I-95/I-64 Overlap Study

Planning Level Cost Estimates for Long-Term Concepts

Long-Term Concept	Concept Description	Planning Level Cost Estimate Range (Rounded to the Nearest $100,000)		
		Average	Minimum	Maxmimum
LONG 1	Northbound I-95 Two-Lane On-Ramp and Dumbarton Road Interchange On- & Off-Ramps	$ 67,300,000	$ 57,300,000	$ 77,400,000
LONG 2	I-95/I-64 Boulevard Interchange (Exit 78) – Braided Ramps	$ 177,100,000	$ 150,600,000	$ 203,700,000
LONG 11	I-95/I-64 Belvidere Street Interchange (Exit 76A) – On- & Off-Ramps	$ 56,300,000	$ 47,900,000	$ 64,800,000
LONG 12	I-95 & Broad Street Interchange (Exits 74 & 75) – Long-Range Vision	$ 524,000,000	$ 445,400,000	$ 602,600,000
	Grand Total =	**$ 824,700,000**	**$ 701,200,000**	**$ 948,500,000**

Assumptions:

- Cost estimates are for an assumed construction year of 2018
- Preliminary Engineering = 14% of major construction items (roadway, drainage, and bridge costs)
- Right of Way (ROW) = 125% of major construction items (roadway, drainage, and bridge costs)
- Construction costs includes Construction Engineering & Inspection (CEI) = 12.5% of major construction items (roadway, drainage, and bridge costs)
- Contingency = 20% of (PE + ROW + Construction)

I-95/I-64 Overlap Study
Planning Level Cost Estimates for Long-Term Concepts

			2013 Dollars					2018 Dollars			
Concept #	Cross Roadway Name		Preliminary Engineering Cost Estimate	R/W & Utility Relocation Cost Estimate	Construction Cost Estimate	Total Cost Estimate		Preliminary Engineering Cost Estimate	R/W & Utility Relocation Cost Estimate	Construction Cost Estimate	Total Cost Estimate
Long 1	Dumbarton Avenue		$ 2,713,200	$ 24,225,000	$ 32,803,500	**$ 59,741,700**		$ 3,054,792	$ 27,274,925	$ 36,933,458	**$ 67,263,174**
Long 2	Boulevard		$ 6,732,439	$ 72,133,275	$ 78,384,381	**$ 157,250,095**		$ 7,580,052	$ 81,214,848	$ 88,252,968	**$ 177,047,868**
Long 11	Belvidere		$ 2,346,155	$ 20,947,813	$ 26,634,244	**$ 49,928,211**		$ 2,641,536	$ 23,585,140	$ 29,987,493	**$ 56,214,168**
n assumed c	Broad Street		$ 21,691,768	$ 193,676,500	$ 250,032,390	**$ 465,400,658**		$ 24,422,760	$ 218,060,353	$ 281,511,445	**$ 523,994,557**
	Total		**$ 33,483,562**	**$ 310,982,588**	**$ 387,854,515**	**$ 732,320,665**		**$ 37,699,139**	**$ 350,135,266**	**$ 436,685,362**	**$ 824,519,768**
							Inflation Rate	**2.40%**			

I-95/I-64 Overlap Study

Planning Level Cost Estimate for Long-Term Concepts

Concept #: Long 1

Exit #: N/A

Description: NB I-95 Two-Lane On-Ramp and Dumbarton Road Interchange On- & Off-Ramps

Planning Level Cost Estimate

Description	Quantity	Unit	Unit Cost ($)	Cost ($)
Roadway Improvements				
- Cost estimates are for an assumed construction year of 2018	1.5	MILE	$6,420,000	$9,630,000
Mainline Widening (2 Lane)		MILE	$8,635,000	$0
CD Road (2 Lane)		MILE	$7,080,000	$0
CD Road (3 Lane)		MILE	$9,000,000	$0
Directional Ramp (1 Lane)	0.5	MILE	$6,000,000	$3,000,000
Roundabout (1 Lane)		EA	$1,250,000	$0
Roundabout (2 Lanes)		EA	$2,500,000	$0
Urban 2 Lanes Undivided (Reconstructed)		MILE	$5,400,000	$0
Urban 3 Lanes Undivided (Reconstructed)		MILE	$7,700,000	$0
Urban 4 Lanes Undivided (Reconstructed)		MILE	$13,500,000	$0
Urban 4 Lanes Divided (Reconstructed)		MILE	$13,500,000	$0
Drainage and Bridge				
SWM Basins	4	EA	$250,000	$1,000,000
Box Culverts	1	LS	$250,000	$250,000
Channel Relocation	600	LF	$250	$150,000
Bridges	21400	SF	$250	$5,350,000
			Sub-Total	**$19,380,000**
Right-of Way and Utility Relocation				
R/W & Utility Relocation	1	LS	$24,225,000	$24,225,000
Environmental Permitting & Mitigation				
Environmental (High, Med, Low)	1	L.S.	$400,000	$400,000
Miscellaneous				
Right Turn Lane on Dumbarton Avenue	1	L.S.	$1,100,000	$1,100,000
Traffic Signals	2	L.S.	$200,000	$400,000
M3		L.S.		$0
			Sub-Total	**$45,505,000**
Planning / Design **14%**				$2,713,200
CEI **12.5%**				$2,422,500
Contigency **20%**				$9,101,000
			Total	**$59,741,700**

Notes:

I-95/I-64 Overlap Study

Planning Level Cost Estimate for Long-Term Concepts

Concept #: Long 2

Exit #: 78

Description: I-95/I-64 Boulevard Interchange - Braided Ramps

Planning Level Cost Estimate

Description	Quantity	Unit	Unit Cost ($)	Cost ($)
Roadway Improvements				
- Cost estimates are for an assumed construction year of 2018	0.53	MILE	$6,420,000	$3,402,600
Mainline Widening (2 Lane)	0.45	MILE	$8,635,000	$3,885,750
CD Road (2 Lane)	0.50	MILE	$7,080,000	$3,540,000
CD Road (3 Lane)	0.31	MILE	$9,000,000	$2,790,000
Directional Ramp (1 Lane)	1.00	MILE	$6,000,000	$6,000,000
Roundabout (1 Lane)		EA	$1,250,000	$0
Roundabout (2 Lanes)		EA	$2,500,000	$0
Urban 2 Lanes Undivided (Reconstructed)	0.50	MILE	$5,400,000	$2,700,000
Urban 3 Lanes Undivided (Reconstructed)		MILE	$7,700,000	$0
Urban 4 Lanes Undivided (Reconstructed)	0.1	MILE	$13,500,000	$1,350,000
Urban 4 Lanes Divided (Reconstructed)		MILE	$13,500,000	$0
Drainage and Bridge				
SWM Basins	1	EA	$500,000	$500,000
Box Culverts		LF	$100	$0
Bridges	95682	SF	$250	$23,920,500
			Sub-Total	**$48,088,850**
Right-of Way and Utility Relocation				
R/W & Utility Relocation	1	LS	$72,133,275	$72,133,275
Environmental Permitting & Mitigation				
Environmental (High, Med, Low)		L.S.		$0
Miscellaneous				
Traffic Signal Rebuild	1	L.S.	$200,000	$200,000
M2		L.S.		$0
M3		L.S.		$0
			Sub-Total	**$120,422,125**
Planning / Design **14%**				$6,732,439
CEI **12.5%**				$6,011,106
Contigency **20%**				$24,084,425
			Total	**$157,250,095**

Notes:

I-95/I-64 Overlap Study

Planning Level Cost Estimate for Long-Term Concepts

Concept #: Long 11

Exit #: 76A

Description: I-95/I-64 Belvidere Interchange On- and Off-Ramps

Planning Level Cost Estimate

Description	Quantity	Unit	Unit Cost ($)	Cost ($)
Roadway Improvements				
- Cost estimates are for an assumed construction year of 2018	0.50	MILE	$6,420,000	$3,210,000
Mainline Widening (2 Lane)		MILE	$8,635,000	$0
CD Road (2 Lane)		MILE	$7,080,000	$0
CD Road (3 Lane)		MILE	$9,000,000	$0
Directional Ramp (1 Lane)	0.56	MILE	$6,000,000	$3,360,000
Roundabout (1 Lane)		EA	$1,250,000	$0
Roundabout (2 Lanes)		EA	$2,500,000	$0
Urban 2 Lanes Undivided (Reconstructed)		MILE	$5,400,000	$0
Urban 3 Lanes Undivided (Reconstructed)		MILE	$7,700,000	$0
Urban 4 Lanes Undivided (Reconstructed)		MILE	$13,500,000	$0
Urban 4 Lanes Divided (Reconstructed)		MILE	$13,500,000	$0
Drainage and Bridge				
SWM Basins	1	EA	$500,000	$500,000
Box Culverts		LF	$100	$0
Bridges	38753	SF	$250	$9,688,250
			Sub-Total	**$16,758,250**
Right-of Way and Utility Relocation				
R/W & Utility Relocation	1	LS	$20,947,813	$20,947,813
Environmental Permitting & Mitigation				
Environmental (High, Med, Low)		L.S.		$0
Miscellaneous				
Traffic Signal Rebuild	1	L.S.	$200,000	$200,000
M2		L.S.		$0
M3		L.S.		$0
			Sub-Total	**$37,906,063**
Planning / Design **14%**				$2,346,155
CEI **12.5%**				$2,094,781
Contigency **20%**				$7,581,213
			Total	**$49,928,211**

Notes:

I-95/I-64 Overlap Study

Planning Level Cost Estimate for Long-Term Concepts

Concept #: Long 12

Exit #: 74 & 75

Description: I-95 at Broad Street and I-64 Interchange - Long Range Vision

Planning Level Cost Estimate

Description	Quantity	Unit	Unit Cost ($)	Cost ($)
Roadway Improvements				
- Cost estimates are for an assumed construction year of 2018	0.63	MILE	$6,420,000	$4,044,600
Mainline Widening (2 Lane)		MILE	$8,635,000	$0
CD Road (2 Lane)	0.45	MILE	$7,080,000	$3,186,000
CD Road (3 Lane)	0.42	MILE	$9,000,000	$3,780,000
Directional Ramp (1 Lane)	0.36	MILE	$6,000,000	$2,160,000
Roundabout (2 Lanes)	2	EA	$1,250,000	$2,500,000
City Roundabout (2 Lanes)	2	EA	$2,500,000	$5,000,000
Overlay and re-stripe existing pavement	0.5	MILE	$600,000	$300,000
Urban 2 Lanes Undivided (Reconstructed)	0.6	MILE	$5,400,000	$3,240,000
Urban 3 Lanes Undivided (Reconstructed)		MILE	$7,700,000	$0
Urban 4 Lanes Undivided (Reconstructed)	0.91	MILE	$13,500,000	$12,285,000
Urban 4 Lanes Divided (Reconstructed)	0.8	MILE	$13,500,000	$10,800,000
Urban 8 Lanes Divided (Reconstructed)	0.13	MILE	$19,000,000	$2,470,000
Replace Traffic Signals	4	L.S.	$250,000	$1,000,000
Demolish Existing Roadway	80000	SF	$5	$400,000
Provide sidewalk	2.44	MILE	$240,000	$585,600
Drainage, Bridge, Walls				
SWM Basins	4	EA	$250,000	$1,000,000
Retaining Walls	64000	SF	$150	$9,600,000
Bridges	364000	SF	$250	$91,000,000
			Sub-Total	**$154,941,200**
Right-of Way and Utility Relocation				
R/W & Utility Relocation	1	LS	$193,676,500	$193,676,500
Environmental Permitting & Mitigation				
Environmental/Historic	1	L.S.	$5,000,000	$5,000,000
Miscellaneous				
			Sub-Total	**$353,617,700**
Planning/EIS/ Design **14%**				$21,691,768
CEI **12.5%**				$19,367,650
Contigency **20%**				$70,723,540
			Total	**$465,400,658**
Notes:				