

Appendix B9

Cost Estimates



**Center Twp Commercial Area Multimodal Improvements
 Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost	
Major Construction Item Quantities						
CLASS 1 EXCAVATION		1696	CY	\$30.00	\$50,880	
CEMENT CONCRETE SIDEWALK		5087	SY	\$130.00	\$661,310	
Construction Item Sub-Total					\$712,190	
Allowances						
				Percentage	Cost	
Erosion & Sediment Control				2%	\$14,244	
Drainage & Stormwater management				5%	\$35,610	
Maintenance & Protection of Traffic				2%	\$14,244	
Mobilization				5%	\$35,610	
Incidental Construction Items				2%	\$14,244	
Signing				1%	\$7,122	
Construction Allowances Item Sub-Total					\$121,072	
Construction & Allowance Items Total					\$833,262	
- Total Escalation Through 2023					\$49,996	
Construction Subtotal					\$883,258	
Contingency @ 30%					\$264,977	
Total Construction Cost					\$1,148,235	
Other Project Costs						
				Construction Oversight @ 12%	\$137,788	
				Design Engineering @ 15%	\$172,235	
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00	
Utility Impact Percentage				5%	Utility Cost	\$57,412
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost	\$1,550,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Frankfort Rd Alt 1 (Split Phase Removal)
Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
CLASS 1 EXCAVATION	933	CY	\$30.00	\$27,990
TOPSOIL FURNISHED AND PLACED	1233	CY	\$75.00	\$92,475
CONCRETE CURB	3482	LF	\$50.00	\$174,100
PLAIN CEMENT CONCRETE PAVEMENT	1262	SY	\$110.00	\$138,820
MILL AND OVERLAY	15384	SY	\$25.00	\$384,600
FULL DEPTH PAVEMENT	625	SY	\$150.00	\$93,750
TRAFFIC SIGNAL	1	EA	\$250,000.00	\$250,000
4" WHITE PAVEMENT MARKINGS	14500	LF	\$0.50	\$7,250
24" WHITE PAVEMENT MARKINGS	1650	LF	\$20.00	\$33,000
4" YELLOW PAVEMENT MARKINGS	8040	LF	\$0.50	\$4,020
WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW	4	EA	\$250.00	\$1,000
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	6	EA	\$250.00	\$1,500
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW	6	EA	\$250.00	\$1,500
Construction Item Sub-Total				\$1,210,005
Allowances				
			Percentage	Cost
	Erosion & Sediment Control		5%	\$60,500
	Drainage & Stormwater management		10%	\$121,001
	Maintenance & Protection of Traffic		5%	\$60,500
	Mobilization		5%	\$60,500
	Incidental Construction Items		2%	\$24,200
	Signing		1%	\$12,100
	Construction Allowances Item Sub-Total			\$338,801
	Construction & Allowance Items Total			\$1,548,806
	- Total Escalation Through 2023			\$92,928
	Construction Subtotal			\$1,641,735
	Contingency @ 30%			\$492,520
	Total Construction Cost			\$2,134,255
Other Project Costs				
	Construction Oversight @ 12%			\$256,111
	Design Engineering @ 15%			\$320,138
Right-of-Way Acquisition	<i>0.00 ac</i>	ROW cost/acre	\$25,000	Right-of-Way Cost
				\$0.00
	Utility Impact Percentage 5%			Utility Cost \$106,713
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost \$2,850,000	

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Frankfort Rd Alt 2 (Roundabout)
Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
CLASS 1 EXCAVATION	3990	CY	\$30.00	\$119,700
FOREIGN BORROW EXCAVATION	3210	CY	\$40.00	\$128,400
TRUCK APRON	522	SY	\$125.00	\$65,250
TOPSOIL FURNISHED AND PLACED	1325	CY	\$75.00	\$99,375
CONCRETE CURB	1087	LF	\$50.00	\$54,350
PLAIN CEMENT CONCRETE PAVEMENT	622	SY	\$110.00	\$68,420
MILL AND OVERLAY	7672	SY	\$25.00	\$191,800
FULL DEPTH PAVEMENT	8106	SY	\$150.00	\$1,215,900
4" WHITE PAVEMENT MARKINGS	14719	LF	\$0.50	\$7,360
4" YELLOW PAVEMENT MARKINGS	8440	LF	\$0.50	\$4,220
24" WHITE PAVEMENT MARKINGS	370	LF	\$20.00	\$7,400
WHITE THERMOPLASTIC PAVEMENT LEGEND ROUNDABOUT LEFT ARROW	1	EA	\$450.00	\$450
WHITE THERMOPLASTIC PAVEMENT LEGEND ROUNDABOUT LEFT-STRAIGHT ARROW	7	EA	\$575.00	\$4,025
WHITE THERMOPLASTIC PAVEMENT LEGEND ROUNDABOUT RIGHT-STRAIGHT ARROW	1	EA	\$575.00	\$575
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW	1	EA	\$250.00	\$250
WHITE THERMOPLASTIC PAVEMENT LEGEND, "YIELD LINE", 12"X18" TRIANGLE	236	LF	\$25.00	\$5,900
Construction Item Sub-Total				\$1,973,375
Allowances				
			Percentage	Cost
		Erosion & Sediment Control	5%	\$98,669
		Drainage & Stormwater management	15%	\$296,006
		Maintenance & Protection of Traffic	7%	\$138,136
		Mobilization	7%	\$138,136
		Incidental Construction Items	2%	\$39,467
		Signing	5%	\$98,669
		Construction Allowances Item Sub-Total		\$809,084
		Construction & Allowance Items Total		\$2,782,458
		- Total Escalation Through 2023		\$166,947
		Construction Subtotal		\$2,949,406
		Contingency @ 30%		\$884,822
		Total Construction Cost		\$3,834,227
Other Project Costs				
		Construction Oversight @ 12%		\$460,107
		Design Engineering @ 15%		\$575,134
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost \$0.00
		Utility Impact Percentage 5%		Utility Cost \$191,711
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost \$5,100,000	

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



**Center Twp Residential & School Area Multimodal Improvements
 Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost	
Major Construction Item Quantities						
CLASS 1 EXCAVATION		2019	CY	\$30.00	\$60,570	
CEMENT CONCRETE SIDEWALK		6056	SY	\$130.00	\$787,280	
WHITE THERMOPLASTIC PAVEMENT LEGEND SHARED LANE MARKING		286	EA	\$450.00	\$128,700	
Construction Item Sub-Total					\$976,550	
Allowances						
				Percentage	Cost	
Erosion & Sediment Control				2%	\$19,531	
Drainage & Stormwater management				5%	\$48,828	
Maintenance & Protection of Traffic				5%	\$48,828	
Mobilization				5%	\$48,828	
Incidental Construction Items				2%	\$19,531	
Signing				3%	\$29,297	
Construction Allowances Item Sub-Total					\$214,841	
Construction & Allowance Items Total					\$1,191,391	
- Total Escalation Through 2023					\$71,483	
Construction Subtotal					\$1,262,874	
Contingency @ 30%					\$378,862	
Total Construction Cost					\$1,641,737	
Other Project Costs						
Construction Oversight @ 12%					\$197,008	
Design Engineering @ 15%					\$246,261	
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00	
Utility Impact Percentage				5%	Utility Cost	\$82,087
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost	
					\$2,200,000	

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



North Branch Road (Right In/Right Out)
 Preliminary Construction Cost Estimate

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
CLASS 1 EXCAVATION		83	CY	\$30.00	\$2,490
FOREIGN BORROW EXCAVATION		55	CY	\$40.00	\$2,200
TOPSOIL FURNISHED AND PLACED		28	CY	\$75.00	\$2,100
BITUMINOUS CURB		50	LF	\$45.00	\$2,250
24" WHITE PAVEMENT MARKINGS		12	LF	\$20.00	\$240
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW		1	EA	\$250.00	\$250
Construction Item Sub-Total					\$9,530
Allowances					
				Percentage	Cost
Erosion & Sediment Control				5%	\$477
Drainage & Stormwater management				5%	\$477
Maintenance & Protection of Traffic				5%	\$477
Mobilization				5%	\$477
Incidental Construction Items				2%	\$191
Signing				3%	\$286
Construction Allowances Item Sub-Total					\$2,383
Construction & Allowance Items Total					\$11,913
- Total Escalation Through 2023					\$715
Construction Subtotal					\$12,627
Contingency @ 30%					\$3,788
Total Construction Cost					\$16,415
Other Project Costs					
Construction Oversight @ 15%					\$2,462
Design Engineering @ 40%					\$6,566
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00
Utility Impact Percentage					0%
Utility Cost					\$0
Note: Value rounded up nearest \$5,000					Estimated Project Total Cost
					\$30,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Baker Rd (Signal and Turn Lane)
Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
MILL AND OVERLAY	3095	SY	\$25.00	\$77,375
FULL DEPTH PAVEMENT	838	SY	\$150.00	\$125,700
4" WHITE PAVEMENT MARKINGS	540	LF	\$0.50	\$270
4" YELLOW PAVEMENT MARKINGS	3958	LF	\$0.50	\$1,979
24" WHITE PAVEMENT MARKINGS	110	LF	\$20.00	\$2,200
24" YELLOW PAVEMENT MARKINGS	230	LF	\$20.00	\$4,600
TRAFFIC SIGNAL	1	EA	\$250,000.00	\$250,000
WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW	1	EA	\$250.00	\$250
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	2	EA	\$250.00	\$500
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW	1	EA	\$250.00	\$250
WHITE THERMOPLASTIC PAVEMENT LEGEND THRU-RIGHT ARROW	1	EA	\$400.00	\$400
Construction Item Sub-Total				\$463,524
Allowances				
			Percentage	Cost
		Erosion & Sediment Control	5%	\$23,176
		Drainage & Stormwater management	10%	\$46,352
		Maintenance & Protection of Traffic	5%	\$23,176
		Mobilization	5%	\$23,176
		Incidental Construction Items	2%	\$9,270
		Signing	1%	\$4,635
		Construction Allowances Item Sub-Total		\$129,787
		Construction & Allowance Items Total		\$593,311
		- Total Escalation Through 2023		\$35,599
		Construction Subtotal		\$628,909
		Contingency @ 30%		\$188,673
		Total Construction Cost		\$817,582
Other Project Costs				
		Construction Oversight @ 15%		\$122,637
		Design Engineering @ 15%		\$122,637
Right-of-Way Acquisition	<i>0.20 ac</i>	ROW cost/acre	\$25,000	Right-of-Way Cost
				\$5,000.00
	Utility Impact Percentage	<i>10%</i>		Utility Cost
				\$81,758
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost	
				\$1,150,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Center Grange Rd (Signal and Turn Lane)
Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
MILL AND OVERLAY		2998	SY	\$25.00	\$74,950
FULL DEPTH PAVEMENT		560	SY	\$150.00	\$84,000
4" WHITE PAVEMENT MARKINGS		4260	LF	\$0.50	\$2,130
4" YELLOW PAVEMENT MARKINGS		3402	LF	\$0.50	\$1,701
24" WHITE PAVEMENT MARKINGS		128	LF	\$20.00	\$2,560
24" YELLOW PAVEMENT MARKINGS		320	LF	\$20.00	\$6,400
TRAFFIC SIGNAL		1	EA	\$250,000.00	\$250,000
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW		2	EA	\$250.00	\$500
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW		2	EA	\$250.00	\$500
WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW		2	EA	\$250.00	\$500
Construction Item Sub-Total					\$423,241
Allowances					
				Percentage	Cost
Erosion & Sediment Control				5%	\$21,162
Drainage & Stormwater management				10%	\$42,324
Maintenance & Protection of Traffic				5%	\$21,162
Mobilization				5%	\$21,162
Incidental Construction Items				2%	\$8,465
Signing				1%	\$4,232
Construction Allowances Item Sub-Total					\$118,507
Construction & Allowance Items Total					\$541,748
- Total Escalation Through 2023					\$32,505
Construction Subtotal					\$574,253
Contingency @ 30%					\$172,276
Total Construction Cost					\$746,529
Other Project Costs					
Construction Oversight @ 15%					\$111,979
Design Engineering @ 15%					\$111,979
Right-of-Way Acquisition	0.10 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$2,500.00
Utility Impact Percentage 10%					Utility Cost \$74,653
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost \$1,050,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Pleasant Dr Alt 1 (Lane Reconfiguration with Signal)
 Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost	
Major Construction Item Quantities					
CLASS 1 EXCAVATION	1049	CY	\$30.00	\$31,470	
FOREIGN BORROW EXCAVATION	760	CY	\$40.00	\$30,400	
PLAIN CEMENT CONCRETE PAVEMENT	615	SY	\$110.00	\$67,650	
TOPSOIL FURNISHED AND PLACED	290	CY	\$75.00	\$21,750	
PLAIN CONCRETE MOUNTABLE CURB	1125	LF	\$50.00	\$56,250	
MILL AND OVERLAY	6471	SY	\$25.00	\$161,775	
FULL DEPTH PAVEMENT	1265	SY	\$150.00	\$189,750	
4" WHITE PAVEMENT MARKINGS	7762	LF	\$0.50	\$3,881	
24" WHITE PAVEMENT MARKINGS	88	LF	\$20.00	\$1,760	
4" YELLOW PAVEMENT MARKINGS	4210	LF	\$0.50	\$2,105	
WHITE THERMOPLASTIC PAVEMENT LEGEND, "STRAIGHT ARROW"	2	EA	\$250.00	\$500	
WHITE THERMOPLASTIC PAVEMENT LEGEND, "LEFT ARROW"	2	EA	\$250.00	\$500	
WHITE THERMOPLASTIC PAVEMENT LEGEND, "RIGHT ARROW"	4	EA	\$250.00	\$1,000	
TRAFFIC SIGNAL	1	EA	\$250,000.00	\$250,000	
Construction Item Sub-Total				\$818,791	
Allowances					
			Percentage	Cost	
	Erosion & Sediment Control		5%	\$40,940	
	Drainage & Stormwater management		10%	\$81,879	
	Maintenance & Protection of Traffic		5%	\$40,940	
	Mobilization		5%	\$40,940	
	Incidental Construction Items		2%	\$16,376	
	Signing		1%	\$8,188	
	Construction Allowances Item Sub-Total			\$229,261	
	Construction & Allowance Items Total			\$1,048,052	
	- Total Escalation Through 2023			\$62,883	
	Construction Subtotal			\$1,110,936	
	Contingency @ 30%			\$333,281	
	Total Construction Cost			\$1,444,216	
Other Project Costs					
	Construction Oversight @ 12%			\$173,306	
	Design Engineering @ 15%			\$216,632	
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00
	Utility Impact Percentage	5%		Utility Cost	\$72,211
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost		\$1,950,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Pleasant Dr Alt 2 (Roundabout with Bypass Lanes)
Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
CLASS 1 EXCAVATION	960	CY	\$30.00	\$28,800
FOREIGN BORROW EXCAVATION	778	CY	\$40.00	\$31,120
TRUCK APRON	675	SY	\$125.00	\$84,375
TOPSOIL FURNISHED AND PLACED	284	CY	\$75.00	\$21,300
CONCRETE CURB	1211	LF	\$50.00	\$60,550
PLAIN CEMENT CONCRETE PAVEMENT	242	SY	\$110.00	\$26,620
MILL AND OVERLAY	4750	SY	\$25.00	\$118,750
FULL DEPTH PAVEMENT	3470	SY	\$150.00	\$520,500
4" WHITE PAVEMENT MARKINGS	5334	LF	\$0.50	\$2,667
4" YELLOW PAVEMENT MARKINGS	5028	LF	\$0.50	\$2,514
WHITE THERMOPLASTIC PAVEMENT LEGEND ROUNDABOUT LEFT ARROW	2	EA	\$450.00	\$900
WHITE THERMOPLASTIC PAVEMENT LEGEND ROUNDABOUT RIGHT-STRAIGHT ARROW	1	EA	\$575.00	\$575
WHITE THERMOPLASTIC PAVEMENT LEGEND, "YIELD LINE", 12"X18" TRIANGLE	56	LF	\$25.00	\$1,400
Construction Item Sub-Total				\$900,071
Allowances				
			Percentage	Cost
	Erosion & Sediment Control		7%	\$63,005
	Drainage & Stormwater management		15%	\$135,011
	Maintenance & Protection of Traffic		7%	\$63,005
	Mobilization		5%	\$45,004
	Incidental Construction Items		2%	\$18,001
	Signing		5%	\$45,004
	Construction Allowances Item Sub-Total			\$369,029
	Construction & Allowance Items Total			\$1,269,100
	- Total Escalation Through 2023			\$76,146
	Construction Subtotal			\$1,345,246
	Contingency @ 30%			\$403,574
	Total Construction Cost			\$1,748,820
Other Project Costs				
	Construction Oversight @ 12%			\$209,858
	Design Engineering @ 15%			\$262,323
Right-of-Way Acquisition	<i>0.00 ac</i>	ROW cost/acre	\$25,000	Right-of-Way Cost
				\$0.00
	Utility Impact Percentage 7%			Utility Cost
				\$122,417
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost	
				\$2,350,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Aliquippa Commercial Area Multimodal Improvements
Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
CLASS 1 EXCAVATION		2649	CY	\$30.00	\$79,470
CEMENT CONCRETE SIDEWALK		7945	SY	\$130.00	\$1,032,850
24" WHITE PAVEMENT MARKINGS		456	LF	\$20.00	\$9,120
WHITE THERMOPLASTIC PAVEMENT LEGEND SHARED LANE MARKING		314	EA	\$450.00	\$141,300
Construction Item Sub-Total					\$1,262,740
Allowances					
				Percentage	Cost
Erosion & Sediment Control				2%	\$25,255
Drainage & Stormwater management				5%	\$63,137
Maintenance & Protection of Traffic				2%	\$25,255
Mobilization				5%	\$63,137
Incidental Construction Items				2%	\$25,255
Signing				5%	\$63,137
Construction Allowances Item Sub-Total					\$265,175
Construction & Allowance Items Total					\$1,527,915
- Total Escalation Through 2023					\$91,675
Construction Subtotal					\$1,619,590
Contingency @ 30%					\$485,877
Total Construction Cost					\$2,105,467
Other Project Costs					
				Construction Oversight @ 12%	\$252,656
				Design Engineering @ 15%	\$315,820
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00
Utility Impact Percentage				5%	Utility Cost
					\$105,273
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost
					\$2,800,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



Chapel Rd (Southbound Left Turn Lane and Realignment)
 Preliminary Construction Cost Estimate

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
CLASS 1 EXCAVATION	865	CY	\$30.00	\$25,950
TOPSOIL FURNISHED AND PLACED	90	CY	\$75.00	\$6,750
MILL AND OVERLAY	1609	SY	\$25.00	\$40,225
FULL DEPTH PAVEMENT	1143	SY	\$150.00	\$171,450
4" WHITE PAVEMENT MARKINGS	3813	LF	\$0.50	\$1,907
4" YELLOW PAVEMENT MARKINGS	3064	LF	\$0.50	\$1,532
24" WHITE PAVEMENT MARKINGS	40	LF	\$20.00	\$800
24" YELLOW PAVEMENT MARKINGS	270	LF	\$20.00	\$5,400
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	1	EA	\$250.00	\$250
Construction Item Sub-Total				\$254,264
Allowances				
			Percentage	Cost
			Erosion & Sediment Control	5% \$12,713
			Drainage & Stormwater management	10% \$25,426
			Maintenance & Protection of Traffic	5% \$12,713
			Mobilization	5% \$12,713
			Incidental Construction Items	2% \$5,085
			Signing	3% \$7,628
			Construction Allowances Item Sub-Total	\$76,279
			Construction & Allowance Items Total	\$330,543
			- Total Escalation Through 2023	\$19,833
			Construction Subtotal	\$350,375
			Contingency @ 30%	\$105,113
			Total Construction Cost	\$455,488
Other Project Costs				
			Construction Oversight @ 12%	\$54,659
			Design Engineering @ 15%	\$68,323
Right-of-Way Acquisition	1.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost \$25,000.00
		Utility Impact Percentage	5%	Utility Cost \$22,774
Note: Value rounded up nearest \$50,000				Estimated Project Total Cost \$650,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Admiral St (Multimodal Improvements)
Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
CLASS 1 EXCAVATION		95	CY	\$30.00	\$2,850
CONCRETE CURB		517	LF	\$50.00	\$25,850
CEMENT CONCRETE SIDEWALK		284	SY	\$130.00	\$36,920
MILL AND OVERLAY		498	SY	\$25.00	\$12,450
FULL DEPTH PAVEMENT		180	SY	\$150.00	\$27,000
4" WHITE PAVEMENT MARKINGS		5334	LF	\$0.50	\$2,667
4" YELLOW PAVEMENT MARKINGS		5028	LF	\$0.50	\$2,514
24" WHITE PAVEMENT MARKINGS		320	LF	\$20.00	\$6,400
WHITE THERMOPLASTIC PAVEMENT LEGEND "BUS"		2	EA	\$300.00	\$600
WHITE THERMOPLASTIC PAVEMENT LEGEND "ONLY"		2	EA	\$300.00	\$600
Construction Item Sub-Total					\$117,851
Allowances					
				Percentage	Cost
Erosion & Sediment Control				5%	\$5,893
Drainage & Stormwater management				15%	\$17,678
Maintenance & Protection of Traffic				7%	\$8,250
Mobilization				5%	\$5,893
Incidental Construction Items				2%	\$2,357
Signing				1%	\$1,179
Construction Allowances Item Sub-Total					\$41,248
Construction & Allowance Items Total					\$159,099
- Total Escalation Through 2023					\$9,546
Construction Subtotal					\$168,645
Contingency @ 30%					\$50,593
Total Construction Cost					\$219,238
Other Project Costs					
Construction Oversight @ 15%					\$32,886
Design Engineering @ 15%					\$32,886
Right-of-Way Acquisition	0.10 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$2,500.00
Utility Impact Percentage 7%					Utility Cost \$15,347
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost \$350,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



Mill St/Kennedy Blvd Alt 1A (Road Diet)
 Preliminary Construction Cost Estimate

Item Description	Quantity	Unit	Unit Cost	Item Cost	
Major Construction Item Quantities					
CLASS 1 EXCAVATION	441	CY	\$30.00	\$13,230	
TOPSOIL FURNISHED AND PLACED	42	CY	\$75.00	\$3,150	
CONCRETE CURB	1623	LF	\$50.00	\$81,150	
CEMENT CONCRETE SIDEWALK	1195	SY	\$130.00	\$155,350	
MILL AND OVERLAY	12957	SY	\$25.00	\$323,925	
FULL DEPTH PAVEMENT	489	SY	\$150.00	\$73,350	
TRAFFIC SIGNAL HEAD	2	EA	\$1,500.00	\$3,000	
MISCELLANEOUS TRAFFIC SIGNAL UPGRADES	1	LS	\$50,000.00	\$50,000	
4" WHITE PAVEMENT MARKINGS	12531	LF	\$0.50	\$6,266	
4" YELLOW PAVEMENT MARKINGS	10254	LF	\$0.50	\$5,127	
24" WHITE PAVEMENT MARKINGS	1380	LF	\$20.00	\$27,600	
24" YELLOW PAVEMENT MARKINGS	372	LF	\$20.00	\$7,440	
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	16	EA	\$250.00	\$4,000	
WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW	4	EA	\$250.00	\$1,000	
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW	4	EA	\$250.00	\$1,000	
Construction Item Sub-Total				\$755,588	
Allowances					
			Percentage	Cost	
			Erosion & Sediment Control	2%	\$15,112
			Drainage & Stormwater management	10%	\$75,559
			Maintenance & Protection of Traffic	5%	\$37,779
			Mobilization	5%	\$37,779
			Incidental Construction Items	2%	\$15,112
			Signing	3%	\$22,668
			Construction Allowances Item Sub-Total		\$204,009
			Construction & Allowance Items Total		\$959,596
			- Total Escalation Through 2023		\$57,576
			Construction Subtotal		\$1,017,172
			Contingency @ 30%		\$305,152
			Total Construction Cost		\$1,322,323
Other Project Costs					
			Construction Oversight @ 12%		\$158,679
			Design Engineering @ 15%		\$198,349
Right-of-Way Acquisition	0.20 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$5,000.00
		Utility Impact Percentage	7%	Utility Cost	\$92,563
Note: Value rounded up nearest \$50,000				Estimated Project Total Cost	\$1,800,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



Mill St/Kennedy Blvd Alt 1B (Road Diet)
 Preliminary Construction Cost Estimate

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
CLASS 1 EXCAVATION		2267	CY	\$30.00	\$68,010
TOPSOIL FURNISHED AND PLACED		114	CY	\$75.00	\$8,550
CONCRETE CURB		6120	LF	\$50.00	\$306,000
CEMENT CONCRETE SIDEWALK		6800	SY	\$130.00	\$884,000
MILL AND OVERLAY		23460	SY	\$25.00	\$586,500
FULL DEPTH PAVEMENT		1360	SY	\$150.00	\$204,000
MISCELLANEOUS TRAFFIC SIGNAL UPGRADES		1	LS	\$75,000.00	\$75,000
4" WHITE PAVEMENT MARKINGS		24480	LF	\$0.50	\$12,240
4" YELLOW PAVEMENT MARKINGS		32640	LF	\$0.50	\$16,320
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW		40	EA	\$250.00	\$10,000
Construction Item Sub-Total					\$2,170,620
Allowances					
				Percentage	Cost
Erosion & Sediment Control				2%	\$43,412
Drainage & Stormwater management				10%	\$217,062
Maintenance & Protection of Traffic				2%	\$43,412
Mobilization				5%	\$108,531
Incidental Construction Items				2%	\$43,412
Signing				1%	\$21,706
Construction Allowances Item Sub-Total					\$477,536
Construction & Allowance Items Total					\$2,648,156
- Total Escalation Through 2023					\$158,889
Construction Subtotal					\$2,807,046
Contingency @ 30%					\$842,114
Total Construction Cost					\$3,649,160
Other Project Costs					
				Construction Oversight @ 12%	\$437,899
				Design Engineering @ 15%	\$547,374
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00
Utility Impact Percentage				5%	Utility Cost
					\$182,458
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost
					\$4,850,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance Item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Mill St/Kennedy Blvd - Alt 2 (Additional Turn Lanes)
Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
CLASS 1 EXCAVATION	339	CY	\$30.00	\$10,170
TOPSOIL FURNISHED AND PLACED	36	CY	\$75.00	\$2,700
CONCRETE CURB	1638	LF	\$50.00	\$81,900
CEMENT CONCRETE SIDEWALK	930	SY	\$130.00	\$120,900
MILL AND OVERLAY	13972	SY	\$25.00	\$349,300
FULL DEPTH PAVEMENT	1225	SY	\$150.00	\$183,750
TRAFFIC SIGNAL HEAD	4	EA	\$1,500.00	\$6,000
4" WHITE PAVEMENT MARKINGS	14504	LF	\$0.50	\$7,252
4" YELLOW PAVEMENT MARKINGS	13324	LF	\$0.50	\$6,662
24" WHITE PAVEMENT MARKINGS	1330	LF	\$20.00	\$26,600
24" YELLOW PAVEMENT MARKINGS	874	LF	\$20.00	\$17,480
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	4	EA	\$250.00	\$1,000
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW	4	EA	\$250.00	\$1,000
WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW	6	EA	\$250.00	\$1,500
Construction Item Sub-Total				\$816,214
Allowances				
			Percentage	Cost
	Erosion & Sediment Control		5%	\$40,811
	Drainage & Stormwater management		10%	\$81,621
	Maintenance & Protection of Traffic		5%	\$40,811
	Mobilization		5%	\$40,811
	Incidental Construction Items		2%	\$16,324
	Signing		3%	\$24,486
	Construction Allowances Item Sub-Total			\$244,864
	Construction & Allowance Items Total			\$1,061,078
	- Total Escalation Through 2023			\$63,665
	Construction Subtotal			\$1,124,743
	Contingency @ 30%			\$337,423
	Total Construction Cost			\$1,462,166
Other Project Costs				
	Construction Oversight @ 12%			\$175,460
	Design Engineering @ 15%			\$219,325
Right-of-Way Acquisition	0.30 ac	ROW cost/acre	\$25,000	Right-of-Way Cost \$7,500.00
Utility Impact Percentage			10%	Utility Cost \$146,217
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost	\$2,050,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



20th St (Clear Vegetation, Install Chevrons)
 Preliminary Construction Cost Estimate

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
CLEARING AND GRUBBING		1	LS	\$20,000.00	\$20,000
CLASS 1 EXCAVATION		1278	CY	\$30.00	\$38,340
TOPSOIL FURNISHED AND PLACED		135	CY	\$75.00	\$10,125
6" WHITE PAVEMENT MARKINGS		1804	LF	\$0.75	\$1,353
4" YELLOW PAVEMENT MARKINGS		3608	LF	\$0.50	\$1,804
FLASHING CHEVRON SIGN		9	EA	\$3,000.00	\$27,000
Construction Item Sub-Total					\$98,622
Allowances					
				Percentage	Cost
Erosion & Sediment Control				5%	\$4,931
Drainage & Stormwater management				5%	\$4,931
Maintenance & Protection of Traffic				5%	\$4,931
Mobilization				5%	\$4,931
Incidental Construction Items				2%	\$1,972
Signing				3%	\$2,959
Construction Allowances Item Sub-Total					\$24,656
Construction & Allowance Items Total					\$123,278
- Total Escalation Through 2023					\$7,397
Construction Subtotal					\$130,674
Contingency @ 30%					\$39,202
Total Construction Cost					\$169,876
Other Project Costs					
Construction Oversight @ 15%					\$25,481
Design Engineering @ 15%					\$25,481
Right-of-Way Acquisition	0.30 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$7,500.00
Utility Impact Percentage 5%					Utility Cost \$8,494
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost \$250,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Hopewell Twp School & Shopping Center Multimodal Improvements
Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
CLASS 1 EXCAVATION		1788	CY	\$30.00	\$53,640
CEMENT CONCRETE SIDEWALK		5364	SY	\$130.00	\$697,320
24" WHITE PAVEMENT MARKINGS		640	LF	\$20.00	\$12,800
WHITE THERMOPLASTIC PAVEMENT LEGEND SHARED LANE MARKING		225	EA	\$450.00	\$101,250
Construction Item Sub-Total					\$865,010
Allowances					
				Percentage	Cost
Erosion & Sediment Control				2%	\$17,300
Drainage & Stormwater management				5%	\$43,251
Maintenance & Protection of Traffic				5%	\$43,251
Mobilization				5%	\$43,251
Incidental Construction Items				2%	\$17,300
Signing				3%	\$25,950
Construction Allowances Item Sub-Total					\$190,302
Construction & Allowance Items Total					\$1,055,312
- Total Escalation Through 2023					\$63,319
Construction Subtotal					\$1,118,631
Contingency @ 30%					\$335,589
Total Construction Cost					\$1,454,220
Other Project Costs					
				Construction Oversight @ 12%	\$174,506
				Design Engineering @ 15%	\$218,133
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00
Utility Impact Percentage				5%	Utility Cost
					\$72,711
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost
					\$1,950,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Hopewell Shopping Center (Signal at Cherry, Internal Improvements and Streetscape)
Preliminary Construction Cost Estimate**

	Item Description	Quantity	Unit	Unit Cost	Item Cost	
Major Construction Item Quantities						
	CLASS 1 EXCAVATION	687	CY	\$30.00	\$20,610	
	TOPSOIL FURNISHED AND PLACED	307	CY	\$75.00	\$23,025	
	LANDSCAPED AREA	1838	SY	\$25.00	\$45,950	
	TRUCK APRON	177	SY	\$125.00	\$22,125	
	MOUNTABLE CURB	141	LF	\$50.00	\$7,050	
	CONCRETE CURB	1075	LF	\$50.00	\$53,750	
	PLAIN CEMENT CONCRETE	36	SY	\$110.00	\$3,960	
	CEMENT CONCRETE SIDEWALK	528	SY	\$130.00	\$68,640	
	MILL AND OVERLAY	43387	SY	\$25.00	\$1,084,675	
	FULL DEPTH PAVEMENT	3694	SY	\$150.00	\$554,100	
	4" WHITE PAVEMENT MARKINGS	10832	LF	\$0.50	\$5,416	
	4" YELLOW PAVEMENT MARKINGS	10488	LF	\$0.50	\$5,244	
	24" WHITE PAVEMENT MARKINGS	5276	LF	\$20.00	\$105,520	
	WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	2	EA	\$250.00	\$500	
	WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW	1	EA	\$250.00	\$250	
	TRAFFIC SIGNAL	1	EA	\$250,000.00	\$250,000	
Construction Item Sub-Total					\$2,250,815	
Allowances						
				Percentage	Cost	
	Erosion & Sediment Control			5%	\$112,541	
	Drainage & Stormwater management			10%	\$225,082	
	Maintenance & Protection of Traffic			5%	\$112,541	
	Mobilization			5%	\$112,541	
	Incidental Construction Items			2%	\$45,016	
	Signing			3%	\$67,524	
	Construction Allowances Item Sub-Total				\$675,245	
	Construction & Allowance Items Total				\$2,926,060	
	- Total Escalation Through 2023				\$175,564	
	Construction Subtotal				\$3,101,623	
	Contingency @ 30%				\$930,487	
	Total Construction Cost				\$4,032,110	
Other Project Costs						
	Construction Oversight @ 12%				\$483,853	
	Design Engineering @ 15%				\$604,816	
Right-of-Way Acquisition	0.60 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$15,000.00	
Utility Impact Percentage				5%	Utility Cost	\$201,605
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost	\$5,350,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Tee Line Drive (Turn Lane)
Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
MILL AND OVERLAY		795	SY	\$25.00	\$19,875
FULL DEPTH PAVEMENT		384	SY	\$150.00	\$57,600
4" WHITE PAVEMENT MARKINGS		1274	LF	\$0.50	\$637
4" YELLOW PAVEMENT MARKINGS		1312	LF	\$0.50	\$656
24" WHITE PAVEMENT MARKINGS		20	LF	\$20.00	\$400
24" YELLOW PAVEMENT MARKINGS		72	LF	\$20.00	\$1,440
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW		1	EA	\$250.00	\$250
Construction Item Sub-Total					\$80,858
Allowances					
				Percentage	Cost
Erosion & Sediment Control				5%	\$4,043
Drainage & Stormwater management				15%	\$12,129
Maintenance & Protection of Traffic				7%	\$5,660
Mobilization				5%	\$4,043
Incidental Construction Items				2%	\$1,617
Signing				3%	\$2,426
Construction Allowances Item Sub-Total					\$29,917
Construction & Allowance Items Total					\$110,775
- Total Escalation Through 2023					\$6,647
Construction Subtotal					\$117,422
Contingency @ 30%					\$35,227
Total Construction Cost					\$152,649
Other Project Costs					
				Construction Oversight @ 15%	\$22,897
				Design Engineering @ 15%	\$22,897
Right-of-Way Acquisition	0.10 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$2,500.00
Utility Impact Percentage				5%	Utility Cost
					\$7,632
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost
					\$250,000

Note: Value rounded up nearest \$50,000

Estimated Project Total Cost \$250,000

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

**Five Points Area Advance Warning Improvements and Multimodal Improvements
Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
6" WHITE PAVEMENT MARKINGS		9370	LF	\$0.75	\$7,028
4" YELLOW PAVEMENT MARKINGS		9372	LF	\$0.50	\$4,686
WHITE THERMOPLASTIC PAVEMENT LEGEND, SLOW CURVE ARROW LEFT		2	EA	\$1,100.00	\$2,200
WHITE THERMOPLASTIC PAVEMENT LEGEND, SLOW CURVE ARROW RIGHT		2	EA	\$1,100.00	\$2,200
WHITE THERMOPLASTIC PAVEMENT LEGEND SHARED LANE MARKING		193	EA	\$450.00	\$86,850
Construction Item Sub-Total					\$102,964
Allowances					
				Percentage	Cost
Erosion & Sediment Control				0%	\$0
Drainage & Stormwater management				0%	\$0
Maintenance & Protection of Traffic				5%	\$5,148
Mobilization				5%	\$5,148
Incidental Construction Items				2%	\$2,059
Signing				5%	\$5,148
Construction Allowances Item Sub-Total					\$17,504
Construction & Allowance Items Total					\$120,467
- Total Escalation Through 2023					\$7,228
Construction Subtotal					\$127,695
Contingency @ 30%					\$38,309
Total Construction Cost					\$166,004
Other Project Costs					
Construction Oversight @ 15%					\$24,901
Design Engineering @ 15%					\$24,901
Right-of-Way Acquisition	0.00 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$0.00
Utility Impact Percentage					0%
Utility Cost					\$0
Note: Value rounded up nearest \$50,000					Estimated Project Total Cost
					\$250,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



**Bocktown Road (Sight Distance)
 Preliminary Construction Cost Estimate**

Item Description		Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities					
CLEARING AND GRUBBING		1	LS	\$10,000.00	\$10,000
CLASS 1 EXCAVATION		643	CY	\$30.00	\$19,290
TOPSOIL FURNISHED AND PLACED		85	CY	\$75.00	\$6,375
Construction Item Sub-Total					\$35,665
Allowances					
				Percentage	Cost
Erosion & Sediment Control				5%	\$1,783
Drainage & Stormwater management				5%	\$1,783
Maintenance & Protection of Traffic				5%	\$1,783
Mobilization				5%	\$1,783
Incidental Construction Items				2%	\$713
Signing				1%	\$357
Construction Allowances Item Sub-Total					\$8,203
Construction & Allowance Items Total					\$43,868
- Total Escalation Through 2023					\$2,632
Construction Subtotal					\$46,500
Contingency @ 25%					\$11,625
Total Construction Cost					\$58,125
Other Project Costs					
Construction Oversight @ 12%					\$6,975
Design Engineering @ 15%					\$8,719
Right-of-Way Acquisition	0.20 ac	ROW cost/acre	\$25,000	Right-of-Way Cost	\$5,000.00
Utility Impact Percentage					10%
Utility Cost					\$5,813
Estimated Project Total Cost					\$100,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



**Five Points Alt 1 (Route 151 Realignment)
 Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
CLASS 1 EXCAVATION	22850	CY	\$30.00	\$685,500
TOPSOIL FURNISHED AND PLACED	150	CY	\$75.00	\$11,250
CONCRETE CURB	394	LF	\$50.00	\$19,700
PLAIN CEMENT CONCRETE PAVEMENT	65	SY	\$110.00	\$7,150
MILL AND OVERLAY	9047	SY	\$25.00	\$226,175
FULL DEPTH PAVEMENT	9705	SY	\$150.00	\$1,455,750
TRAFFIC SIGNAL	1	EA	\$250,000.00	\$250,000
4" WHITE PAVEMENT MARKINGS	15593	LF	\$0.50	\$7,797
4" YELLOW PAVEMENT MARKINGS	12614	LF	\$0.50	\$6,307
24" WHITE PAVEMENT MARKINGS	1194	LF	\$20.00	\$23,880
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	3	EA	\$250.00	\$750
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW	3	EA	\$250.00	\$750
WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW	2	EA	\$250.00	\$500
WHITE THERMOPLASTIC PAVEMENT LEGEND THRU-RIGHT ARROW	1	EA	\$400.00	\$400
WHITE THERMOPLASTIC PAVEMENT LEGEND THRU-LEFT ARROW	1	EA	\$400.00	\$400
Construction Item Sub-Total				\$2,696,309
Allowances				
			Percentage	Cost
		Erosion & Sediment Control	7%	\$188,742
		Drainage & Stormwater management	15%	\$404,446
		Maintenance & Protection of Traffic	7%	\$188,742
		Mobilization	5%	\$134,815
		Incidental Construction Items	2%	\$53,926
		Signing	3%	\$80,889
		Construction Allowances Item Sub-Total		\$1,051,560
		Construction & Allowance Items Total		\$3,747,869
		- Total Escalation Through 2023		\$224,872
		Construction Subtotal		\$3,972,741
		Contingency @ 40%		\$1,589,096
		Total Construction Cost		\$5,561,837
Other Project Costs				
		Construction Oversight @ 12%		\$667,420
		Design Engineering @ 25%		\$1,390,459
Right-of-Way Acquisition	<i>5.00 ac</i>	ROW cost/acre		\$25,000
Commercial Acquisition	<i>3 Each</i>	ROW cost/each		\$500,000
Residential Acquisition	<i>2 Each</i>	ROW cost/each		\$125,000
		Right-of-Way Cost		\$1,875,000.00
		Utility Impact Percentage	10%	Utility Cost
				\$556,184
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost	
				\$10,100,000

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities



**Five Points Alt 2 (Quadrant Roadway with Overpass)
 Preliminary Construction Cost Estimate**

Item Description	Quantity	Unit	Unit Cost	Item Cost
Major Construction Item Quantities				
CLASS 1 EXCAVATION	12500	CY	\$30.00	\$375,000
TOPSOIL FURNISHED AND PLACED	212	CY	\$75.00	\$15,900
CONCRETE CURB	394	LF	\$50.00	\$19,700
PLAIN CEMENT CONCRETE PAVEMENT	65	SY	\$110.00	\$7,150
MILL AND OVERLAY	9158	SY	\$25.00	\$228,950
FULL DEPTH PAVEMENT	8443	SY	\$150.00	\$1,266,450
TRAFFIC SIGNAL	2	EA	\$250,000.00	\$500,000
GUIDE RAIL (PER PROPOSED RUN)	4	EA	\$7,500.00	\$30,000
4" WHITE PAVEMENT MARKINGS	15473	LF	\$0.50	\$7,737
4" YELLOW PAVEMENT MARKINGS	13820	LF	\$0.50	\$6,910
24" WHITE PAVEMENT MARKINGS	320	LF	\$20.00	\$6,400
24" YELLOW PAVEMENT MARKINGS	1714	LF	\$20.00	\$34,280
WHITE THERMOPLASTIC PAVEMENT LEGEND LEFT ARROW	5	EA	\$250.00	\$1,250
WHITE THERMOPLASTIC PAVEMENT LEGEND RIGHT ARROW	5	EA	\$250.00	\$1,250
WHITE THERMOPLASTIC PAVEMENT LEGEND STRAIGHT ARROW	4	EA	\$250.00	\$1,000
RETAINING WALLS	6655	SF	\$225.00	\$1,497,375
STRUCTURE (INCLUDING SHORING)	1	LS	\$1,000,000.00	\$1,000,000
Construction Item Sub-Total				\$4,999,352
Allowances				
			Percentage	Cost
		Erosion & Sediment Control	5%	\$249,968
		Drainage & Stormwater management	15%	\$749,903
		Maintenance & Protection of Traffic	7%	\$349,955
		Mobilization	5%	\$249,968
		Incidental Construction Items	2%	\$99,987
		Signing	3%	\$149,981
		Construction Allowances Item Sub-Total		\$1,849,760
		Construction & Allowance Items Total		\$6,849,112
		- Total Escalation Through 2023		\$410,947
		Construction Subtotal		\$7,260,058
		Contingency @ 30%		\$2,178,017
		Total Construction Cost		\$9,438,076
Other Project Costs				
		Construction Oversight @ 10%		\$943,808
		Design Engineering @ 25%		\$2,359,519
Right-of-Way Acquisition	<i>5.00 ac</i>	ROW cost/acre	\$25,000	
Commercial Acquisition	<i>3 Each</i>	ROW cost/each	\$500,000	
Residential Acquisition	<i>0 Each</i>	ROW cost/each	\$125,000	
Right-of-Way Cost				\$1,625,000.00
Utility Impact Percentage	<i>10%</i>	Utility Cost		\$943,808
Note: Value rounded up nearest \$50,000			Estimated Project Total Cost	
			\$15,350,000	

Escalation		
Current year	Rate	Escalation duration
2021	3% / year	2 years

Notes:

- Construction Item Cost were derived from PennDOT's ECMS Items Price History using an average cost within a similar quantity range
- Contingency Ranges vary from 10% for minor, Non-Complex projects to 40% for Major, Complex Projects per PennDOT's Publication 352 Cost Estimating Guide
- Allowance item costs are a percentage of the known major construction Items cost. A percentage is assigned to the pertinent items that are expected to be part of the project but can not yet be quantified. The percentage is based on the expected project size and the complexity level based on judgment from previous projects.
- Incidental Construction = Field office, Construction Surveying, CPM Schedule, Equipment Package (2% of construction cost)
- Utility Impact Percentage is a percentage of the total construction cost to account for utility impacts. This value is based on the estimated impact to the utilities

