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STAFF MEMORANDUM

To: THE COMMISSION

From: Robert Marvin
Director
Safety Division

Date: May 20, 2014

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Arizona Corporation Commission

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MAY 20 2014

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RE: IN THE MATTER OF THE APPLICATION OF THE ARIZONA DEPARTMENT OF TRANSPORTATION TO UPGRADE AN EXISTING CROSSING OF THE ARIZONA EASTERN RAILWAY COMPANY AT U.S. HIGHWAY 191 IN THE CITY OF SAFFORD, GRAHAM COUNTY, ARIZONA, USDOT NO. 742-211-V.

DOCKET NO. RR-02634A-14-0089

ORIGINAL

Background

On March 17, 2014, the Arizona Department of Transportation (“ADOT”) filed with the Arizona Corporation Commission (“Commission”) an application for approval for the Arizona Eastern Railway Company (“Railroad”) to upgrade an existing crossing at U.S. Highway 191 in the City of Safford (“City”), Graham County, Arizona at USDOT No. 742-211-V.

The Safety Division’s Railroad Safety Section, (“Staff”), ADOT, the City and the Railroad participated in several diagnostic review meetings of the proposed improvements to this crossing. All parties present were in agreement to the proposed improvements at the crossing. The following is a breakdown 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 2010 Commission Annual Array approved by Decision No. 72020, dated December 10, 2010. 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.

U.S. Highway 191

U.S. Highway 191 is a paved two lane roadway, consisting of one northbound and one southbound lane with a left turn lane onto 8th Street for northbound traffic. Currently, this crossing is equipped with flashing lights, automatic gates, cantilevers and bells. The proposed project consists of installing a new automatic gate with LED flashing lights for southbound traffic and new LED flashing lights on the southbound cantilever. A new automatic gate with LED flashing lights for northbound traffic will be installed as well as replacing the existing northbound cantilever with an extended cantilever to cover current and future lanes of traffic. A new concrete surface will also be installed. The total cost of the project is \$270,000. The project will be paid entirely by FHWA, Section 130 funds. The proposed measures are consistent with safety measures employed at similar at-grade crossings in the State. The Railroad will maintain the warning devices and crossing surface after the upgrades are completed.

Traffic data for U.S. Highway 191 was provided to ADOT by the City. Per the City, in 2013 there were 6,380 vehicles per day ("vpd") at this crossing. The Level of Service ("LOS") for this crossing 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 U.S.191 is 35 mph. Staff records, as well as the Federal Railroad Administration's ("FRA") accident/incident records indicate four accidents at this crossing. The first occurred on November 23, 1976 and was the result of the driver not stopping for the activated gates; however, there were no injuries. The second occurred on January 24, 1977 and was the result of the driver stopping on the tracks; but no injuries occurred. On September 14, 1979 there was a third incident which was the result of the driver not stopping for the activated gates. There were no injuries reported. The fourth incident occurred on February 19, 1991 and was the result of the driver driving through the downed gates. There were no injuries reported.

Alternative routes from this crossing are: to the southeast 1.9 miles is Montierth Lane, and to the west, Central Avenue is .3 of a mile away. Both are at-grade crossings.

Train Data

Data provided to ADOT, by the Railroad regarding train movements through this crossing are as follows:

Train Count: 2 trains per day with no passenger service

Maximum Train Speed: 10 mph

Thru Freight/Switching Moves: there are no switching movements through the crossing

Schools and Bus Routes

The following are schools near this crossing:

- Triumphant Learning Center 201 E Main St., Safford
- Safford Christian Academy PO Box 1074, Safford
- Dan Hinton Accommodation School 146 E. 4th, Pima
- Safford Middle School 698 W. 11th St., Safford

Per the Safford Unified School District, school buses cross this crossing six times per day. The City has no local bus service at this time. A shuttle (Ryan's Express) that brings workers from the City to the Morenci Mine may cross occasionally. San Carlos Apache Tribe-Transit District Department reports that shuttle busses may drive across the crossing once a day depending on the season.

Hospitals

ADOT gave the following response about hospitals and emergency services vehicles:

Mt Graham Regional Medical Center is located at 1600 S. 29th Ave. Safford, Az. U.S. 191 is a major emergency service route for the hospital.

Hazardous Materials

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

No data available.

Zoning

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

The areas adjacent to the U.S. 191 and the AZER railroad crossing are mostly business, but also residential and farming.

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:

		U.S. 191
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	No
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No

Grade Separation

ADOT gave the following response about grade separation:

Because this project is Section 130 (Highway-Rail Safety), grade separation was not considered. Cost estimates for grade separating this location would be in the \$30,000,000 range, due to the urbanized location.

Vehicular Delays at Crossings

ADOT stated that the delay at the crossing is really a function of the average length of the train and the average speed that it is traveling, for example, a 7,000 foot train traveling 30 miles per hour would cause a traffic delay of approximately 3.5 minutes.

Another commonly used measure outlined in the FHWA Guidelines; is 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 12,760 at U.S.191 far below the 1,000,000 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.

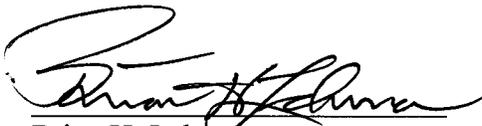
Staff has utilized the FHWA Guidelines to determine the potential need for grade separation at this crossing. Based on existing conditions, U.S.191 meets none of the nine criteria for consideration of grade separation. Staff does not recommend a grade separation at the crossing.

Crossing Closure

Closing a federal highway at-grade crossing under the jurisdiction of ADOT would be highly undesirable. Currently, U.S. 191 intersects with U.S. Highway 70 approximately 1.5 miles north of the crossing and to the south approximately 40 miles to I-10. To close the crossing would mean a re-alignment of U.S. 191. Doing so would negatively impact numerous businesses and residences in the area.

Staff Conclusions

Having reviewed all applicable data, Staff supports ADOT's application. Staff believes that the upgrades are in the public's 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.



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