



Appendices

Appendices

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East Lackawannock Township

Mercer Borough

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Traditional Neighborhood Development Ordinance (Mercer Borough)

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Traffic Access and Impact Studies

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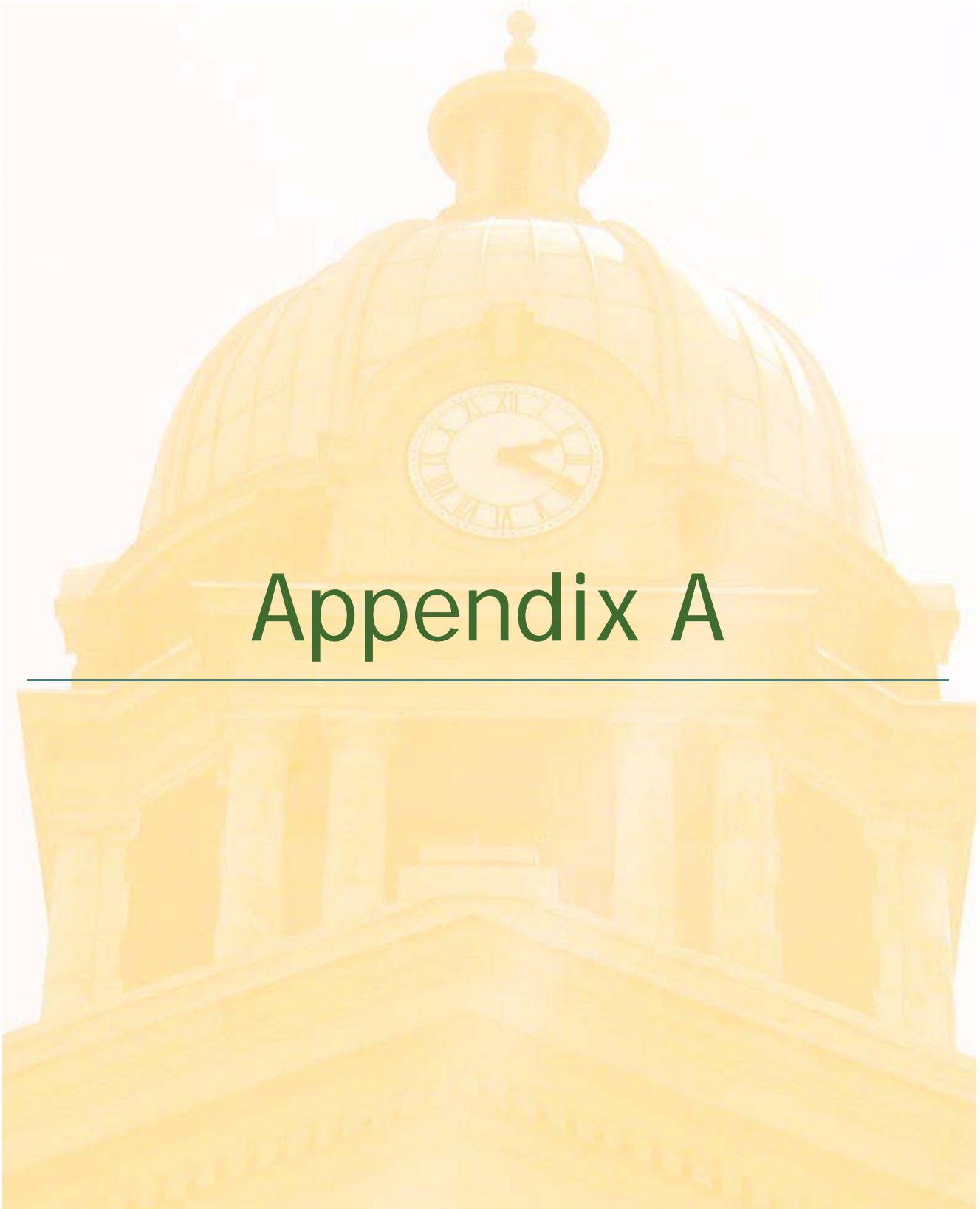
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Appendix A

Appendix A: Public Involvement Summaries

The materials listed below are included in Appendix A. All materials are included in electronic-format only on an enclosed CD at the end of this report.

A1: Land Use Regulations

East Lackawannock Township

Mercer Borough

A2: General Land Use Updates

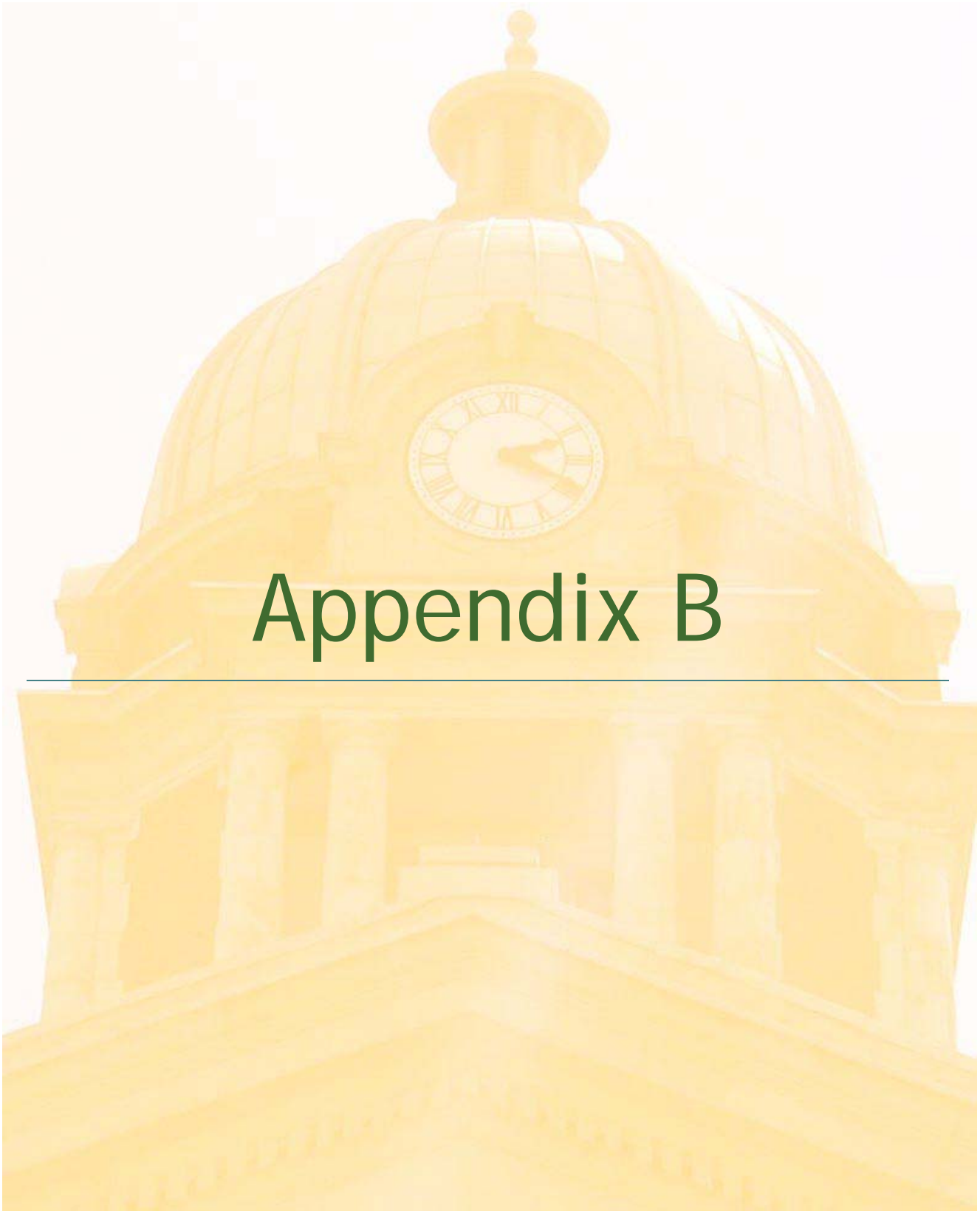
Traditional Neighborhood Development (TND) East Lackawannock Township

Traditional Neighborhood Development Ordinance (Mercer Borough)

Access Management

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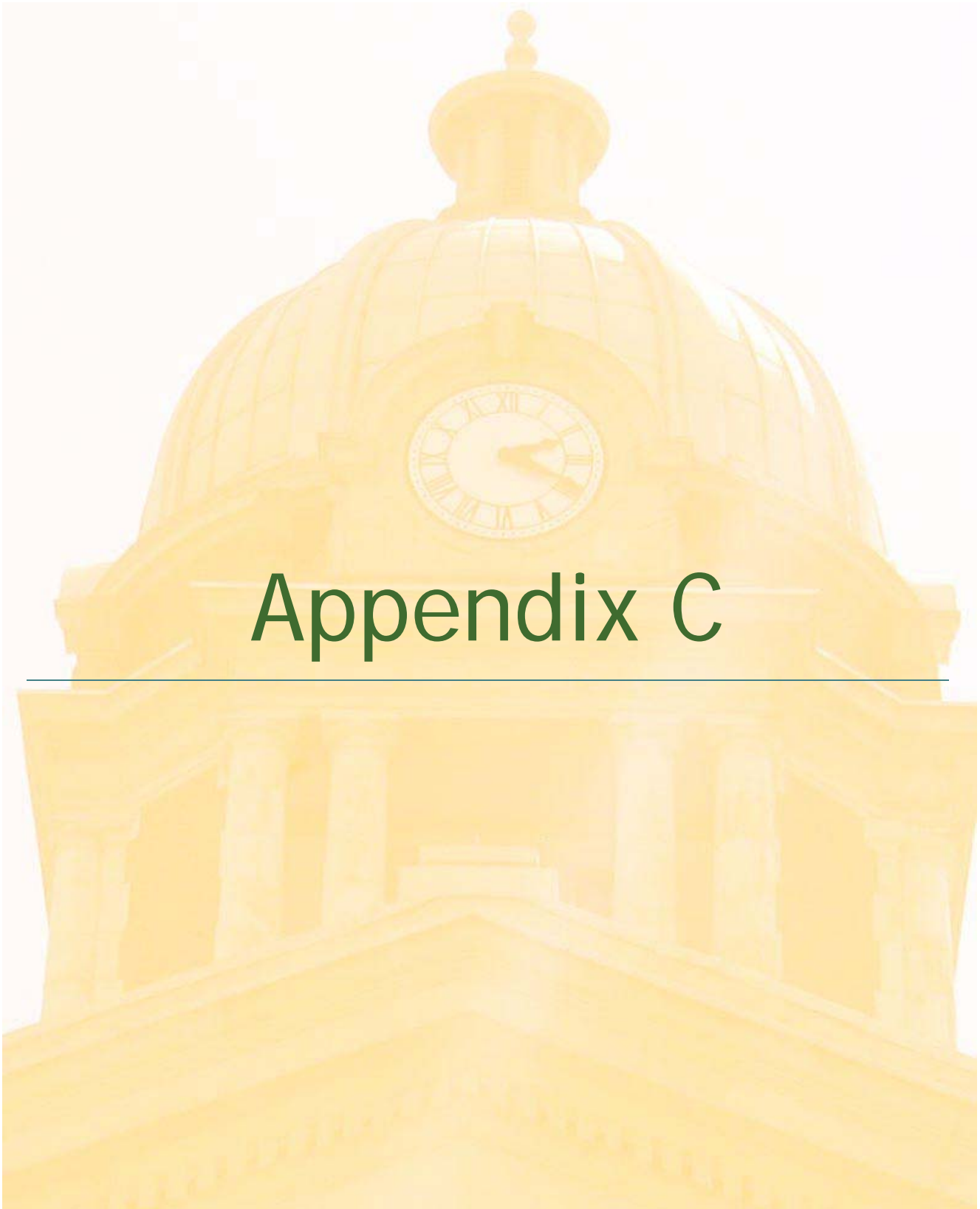
Appendix B

Appendix B: Traffic Data

The materials listed below are included in Appendix B. All materials are included in electronic-format only on an enclosed CD at the end of this report.

B1: ATR Data

B2: TMC Data



Appendix C

Appendix C: Traffic Analysis

The materials listed below are included in Appendix C. All materials are included in electronic-format only on an enclosed CD at the end of this report.

C1: VISUM/VISSIM

C2: Synchro Output

Existing Conditions

Future No Build Conditions

Scenario 1

Scenario 2

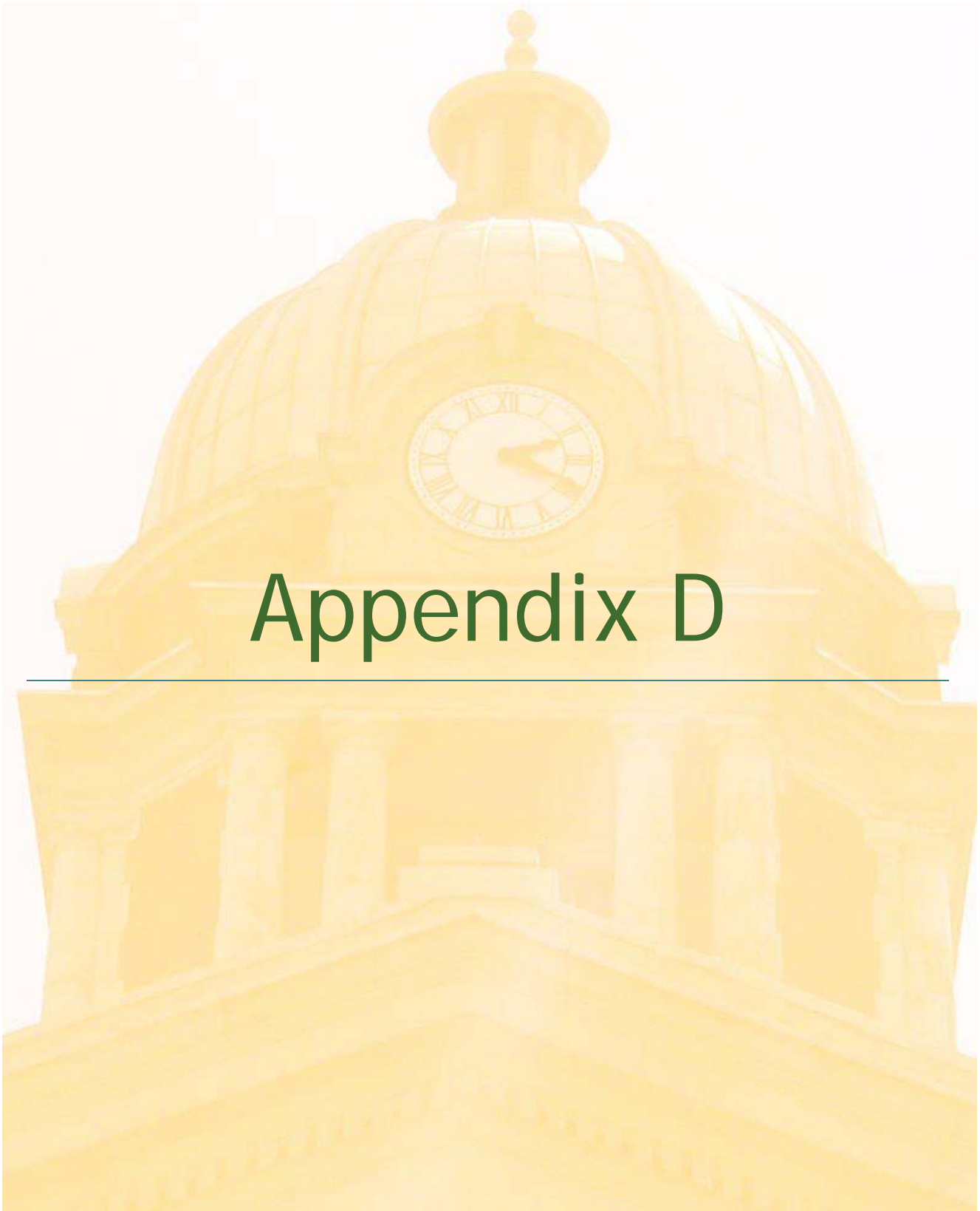
Scenario 3

Scenario 4

Preferred Scenario 3B

Comparison Preferred Scenario 4

C3: Pedestrian Savings Analyses



Appendix D

Appendix D: Conceptual Quantity and Cost Estimates

The materials listed below are included in Appendix D. All materials are included in electronic-format only on an enclosed CD at the end of this report.

D1: Project Costs

D2: Potential Improvement Assumptions

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

TRAFFIC CONGESTION IMPROVEMENTS					
TC-1 Retime Traffic Signals (OPTION 1 - LED RETROFITS)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0952-2036	CONTROLLER ASSEMBLY, SOLID STATE, ACTUATED, WITH VOLUME DENSITY, 2-8 PHASE, TYPE II MOUNTING	4	EA	\$8,000.00	\$32,000.00
0953-0350	MASTER CONTROLLER	1	EA	\$6,000.00	\$6,000.00
0953-0360	CLOSED LOOP SYSTEM	1	LS	\$4,000.00	\$4,000.00
4953-0401	RADIO COMMUNICATIONS SYSTEM	4	EA	\$3,000.00	\$12,000.00
0953-0403	TELEPHONE DIALUP COMMUNICATIONS SYSTEM	1	LS	\$1,000.00	\$1,000.00
0955-3722	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, TYPE A	30	EA	\$600.00	\$18,000.00
0955-4101	VEHICULAR LED RETROFIT MODULE (12-INCH)	103	EA	\$100.00	\$10,300.00
0956-0500	PEDESTRIAN PUSH BUTTON	30	EA	\$200.00	\$6,000.00
SUBTOTAL 1					\$89,300.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$13,395.00
SUBTOTAL 2					\$102,695.00
CONTINGENCIES			40% OF SUBTOTAL 2		\$41,078.00
SUBTOTAL OF CONSTRUCTION					\$143,773.00
ENGINEERING			\$5,000 PER INTERSECTION		\$20,000.00
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$17,252.76
TOTAL					\$181,025.76

ASSUME
\$181,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

TC-1 Retime Traffic Signals (OPTION 2 - COMPLETE SIGNAL HEAD REPLACEMENT)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0952-2036	CONTROLLER ASSEMBLY, SOLID STATE, ACTUATED, WITH VOLUME DENSITY, 2-8 PHASE, TYPE II MOUNTING	4	EA	\$8,000.00	\$32,000.00
0953-0350	MASTER CONTROLLER	1	EA	\$6,000.00	\$6,000.00
0953-0360	CLOSED LOOP SYSTEM	1	LS	\$4,000.00	\$4,000.00
4953-0401	RADIO COMMUNICATIONS SYSTEM	4	EA	\$3,000.00	\$12,000.00
0953-0403	TELEPHONE DIALUP COMMUNICATIONS SYSTEM	1	LS	\$1,000.00	\$1,000.00
0955-3722	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, TYPE A	30	EA	\$600.00	\$18,000.00
0955-3203	VEHICULAR SIGNAL HEAD, THREE 12" SECTIONS (LED)	31	EA	\$725.00	\$22,475.00
0955-3205	VEHICULAR SIGNAL HEAD, FIVE 12" SECTIONS (LED)	2	EA	\$1,200.00	\$2,400.00
0956-0500	PEDESTRIAN PUSH BUTTON	30	EA	\$200.00	\$6,000.00
SUBTOTAL 1					\$103,875.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$15,581.25
SUBTOTAL 2					\$119,456.25
CONTINGENCIES			40% OF SUBTOTAL 2		\$47,782.50
SUBTOTAL OF CONSTRUCTION					\$167,238.75
ENGINEERING			\$5,000 PER INTERSECTION		\$20,000.00
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$20,068.65
TOTAL					\$207,307.40

ASSUME
\$207,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

TC-2 US 19 / US 62 / SR 58 / North Street 5 Legged Intersection Improvements (Prohibit NBL and Convert East Approach, North Street, to One-way Eastbound Only)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	130	CY	\$42.00	\$5,460.00
0630-0001	PLAIN CEMENT CONCRETE CURB	270	LF	\$45.00	\$12,150.00
0676-0001	CEMENT CONCRETE SIDEWALK	135	SY	\$105.00	\$14,175.00
0931-0001	POST MOUNTED SIGN, TYPE B	35	SF	\$40.00	\$1,400.00
0936-0200	STRUCTURE MOUNTED FLAT SHEET ALUMINUM SIGNS	10	SF	\$45.00	\$450.00
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	50	LF	\$1.50	\$75.00
0963-0001	PAVEMENT MARKING REMOVAL	24	SF	\$5.00	\$120.00
9695-0001	SIDEWALK DETECTABLE WARNING SURFACE (ASSUME 15 SF PER CURB RAMP)	30	SF	\$55.00	\$1,650.00
-	CURB RAMP DESIGN	2	EA	\$450.00	\$900.00
-	MISCELLANEOUS - DRAINAGE (PIPE, INLETS, ETC.)	1	LS	\$35,000.00	\$35,000.00
SUBTOTAL 1					\$71,380.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$10,707.00
SUBTOTAL 2					\$82,087.00
CONTINGENCIES			40% OF SUBTOTAL 2		\$32,834.80
SUBTOTAL OF CONSTRUCTION					\$114,921.80
ENGINEERING		35% OF SUBTOTAL OF CONSTRUCTION			\$40,222.63
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$13,790.62
TOTAL					\$168,935.05

ASSUME
\$169,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

TC-3 Traffic Redirection on North and South Diamond Streets					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	270	CY	\$35.00	\$9,450.00
-	PAVEMENT CONSTRUCTION (WEARING, BINDER, BASE, AND SUBBASE)	275	SY	\$140.00	\$38,500.00
0630-0001	PLAIN CEMENT CONCRETE CURB	165	LF	\$50.00	\$8,250.00
0664-0100	MODULAR ARCHITECTURAL BLOCK SYSTEM	140	SF	\$40.00	\$5,600.00
0931-0001	POST MOUNTED SIGN, TYPE B	105	SF	\$35.00	\$3,675.00
0960-0008	8" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	180	LF	\$3.00	\$540.00
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	40	LF	\$13.00	\$520.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	2,430	LF	\$0.50	\$1,215.00
0963-0001	PAVEMENT MARKING REMOVAL	810	SF	\$3.00	\$2,430.00
-	MISCELLANEOUS - DRAINAGE (PIPE, INLETS, ETC.)	1	LS	\$25,000.00	\$25,000.00
-	MISCELLANEOUS - LANDSCAPING REPLACEMENT	1	LS	\$10,000.00	\$10,000.00
SUBTOTAL 1					\$105,180.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$15,777.00
SUBTOTAL 2					\$120,957.00
CONTINGENCIES		40% OF SUBTOTAL 2			\$48,382.80
SUBTOTAL OF CONSTRUCTION					\$169,339.80
ENGINEERING		35% OF SUBTOTAL OF CONSTRUCTION			\$59,268.93
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$20,320.78
TOTAL					\$248,929.51

ASSUME
\$250,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

TC-4 Hope Mill Rd. Extension to US 19					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	19,500	CY	\$14.00	\$273,000.00
-	PAVEMENT CONSTRUCTION - HOPE MILL ROAD EXT. (WEARING, BINDER, BASE, AND SUBBASE) (Assume 10' lanes and 4' shoulders)	15,775	SY	\$75.00	\$1,183,125.00
-	PAVEMENT CONSTRUCTION - PED TRAIL (1" FG, 4" BINDER COURSE, AND 6" SUBBASE) (Assume 10' Trail)	4,975	SY	\$40.00	\$199,000.00
0931-0001	POST MOUNTED SIGN, TYPE B	50	SF	\$40.00	\$2,000.00
0960-0008	8" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	75	LF	\$4.00	\$300.00
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	60	LF	\$13.00	\$780.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	8,825	LF	\$0.50	\$4,412.50
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	8,550	LF	\$0.50	\$4,275.00
-	MISCELLANEOUS - DRAINAGE (PAV'T BASE DRAIN, PIPE, INLETS, SWALE, ETC.)	1	LS	\$300,000.00	\$300,000.00
SUBTOTAL 1					\$1,966,892.50
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$295,033.88
SUBTOTAL 2					\$2,261,926.38
CONTINGENCIES			40% OF SUBTOTAL 2		\$904,770.55
SUBTOTAL OF CONSTRUCTION					\$3,166,696.93
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION			\$633,339.39
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$380,003.63
TOTAL					\$4,180,039.94

ASSUME
\$4,180,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

TC-5 Left Turn Lanes on US 19 at Beaver St. and South St.					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	50	CY	\$46.00	\$2,300.00
0630-0001	PLAIN CEMENT CONCRETE CURB	1225	LF	\$35.00	\$42,875.00
0931-0001	POST MOUNTED SIGN, TYPE B	35	SF	\$40.00	\$1,400.00
0960-0008	8" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	230	LF	\$3.00	\$690.00
0960-0224	WHITE HOT THERMOPLASTIC LEGEND, "LEFT ARROW", 12' - 0" X 3' - 0"	4	EA	\$160.00	\$640.00
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	2470	LF	\$0.50	\$1,235.00
0963-0001	PAVEMENT MARKING REMOVAL	1120	SF	\$3.00	\$3,360.00
SUBTOTAL 1					\$52,500.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$7,875.00
SUBTOTAL 2					\$60,375.00
CONTINGENCIES			40% OF SUBTOTAL 2		\$24,150.00
SUBTOTAL OF CONSTRUCTION					\$84,525.00
ENGINEERING		35% OF SUBTOTAL OF CONSTRUCTION			\$29,583.75
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$10,143.00
TOTAL					\$124,251.75

ASSUME
\$120,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

HEAVY TRUCK CONFLICT IMPROVEMENTS					
HTC-1 Truck Route from US 19 to Market St. via Butler St. and Pitt St.					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	235	CY	\$35.00	\$8,225.00
-	PAVEMENT CONSTRUCTION (WEARING, BINDER, BASE, AND SUBBASE) (RADIUS WIDENING)	215	SY	\$140.00	\$30,100.00
0630-0001	PLAIN CEMENT CONCRETE CURB	320	LF	\$45.00	\$14,400.00
0676-0001	CEMENT CONCRETE SIDEWALK	95	SY	\$105.00	\$9,975.00
0931-0001	POST MOUNTED SIGN, TYPE B	30	SF	\$40.00	\$1,200.00
0960-0008	8" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	760	LF	\$3.00	\$2,280.00
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	160	LF	\$10.00	\$1,600.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	355	LF	\$1.00	\$355.00
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	425	LF	\$1.00	\$425.00
0963-0001	PAVEMENT MARKING REMOVAL	555	SF	\$2.00	\$1,110.00
9695-0001	SIDEWALK DETECTABLE WARNING SURFACE (ASSUME 15 SF PER CURB RAMP)	75	SF	\$50.00	\$3,750.00
-	CURB RAMP DESIGN	5	EA	\$450.00	\$2,250.00
-	MISCELLANEOUS - DRAINAGE (PIPE, INLETS, ETC.)	1	LS	\$50,000.00	\$50,000.00
-	MISCELLANEOUS - TRAFFIC SIGNAL IMPROVEMENTS @ US 19 AND BUTLER ST	1	LS	\$25,000.00	\$25,000.00
SUBTOTAL 1					\$150,670.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$22,600.50
SUBTOTAL 2					\$173,270.50
CONTINGENCIES		40% OF SUBTOTAL 2			\$69,308.20
SUBTOTAL OF CONSTRUCTION					\$242,578.70
ENGINEERING		35% OF SUBTOTAL OF CONSTRUCTION			\$84,902.55
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$29,109.44
TOTAL					\$356,590.69

ASSUME
\$360,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

HTC-2 Truck Route from US 19 to PA 158 via Steigrabe Rd. (OPTION 1 - ON ALIGNMENT)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	13,500	CY	\$14.00	\$189,000.00
-	PAVEMENT CONSTRUCTION (BINDER, BASE, AND SUBBASE) (SHOULDER WIDENING)	10,000	SY	\$65.00	\$650,000.00
-	PAVEMENT CONSTRUCTION (WEARING COURSE)	24,400	SY	\$12.00	\$292,800.00
0931-0001	POST MOUNTED SIGN, TYPE B	15	SF	\$40.00	\$600.00
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	70	LF	\$13.00	\$910.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	12,770	LF	\$0.25	\$3,192.50
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	12,500	LF	\$0.25	\$3,125.00
-	MISCELLANEOUS - DRAINAGE (PAV'T BASE DRAIN, PIPE, INLETS, ETC.)	1	LS	\$500,000.00	\$500,000.00
-	MISCELLANEOUS - DRIVEWAY ADJUSTMENT	21	EA	\$3,000.00	\$63,000.00
SUBTOTAL 1					\$1,702,627.50
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$255,394.13
SUBTOTAL 2					\$1,958,021.63
CONTINGENCIES		40% OF SUBTOTAL 2			\$783,208.65
SUBTOTAL OF CONSTRUCTION					\$2,741,230.28
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION			\$548,246.06
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$328,947.63
TOTAL					\$3,618,423.96

ASSUME
\$3,620,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

HTC-3 Truck Route from US 19 to PA 158 via Steigrabe Rd. (OPTION 2 - OFF ALIGNMENT)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	21,700	CY	\$14.00	\$303,800.00
-	PAVEMENT CONSTRUCTION (BINDER, BASE, AND SUBBASE) (SHLDR WIDENING & NEW CONSTR)	16,200	SY	\$75.00	\$1,215,000.00
-	PAVEMENT CONSTRUCTION (WEARING COURSE)	22,600	SY	\$12.00	\$271,200.00
0931-0001	POST MOUNTED SIGN, TYPE B	20	SF	\$40.00	\$800.00
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	65	LF	\$13.00	\$845.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	11,310	LF	\$0.25	\$2,827.50
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	11,050	LF	\$0.25	\$2,762.50
-	MISCELLANEOUS - DRAINAGE (PAV'T BASE DRAIN, PIPE, INLETS, ETC.)	1	LS	\$500,000.00	\$500,000.00
-	MISCELLANEOUS - DRIVEWAY ADJUSTMENT	12	EA	\$3,000.00	\$36,000.00
SUBTOTAL 1					\$2,333,235.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$349,985.25
SUBTOTAL 2					\$2,683,220.25
CONTINGENCIES		40% OF SUBTOTAL 2			\$1,073,288.10
SUBTOTAL OF CONSTRUCTION					\$3,756,508.35
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION			\$751,301.67
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$450,781.00
TOTAL					\$4,958,591.02

ASSUME
\$4,960,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

SAFETY IMPROVEMENTS					
SI-1 Sight Distance Improvements at Old Mercer Rd. and Drake Rd. (OPTION 1 - OLD MERCER RD. REALIGNMENT)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	7,800	CY	\$14.00	\$109,200.00
-	PAVEMENT CONSTRUCTION (WEARING, BINDER, BASE, AND SUBBASE) (Assume 10' lanes and 2' shoulders)	5,260	SY	\$75.00	\$394,500.00
0931-0001	POST MOUNTED SIGN, TYPE B	50	SF	\$40.00	\$2,000.00
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	45	LF	\$13.00	\$585.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	3,850	LF	\$0.50	\$1,925.00
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	3,760	LF	\$0.50	\$1,880.00
-	MISCELLANEOUS - DRAINAGE (PAV'T BASE DRAIN, PIPE, INLETS, ETC.)	1	LS	\$150,000.00	\$150,000.00
-	MISCELLANEOUS - BRIDGE REPLACEMENT	1	LS	\$300,000.00	\$300,000.00
SUBTOTAL 1					\$960,090.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$144,013.50
SUBTOTAL 2					\$1,104,103.50
CONTINGENCIES			40% OF SUBTOTAL 2		\$441,641.40
SUBTOTAL OF CONSTRUCTION					\$1,545,744.90
ENGINEERING			20% OF SUBTOTAL OF CONSTRUCTION		\$309,148.98
CONSTRUCTION INSPECTION			12% OF SUBTOTAL OF CONSTRUCTION		\$185,489.39
TOTAL					\$2,040,383.27

ASSUME
\$2,040,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

SI-2 Sight Distance Improvements at Old Mercer Rd. and Drake Rd. (OPTION 2 - INTERSECTION RECONSTRUCTION)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	7,975	CY	\$14.00	\$111,650.00
-	PAVEMENT CONSTRUCTION (WEARING, BINDER, BASE, AND SUBBASE) (MATCH EXISTING WIDTH)	1,675	SY	\$75.00	\$125,625.00
0931-0001	POST MOUNTED SIGN, TYPE B	50	SF	\$40.00	\$2,000.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	920	LF	\$1.00	\$920.00
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	940	LF	\$1.00	\$940.00
-	MISCELLANEOUS - DRAINAGE (PAV'T BASE DRAIN, PIPE, INLETS, ETC.)	1	LS	\$50,000.00	\$50,000.00
SUBTOTAL 1					\$291,135.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$43,670.25
SUBTOTAL 2					\$334,805.25
CONTINGENCIES		40% OF SUBTOTAL 2			\$133,922.10
SUBTOTAL OF CONSTRUCTION					\$468,727.35
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION			\$93,745.47
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$56,247.28
TOTAL					\$618,720.10

ASSUME
\$620,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

SI-3 Butler St. at Pitt St. (OPTION 1 - ALL WAY STOP)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0931-0001	POST MOUNTED SIGN, TYPE B	30	SF	\$40.00	\$1,200.00
0960-0021	24" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	70	LF	\$13.00	\$910.00
SUBTOTAL 1					\$2,110.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$316.50
SUBTOTAL 2					\$2,426.50
CONTINGENCIES		40% OF SUBTOTAL 2			\$970.60
SUBTOTAL OF CONSTRUCTION					\$3,397.10
ENGINEERING		35% OF SUBTOTAL OF CONSTRUCTION			\$1,188.99
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$407.65
TOTAL					\$4,993.74

ASSUME
\$5,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

SI-3 Butler St. at Pitt St. (OPTION 2 - SIGNAL)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
-	MISCELLANEOUS - TRAFFIC SIGNAL NEW CONSTRUCTION	1	LS	\$180,000.00	\$180,000.00
SUBTOTAL 1					\$180,000.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$27,000.00
SUBTOTAL 2					\$207,000.00
CONTINGENCIES		40% OF SUBTOTAL 2			\$82,800.00
SUBTOTAL OF CONSTRUCTION					\$289,800.00
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION			\$57,960.00
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$34,776.00
TOTAL					\$382,536.00

ASSUME
\$380,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

MULTI-MODAL IMPROVEMENTS					
MM-1 Sidewalk to Walt's Grocery Store					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	95	CY	\$42.00	\$3,990.00
0676-0001	CEMENT CONCRETE SIDEWALK	275	SY	\$90.00	\$24,750.00
9695-0001	SIDEWALK DETECTABLE WARNING SURFACE (ASSUME 15 SF PER CURB RAMP)	45	SF	\$55.00	\$2,475.00
-	CURB RAMP DESIGN	3	EA	\$450.00	\$1,350.00
SUBTOTAL 1					\$32,565.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$4,884.75
SUBTOTAL 2					\$37,449.75
CONTINGENCIES			40% OF SUBTOTAL 2		\$14,979.90
SUBTOTAL OF CONSTRUCTION					\$52,429.65
ENGINEERING		35% OF SUBTOTAL OF CONSTRUCTION			\$18,350.38
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$6,291.56
TOTAL					\$77,071.59

ASSUME
\$77,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

MM-2 Repair Deficient Sidewalks throughout Mercer Borough					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	4,375	CY	\$16.00	\$70,000.00
0676-0001	CEMENT CONCRETE SIDEWALK	13,050	SY	\$60.00	\$783,000.00
9695-0001	SIDEWALK DETECTABLE WARNING SURFACE (ASSUME 15 SF PER CURB RAMP)	1,130	SF	\$40.00	\$45,200.00
-	CURB RAMP DESIGN	75	EA	\$450.00	\$33,750.00
SUBTOTAL 1					\$931,950.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$139,792.50
SUBTOTAL 2					\$1,071,742.50
CONTINGENCIES			40% OF SUBTOTAL 2		\$428,697.00
SUBTOTAL OF CONSTRUCTION					\$1,500,439.50
ENGINEERING			20% OF SUBTOTAL OF CONSTRUCTION		\$300,087.90
CONSTRUCTION INSPECTION			12% OF SUBTOTAL OF CONSTRUCTION		\$180,052.74
TOTAL					\$1,980,580.14

ASSUME
\$1,980,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

MM-3 Sidewalk to Dairy Queen					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	380	CY	\$35.00	\$13,300.00
0676-0001	CEMENT CONCRETE SIDEWALK	1,125	SY	\$80.00	\$90,000.00
-	MISCELLANEOUS - DRAINAGE (PIPE, END SECTION, ETC.)	1	LS	\$5,000.00	\$5,000.00
SUBTOTAL 1					\$108,300.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$16,245.00
SUBTOTAL 2					\$124,545.00
CONTINGENCIES			40% OF SUBTOTAL 2		\$49,818.00
SUBTOTAL OF CONSTRUCTION					\$174,363.00
ENGINEERING		35% OF SUBTOTAL OF CONSTRUCTION			\$61,027.05
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$20,923.56
TOTAL					\$256,313.61

ASSUME
\$260,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

MM-4 New Sidewalks to Complete Network throughout Mercer Borough					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	1,370	CY	\$25.00	\$34,250.00
0676-0001	CEMENT CONCRETE SIDEWALK	4,070	SY	\$65.00	\$264,550.00
9695-0001	SIDEWALK DETECTABLE WARNING SURFACE (ASSUME 15 SF PER CURB RAMP)	405	SF	\$40.00	\$16,200.00
-	CURB RAMP DESIGN	27	EA	\$450.00	\$12,150.00
SUBTOTAL 1					\$327,150.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$49,072.50
SUBTOTAL 2					\$376,222.50
CONTINGENCIES		40% OF SUBTOTAL 2			\$150,489.00
SUBTOTAL OF CONSTRUCTION					\$526,711.50
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION			\$105,342.30
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$63,205.38
TOTAL					\$695,259.18

ASSUME
\$700,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

MM-5 PA 158 Shoulder Widening (BOTH SIDES FROM BEAVER ST. TO I-80)					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	32,800	CY	\$14.00	\$459,200.00
-	PAVEMENT CONSTRUCTION (WEARING, BINDER, BASE, AND SUBBASE) (SHOULDER WIDENING)	24,500	SY	\$75.00	\$1,837,500.00
0931-0001	POST MOUNTED SIGN, TYPE B	50	SF	\$40.00	\$2,000.00
0962-1000	4" WHITE WATERBORNE PAVEMENT MARKINGS	31,550	LF	\$0.25	\$7,887.50
0962-1005	4" YELLOW WATERBORNE PAVEMENT MARKINGS	31,500	LF	\$0.25	\$7,875.00
-	MISCELLANEOUS - DRAINAGE (PAV'T BASE DRAIN, PIPE, INLETS, DITCH, ETC.)	1	LS	\$1,000,000.00	\$1,000,000.00
-	MISCELLANEOUS - DRIVEWAY ADJUSTMENT	80	EA	\$3,000.00	\$240,000.00
SUBTOTAL 1					\$3,554,462.50
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT		15% OF SUBTOTAL 1			\$533,169.38
SUBTOTAL 2					\$4,087,631.88
CONTINGENCIES		40% OF SUBTOTAL 2			\$1,635,052.75
SUBTOTAL OF CONSTRUCTION					\$5,722,684.63
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION			\$1,144,536.93
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION			\$686,722.16
TOTAL					\$7,553,943.71

ASSUME
\$7,550,000

US 19 Land Use and Transportation Study, Mercer County

Conceptual Cost Estimates

Last Updated 4-29-2011

MM-6 Hope Mill Rd Hiker / Biker Trail					
Pay Item	Description	Quantity	Unit	Unit Cost	Total Cost
0203-0001	CLASS 1 EXCAVATION	13,200	CY	\$14.00	\$184,800.00
-	PAVEMENT CONSTRUCTION - PED TRAIL (1" FG, 4" BINDER COURSE, AND 6" SUBBASE) (Assume 10' Trail)	7,900	SY	\$40.00	\$316,000.00
0931-0001	POST MOUNTED SIGN, TYPE B	45	SF	\$40.00	\$1,800.00
0960-0008	8" WHITE HOT THERMOPLASTIC PAVEMENT MARKINGS	40	LF	\$4.00	\$160.00
-	MISCELLANEOUS - DRAINAGE (PAV'T BASE DRAIN, PIPE, INLETS, SWALE, ETC.)	1	LS	\$200,000.00	\$200,000.00
-	MISCELLANEOUS - DRIVEWAY ADJUSTMENT	8	EA	\$3,000.00	\$24,000.00
-	MISCELLANEOUS - PEDESTRIAN BRIDGE (APPROX. 25' SPAN)	2	EA	\$50,000.00	\$100,000.00
SUBTOTAL 1					\$826,760.00
MPT, MOBILIZATION, FIELD OFFICE, and EQUIPMENT			15% OF SUBTOTAL 1		\$124,014.00
SUBTOTAL 2					\$950,774.00
CONTINGENCIES			40% OF SUBTOTAL 2		\$380,309.60
SUBTOTAL OF CONSTRUCTION					\$1,331,083.60
ENGINEERING		20% OF SUBTOTAL OF CONSTRUCTION		\$266,216.72	
CONSTRUCTION INSPECTION		12% OF SUBTOTAL OF CONSTRUCTION		\$159,730.03	
TOTAL					\$1,757,030.35

ASSUME
\$1,760,000

Cost Estimate Notes and Assumptions (Includes Possible Field View Items or Additional Information Request)

TRAFFIC CONGESTION IMPROVEMENTS

Retime Traffic Signals

- Assume retiming of all 4 existing signalized intersections along US 19.
- Assume equipment upgrades consisting of:
 - LED retrofits of all vehicular signal indications.
 - Replace or add LED countdown pedestrian signal heads to all intersections.
 - Replace or add ADA compliant pedestrian push buttons to all intersections.
 - Controller cabinet (Type II - pole mounted).
 - Traffic signal controllers.
- Assume new interconnect equipment installed to enable signal coordination via a closed-loop system.
 - Master controller.
 - Spread spectrum radio system.
 - Closed-loop system software.
 - Telephone dialup communications.

US 19 / US 62 / SR 58 / North Street 5 Legged Intersection Improvements

(Prohibit NBL and Convert East Approach, North Street, to One-way Eastbound Only)

- Assume North Street goes from two-way traffic to one-way traffic eastbound (11' lane) with parallel parking (7' parking) on north side of street.
- Assume 5' sidewalk adjacent to parking.
- Look at existing drainage any possible drainage upgrades.

Traffic Redirection on North and South Diamond Streets

- Assume revising internal parking spaces along South Diamond Street.
- Look at ADA accessible parking spaces and entrances to courthouse from each street.
- Look at swapping internal parking spaces along South Diamond Street.
- Look at curb ramps along both North and South Diamond Street.

Hope Mill Rd. Extension to US 19

- PennDOT DM2 Design Criteria:
 - Rural Neighborhood Collector
 - 10'-11' lanes with 4'-8' shoulders (use 10' lanes and 4' shoulders)
 - 20-35 MPH operating speed (use design speed of 40 MPH)
- Field conditions (further north):
 - 9' lanes with no shoulders
 - 40 MPH speed limit
- Assume 10' wide hiker / biker trail and 5' swale on one side of road.
- Should consider replacing 2 bridges (narrow, open grate) along Hope Mill Road between SR 258 and end of existing road to accommodate additional traffic. This is not included in current estimate.

Left Turn Lanes on US 19 at Beaver St. and South St.

- Field conditions:
 - 33' pavement width
 - 11' lanes and 5.5' shoulders
 - 35 MPH speed limit
- Assume restriping US 19 to 3-11' lanes (2 travel lanes with center turn lane) to match center of town.

HEAVY TRUCK CONFLICT IMPROVEMENTS

Truck Route from US 19 to Market St. via Butler St. and Pitt St.

- Look at existing drainage along curb reconstructions.
- Look at condition of signal at US 19 and Butler St.
- Look at on-street parking throughout the revised truck route (especially along south side of Butler St.) and any necessary parking restrictions due to trucks. May need to restrict parking at intersections for wide turns.
- Assume a WB-67 (interstate semitrailer) for AutoTURN analyses.
- Assume partial signal replacement / relocation only due to cost.
- Assume no improvements or modifications of the flashing beacon at the intersection of Pitt St. and Market St. are necessary.

Truck Route from US 19 to PA 158 via Steigrabe Rd. (Option 1 and Option 2)

- PennDOT DM2 Design Criteria:
 - Rural Neighborhood Collector
 - 10'-11' lanes with 4'-8' shoulders (use 11' lanes and 6' shoulders)
 - 20-35 MPH operating speed (use design speed of 30 MPH)
- Field conditions:
 - 10'-10.5' lanes with no shoulders
 - 25 MPH speed limit
 - 10 ton weight limit
- Look at sight distance at both intersections.
- Look for utilities (major transmission lines).

SAFETY IMPROVEMENTS

Sight Distance Improvements at Old Mercer Rd. and Drake Rd. (Option 1 and Option 2)

- PennDOT DM2 Design Criteria (Old Mercer Road):
 - Rural Local Road
 - 9'-11' lanes with 2'-8' shoulders (use 10' lanes and 2' shoulders)
 - 20-30 MPH operating speed (use design speed of 35 MPH)
- Field conditions (Old Mercer Road):
 - 10' lanes with no shoulders
 - 17 ton weight limit / 29 ton weight limit combinations
- Assume new box culvert structure on Old Mercer Road (Option 1 only)

Butler St. at Pitt St. (Option 1 and Option 2)

- Give cost for 4-way stop or signal.

Intersection Improvements at US 19 and Steingrabe Rd (Sight Distance and Public Concern)

- Look at sight distance in both directions (left and right) from both side roads.
- Field conditions:
 - 45 MPH speed limit on US 19
 - Center turn lane
 - Several closely spaced driveways on both sides of US 19
 - No reduced speed limit sign on SB US 19
- Possible improvement options:
 - Signing, pavement marking, and delineation
 - Transverse rumble strips
 - Flashing warning device
 - Intersection flashing beacon
 - Traffic signal

MULTI-MODAL IMPROVEMENTS

PA 158 Shoulder Widening (Both Sides from Beaver St. to I-80)

- PennDOT DM2 Design Criteria:
 - Rural Neighborhood Collector
 - 10'-11' lanes with 4'-8' shoulders (use 11' lanes and 6' shoulders)
 - 20-35 MPH operating speed (use design speed of 35 MPH)
- Field conditions:
 - 10' lanes with 1' shoulders
 - Speed limit not posted
 - Weight limit not posted
- Look for major stream crossings and drainage structures.
- Assume no widening or replacement of major structures / bridges.
- Consider widening shoulders to 6' on both sides of road.

Hope Mill Rd Hiker / Biker Trail

- Assume 10' wide hiker / biker non-motorized, shared-use trail. Based on AASHTO Guide to the Development of Bicycle Facilities and PennDOT DM2.
- Assume 5' bioswale / ditch / buffer / shy distance between road & trail. Based on PennDOT DM2.
- Assume paved trail surface.
- Assume 2 new pedestrian bridges.
- Look at bridges further north.
- Look at utilities.

Sidewalk to Walt's Grocery Store

- Assume 5' sidewalk width.
- Assume detectable warning surface at major driveways and all intersecting streets.

Sidewalk to Dairy Queen

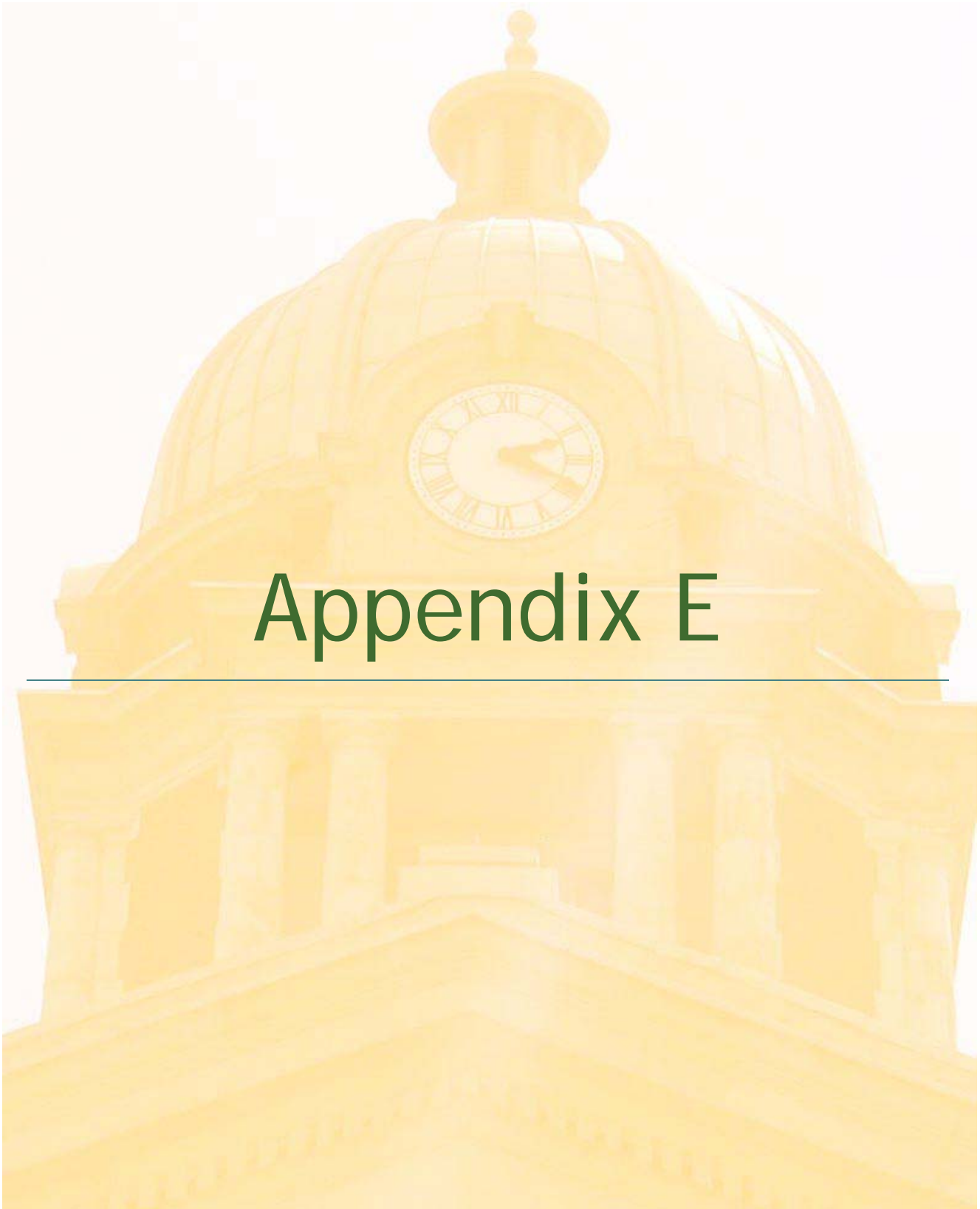
- Assume 5' sidewalk width.
- Assume detectable warning surface at major driveways and all intersecting streets.
- Look at drainage crossings (two).

New Sidewalks to Complete Network throughout Mercer Borough

- Assume 5' sidewalk width.

Repair Deficient Sidewalks throughout Mercer Borough

- Assume 5' sidewalk width.



Appendix E

Appendix E: Public Involvement Summaries

The materials listed below are included in Appendix E. All materials are included in electronic-format only on an enclosed CD at the end of this report.

- E1: Meeting Summaries
- E2: Corridor Survey Report
- E3: Corridor Intercept Survey

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