



CTC Fee Proposal:
Professional Services for
Railroad Quiet Zone Feasibility
Study and Establishment

Prepared for the City of Merced,
California

April 20, 2018

Project Cost and Schedule

Summary of Project Cost

A summary of the overall cost proposal for the scope of work and each scope activity is shown in the table below.

Summary of Cost Proposal

Project Activity	Activity Cost
Activity 1 - Preliminary Investigation/Risk Index & Review	\$33,689
Activity 2 - Coordination with Governing Entities/Diagnostic Meeting	\$17,969
Activity 3 - Quiet Zone Calculations & Analysis	\$67,363
Activity 4 - Notice of Intent (NOI)	\$8,058
Activity 4a - Public Authority Application (PAA)	\$11,750
Activity 5 - Notice of Establishment (NOE)	\$21,513
TOTAL COST:	\$160,342

The employees at CTC are salary and the summary of each employee classification and estimated hours to meet project objectives are shown in the table below:

Summary of Employee Classifications and Rate Schedule:

Resource Name	Hourly Billing Rate	Estimated Hours by Activity					
		1	2	3	4	4a	5
Sr. Project Manager	\$276.21	4	2	13	2	2	2
Sr Traffic Engineer	\$182.28	0	0	6	0	0	0
Project Manager	\$151.92	52	42	155	18	29	64
Engineering Tech	\$102.54	2	4	26	8	4	11
Grade Crossing Safety Specialist I	\$75.96	24	28	206	44	76	60
CAD	\$106.33	0	56	72	0	0	20
Project Accounting	\$75.57	8	8	12	4	4	4
Clerical Support	\$76.57	4	4	8	4	4	4
<i>Sr Traffic Engineer - JLB</i>	\$177.93	2	0	50	0	0	0
<i>Engineering Tech - JLB</i>	\$72.58	8	0	16	0	0	0

Project Schedule

CTC has successfully completed the establishment of over 60 quiet zones throughout the country and has detailed knowledge of the scheduling involved in managing the quiet zone process. CTC has worked with UP and BNSF over the last ten years and understands their internal requirements and timelines for completing quiet zone related work.

Many of the task items can occur simultaneously as you can see for the proposed schedule. This is generic overall schedule to indicate the order in which the proposed activities may occur. In CTC's experience the tasks that has the most impact on the proposed schedule are the agency's internal approval process of document review, contract approval and execution, funding allocation, approval process requiring city council action.

The detailed schedule for quiet zone establishment in Merced is located below:

Proposed Schedule

Task	Duration	Start	Finish
ACTIVITY #1	43 days	Mon 6/18/18	Wed 8/15/18
Notice to Proceed	1 day	Mon 6/18/18	Mon 6/18/18
Kick Off Meeting	1 day	Wed 6/20/18	Wed 6/20/18
Coordinate with all stakeholders and schedule diagnostic meeting	5 days	Mon 6/25/18	Fri 6/29/18
Data Collection - Determine existing circuitry, provide USDOT Grade Crossing Inventory data, crash reports, and research existing traffic counts if available, complete Google Earth review	5 days	Mon 7/9/18	Fri 7/13/18
On-site evaluation - CTC and City Staff	3 days	Tue 7/24/18	Thu 7/26/18
Determine safety measures and evaluate alternatives	1 day	Mon 7/30/18	Mon 7/30/18
Analyze quiet zone improvements	3 days	Mon 8/6/18	Wed 8/8/18
Provide quiet zone Quiet Zone Risk Index (QZRI) for each crossing based on improvements	3 days	Mon 8/13/18	Wed 8/15/18
ACTIVITY #2	26 days	Wed 8/15/18	Wed 9/19/18
Prepare Diagnostic Mtg information	2 days	Wed 8/15/18	Thu 8/16/18
Conduct Field Diagnostic Meeting	1 day	Tue 8/21/18	Tue 8/21/18
Prepare Diagnostic Notes/provide to stakeholders	5 days	Mon 8/27/18	Fri 8/31/18
Diagnostic Team reviews notes/layouts	10 days	Mon 9/3/18	Fri 9/14/18
Revise notes per team comments	2 days	Mon 9/17/18	Tue 9/18/18
Submit final diagnostic notes to stakeholders	1 day	Wed 9/19/18	Wed 9/19/18
ACTIVITY #3	43 days	Mon 9/24/18	Wed 11/21/18
Complete safety analysis, make final recommendations, estimate project budget	2 days	Mon 9/24/18	Tue 9/25/18
Complete and provide draft feasibility report to city staff	7 days	Tue 10/2/18	Wed 10/10/18
City Staff reviews draft report	14 days	Thu 10/11/18	Tue 10/30/18
City Staff provides comments	1 day	Wed 10/31/18	Wed 10/31/18

Task	Duration	Start	Finish
Revise draft report based on city comments	1 day	Fri 11/2/18	Fri 11/2/18
Provide final report to City	1 day	Tue 11/6/18	Tue 11/6/18
Prepare presentation for City Council	3 days	Mon 11/19/18	Wed 11/21/18
Presentation to City Council - Trip#3 (date may vary based on city schedule)	1 day	Mon 11/19/18	Mon 11/19/18
ACTIVITY #4	58 days	Mon 12/3/18	Wed 2/20/19
Prepare Notice of Intent (NOI)	4 days	Mon 12/3/18	Thu 12/6/18
City review NOI	5 days	Fri 12/7/18	Thu 12/13/18
Revise per city comments	1 day	Fri 12/14/18	Fri 12/14/18
Submit final NOI for city submittal	1 day	Mon 12/17/18	Mon 12/17/18
City submits NOI	1 day	Tue 12/18/18	Tue 12/18/18
NOI 60 Day comment period (calendar days)	45 days	Tue 12/18/18	Mon 2/18/19
Review and draft response to NOI comments, if applicable	2 days	Tue 2/19/19	Wed 2/20/19
ACTIVITY #4A (If needed)	214 days	Wed 1/3/18	Mon 10/29/18
Prepare Public Authority Application (PAA)	20 days	Wed 1/3/18	Tue 1/30/18
Provide PAA to city for review	3 days	Wed 1/31/18	Fri 2/2/18
City review of PAA	10 days	Mon 2/5/18	Fri 2/16/18
Address PAA comments if needed	2 days	Mon 2/19/18	Tue 2/20/18
Provide final PAA to City for submittal	1 day	Thu 2/22/18	Thu 2/22/18
City submits PAA to FRA	1 day	Mon 2/26/18	Mon 2/26/18
PAA 60 day comment period (60 calendar days)	45 days	Mon 2/26/18	Fri 4/27/18
FRA review PAA (This could be 4-12 months - will use 6 months here)	131 days	Fri 4/27/18	Fri 10/26/18
FRA provides approval letter to city	1 day	Mon 10/29/18	Mon 10/29/18
Construction Phase	409 days	Tue 8/21/18	Fri 3/13/20
Note: After Diagnostic and report completed - approval process with railroads/CPUC			
City request Preliminary Engineering Agreement (PEA) from railroad (BNSF does not require PEA at this time)	1 day	Tue 8/21/18	Tue 8/21/18
UP provides PEA	10 days	Tue 8/21/18	Mon 9/3/18

Task	Duration	Start	Finish
City executes PEA	10 days	Tue 9/4/18	Mon 9/17/18
Submits PEA - request estimates from all railroad	1 day	Wed 9/19/18	Wed 9/19/18
Railroads Prepares design and estimate (typically 60-90 days)	66 days	Thu 9/20/18	Thu 12/20/18
City reviews, approves, and executes railroad Construction agreements	60 days	Fri 12/21/18	Thu 3/14/19
City give railroads Notice to Proceed with Construction	1 day	Fri 3/15/19	Fri 3/15/19
Railroad Construction - complete design, order and assemble material and equipment, complete construction	260 days	Mon 3/18/19	Fri 3/13/20
ACTIVITY #5	35 days	Fri 2/28/20	Thu 4/16/20
CTC prepares Notice of Establishment	5 days	Fri 2/28/20	Thu 3/5/20
CTC provides NOE for city review and approval	5 days	Fri 3/6/20	Thu 3/12/20
City reviews and approves NOE	3 days	Fri 3/13/20	Tue 3/17/20
CTC Provide final NOE for city to issue	1 day	Wed 3/18/20	Wed 3/18/20
CTC conducts final inspection of quiet zone	1 day	Mon 3/16/20	Mon 3/16/20
City Issues NOE	1 day	Tue 3/17/20	Tue 3/17/20
Quiet Zone is Established	21 days	Wed 3/18/20	Wed 4/15/20
Railroads ceases to routinely sound train horns	1 day	Thu 4/16/20	Thu 4/16/20

Attachment A

Detailed Project Cost

Phase I (Activity 1) - Quiet Zone Feasibility Study, Merced, CA
Preliminary Investigation/Risk Index & Review

Project Tasks	Sr Proj Mgr	Sr Traffic Engr	Project Mgr	Engr Tech	Grade Crossing Safety Specialist	CAD	Proj Acctg	Clerical	Sr Traffic Engr-JLB	Engr Tech-JLB	Totals
Kick Off meeting - determine stakeholders, project managers, contact personnel. Planning. Schedule development and timeline review	2		2						2		6
Data Collection - Determine existing circuity, provide USDOT Grade Crossing Inventory data, crash reports, and research existing traffic counts if available, complete Google Earth review	1		8	2	24					8	43
Trip #1 - On-site evaluation of each crossing, meeting with city discuss options; identify potential issues and potential safety improvements at each crossing			32								32
Coordinate and schedule diagnostic meeting			2								2
Provide status updates			4								4
Project Management, Accounting and administration	1		4				8	4			17
	4	0	52	2	24	0	8	4	2	8	104

Classification	Hours	Billing Rate	Totals
Sr. Project Manager	4	\$276.21	\$1,104.84
Sr Traffic Engineer	0	\$182.28	\$0.00
Project Manager	52	\$151.92	\$7,899.84
Engineering Tech	2	\$102.54	\$205.08
Grade Crossing Safety Specialist I	24	\$75.96	\$1,823.04
CAD	0	\$106.33	\$0.00
Project Accounting	8	\$75.57	\$604.56
Clerical Support	4	\$76.57	\$306.28
Sr Traffic Engineer - JLB	2	\$177.93	\$355.86
Engineering Tech - JLB	8	\$72.58	\$580.64
Totals	104		\$12,880.14

Direct Expenses	Number	Cost
Airline Travel	1 Trips	\$ 750.00
Car Rental/Gas	2 days	\$ 250.00
Automobile expense	60 miles at .56	\$ 33.60
Airport Parking	2 days	\$ 50.00
Toll Road Fees	2 days	\$ 50.00
Lodging	3 man-days	\$ 625.00
Meals	3 man-days	\$ 150.00
Total Direct Expenses		\$ 1,808.60

Total Labor	\$12,880
Traffic/Pedestrian Counts (\$1000/crossing)	\$19,000 JLB Traffic
Total Direct Expenses	\$1,809
Total Project Fee =	\$33,689

Phase I (Activity 2) - Quiet Zone Feasibility Study, Merced, CA

Coordination with Governing Entities/Diagnostic Meeting

Note: GO88 forms and plans are included in Activity 3

Project Tasks	Sr Proj Mgr	Sr Traffic Engineer	Project Mgr	Engr Tech	Grade Crossing Safety Specialist I	CAD	Proj Acctg	Clerical	Sr Traffic Engr-JLB	Engr Tech - JLB	Totals
Prepare diagnostic documents for meeting			2	2	12						28
Trip #2 - Coordinate and attend Field Diagnostic Meeting	1		24								25
Prepare draft diagnostic notes and distribute to stakeholders; conceptual layouts			6	2	12	40					60
Revised notes per comments and provide final notes			2		4	4					10
Provide status updates			4								4
Project Management, Accounting and administration	1		4				8	4			17
	2	0	42	4	28	56	8	4	0	0	144

Classification	Hours	Billing Rate	Totals
Sr. Project Manager	2	\$276.21	\$552.42
Sr Traffic Engineer	0	\$182.28	\$0.00
Project Manager	42	\$151.92	\$6,380.64
Engineering Tech	4	\$102.54	\$410.16
Grade Crossing Safety Specialist I	28	\$75.96	\$2,126.88
CAD	56	\$106.33	\$5,954.48
Project Accounting	8	\$75.57	\$604.56
Clerical Support	4	\$76.57	\$306.28
Sr Traffic Engineer - JLB	0	\$177.93	\$0.00
Engineering Tech - JLB	0	\$72.58	\$0.00
Totals	144		\$16,335.42

Direct Expenses	Number	Cost
Airline Travel	1 Trips	\$ 750.00
Car Rental/Gas	2 days	\$ 250.00
Automobile expense	60 miles at .56	\$ 33.60
Airport Parking	2 days	\$ 50.00
Toll Road Fees	2 days	\$ 50.00
Lodging	2 man-days	\$ 350.00
Meals	3 man-days	\$ 150.00
Total Direct Expenses		\$ 1,633.60

Total Labor	\$16,335
Total Direct Expenses	\$1,634
Total Project Fee =	\$17,969

Phase I (Activity 3) - Quiet Zone Feasibility Study, Merced, CA
Quiet Zone Calculations & Analysis

Project Tasks	Sr Proj Mgr	Sr Traffic Engr	Project Mgr	Engr Tech	Grade Crossing Safety Specialist I	CAD	Proj Acty	Clerical	Sr Traffic Engr-JLB	Engr Tech-JLB	Totals
Determine safety measures and evaluate alternatives			8		8						16
Analyze quiet zone improvements	1		8		24						33
Provide quiet zone Quiet Zone Risk Index (QZRI) for each crossing based on improvements			4		24						28
Complete safety analysis, make final recommendations, estimate project budget	2		8	2	12	12					36
Complete and provide staff feasibility report to city staff	4	2	16	16	40	16					94
Revise based on city staff review			2		8	4					14
Provide Final Report to City			1		2						3
Prepare presentation for City Council			8		16	4					28
Presentation to City Council - Trip#3			16								16
Prepare plans for Railroad/CPRC approval		2	16		40	24					82
Prepare CD88-2 for approval (assumes all stakeholders sign off - does not include final process if required)		2	8	8	16	12			8	8	62
Identify Environmental Review documentation			4		8				12	8	32
Identify possible funding from federal/state/federal/state and assist with funding justification	4		24		8				24		60
Provide status updates			16						4		20
Project Management, Accounting and administration	2		16				12	8	2		40
Totals	13	6	155	26	206	72	12	8	50	16	564

Classification	Hours	Billing Rate	Totals
Project Manager	13	\$1,161.29	\$15,096.77
Sr Traffic Engr	6	\$1,161.29	\$6,967.74
Project Manager	155	\$151.02	\$23,407.60
Engineering Tech	26	\$102.54	\$2,666.04
Grade Crossing Safety Specialist I	206	\$75.06	\$15,477.76
CAD	72	\$103.33	\$7,439.76
Project Accounting	12	\$175.84	\$2,110.08
Client Support	1	\$317.57	\$317.57
Sr Traffic Engineer - JLB	50	\$377.83	\$18,891.50
Engineering Tech - JLB	16	\$72.58	\$1,161.28
Totals	564		\$85,778.75

Direct Expenses	Number	Cost
Travel	7 days	\$7,000.00
Car Rental	2 days	\$250.00
Automobile expense	60 miles at .56	\$33.60
Airport Parking	2 days	\$50.00
Toll Road Fees	2 days	\$50.00
Lodging	2 man-days	\$50.00
Meals	2 man-days	\$100.00
Total Direct Expenses		\$7,583.60

Total Labor	\$85,779
Total Direct Expenses	\$1,584
Total Project Fee =	\$87,362

Phase II (Activity 4) - Quiet Zone Feasibility Study, Merced, CA
Notice of Intent (NOI)

Project Tasks	Sr Proj Mgr	Sr Traffic Engr	Project Mgr	Engr Tech	Grade Crossing Safety Specialist I	CAD	Proj Acctg	Clerical	Sr Traffic Engr-JBL	Engr Tech-JBL	Totals
Prepare Notice of Intent (NOI) to create a quiet zone. (Assume 2 quiet zones - BNSF - UPRR)	1		8	4	32						45
Assist City in submission of NOI			2	2	4						8
Review 60 day comments and assist city in response, if applicable			2	2	8						12
Provide status updates			2								2
Project Management, Accounting and administration	1		4				4	4			13
	2	0	18	8	44	0	4	4	0	0	80

Classification	Hours	Billing Rate	Totals
Sr. Project Manager	2	\$276.21	\$552.42
Sr Traffic Engineer	0	\$182.28	\$0.00
Project Manager	18	\$151.92	\$2,734.56
Engineering Tech	8	\$102.54	\$820.32
Grade Crossing Safety Specialist I	44	\$75.96	\$3,342.24
CAD	0	\$106.33	\$0.00
Project Accounting	4	\$75.57	\$302.28
Clerical Support	4	\$76.57	\$306.28
Sr Traffic Engineer - JLB	0	\$177.93	\$0.00
Engineering Tech - JLB	0	\$72.58	\$0.00
Totals	80		\$8,058.10

Direct Expenses	Number	Cost
Airline Travel	0 Trips	\$ -
Car Rental/Gas	0 days	\$ -
Automobile expense	0 miles at .56	\$ -
Airport Parking	0 days	\$ -
Toll Road Fees	0 days	\$ -
Lodging	0 man-days	\$ -
Meals	0 man-days	\$ -
Total Direct Expenses		\$ -

Total Labor	\$8,058
Total Direct Expenses	\$0
Total Project Fee =	\$8,058

Phase II (Activity 4a) - Quiet Zone Feasibility Study, Merced, CA

Public Authority Application (PAA)

NOTE: If it is determined that enough SSMs cannot be implemented and a PAA is required, the following scope will be needed in addition to the NOI.

Project Tasks	Sr Proj Mgr	Sr Traffic Engr	Project Mgr	Engr Tech	Grade Crossing Safety Specialist I	CAD	Proj Acctg	Clerical	Sr Traffic Engr-JLB	Engr Tech-JLB	Totals
Complete Alternative Safety Measure (ASM) calculations for each alternative	1		4		24						29
Prepare Public Authority Application (PAA) and all attachments - must address any NOI comments			8	4	32						44
Assist City in Submittal of PAA to FRA			2		4						6
Review 60 day comments and assist city in response, if applicable			2		8						10
Follow up with FRA - reviews may take 4-12 months - CTC will maintain contact with FRA during the review period			1		8						9
Provide status updates			8								8
Project Management, Accounting and administration	1		4				4	4			13
Totals	2	0	29	4	76	0	4	4	0	0	119

Classification	Hours	Billing Rate	Totals
Sr. Project Manager	2	\$276.21	\$552.42
Sr Traffic Engineer	0	\$182.28	\$0.00
Project Manager	29	\$151.92	\$4,405.68
Engineering Tech	4	\$102.54	\$410.16
Grade Crossing Safety Specialist I	76	\$75.96	\$5,772.96
CAD	0	\$106.33	\$0.00
Project Accounting	4	\$75.57	\$302.28
Clerical Support	4	\$76.57	\$306.28
Sr Traffic Engineer - JLB	0	\$177.93	\$0.00
Engineering Tech - JLB	0	\$72.58	\$0.00
Totals	119		\$11,749.78

Direct Expenses	Number	Cost
Airline Travel	0 Trips	\$ -
Car Rental/Gas	0 days	\$ -
Automobile expense	0 miles at .56	\$ -
Airport Parking	0 days	\$ -
Toll Road Fees	0 days	\$ -
Lodging	0 man-days	\$ -
Meals	0 man-days	\$ -
Total Direct Expenses		\$ -

Total Labor	\$11,750
Total Direct Expenses	\$0
Total Project Fee =	\$11,750

Phase II (Activity 5) - Quiet Zone Feasibility Study, Merced, CA
Notice of Establishment (NOE)

Project Tasks	Sr Proj Mgr	Sr Traffic Engr	Project Mgr	Engr Tech	Grade Crossing Safety Specialist I	CAD	Proj Acctg	Clerical	Sr Traffic Engr-JLB	Engr Tech-JLB	Totals
Complete on-site inspection to confirm all crossings are quiet zone compliant - Assume 2-trips - one for each quiet zone			32								32
Prepare Notice of Establishment (NOE) to create a quiet zone. (Assume 2 quiet zones - BNSF - UPRR)	1		12	8	40	16					77
Assist City in submission of NOI			4	2	8						14
Review 60 day comments and assist city in response, if applicable			4	1	12	4					21
Provide status updates			4								4
Project Management, Accounting and administration	1		8				4	4			17
	2	0	64	11	60	20	4	4	0	0	165

Classification	Hours	Billing Rate	Totals
Sr. Project Manager	2	\$276.21	\$552.42
Sr Traffic Engineer	0	\$182.28	\$0.00
Project Manager	64	\$151.92	\$9,722.88
Engineering Tech	11	\$102.54	\$1,127.94
Grade Crossing Safety Specialist I	60	\$75.96	\$4,557.60
CAD	20	\$106.33	\$2,126.60
Project Accounting	4	\$75.57	\$302.28
Clerical Support	4	\$76.57	\$306.28
Sr Traffic Engineer - JLB	0	\$177.93	\$0.00
Engineering Tech - JLB	0	\$72.58	\$0.00
Totals	165		\$18,696.00

Direct Expenses	Number	Cost
Airline Travel	2 Trips	\$ 1,500.00
Car Rental/Gas	4 days	\$ 500.00
Automobile expense	120 miles at .56	\$ 67.20
Airport Parking	4 days	\$ 100.00
Toll Road Fees	4 days	\$ 100.00
Lodging	2 man-days	\$ 350.00
Meals	4 man-days	\$ 200.00
Total Direct Expenses		\$ 2,817.20

Total Labor	\$18,696
Total Direct Expenses	\$2,817
Total Project Fee =	\$21,513