

ORIGINAL

STAFF MEMORANDUM



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To: THE COMMISSION

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Arizona Corporation Commission

From: Robert Marvin  
Director  
Safety Division

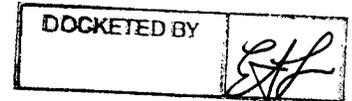
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OCT 08 2013

Date: October 10, 2013

AZ CORP COMMISSION  
DOCKET CONTROL



RE: IN THE MATTER OF THE APPLICATION OF THE ARIZONA DEPARTMENT OF TRANSPORTATION TO UPGRADE AN EXISTING CROSSINGS OF THE UNION PACIFIC RAILROAD AT DOBSON ROAD IN THE CITY OF MESA, MARICOPA COUNTY, ARIZONA, USDOT NO. 741-649-G.

DOCKET NO. RR-03639A-13-0268

**Background**

On August 5, 2013, the Arizona Department of Transportation ("ADOT") filed with the Arizona Corporation Commission ("Commission") an application for approval for the Union Pacific Railroad ("Railroad") to upgrade an existing crossing at Dobson Road in the City of Mesa ("City"), Maricopa County, Arizona at USDOT No. 741-649-G.

Between 2005 and 2007, the Safety Division's Railroad Safety Section, ("Staff"), ADOT, the City and Railroad participated in several diagnostic review meetings to discuss the proposed improvements to this crossing. All parties present were in agreement to the proposed improvements at the crossings. 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 2008 Commission Annual Array approved by Decision No. 70481, dated September 3, 2008. 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.

### **Dobson Road**

Dobson Road is a seven lane paved roadway consisting of 3 northbound and 3 southbound lanes and a center turn lane (See Appendix "A"). This project consists of installing two new automatic gates with LED flasher units at the curbside of the roadway, two gates with LED flasher units within a new raised median, one cantilever at the curbside of the road for northbound traffic, and one cantilever in the new raised median for southbound traffic. Additionally, the City will make several civil improvements, including new raised medians, sidewalk adjustments, and road approach improvements to accommodate the railroad signal and surface work. 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 Dobson Road was provided to ADOT by the City. Per the City, the average daily traffic counts for this crossing in 2010 were 27,300. The Level of Service ("LOS") for this road was not available.

The posted speed limit on Dobson Road is 40MPH. Staff records, as well as the Federal Railroad Administration's ("FRA") accident/incident records indicate 3 accidents at this crossing. The first was on June 4, 1995 with one injury, the second on July 30, 2006 with no injuries, and the third on July 4, 2008 with one injury.

Alternative routes from this crossing are: one mile to the east is Alma School Road and one mile to the west is Price Road. Both are at grade crossings.

### **Train Data**

Data provided by ADOT, from the FRA website regarding train movements through this crossing are as follows:

Train Count: 11 trains per day with no passenger service

Maximum Train Speed: 60 mph

Thru Freight/Switching Moves: All thru freight movements and no switching through the crossing

### **Schools and Bus Routes**

The following are schools near this crossing:

- Webster Elementary School – 202 N. Sycamore
- Roosevelt Elementary School – 828 S. Valencia
- Adams Elementary – 738 S. Longmore

Per the Tempe Union High School District there are 3 bus crossings per day and according to the Mesa Unified District, there are 46 bus crossings per day for a total of 49 crossings per day.

## Hospitals

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

***Banner Desert Hospital is located on Dobson Road 1.5 miles south of this crossing. This crossing is used extensively by emergency vehicles.***

## Hazardous Materials

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

***The City of Mesa stated they do not have any information pertaining to the use of this crossing by vehicles carrying hazardous materials.***

## Zoning

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

***The properties to the northeast, southwest, and southeast of this crossing are zoned as Manufacturing/Industrial/Employment. The property to the northwest of the crossing is zoned commercial. There are currently no new developments in the area. The area to the southwest of the crossing is currently being developed as a new industrial park and is nearly complete.***

## 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:

		<b>Dobson Road</b>
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:

***Grade separation was not considered as part of this Section 130 safety upgrade due to the complexity of the crossing and cost to grade separate since it is within a major urban area. Estimates for grade separation are around the \$30,000,000 plus amount.***

### **Vehicular Delays at Crossings**

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 300,300 at Dobson Road, 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, Dobson Road meets none of the nine criteria for consideration of grade separation. Staff does not recommend a grade separation at the crossing.

### **Crossing Closure**

The City has stated they would not consider closing this crossing. Staff believes closing the crossing would negatively impact numerous businesses in the area, therefore Staff does not recommend closing the crossing.

**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.

A handwritten signature in black ink, appearing to read "Brian H. Lehman", written over a horizontal line.

Brian H. Lehman  
Railroad Safety Supervisor  
Safety Division

Originator: BHL

Original and thirteen (13) copies  
of the foregoing were filed this  
\_10th\_ day of October, 2013 with:

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Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Copy of the foregoing mailed  
this 10th day of October, 2013 to:

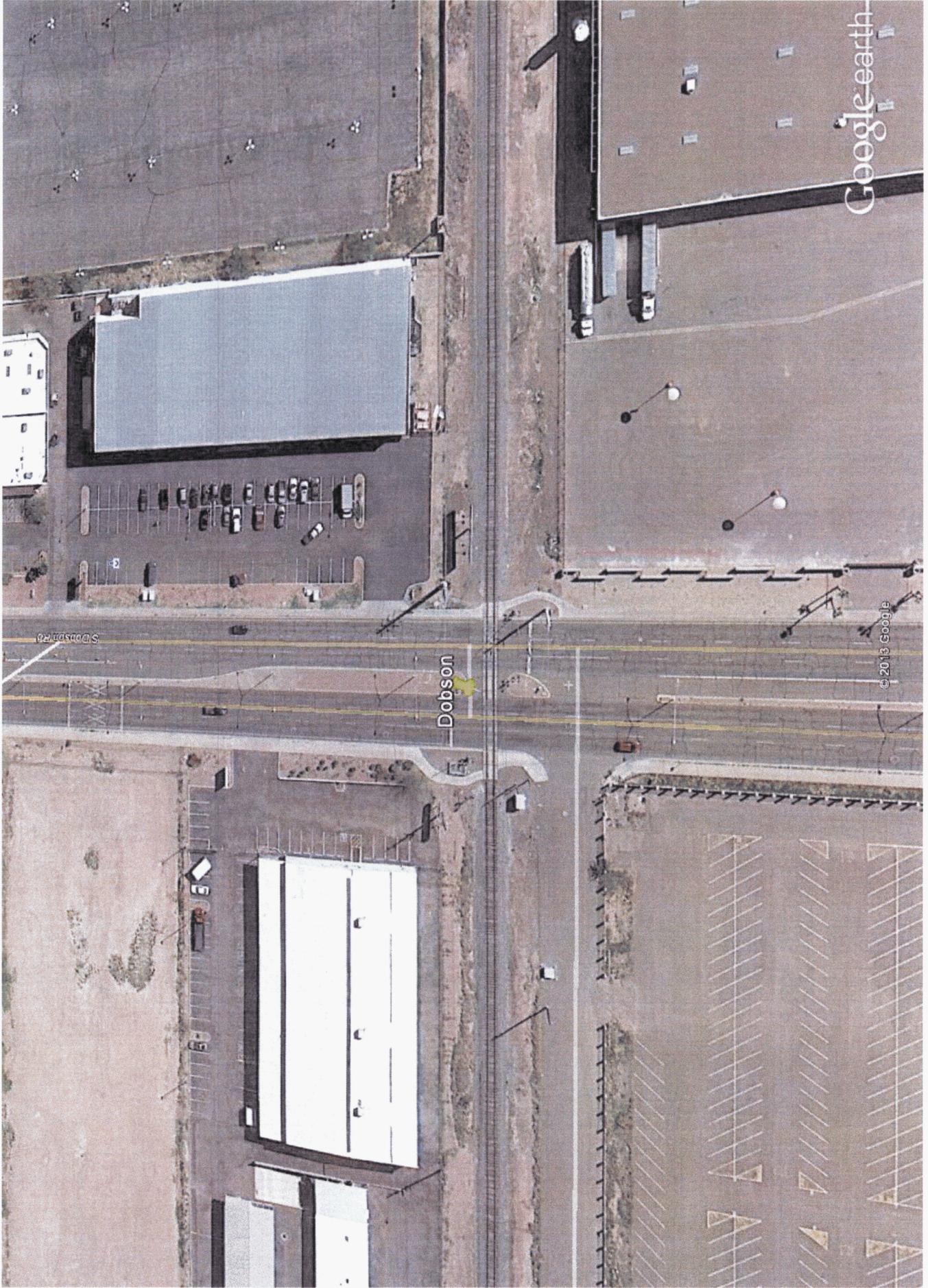
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# Appendix "A"



400

100

feet  
meters

Google earth

