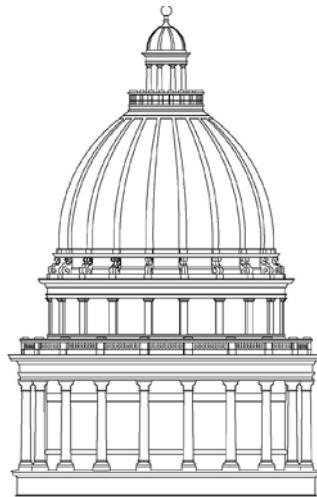


REPORT TO THE
UTAH LEGISLATURE
Number 2015-C



**A Limited Review of Allegations Regarding
UDOT Noise Walls in Farr West**

October 2015

Office of the
LEGISLATIVE AUDITOR GENERAL
State of Utah



STATE OF UTAH

Office of the Legislative Auditor General

315 HOUSE BUILDING • PO BOX 145315 • SALT LAKE CITY, UT 84114-5315
(801) 538-1033 • FAX (801) 538-1063

Audit Subcommittee of the Legislative Management Committee
President Wayne L. Niederhauser, Co-Chair • Speaker Gregory H. Hughes, Co-Chair
Senator Gene Davis • Representative Brian S. King

JOHN M. SCHAFF, CIA
AUDITOR GENERAL

October 2015

TO: THE UTAH STATE LEGISLATURE

Transmitted herewith is our report, **A Limited Review of Allegations Regarding UDOT Noise Walls in Farr West** (Report #2015-C). We will be happy to meet with appropriate legislative committees, individual legislators, and other state officials to discuss any item contained in the report in order to facilitate the implementation of the recommendations.

Sincerely,

John M. Schaff, CIA
Auditor General

JMS/lm

REPORT TO THE UTAH LEGISLATURE

Report No. 2015-C

A Limited Review of Allegations Regarding UDOT Noise Walls in Farr West

October 2015

Audit Performed By:

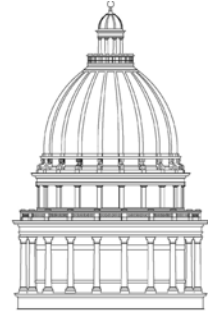
Audit Manager	Tim Osterstock
Audit Supervisor	Brian Dean
Audit Staff	Christopher McClelland

A Limited Review of Allegations Regarding UDOT Noise Walls in Farr West

This limited review addresses allegations related to noise walls built in Farr West, Utah, by the Utah Department of Transportation (UDOT). These allegations focused on whether UDOT followed policy during preconstruction analysis, built noise walls according to project specifications, and followed policy during the public input phase of the project. Pursuant to the request, we conducted a limited review and found the following:

- UDOT followed its noise wall policy during the preconstruction phase by conducting a noise analysis that met all requirements.
- UDOT constructed noise walls according to original plan specifications.
- The balloting and public involvement portion of the project followed UDOT policy but noise abatement policy can be improved. While UDOT was initially unable to locate ballots in response to a 2014 request for documents, we reviewed original ballots after they were found at a UDOT storage shed.
- UDOT should consider adopting a policy governing the removal of noise walls.

In December 2009, UDOT completed the I-15 North Ogden Weber (I-15 NOW) project that added lanes on the interstate and improved interchanges from 31st Street in Ogden to just past 2700 North in Farr West. As part of the project, UDOT installed noise walls to mitigate or abate traffic noise for property owners near the interstate. Federal regulations adopted in UDOT policy govern the process for determining where noise walls should be built. The policy requires UDOT to incorporate noise walls into a project if certain criteria are met. For example, noise walls must be below a cost threshold per property owner and be desired by benefitted property owners. The allegations relate primarily to noise walls in the north end of Area 7 of the project, which is located in Farr West on the west side of I-15 (Area 7 is the most northern part of the I-15 NOW project).



UDOT followed noise abatement policy, but policy and procedures could be improved.

To be constructed, noise walls must be cost effective and desired by property owners.

Area 7 is one of 10 noise study areas¹ from the I-15 NOW project for which UDOT considered noise mitigation measures.

Preconstruction Analysis Followed UDOT Policy

Complaints arose that UDOT had not properly conducted a noise analysis prior to building noise walls. UDOT's noise abatement policy (effective April 2000)² required UDOT to evaluate traffic noise impacts associated with projects that increase the number of traffic lanes and evaluate measures to mitigate traffic noise. Specifically, UDOT was required to:

- Identify existing activities and land use
- Determine existing noise levels and traffic noise impacts
- Evaluate alternative noise mitigation measures
- Assess cost feasibility of chosen noise mitigation measures

UDOT fulfilled these requirements by contracting with an engineering company for the creation of a formal noise analysis in 2003. The noise analysis concluded that five areas along the project could qualify for noise walls.

The noise analysis considered current land use in the project area, concluding it was typical of urban and suburban growth. The noise analysis also used measurements of existing noise levels in conjunction with traffic data to predict noise levels in 2030 for property owners in the area of the I-15 NOW project. Areas in which the 2030 noise level

UDOT's noise analysis fulfilled the requirements of UDOT policy and recommended where noise walls could be built.

¹ The ten noise study areas were created based on similar land uses and traffic volumes.

² UDOT's noise abatement policy was revised in April 2000, March 2004, and February 2014. For the purposes of this report, the policy in place during a certain phase of the project (for example, conducting a noise analysis) was used to evaluate UDOT compliance.

reached a noise threshold or increased by a certain amount relative to 2000³ noise levels were eligible for noise abatement consideration.

The noise analysis then considered noise abatement alternatives, including traffic management measures, placement of roads, sound insulation for public buildings, and noise walls. Alternatives other than noise walls were either ineffective or difficult from an engineering perspective.

Noise models predicted that noise walls would be able to achieve a reduction of 5 dBA (A-weighted decibels, a unit of sound measurement) as required by UDOT policy. The noise analysis concluded by considering cost feasibility for noise walls. The cost-per-benefitted property owner was calculated for each of the ten noise study areas (including Area 7 in Farr West). Five of the ten areas fell below the cost-per-benefitted-property-owner threshold used in the noise analysis. Ultimately, noise walls were built in four of five cost-effective project areas (see map in Figure 4 on page 8) because one noise wall was not approved by the property owners.

Noise Walls Were Constructed According to Original Plan Specifications

Another concern focused on the location of noise walls in Area 7 in Farr West. It was alleged that the noise walls extended too far north on the west side of I-15 and did not follow project construction documents. Based on a review of the project's environmental impact statement and the current location of the noise wall in question, UDOT installed the noise wall in the correct location and did not deviate from project specifications.

³ UDOT policy states that a noise impact is present if the noise level in the year 2030 is within 2 dBA (A-weighted decibels, a unit of sound measurement) of established noise abatement criteria or if the noise level increases by 10 dBA between the present day and 2030. Different land uses have varying noise thresholds (according to the noise abatement criteria) before a noise wall is required.

The noise analysis considered land use, predicted noise levels in 2030, and evaluated noise abatement alternatives.

Five of the ten noise study areas qualified for noise walls based on the noise analysis.

UDOT built noise walls according to maps and descriptions in the project’s environmental impact statement.

The environmental impact statement created for the I-15 NOW project contained maps of different build options. The preferred build option, which was ultimately constructed, ended the noise wall just north of 2700 North in Area 7. This is depicted in Figure A.1 in the Appendix, which is a map similar to one that was included in the environmental impact statement. Map imagery of the same area after the I-15 NOW project was completed confirms that UDOT installed the noise wall at the correct location. This imagery is shown in the Appendix, Figure A.2. The environmental impact statement describes that section of noise wall running “...from the 2700 North and outbound off-ramp intersection north to the project ending.” The environmental impact statement also specified the exact length and height of the noise walls.

Additionally, UDOT made the environmental impact statement available to the public for review at the locations listed in Figure 1.

Figure 1. The Final Environmental Impact Statement Was Available for Review at the Following Locations. Individuals were able to make comments about the document at all of these locations.

Building	Location
Federal Highway Administration	Salt Lake City
UDOT Region 1	Ogden
UDOT Community and Media Relations Office	Salt Lake City
Michael Baker Jr., Inc.	Midvale
Farr West City Offices	Farr West
Harrisville City Offices	Harrisville
Marriott-Slaterville City Offices	Marriott-Slaterville
Ogden Municipal Building	Ogden
Pleasant View City Offices	Pleasant View
Riverdale City Offices	Riverdale
West Haven City Offices	West Haven
Weber County Library	Ogden

Source: I-15 NOW Environmental Impact Statement

The environmental impact statement, available for review and comment at all of these locations, both showed and described where each noise wall would be constructed.

The environmental impact statement was available for public review in multiple locations in both Salt Lake and Weber Counties.

Balloting and Public Involvement Processes Were Followed, But Policy Can Improve

UDOT followed the balloting and public involvement requirements of their policies. UDOT fulfilled balloting requirements by making a significant effort to contact property owners and assess their desires for noise mitigation. In addition, UDOT exceeded the minimum balloting requirements set forth in the noise abatement policy for the involvement of local governments and the public in noise mitigation decisions. UDOT held focus workshops and worked with property owners to optimize noise-wall length and location. Although UDOT followed existing policies, we believe that UDOT's current noise abatement policy could be improved by incorporating additional requirements for public involvement found in other states' noise abatement policies. UDOT was initially unable to locate ballots in response to a Government Records Access and Management Act (GRAMA) request in May 2014, but UDOT was not required to maintain these records after 2012. Working with UDOT, we located the ballots in a storage shed and used these ballots in our analysis.

UDOT Balloted Property Owners According to Policy

Once a noise analysis has established need and feasibility, UDOT is required to solicit public input to determine if noise walls should be built. As part of this input process, UDOT ballots affected property owners to determine their opinions as to whether noise walls should be constructed. Noise abatement policy is very specific on the balloting process.

Based on information provided by UDOT's consultant and available physical ballots, UDOT fulfilled all balloting requirements in UDOT policy. UDOT contacted property owners and tallied their votes on noise mitigation. UDOT's consultant appears to have exceeded requirements for balloting property owners by contacting some of them multiple times.

Policy requires UDOT to mail a ballot to every property owner in areas affected by potential noise walls. Door-to-door ballots are required only in unusual circumstances, which are determined by UDOT employees. For noise walls to be built in a given study area, 75 percent of impacted property owners adjacent to the interstate

Working with UDOT, we located the ballots and used them in our analysis.

Balloting and public involvement are important factors in determining whether noise walls should be built.

UDOT is required to mail a ballot to property owners, followed by a door-to-door ballot under unusual circumstances.

(front-row properties) and 67 percent of all affected property owners must be in favor of noise walls.

In early 2005, UDOT mailed ballot postcards to property owners, accompanied by ballot instructions containing incorrect information. The information on the location of prospective noise walls was inaccurate for some noise study areas. For example, the incorrect ballot instructions did not include noise walls being considered for the west side of I-15 in Farr West (Area 7). The mailed ballot postcard is reproduced in Figure 2.

Figure 2. The Mailed Ballot Postcard for the I-15 NOW Project. This represents the first effort to assess the desires of property owners for noise mitigation.

I-15 NOW Noise Survey - postmark return by June 1, 2005

1. Are you for or against the installation of noise walls in your area?

FOR AGAINST NO PREFERENCE

2. What concerns, if any, do you have regarding noise wall placement in your area?

Please let us know if you would like to receive I-15 NOW project updates and how you prefer to receive them. Check all that apply.

Home Phone Work Phone Mobile Phone Email Regular Mail

Please add me to the project: Email Update List Mailing List

Please make any necessary corrections to your name and address and provide the following information. **Your information will not be shared or sold.**

[Property owner name and address found here on actual ballots]

Source: UDOT

UDOT reports that two mailings occurred but were unable to confirm whether the available physical ballots were first or second mailings based on the information provided. Because the balloting took place ten years ago, some records were unavailable, and key personnel involved with the balloting process have since left. Some complainant concerns may stem from UDOT accidentally including inaccurate information (pertaining to the placement of noise walls in Area 7) on the initial mailed ballots and the unavailability of ballots at the time of the GRAMA request in 2014.

UDOT's contractor administered a door-to-door ballot in 2005 because of the low response rate and the inaccurate information in some mailed balloting instructions. The door-to-door ballot was confirmed to have included accurate information about prospective noise walls. The tear-off portion of the door-to-door ballot is very similar to the mailed ballot postcard. Just prior to construction in 2008, the contractor did another door-to-door ballot in the northern part of Area 7 due to complaints from some property owners that did not want the noise walls built. An example of the 2008 ballot is shown in Figure 3.

Figure 3. The Second Door-to-Door Ballot for the I-15 NOW Project. This ballot was only administered to a portion of Area 7 in Farr West north of 2700 North.

Expansion
I-15 NOW
New Ogden Weber

I-15 NOW
New Ogden Weber
Expansion

As part of the final design phase of projects, the Utah Department of Transportation (UDOT) needs to know if resident/land owners are in favor of noise abatement measures. UDOT conducted a survey of impacted residents and businesses in 2005. The results of that survey indicated that the majority of area property owners wanted noise walls installed. However, property owners along I-15 in your area have expressed opposition to noise wall placement.

It is our commitment at UDOT to provide noise abatement where it is deemed feasible and where the impacted public has indicated a desire for such measures. The purpose of this survey is to determine whether or not the majority of local residents and businesses still agree that noise walls should be placed along I-15 and the southbound off-ramp in Farr West from approximately 3100 North to 2700 North. Please answer the survey question and provide your contact information in the space below.

I am in favor of noise walls placed along I-15.

I am not in favor of noise walls placed along I-15.

I have no opinion regarding the placement of noise walls along I-15.

Name: _____

Address: _____

Signature: _____

2700 North Survey: March 12, 2008

Source: UDOT

A review of Area 7 ballots indicates property owners were contacted at least once, and many property owners were contacted two times. The consultant took these steps to ensure an accurate measure of property owners' desires for noise mitigation.

We documented that UDOT provided valid ballot statistics for all of the noise study areas, including Area 7. UDOT then used the compiled balloting data to determine if noise walls should be built. Areas 1 (Riverdale), 5 (Farr West), 7 (Farr West), and 10 (West Haven) all satisfied the noise wall construction requirements of 75

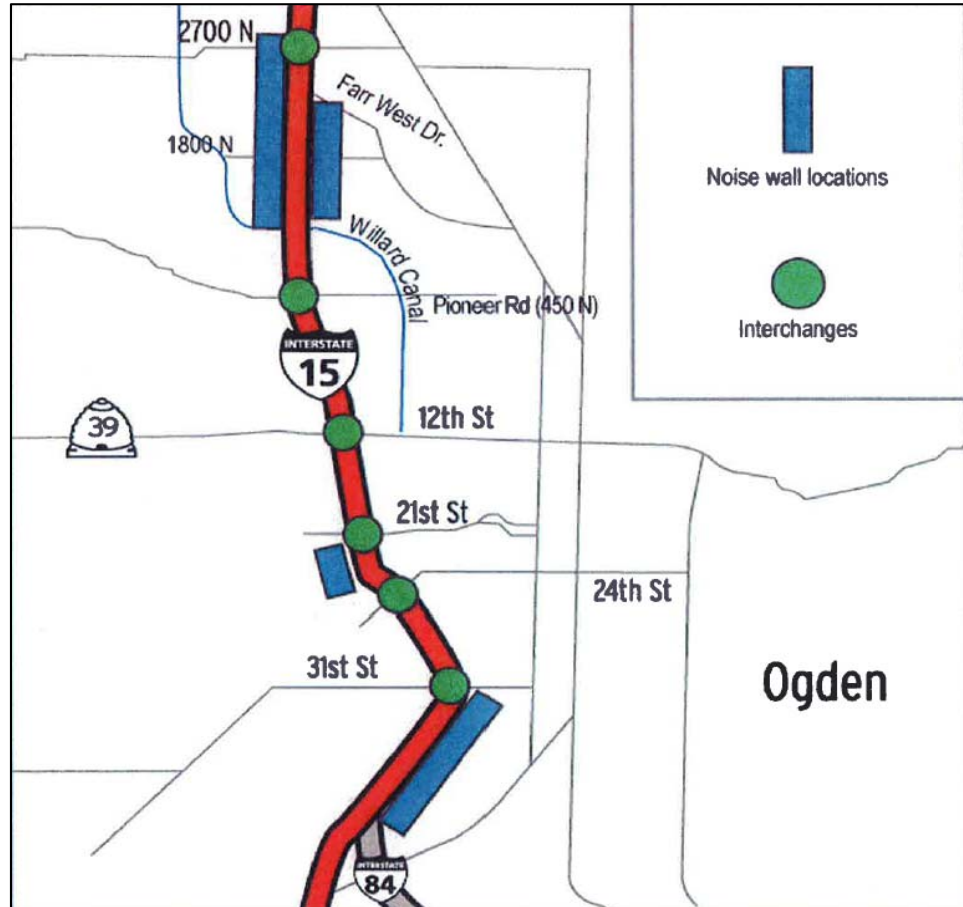
UDOT conducted a door-to-door ballot in 2005 due to low response rate and mailing ballot errors.

Area 7 received a second door-to-door ballot due to complaints in the area.

percent of front-row property owners and 67 percent of all property owners favoring the noise wall. Figure 4 shows where these noise walls were built along I-15.

Figure 4. Noise Walls Were Built in Four Main Areas Along the I-15 NOW Project. The top two are in Farr West, the middle one is in West Haven, and the bottom one is in Riverdale.

Noise walls were constructed in Farr West, West Haven, and Riverdale.



Source: UDOT

Reviewed data shows that the use of multiple ballots and repeated contacts with property owners allowed UDOT to gauge property owners' desire for noise walls and satisfied existing policy requirements.

UDOT Involved the Public and Local Government But Noise Abatement Policy Could Be Improved

Along with balloting requirements, UDOT's noise abatement policy requires UDOT to involve the public and local governments. UDOT took actions to involve the public, such as focus workshops and responding to complaints. While not required by the noise

abatement policy, UDOT's Environmental Manual of Instruction regarding public and agency involvement requires taking steps to involve and inform the public. We believe that UDOT should augment its existing noise abatement policy by incorporating public involvement requirements found in other states' policies.

At the time of the I-15 NOW project, UDOT's noise abatement policy contained two main public and local government involvement requirements. Policy required UDOT to contact local governments and consider written documentation from local governments as well as provide information to local governments where noise abatement was likely and where it was not likely. The policy suggested, but did not require, holding special open houses and workshops and using mailers as public involvement options. UDOT fulfilled and exceeded these requirements by taking the following actions.

- UDOT sent the project's environmental impact statement, which included information on noise abatement, to many state and federal agencies, all cities in the project area, and local community organizations, based on mailing lists contained in the environmental impact statement.
- UDOT made presentations to various city councils and organizations, including the Farr West City Council in 2001 and the Farr West Planning Commission in 2002, on issues related to the I-15 NOW project and its construction.
- UDOT held public advisory committee meetings and focus workshops where project issues, including noise mitigation, were discussed. The environmental impact statement included a record of public input at these meetings.
- UDOT listened to and acted on noise-wall feedback in Areas 7 and 10. UDOT shortened the Area 7 wall by several panels on the north end to accommodate a business located at the end of the noise wall. UDOT agreed to a shortened wall in Area 10 to accommodate commercial visibility without affecting residential noise abatement.
- UDOT sent a confirmation letter to the city of Farr West prior to construction that detailed where the noise walls would be built.

Policy in 2003 required UDOT to contact local governments and specify where noise walls may or may not be built.

UDOT did more to involve the public than was required in existing state noise abatement policy.

UDOT could benefit by adopting public involvement requirements for noise abatement policies used by other states.

Current UDOT policy includes two additional requirements compared to the policy in place during the I-15 NOW project. UDOT is now required to inform local officials about noise-compatible planning concepts and provide an estimate of future noise levels on undeveloped lands or properties within the project limits. These additions likely help local governments more effectively manage land use and zoning in their jurisdictions. UDOT’s noise mitigation policy, however, could be further improved by incorporating elements of noise policies found in other states. Figure 5 details policy requirements in Colorado, Oregon, and Washington that could be adopted into UDOT policy.

Figure 5. Three States Have Noise Wall Policies with Requirements Not Found in UDOT’s Policy. UDOT performed some of these actions as part of the I-15 NOW project’s public involvement process, but should consider requiring them in policy.

State	Noise-Wall Policy Requirements
Washington	If opposition to proposed abatement arises during a public involvement process, the department’s local office must ensure the department is aware of concerns, document the concerns, consider changes to the design if possible, respond to concerns, and conduct a poll of affected property owners.
	Provide noise reports to local governments.
	Invite local officials to all community meetings or traffic-noise-related meetings and public open houses.
Oregon	Send a cover letter along with the noise study to local jurisdictions. This information must be provided to and reviewed by city and/or county planning departments.
Colorado	Educate the public through public meetings and publications on noise, noise impact, and noise mitigation.
	Provide noise study information to local government agencies, including planning and zoning departments. This information should include noise levels.

Source: Other states noise abatement policies

Colorado and Oregon require inclusion of local planning and zoning departments, an important element because projects estimate noise and land use thirty years in the future. Washington’s policy on complaint resolution is helpful because noise walls are sometimes controversial and this policy standardizes the steps to be taken in response to complaints. UDOT took many of these steps during the I-15 NOW project, but including these requirements in UDOT’s noise

abatement policy could potentially increase uniformity of project administration and ensure adequate public involvement.

UDOT Should Consider Developing A Noise-Wall Removal Policy

Responding to complaints about the noise wall in Farr West, UDOT Region 1 laid out steps the complainant could take to get the noise walls removed. The process was communicated to the complainant in a letter; however, the exact method and requirements for removing a noise wall might change from project to project and thus could result in inconsistent responses.

Region 1 communicated two requirements the complainant had to fulfill in order to have the walls removed. First, the complainant had to obtain written agreement from all affected property owners that they were willing to forego the right to noise mitigation. Second, the complainant had to hire a bonded contractor to remove the walls and restore the area where the noise walls were removed.

Other states have formalized policies that incorporate these two requirements. Ohio and California require unanimous consent from all property owners benefitting from the noise wall before one can be removed. Indiana and Ohio require the party requesting the removal to conduct a noise analysis and pay for the noise-wall removal. UDOT policy could incorporate aspects of these other states' policies when creating its own. A noise-wall removal policy would enable UDOT to respond to noise-wall complaints using a uniform policy and process across all UDOT regions. It could also create a process that would accommodate changes in land use and land zoning over time.

Having a noise wall removal policy would enable UDOT to respond to noise-wall complaints using a uniform policy and process across all UDOT regions.

Recommendations

1. We recommend that the Utah Department of Transportation expand its noise abatement policy to require submission of noise analyses to local jurisdictions and to address noise-wall opposition during the public involvement process.
2. We recommend that the Utah Department of Transportation consider adopting a noise-wall removal policy.

This Page Left Blank Intentionally

Appendix

This Page Left Blank Intentionally

Figure A.1. The Noise Wall Extends North Past 2700 N in Farr West on Project Planning Documents. The blue line represents the planned noise wall. 2700 N passes under I-15 near the center of the map. A version of this map was included as part of the environmental impact statement.



Source: Google Earth and I-15 NOW Environmental Impact Statement

This Page Left Blank Intentionally

Figure A.2. Zoomed-in View of the End of the Noise Wall. This figure shows a more detailed view of the circled area in Figure A.1, which is the north end of the I-15 NOW Project. This portion of the noise wall was shortened to accommodate the desires of a commercial business that did not want their visibility from the interstate diminished.



Source: Google Earth

This Page Left Blank Intentionally

Agency Response

This Page Left Blank Intentionally



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

September 25, 2015

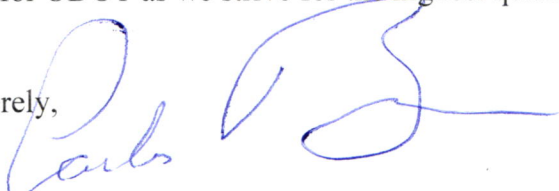
John M. Schaff, CIA
Auditor General
Office of the Legislative Auditor General
W315 Utah State Capital
P.O. Box 145315
Salt Lake City, UT 84114

Dear Auditor General Schaff:

This letter is in response to the Limited Review of Allegations Regarding UDOT Noise Walls in Farr West (Report No. ILR2015-C). I appreciate your office looking into this matter; we have had a chance to review the draft report. The recommendations found in the report are valuable and UDOT will revise our policies and procedures to improve our processes with regard to sharing of information. At UDOT we take our responsibility to the public very seriously, and as it was demonstrated by the report findings, we commonly go above the minimum requirements to inform our stakeholders. This level of collaboration helps UDOT deliver our projects in a manner that meets local goals and serve regional needs. UDOT will also develop additional guidance and policies that will help encourage this level of collaboration to ensure we are educating the public and continue to learn from them as well. I also appreciate the suggestion of developing a formal noise wall removal process. Although this is a rare occasion it does happen, and as the report suggests this would provide an opportunity to adjust to changing conditions over time. The addition of this new procedure will be included in our upgrades.

I once again would like to thank your office for your independent review of our processes. Your feedback is important and useful for UDOT as we strive for the highest quality for our customers.

Sincerely,


Carlos M. Braceras, P.E.
Executive Director

CMB/dej

This Page Left Blank Intentionally