MEMORANDUM

Date: July 13, 2016

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator

Re: **Load Limit Postings on Three Pima County Bridge Structures**

Attached are memoranda from the Transportation Director dated June 24, 2016 (Attachment 1) and July 12, 2016 (Attachment 2) regarding the necessity of posting load limitations on three bridges in Pima County; Soldier Trail, Madera Canyon, and Soledad Avenue in Ajo.

These load limits are necessary to ensure safe operating conditions. Proposed ordinances limiting the loads on these bridges will be presented to the Board of Supervisors at the August 2, 2016 meeting.

Appropriate outreach and notifications are occurring as identified on Page Three of Attachment 2.

CHH/lab

Attachments

c: John Bernal, Deputy County Administrator for Public Works
Nanette Slusser, Assistant County Administrator for Public Works
Priscilla Cornelio, Director, Transportation

ATTACHMENT 1

PIMA COUNTY
TRANSPORTATION

MEMORANDUM

DATE: June 24, 2016

TO: C.H. Huckelberry
County Administrator

FROM: Priscilla S. Cornelio, P.E.
Director

SUBJECT: Bridge Load Postings and Recommended Outreach Plan

In accordance with requirements set forth by Federal Highway Administration (FHWA) and Arizona Department of Transportation (ADOT), we have completed our load rating analysis and subsequently identified eight bridges that need new weight limit restrictions imposed. The following table summarizes the load ratings identified, plus the vehicle classification summary, as well as the summary from the user assessment (map location information is attached for your reference):

	Inventory Load Rating (The load level that can safely utilize for an indefinite period of time).	**Operating Load Rating** (The absolute maximum permissible load level to which the structure may be subjected).	**Vehicle Classification Summary** (24 hour counts from February 2016).	**User Assessment Summary** (Observations from late May/early June 2016).
Soldier Trail (Mount Lemon Short Road)	14 Tons	23 Tons	• 65% cars. • 28%-31% pickups/vans. • 1%-4% single unit trucks. • 1% semi.	UPS Delivery (medium), Waste Mgmt. septic, Waste Mgmt. roll off, construction delivery.
Madera Canyon (only one of the two bridges is affected)	24 Tons	39 Tons	• 79% cars. • 17% pickups/vans. • 1% single unit trucks.	Trico Electric repair/service trucks.
Soledad Avenue	20 Tons	34 Tons	• 65%-70% cars. • 29%-31% pickups/vans. • 1% single unit trucks.	FedEx delivery, small utility, full size garbage.

Nogales Hwy vic Felix Rd to Fenley Dr. (5 bridges)	15 Tons	26 Tons	• 70% cars. • 25% pickups/vans. • 5% single unit trucks all the way to semis.	Not observed since classification summary already indicates significant truck activity.

After careful evaluation, Pima County Department of Transportation (PCDOT) had determined these bridge structures should be load posted the Operating Load Limit due to the following reasons:

1. Utilizing the higher load limits allows the ability to maximize the capability of the roadway system to the highest degree possible.
2. Due to the small number of heavier vehicles, their occasional use poses minimal risk. Since PCDOT performs yearly inspections on all weight restricted bridges, any continued degradation can be tracked and monitored such that any detrimental structural changes can be identified, and subsequently decisions can be made regarding repairs or further restrictions.

ADOT and FHWA are requiring that these bridges be posted with the new load limit restrictions by September 2016. In order to meet that time line, we will be developing the appropriate ordinances for approval by the Pima County Board of Supervisors (BOS) at one of the meetings in August.

We anticipate that there may be impacts to businesses and users as they may need to make adjustments to routes, travel patterns, shipping schedules, etc. As a result, we are planning to implement the following outreach and notification plan:

1. Meet with the Supervisor's staff members to brief them on the pending action, and provide background information as requested.
2. For the minor roadways; Soldier Trail, Madera Canyon Road and Soledad Avenue; we will send post card notifications to the primary users i.e., UPS, FedEx, Waste Management, etc., notifying them of the pending load restrictions. This will then be followed up by a press release which will include contact information if there are any additional questions.
3. For the Nogales Highway, we have already been in contact with Dr. John Moffatt, Director of Economic Development, and he believes that this will not cause significant impact as the users can adjust delivery methods, and/or use alternate routes. We will continue to work with Dr. Moffatt to obtain contact information for the major businesses and users of this roadway i.e., Raytheon, Air National Guard, Army Reserves, etc. We will send post card notifications of the pending action, as well as meet with affected business as requested. This will also be supplemented by a mass mailing to the businesses within a one mile radius of the affected area.

4. In addition, we will also begin meeting with representatives from the Town of Sahuarita, City of Tucson and ADOT to notify them of the pending action, plus also discuss signing requirements that are needed to alert users to the newly established weight restrictions.

Although there is currently no funding available to repair or replace any of these structures, we are continuing to investigate reasonable and feasible options so that in the event funding opportunities become available, we will have corrective options identified, along with associated cost estimates.

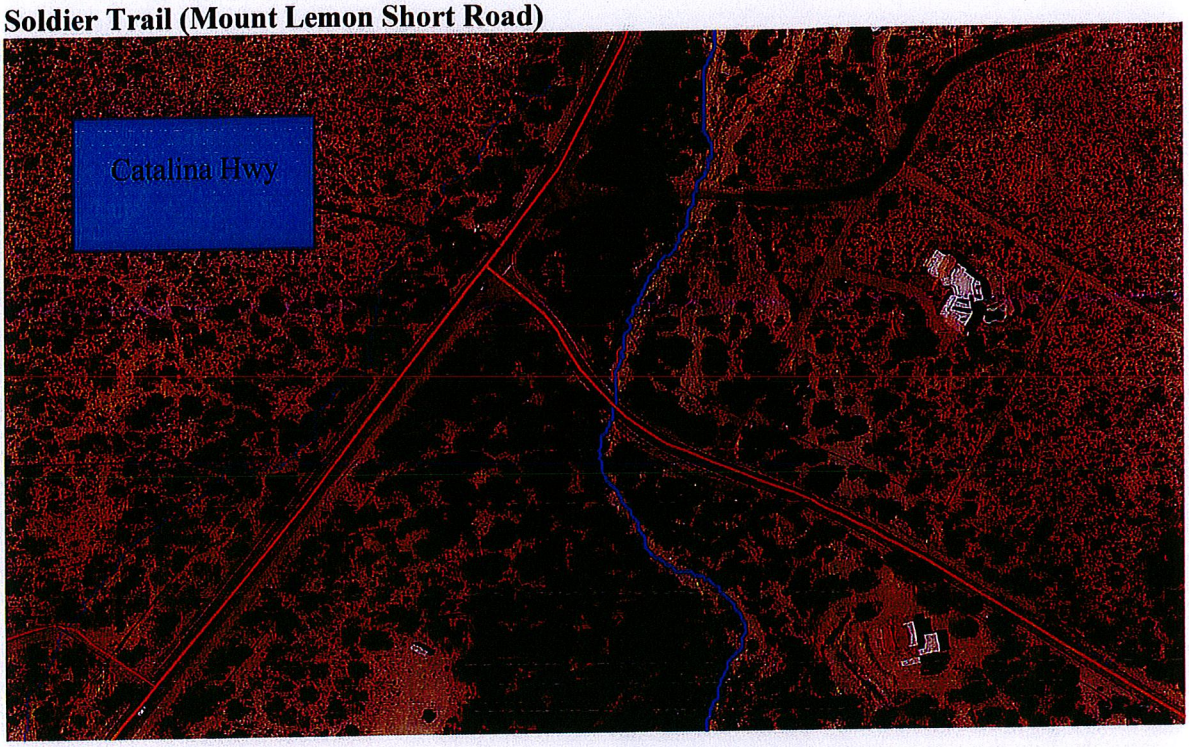
I trust this provides the information you need, and please let me know if you have any further questions.

PSC:RE:sv
Attachment

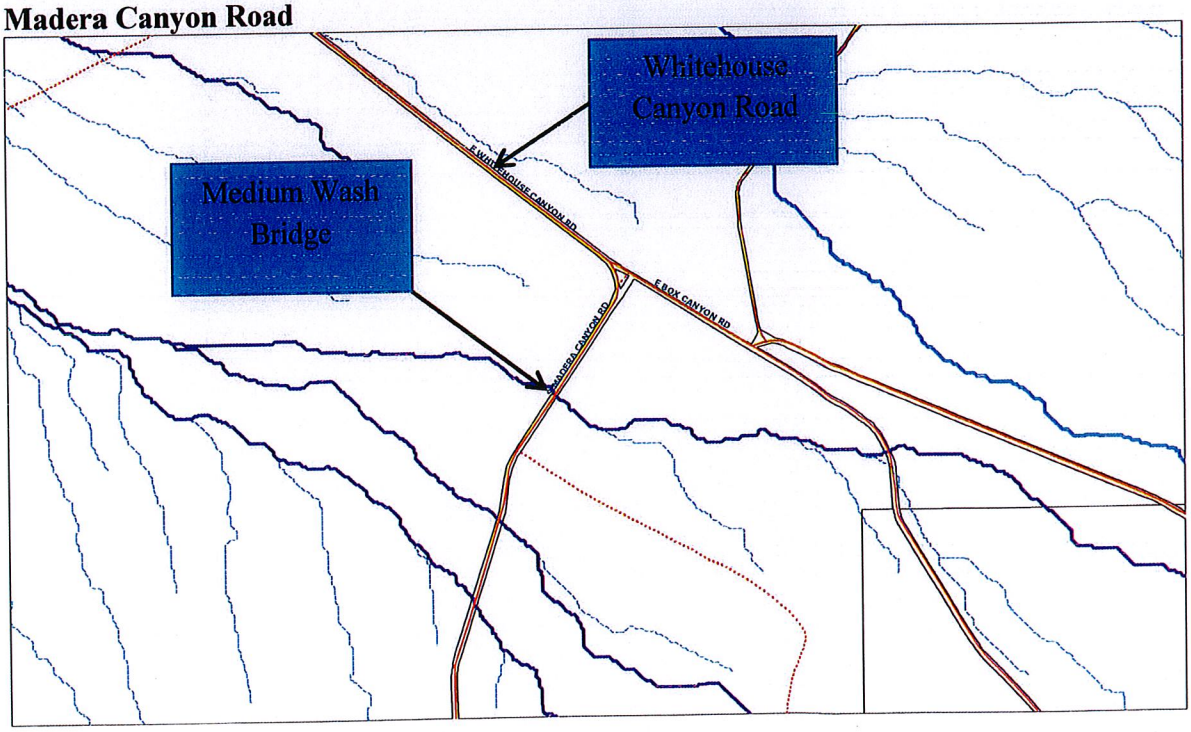
cc: John M. Bernal, Deputy County Administrator – Public Works
Dr. John Moffatt, Economic Development Director
Ana Olivares, Deputy Director for Infrastructure
Rick Ellis, Engineering Division
Dave Zaleski, Engineering Division

Attachment 1: Bridge Location Information

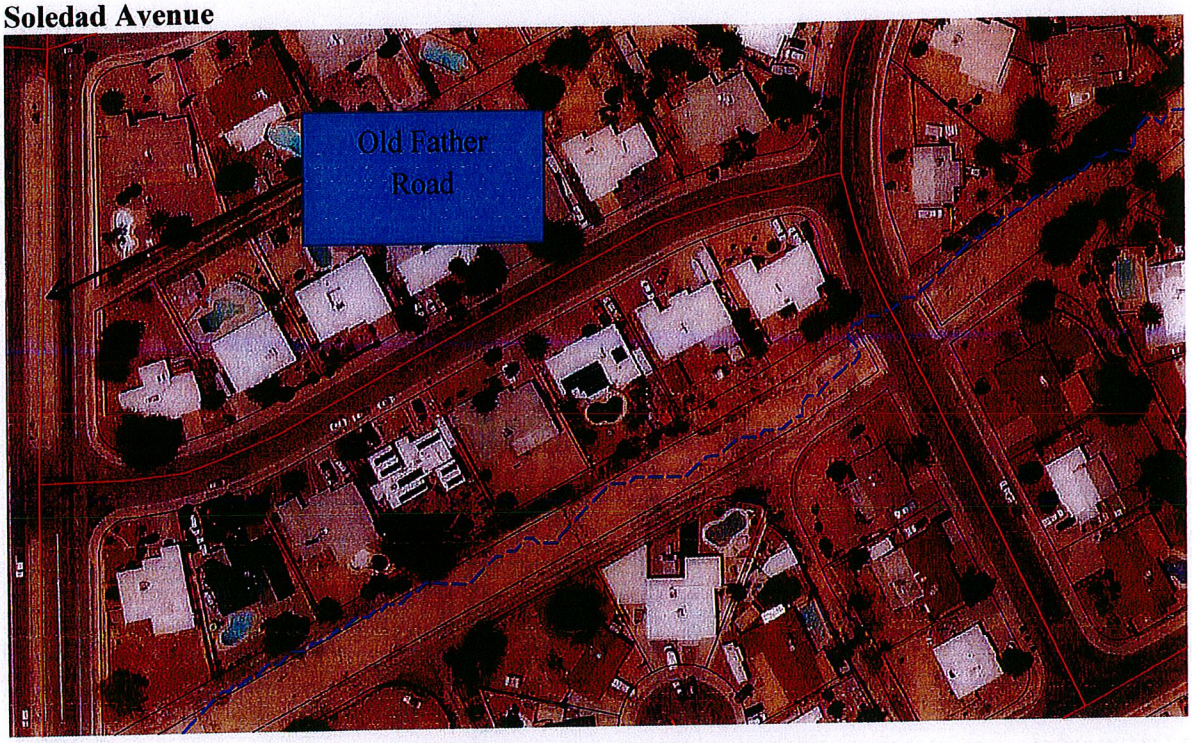
Soldier Trail (Mount Lemon Short Road)



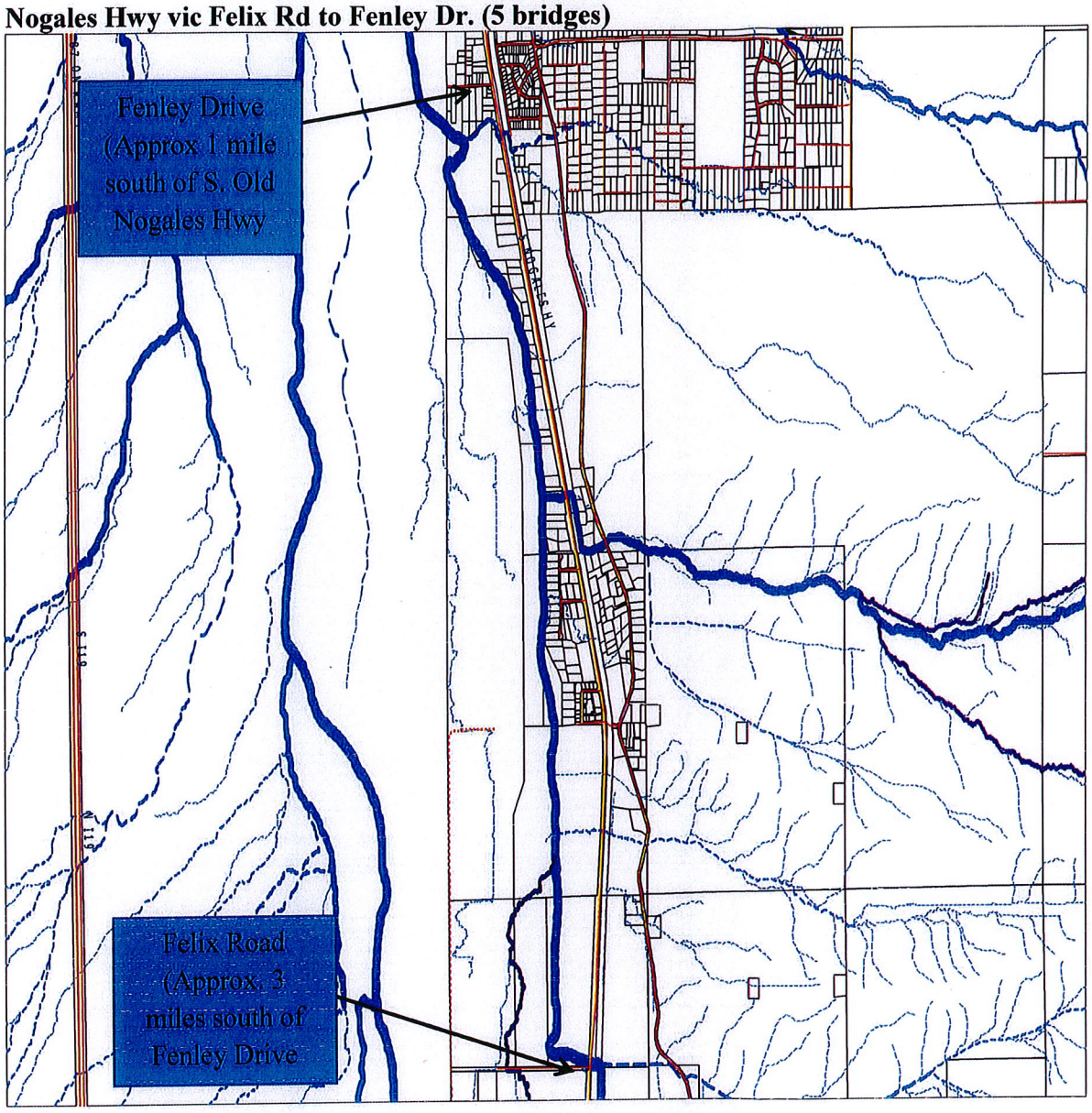
Madera Canyon Road



Soledad Avenue



Nogales Hwy vic Felix Rd to Fenley Dr. (5 bridges)



ATTACHMENT 2

PIMA COUNTY
TRANSPORTATION

MEMORANDUM

DATE: July 12, 2016

TO: C.H. Huckelberry
County Administrator

FROM: Priscilla S. Cornelio, P.E.
Director

SUBJECT: Bridge Load Postings and Recommended Outreach Plan, Follow-up Information

Since our initial memo dated June 24, 2016 (attached) regarding this subject, we have continued to investigate and evaluate our approach regarding load posting the eight bridge structures identified. As we mentioned, there was a sense of urgency to post the load restrictions in order to comply with the September 2016 deadline set forth by Federal Highway Administration (FHWA) and Arizona Department of Transportation (ADOT). In order to meet this timeline, we relied on many of the current practices, polices, guidelines and interpretations that have been in place and utilized for over 15 years.

During the last couple of weeks, at the same time we have been drafting the proposed ordinances and preparing the information for outreach and advertisement, we have also continued to research the Manual for Bridge Evaluation (MBE), including the most recent revisions and amendments. Through our investigations, as well as consultations and discussions with other structural engineers, we have determined that the five bridges on Nogales Hwy. that were originally identified for load posting (see table below), do NOT need to be posted.

	Inventory Load Rating (The load level that can safely utilize for an indefinite period of time).	**Operating Load Rating** (The absolute maximum permissible load level to which the structure may be subjected).	**Vehicle Classification Summary** (24 hour counts from February 2016).	**User Assessment Summary** (Observations from late May/early June 2016).
Nogales Hwy. vicinity Felix Road to Fenley Drive (5 bridges)	15 Tons	26 Tons	• 70% cars • 25% pickups/vans • 5% single unit trucks all the way to semis	Not observed since classification summary already indicates significant truck activity.

This change is primarily due to the fact that the Rating Factor that has been calculated for each bridge (using the three AASHTO legal vehicles, which closely match the vehicle types that most commonly use the roadway) is greater than 1.0. The latest MBE guidelines state, that when the rating factor exceeds 1.0, the bridge does not need to be posted. This information has been supplemented by additional field investigations and evaluations which confirm that the condition of these five bridges does not show any indications of stress or deterioration.

We have performed a similar evaluation of the other three bridges along Soldier Trail, Madera Canyon and Soledad Avenue. However, we have confirmed that all three show some signs of deterioration and possible load induced stress. Therefore, the department recommends proceeding with the load posting at the Operating Load Limit as summarized in the table below.

	Inventory Load Rating (The load level that can safely utilize for an indefinite period of time).	**Operating Load Rating** (The absolute maximum permissible load level to which the structure may be subjected).	**Vehicle Classification Summary** (24 hour counts from February 2016).	**User Assessment Summary** (Observations from late May/early June 2016).
Soldier Trail (Mount Lemon Short Road)	14 Tons	23 Tons	• 65% cars • 28%-31% pickups/vans • 1%-4% single unit trucks • 1% semi	UPS Delivery (medium), Waste Mgmt. septic, Waste Mgmt. roll off, construction delivery.
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Soledad Avenue	20 Tons	34 Tons	• 65%-70% cars • 29%-31% pickups/vans • 1% single unit trucks	FedEx delivery, small utility, full size garbage.

Despite this new information and revision to the load posting approach, we are still on schedule to meet the ADOT and FHWA mandate that these bridges be posted with the new load limit restrictions by September 2016. The ordinance packages have been drafted and are being circulated for review and approval, and we are targeting approval by the Pima County Board of Supervisors (BOS) at the meeting on August 2, 2016.

In addition, we will be proceeding with the following modified outreach and notification plan:

1. Notify the BOS members with memorandum briefing them on the pending action, and provide background information as requested.
2. For the minor roadways; Soldier Trail, Madera Canyon Road and Soledad Avenue; we will send post card notifications to the primary users i.e. UPS, FedEx, Waste Management, etc., notifying them of the pending load restrictions. This will then be followed up by a press release which will include contact information if there are any additional questions.
3. In addition, we will also begin meeting with representatives from other agencies (if needed) to notify them of the pending action, plus also discuss signing requirements that are needed to alert users to the newly established weight restrictions.

Due to the continued lack of available funding for repair or replacement of any of these structures (or other load bridges that are currently load restricted), we will continue to investigate reasonable and feasible options so that we can continue to maximize the use of the existing roadway system.

I trust this provides the information you need, and please let me know if you have any further questions.

PSC:RE:dg

Attachment

c: John M. Bernal, Deputy County Administrator – Public Works
Dr. John Moffatt, Director of Economic Development
Ana Olivares, Deputy Director
Rick Ellis, Engineering Division
Dave Zaleski, Engineering Division
Annabelle Valenzuela, Community Relations Program Manager