

ORIGINAL

STAFF MEMORANDUM



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To: THE COMMISSION

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Arizona Corporation Commission

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From: Steven M. Olea
Interim Director
Safety Division

2010 AUG 12 A 9:51

AUG 12 2010

Date: August 12, 2010

AZ CORP COMMISSION
DOCKET CONTROL

DOCKETED BY	<i>[Signature]</i>
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RE: IN THE MATTER OF THE APPLICATION OF THE ARIZONA DEPARTMENT OF TRANSPORTATION TO REPLACE EXISTING CANTILEVERED FLASHING LIGHTS AT A CROSSING OF THE UNION PACIFIC RAILROAD AT LINCOLN STREET IN THE CITY OF PHOENIX, MARICOPA COUNTY, ARIZONA, USDOT NO. 741-492-D.

DOCKET NO. RR-03639A-10-0233

Background

On June 10, 2010, the Arizona Department of Transportation ("ADOT") filed with the Arizona Corporation Commission ("Commission") an application for approval for the Union Pacific Railroad ("Railroad") to replace the existing cantilevered lights at its crossing at Lincoln Street in the City of Phoenix ("City"), Maricopa County, Arizona at USDOT No. 741-492-D.

Commission Railroad Safety Staff ("Staff") records indicate, the presence of automatic warning devices at Lincoln Street as far back as June 5, 1974.

On February 14, 2008, Staff, ADOT, the City and the Railroad participated in a diagnostic review of the proposed improvements at Lincoln Street. All parties present were in agreement to the proposed improvements at the crossing. The following is a break down of the crossing in this application, including information about the crossing that was provided to Staff by ADOT.

Federal Highway Administration ("FHWA") Section 130

This project is federally funded pursuant to 23 U.S.C. § 130 ("Section 130"). The purpose of Section 130 is to comply with legislation seeking to eliminate hazards to pedestrians and highway vehicles at public railway-highway crossings. Only crossings which are located on public roads, and which are not primarily for the benefit of the railroad, are eligible for Section 130 funding. In order to be eligible for Section 130 funding, a crossing must be designated on the Commission's annual Crossing Array as being a priority to receive safety upgrades. Arizona Revised Statute § 40-337.03 states that:

[T]he commission shall submit to the railroad involved and the city, county and department of transportation in which jurisdiction a public railroad grade crossing is located, an array of such crossings where the installation of automatic warning signals or devices should be considered during the year, or within a reasonable

time thereafter depending upon the availability of monies, materials, labor and other factors involved in such installation.

This project was approved for Section 130 funding as part of the 1998 Commission Annual Array approved by Decision No 60723, dated March 23, 1998. After designation on the Annual Array, FHWA issues authorizations for design and construction of each project, reimburses ADOT for the cost and conducts a final inspection of each project. The Railroad will invoice ADOT for 100% of the cost of the project.

Lincoln Street

Lincoln Street is a five lane east-west roadway, which is normally used for two-way traffic, consisting of two west bound lanes, and three east bound lanes. Lincoln Street can be converted by the City's traffic division to a five lane eastbound only roadway during events at Chase Field and U.S. Airways Arena to help the flow of traffic (**see Exhibit A**). Currently, there are curbside mounted cantilevers installed at the crossing. The current cantilever configuration is inadequate, because there is not a pair of flashing lights for each lane of travel. The proposed new project consists of installing three new cantilevers; one cantilever for eastbound travel, one for westbound travel and a third cantilever will cover the westbound lanes when they are used for eastbound traffic (**see Exhibit B**). While the addition of the third cantilever for reversed traffic is unique, the other proposed measures are consistent with safety measures employed at similar at-grade crossings in the State. The estimated cost of the project is \$347,210 funded entirely by federal funds. The Railroad will maintain the warning devices after the upgrade is completed.

Traffic data for Lincoln Street was provided by ADOT. The data shows the Average Daily Traffic ("ADT") for 2005 to be 7,300, vehicles per day ("vpd"). The current Level of Service ("LOS") for Lincoln Street is LOS A.

The American Association of State Highway and Transportation Officials ("AASHTO") Geometric Design of Highways and Streets, 2004, states that the Level of Service characterizes the operating conditions on a facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. This is a measure of roadway congestion ranging from LOS A--least congested--to LOS F--most congested. LOS is one of the most common terms used to describe how "good" or how "bad" traffic is projected to be.

The posted speed limit on Lincoln Street is 45MPH. Staff records, as well as Federal Railroad Administration ("FRA") accident/incident records indicate no accidents at this crossing.

Alternative routes from this crossing are as follows; to the north approximately 200 feet, is Buchanan Street, to the south approximately 500 feet is Grant Street. Both of these crossings are at-grade.

Train Data

Data provided by the Union Pacific regarding train movements through this crossing are as follows:

Train Count: 3 total average trains per day (all freight trains/no passenger trains)

Train Speed: 10 mph

Thru Freight/Switching Moves: All movements through this crossing are switching movements.

Schools and Bus Routes

There is one school located approximately two miles southeast of the Lincoln Street crossing.

Elementary Schools:

- ✓ Silvestre S. Herrera Elementary School – 1350 S. 11th Street

According to Sheri Thompson, Bus Transportation Coordinator for Silvestre S. Herrera School, the school is located east of the crossing, and the bus storage facility is west of the crossing. There are approximately 40 bus crossings per day at this crossing. Due to the location of the bus facility, most but not all of the crossing are with empty busses. On July 27, 2010, Staff verified the 40 bus crossings with Ms. Thompson. She further stated there have been no incidents at the crossing reported by bus drivers. Buses other than school buses do utilize the crossing during sporting and other events at Chase Field and U.S. Airways Arena.

Hospitals

The nearest hospitals to the Lincoln Street crossing are as follows;

Hospitals:

- ✓ Promise Hospital – 1201 S. 7th Avenue
- ✓ Maricopa Medical Center - 2601 E. Roosevelt Street

No data was available for the number of emergency vehicles utilizing this crossing.

Hazardous Materials

ADOT gave the following response when asked about vehicles transporting hazardous materials through this crossing:

No known data. However Lincoln Street is part of the City of Phoenix designated thru truck route, allowing unlimited truck access.

Zoning

Staff requested information regarding the type of zoning in adjacent areas from the crossing. The following was the response given:

The area around this crossing is zoned commercial and industrial. Chase Field sporting venue is located just northwest of this crossing.

FHWA Guidelines Regarding Grade Separation

The FHWA Railroad-Highway Grade Crossing Handbook (Revised Second Edition August 2007) provides nine criteria for determining whether highway-rail crossings should be considered for grade separation or otherwise eliminated across the railroad right of way. The Crossing Handbook indicates that grade separation or crossing elimination should be considered whenever one or more of the nine conditions are met. The nine criteria are applied to this crossing application as follows:

		Lincoln Street
The highway is a part of the designated Interstate Highway System	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The highway is otherwise designed to have full controlled access	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The posted highway speed equals or exceeds 70 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Maximum authorized train speed exceeds 110 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
An average of 150 or more trains per day or 300 million gross tons/year	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Crossing exposure (trains/day x AADT) exceeds 1M in urban or 250k in rural; or passenger train crossing exposure exceeds 800k in urban or 200k in rural	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Expected accident frequency for active devices with gates, as calculated by the US DOT Accident Prediction Formula including five-year accident history, exceeds 0.5	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	N/A ¹
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No

¹ N/A = Not Applicable

Grade Separation

Due to the scope of this Section 130 cantilever upgrade, no grade separation study was performed. Because of the urbanized location, ADOT estimated a grade separation would cost in excess of \$30 million.

Vehicular Delays at Crossings

Due to the limited number of train crossings (3 per day) and the length of the trains, typically three locomotives with a total length of 300 feet, no vehicular delay calculations were performed.

Another commonly used measure outlined in the FHWA Guidelines; the so-called Crossing Exposure Index (which is simply the product of the number of trains per day multiplied by the number of vehicles crossing daily) is not currently met at this crossing. The current crossing exposure is 21,900, far below the 1million threshold for urban areas. It should be noted that the criteria identified in the FHWA material are not mandates, but guidelines established by the FHWA, which serve to alert those having jurisdiction that potential problems may arise.

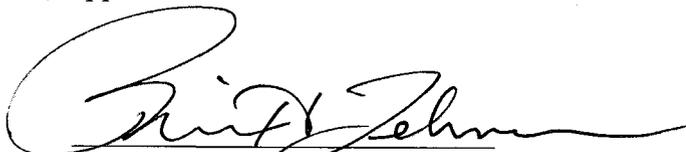
Staff has utilized the FHWA Guidelines to determine the potential need for grade separation at this crossing. Based on existing conditions, the crossing in this application meets none of the nine criteria for consideration of grade separation. Therefore, Staff does not recommend a grade separation at the crossing.

Crossing Closure

The area surrounding this crossing is highly developed with commercial businesses. To close this crossing would have a negative affect on many of the local businesses. Therefore, Staff would not recommend closure of this crossing at this time.

Staff Conclusions

Having reviewed all applicable data, Staff generally supports ADOT's application. Staff believes that the upgrades are in the public interest and are reasonable. Staff believes that the measures proposed by ADOT are consistent with other similar at-grade crossings in the State and will provide for the public's safety. Therefore, Staff recommends approval of ADOT's application.



Brian H. Lehman
Railroad Safety Supervisor
Safety Division

Originator: BHL

COPIES of the foregoing mailed
this 12th day of August, 2010 to:

Docket No. RR-03639A-10-0233

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Exhibit A



Google

Eye alt: 272.1 ft.

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33°26'38.85" N 112°04'07.73" W elev: 0 ft

Imagery Date: Nov 20, 2009

Chase Field

U.S. Airways Center

Lincoln Street

Lincoln Street

E Madison St

E Jackson St

E Buchanan St

E Grant St

S Central Ave

S 2nd St

S 5th St

E Washington St

S 7th St

Lincoln Street

E Lincoln St

S 3rd St

S 4th St

S P St

Exhibit B

