly delay a project. Another factor taken into account is the likelihood of certain developments being constructed. Although a large parcel may have a significant impact on the Township roadways, if it is not likely to be developed until the later part of the ten year schedule, then the improvements associated with development of the site should be scheduled further into the future. On the other hand, improvements for a development that is expected to be constructed in the next two years were given higher priority. In addition, improvements which have environmental or right-of-way constraints were given a high priority. This is because the design stage for these projects needs to begin early in order to provide time for the extensive and timely review processes that are required for these types of projects.

All of the study area intersections that require improvements for the 2025 Projected Conditions include at least one state highway. Therefore, State and Federal funding will play a crucial role in funding the improvements. Since federal and state funding can take significant amounts of time to obtain, it is recommended that the Township begin to secure the funding immediately. As funding becomes available for specific projects, the implementation schedule for the projects can be projected and the CIP can be revised accordingly (once per year). Therefore, as shown in the CIP in Exhibit 2, a start date of 2016 was assumed for obtaining funding on all projects. For all projects, a completion date of 2023 was assumed for engineering, 2024 for right-of-way acquisition and 2025 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 dates as funding becomes available for the projects.

FUTURE REVISIONS TO THE CIP

To ensure consistency between land development and roadway improvements, the CIP should be reviewed periodically for necessary changes. After adoption of the CIP and the traffic impact fee ordinance, the Township may make revisions to the CIP under certain conditions. The MPC legislation authorizes West Whiteland Township to request the impact fee advisory committee to review the CIP once a year and recommend changes based only on the following conditions:

- new subsequent development that has occurred;
- completion of projects included in the CIP;
- unavoidable construction delays beyond the responsibility or control of the Township;
- significant changes to the land use assumptions;
- changes in the cost estimates in the plan;
- significant changes in the projected revenues of the sources identified in the plan, such as state funds.

The CIP may require revisions if impact fees are spent on improvements that are not on the CIP. Recent amendments to the MPC legislation allow the Township to spend traffic impact fees for improvements in the TSAs that are not on the CIP. Municipalities are also permitted to provide credit towards an applicant’s impact fee for the costs of alternative projects that were not on the CIP and will be completed at the applicant’s expense. This may only be done if the following criteria are met:

- “The applicant has provided written consent to use of its collected impact fees, or the provision of such credit against the applicants impact fees, for specific transportation projects which are not included in the transportation CIP.”;
- “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.”
- “The municipality amends its transportation CIP components... to provide replacement of the collected impact fees transferred to transportation projects outside the approved transportation 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

Calculation of Traffic Impact Fee per P.M. Peak Hour Trip Generated

In order to calculate the fee that will be charged per trip for a new development in the TSA, a formula was used which divides the total improvement costs attributable to new development (calculated in Exhibit 2) by the total number of peak hour trips generated by the projected land developments. The MPC also permits a pro rata share of the cost of the Roadway Sufficiency Analysis Report to be assessed to the impact fee.

In order to determine the pro rata share of the cost of the Roadway Sufficiency Analysis Report to be assessed to the impact fee, the percentage of the total cost of all improvements (\$28,644,500) for the existing, pass-through, and projected improvement costs was calculated. Based on previous sections of the report, \$7,000.00 (.02% of the total cost of all improvements) is attributed to existing deficiencies, \$4,246,000.00 (14.82% of the total cost of all improvements) is attributed to “pass-thru” traffic, \$5,092,950.00 (17.78% of the total cost of all improvements) is attributable to new development traffic, and \$19,289,550 (67.37% of the total cost of all improvements) will be funded by “other” sources. The cost to prepare the Roadway Sufficiency Analysis was \$15,530.00 (based on the amount budgeted in the proposal.) Therefore, the pro rata share of the cost to prepare the Roadway Sufficiency Analysis is \$2,761.23 (17.78% of \$15,530.00).

The cost of the improvements attributable to new development traffic plus the cost of preparing the RSA attributable to new development divided by the total number of peak hour trips generated by projected development (4,178 trips) equals an impact fee of \$1,219.65 per trip to be charged to new developments to cover the cost of the road improvements. The calculation is shown below:

Cost Per New P.M. Peak Hour Trip Generated =

$$\frac{\$5,095,711.23 \text{ (Costs attributable to new development + new development proportional share of RSA)}}{4,178 \text{ (Total new P.M. peak trips generated by new development)}}$$

Cost Per New P.M. Peak Hour Trip Generated = \$1,219.65

EXHIBIT 2
TRANSPORTATION CAPITAL IMPROVEMENTS PLAN FOR WEST WHITELAND TOWNSHIP
AS REQUIRED UNDER THE MUNICIPALITIES PLANNING CODE FOR THE ESTABLISHMENT OF TRAFFIC IMPACT FEES

LOCATION	ROAD OWNERSHIP	EXISTING LEVELS OF SERVICE	PREFERRED LEVEL OF SERVICE	PROPOSED TRAFFIC IMPROVEMENT	COST ATTRIBUTABLE TO EXISTING DEFICIENCIES	COST ATTRIBUTABLE TO PASS-THRU TRAFFIC	ALLOWABLE COSTS ATTRIBUTABLE TO NEW DEVELOPMENT	REMAINING COSTS (FUNDED BY 'OTHER' SOURCES)	TOTAL COST	PROPOSED FUNDING	PROJECT SCHEDULE
INTERSECTION OF WHITFORD ROAD AND WATERLOO BOULEVARD	SR 3069/ T-544	LOS B	LOS C	RETIRE TRAFFIC SIGNAL						FEDERAL PENNDOT \$0	SECURE FUNDING 2016
				CONSTRUCT NORTHBOUND WHITFORD ROAD RIGHT TURN LANE						MUNICIPALITY \$66,000	COMPLETE ENGINEERING 2023
					\$3,500	\$62,500	\$104,700	\$418,800	\$589,500	OTHER \$418,800	BEGIN CONSTRUCTION 2025
										TOTAL \$589,500	
INTERSECTION OF WHITFORD ROAD AND LINCOLN HIGHWAY	SR 3069/ SR 3070	LOS C	LOS C	RETIRE TRAFFIC SIGNAL						FEDERAL PENNDOT \$0	SECURE FUNDING 2016
				CONSTRUCT ADDITIONAL NORTHBOUND WHITFORD ROAD THRU LANE						MUNICIPALITY \$3,917,000	COMPLETE ENGINEERING 2023
				CONSTRUCT ADDITIONAL SOUTHBOUND WHITFORD ROAD THRU LANE	\$3,500	\$3,913,500	\$312,700	\$1,250,800	\$5,480,500	OTHER \$1,250,800	BEGIN CONSTRUCTION 2025
										TOTAL \$5,480,500	
INTERSECTION OF WHITFORD ROAD COMMERCE DRIVE	SR 3069/ T-543	LOS B	LOS C	RETIRE TRAFFIC SIGNAL						FEDERAL PENNDOT \$0	SECURE FUNDING 2016
				CONSTRUCT ADDITIONAL NORTHBOUND WHITFORD ROAD THRU LANE						MUNICIPALITY \$0	COMPLETE ENGINEERING 2023
					\$0	\$0	\$576,700	\$2,306,800	\$2,883,500	OTHER \$2,306,800	BEGIN CONSTRUCTION 2025
										TOTAL \$2,883,500	
INTERSECTION OF WHITFORD ROAD AND CLOVER MILL ROAD	SR 3069/ T-401	LOS B	LOS C	RETIRE TRAFFIC SIGNAL						FEDERAL PENNDOT \$0	SECURE FUNDING 2016
				CONSTRUCT SOUTHBOUND WHITFORD ROAD RIGHT TURN LANE						MUNICIPALITY \$0	COMPLETE ENGINEERING 2023
					\$0	\$0	\$121,750	\$121,750	\$243,500	OTHER \$121,750	BEGIN CONSTRUCTION 2025
										TOTAL \$243,500	

**EXHIBIT 2
TRANSPORTATION CAPITAL IMPROVEMENTS PLAN FOR WEST WHITELAND TOWNSHIP
AS REQUIRED UNDER THE MUNICIPALITIES PLANNING CODE FOR THE ESTABLISHMENT OF TRAFFIC IMPACT FEES**

LOCATION	ROAD OWNERSHIP	EXISTING LEVELS OF SERVICE	PREFERRED LEVEL OF SERVICE	PROPOSED TRAFFIC IMPROVEMENT	COST ATTRIBUTABLE TO EXISTING DEFICIENCIES	COST ATTRIBUTABLE TO PASS-THRU TRAFFIC	ALLOWABLE COSTS ATTRIBUTABLE TO NEW DEVELOPMENT	REMAINING COSTS (FUNDED BY 'OTHER' SOURCES)	TOTAL COST	PROPOSED FUNDING	PROJECT SCHEDULE		
INTERSECTION OF SHIP ROAD AND LINCOLN HIGHWAY	SR 1001/ SR 3070	LOS C	LOS C	CONSTRUCT NEW ONE-WAY ROAD FOR SOUTHBOUND SHIP ROAD ON NORTH AND SOUTH SIDES OF LINCOLN HIGHWAY	\$0	\$0	\$2,791,600	\$11,166,400	\$13,958,000	FEDERAL PENNDOT	\$0	SECURE FUNDING	2016
				MUNICIPALITY						\$0	COMPLETE ENGINEERING	2023	
				IMPACT FEES						\$2,791,600	ACQUIRE RIGHT-OF-WAY	2024	
				OTHER						\$11,166,400	BEGIN CONSTRUCTION	2025	
TOTAL	\$13,958,000												
INTERSECTION OF SPRINGDALE DRIVE AND LINCOLN HIGHWAY	T-548/ SR 3070	LOS B	LOS C	RETIME TRAFFIC SIGNAL	\$0	\$270,000	\$949,500	\$3,798,000	\$5,017,500	FEDERAL PENNDOT	\$0	SECURE FUNDING	2016
				MUNICIPALITY						\$370,000	COMPLETE ENGINEERING	2023	
				IMPACT FEES						\$949,500	ACQUIRE RIGHT-OF-WAY	2024	
				OTHER						\$3,798,000	BEGIN CONSTRUCTION	2025	
TOTAL	\$5,017,500												
INTERSECTION OF PHOENIXVILLE PIKE/DUNWOODY DRIVE AND KING ROAD	SR 2011/ SR 2022	LOS A	LOS C	SIGNALIZE INTERSECTION	\$0	\$0	\$118,000	\$118,000	\$236,000	FEDERAL PENNDOT	\$0	SECURE FUNDING	2016
				MUNICIPALITY						\$0	COMPLETE ENGINEERING	2023	
				IMPACT FEES						\$118,000	ACQUIRE RIGHT-OF-WAY	2024	
				OTHER						\$118,000	BEGIN CONSTRUCTION	2025	
TOTAL	\$236,000												
INTERSECTION OF PHOENIXVILLE PIKE AND KING ROAD	SR 2011/ SR 2022	LOS A	LOS C	SIGNALIZE INTERSECTION	\$0	\$0	\$118,000	\$118,000	\$236,000	FEDERAL PENNDOT	\$0	SECURE FUNDING	2016
				MUNICIPALITY						\$0	COMPLETE ENGINEERING	2023	
				IMPACT FEES						\$118,000	ACQUIRE RIGHT-OF-WAY	2024	
				OTHER						\$118,000	BEGIN CONSTRUCTION	2025	
TOTAL	\$236,000												
TOTALS					\$7,000	\$4,246,000	\$5,092,950	\$19,298,550	\$28,644,500				
					0.02%	14.82%	17.78%	67.37%	100.00%				