



BOARD OF SUPERVISORS AGENDA ITEM REPORT AWARDS / CONTRACTS / GRANTS

☐ Award ☐ Contract ☒ Grant

Requested Board Meeting Date: 8/21/2023

* = Mandatory, information must be provided

or Procurement Director Award: ☐

***Contractor/Vendor Name/Grantor (DBA):**

Arizona Department of Transportation

***Project Title/Description:**

Off-System Bridge Program Grant - Medium Wash Bridge Replacement

***Purpose:**

To replace the Medium Wash Bridge on Madera Canyon Road utilizing \$4,630,000 in state funds with no match amount required from Pima County.

***Procurement Method:**

Not applicable.

***Program Goals/Predicted Outcomes:**

To replace the Medium Wash Bridge on Madera Canyon Road to provide for two-way traffic and eliminate the scour critical ratings of the existing structure.

***Public Benefit:**

Enhance public safety within County right-of-way.

***Metrics Available to Measure Performance:**

Design completion and construction completion.

***Retroactive:**

No.

GNET approves
RUI
8/4/23

THE APPLICABLE SECTION(S) BELOW MUST BE COMPLETED

Click or tap the boxes to enter text. If not applicable, indicate "N/A". Make sure to complete mandatory (*) fields

Contract / Award Information

Document Type: _____ Department Code: _____ Contract Number (i.e., 15-123): _____
Commencement Date: _____ Termination Date: _____ Prior Contract Number (Synergen/CMS): _____
☐ Expense Amount \$ _____ * ☐ Revenue Amount: \$ _____

***Funding Source(s) required:** _____

Funding from General Fund? ☐ Yes ☐ No If Yes \$ _____ % _____

Contract is fully or partially funded with Federal Funds? ☐ Yes ☐ No

If Yes, is the Contract to a vendor or subrecipient? _____

Were insurance or indemnity clauses modified? ☐ Yes ☐ No
If Yes, attach Risk's approval.

Vendor is using a Social Security Number? ☐ Yes ☐ No
If Yes, attach the required form per Administrative Procedure 22-10.

Amendment / Revised Award Information

Document Type: _____ Department Code: _____ Contract Number (i.e., 15-123): _____

Amendment No.: _____ AMS Version No.: _____

Commencement Date: _____ New Termination Date: _____

Prior Contract No. (Synergen/CMS): _____

☐ Expense ☐ Revenue ☐ Increase ☐ Decrease

Amount This Amendment: \$ _____

Is there revenue included? ☐ Yes ☐ No If Yes \$ _____

***Funding Source(s) required:** _____

Funding from General Fund? ☐ Yes ☐ No If Yes \$ _____ % _____

Grant/Amendment Information (for grants acceptance and awards)

☒ Award ☐ Amendment

Document Type: GTAW Department Code: TR Grant Number (i.e., 15-123): 23*156

Commencement Date: August 21, 2023 Termination Date: June 30, 2028 Amendment Number: _____

☒ Match Amount: \$ -0- ☒ Revenue Amount: \$ 4,630,000

***All Funding Source(s) required:** Arizona Department of Transportation, Department of Transportation

*Match funding from General Fund? ☐ Yes ☒ No If Yes \$ _____ % _____

*Match funding from other sources? ☐ Yes ☒ No If Yes \$ _____ % _____

*Funding Source: _____

*If Federal funds are received, is funding coming directly from the Federal government or passed through other organization(s)?
Passed through ADOT

Contact: Krista Christensen (Administrative Contact: Angela Alvarez 724-5927)

Department: Transportation

Telephone: 520-724-6775

Digitally signed by Kathryn Skinner
DN: cn=Kathryn Skinner, o=Transportation, ou=Pima
County, email=kathryn.skinner@pima.gov, c=US
Date: 2023.08.01 12:19:47 -07'00'

Department Director Signature: _____

Date: _____

Deputy County Administrator Signature: _____

Date: 8/4/2023

County Administrator Signature: _____

Date: 8/4/2023



Infrastructure Delivery and Operations

Katie Hobbs, Governor
Jennifer Toth, Director
Gregory Byres, State Engineer
Steve Boschen, Division Director

March 24, 2023

Stephen Wilson
Civil Engineering Manager
Pima County Department of Transportation
201 N. Stone Avenue
Tucson, AZ 85701

Re: Off-System Bridge (OSB) Program Funding - Bridge Formula Program

Project Name: Medium Wash Bridge Replacement
Project Location: Madera Canyon Road
Bridge Structure #: 08301
Project Sponsor: Pima County
COG/MPO: PAG

Dear Mr. Wilson,

The Arizona Department of Transportation (ADOT) OSB Selection Committee has completed its review of the State Fiscal Year (FY) 2023 OSB Program applications. Based on the review of the submitted application and established scoring criteria used in the technical review process, the above referenced project has been determined as eligible and selected to receive OSB program funding in the amount of \$4,630,000 as shown below.

Funding for this project is established under the ADOT OSB Bridge Formula Program (BFP) and must follow all federal-aid requirements. Eligible bridge projects under this category of funding are allocated 100% federal share with no local match requirements.

Design/Admin Costs - FY24		Right of Way Costs- FY24		Construction Costs- FY26	
Federal OSB (100%)	\$ 577,000	Federal OSB (100%)	\$ 25,000	Federal OSB (100%)	\$ 4,028,000
Local (100%)	\$ -	Local (100%)	\$ -	Local (100%)	\$ -
Estimated Total Cost	\$ 577,000	Estimated Total Cost	\$ 25,000	Estimated Total Cost	\$ 4,028,000

Please ensure that this project is programmed in the Regional Transportation Improvement Plan (TIP) for the correct funding amount, the correct FY, and that all funding sources and project phases are identified showing a fully funded project. Once the project has been programmed in the Regional TIP, Project Sponsors may submit a project initiation packet to the ADOT LPA Section to begin the Project Development Process.

Please note that eligibility does not give you authorization to begin work. Federal funding authorization will be requested by ADOT through the Development process. Any work performed prior to federal authorization is not eligible for reimbursement.

If you have any questions regarding this request, please contact the ADOT LPA Section at (602) 712-7132.

Sincerely,

DocuSigned by:
Mark Henige
D9E57E5240E5477...
Mark Henige

ADOT LPA Section
Program Manager

Cc: File, COG/MPO, ADOT MPD, ADOT Bridge Group



OFF-SYSTEM BRIDGE (OSB) PROGRAM APPLICATION

OSB Funding is a federal-aid program and must follow all federal-aid requirements

GENERAL PROJECT INFORMATION (Medium Wash NBI #8301)					
SPONSORING AGENCY: (AGENCY NAME & ADDRESS)	Pima County Department of Transportation	DATE SUBMITTED:	12/30/2022 rev 3/6/2023		
CONTACT NAME:	Stephen Wilson	TITLE:	Civil Engineering Manager		
EMAIL ADDRESS:	Stephen.Wilson@pima.gov	PHONE #:	(520) 724-5912		
OSB PROGRAM: (Check one)	<input type="checkbox"/> STBG Program (94.3%/5.7%) <input checked="" type="checkbox"/> Bridge Formula Program (BFP) (100%)				
PROJECT LOCATION	Bridge Name:	Medium Wash			
	Bridge Structure #:	8301			
	Road Name:	Madera Canyon Road			
	County:	Pima			
	COG/MPO/TMA:	PAG			
	ADOT District:	Southcentral			
	Starting Location:	0.3 mi south of Whitehouse Canyon Rd			
	Ending Location:	0.5 mi south of Whitehouse Canyon Rd			
	Length (to the 0.1 of a mile):	0.2 mi			
TYPE OF WORK	# of Lanes (Before & After):	Before:	1	After:	2
	<input type="checkbox"/> Rehabilitation/Strengthening <input checked="" type="checkbox"/> Replacement <input type="checkbox"/> Preservation/Preventative Maintenance/Protection				
	Bridge Structure Condition				
	<input type="checkbox"/> Good		<input type="checkbox"/> Fair		
<input checked="" type="checkbox"/> Poor		<input checked="" type="checkbox"/> Weight Restricted			
PROJECT INCLUDED IN LOCAL CAPITAL IMPROVEMENT PLAN (CIP)					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
FEDERAL FUNCTIONAL CLASSIFICATION – (LINK: FEDERAL FUNCTIONAL CLASSIFICATION MAPS) :					Minor Collector
AVERAGE ANNUAL DAILY TRAFFIC (AADT) COUNT (LINK: AADT COUNTS) :	740	DATE OF AADT COUNT:	2021		
Crash Data (5 Years):	According to the ADOT crash database, there were no crashes in the past 5 years on Madera Canyon Road within the limits of the proposed limits of bridge replacement project.				

Any application without the required attachment(s) will not be considered for funding

- ATTACH** a detailed scoping document that includes an alternative analysis, project background, scope of work, justification, 15% level plans, schedule identifying critical milestones, and detailed cost estimates for Design and Construction phases. (Not required if submitting for Scoping Only).
- ATTACH** a Project Vicinity/Project Location Map
- ATTACH** a copy of the FHWA Functional Classification Map
- ATTACH** photographs

Samples are available on the [ADOT LPA Section Website](#) (LINK), including the ADOT Cost Estimate Tool, Project Scoping Document Guidelines, and Sample Scoping Document based on the ADOT Pre-Design Section format.

COST ESTIMATE & PROJECT PROGRAMMING (Medium Wash NBI #8301)			
		Total Project Estimated Cost (Include ADOT PDA Fee, Scoping, Design, ROW, & Construction):	\$4,630,000
<input checked="" type="checkbox"/>	ADOT PROJECT DELIVERY ADMINISTRATION (PDA) FEE	Bridge Formula Program: Federal Share (100%)	\$ 10,000
		STBG Program: Federal Share (94.3%) (Complete If using federal STBG funds for PDA Fee)	\$0
		STBG Local Match (5.7%) (Complete If using federal STBG funds for PDA Fee)	\$0
		Additional/100% Local Funding: (Complete If using only local funds for PDA Fee)	\$0
		Total ADOT Project Delivery Administration (PDA) Fee (\$30,000 Non-CA/\$10,000 CA):	\$10,000
<input type="checkbox"/>	SCOPING	FY Program Year:	
		Bridge Formula Program: Federal Share (100%)	\$0
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$0
		Additional/100% Local Funding:	\$0
		Total Cost for Scoping	\$0
<input checked="" type="checkbox"/>	DESIGN	FY Program Year:	2024
		Bridge Formula Program: Federal Share (100%)	\$567,000
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$ 0
		Additional/100% Local Funding:	\$0
		Total Cost for Project Development	\$567,000
<input checked="" type="checkbox"/>	ROW	FY Program Year:	2024
		Bridge Formula Program: Federal Share (100%)	\$25,000
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$0
		Additional/100% Local Funding:	\$0
		Total Cost for ROW	\$25,000
<input checked="" type="checkbox"/>	CONSTRUCTION	FY Program Year:	2026
		Bridge Formula Program: Federal Share (100%)	\$4,028,000
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$0
		Additional/100% Local Funding:	\$0
		Total Cost for Construction (including CE, CC, PDS)	\$4,028,000

PROJECT WORK DESCRIPTION (Medium Wash NBI #8301)

Describe the purpose and need of the project. What work is proposed for this project? How will the project improve the condition and/or extend the service life of the bridge?

Pima County DOT has in its' inventory a one-lane bridge located on Madera Canyon Road approximately 25 miles south of Tucson. The one-lane structure at Medium Wash (#8301) was built in 1935 and is considered functionally obsolete due to only providing one-way traffic operations. The most recent ADT on Madera Canyon Road (obtained from Streetlight due to data not being available from ADOT or PAG) is estimated to be approximately 740 vpd which creates a potential safety issue for one-way traffic operations at the bridge. The overall condition of the structure is rated as "Poor". The structure was determined to be scour critical in 1997. The sufficiency rating is 27 for Medium Wash (Structure #8301). Medium Wash bridge has a maximum span of 27' that was load rated at 39 tons in 2014.

Pima County DOT recommends that Medium Wash (Structure #8301) on Madera Canyon Road both be replaced with a new bridge structure. The proposed replacement structure would improve safety by providing for two-way traffic operations. The replacement structure would eliminate the scour critical ratings of the existing structure. The overall cost of the project is estimated to be \$4,630,000.

AGENCY PRIORITIZATION (Medium Wash NBI #8301)

Describe the agencies top (up to three) priorities of off-system bridges in your inventory. Provide justification as to why the bridge project in this application is the top priority. (Refer to section of Priority Ranking of Candidate Bridges in the Off-System Bridge Program Guidelines.)

According to the Pima County Department of Transportation Bridge Management System Priority Ranking, there are seven bridges meeting the criteria of the Off-System Bridge program that have a Sufficiency Ratings less than 40 and two structures less than 25. The table below lists the seven highest priority structures in Pima County's inventory.

NBI #	Bridge Name	Road Name	Proposed Scope	Sufficiency Rating	Condition	Functionally Obsolete (F) Structurally Deficient (S)	Priority
8475	Jones Wash Br.	Mile Wide Rd	Replacement	21.1	Poor	S	7
8474	Brawley Wash Br.	Mile Wide Rd	Replacement	21.6	Poor	S	8
8301	Medium Wash Br.	Madera Canyon Rd	Replacement	26.0	Poor	S	4
8259	Blanco Wash Br.*	Silverbell Rd	Replacement	31.3	Fair	F,S	1
8302	Florida Cyn. Wash Br.	Madera Canyon Rd	Replacement	33.0	Poor	S	5
8258	Ajo Wash Bridge*	Telera St	Replacement	34.9	Poor	S	3
8318	Mission Rd OP*	Mission Rd	Rehabilitation	36.9	Poor	S	2

* Currently programmed

The three highest priority structures are currently programmed for either replacement or rehabilitation using OSB funding. Replacing the Medium Wash bridge on Madera Canyon Road is PCDOT's next priority due to the overall condition of the bridge as documented in the November, 2021 Structure Inventory and Appraisal and Inspection Report (see attached). The two bridges on Mile Wide Road have lower sufficiency ratings than the bridge on Madera Canyon Road; however, replacing structures on roadways with lower AADT's does not meet the objectives of PCDOT's bridge program. Currently, Mile Wide Road at the Brawley Wash Bridge has an ADT of 114 vpd while Mile Wide Road at the Jones Wash Bridge has an ADT of 64 vpd according to counts done by PCDOT in 2019. Both of these AADT's are significantly less than the AADT on Madera Canyon Road of 740 vpd. One-way traffic operations on Madera Canyon Road with a AADT of 740 vpd is a potential safety issue which is a top priority of the Off-System Bridge Program and is why PCDOT has prioritized the replacement of the Medium Wash Bridge above Mile Wide Road bridges at Jones Wash and Brawley Wash.

This project is considered an ideal candidate for the OSB program for replacement in order to improve safety, eliminate load restrictions and scour issues. Pima County does not currently have funding to replace the Medium Wash structure.

OPERATIONAL IMPROVEMENT (Medium Wash NBI #8301)

How will this bridge project improve the agency's operations?

Are there other operational improvements? If so, what are they and how will this project improve them?

Topics to consider addressing in application:

- Effect on lifecycle
- Maintenance and Repair tasks and frequency
- Annual maintenance and repair costs

The proposed replacement structure for Medium Wash would allow the Madera Canyon Road to be opened to two-way traffic at the bridge thereby improving traffic operations and safety. The potential risk of head-on or side-swipe type crashes will be reduced by the elimination of one-way traffic operations with the proposed bridge replacement project.

Medium Wash was constructed in 1935 by the Civilian Conservation Corps. The superstructure of the bridge may have been reconstructed in 1954 according to a Structural Assessment Reports done by Holben, Martin & White in September, 2000. A bridge scour evaluation was done by Cannon & Associates in 1997 in which the structure was determined to be scour critical. Sufficiency ratings have continued to decline and is presently 27 for Medium Wash (Structure #8301). The structure is considered to be in "Poor" condition and is at (or beyond) the end of its lifecycle at 87 years old.

Replacing the structures at Medium Wash will reduce PCDOT's Maintenance efforts. The project would reduce ADOT inspection efforts and bridge load rating efforts in the future will be eliminated. Annualized maintenance efforts and repair costs are estimated to be approximately in the \$5,000 to \$10,000 range.

The proposed replacement structure would allow the roadway to be opened to two-way traffic at the bridge.

COMMUNITY IMPACTS (Medium Wash NBI #8301)

How important is this bridge crossing and access to the community?

Topics to consider addressing in this application:

- Emergency Access
- Local Business and Industry Access
- Educational Access
- Other areas important to the community

Madera Canyon Road provides recreational access to Madera Canyon located in the Coronado National Forest, Nogales Ranger District. The current AADT for Madera Canyon Road at the project site is 740 vpd. Madera Canyon is a popular destination due to the many recreational opportunities available including hiking, bird/animal watching, camping and picnicking at higher elevations and cooler temperatures.

Because Madera Canyon Road is the only roadway to Madera Canyon, it also provides emergency access for medical response, rescue efforts, fire fighting by the USFS and is the evacuation route from fire and other weather related incidents.

The Santa Rita Lodge, Madera Kubo B & B and the Chuparosa Inn are available for overnight accommodations in Madera Canyon. The Friends of Madera Canyon provide an outdoor nature education program for children to learn about history, plants, wildlife and scientific method.

Madera Canyon Road is an important asset to the community for the recreational, emergency, business and educational access it provides.

OTHER (Medium Wash NBI #8301 and Florida Canyon Wash NBI #8302)

This is an opportunity to add project-specific items or unique issues that are not addressed in another category.

Based on the poor condition and the scour critical assessment of both Medium Wash and Florida Canyon Wash structures, PCDOT had previously developed a project in 2001 to replace the two bridges on Madera Canyon Road. The overall project was split into two separate federally funded projects; one for replacement of the Medium Wash (Structure #8301) Federal Project No. BR-PPM-0(149)P, TRACS No. 0000 PM PPM SB405 01C and the other for Florida Canyon Wash (Structure #8302) Federal Project No. BR-PPM-0(150)P, TRACS No. 0000 PM PPM SB406 01C. The projects were developed to include plans, specifications and clearances for right-of-way, utilities and environmental. The projects were not constructed due to budgetary reasons. Available documents from the previous project development efforts are submitted with this application. Below is a list of the reports and documents completed for the previous project:

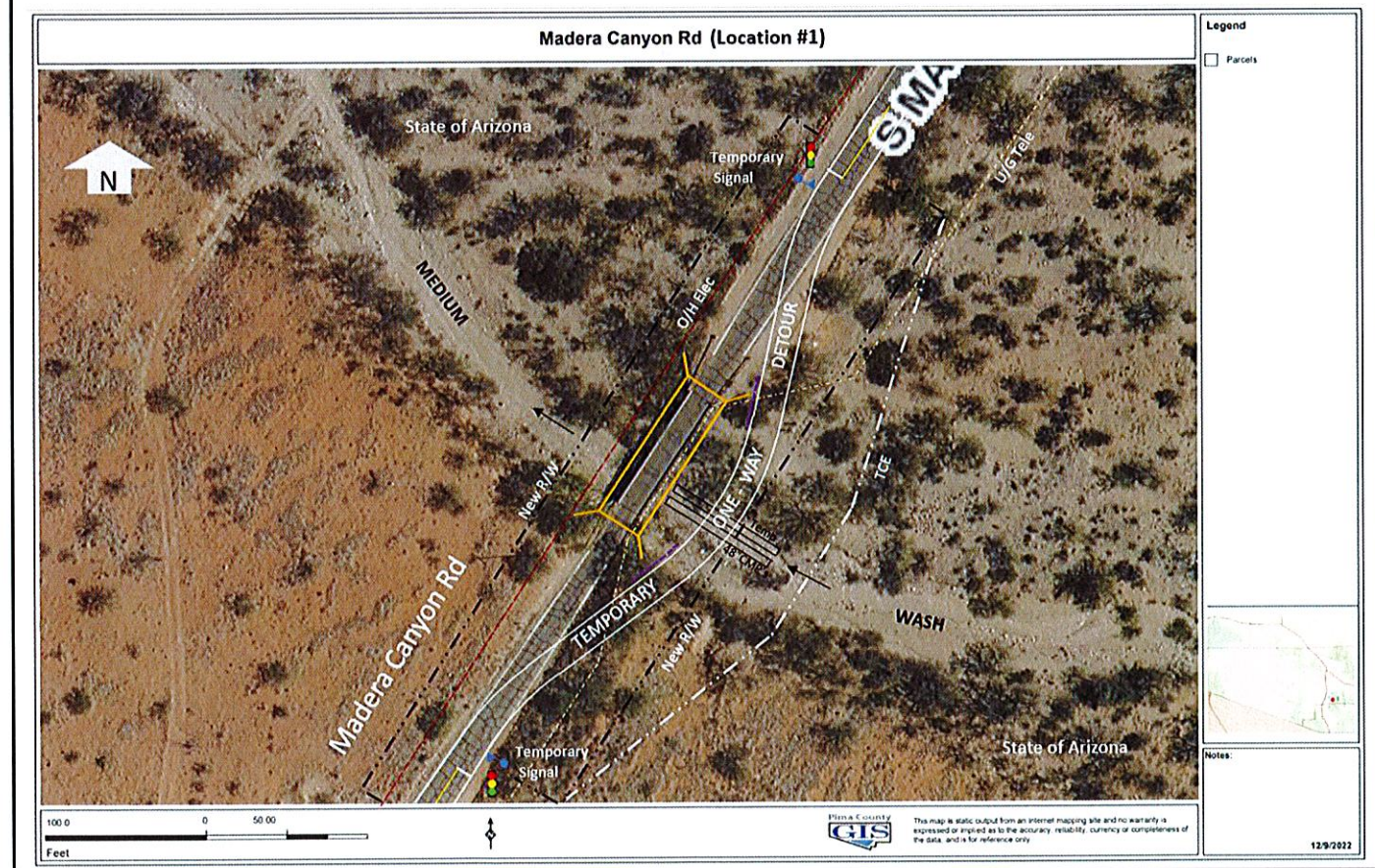
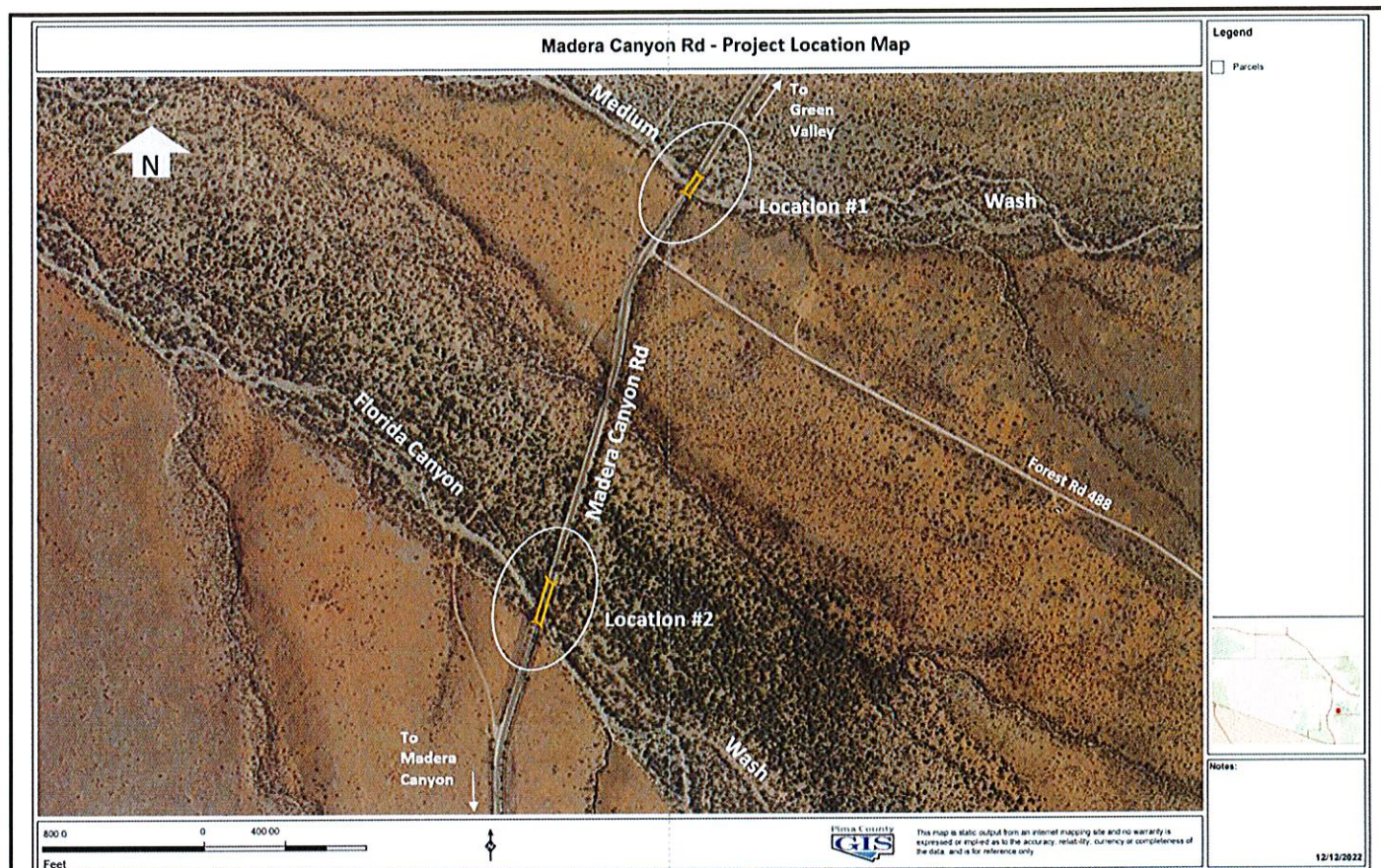
1. Design Concept Report for Madera Canyon Road Bridge at Medium Wash, July 2001
2. Design Concept Report for Madera Canyon Road Bridge at Florida Canyon Wash, July 2001
3. Bridge Assessment Report for Madera Canyon Road at Medium Wash, September 2000
4. Bridge Assessment Report for Madera Canyon Road at Florida Canyon Wash, September 2000
5. Biological Evaluation for Madera Canyon Road Bridge Replacement at Medium Wash, March 2005
6. Biological Evaluation for Madera Canyon Road Bridge Replacement at Florida Canyon Wash, March 2005
7. Cultural Resources Survey for Two Improvement Projects Along Madera Canyon Road, June 2001
8. ADOT Environmental & Enhancement Group Section 106 Consultation, October 2002
9. Phase I Environmental Site Assessment, December 2005
10. ADOT Environmental & Enhancement Group Categorical Exclusion, June 2006
11. ADOT Environmental & Enhancement Group - Environmental Clearance, June 2006
12. Geotechnical Evaluation, October and November 2000
13. Drainage Report Madera Canyon Road at Medium Wash and Florida Canyon Wash, May 2001

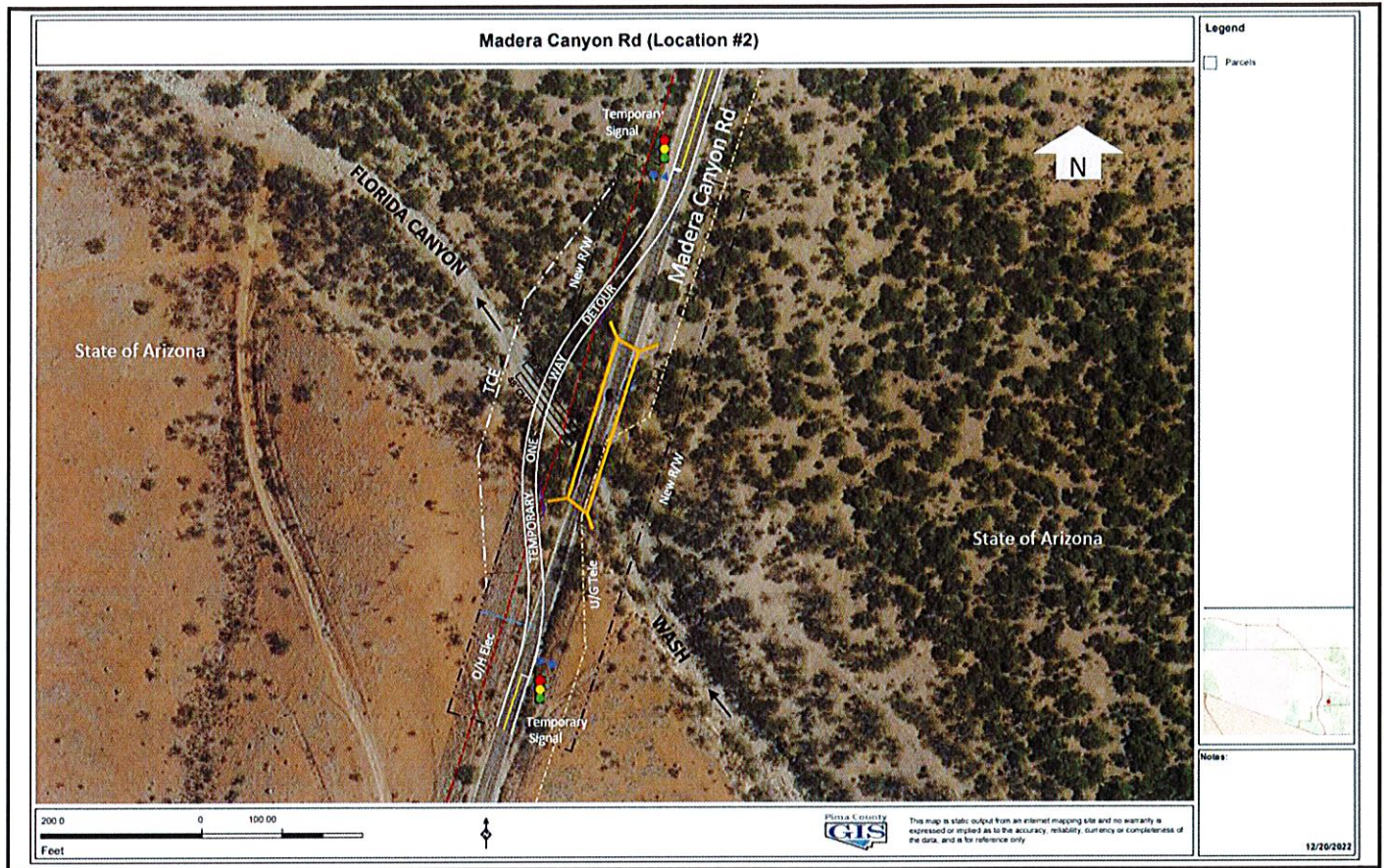
The previous reports and documents provide a level of understanding of the anticipated efforts for this project (submitted for the current Call for Projects) for the OSB program. Most of what was done back in the early 2000's will need to be redone but the information will be helpful in determining the revised scope. The previous project proposed to realign Madera Canyon Road for approximately $\frac{3}{4}$ mile whereas the proposed project submitted for this OSB application focuses on replacing the bridge at Medium Wash (and Florida Canyon Wash if sufficient OSB funds are available in FY 26) in order to minimize roadway work. The replacement structure at Medium Wash could be constructed on the existing alignment using a one-lane temporary detour with temporary traffic signals or by constructing the replacement structure in halves as a two-phase stage construction operation thus reducing the overall project cost substantially from what was previously proposed.

The "Bridge Selection Report for Madera Canyon Road Bridge at Medium Wash" prepared by HM&W in 2001 recommends a single-span bridge structure having a total length of 93 feet. The report recommended a substructure supported on drilled shaft foundations and AASHTO Type IV precast, pre-stressed concrete I-girder superstructure with ADOT Type F barriers. The roadway width would be 11' lanes and 6' shoulders for the structure.

The proposed superstructure type for the Medium Wash bridge will be reevaluated during design in order to minimize the amount the profile grade of Madera Canyon Road needs to be raised relative the cost of the bridge.

Below are exhibits showing the location of the Medium Wash (and Florida Canyon Wash) bridge site. A temporary one-lane detour is shown on the exhibit but the bridge replacement project could be developed using a phased approach where the bridge is constructed in halves. A cost estimate of the proposed project is attached to the application.





DEVELOPMENT CONSIDERATIONS (Medium Wash NBI #8301)

Projects that have identified challenges and risks to delivery will encounter fewer hurdles and allow for a project to have fewer complications and provide the best opportunity for a project to be delivered on time and within budget.

CHALLENGES/RISKS TO DELIVERY AND CONSTRUCTION OF PROJECT	<p>Please describe any challenges that may impact the scope, schedule, budget and/or delivery of this project.</p>	<p>The project involves acquisition of new right-of-way from the Arizona State Lands Department at the Medium Wash bridge site. The schedule will need to be such that adequate time is provided in order to follow ASLD's processes. Two years is anticipated for this effort and that is why the project tentatively proposes design in FY 24 and construction in FY 26. It is anticipated that Madera Canyon Road will remain open at all times, therefore temporary detours and/or stage construction will be necessary.</p>
ENVIRONMENTAL	<p>Are there any potential environmental impacts or challenges of the project that you can foresee?</p> <p><i>(e.g. endangered species, cultural resources, hazardous materials sites, Section 4(f) properties, Title VI populations, significant community opposition, wetlands that would be affected, etc.)</i></p>	<p>This project will comply with the National Environmental Policy Act (NEPA) to determine the effects to the environment, consultations and coordination and any mitigations necessary for impacts caused by project. There will be tree removals necessary at the bridge site, therefore Migratory Bird Treaty Act mitigations will apply to this project. Nest surveys will be required if vegetation removals are done during the breeding season between March 1st and August 31st. Potential impacts to biological resources will be addressed in a Biological Evaluation prepared for the project. Previous studies determined there was suitable habitat for Pima Pineapple Cactus and Cactus</p>

		<p>Ferruginous owls within the project limits. No known hazardous materials were found from the previous Preliminary Initial Site Assessment (PISA) that was prepared for the project in 2001. There are no known wetlands affected. Medium Wash is classified as "water of the US" and therefore subject to the jurisdiction of the Corps of Engineer is under Section 404 of the Clean Water Act. A jurisdictional delineation will be coordinated with the COE in order to obtain an individual permit involving discharges into the delineated area. Previous Section 4(f) assessments done in 2000 and reviewed by the State Historic Preservation Office concluded Medium Wash structure was not eligible for listing on the National Register of Historic Places. No known noise or air quality issues exist at the project site. Riparian habitat areas will be affected. Mitigation using in-lieu fees are anticipated. Public outreach will be included during the project development phase.</p>
RIGHT-OF-WAY (ROW)	<p>Please describe any ROW items associated with this project.</p> <p><i>(e.g. Will ROW be required? How much ROW? Is the State Land Department involved? Consider Right of Way requirements associated with Traffic Control/Detour Requirements; Access, Construction Area Needs and on-going Maintenance Requirements.</i></p>	<p>The width of the existing right-of-way for Madera Canyon Road is 66'. This project will require new right-of-way from the Arizona State Land Department (approximately 0.5 acres total). The new right-of-way would be required for the fill slopes of the roadway approaches to the replacement structures. Temporary construction easements will be needed from ASLD at the bridge site for the proposed temporary detours and/or phased construction activities. A construction staging area will be identified during the development process and will likely require a TCE. The easement for the telephone line will require modification due to anticipate relocation.</p>
UTILITIES & RAILROAD	<p>Please describe any Utilities and/or Railroad items associated with this project.</p> <p><i>(e.g. Will the project include/require any utility relocation(s) by the project sponsor? What utilities may be impacted? Are there prior rights? If Yes, please explain.)</i></p>	<p><u>Electrical</u> There are overhead electrical lines along the west side of Madera Canyon Road that will likely not be impacted by the project.</p> <p><u>Underground Telephone</u> An underground telephone line exists along the east side of Madera Canyon Road through the limits of the project. The telephone line is in a conduit that is attached to the east side of the Medium Wash structure. The telephone line will require relocation at the structure due to the project. Prior rights are not anticipated.</p> <p><u>Railroad</u> The closest railroad is approximately 7.8 miles away and is not impacted by the project.</p>

Certificate Of Completion

Envelope Id: 442F951EDB6043E78795AEBEEEE12C4D

Status: Completed

Subject: Complete with DocuSign: FY23 OSB Elg Ltr; PPM Medium Wash Br.doc, 03062023 Medium Wash Br App.docx

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Signatures: 1

Envelope Originator:

Certificate Pages: 1

Initials: 0

Jennifer Hobert

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Phoenix, AZ 85007

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JHobert@azdot.gov

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Mark Henige

MHenige@azdot.gov

ADOT

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Payment Events**Status****Timestamps**



OFF-SYSTEM BRIDGE (OSB) PROGRAM APPLICATION

OSB Funding is a federal-aid program and must follow all federal-aid requirements

GENERAL PROJECT INFORMATION					
SPONSORING AGENCY: (AGENCY NAME & ADDRESS)		Pima County Department of Transportation		DATE SUBMITTED:	12/30/2022
CONTACT NAME:		Stephen Wilson		TITLE:	Civil Engineering Manager
EMAIL ADDRESS:		Stephen.Wilson@pima.gov		PHONE #:	(520) 724-5912
OSB PROGRAM: (Check one)		<input type="checkbox"/> STBG Program (94.3%/5.7%)		<input checked="" type="checkbox"/> Bridge Formula Program (BFP) (100%)	
PROJECT LOCATION		Bridge Name:		Medium Wash and Florida Canyon Wash	
		Bridge Structure #:		8301 and 8302	
		Road Name:		Madera Canyon Road	
		County:		Pima	
		COG/MPO/TMA:		PAG	
		ADOT District:		Southcentral	
		Starting Location:		0.4 mi south of Whitehouse Canyon Rd	
		Ending Location:		0.7 mi south of Whitehouse Canyon Rd	
Length (to the 0.1 of a mile):		Two Spot Locations (0.3 mi apart)			
# of Lanes (Before & After):		Before:	1	After:	2
TYPE OF WORK		<input type="checkbox"/> Rehabilitation/Strengthening		Bridge Structure Condition	
		<input checked="" type="checkbox"/> Replacement		<input type="checkbox"/> Good	<input type="checkbox"/> Fair
		<input type="checkbox"/> Preservation/Preventative Maintenance/Protection		<input checked="" type="checkbox"/> Poor	<input checked="" type="checkbox"/> Weight Restricted
PROJECT INCLUDED IN LOCAL CAPITAL IMPROVEMENT PLAN (CIP)				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
FEDERAL FUNCTIONAL CLASSIFICATION – (LINK: FEDERAL FUNCTIONAL CLASSIFICATION MAPS) :				Minor Collector	
AVERAGE ANNUAL DAILY TRAFFIC (AADT) COUNT (LINK: AADT COUNTS) :		740		DATE OF AADT COUNT:	2021
Crash Data (5 Years):		According to the ADOT crash database, there were no crashes in the past 5 years on Madera Canyon Road within the limits of the proposed limits of bridge replacement project.			
<p><u>Any application without the required attachment(s) will not be considered for funding</u></p> <ul style="list-style-type: none">• ATTACH a detailed scoping document that includes an alternative analysis, project background, scope of work, justification, 15% level plans, schedule identifying critical milestones, and detailed cost estimates for Design and Construction phases. (Not required if submitting for Scoping Only).• ATTACH a Project Vicinity/Project Location Map• ATTACH a copy of the FHWA Functional Classification Map• ATTACH photographs <p>Samples are available on the ADOT LPA Section Website (LINK), including the ADOT Cost Estimate Tool, Project Scoping Document Guidelines, and Sample Scoping Document based on the ADOT Pre-Design Section format.</p>					

COST ESTIMATE & PROJECT PROGRAMMING

		Total Project Estimated Cost (Include ADOT PDA Fee, Scoping, Design, ROW, & Construction):	\$12,700,000
<input checked="" type="checkbox"/>	ADOT PROJECT DELIVERY ADMINISTRATION (PDA) FEE	Bridge Formula Program: Federal Share (100%)	\$ 10,000
		STBG Program: Federal Share (94.3%) (Complete if using federal STBG funds for PDA Fee)	\$0
		STBG Local Match (5.7%) (Complete if using federal STBG funds for PDA Fee)	\$0
		Additional/100% Local Funding: (Complete if using only local funds for PDA Fee):	\$0
		Total ADOT Project Delivery Administration (PDA) Fee (\$30,000 Non-CA/\$10,000 CA):	\$10,000
<input type="checkbox"/>	SCOPING	FY Program Year:	
		Bridge Formula Program: Federal Share (100%)	\$0
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$0
		Additional/100% Local Funding:	\$0
		Total Cost for Scoping	\$0
<input checked="" type="checkbox"/>	DESIGN	FY Program Year:	2024
		Bridge Formula Program: Federal Share (100%)	\$1,140,000
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$ 0
		Additional/100% Local Funding:	\$0
		Total Cost for Project Development	\$1,140,000
<input checked="" type="checkbox"/>	ROW	FY Program Year:	2024
		Bridge Formula Program: Federal Share (100%)	\$50,000
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$0
		Additional/100% Local Funding:	\$0
		Total Cost for ROW	\$50,000
<input checked="" type="checkbox"/>	CONSTRUCTION	FY Program Year:	2026
		Bridge Formula Program: Federal Share (100%)	\$11,500,000
		STGB Program: Federal Share (94.3%)	\$0
		Local Match (5.7%):	\$0
		Additional/100% Local Funding:	\$0
		Total Cost for Construction (Including CE, CC, PDS)	\$11,500,000

PROJECT WORK DESCRIPTION

Describe the purpose and need of the project. What work is proposed for this project? How will the project improve the condition and/ or extend the service life of the bridge?

Pima County DOT has in its' inventory two one-lane bridges located on Madera Canyon Road approximately 25 miles south of Tucson. The one-lane structures at Medium Wash (#8301) and Florida Canyon Wash (#8302) were both built in 1935 and are considered functionally obsolete due to only providing one-way traffic operations. The most recent ADT on Madera Canyon Road (obtained from Streetlight due to data not being available from ADOT or PAG) is estimated to be approximately 740 vpd which creates a potential safety issue for one-way traffic operations at both bridges. The overall condition of both structures is rated as "Poor". Both structures were determined to be scour critical in 1997. The sufficiency ratings are 27 and 33 for Medium Wash (Structure #8301) and Florida Canyon Wash (Structure #8302) respectively. Medium Wash bridge has a maximum span of 27' that was load rated at 39 tons in 2014. Florida Canyon Wash bridge has a maximum span of 24' and did not require a load posting according to the load rating done in 2014.

Pima County DOT recommends that Medium Wash (Structure #8301) and Florida Canyon Wash (Structure # 8302) on Madera Canyon Road both be replaced with a new bridge structures. The proposed replacement structures would improve safety by providing for two-way traffic operations. The replacement structures would eliminate the scour critical ratings of the existing structures. The overall cost of the project is estimated to be \$12,700,000. The project proposes to bundle the replacement structures into one construction project.

AGENCY PRIORITIZATION

Describe the agencies top (up to three) priorities of off-system bridges in your inventory. Provide justification as to why the bridge project in this application is the top priority. (Refer to section of Priority Ranking of Candidate Bridges in the Off-System Bridge Program Guidelines.)

According to the Pima County Department of Transportation Bridge Management System Priority Ranking, there are seven bridges meeting the criteria of the Off-System Bridge program that have a Sufficiency Ratings less than 40 and two structures less than 25. The table below lists the seven highest priority structures in Pima County's inventory.

NBI #	Bridge Name	Road Name	Proposed Scope	Sufficiency Rating	Condition	Functionally Obsolete (F) Structurally Deficient (S)	Priority
8475	Jones Wash Br.	Mile Wide Rd	Replacement	21.1	Poor	S	7
8474	Brawley Wash Br.	Mile Wide Rd	Replacement	21.6	Poor	S	8
8301	Medium Wash Br.	Madera Canyon Rd	Replacement	26.0	Poor	S	4
8259	Blanco Wash Br.*	Silverbell Rd	Replacement	31.3	Fair	F,S	1
8302	Florida Cyn. Wash Br.	Madera Canyon Rd	Replacement	33.0	Poor	S	5
8258	Ajo Wash Bridge*	Telera St	Replacement	34.9	Poor	S	3
8318	Mission Rd OP*	Mission Rd	Rehabilitation	36.9	Poor	S	2

* Currently programmed

The three highest priority structures are currently programmed for either replacement or rehabilitation using OSB funding. Replacing the Medium Wash and the Florida Canyon Bridges on Madera Canyon Road is PCDOT's next priority due to the overall condition of the bridges as documented in the November, 2021 Structure Inventory and Appraisal and Inspection Reports (see attached). The two bridges on Mile Wide Road have lower sufficiency ratings than the bridges on Madera Canyon Road; however, replacing structures on roadways with lower AADT's does not meet the objectives of PCDOT's bridge program. Currently, Mile Wide Road at the Brawley Wash Bridge has an ADT of 114 vpd while Mile Wide Road at the Jones Wash Bridge has an ADT of 64 vpd according to counts done by PCDOT in 2019. Both of these AADT's are significantly less than the AADT on Madera Canyon Road of 740 vpd. One-way traffic operations on Madera Canyon Road with a AADT of 740 vpd is a safety issue which is a top priority of the Off-System Bridge Program and is why PCDOT has prioritized the replacement of the Medium Wash and the Florida Canyon Bridges above Mile Wide Road bridges at Jones Wash and Brawley Wash.

This project is considered an ideal candidate for the OSB program for replacement in order to improve safety, eliminate load restrictions and scour issues. Pima County does not currently have funding to replace the Medium Wash and Florida Canyon structures.

OPERATIONAL IMPROVEMENT

How will this bridge project improve the agency's operations?

Are there other operational improvements? If so, what are they and how will this project improve them?

Topics to consider addressing in application:

- Effect on lifecycle
- Maintenance and Repair tasks and frequency
- Annual maintenance and repair costs

The proposed replacement structures for Medium Wash and Florida Canyon Wash would allow the Madera Canyon Road to be opened to two-way traffic at both bridges thereby improving traffic operations and safety. The potential risk of head-on or side-swipe type crashes will be reduced by the elimination of one-way traffic operations with the proposed bridge replacement project.

Medium Wash and Florida Canyon Wash bridges were constructed in 1935 by the Civilian Conservation Corps. The superstructures of both bridges may have been reconstructed in 1954 according to a Structural Assessment Reports done by Holben, Martin & White in September, 2000. A bridge scour evaluation was done by Cannon & Associates in 1997 in which both structures were determined to be scour critical. Sufficiency ratings have continued to decline and are presently 27 for Medium Wash (Structure #8301) and 33 for Florida Canyon Wash (Structure #8302). Both structures are considered to be in "Poor" condition and are at (or beyond) the end of their lifecycles at 87 years old.

Replacing the structures at Medium Wash and Florida Canyon Wash will reduce PCDOT's Maintenance efforts. The project would reduce ADOT inspection efforts and bridge load rating efforts in the future will be eliminated. Annualized maintenance efforts and repair costs are estimated to be approximately in the \$5,000 to \$10,000 range.

The proposed replacement structures would allow the roadway to be opened to two-way traffic at both bridges.

COMMUNITY IMPACTS

How important is this bridge crossing and access to the community?

Topics to consider addressing in this application:

- Emergency Access
- Local Business and Industry Access
- Educational Access
- Other areas important to the community

Madera Canyon Road provides recreational access to Madera Canyon located in the Coronado National Forest, Nogales Ranger District. The current AADT for Madera Canyon Road at the project site is 740 vpd. Madera Canyon is a popular destination due to the many recreational opportunities available including hiking, bird/animal watching, camping and picnicking at higher elevations and cooler temperatures.

Because Madera Canyon Road is the only roadway to Madera Canyon, it also provides emergency access for medical response, rescue efforts, fire fighting by the USFS and is the evacuation route from fire and other weather related incidents.

The Santa Rita Lodge, Madera Kubo B & B and the Chuparosa Inn are available for overnight accommodations in Madera Canyon. The Friends of Madera Canyon provide an outdoor nature education program for children to learn about history, plants, wildlife and scientific method.

Madera Canyon Road is an important asset to the community for the recreational, emergency, business and educational access it provides.

OTHER

This is an opportunity to add project-specific items or unique issues that are not addressed in another category.

Based on the poor condition and the scour critical assessment of both Medium Wash and Florida Canyon Wash structures, PCDOT had previously developed a project in 2001 to replace the two bridges on Madera Canyon Road. The overall project was split into two separate federally funded projects; one for replacement of the Medium Wash (Structure #8301) Federal Project No. BR-PPM-0(149)P, TRACS No. 0000 PM PPM SB405 01C and the other for Florida Canyon Wash (Structure #8302) Federal Project No. BR-PPM-0(150)P, TRACS No. 0000 PM PPM SB406 01C. The projects were developed to include plans, specifications and clearances for right-of-way, utilities and environmental. The projects were not constructed due to budgetary reasons. Available documents from the previous project development efforts are submitted with this application. Below is a list of the reports and documents completed for the previous project:

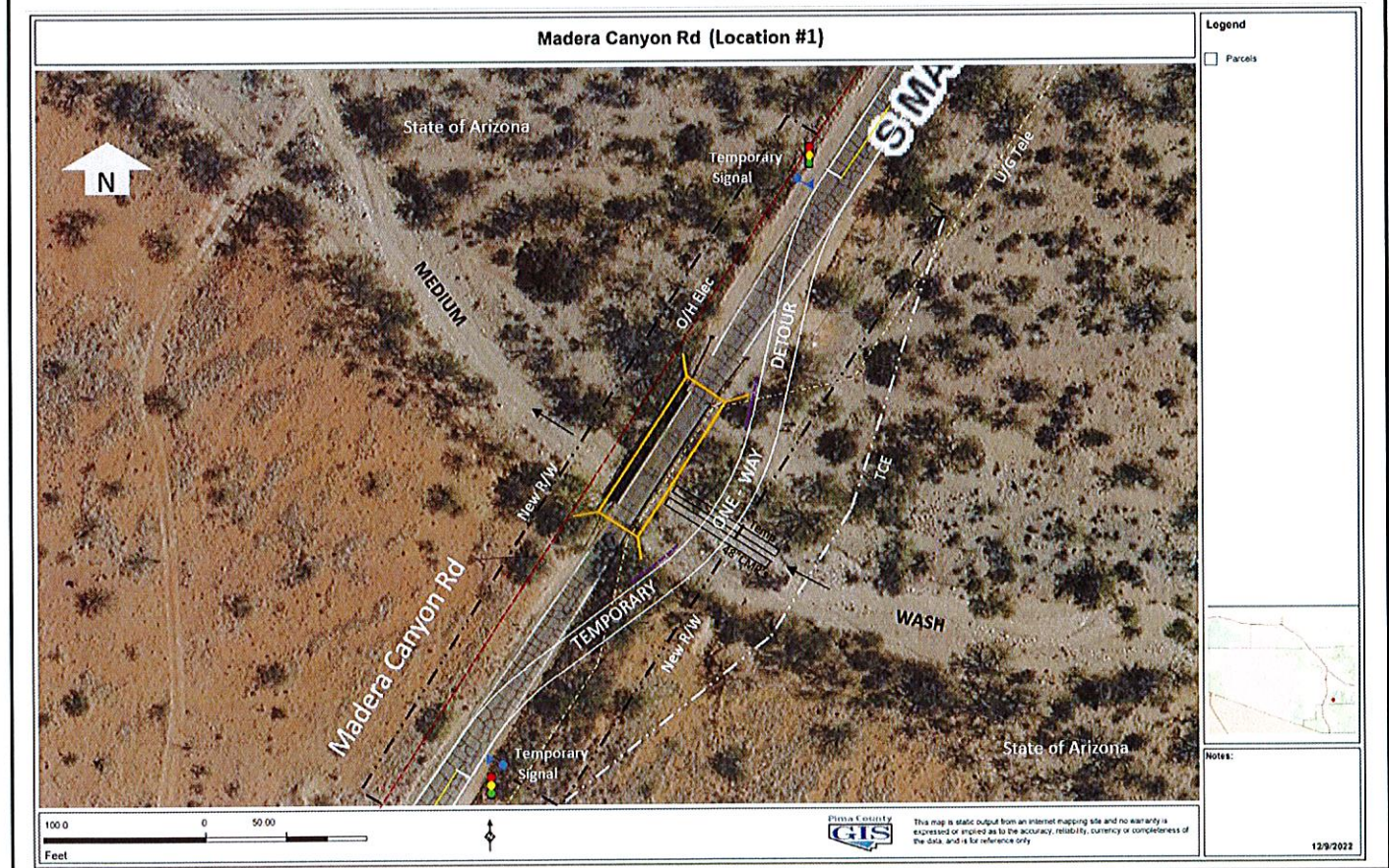
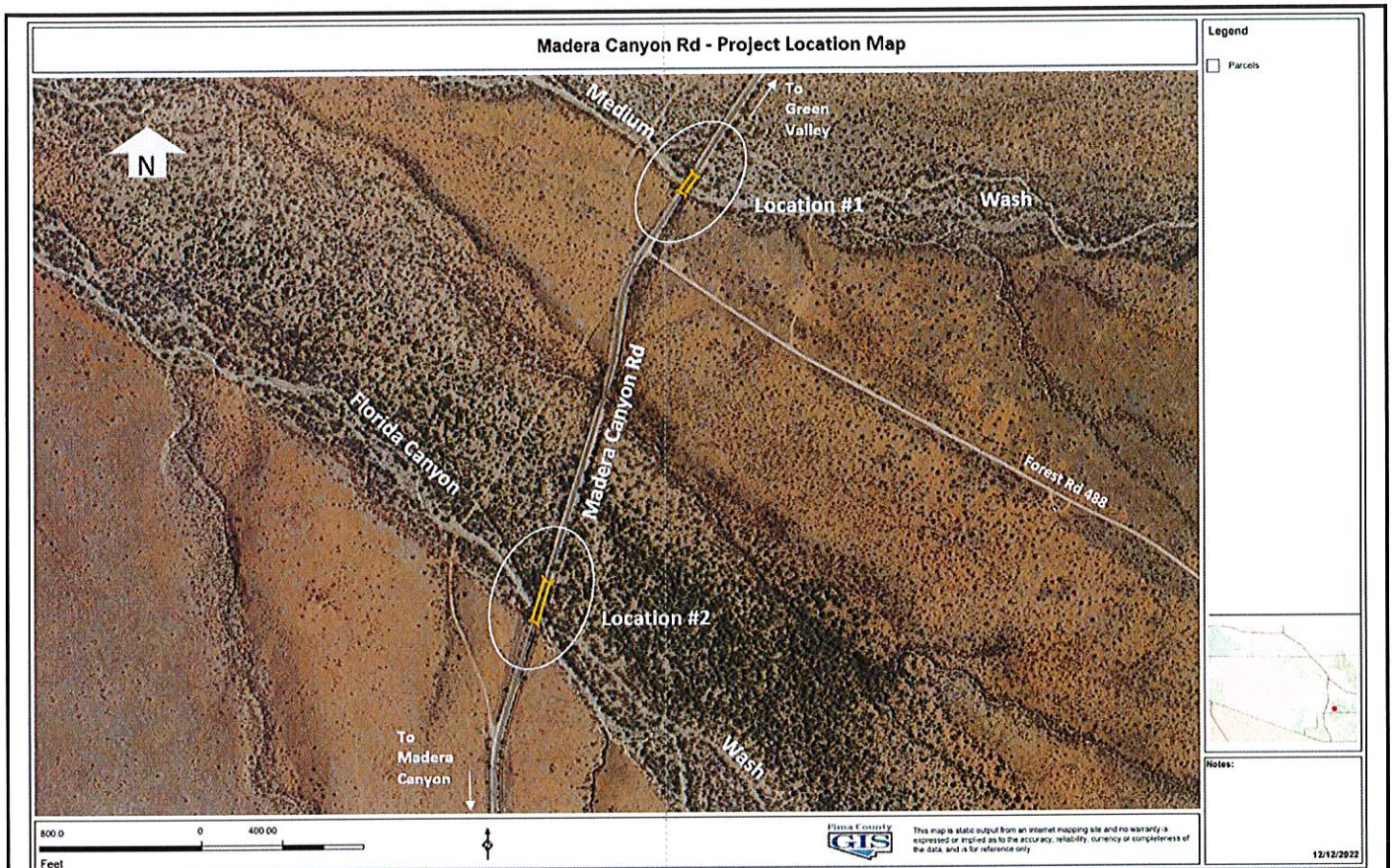
1. Design Concept Report for Madera Canyon Road Bridge at Medium Wash, July 2001
2. Design Concept Report for Madera Canyon Road Bridge at Florida Canyon Wash, July 2001
3. Bridge Assessment Report for Madera Canyon Road at Medium Wash, September 2000
4. Bridge Assessment Report for Madera Canyon Road at Florida Canyon Wash, September 2000
5. Biological Evaluation for Madera Canyon Road Bridge Replacement at Medium Wash, March 2005
6. Biological Evaluation for Madera Canyon Road Bridge Replacement at Florida Canyon Wash, March 2005
7. Cultural Resources Survey for Two Improvement Projects Along Madera Canyon Road, June 2001
8. ADOT Environmental & Enhancement Group Section 106 Consultation, October 2002
9. Phase I Environmental Site Assessment, December 2005
10. ADOT Environmental & Enhancement Group Categorical Exclusion, June 2006
11. ADOT Environmental & Enhancement Group - Environmental Clearance, June 2006
12. Geotechnical Evaluation, October and November 2000
13. Drainage Report Madera Canyon Road at Medium Wash and Florida Canyon Wash, May 2001

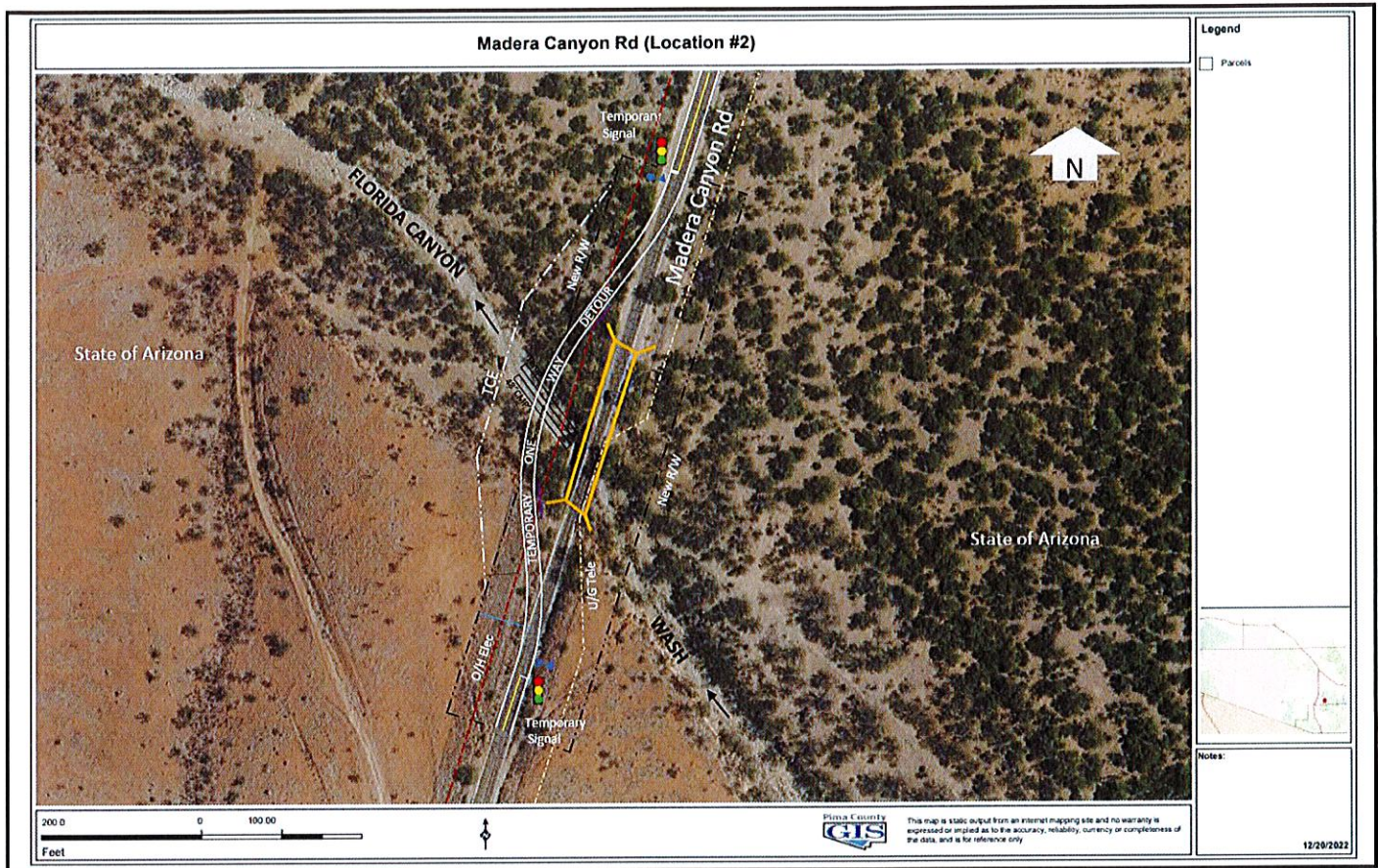
The previous reports and documents provide a level of understanding of the anticipated efforts for this project (submitted for the current Call for Projects) for the OSB program. Most of what was done back in the early 2000's will need to be redone but the information will be helpful in determining the revised scope. The previous project proposed to realign Madera Canyon Road for approximately $\frac{3}{4}$ mile whereas the proposed project submitted for this OSB application focuses on replacing the bridges at Medium Wash and Florida Canyon Wash in order to minimize roadway work. The replacement structures for both locations could be constructed on the existing alignment using one-lane temporary detours with temporary traffic signals or by constructing the replacement structures in halves as a two-phase stage construction operation thus reducing the overall project cost substantially from what was previously proposed.

The "Bridge Selection Report for Madera Canyon Road Bridge at Medium Wash" prepared by HM&W in 2001 recommends a single-span bridge structure having a total length of 93 feet. The report recommended a substructure supported on drilled shaft foundations and AASHTO Type IV precast, pre-stressed concrete I-girder superstructure with ADOT Type F barriers. The roadway width would be 11' lanes and 6' shoulders for the structure. The "Bridge Selection Report for Madera Canyon Road Bridge at Florida Canyon Wash" prepared by HM&W in 2001 recommends a two-span bridge structure having a total length of 208 feet. The report recommended a substructure supported on drilled shaft foundations and a AASHTO Type V precast, pre-stressed concrete I-girder superstructure with ADOT Type F barriers. The roadway width would be 11' lanes and 6' shoulders for the structure.

The proposed superstructure type and number of spans for both bridges will be reevaluated during design in order to minimize the amount the profile grade of Madera Canyon Road needs to be raised relative the cost of the bridge.

Below are exhibits showing the location of Medium Wash and Florida Canyon Wash bridge sites. Temporary one-lane detours are shown on the exhibits but the bridge replacement projects could be developed using a phased approach where the bridges are constructed in halves. A cost estimate of the proposed project is attached to the application.





DEVELOPMENT CONSIDERATIONS

Projects that have identified challenges and risks to delivery will encounter fewer hurdles and allow for a project to have fewer complications and provide the best opportunity for a project to be delivered on time and within budget.

CHALLENGES/RISKS TO DELIVERY AND CONSTRUCTION OF PROJECT	Please describe any challenges that may impact the scope, schedule, budget and/or delivery of this project.	The project involves acquisition of new right-of-way from the Arizona State Lands Department at both the Medium Wash and Florida Canyon Wash bridge sites. The schedule will need to be such that adequate time is provided in order to follow ASLD's processes. Two years is anticipated for this effort and that is why the project tentatively proposes design in FY 24 and construction in FY 26. It is anticipated that Madera Canyon Road will remain open at all times, therefore temporary detours and/or stage construction will be necessary.
ENVIRONMENTAL	Are there any potential environmental impacts or challenges of the project that you can foresee? <i>(e.g. endangered species, cultural resources, hazardous materials sites, Section 4(f) properties, Title VI populations, significant community opposition, wetlands that would be affected, etc.)</i>	This project will comply with the National Environmental Policy Act (NEPA) to determine the effects to the environment, consultations and coordination and any mitigations necessary for impacts caused by project. There will be tree removals necessary at both bridge sites, therefore Migratory Bird Treaty Act mitigations will apply to this project. Nest surveys will be required if vegetation removals are done during the breeding season between March 1st and August 31st. Potential impacts to biological resources will be addressed in a Biological Evaluation prepared for the project. Previous studies determined there was suitable habitat for Pima pineapple cactus

		<p>and cactus ferruginous owls within the project limits. No known hazardous materials were found from the previous Preliminary Initial Site Assessment (PISA) that was prepared for the project in 2001. There are no known wetlands affected. Medium Wash and Florida Canyon Wash are classified as "water of the US" and therefore subject to the jurisdiction of the Corps of Engineer is under Section 404 of the Clean Water Act. A jurisdictional delineation will be coordinated with the COE in order to obtain an individual permit involving discharges into the delineated area. Previous Section 4(f) assessments done in 2000 and reviewed by the State Historic Preservation Office concluded both the Medium Wash and Florida Canyon Wash structures were not eligible for listing on the National Register of Historic Places. No known noise or air quality issues exist at the project site. Riparian habitat areas will be affected. Mitigation using in-lieu fees are anticipated. Public outreach will be included during the project development phase.</p>
RIGHT-OF-WAY (ROW)	<p>Please describe any ROW items associated with this project.</p> <p><i>(e.g. Will ROW be required? How much ROW? Is the State Land Department involved? Consider Right of Way requirements associated with Traffic Control/Detour Requirements; Access, Construction Area Needs and on-going Maintenance Requirements.</i></p>	<p>The width of the existing right-of-way for Madera Canyon Road is 66'. This project will require new right-of-way from the Arizona State Land Department (approximately 1.5 acres total). The new right-of-way would be required for the fill slopes of the roadway approaches to the replacement structures. Temporary construction easements will be needed from ASLD at both bridge sites for the proposed temporary detours and/or phased construction activities. A construction staging area will be identified during the development process and will likely require a TCE. The easement for the telephone line will require modification due to anticipate relocation.</p>
UTILITIES & RAILROAD	<p>Please describe any Utilities and/or Railroad items associated with this project.</p> <p><i>(e.g. Will the project include/require any utility relocation(s) by the project sponsor? What utilities may be impacted? Are there prior rights? If Yes, please explain.)</i></p>	<p><u>Electrical</u> There are overhead electrical lines along the west side of Madera Canyon Road that will likely not be impacted by the project.</p> <p><u>Underground Telephone</u> An underground telephone line exists along the east side of Madera Canyon Road through the limits of the project. The telephone line is in a conduit that is attached to the east side of both the Medium Wash and Florida Canyon Wash structures. The telephone line will require relocation at both structures due to the project. Prior rights are not anticipated.</p> <p><u>Railroad</u> The closest railroad is approximately 7.8 miles away and is not impacted by the project.</p>