

ORIGINAL

City of Tempe
P.O. Box 5002
31 East Fifth Street
Tempe, AZ 85280

www.tempe.gov

Community Development
Transportation Planning

January 18, 2011

Arizona Corporation Commission
Office of Railroad Safety
Attn: Chris Watson
1200 West Washington Street
Phoenix, AZ 85007

RE: Application to install new Constant Warning Time (CWT) device
Project: City of Tempe Quiet Zone Project – 13th Street Highway Grade Crossing
Union Pacific Railroad Crossing: AAR/DOT # 741 564 E

Mr. Watson,

This application is being submitted to allow the Union Pacific Railroad (UPRR) to install one new Constant Warning Time (CWT) device on the Industrial Track of 13th Street to provide train warning to the traveling public. This work was identified thru the Diagnostic Site Review Meeting held on June 12, 2008, as part of the process of establishing the City of Tempe Quiet Zone. At this meeting the Federal Railroad Administration (FRA) indicated that in order for a Quiet Zone to be established, all tracks at all highway grade crossings within the Quiet Zone would need to have CWT devices installed. The only crossing within the project limits that does not currently have CWT is the Industrial Track at 13th Street.

1. Project Location and Description

The project is located on 13th Street between Farmer Avenue and Ash Avenue in Tempe. UPRR has two tracks within the highway grade crossings. One track, the Main Track, runs north-south in the area north of the 13th Street crossing and then turns east-west south of the crossing, ultimately continuing to the eastern border of the City of Tempe (western border of the City of Mesa). The second track, the Industrial Track, also runs north-south in the area north of the 13th Street crossing and then continues in a north-south alignment south to the southern border of the City of Tempe (northern border of the City of Chandler). 13th Street is 2 lanes wide and is used for 2 way traffic, consisting of 1 westbound and 1 eastbound lane.

The project consists of installing one new CWT device on the Industrial Track. Following this installation, all railroad grade crossings within the Tempe Quiet Zone will have CWT devices. A draft UPRR CWT installation sketch is included to show the proposed work.

2. Why the crossing is needed

Based on the 2008 Diagnostic Site Review Meeting, this crossing of the Industrial Track requires CWT devices in order to establish the Quiet Zone.

NEW APPLICATION

RECEIVED



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AZ CORP COMMISSION
DOCKET CONTROL

Arizona Corporation Commission

DOCKETED

JAN 25 2011

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NR

RR-03639A-11-0039

3. Construction Phasing

Once an opinion and order is issued, UPRR will acquire and install the CWT equipment within 12 to 15 months.

4. Maintenance of the crossing

UPRR will be responsible for installing and maintaining the CWT equipment. City of Tempe will be responsible for maintaining the road approaches outside of UPRR responsibility.

5. Project Funding

100% of the funding will be provided thru local funds.

Costs are as follows:

UPRR CWT engineering, equipment and installation: **\$248,533.00**

6. Other information (based on typical Staff Data Requests):

A. Provide Average Daily Traffic Counts for each of the locations. **4,000 ADT in 2009**

B. Please describe the current Level of Service (LOS) at each intersection. **Level A**

C. Provide any traffic studies done by the road authorities for each area. **None**

D. Provide the population of the City the crossing is located in. **2006 census: 169,712 persons.**

E. Provide what warning devices are currently installed at the crossing.
Gate mounted warning lights for both tracks and CWT devices on one track.

F. Provide distances in miles to the next public crossing on either side of the proposed project location. Are any of these grade separations?
Brodway Road (AAR/DOT 741 565 L) is at-grade and 2,600 ft south.
10th Street (AAR/DOT 741 563 X) is at grade and 1,500 feet to the north.

G. How and why was grade separation not decided on at this time? Please provide any studies that were done to support these answers.
Grade separation was not considered as part of the scope of the Quiet Zone project. This is a low volume intersection with no history of safety or mobility issues. No studies have been completed.

H. If this crossing was grade separated, provide a cost estimate of the project.
Unknown costs. Estimate \$30,000,000++ due to urbanized location.
(Town of Cary, NC = \$33 million; City of Fremont, CA = \$52 million;
City of The Dalles, OR = \$54 million; Douglas County, CO = \$30 million)

I. Please describe what the surrounding areas are zoned for near this intersection. (i.e. Are there going to be new housing developments, industrial parks etc.)
Surrounding area is zoned residential. This is an established neighborhood with no plans for any new development or significant redevelopment.

- J. Please supply the following: number of daily train movements through the crossing, speed of the trains, and the type of movements being made (i.e. thru freight or switching). Is this a passenger train route?
UPRR anticipates 11 engines/day (varies) passing through this crossing; train speeds of 20 mph (timetable maximum speed); thru freight movements. No passenger traffic.
- K. Please provide the names and locations of all schools (elementary, junior high and high school) within the area of the crossing.
**Tempe High School is located 2,200 ft SE of the crossing.
(1730 South Mill Avenue, Tempe, AZ 850281)**
- There are no elementary or junior highs schools near this crossing.**
- L. Please provide school bus route information concerning the crossing, including the number of times a day a school bus crosses this crossing.
Tempe Elementary School District (480-642-1540) crosses this crossing 8 times per day. Tempe Union High School District (480-345-3781) crosses this crossing 2 times per day.
- M. Please provide information about any hospitals in the area and whether the crossing is used extensively by emergency service vehicles.
**Tempe St. Luke's Hospital is 1/4 mile SE of the crossing.
(1500 South Mill Avenue, Tempe, AZ 85281)**
- 13th Street is not used extensively by emergency services.**
- N. Please provide total cost of the railroad improvements to each crossing.
Cost described in item #5 above.
- O. Provide any information as to whether vehicles carrying hazardous materials utilize this crossing and the number of times a day they might cross it.
No known data. However, 13th Street is designated (and signed accordingly) by City of Tempe as a limited truck route, restricting delivery truck access to only "residential deliveries."
- P. Please provide the posted vehicular speed limit for the roadway.
Speed limit is posted 25 mph.
- Q. Do any buses (other than school buses) utilize the crossing, and how many times a day do they cross the crossing.
There are no fixed bus routes that utilize this crossing.
- R. Please indicate whether any spur lines have been removed within the last three years inside a 10 mile radius of any crossings covered in this application. Please include the reason for the removal, date of the removal and whether an at-grade crossing or crossings were removed in order to remove the spur line.
No spur lines removed in the recent past.
- S. Please fill in the attached FHWA Grade Separation Guidelines Table, (from FHWA's 2007 revised second edition Railroad Highway Grade-Crossing Handbook, page 151)

with a yes or no answer as to whether each item applies. Also, please provide all information to support your answers of yes or no (i.e. vehicle delay numbers, any calculations that were performed to get the answers).

Per FHWA Railroad-Highway Grade Crossing Handbook, Page 58:

K= 0.001088 C*T = 44,000 EI = 46.53 Tracks =2 MT= 1.79

Gates: DT, HP, MS, HT =1 2 traffic lanes HL= 1.11

Thus: $0.001088 * 46.53 * 1.79 * 1 * 1 * 1 * 1.11 = \underline{0.10}$

- T. Based on the current single track configuration at the crossings specified by this application, please provide the current traffic blocking delay per train. Please indicate the time in which vehicular traffic is delayed (1) to allow the train to pass at a crossing and (2) due to trains stopped on the track for any purpose. The delay is measured from the point that the warning devices are activated at the crossing to the time after the train has cleared the crossing and the warning devices are reset.
No known excessive delays due to railroad operations.

Please contact me with any questions.

Sincerely,



Robert Yabes
Principal Planner
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enclosures

cc: Robert Travis, ADOT
Jeff Kulaga, City of Tempe
Gregg Kent, City of Tempe
Freddy Cheung, Union Pacific Railroad
Alexander Popovici, Union Pacific Railroad
File



City of Tempe, Maricopa County, Arizona

DNTE: 2010-11-08

ESTIMATE OF MATERIAL AND FORCE ACCOUNT WORK
 BY THE
 UNION PACIFIC RAILROAD

THIS ESTIMATE GOOD FOR 6 MONTHS EXPIRATION DATE IS :2011-05-09

DESCRIPTION OF WORK:
 INSTALL CONSTANT WARNING TIME DEVICES IN NEW CABIN AT
 TEMPE, AZ - 13TH STREET - M.P. 915.30
 PHOENIX SUB - DOT #741564E
 WORK TO BE PERFORMED BY RAILROAD WITH EXPENSE AS BELOW:
 SIGNAL - CITY OF TEMPE - 100%
 ESTIMATED USING FEDERAL ADDITIVES WITH INDIRECT AND
 OVERHEAD CONSTRUCTION COST'S - 167.76%

PID: 67737 AWO: 03243 MP,SUBDIV: 915.30, PHOENIX
 SERVICE UNIT: 16 CITY: TEMPE STATE: AZ

DESCRIPTION	QTY	UNIT	LABOR	MATERIAL	RECOLL	UPRR	TOTAL
ENGINEERING WORK							
ENGINEERING			5210		5210		5210
LABOR ADDITIVE 167.76%			16751		16751		16751
SIG-HWY XNG			4821		4821		4821
TOTAL ENGINEERING			26782		26782		26782
SIGNAL WORK							
BILL PREP			900		900		900
CONTRACT				4893	4893		4893
LABOR ADDITIVE 167.76%			76639		76639		76639
MATL STORE EXPENSE				7	7		7
METER SERVICE				15000	15000		15000
PERSONAL EXPENSES				24712	24712		24712
ROCK/GRAVEL/FILL				1500	1500		1500
SALES TAX				1957	1957		1957
SIGNAL			44784	48936	93720		93720
TRANSP/IB/OB/RCLW CONTR				8787	8787		8787
ENVIRONMENTAL				1	1		1
TOTAL SIGNAL			122323	105793	228116		228116
LABOR/MATERIAL EXPENSE			149105	105793			
RECOLLECTIBLE/UPRR EXPENSE					254898	0	
ESTIMATED PROJECT COST							254898

THE ABOVE FIGURES ARE ESTIMATES ONLY AND SUBJECT TO FLUCTUATION. IN THE EVENT OF AN INCREASE OR DECREASE IN THE COST OR QUANTITY OF MATERIAL OR LABOR REQUIRED, UPRR WILL BILL FOR ACTUAL CONSTRUCTION COSTS AT THE CURRENT EFFECTIVE RATE.