Report Highlights

In 2006, Pima County voters passed a one-half cent sales-tax measure dedicated to a variety of transportation-related projects that sunsets on June 30, 2026. With the passage, voters approved investments in roadways, safety, environmental and economic vitality, and transit projects as part of the Regional Transportation Authority (RTA) Plan (RTA Plan) to enhance mobility and safety, reduce congestion, and provide multimodal choices as part of the transportation system in Pima County. These projects are planned, funded, implemented, and operated by several entities in Pima County including the Pima Association of Governments (PAG), RTA, Arizona Department of Transportation (ADOT), and eight local jurisdictional cities, towns, and native nations and Pima County. Sjoberg Evashenk Consulting, Inc. was hired by the Arizona Auditor General to conduct an independent performance audit of the expenditures of the RTA Plan projects between July 1, 2016 and June 30, 2021 to determine their impact on solving transportation problems within Pima County. Results are as follows.

Were Promised RTA Plan Projects Delivered as Expected and Will Remaining Projects be Completed as Planned?

RTA Plan projects were generally completed as planned and realized many accomplishments. Specifically, of the 51 RTA Plan projects envisioned in 2006, 45 improvements—or 88 percent—were completed or in progress as of June 30, 2021.[1] The majority of remaining projects are scheduled to be started within the RTA Plan timeframe as promised.

Roadway Improvement Projects

- Of the 35 RTA Plan Roadway projects, 15 projects have been implemented and 14 were underway.
- Completed projects resulted in 169 new lane-miles, 4 railroad overpasses and underpasses, 194 intersection improvements, and a variety of other enhancements.
- Six roadway projects have not yet been started, but are scheduled to start, as promised, before the RTA Plan sunsets on June 30, 2026.
- Roadway projects were completed on schedule with minor delays or continue to mostly be on schedule and will not affect overall delivery of the RTA Plan.

Safety Projects

- All five RTA Plan safety element projects were completed including:
  - Safety features across 194 intersections.

Environmental & Economic Vitality Projects

- The RTA Plan's Environmental and Economic Vitality element had two of three projects completed that included 179 miles of pedestrian sidewalks, 366 miles of bike lanes, and multiple wildlife studies and crossings.
- One of the three RTA Plan Environmental and Economic Vitality projects relates to providing resources to local businesses that were impacted by the construction of RTA Plan projects through consulting services to identify strategies and developing tools to keep the business open during construction. This assistance has been provided to over 9,000 local businesses and is on-going until the RTA Plan sunsets, or dedicated RTA Plan funding is exhausted.

Transit Projects

- All eight RTA Plan Transit element projects were completed and included:
  - Capital projects: 3 maintenance storage facilities, 7 park and ride transit centers, and a modern streetcar.

[1] These 51 RTA Plan projects were split into more than 1,000 individual project segments as of June 30, 2021.

- 76 Pedestrian crossings.
- 139 Bus pullouts, rail crossings, bridge improvements.
- Technology such as controllers, wireless communications, and adaptive traffic management for 71 signal projects.

- Operations: Service was expanded with 21 weekday routes, 23 weekend routes, and boundary extensions for paratransit services with routes modified based on ridership demand and available funding.

Have RTA Plan Projects been On Budget and Is Funding Sufficient to start Remaining Projects Before the RTA Plan Sunsets on June 30, 2026?

While past projects completed have experienced some cost overruns, variances were explained and ultimately funded by local jurisdictions. Yet, as of December 2021, there was a funding gap of approximately $149 million—or 12 percent of the remaining $1.2 billion needed to fulfill RTA Plan promises. PAG and local jurisdictions are working toward solutions to bridge the gap.

Capital Project Budgets

- Completed roadway projects experienced cost overruns causing variances from planned budgets ranging from 9 percent to 94 percent.
- Reasons for cost variations included scope increases, unforeseen conditions, and cost escalation—all typical and similar to challenges experienced by other transportation entities across the nation and recent industry trends of rising construction costs.

Remaining Costs to Complete

- As of June 30, 2021, there is an estimated $1.2 billion needed for remaining in-progress projects and projects not started in addition to covering related bond debt service and administrative costs.

Funding Available and Funding Gap

- $1.054 billion in sales tax and other state, local, and federal funds have been committed to cover approximately 88 percent of the remaining RTA Plan costs.
- As of December 2021, there is a funding gap remaining of approximately $149 million representing 12 percent of the remaining costs.
- Funding is needed for 11 roadway projects—where individual cost increases resulted in gaps ranging from approximately $2 million to more than $64 million.

Efforts to Address Funding Gap

- To cover the gap and secure funding to complete or start remaining projects in alignment with the RTA Plan promises, RTA is working with the local jurisdictions.
- Discussions include securing additional local funding, raising more revenue through future sales-tax extension, reducing scope on projects, or delaying the start of some projects.

Recommendations

To strengthen management of total RTA Plan project costs and funding available to mitigate potential funding gaps, RTA should:

1. On an annual or more frequent basis, require RTA member jurisdictions to submit complete capital project cost estimates and actual expenditure data from regional and local sources. RTA should monitor and summarize the revised cost estimates in addition to all available funding sources to pay for project costs to further enhance RTA's gap analysis.
2. Continue working with local jurisdictions to secure needed non-RTA funding for RTA Plan projects before and after the end of the RTA Plan on June 30, 2026.

Did Mobility Increase and Congestion Decrease in Pima County based on Available Data?

Performance results were mixed. Because performance cannot be specifically linked to individual RTA Plan projects, we assessed performance regionally at the Tucson Urban Area or Pima County level. We used data most relevant to the RTA Plan geographical area available within our July 1, 2016 through June 30, 2021 audit period to the extent practical. Overall, we found fewer vehicle miles traveled, increased travel time to work, and less congestion in the region when considering hours of delay.[2] Also, while we found bridges were in good condition, results were mixed when assessing pavement condition.

Vehicle-Miles-of-Travel

- Vehicle miles traveled per capita for Pima County decreased by 10 percent from 22.5 miles per 100,000 population in calendar year 2016 to 20.2 miles in 2019—suggesting lower levels of congestion.[3] This trend generally aligned with 2 of the 4 counties reviewed.[4]

Hours of Delay

- Tucson Urban Area's hours of delay decreased from 50 hours per commuter in calendar year 2019 to 21 hours per commuter in calendar year 2020—yet, some of the decrease has anecdotally been attributed to COVID-19.
- These results were lower than other urban areas we reviewed and improved from prior performance where the Tucson Urban Area was in the top 10 medium-sized urban areas for most annual hours of delay per auto commuter.

Travel Time to Work

- In Pima County, daily total minutes of travel time to work slightly increased by 2.9 percent from 24.4 minutes in calendar year 2016 to 25.1 minutes in calendar year 2019. This result was higher than all but one other county reviewed, although Pima County's rate of increase was lower than the rate of increase for most other peers.

Pavement and Bridge Condition

- Pavement condition across Pima County varied with results ranging from poor to good depending on the local area. Rutted roadways or pavement potholes negatively impact driving conditions by requiring reduced speeds, while smooth roadway surfaces allow for safer driving.
- Bridge condition improved between calendar years 2017 and 2021—growing from 61 percent in 2017 in good condition to 67 percent of the 1,000+ bridges in good condition by 2021.

Performance Measurement

- PAG improved its performance measurement system by setting performance goals and establishing targets, but performance results used computer-modeled data to predict outcomes—rather than actual performance statistics.
- Actual data is critical to enable true measurement of performance. Because it can be costly to purchase, we recommend that PAG considers partnering with others to obtain actual performance data in addition to other suggestions for enhanced performance measurement.

Recommendations

To continue improving its performance measurement framework and provide additional accountability, PAG and RTA should consider the following:

3. Formally study and quantify the cost-benefit of obtaining raw performance data including the cost of dedicating resources for data refinement, validation, analysis, and reporting.

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[2] While performance outcomes may have been impacted by COVID-19, there were no authoritative studies available. One leading industry expert, the Texas A&M Transportation Institute noted in its 2021 Urban Mobility Report that the effects of the COVID-19 pandemic on urban transportation systems is not yet clear and, while delay was less in 2020, it is too soon to draw conclusions based on pandemic travel patterns.

[3] Vehicle miles traveled measures the volume of traffic on roadways where a lower vehicle-miles-of travel rate indicates that a traveler would experience less congestion because there are fewer vehicles on the road.

[4] We compared the Tucson Urban Area and Pima County, where relevant, with other comparable areas including Albuquerque, New Mexico; Bakersfield, California; Colorado Springs, Colorado; El Paso, Texas; Fresno, California; and Salt Lake City, Utah.

4. Consider avenues for obtaining actual data such as partnering with other regional or state partners to acquire and prioritize certain key data for performance assessment, in addition to developing a plan with timelines to pursue these avenues, so that performance can better be assessed.

5. If modeled data continues to be used for performance measurement, provide sampling and validation of the model output to ensure accuracy of the modeled data. Alternately, provide supplemental or contextual information to the PAG Regional Council and RTA Board of Directors regarding data limitations and caveats on actual versus modeled data.

How Safe are Pima County Roadways for Drivers, Bicyclists, and Pedestrians based on Available Data?

Traveler safety is a critical component of the RTA Plan through its designated projects to protect travelers, but it also improves mobility through the free-flow of traffic without incident. In the past five years, roadway crashes have fallen in areas with RTA Plan improvements and systemwide, but rates of roadway fatalities have increased. These trends generally aligned with other entities reviewed.[5] While several RTA Plan projects involved spending on safety features, outcomes cannot be directly attributed to individual projects. Instead, various factors contribute to safety results with many incidents attributed to driver behavior such as impaired driving or speed. To address these outcomes, PAG and ADOT developed strategic safety plans with strategies such as mapping safer alternate routes for bicyclists and pedestrians.

Roadway Crashes and Fatalities

- Along four roadway segments we reviewed with completed RTA Plan projects, crashes decreased between 48 and 70 percent during the RTA Plan period.
- Across Pima County systemwide, total roadway crashes decreased by 24 percent from 11,646 crashes in calendar year 2016 to 8,841 crashes in calendar year 2020.
- The rate of roadway fatalities per one million vehicle miles traveled increased 53 percent over the same period.
- Many fatalities in Pima County and nationally were caused by driver behavior from impaired driving, lack of restraints, and speeding.
- Trends for total crashes and rate of roadway fatalities at other counties reviewed did not follow a consistent pattern—some aligned with Pima County's results, while others experienced better results.

Bicycle Crashes and Fatalities

- Total count of bicycle crashes decreased, but the rate of bicycle fatalities increased 35 percent from 4.92 fatalities per million population in calendar year 2016 to 6.68 fatalities per million population in calendar 2020.
- When compared to 4 of the 6 other counties reviewed where data was available, the Pima County rate of fatalities in 2020 was higher than all but one county.

Pedestrian Crashes and Fatalities

- Pedestrian fatalities are generally intersection related, involved alcohol, and occurred more frequently at night.
- Pima County had higher rates of pedestrian fatalities by 2020 than all but one of the 4 peer counties reviewed with 2020 data.

Actions to Address Safety

- Although many causes for fatalities relate to driver behavior outside their control, PAG and RTA are working with ADOT and local jurisdictions on several strategies increasing roadway visibility for drivers, implementing protected pedestrian crossings, and targeting prevention of distracted commuting.

[5] We compared roadway statistics to (1) Denver County, Colorado; (2) El Paso County, Colorado; (3) El Paso County, Texas; (4) Fresno County, California; (5) Kern County, California, and (6) Salt Lake County, Utah. However, there were limitations with 2020 data not available for some of the counties.

Has Transit Contributed to Mobility and Congestion Relief in the PAG/RTA Region?

Transit generally performed reliably and more efficiently than other transit operators reviewed serving as a viable choice for riders and helping relieve pressure off the system to enhance mobility. Yet, performance results were mixed. For instance, ridership declined between fiscal years 2017 and 2021, but on-time performance averaged 92 percent or higher for bus, streetcar, and paratransit. Transit was generally safe with fewer preventable accidents and declining security incidents—except for a sharp increase in 2021. Rider complaint trends varied between bus, streetcar, and paratransit.

Transit Ridership

- Between fiscal years 2017 and 2021, total bus ridership decreased by 34 percent.
- Sun Link streetcar ridership decreased 51 percent and Sun Van paratransit declined 50 percent between fiscal years 2017 and 2021.[6]
- Decreases were attributed to COVID-19 concerns and people no longer commuting to work.
- To address declining ridership, Sun Tran increased marketing and implemented a fare-free policy in response to COVID-19 to encourage riders to feel safe riding in transit vehicles and using service.

Bus Transit Efficiency & Reliability

- Sun Tran bus transit was more efficient than peers across many metrics, including lower average operating costs per boarding at $4.07 compared to the peer average of $7.03—although efficiency metrics were negatively impacted by lower ridership and fare-free policy.[7]
- Sun Tran bus service was on-time 92 percent of the time, or greater—consistently meeting on-time performance goals.
- Miles between bus breakdowns steadily increased from approximately 11,700 in fiscal year 2018 to nearly 23,000 by fiscal year 2021.

Transit Preventable Accidents

- Preventable accidents involving bus, streetcar, and paratransit decreased 84 percent, 83 percent, and 95 percent, respectively.
- Performance met safety goals in some years across transit types, but not in all years.

Streetcar Efficiency & Reliability

- With significant decreases in ridership, Sun Link streetcar's operational performance metrics suffered.
- The Sun Link streetcar was reliable completing more than 98 percent of scheduled trips with stable levels of vehicle breakdown.
- As a result of fewer riders and the fare-free policy, operating costs per boarding increased 104 percent and subsidy per boarding increased 134 percent between fiscal years 2018 and 2021.

Paratransit Efficiency & Reliability

- On average, Sun Van paratransit reliably completed nearly 96 percent of appointments on time—although breakdowns varied.
- Like both bus transit and streetcar performance, Sun Van paratransit experienced increased operating costs and higher subsidies per boarding.

Bus Transit Security Incidents

- After years of decline since fiscal year 2017, Sun Tran bus transit security incidents increased to 0.06 incidents per 100,000 revenue miles in fiscal year 2021—attributed to COVID-19 challenges.

[6] Sun Tran refers to the Tucson Transit Management, LLC dba Sun Tran and Sun Van, and Tucson Streetcar LL dba Sun Link is a corporation held by the City of Tucson that operates its transit service.

[7] We compared service to six peer entities: (1) Sacramento Regional Transit District; (2) New Orleans Regional Transit Authority; (3) Central Oklahoma Transportation and Parking Authority; (4) City of El Paso's Mass Transit Department (Sun Metro); (5) City of Albuquerque Transit Department (ABQ Ride); and (6) Kansas City Area Transportation Authority.

Transit Rider Satisfaction

- Across the transit network, Sun Tran bus complaints increased steadily over the period, while Sun Link streetcar decreased and Sun Link paratransit remained generally stable. Specifcically, we found:
  - Valid bus compaints rose 56 percent from nearly 420 to slightly over 650 between fiscal years 2017 and 2021. Most complaints were due to mask complaints, riders feeling unsafe, and general frustration due to the pandemic.
  - Streetcar complaints decreased from 162 complaints in 2017 to 27 complaints in 2021.
  - Paratransit complaints were relatively stable with 0.34 complaints per one thousand trips in fiscal year 2021 compared to 0.38 complaints in fiscal year 2017.