



CITY AUDITOR'S OFFICE

Bridge Infrastructure Assessments

June 14, 2024

AUDIT NO. 2407

CITY COUNCIL

Mayor David D. Ortega
Tammy Caputi
Tom Durham
Vice Mayor Barry Graham
Betty Janik
Kathy Littlefield
Solange Whitehead



June 14, 2024

Honorable Mayor and Members of the City Council:

Enclosed is the audit report for *Bridge Infrastructure Assessments*, which was included on the Council-approved FY 2023/24 Audit Plan. This audit was conducted to review processes and controls relating to bridge inspections, repair, and maintenance, including follow-up on related recommendations from Audit No. 1905, *Infrastructure Condition Assessments*, issued June 2019.

Our audit found that since the 2019 audit, the department more actively reviews ADOT inspections results and recommended work. However, more than half of the ADOT inspections completed in the last few years have not been obtained and reviewed, and the department does not have processes in place to identify missing inspections. As well, monitoring of work order status could be improved, including follow-up of deferred work. Additionally, smaller bridges are at risk of costly repairs or replacement due to lack of an asset management program.

If you need additional information or have any questions, please contact me at (480) 312-7851.

Sincerely,

Lai Cluff, CIA
Acting City Auditor

Audit Team:

Elizabeth Brandt, CIA, CGAP, CPM – Sr. Auditor

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AUDIT HIGHLIGHTS

Bridge Infrastructure Assessments

June 14, 2024

Audit No. 2407

WHY WE DID THIS AUDIT

This audit of *Bridge Infrastructure Assessment* was included on the City Council-approved fiscal year (FY) 2023/24 Audit Plan. The audit objective was to review processes and controls relating to bridge inspections, repair, maintenance, including follow-up on related recommendations from Audit No. 1905.

BACKGROUND

Transportation & Streets, a department within the Public Works Division, is responsible for managing inspections, maintenance, and repair of most City-owned bridges and culverts. Through an Intergovernmental Agreement, ADOT perform inspections on bridges that meet National Bridge Inspection Standards (NBIS) criteria. ADOT sends its completed bridge inspection reports to the Street Operations department, which is responsible for handling the recommended maintenance and repair items.

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WHAT WE FOUND

More than half of recent ADOT inspection reports have not been obtained and reviewed; more effective monitoring of inspection results is needed.

Since the 2019 audit, the department more actively reviews ADOT inspections results and recommended work. However, stronger monitoring practices are still needed.

- Recent reports for about 130 structures were missing. Procedures needed to ensure inspections are received and reviewed.
- Incomplete inventory led to a bridge going uninspected for nearly 30 years. Also, an inaccurate inventory impacts the department's ability to effectively monitor inspection results.
- Work order status is not effectively monitored and follow-up on deferred work is needed.
- A culvert rated in poor condition needs attention.

A lack of an asset management program puts small bridges at risk of expensive repairs or replacement.

Limited progress has been made in establishing an asset management program for non-NBIS bridges and culverts.

- Roles and responsibilities for these assets, which cross multiple city departments, need to be defined or formalized.
- Non-NBIS bridges have not been identified and inventoried; a plan for periodic assessments or inspections needs to be developed.

WHAT WE RECOMMEND

We recommend:

- Transportation & Streets should establish stronger processes to ensure all ADOT inspection reports are received, reviewed and work orders are created when needed. Additionally, the department should follow-up on deferred work orders and further assess the culvert in poor condition.
- Transportation & Streets should develop procedures for reporting new structures and ensuring accurate structure information.
- Public Works Director work with departments to define roles and responsibilities for non-NBIS asset management.

MANAGEMENT RESPONSE

The department agreed with the recommendations.

BACKGROUND

This audit of *Bridge Infrastructure Assessment* reviews the processes and controls relating to bridge inspections, repair, and maintenance. As well, the audit reviewed the status of the related audit findings from the 2019 audit of *Infrastructure Condition Assessment (Audit No. 1905)*.

Transportation & Streets, a department within the Public Works Division, is responsible for managing inspections, maintenance, and repair of most City-owned bridges and culverts. Proper maintenance can prolong the life of these expensive and labor-intensive structures as well as help prevent safety hazards. Figure 1 illustrates two examples of City-owned bridges and culverts.

Figure 1. Example of City-owned bridge and culvert.



SOURCE: Arizona Department of Transportation inspection report photos.

ADOT Bridge Inspections

Under the National Bridge Inspection Standards (NBIS), the Arizona Department of Transportation (ADOT) inspects all highway bridges located on public roads, with some exceptions. To require NBIS inspections, a bridge must meet the following criteria:

- Be a structure erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads.
- Measure longer than 20 feet along the center of the roadway, and
- Be located on a public road.

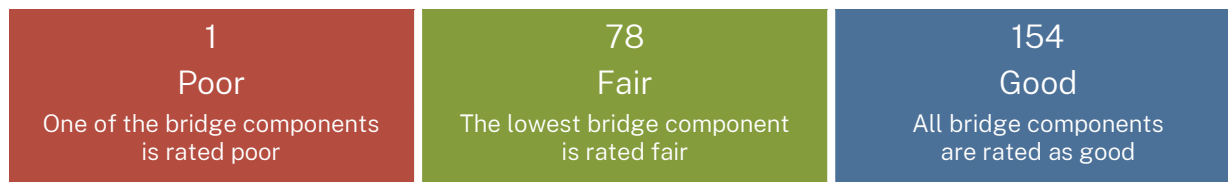
NBIS requirements do not apply to pedestrian and railroad structures or tunnels.

Through an Intergovernmental Agreement, ADOT performs NBIS inspections on applicable bridges owned or controlled by the City. ADOT sends its completed bridge inspection reports to the City's Street Operations department, which is responsible for handling the recommended maintenance and repair items. Bridges are inspected every 2 years and culverts every 4 years.

ADOT rates inspected bridges using NBIS standards as either *good*, *fair* or *poor* condition using a nine-point scale that ranges from failed a condition to excellent condition. The bridge components including materials and structure are assessed. As illustrated by Figure 2, the

October 2023 ADOT inventory of Scottsdale bridge assets included 233 bridges and culverts, with 78 structures rated Fair and one rated in Poor condition. The culvert that was rated Poor had the same rating in 2018.

Figure 2. ADOT Rating of City Bridges



SOURCE: Auditor analysis of ADOT inventory listing and structure status of City owned bridges and culverts as of October 2023.

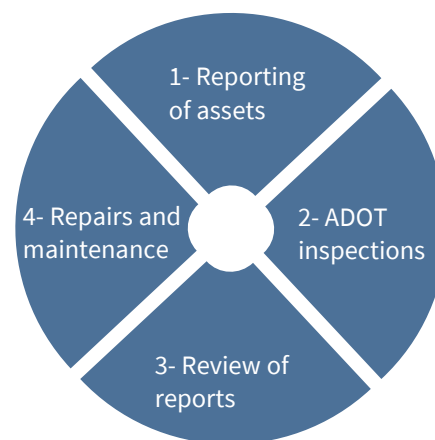
City Bridge Inventory and Maintenance

The City is required to report to ADOT changes to the inventory of bridges and culverts such as new assets and rehabilitation of existing assets. The Street Operations department, within Transportation & Streets, maintains the City’s bridge inventory in the Land Information System (LIS). This system is also used to create and manage the related maintenance and repair work orders.

When inspection reports are received from ADOT, a Streets employee uploads the reports to LIS and generates work orders for the inspection recommendations. These are reviewed by the Street Operations Manager that oversees Grading and Drainage, assigning work to be completed internally or through contractors. Transportation & Streets reported that based on the complexity of the recommended work, in some instances they collaborate with the City Engineer to evaluate whether a capital improvement project may be needed to address the concerns. The inspection and maintenance cycle is illustrated by Figure 3.

Figure 3. NBIS bridges and culvert asset management cycle.

- 1 Transportation & Streets reports additions, removals, and rehabilitation of NBIS bridges and culverts.
- 2 ADOT performs inspections of assets based on its inventory of City bridges and culverts. Inspections completed are provided to the City each year.
- 3 Streets Operation Manager receives and reviews ADOT inspection reports, creates work orders for recommended maintenance and repairs.
- 4 Transportation & Streets completes the work orders or works with Capital Project Management to plan for a capital improvement project.



SOURCE: Auditor analysis of City’s intergovernmental agreement 2010-032-COS authorizing ADOT to perform required inspections of City bridges and culverts and interview information provided by Transportation and Streets staff.

OBJECTIVES, SCOPE, AND METHODOLOGY

An audit of *Bridge Infrastructure Assessment* was included on the City Council-approved fiscal year (FY) 2023/24 Audit Plan. The audit objective was to review processes and controls relating to bridge inspections, repair, maintenance, including follow-up on related recommendations from Audit No. 1905.

To gain an understanding of processes and controls related to bridge maintenance, auditor interviewed the Transportation & Streets Director, a Street Operations Manager, Street Maintenance Worker, the City Engineer, and a Public Works Systems Integrator. Auditor also reviewed:

- Audit No. 1905, *Infrastructure Condition Assessment*, issued by our Office on June 14, 2019, and subsequent audit follow-ups performed from October 2019 thru April 2022.
- Applicable laws, regulations and criteria including:
 - City's intergovernmental agreement authorizing Arizona Department of Transportation (ADOT) to perform required inspections of bridges and culverts owned and controlled by the City (contract 2010-032-COS).
 - City's Design Standards and Policies Manual dated 2018.
 - Bridge Preservation Guide issued Spring 2018 by the U.S. Department of Transportation Federal Highway Administration (FHWA).
 - ADOT Bridge Inspection Guidelines obtained in September 2023.
 - ADOT Transportation Asset Management Plan dated June 2021.

To evaluate processes and controls relating to bridge inspections, repairs, and maintenance, we:

- Reconciled City and ADOT inventories of NBIS bridges and culverts to identify any differences. We used the available ADOT inventory of City bridges and culverts, updated October 2023.
- Reviewed City's records of ADOT safety inspection reports from 2019 through 2023 against the ADOT inventory for completeness.
- Obtained Transportation and Streets work order data from LIS for work entered from January 2019 to March 31, 2024. Compared ADOT inspection reports on file to work order data to determine whether work orders had been created for recommended maintenance and repairs.
- Analyzed ADOT 2019 and 2023 bridge and culvert ratings, and researched items noted as deteriorating from prior inspection results or in poor condition.

The audit found that more than half of ADOT inspection reports have not been reviewed or uploaded and more effective monitoring of inspection results is needed. Additionally, the lack of an asset management program puts smaller bridges at risk of costly repairs or replacement.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Audit work took place from October 2023 to April 2024.

FINDINGS AND ANALYSIS

1. More than half of recent ADOT inspection reports have not been obtained and reviewed; more effective monitoring of inspection results is needed.

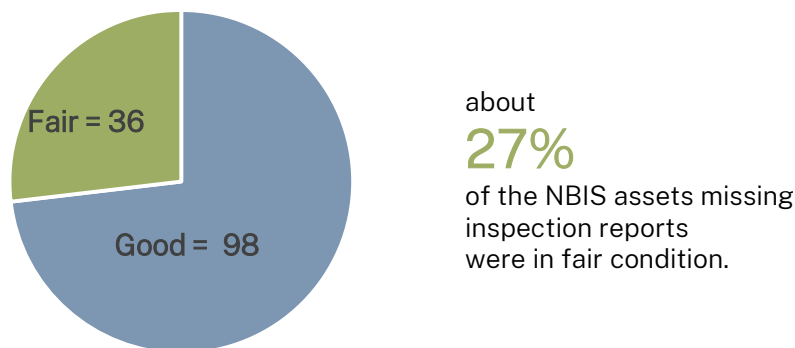
Our 2019 audit found that the department had not been reviewing ADOT inspection reports to address the recommended maintenance and repair and the NBIS bridge inventory was not kept up-to-date. Since then, the department more actively reviews ADOT inspection results and recommended work. However, more than half of the ADOT inspections completed in the last few years have not been obtained and reviewed, and the department lacks processes to identify missing inspections. As a result, recommended maintenance and repair for some structures have not been addressed. Additionally, of the inspections reviewed, several recommendations have not been entered into the work order system, and monitoring of work order status needs to be improved.

A. Procedures to ensure inspections were received and reviewed have not been established; the most recent report for about 130 structures were missing.

ADOT now provides completed inspection reports of NBIS bridges and culverts through its inspection portal. The Streets Manager can download or request the reports via email. Inspections are performed cyclically (bridges every 2 years and culverts every 4 years). However, the department has not monitored the inspection cycle or the receipt of these reports to ensure all recommendations have been addressed.

An analysis of ADOT inspection reports from 2019 through 2023 showed that Transportation & Streets was missing the most recent inspection report for about 130 structures (more than half of the NBIS bridges and culverts on the ADOT inventory for Scottsdale). These inspections should have been received between 2020 and 2022. As illustrated by Figure 4, about 27% of the structures missing reports were last rated in “fair” condition, which may need significant maintenance or repairs. Based on a review of 10 of these on the ADOT website, all 10 were inspected in 2020 or 2021 but the department did not have the inspection reports.

Figure 4. About 27% of the missing inspection reports were NBIS bridges in Fair condition.



SOURCE: Auditor analysis of structure condition rating as of October 2023 ADOT inventory report and ADOT inspection reports from 2019 through 2023 maintained by Transportation & Streets.

Since our 2019 audit, where we found that these inspection reports were not being reviewed, the Transportation & Streets department has made efforts to review and address the inspection recommendation. However, existing processes continue to be predominantly manual and lack automated methods to identify missing bridge inspections.

B. An incomplete inventory led one bridge to go uninspected for nearly 30 years, and inaccurate inventory records may impact the ability to effectively monitor inspection results.

Transportation & Streets has reported several bridges to ADOT in the last few years; one identified in our prior audit, two recent bridge replacements, and one new bridge project. As well, an existing bridge missing from the City's and ADOT's inventory was added and inspected by ADOT. However, the City's bridge inventory had not been updated with the new information, increasing the risk that inspections are not properly received and reviewed.

1. *A 30-year old bridge over the CAP canal on Taliesin Drive was not part of the City's bridge inventory and had not been inspected until recently.* In February 2022, a Central Arizona Project (CAP) engineer reported to ADOT that the bridge did not appear to have been inspected. The bridge was built in 1993. ADOT contacted Transportation & Streets to add the structure and completed an inspection in August 2022. The department provided the bridge information to ADOT but, as of the time of this audit, it had not been added to the City's inventory and the inspection report was not on file. We obtained a copy of the inspection report and notified the department. The bridge has since been added to the City's bridge inventory. The bridge received an overall condition rating of "good" in 2022.

Figure 5. Image of City-owned bridge on Taliesin Drive.



SOURCE: Bridge ADOT asset identification number 11702, image obtained from Google Maps on April 19, 2024. ADOT bridge structure number 11702.

2. *Bridge data was not updated for recently reported structures.* Following our prior audit, the department reported to ADOT a bridge built in 2016 on Scottsdale Road and a reconstructed bridge on 68th street. However, its inventory records have not been updated to reflect the ADOT assigned structure numbers, as well as add missing information such as location. ADOT inspected the bridges in 2022, but only one of these inspections was on file. As such, any maintenance or repair recommendations for the other are missing a review and assessment.

Ensuring assigned structure numbers and asset data are accurate would help the department properly record inspection information received.

3. *A pedestrian underpass on Pima Road and box culvert on Dynamite road may need to be reported to ADOT as an active city asset.* Following the previous audit, the prior City Engineer had reviewed city projects and bridge assets to identify structures that should be added or removed from the inventory, providing these notes to the Streets Manager. However, additional steps have not been taken to follow-up on reporting or updating the information on these structures. Because the assets have not been reported to ADOT, cyclical safety inspections have not been completed.
4. *Internal procedures do not provide specific guidance on the timing or reporting process for new structures.* A new bridge project was reported to ADOT in 2022, during initial construction. According to ADOT, new structures should be submitted at 60% construction completion, and as-builts submitted upon completion. As of May 2024, the bridge was under construction.

Detailed written procedures for identifying new structures, submitting them to ADOT, and updating information for existing assets would provide accurate and complete information to help ensure ADOT inspections are properly recorded and reviewed.

C. The department has not yet implemented a process to monitor work order status and follow-up on deferred work.

Transportation & Streets responsibilities include evaluating and addressing ADOT recommended maintenance and repairs. Work orders were not created for 5 of 71 structures with ADOT recommendations, quality of work order data should be improved, and deferred work is not monitored.

Our 2019 audit recommended that the department should review ADOT reports, create work orders for their inspection recommendations, then prioritize and complete the work orders timely.

1. *Missing work orders for five inspection reports* – From 2019 through 2023, 71 of 136 ADOT inspection reports obtained by the department included recommendations for maintenance or repairs. Transportation & Streets did not create work orders for 5 of 71 (7%) ADOT inspections reports, ADOT recommendations include:

Inspection Year	Asset Type	Condition	ADOT Recommendation
2020	Bridge	Fair	Assess the condition of the steel reinforcement in the soffit of old deck. The steel has been exposed to corrosion for more than 50 years.
2022	Bridge	Fair	Repair/Patch potholes in deck AC wearing surface adjacent to deck joint header and seal cracks.
2019 and 2020	Bridge	Good	Two inspections with the same recommendation of removing debris and settlement build up at the inlet.
2022	Bridge	Good	Reattach light fixture.

SOURCE: Auditor analysis of LIS bridge work order reports from January 2019 thru March 2024.

2. *Quality of work order data needs to be improved to allow for effective monitoring of work status.* A Street Operations systems integrator creates work orders for ADOT recommendations received. However, uncompleted work will continue to be cited by ADOT inspectors, therefore Streets staff may enter multiple work orders for the same issue. As a result, data for managing work order completion is inaccurate. For example, duplicate work orders may be closed as completed when a new one is entered. Also, monitoring duration for work order completion may be ineffective if the creation date is continuously updated and closing dates are delayed. Further, the department reported that work orders are not always closed timely after work is completed.
3. *Deferred work orders were closed, a process for monitoring and follow-up has not been established.* From January 2019 through March 2024, a total of 21 work orders for ADOT-recommended work were deferred. Deferred items range from replacement of deck joints, repairs to sidewalk lights, to full replacement of a culvert. Of these, 15 noted a reason for the deferral:
 - Eleven were recommendations to hold for CPM review of potential future Capital Project submission or funding options.
 - Two were deferred to be monitored for structural issues.
 - One had an outdated lighting system.
 - One stated “no access to complete the repair”.

Deferred work orders are also *closed*, and without a process for monitoring these, they may not be reviewed again in a timely manner. The majority of deferred work orders were closed in 2022 and it is unclear if any of these have been resolved.

D. A culvert rated in poor condition needs attention.

ADOT has rated a culvert on 117th Way and Mountain View Road in “poor” condition since 2014 (the earliest inspection the City has on file), recommending to either rehabilitate or replace the culvert. The most recent inspection dated January 2022 noted that while other aspects of the structure (roadway safety and waterway) were reported in good condition, several of the culvert barrels showed “vertical deformation”, resulting in an overall “poor” condition rating. Inspection photos are shown in Figure 6, on page 11. A work order was created for the ADOT recommendation, but it was closed as “deferred” in 2022 with a note stating that the City Engineer recommended monitoring since there were no structural issues observed at the time. However, the department does not currently have a process in place to follow-up on work orders closed as deferred. Further, current processes do not require engineering review of inspection reports for structures with low condition ratings to assist the Street Operations department with prioritizing work based on criticality.

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Figure 6. Culvert rated in poor condition on 117th Way needs repairs and maintenance.



SOURCE: Images from ADOT inspection reports for culvert on 117th Way and Mountain View Road.

According to the in-house engineering team, this culvert was referred to them by the City Engineer in 2019 (following the prior audit), and the intent was to obtain an estimate for the repairs or replacement. However, no formal assessment was available, and an estimate had not yet been obtained, possibly due to the prior City Engineer's departure from the City in 2021. The applicable work order was closed after the departure of the prior City Engineer, and the current City Engineer has not been asked to review this structure. Additionally, the latest ADOT inspection report, completed January 2022 also listed a maintenance recommendation to remove the debris and vegetation at the inlet. However, that work order had not yet been entered as of May 2024.

Recommendations:

The Transportation & Streets Director should:

- 1.1 Establish monitoring processes to ensure all ADOT inspection reports are received and reviewed in a timely manner. Verify that the most recent inspection reports have been received for all ADOT-inspected structures.
- 1.2 Review the NBIS bridge inventory and determine if two unreported bridges (Pima Rd pedestrian underpass and Dynamite Rd box culvert) meet reporting requirements; submit structure information to ADOT as determined.
- 1.3 Establish procedures for identifying new structures, submitting them to ADOT, and updating information for existing assets in the City's database.

- 1.4 Establish stronger work order management practices to ensure that work orders are entered for all ADOT recommendations, including improving the quality of the information entered in order to better monitor work order status and completion.
- 1.5 Follow-up on deferred work orders.
- 1.6 Clarify roles and responsibilities relating to the review of inspection reports to ensure work is prioritized by risk, including requiring engineering review to assess criticality of inspections with low condition ratings and evaluate the need for larger repair projects.
- 1.7 Obtain further assessment of the culvert rated in poor condition and, if needed, work with Capital Project Management to evaluate next steps.

2. A lack of an asset management program puts small bridges at risk of expensive repairs or replacement.

Certain bridge structures that do not meet the NBIS definition in size or use, do not receive ADOT inspections. This may include pedestrian bridges or other smaller bridge structures owned by the City.¹ Our 2019 audit recommended that the Public Works Division identify these non-NBIS bridge structures and establish a program for regularly inspecting, maintaining, and repairing them. As of the last audit follow-ups in 2022:

1. Non-NBIS bridges had not been identified in the asset inventories maintained by Transportation & Streets. No other inventory of these structures is available.
2. A plan for periodic condition assessments or inspections had not been developed.

Limited progress towards establishing an asset management program has been made, primarily because roles and responsibilities, crossing multiple city departments, have not been defined or formalized. According to Transportation & Streets, the department is responsible for the ADOT-inspected NBIS bridges; however, non-NBIS bridges are not currently part of their processes.

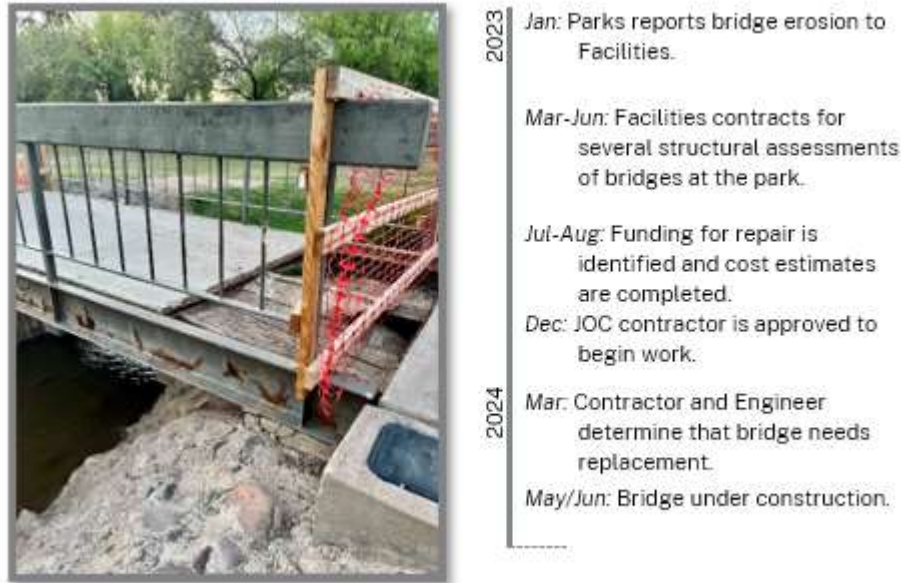
Additionally, some structures are not maintained by Transportation & Streets. For example, bridges located within City parks are maintained by Parks & Recreation maintenance staff and they refer more significant concerns to the Facilities Management department for maintenance and repair. However, neither of these departments have responsibility for obtaining routine or periodic structural condition assessments for these bridges.

The importance of an asset management program for smaller bridges is illustrated by the unplanned replacement of a pedestrian bridge located in El Dorado Park. As described in Figure 7, Park maintenance staff reported erosion at this bridge in January 2023 and the bridge was replaced in June 2024, about 1.5 years after erosion was reported. Cyclical structural inspections could have detected significant deterioration prior to the emergent

¹ According to an ADOT representative, ADOT does a limited inspection of pedestrian bridges that cross public roads, such as verifying appropriate vertical clearances. While observed maintenance and repair needs are noted on the inspection reports, the pedestrian structures are not given sufficiency ratings as bridges are.

need for replacement of an expensive asset. As well, planning for maintenance and repair work would minimize potential inconvenience to City residents.

Figure 7. Pedestrian bridge in El Dorado Park needed unplanned replacement.



SOURCE: Auditor photo of El Dorado Park bridge taken in April 2024 and summary of project information provided by Facilities Management.

Recommendation:

2.1 Public Works Director should work with City departments to define roles and responsibilities over inspection and maintenance of non-NBIS City bridges. As part of the program, inventory non-NBIS bridges and establish a plan for periodic structural assessments.

MANAGEMENT ACTION PLAN

1. More than half of recent ADOT inspection reports have not been obtained and reviewed; more effective monitoring of inspection results is needed.

Recommendations:

The Transportation & Streets Director should:

- 1.1 Establish monitoring processes to ensure all ADOT inspection reports are received and reviewed in a timely manner. Verify that the most recent inspection reports have been received for all ADOT-inspected structures.

Priority	Management Response and Proposed Resolution
High	<p>Agree, with additional wording.</p> <p>Develop scheduled calendars notifications to remind ADOT that inspection reports are due and to inform them at set times that certain reports are missing or have not been reviewed. City Engineer, Transportation and Streets Director and Street Operations Manager will be included on notifications.</p> <p>Propose setting a calendar notification for June 1 of each year to follow up with ADOT on current years inspections and status.</p>
<p>Responsible Party: Transportation and Streets</p>	
<p>Est. Completion Date: Date 08/01/2024</p>	

- 1.2 Review the NBIS bridge inventory and determine if two unreported bridges meet reporting requirements; submit structure information to ADOT as determined.

Priority	Management Response and Proposed Resolution
Medium	<p>Agree, with additional wording,</p> <p>Street Operations will work with CPM to evaluate these two assets and forward recommendations to ADOT. If needed, the structure work will be studied further and included as a future CIP project.</p> <p>Pedestrian underpass on Pima north of Thompson Peak COS asset #16041. The second is the Miller Bridge over Rawhide wash under construction now. Staff will create an asset number and request that these are placed on the inspection rotation.</p>
<p>Responsible Party: Transportation and Streets</p>	
<p>Est. Completion Date: Date 01/01/2025</p>	

1.3 Establish procedures for identifying new structures, submitting them to ADOT, and updating information for existing structures.

Priority	Management Response and Proposed Resolution	
Medium	<p>Agree, with additional wording.</p> <p>Ensure that bridges and culverts built as part of the CIP Program or development process are integrated into the database and submitted to ADOT in a timely manner.</p>	
Responsible Party: CPM (City Engineer)		Est. Completion Date: Date 08/01/2024

1.4 Establish stronger work order management practices to ensure that work orders are entered for all ADOT recommendations, including improving the quality of the information entered in order to better monitor work order status and completion.

Priority	Management Response and Proposed Resolution	
Medium	<p>Agree, with additional wording.</p> <p>Over time staff has experienced data loss with existing LIS as seen in 2019 audit. However, our emphasis on improved processes and procedures including stronger work order documentation, will be built into the future Lucity system.</p> <p>In addition to what Lucity can do to help with these issues, staff will request in the next budget development cycle a position upgrade for a Lead position designated to the bridge program to work on the creation and monitoring of all ADOT recommendation repairs within the work order system and to monitor and assist with the uploading of incoming inspection reports. In the past only one staff member was involved in this process and when they left the process was lost.</p>	
Responsible Party: Transportation and Streets		Est. Completion Date: Date 06/30/2025

1.5 Follow-up on deferred work orders.

Priority	Management Response and Proposed Resolution
High	Agree, with additional wording. Street Operations Manager can work on this follow-up.
Responsible Party: Transportation and Streets	
Est. Completion Date: Date 08/01/2024	

1.6 Clarify roles and responsibilities relating to the review of inspection reports to ensure work is prioritized by risk, including requiring engineering review to assess criticality of inspections with low condition ratings and evaluate the need for larger repair projects.

Priority	Management Response and Proposed Resolution
Medium	Agree, with additional wording. These roles were developed during the 2019 Infrastructure Audit. The inspection reports come to the Transportation and Streets Director and the Street Operations Manager. The Street Operations Manager downloads the inspection reports and reviews them based on the ADOT Repair Priority Rating.
Responsible Party: Transportation and Streets	
Est. Completion Date: Date 2019	

1.7 Obtain further assessment of the culvert rated in poor condition and, if needed, work with Capital Project Management to evaluate next steps.

Priority	Management Response and Proposed Resolution
Med/High	Agree, with additional wording. We have been monitoring this asset since 2010 and as recent as 06/10/2024. It has not changed in 14 years.
Responsible Party: Transportation and Streets	
Est. Completion Date: 10/01/2024	

2. A lack of an asset management program puts smaller bridges at risk of expensive repairs or replacement.

Recommendation:

2.1 Public Works Director should work with City departments to define roles and responsibilities over inspection and maintenance of non-NBIS City bridges. As part of the program, inventory non-NBIS bridges and establish a plan for periodic structural assessments.

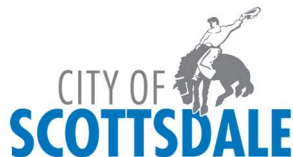
Priority	Management Response and Proposed Resolution
High	Agree
Responsible Party: Facilities Management	Est. Completion Date: Date 01/01/2025

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