



Appendix C

Cost Estimates

River Road Route Alternatives Study

Webb County-City of Laredo Regional Mobility Authority
Laredo & Webb County Area Metropolitan Planning Authority
May 2023

Methodology

River Road was assumed to have a 150' wide right-of-way for the majority of its length as illustrated in **Figure C-1**. Design criteria consistent with roadway classifications specified by the City of Laredo and Laredo-Webb County Area Metropolitan Planning Organization, detailed in **Appendix B**, constitute the basis of design. Alternatives 5 and 6 (**Figure C-2**) were advanced from the Level 1 evaluation and using the cross-section in **Figure C-1** and design criteria in **Appendix B**, were drawn in Bentley ConceptStation using in-program topography derived from the latest data available for the study area. ConceptStation allowed for a constructable roadway concept according to these factors to be developed for each alternative and provided construction material quantities as an output. Using a combination of 2023 State and local (Laredo District) Texas Department of Transportation (TxDOT) material costs, unit prices were applied to the quantities to establish costs for each project alternative alignment detailed in **Tables C-3 – C-6**.

Itemized material costs were tallied based on the quantities associated with each alternative resulting in an itemized material cost subtotal. At this level of design, there are still many unknowns that will only be made known as the design progresses. Because of this, industry-standard percentages of the itemized material subtotal were applied for design elements such as drainage, traffic control during construction, striping, signage, traffic signals, lighting, utilities, and miscellaneous items (i.e., irrigation, landscaping, etc.) to determine a base subtotal cost. Because there are still many unknown factors associated with the design, an unallocated contingency of 20% of the base subtotal cost was added to establish a construction base subtotal, to which an additional 10% of the construction base subtotal factoring for mobilization of materials, equipment, and personnel to build the roadway was added. This resulted in a total construction cost.

Over the course of the project schedule, outlined in **Figure C-3**, there will be a need for professional services for overall project management, legal fees, right-of-way, design, environmental, and construction management. These are referred to as “soft costs” (**Tables C-4 and C-6**) since they are not associated with physical materials necessary to construct the project. Many of these services will be required to advance the design, assess potential impacts to the built and natural environment, and to acquire property for the right-of-way prior to construction beginning. These services are estimated using industry-standard percentages of the total construction cost for similar project types providing a full project cost. Since the project is expected to let for procurement of construction in fiscal year 2028 according to the schedule shown in **Figure C-3**, the 2023 construction and soft costs were escalated to 2028 costs assuming a 4% annual rate of inflation.

The estimates published in this document represent the best judgement of professionals familiar with this type of construction and it cannot be guaranteed that construction bids will not ultimately vary from this opinion of probable cost. The costs assume a 4-lane divided roadway with 2 lanes in each direction and left turn lanes at intersections, including curb, a shared use path, a sidewalk, culverts, and a contained drainage system, as well as bridges, retaining walls and embankments in certain locations. Details for materials, design, and professional services will continue to be developed as the project moves forward, which can be expected to change the total project cost over time. This methodology offers a conservative estimate of cost for professional services and construction that provide project partners a basis for budgeting project funds necessary to deliver the project according to the schedule in **Figure C-3**. Summaries of costs for each alternative can be found in **Tables C-1 and C-2**.

Figure C-1: River Road Typical (150') Section

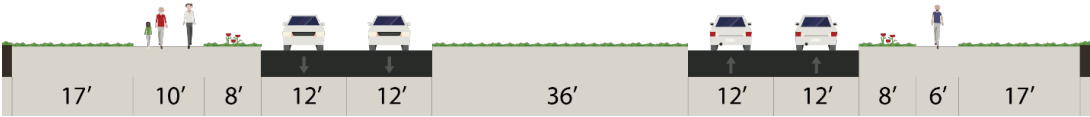


Figure C-2: River Road Alternatives 5 and 6 used in Level 2 Evaluation

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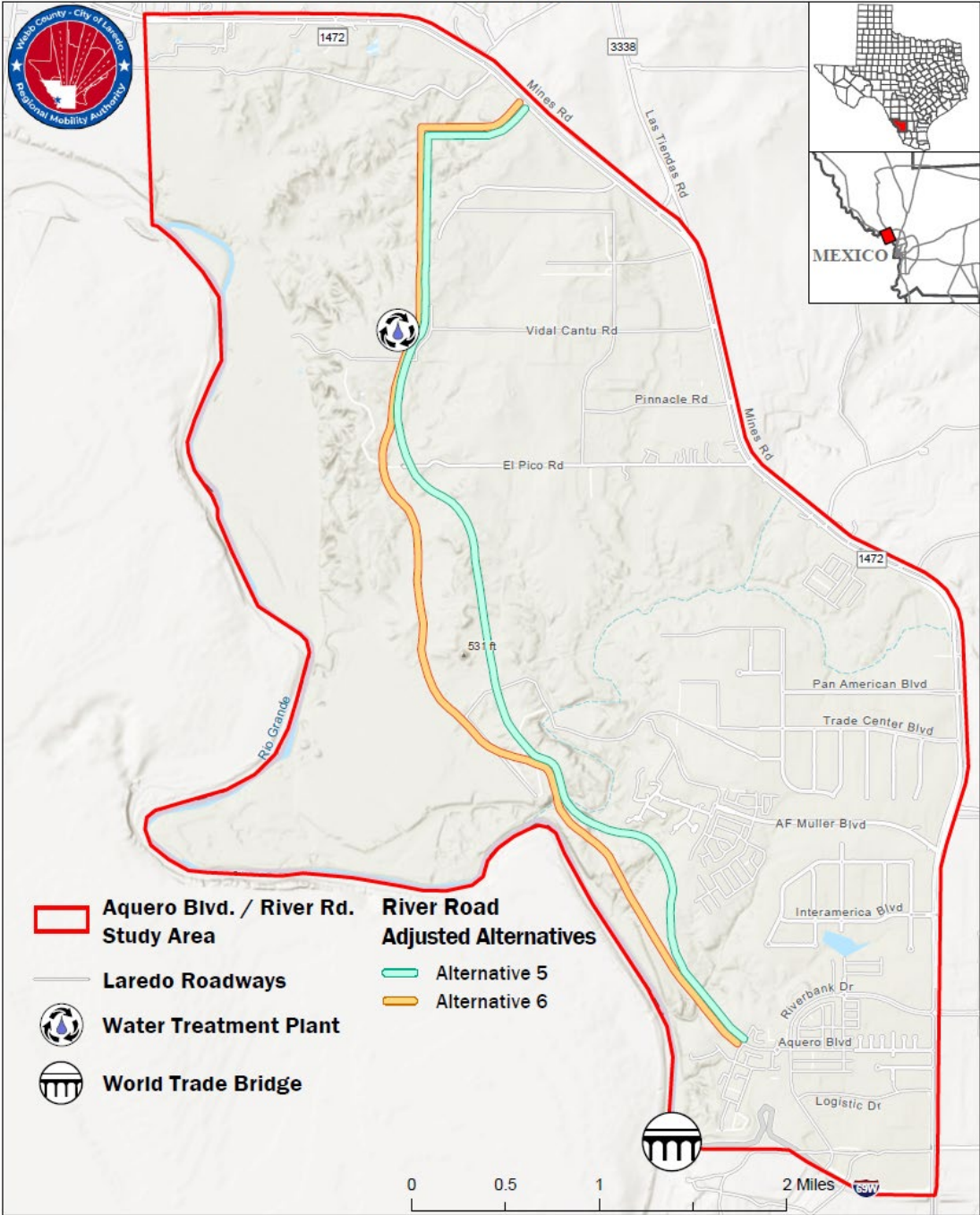


Figure C-3: River Road Project Schedule

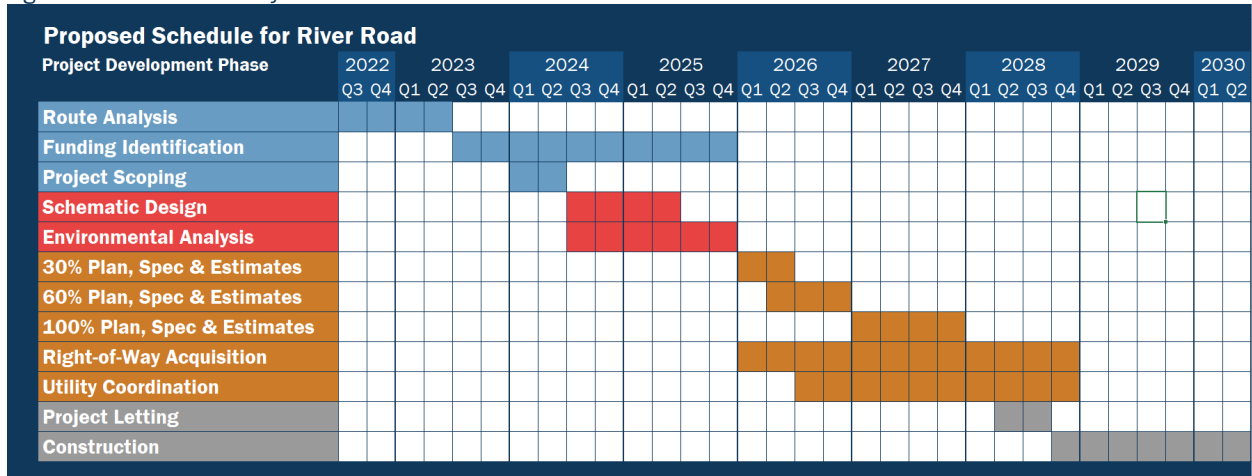


Table C-1: Alternative 5 Opinion of Probable Cost Summary

River Road (Alternative 5) Full Project Cost	
Project Component	Component Cost
Administrative, Environmental and Planning	\$944,000
Plans, Specifications and Estimates	\$7,190,000
Construction Engineering and Inspection	\$2,146,000
Right-of-Way Acquisition	\$9,604,000
Construction and Mobilization	\$91,049,000
Construction Contingency (20%)	\$16,259,000
TOTAL PROJECT COST (4/25/2023)	\$127,192,000
TOTAL PROJECT COST (4/25/2028) with 4% annual inflation	\$154,749,000

Detailed construction and soft costs can be found in Tables C-3 and C-4 respectively

Table C-2: Alternative 6 Opinion of Probable Cost Summary

River Road (Alternative 6) Full Project Cost	
Project Component	Component Cost
Administrative, Environmental and Planning	\$956,000
Plans, Specifications and Estimates	\$7,125,000
Construction Engineering and Inspection	\$2,158,000
Right-of-Way Acquisition	\$9,891,000
Construction and Mobilization	\$86,358,000
Construction Contingency (20%)	\$15,421,000
TOTAL PROJECT COST (4/25/2023)	\$121,910,000
TOTAL PROJECT COST (4/25/2028) with 4% annual inflation	\$148,322,000

Detailed construction and soft costs can be found in Tables C-5 and C-6 respectively

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Table C-3: Alternative 5 Opinion of Probable Cost (Construction)

River Road (Alternative 5) Construction Cost					
Limits From: Las Tiendas Rd @ FM 1472; Limits To: Aquero Blvd @ Bernadette Ln					
Project Length: 5.57 miles					
Items	Item Description	Unit	Unit Price	Quantity	Cost
100-6002	PREPARING RIGHT-OF-WAY ^a	STA	\$3,200.00	294	\$941,000
110-6001	EXCAVATION (ROADWAY) ^a	CY	\$49.00	188,133	\$9,219,000
132-6001	EMBANKMENT (FINAL) (ORD COMP) (TY A) ^b	CY	\$83.00	175,341	\$14,553,000
247-6041	FL BS (CMP IN PLC) (TY A GR 1-2) (FINAL POS) (22-INCH)	CY	\$120.00	101,690	\$12,203,000
310-6009	PRIME COAT (MC-30) ^b	GAL	\$8.00	33,280	\$266,000
423-6001	RETAINING WALL (MSE) ^b	SF	\$65.00	90,416	\$5,877,000
529-6008	CONC CURB & GUTTER (TY II) ^a	LF	\$44.00	61,903	\$2,724,000
3076-6041	D – GR HMA TY – D PG70 – 22 (4-INCH) ^b	TON	\$150.00	36,608	\$5,491,000
3076-6066	TACK COAT ^b	GAL	\$15.00	23,296	\$349,000
XXXX-XXXX	BRIDGE ^a	SF	\$175.00	76,374	\$13,365,000
<i>ITEMIZED MATERIAL COST SUBTOTAL</i>					\$64,988,000
Percentage Items		Unit	Percentage	Quantity	Cost
4XX	DRAINAGE	%	8.3%	--	\$5,362,000
502	BARRICADES, SIGNS AND TRAFFIC HANDLING	%	0.3%	--	\$182,000
666	PAVEMENT MARKINGS	%	0.3%	--	\$182,000
6XX	SIGNING	%	0.3%	--	\$182,000
6XX	TRAFFIC SIGNALS & LIGHTING	%	8.0%	--	\$5,199,000
XXX	UTILITIES (WATER AND SEWER)	%	5.8%	--	\$3,737,000
	MISCELLANEOUS ITEMS ¹	%	2.3%	--	\$1,462,000
<i>PERCENTAGE BASED SUBTOTAL</i>					\$16,306,000
<i>BASE SUBTOTAL</i>					\$81,294,000
	CONTINGENCY ²	%	20.0%	--	\$16,259,000
<i>CONSTRUCTION BASE TOTAL</i>					\$97,553,000
Miscellaneous Items		Unit	Unit Price	Quantity	Cost
	MOBILIZATION	%	10.0%	--	\$9,755,000
<i>MISCELLANEOUS COST SUBTOTAL</i>					\$9,755,000
TOTAL CONSTRUCTION COST (4/25/2023)					\$107,308,000
TOTAL CONSTRUCTION COST (4/25/2028) with 4% annual inflation					\$130,557,000

a – TxDOT Laredo District unit price last updated 4/25/2023
b – TxDOT Statewide unit price last updated 4/25/2023

1 – 2.3% has been added to account for miscellaneous items like SW3P, Landscape, Irrigation, Hardscape Items, and Seeding
2 – 20% contingency was also included to capture cost of construction items not accounted for due to not having detailed plans.

Table C-4: Alternative 5 Opinion of Probable Cost (Professional Services)

River Road (Alternative 5) Soft Costs					
Percentage Items		Unit	%/Cost	Quantity	Cost
<i>ADMINISTRATIVE</i>					
	GENERAL ENGINEERING CONSULTANT (GEC)	%	0.1%	--	\$118,000
	LEGAL CONSULTATION FEES	%	0.1%	--	\$118,000
<i>SCHEMATIC AND ENVIRONMENTAL</i>					
	SCHEMATIC, ENVIRONMENTAL ASSESSMENT, ETC.	%	0.55%	--	\$590,000
<i>DESIGN</i>					
	PLANS, SPECIFICATIONS AND ESTIMATES	%	6.7%	--	\$7,190,000
<i>RIGHT-OF-WAY</i>					
	RIGHT-OF-WAY ACQUISITION CONSULTANT	%	0.11%	--	\$118,000
	RIGHT-OF-WAY ACQUISITION ³	SF	\$3.00	3,201,267	\$9,604,000
<i>CONSTRUCTION SUPPORT</i>					
	CONSTRUCTION MANAGEMENT	%	1.7%	--	\$1,824,000
	MATERIALS TESTING AND ENV. COMPLIANCE	%	0.3%	--	\$322,000
TOTAL SOFT COST (4/25/2023)					\$19,884,000
TOTAL SOFT COST (4/25/2028) with 4% annual inflation					\$24,192,000

³ - Right-of-Way based on an average price per square foot of land adjacent to the project.

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Table C-5: Alternative 6 Opinion of Probable Cost (Construction)

River Road (Alternative 6) Construction Cost					
Limits From: Las Tiendas Rd @ FM 1472; Limits To: Aquero Blvd @ Bernadette Ln					
Project Length: 5.70 miles					
Items	Item Description	Unit	Unit Price	Quantity	Cost
100-6002	PREPARING RIGHT-OF-WAY ^a	STA	\$3,200.00	301	\$963,000
110-6001	EXCAVATION (ROADWAY) ^a	CY	\$49.00	180,930	\$8,866,000
132-6001	EMBANKMENT (FINAL) (ORD COMP) (TY A) ^b	CY	\$83.00	134,185	\$11,137,000
247-6041	FL BS (CMP IN PLC) (TY A GR 1-2) (FINAL POS) (22-INCH)	CY	\$120.00	104,233	\$12,508,000
310-6009	PRIME COAT (MC-30) ^b	GAL	\$8.00	34,113	\$273,000
423-6001	RETAINING WALL (MSE) ^b	SF	\$65.00	77,649	\$5,047,000
529-6008	CONC CURB & GUTTER (TY II) ^a	LF	\$44.00	63,142	\$2,778,000
3076-6041	D – GR HMA TY – D PG70 – 22 (4-INCH) ^b	TON	\$150.00	37,524	\$5,628,000
3076-6066	TACK COAT ^b	GAL	\$15.00	23,879	\$358,000
XXXX-XXXX	BRIDGE ^a	SF	\$175.00	76,541	\$13,395,000
<i>ITEMIZED MATERIAL COST SUBTOTAL</i>					\$60,953,000
Percentage Items		Unit	Percentage	Quantity	Cost
4XX	DRAINAGE	%	8.5%	--	\$5,181,000
502	BARRICADES, SIGNS AND TRAFFIC HANDLING	%	0.3%	--	\$183,000
666	PAVEMENT MARKINGS	%	0.3%	--	\$183,000
6XX	SIGNING	%	0.3%	--	\$183,000
6XX	TRAFFIC SIGNALS & LIGHTING	%	8.5%	--	\$5,181,000
XXX	UTILITIES (WATER AND SEWER)	%	6.2%	--	\$3,779,000
	MISCELLANEOUS ITEMS ¹	%	2.4%	--	\$1,463,000
<i>PERCENTAGE BASED SUBTOTAL</i>					\$16,153,000
<i>BASE SUBTOTAL</i>					\$77,106,000
	CONTINGENCY ²	%	20.0%	--	\$15,421,000
<i>CONSTRUCTION BASE TOTAL</i>					\$92,527,000
Miscellaneous Items		Unit	Unit Price	Quantity	Cost
	MOBILIZATION	%	10.0%	--	\$9,252,000
<i>MISCELLANEOUS COST SUBTOTAL</i>					\$9,252,000
TOTAL CONSTRUCTION COST (4/25/2023)					\$101,780,000
TOTAL CONSTRUCTION COST (4/25/2028) with 4% annual inflation					\$123,831,000

a – TxDOT Laredo District unit price last updated 4/25/2023
b – TxDOT Statewide unit price last updated 4/25/2023

1 – 2.4% has been added to account for miscellaneous items like SW3P, Landscape, Irrigation, Hardscape Items, and Seeding

2 – 20% contingency was also included to capture cost of construction items not accounted for due to not having detailed plans.

Table C-6: Alternative 6 Opinion of Probable Cost (Professional Services)

River Road (Alternative 6) Soft Costs					
Percentage Items		Unit	%/Cost	Quantity	Cost
<i>ADMINISTRATIVE</i>					
	GENERAL ENGINEERING CONSULTANT (GEC)	%	0.1%	--	\$122,000
	LEGAL CONSULTATION FEES	%	0.1%	--	\$122,000
<i>SCHEMATIC AND ENVIRONMENTAL</i>					
	SCHEMATIC, ENVIRONMENTAL ASSESSMENT, ETC.	%	0.58%	--	\$590,000
<i>DESIGN</i>					
	PLANS, SPECIFICATIONS AND ESTIMATES	%	67.0%	--	\$7,125,000
<i>RIGHT-OF-WAY</i>					
	RIGHT-OF-WAY ACQUISITION CONSULTANT	%	0.1%	--	\$122,000
	RIGHT-OF-WAY ACQUISITION ³	SF	\$3.00	3,296,915	\$9,891,000
<i>CONSTRUCTION SUPPORT</i>					
	CONSTRUCTION MANAGEMENT	%	1.8%	--	\$1,832,000
	MATERIALS TESTING AND ENV. COMPLIANCE	%	0.3%	--	\$326,000
TOTAL SOFT COST (4/25/2023)					\$20,130,000
TOTAL SOFT COST (4/25/2028) with 4% annual inflation					\$24,491,000

³ - Right-of-Way based on an average price per square foot of land adjacent to the project.