



# PHOENIX TRANSPORTATION 2050



MOVING PHOENIX  
FORWARD

**ANNUAL  
PROGRESS  
REPORT  
FY 2020**

JULY 1, 2019  
THROUGH  
JUNE 30, 2020



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# MESSAGE FROM LEADERSHIP

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Mayor Kate Gallego

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"T2050 is more than just a plan; it's an investment in our community, to get our residents more connected. Phoenix is one of the fastest-growing cities in the country and we show that through our investment in building a multimodal transit plan that is reflective of our residents and the needs of every individual to thrive. While 2020 has been a different year than most, our progress has not slowed – we have added more bus stop shelters for shade, started our cool pavement pilot project, used recycled asphalt and continued to grow our light rail. Robust, inclusive transportation options for Phoenix are becoming a reality with the help of the smart, long-range planning of T2050."

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Councilwoman Thelda Williams  
Chair, Transportation, Infrastructure and  
Innovation Subcommittee

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"Transportation infrastructure is vital not only because it moves people from place to place, but it supports public safety, economic development and education. Since the passing of T2050, transportation and transit infrastructure in Phoenix continues to make great strides. In 2019, Phoenix underwent the largest street paving season in the city's history, treating more than 290 miles of roadways. Construction on several major light rail projects began and a study on neighborhood circulators is underway – these investments are key for improving connectivity and accessibility for our residents."

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Commissioner Jennifer Mellor  
Chair, Citizens Transportation  
Commission

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"T2050 was a voter-approved ballot initiative to enhance Phoenix's transportation infrastructure, including bus, rail and streets. Since its inception in 2016, members of the Citizens Transportation Commission have made it a priority to ensure that the vision of the voters is carried forward. Although 2020 has brought new challenges, the CTC remains committed to delivering on this vision and continues to monitor funding and other impacts as a result of COVID-19. T2050 will continue to provide much-needed transportation solutions to support Phoenix's continued economic growth."

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# Program Overview



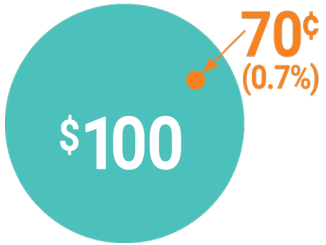


# PROGRAM OVERVIEW



Phoenix's 35-year Transportation 2050 (T2050) plan dedicates revenue to improving transit service and the street network throughout

the city. On Aug. 25, 2015, Phoenix voters approved Proposition 104, which replaced the previous 0.4% sales tax with a 0.7% sales tax. The new sales tax became effective Jan. 1, 2016 and allocates 70 cents of each \$100 spent to the city's transportation needs. Approximately 86% of funds are dedicated to public transit and 14% to supplement street maintenance and improvement funds.



T2050 revenues supplement other sources of transportation funding, allowing the city to accomplish more. This report identifies T2050 accomplishments for fiscal year (FY) 2020 – July 1, 2019 to June 30, 2020 – plus cumulative progress and an overview of improvements planned for the next five years.



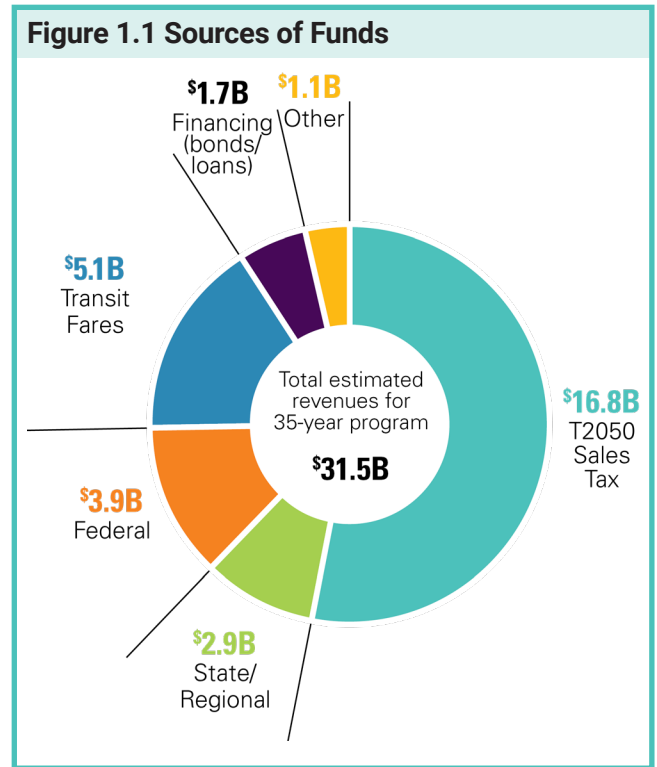
On Dec. 3, 2019, Mayor Gallego, Councilwoman Williams, City Manager Ed Zuercher, Deputy City Manager Mario Paniagua, Street Transportation Director Kini Knudson and the project team and contractors celebrated Phoenix's most successful paving season in history. During FY 2020, the Street Transportation Department completed 296 miles of mill and overlay treatment on all streets and 686 miles of other pavement treatments such as microsurfacing, fog sealing and crack seal.

# Lifecycle Revenues

Over the course of 35 years, a little over half of the estimated \$31.5 billion in overall T2050 funding is expected to be generated from the sales tax. The remaining funds will be comprised of federal, state, regional and local funding sources. Figure 1.1 shows funding sources as established at the program's launch.

In addition to these funds, the staff of the Public Transit and Street Transportation departments pursue opportunities to reduce costs through innovation and efficient project delivery methods.

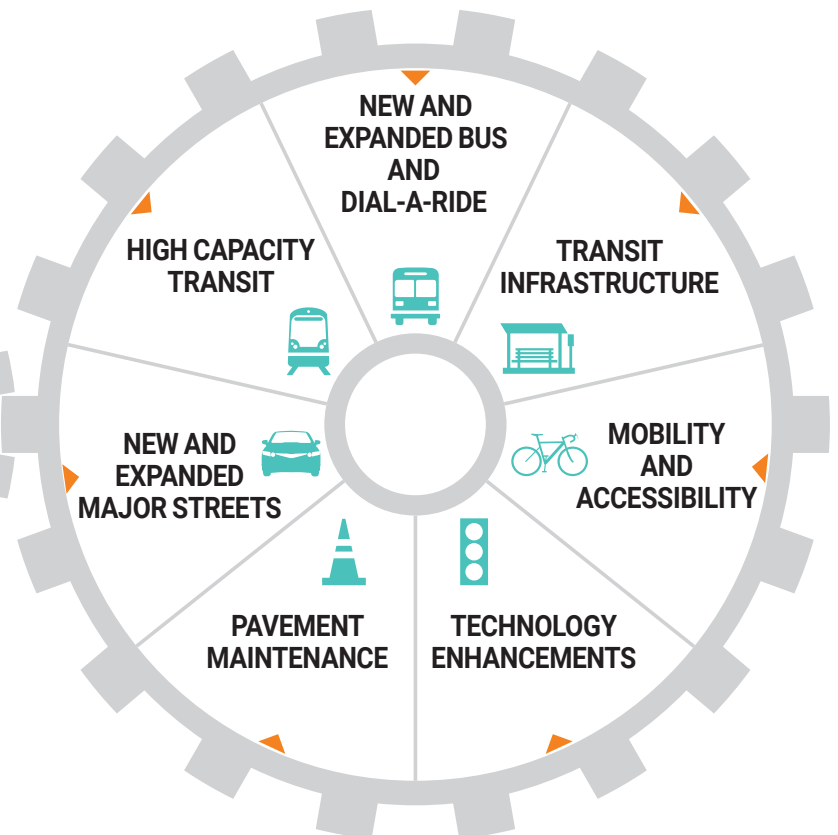
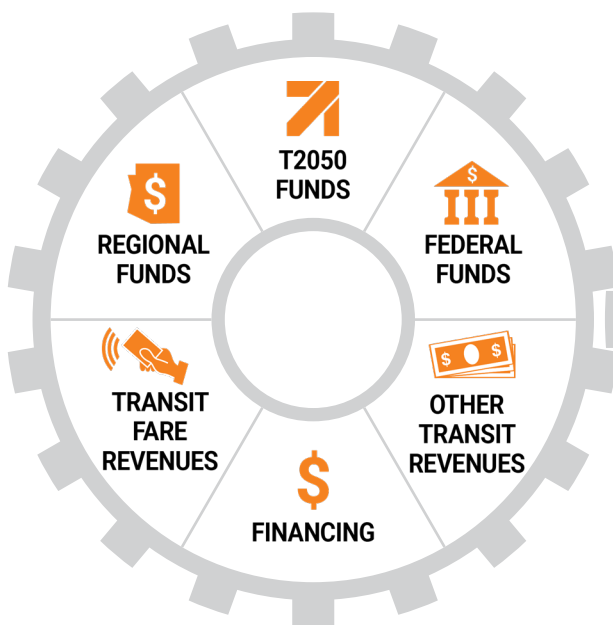
More information on program assumptions can be found in the appendix, with projected and actual sales tax revenue shown in Table A.1. Additional regional and federal funding information is also available at [phoenix.gov/T2050/Funding](http://phoenix.gov/T2050/Funding).



## T2050 PROGRAM AREAS

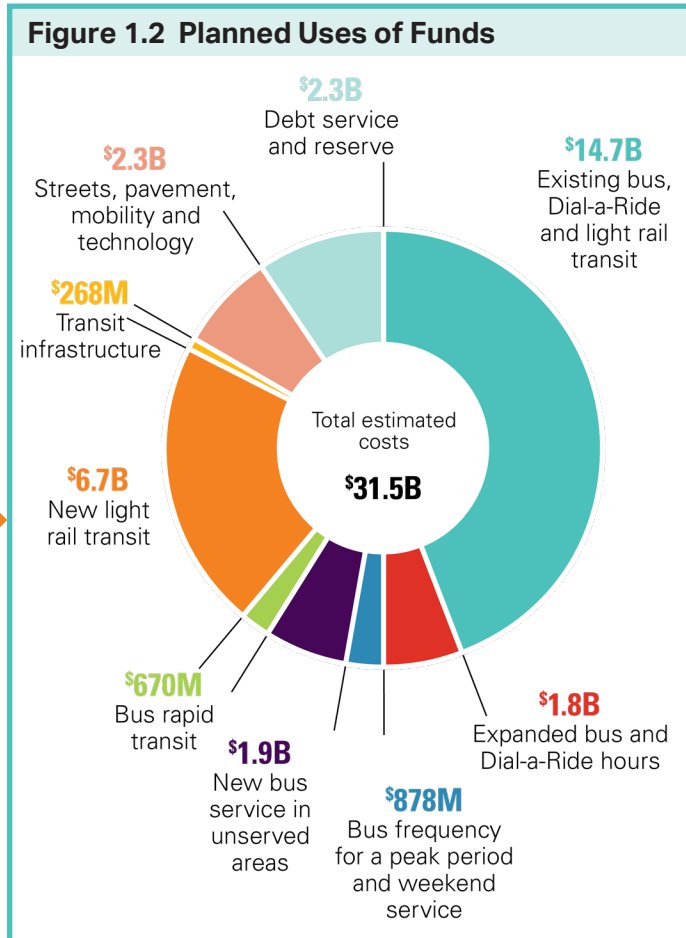


### T2050 FUNDING



# Lifecycle Expenditures

At times, T2050's projected revenue will exceed projected expenditures for a given year. This deliberate strategy helps ensure that the plan has available funds in future years for large expenses, such as light rail projects and park-and-ride facilities. **Figure 1.2** shows planned uses of funds as established at the program's launch.



## Impact of COVID-19

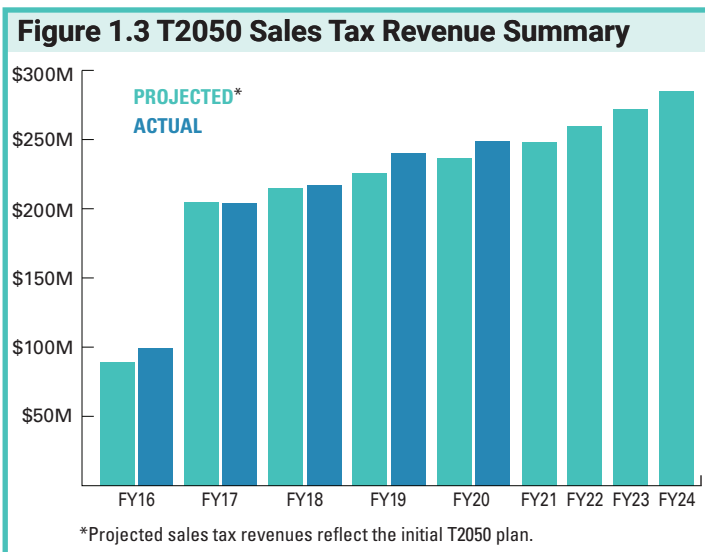
The COVID-19 pandemic has resulted in a great deal of economic uncertainty, which will likely negatively affect previous revenue projections. On March 30, 2020, *Executive Order 2020-18* was issued in Arizona to promote physical distancing and limit individuals' time away from their residences, with the exception of essential activities. Effective June 20, 2020, a *declaration* was issued in Phoenix requiring people to utilize face coverings that cover their noses and mouths.

The effects of changes due to the pandemic are noted within each program area of this report.



## FY 2020 Financial Summary and Projection

The total budget for FY 2020 was \$752.2 million. [Table A.2](#) in the appendix provides details of budgeted and actual revenue and expenditures. Projected and actual sales tax revenue, as well as short-term projected revenue figures, are shown in [Figure 1.3](#). The FY 2020–2024 five-year financial plan is provided in [Table A.3](#) in the appendix.



## Public Outreach

Engaging with the public is vital to understanding residents’ transportation needs. Staff members host open houses and public meetings, and attend community events to provide information and gather input. Public input is sought on a variety of topics such as planning bus routes and extensions, future station locations for light rail, potential bus rapid transit routes, building and improving roads, and creating and improving bike lanes.

Beginning in March 2020, in-person public outreach meetings were temporarily suspended and staff members were directed not to attend community meetings due to the pandemic; however, many outreach events occurred prior to this time. Staff members also adapted to a new way of conducting business by hosting virtual public meetings accessible by phone or computer — complete with presentations, a variety of speakers and public question-and-answer segments.



Transportation, Infrastructure and Innovation Subcommittee Members (top row, left–right): Councilwoman Thelda Williams, Chair; Vice Mayor Betty Guardado; (second row, left–right): Councilwoman Laura Pastor, Councilwoman Debra Stark.

## Formal Oversight

The Citizens Transportation Commission (CTC) was established in 2015 by the mayor and Phoenix City Council for the T2050 program. Fifteen commissioners are appointed by the Phoenix City Council to address street and transit needs, provide oversight on the expenditure of funds and make recommendations on plan elements. Current members include Chairwoman Jennifer Mellor, Vice Chairman Rick Naimark, David Adame, Sue Glawe, Luis Heredia, Gail Knight, Gabriel Loyola, David Martin, Roy Miller, David Moody, Alex Navidad, Brookelynn Nisenbaum, Phil Pangrazio, David Siebert and William Smith.

The Phoenix City Council’s Transportation, Infrastructure and Innovation subcommittee provides guidance, approvals and recommendations on policies related to infrastructure, transportation, transit, streets, aviation/airport, water, technology, smart cities, innovation and sustainability.

Additional oversight is provided through the Phoenix City Council, and opportunities for public input occur at these meetings as well.

## 35-Year Goals Established at the Onset of T2050

On Jan. 1, 2016, the voter-approved 35-year sales tax became effective. A dashboard comparing the progress expected at four-and-a-half years to the progress made since the inception of the program is provided below. City leaders established the program goals based on the [Proposition 104](#) ballot language. These goals are expected to evolve as the program progresses. Additional

information is available through the interactive links and included throughout this report.

Please note that this dashboard represents progress from Jan. 1, 2016 through June 30, 2020. Beginning in the third quarter of FY 2020, effects of the COVID-19 pandemic began and resulting impacts remain in flux at the time of publishing this report.

T2050 GOALS ESTABLISHED AT PROGRAM ONSET		EXPECTED PROGRESS AT 4.5 YEARS
BUS AND DIAL-A-RIDE	<b>35 YEARS</b> CONTINUE local bus, RAPID commuter bus, neighborhood circulator and Dial-a-Ride service <b>FOR 35 YEARS</b>	
	<b>15 MIN</b> PROVIDE 15-MINUTE FREQUENCY on half of all bus routes	
	<b>RAPID</b> EXTEND & ADD new RAPID service	
	PURCHASE NEW buses and Dial-a-Ride vehicles	
	EXTEND bus and Dial-a-Ride service hours TO MATCH LIGHT RAIL HOURS	
	EXTEND & ADD BUS SERVICE to unserved major streets	
	ADD NEW circulator service	
	BUILD NEW park-and-ride lots	
	BUILD additional bus bays	
HIGH CAPACITY TRANSIT	CONTINUE 17 MILES of light rail service	
	PROVIDE 75 MILES of new bus rapid transit service	
	ADD 42 MILES of new light rail in Phoenix	
	BUILD NEW light rail station at 50th Street (completed April 25, 2019, and operational throughout FY 2020)	
STREETS	680 MILES of new overlays on arterial/major streets	
	2,000 new streetlights	
	\$240 MILLION for new roads and upgraded bridges	
	1,080 MILES of new bike lanes	
	135 MILES of new sidewalks	
	ENHANCE technology	

Below expected target    Approaching expected target    At or above expected target



# 2.0



# Bus and Dial-a-Ride

# BUS AND DIAL-A-RIDE

 **CUMULATIVE PROGRESS** JAN. 1, 2016–JUNE 30, 2020

## EXTENDED SERVICE HOURS

for bus and Dial-a-Ride to **MATCH LIGHT RAIL HOURS (FY 2017)**    [More Info on Dial-a-Ride](#)

## INCREASED FREQUENCY\*

off-peak to **15 MIN** on five routes:





<b>41</b> Indian School Road (FY 2019)	<b>19</b> 19th Avenue (FY 2018)	<b>3</b> Van Buren Street (FY 2018)	<b>50</b> Camelback Road (FY 2018)	<b>29</b> Thomas Road (FY 2018)
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**Weekday service levels on five holidays reinstated** (previously on a Sunday schedule)






**RAPID service** frequency increases 

Weekdays and weekends **to 30 MIN or better**

## ORDERED

	<b>319</b>	Local Buses
	<b>37</b>	Rapid Buses
	<b>97</b>	Dial-a-Ride Vehicles
	<b>3</b>	Circulator Buses

## INSTALLED

	<b>6</b>	Bus Bays
	<b>49</b>	Bus Stops 
	<b>257</b>	Bus Shelter Shade Structures 

## EXTENDED BUS ROUTES

- 51 51st Avenue** Lower Buckeye Road to Baseline Road (FY 2017)
- 60 16th Street** Bethany Home Road & 16th Street to Camelback Road & 24th Street (FY 2018)
- 19 23rd Avenue** Happy Valley Road to Pinnacle Peak Road (FY 2018)
- 39 Shea Boulevard** Dreamy Draw Park-and-Ride to 40th Street (FY 2017)
- 122 Cactus Road** ASU West Campus to 19th Avenue/Dunlap Avenue Light Rail (FY 2017)

## ADDED BUS ROUTES

- 32 32nd Street** Camelback Road to Baseline Road & Priest Drive (FY 2017)
- 140 Ray Road** 48th Street to Gilbert Road (FY 2018)

*\* On May 4, 2020, service was temporarily reduced due to the COVID-19 pandemic and its impact on transit demand.*

# BUS AND DIAL-A-RIDE

 **CUMULATIVE PROGRESS** JAN. 1, 2016–JUNE 30, 2020

## OTHER IMPROVEMENTS COMPLETED

**\$123 MILLION RECEIVED**  
in Federal Transit Administration (FTA) formula grants for Phoenix transit (4.5-year total)

**\$9 MILLION RECEIVED**  
in competitive grant funding to purchase buses (4.5-year total)

 **LIQUEFIED NATURAL GAS**  
contract saves \$2 million in fuel costs each year (FY 2018)

 **WEST TRANSIT FACILITY**  
awarded contract (FY 2019)

 **NORTH AND SOUTH FACILITIES**  
awarded contract (FY 2020)

 **ALTERNATIVE TRANSPORTATION SERVICES**  
technology enhancements include: ADA Ride, Senior Ride and Senior Center Shuttle, Employment Transportation and Medical Trip (FY 2019)

 **TRIPSPARK**  
customer web portal for Dial-a-Ride reservations (FY 2018)

 **SECURITY**  
K-9 Security Unit Grant (FY 2017)

 **REGIONAL DIAL-A-RIDE IMPLEMENTED**  
eliminating transfers (FY 2017)

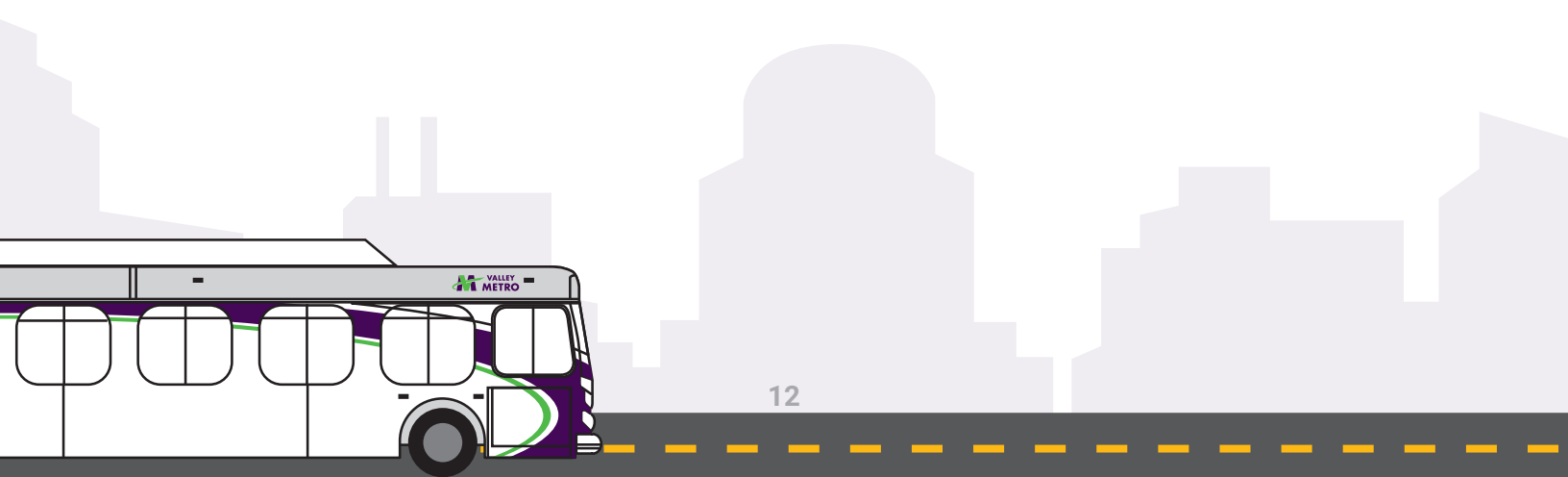
 **SOUTH TRANSIT FACILITY**  
refurbished (FY 2019)

 **COMPUTER AIDED DISPATCH/AUTOMATED VEHICLE LOCATION**  
upgrades installed (FY 2020)

 **AUDIO ON DIGITAL BUS SIGNS**  
(FY 2018)

 **FARE COLLECTION SYSTEM**  
awarded contract (FY 2020)

 **OPERATIONS CONTROL CENTER**  
awarded contract (FY 2020)







# BUS AND DIAL-A-RIDE

Phoenix residents have access to an array of public transportation services. In addition to fixed route bus and light rail service, transportation options include neighborhood circulators, express commuter buses and alternative transportation services such as Dial-a-Ride (DAR) for people with special needs.

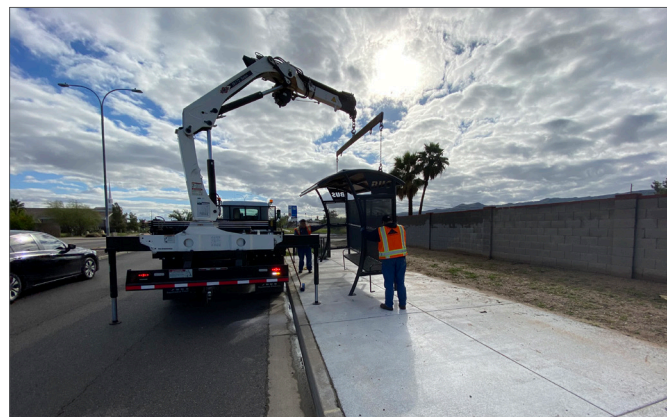
The Phoenix Public Transit Department (PTD) coordinates with Valley Metro, the regional public transportation agency that provides coordinated transit services to riders in the metro area.

Additional transit information is available at [phoenix.gov/publictransit](https://phoenix.gov/publictransit).

## Funding and Budget

In addition to T2050 sales tax revenues, Phoenix's T2050 plan utilizes federal grants, fare revenues, transit advertising and the Regional Public Transportation Fund for bus and DAR.

Funding of \$248 million was utilized in FY 2020 to support ongoing operations and system improvements, which included greater bus frequency, additional and extended bus routes, new vehicles, shaded bus stops, and security and technology enhancements. Phoenix's T2050 plan for the next five years includes funding of \$1.5 billion to continue bus and DAR operations and provide for additional capital investments to maintain the system in a state of good repair and further expand and enhance the system.



Since T2050's inception, 257 new shade structures have been installed at transit stops. By the end of FY 2025, transit riders should expect to find 400 more shade structures.



## COVID-19 Response


On March 30, 2020, [Executive Order 2020-18](#) was issued in Arizona limiting the use of public transportation to when absolutely necessary to conduct or participate in essential activities or attend work in an essential function. Public transit was identified as a critical service, which provides transportation to essential service workers in the community. Staff members and contractors have been informed about current health and safety protocols. The health and safety of staff members, contractors, community members and the traveling public are a top priority for PTD.

The PTD, Valley Metro and other transit partners implemented a variety of safety measures designed to protect passengers and employees, which include the following:

- As a result of stay-at-home orders and increased teleworking, Express and RAPID bus service schedules were reduced on April 6, 2020, to ensure that resources could be allocated to service needs with the greatest demand.
- Effective April 13, 2020, maximum seating on buses was limited to accommodate social distancing measures recommended by national and local health agencies.
- Beginning May 4, 2020, Phoenix implemented bus service reductions as approved by the Phoenix City Council in response to the pandemic's impact on the transit workforce and lower ridership. The reduced service day begins at approximately 5 a.m. Monday through Friday and at 6 a.m. Saturday and Sunday. Service is also reduced for trips beginning after 11 p.m.
- Effective June 20, 2020, passengers were required to wear face coverings while riding transit in Phoenix. The use of face coverings was also strongly encouraged while waiting at bus stops or other transit areas where social distancing may not be possible.
- Face masks for riders were available at the Central Station, Ed Pastor, Metrocenter and Sunnyslope transit centers, as well as at the Burton Barr, Cesar Chavez, Desert Sage, Harmon, Palo Verde, Saguaro and Yucca libraries.
- PTD staff worked with its contracted service providers on options for a temporary barrier between the operator and passengers on buses. The temporary barrier was designed to be kept in place until a permanent barrier could be installed.
- PTD and Valley Metro promoted social distancing by placing signs on buses and bus stops, and messages on websites and social media, that recommend transit use for essential trips only, note passenger limits and the use of rear-door boarding procedures and urge riders to use a mask or cloth face cover.
- Additional preventive measures have included the availability of hand sanitizer on buses, visual fare inspections and enhanced cleanings of transit vehicles and assets throughout the transit environment.





## Local Fixed Route

 Local fixed route bus service is the foundation of the public transportation network. Routes operate on a grid and provide transportation for riders traveling throughout the Valley. Prior to reductions in service due to the pandemic, bus services were available nearly 24 hours per day.


Last year, there were more than 43 million passenger boardings in Phoenix. Since the onset of the pandemic, bus and light rail continue to be utilized by riders performing essential services, recognizing that safety measures have been put in place throughout the transit environment.

## Dial-a-Ride and Alternative Transportation Services

 Phoenix provides a variety of alternative transportation options including DAR, ADA Ride, Senior Ride and Senior Center Shuttle, Employment Transportation and Medical Trip.


 DAR service complements fixed route bus service and operates during the same service hours. DAR is a federally required paratransit service that provides a convenient transportation option for those unable to ride the bus or light rail. Trips can be scheduled by phone or through TripSpark, the online reservation tool launched in 2018.

## Circulator Service

 Four circulator routes – ALEX (Ahwatukee Local Explorer), DASH (Downtown Area Shuttle), MARY (Maryvale Area Ride for You) and SMART (Sunnyslope Multi-Access Residential Transit) – connect area residents with key neighborhood destinations such as libraries, grocery stores and community centers.

In the past year, the project team began a study on the role of circulators and other forms of small-scale services within the transit network. The team will examine and evaluate the current circulator routes and identify opportunities for service improvements. Additionally, areas that might benefit from other small-scale transit service are being investigated. The team will seek public input on possible locations for new service.

## RAPID Commuter


 Phoenix offers six RAPID routes that provide residents in suburban areas with another option for commuting to downtown Phoenix. A new RAPID route to service southwest Phoenix and the planned Laveen Park-and-Ride is anticipated in 2024.

**Table 2.1 T2050 Bus and Dial-a-Ride**


Completed FY 2020 (July 1, 2019–June 30, 2020)
<b>Fund existing bus, RAPID commuter bus, neighborhood circulator and Dial-a-Ride service for 35 years</b>
<ul style="list-style-type: none"> <li>Continue to provide safe and reliable services.</li> <li>Maintain bus and Dial-a-Ride service hours to match light rail hours. (Note: On April 11, 2020, light rail hours were adjusted in response to the COVID-19 pandemic.)</li> </ul>
<b>Improve bus frequency</b>
<ul style="list-style-type: none"> <li>Due to the COVID-19 pandemic and its impact on transit demand and the transit workforce, transit services were temporarily reduced effective May 4, 2020.</li> </ul>
<b>New buses and Dial-a-Ride vehicles</b>
<ul style="list-style-type: none"> <li>Ordered 61 buses, three circulator buses and 25 Dial-a-Ride vehicles.</li> </ul>
<b>Extend and add bus service to unserved major streets</b>
<ul style="list-style-type: none"> <li>Adjusted routing of Routes 7 and 60 in April 2020.</li> </ul>
<b>Circulator service</b>
<ul style="list-style-type: none"> <li>Adjusted routing of SMART circulator in April 2020.</li> <li>Began study of circulators and other small-scale transit services.</li> </ul>
<b>Bus bays</b>
<ul style="list-style-type: none"> <li>Installed one bus bay (Bethany Home Road and 7th Street).</li> </ul>
<b>Bus stops</b>
<ul style="list-style-type: none"> <li>Installed nine new bus stops.</li> <li>Installed 35 new shade structures at existing bus stops.</li> </ul>
<b>Incorporate technology</b>
<ul style="list-style-type: none"> <li>Installed Computer-Aided Dispatch/Automated Vehicle Location (CAD/AVL) upgrade on entire fleet.</li> <li>Awarded contract for Regional Fare Collection System (FCS) Improvement Project on March 18, 2020.</li> </ul>
<b>Increase security</b>
<ul style="list-style-type: none"> <li>Due to the pandemic and the related decreased bus span of service, security hours at transit centers were reduced.</li> </ul>
<b>Other progress</b>
<ul style="list-style-type: none"> <li>Awarded contracts for North and South facilities fixed route service on May 6, 2020.</li> <li>Awarded contract for Operations Control Center on March 18, 2020.</li> </ul>




## Park-and-Ride

 The Public Transit Department operates and maintains nine park-and-ride facilities, which provide free parking for transit users, and include the Sunnyslope, Metrocenter and Desert Sky transit centers. Currently, Valley Metro manages five light rail park-and-ride locations along the Phoenix portion of the light rail alignment. A new park-and-ride facility is anticipated to open in Laveen near Baseline Road and the South Mountain Freeway in 2024.

## Bus Stops and Shelters

 Nine new bus stops were added to the Phoenix transit network and shade structures were installed at 35 existing bus stops during the past fiscal year. Future plans include installing additional shade structures at 80 existing bus stops for each of the next five years – totaling an additional 400 new shade structures by FY 2025.

## Security

 Beginning in March 2020, security hours at transit centers were reduced due to the decreased span of bus service hours related to the pandemic. Security hours were not reduced at the Central Station. Security remained present at transit centers during the hours of bus operation. As bus service is expanded, security staffing levels will increase.



The Phoenix Public Transit Department was awarded Employer of the Year by the Phoenix chapter of WTS International, an organization dedicated to advancing women in transportation.



As the largest member of the Valley Metro regional transit system, Phoenix provides local and commuter bus service as well as Dial-a-Ride service for individuals with special needs.

**Table 2.2 T2050 Bus and Dial-a-Ride**

Planned for FY 2021
<p><b>Fund existing bus, RAPID commuter bus, neighborhood circulator and Dial-a-Ride service for 35 years</b></p> <ul style="list-style-type: none"> <li>Continue to provide safe and reliable services.</li> <li>Maintain bus and Dial-a-Ride service hours to match light rail hours.</li> </ul>
<p><b>Improve bus frequency</b></p> <ul style="list-style-type: none"> <li>Due to the pandemic, the goal to introduce peak service to three routes in October 2020 is on hold.</li> <li>Due to the pandemic, the goal to add weekend frequency to top ridership routes is on hold.</li> </ul>
<p><b>New buses and Dial-a-Ride vehicles</b></p> <ul style="list-style-type: none"> <li>Order 30 buses, three circulator buses and 25 Dial-a-Ride vehicles.</li> </ul>
<p><b>Extend and add bus service to unserved major streets</b></p> <ul style="list-style-type: none"> <li>Implement necessary routing changes in response to the South Central Extension/Downtown Hub light rail construction in October 2020.</li> </ul>
<p><b>Bus stops</b></p> <ul style="list-style-type: none"> <li>Install 80 new shade structures at existing bus stops.</li> </ul>
<p><b>Increase security</b></p> <ul style="list-style-type: none"> <li>Increase security as service expands.</li> </ul>
<p><b>Incorporate technology</b></p> <ul style="list-style-type: none"> <li>Implement full CAD/AVL operation by April 2021 due to delays associated with the pandemic.</li> <li>Complete FCS project design.</li> </ul>

## Technology

The entire regional transit fleet has been converted to the new Computer-Aided Dispatch/Automated Vehicle Location (CAD/AVL) system supplied by Clever Devices Ltd. Features of this upgraded system include remote radio management and redundancy, HASTUS schedule integration, automated passenger counters, ridership analysis, SmartYard (garage scheduling and dispatching system) and Google Transit Feed Specification (real-time bus data). System integration and refinement are in process. Due to delays associated with the COVID-19 public health crisis, final implementation is expected in April 2021.

Another technological enhancement on the horizon is the Regional Fare Collection System (FCS) Improvement Project. FCS will offer transit customers improved fare payment options such as the ability to store value and use mobile passes for increased flexibility. The system also enables innovative options such as fare capping, mobile ticketing and time- and location-based fare products.

← The mobile application is expected to launch in February 2022, with reloadable smart cards and reduced fare registration available in February 2023.

## Operations and Maintenance Facilities

Bus maintenance, fueling and cleaning take place at three facilities to serve Phoenix bus routes efficiently. On May 6, 2020, the Phoenix City Council approved a five-year, \$790 million contract with Transdev Services, Inc. to provide services at the north and south facilities.

Additionally, the Operations Control Center is crucial to delivering continued bus service and is the nexus of dispatch operations. On March 18, 2020, the Phoenix City Council awarded a five-year, \$14 million contract to Transdev Services, Inc. to provide services at the Operations Control Center.

**Table 2.3 T2050 Bus and Dial-a-Ride**

Planned for FY 2022–2025
<b>Fund existing bus, RAPID commuter bus, neighborhood circulator and Dial-a-Ride service for 35 years</b>
<ul style="list-style-type: none"> <li>Continue to provide safe and reliable services.</li> <li>Maintain bus and Dial-a-Ride service hours to match light rail hours.</li> </ul>
<b>New buses and Dial-a-Ride vehicles</b>
<ul style="list-style-type: none"> <li>FY 2022 and FY 2023: Order 40 buses, three circulator buses and 25 Dial-a-Ride vehicles.</li> <li>FY 2024 and FY 2025: Order 60 buses, three circulator buses and 25 Dial-a-Ride vehicles.</li> </ul>
<b>Extend and add bus service to unserved major streets</b>
<ul style="list-style-type: none"> <li>FY 2022: Extend two regular fixed routes to unserved markets (pending impacts related to the pandemic).</li> <li>FY 2024: Provide new RAPID service to the planned Laveen Park-and-Ride.</li> </ul>
<b>Circulator service</b>
<ul style="list-style-type: none"> <li>FY 2022: Improve MARY and ALEX service to every 30 minutes (pending impacts related to the pandemic).</li> </ul>
<b>Build new park-and-ride lots</b>
<ul style="list-style-type: none"> <li>FY 2024: Open Laveen park-and-ride.</li> </ul>
<b>Bus stops</b>
<ul style="list-style-type: none"> <li>Install 24 new bus stops.</li> <li>Install 320 new shade structures at existing bus stops.</li> </ul>
<b>Increase security</b>
<ul style="list-style-type: none"> <li>Increase security as service expands.</li> </ul>
<b>Incorporate technology</b>
<ul style="list-style-type: none"> <li>FY 2022: Launch FCS mobile application.</li> <li>FY 2023: Launch reloadable smart cards and reduced fare registration program.</li> </ul>



3.0



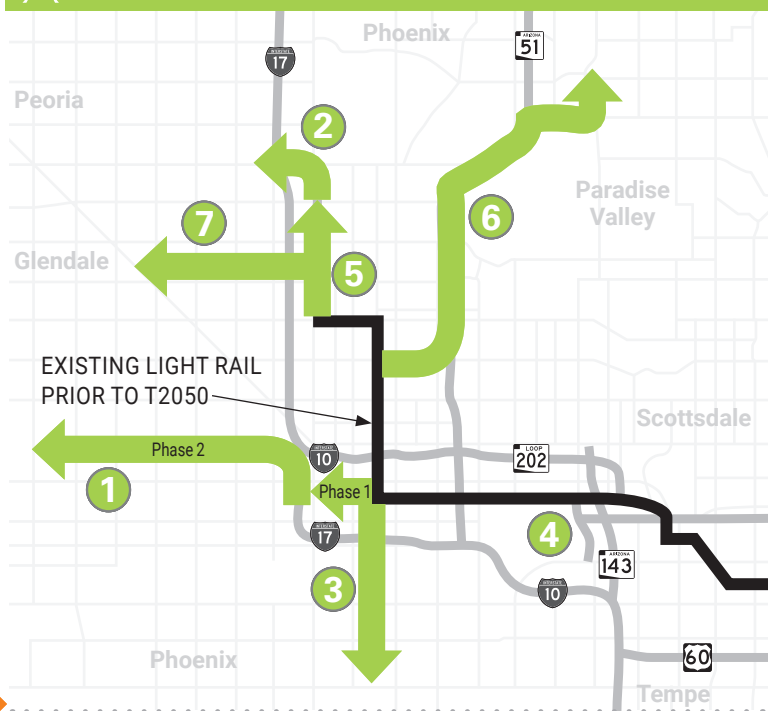
# High Capacity Transit



# HIGH CAPACITY TRANSIT



CUMULATIVE PROGRESS JAN. 1, 2016–JUNE 30, 2020



## LRT Ongoing Projects

### 1 CAPITOL/I-10 WEST EXTENSION



- Conducted public meetings for input on options for the downtown route, potential extension to Desert Sky Mall and potential project phasing options
- Continued preparing the federally required Environmental Assessment
- Awarded \$2 million federal transit-oriented development grant

### 2 NORTHWEST EXTENSION PHASE II



- Completed design and began the engineering phase
- Continued surveying to identify underground utilities

### 3 SOUTH CENTRAL EXTENSION/ DOWNTOWN HUB



- Completed final design and began the engineering phase
- Began construction in October 2019 and began utility relocation
- Completed street improvements at three intersections to help avoid future traffic impacts
- Opened South Central Extension Community Office (2018)
- Awarded two allocations of \$100 million each from the FTA (2019/2020) and a \$2 million federal business assistance grant (2016)

## Light Rail Transit (LRT) Completed Projects

### 4 50TH STREET STATION



- Opened April 25, 2019
- Received Sustainable Infrastructure Award from Arizona State University's Metis Center

### 5 NORTHWEST EXTENSION PHASE I



- Service began March 19, 2016

## LRT Deferred Projects

### 6 NORTHEAST EXTENSION



- Deferred to end of T2050 program by Phoenix City Council (2018)

### 7 WEST PHOENIX TRANSIT CORRIDOR STUDY



- Deferred to end of T2050 program by Phoenix City Council (2019)

## Bus Rapid Transit (BRT) Ongoing Projects



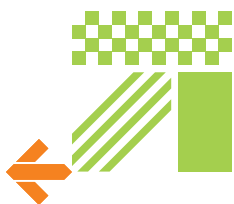
### BRT SERVICE

- Began extensive public education and outreach for input on six potential corridors





# HIGH CAPACITY TRANSIT



High capacity transit (HCT) offers faster travel for more customers than traditional bus service. HCT bypasses vehicular traffic and provides more frequent service using larger-capacity vehicles.

Phoenix currently offers light rail service that operates in exclusive rights of way, at faster travel speeds and with prioritized traffic signaling. With 16.5 miles of light rail service – a substantial portion of the existing 28.2-mile Valley Metro Rail light rail system – the system connects people to the downtown areas of Phoenix, Tempe and Mesa, as well as Sky Harbor Airport and many other key destinations in between.

In addition to light rail, Phoenix is investing in bus rapid transit (BRT), which was identified as a key component of T2050 to continue expanding the city's HCT network. The BRT program is in the planning stages and will offer many of the same amenities light rail riders enjoy, including improved speed, reliability and convenience. Where feasible, BRT is anticipated to provide transit signal priority and queue jump lanes, which give buses a “head start” at intersections. There is also the potential to provide dedicated bus lanes throughout the corridor or in selected areas.

## Proposition 105

In November 2018, a group of citizens filed an initiative petition that sought to amend the city charter to terminate “the furtherance of any light rail extension or any other fixed rail line transit system.” After the initiative was determined to have a sufficient number of eligible signatures, it became Proposition 105 on the Aug. 27, 2019, ballot. Phoenix voters defeated this proposition, reaffirming their support to continue expanding light rail in Phoenix.



In May 2020, the city of Phoenix and Valley Metro conducted a virtual public meeting to gather input on the Capitol/I-10 West Light Rail Extension.



## Funding and Budget

The cities of Phoenix, Tempe and Mesa share the funding obligations for the ongoing operations and maintenance of light rail through the unified regional transit system, Valley Metro. These expenses include vehicle operations, security and fare collection, and vehicle and system maintenance and administration costs.

Funding of \$137 million was utilized in FY 2020 to support ongoing light rail operations and expansion. Phoenix's T2050 plan for the next five years includes an investment of more than \$2 billion to expand and improve the city's HCT network. The plan includes light rail improvements and expansion, and development of Bus Rapid Transit (BRT). In addition to revenues generated by the city's T2050 sales tax, other funding sources include federal grants, the Regional Public Transportation Fund, fares and advertising.

## COVID-19 Response

On April 11, 2020, light rail hours were modified in response to the COVID-19 pandemic. The first full trip on light rail began at approximately 4:45 a.m. with the last trip starting at 11 p.m. Adjustments included a 15-minute frequency from 5 a.m.–6 p.m. with no late-night service on Friday or Saturday. Sunday service remained the same.

Additional measures affecting public transit and implemented by the Phoenix Public Transit Department, Valley Metro and other transportation providers are identified in Section 2 of this report, Bus and Dial-a-Ride.

As public works construction is an essential service, construction activities were able to progress as planned.

**Table 3.1 T2050 High Capacity Transit**

Completed FY 2020 (July 1, 2019–June 30, 2020)
<b>Increase light rail in Phoenix</b>
<b>Capitol/I-10 West Extension</b>
<ul style="list-style-type: none"> <li>Conducted public meetings for input on options for the route to the Capitol, potential extension to Desert Sky Mall and potential project phasing options.</li> <li>Continued preparing the federally required Environmental Assessment.</li> </ul>
<b>Northwest Extension Phase II</b>
<ul style="list-style-type: none"> <li>Completed 100% design and began the engineering phase.</li> <li>Continued surveying to identify underground utilities.</li> <li>Conducted public meetings to gather input on the design, station artwork and traction power stations.</li> </ul>
<b>South Central Extension/Downtown Hub</b>
<ul style="list-style-type: none"> <li>Completed final design and began the engineering phase.</li> <li>Completed street improvements at three intersections (7th Avenue and I-17, 7th Avenue and Southern Avenue, and 7th Street and I-17) in advance of the project to help avoid traffic impacts related to project construction.</li> <li>Began construction in October 2019 and began utility relocation.</li> <li>Awarded two \$100 million allocations from U.S. Department of Transportation's Federal Transit Administration Capital Investment Grants program.</li> <li>Conducted public meetings to gather input on final design, station artwork and traction power stations.</li> <li>Selected Construction Advisory Board.</li> </ul>
<b>Begin Bus Rapid Transit program</b>
<ul style="list-style-type: none"> <li>Began public education and outreach for input on potential corridors.</li> </ul>



## Light Rail Service

### Capitol/I-10 West Extension



The Capitol/I-10 West light rail extension will add 10 miles of light rail service and connect downtown Phoenix to the 79th Avenue Park-and-Ride in Maryvale.

In 2016, the project was split into two phases for design and construction. The first phase, from downtown to the state Capitol, is currently planned for 2024. The second phase, from the Capitol building to the 79th Avenue/I-10 Park-and-Ride, is anticipated to be completed in 2030.

In January and June of 2020, the project team conducted public meetings to gather input on options for the downtown section of the light rail route, the potential extension of the end-of-line from the 79th Avenue Park-and-Ride to Desert Sky Mall and potential phasing options to accelerate completion of the project.

The project team also has continued to prepare the Environmental Assessment (EA) to comply with federal requirements. The EA includes an evaluation of the environmental aspects of the project and a detailed analysis of how light rail would operate along the route.

In June 2020, the Federal Transit Administration (FTA) announced selection of the project for a \$2 million Transit-Oriented Development Grant.

Next steps will include early design work, identification of station locations and continued community outreach.

### Northwest Extension Phase II



Phase II of the Northwest Extension will extend light rail west on Dunlap Avenue from 19th Avenue, north on 25th Avenue and west of Mountain View across I-17 to terminate near Metrocenter.

In 2016, the Phoenix City Council approved accelerating segments of the project. Northwest Extension Phase II is currently scheduled to open in 2023, three years earlier than originally anticipated.

In August 2019, the project team held a public meeting to provide the community with an opportunity to learn about the project's current design and meet the artists designing public art that will be incorporated at the stations, power substation and Park-and-Ride.

The project design is complete and engineering plans are underway. The project team continues to survey to identify underground utilities.

Next steps include hosting public meetings to share final design and beginning construction in August 2020.

### South Central Extension/Downtown Hub



This five-mile project will extend to Baseline Road, connecting South Phoenix residents to downtown Phoenix and the light rail network.

The project also includes a hub in downtown Phoenix, nine new stations and public art.

In September 2019, the project team held public meetings to gather input on the final design, station artwork and traction power stations.

Construction began in October 2019 and the South Central Extension is expected to be operational by 2024.

In the past year, the final project design was completed. Roadway improvements to increase vehicle flow at three intersections (7th Avenue and I-17 freeway, 7th Avenue and Southern Avenue, and 7th Street and I-17 freeway) were completed in advance of light rail construction to help avoid traffic impacts. Other construction activities included relocating utilities in downtown Phoenix.

**Table 3.2 T2050 High Capacity Transit**

Planned for FY 2021
<b>Increase light rail in Phoenix</b>
<b>Capitol/I-10 West Extension</b>
<ul style="list-style-type: none"> <li>Initiate Environmental Assessment for Phase I of project; confirm transit type for Phase II of project.</li> </ul>
<b>Northwest Extension Phase II</b>
<ul style="list-style-type: none"> <li>Continue utility relocation and rail construction.</li> </ul>
<b>South Central Extension/Downtown Hub</b>
<ul style="list-style-type: none"> <li>Continue utility relocation and rail construction.</li> </ul>
<b>Begin Bus Rapid Transit program</b>
<ul style="list-style-type: none"> <li>Select three BRT corridors as the foundation of the BRT network.</li> </ul>

Other progress includes selecting Construction Advisory Board members, composed of residents, property owners and business representatives from the community adjacent to the project route, to serve as a voice for the community during construction.

In May 2020, the FTA announced the second \$100 million allocation to the project through the Capital Investment Grants Program.

**Table 3.3 T2050 High Capacity Transit**

Planned for FY 2022–2025
<b>Increase light rail in Phoenix</b>
<ul style="list-style-type: none"> <li>South Central Extension: Complete construction, with anticipated opening in 2024.</li> </ul>
<b>Begin Bus Rapid Transit program</b>
<ul style="list-style-type: none"> <li>Begin planning, design and construction of one or more BRT corridors. Timing and schedule to be determined by the CTC and Phoenix City Council.</li> </ul>

## Bus Rapid Transit



The BRT program will be developed based on where current and future transit riders need service. The project team reevaluated potential

locations based on three factors – demographic and socioeconomic data, transit performance and forecasted ridership. As a result, six potential BRT corridors were identified:

- Camelback Road and 24th Street
- Indian School Road and 24th Street
- Thomas Road and 44th Street
- McDowell Road and 44th Street
- 19th Avenue and Van Buren Street
- 35th Avenue and Van Buren Street

The project team began public education and outreach efforts to gather input on BRT network options and to help select the three corridors that will serve as the foundation of the program. In addition to in-person meetings conducted prior to pandemic meeting restrictions, virtual public meetings are scheduled and an ongoing, open, web-based online meeting and survey are accessible through Dec. 18, 2020.

In February, the project team launched a BRT webpage ([phoenix.gov/brt](http://phoenix.gov/brt)). This site is continually updated and includes an array of educational information such as a BRT 101 video, fact sheet, frequently asked questions, potential BRT corridor maps, meeting opportunities, an online meeting and a survey.

BRT branding efforts kicked off in March 2020. Branding plays an important role in the development of the BRT system as it creates a distinctive identity, which results in positive public recognition and differentiates the system from other services. Partner agencies include the Maricopa Association of Governments (MAG) and Valley Metro. The project team will also seek public input on branding at future milestones.

Public outreach will continue through the end of 2020, after which there will be a recommendation to the Citizens Transportation Commission and Phoenix City Council on the three corridors that will form the foundation of the BRT network.

The screenshot shows the Phoenix BRT website interface. At the top, there is a header with the Phoenix BRT logo and the text 'Bus Rapid Transit'. Below the header, there are social media icons for Facebook, Twitter, YouTube, and Pinterest. The main content area features a 'Program Overview' section with a 'BRT 101' video player. To the left of the video player is a navigation menu with the following items: 'Program Overview', 'BRT 101', 'Community Education & Engagement', 'Ways to Participate', 'Schedule', 'F.A.Q.', 'Documents', and 'Contact Us'. The video player shows a scene with a BRT bus and cars on a city street.

The BRT webpage, [Phoenix.gov/BRT](http://Phoenix.gov/BRT), provides information about the new program and potential corridors and amenities. The public is encouraged to watch the online presentation and take the survey to help shape Phoenix BRT.

⇐ 4.0



# Street Maintenance and Improvements



# STREET MAINTENANCE AND IMPROVEMENTS



CUMULATIVE PROGRESS JAN. 1, 2016–JUNE 30, 2020

	Miles of new pavement	Miles of pavement treatments
▶ ARTERIAL/MAJOR COLLECTORS	189	451
▶ MINOR COLLECTORS/LOCAL	500	1,547

49 MILES OF NEW SIDEWALKS



SELECTED  
▶ 12 MOBILITY STUDY LOCATIONS from  
39 POTENTIAL STUDY AREAS

COMPLETED 11 STUDIES

IMPROVED/INSTALLED  
16,616  
ADA RAMPS



INSTALLED  
▶ 181.5  
MILES OF NEW  
BICYCLE LANES



PAINTED SIGNAL POLES at  
▶ 415\* INTERSECTIONS



INSTALLED  
▶ 166\* LEFT-TURN  
ARROWS



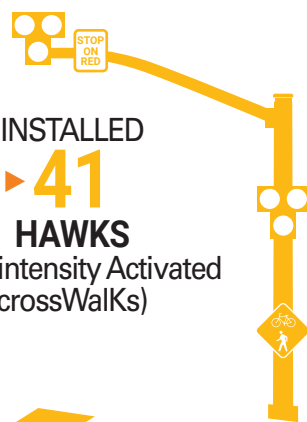
INSTALLED  
▶ 2,318 NEW  
STREETLIGHTS



REPLACED  
▶ 3,331 ILLUMINATED  
STREET SIGNS



INSTALLED  
▶ 41  
HAWKS  
(High-intensity Activated  
crossWalks)



\* reflects revision to previous counts



# STREET MAINTENANCE AND IMPROVEMENTS



The Street Transportation Department is responsible for maintaining the city's roadways, bridges, dams and levees and works to provide a safe and sustainable transportation network for everyone – including pedestrians, bicyclists and motorists.

The core of the department's work includes the pavement preservation program, asphalt and pothole repair and installation of street signs, traffic signals, streetlights, bikeways and Americans with Disabilities Act (ADA)-compliant ramps and sidewalks.

Typically, street improvement projects, such as resurfacing and striping changes, have a well-defined scope and are planned and executed within the Street Maintenance Division. However, larger-scale projects with a wide array of components, such as turn lane improvements, lane additions or drainage studies, go through a project assessment phase prior to design and construction.

Other behind-the-scenes functions include plan review for private development projects, construction inspection, materials testing and implementation of technology enhancements such as Geographic Information Systems (GIS). Additional information is available at [phoenix.gov/streets](http://phoenix.gov/streets).



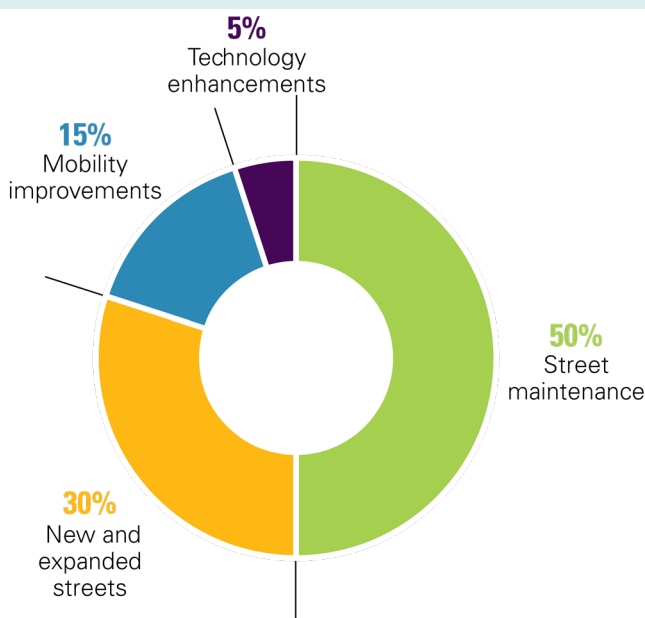
In the past year, Phoenix streets received more than 500,000 tons of asphalt, which is equal to paving about 710 NFL football fields.

## Funding and Budget

In addition to T2050 funds, other sources of funding include the state-collected motor fuel tax, city's general fund, regional/MAG funds, federal funds, grants and impact fees. **Figure 4.1** shows the distribution of T2050 funds within the Street Transportation Department.

The FY 2020 budget earmarked about \$134 million in T2050 funding for street construction and maintenance projects. This figure includes \$77 million allocated through the Accelerated Pavement Maintenance Program. Phoenix's T2050 plan for the next five years includes nearly \$285 million to improve traffic system infrastructure, make ADA improvements, assess and address mobility needs and continue maintenance of city streets.

**Figure 4.1 T2050 Funds for Street Improvement**



## COVID-19 Response

The Street Transportation Department's primary duties are considered essential city services and most activities continued despite COVID-19. Street paving continued, as did pothole patching, sign replacement, lane striping, traffic signal servicing and installation, streetlight repair and more.

The pandemic forced adjustments to schedules and changes to the ways crews carried out their work, but the work continued. Crews utilized the opportunity to work on major roads during the weeks with fewer travelers on the roads.

Project teams and road crews have been informed about current health and safety protocols. The health and safety of staff members, construction crews, community members and the traveling public are a top priority for the department.

## Accelerated Pavement Maintenance Program



Typically, about \$16 million per year is allocated for pavement maintenance. However, in 2018, the Phoenix City Council allocated additional funding of \$200 million over five years, creating the Accelerated Pavement Maintenance Program (APMP).

This funding boost of \$77 million in FY 2019 resulted in Phoenix's most successful paving season to date. The department performed mill and overlay treatment on 62.5 miles of major streets, along with 35.8 miles of pavement preservation and 128.6 miles of crack seal in preparation for future work – essentially completing three years of work in just 10 months.

Although weather, utility coordination and other factors can affect pavement maintenance schedules, the 2020 paving season currently has over 200 miles of overlay planned.

In June 2020, the project team developed a comprehensive Pavement Condition Report, which details the paving assessment process, pavement treatments and current conditions. This report is available on the city's [website](#).

CITYWIDE TOTALS	
<b>T2050 PAVEMENT MAINTENANCE</b>	
JULY 1, 2018 THROUGH JUNE 30, 2020	
<b>406.9 MILES</b>	OF MILL AND OVERLAY WORK
<b>479.7 MILES</b>	OF PRESERVATION TREATMENTS
<b>829.5 MILES</b>	OF CRACK SEAL
<b>8,672</b>	ADA RAMPS



## Active Transportation Program



The Active Transportation Program (ATP) strives to create a connected and comfortable network where residents can enjoy options such as walking and bicycling as part of their daily lives. Investments in light rail, BRT and buses make active transportation even more essential for people making their way to or from transit locations.

As streets are repaved, the ATP looks for opportunities to update striping plans to add or widen bike lanes, add buffers to existing bike lanes and add markings in the intersections on major bikeways. Bike lanes, especially buffered bike lanes and protected bike lanes, also improve the walking experience by creating more space between sidewalks and vehicle travel lanes.

The ATP also focuses on multi-use paths and street crossings to help all road users. Off-street trails, such as projects along canals, bolster the active transportation network and create enjoyable routes for everyone.

Looking forward, the program will be launching the Active Transportation Plan, which includes a Bicycle Master Plan update. This will be an opportunity to hear from residents about their priorities in enhancing the active transportation network.

### City of Phoenix Employee Excellence Awards

Of the more than 14,000 people employed by the city of Phoenix, only eight teams received Team Excellence Awards.

The 2019 Accelerated Pavement Maintenance Program team received this award for delivering outstanding results to the community in a short timeframe through hard work, collaboration and innovative thinking. Team members included Perfect Arroyo, Sam Enmon, Rick Evans, Dominic Galaviz, Matthew Glock, Seng Hkawn N-Sang, Rubben Lolly, Richard Lujan, Andrea Lynch, Chris Manno, Cole Mohr, Chris Nipar, Curtis Pulford, Joseph Rodriguez, Julian Sanchez III, Ruben Somoza, Ryan Stevens, Kyle Vance and Robert Walsh.



In June 2020, Phoenix earned a Bicycle Friendly Community bronze award from the League of American Bicyclists. The award recognizes Phoenix's commitment to improving conditions for bicyclists. Additional information is available at [bikeleague.org/community](https://bikeleague.org/community).

## Mobility Studies



Because people travel to neighborhood destinations by foot and bicycle, mobility studies are conducted to identify barriers faced by pedestrians and bicyclists.

The studies recommend solutions that will improve safety, convenience and quality of life. Options include opportunities for constructing new sidewalks, installing or improving ADA curb ramps and installing streetlights, bicycle facilities, traffic signals, shade trees and connections to transit stops.

While significant progress is being made, much work still needs to be done. For example, an estimated \$2 million is required each year to bring the city's ADA curb ramps to current standards.

Thirty-nine locations were identified for study at the inception of T2050. Of the initial 12 studies launched, all but one are complete. The final study will be completed in 2020. Next steps involve completing the remaining studies and scheduling and installing recommended improvements.





**Table 4.1 T2050 Street Maintenance and Improvements**

Completed FY 2020 (July 1, 2019–June 30, 2020)
<p><b>Street projects</b></p> <ul style="list-style-type: none"> <li>• 12 major street projects in the project assessment phase, with three assessments completed.</li> <li>• 35 major street projects in design.</li> <li>• 71 major street projects in construction.</li> <li>• 38 major street projects completed.</li> </ul>
<p><b>Street pavement and overlays</b></p> <ul style="list-style-type: none"> <li>• Continued the Accelerated Pavement Maintenance Program, for which the Phoenix City Council authorized an additional \$200 million to fast-track pavement maintenance through 2023.</li> <li>• 65.8 miles of new asphalt pavement on major streets.</li> <li>• 214.0 miles of other pavement treatments, such as crack and fog sealing, on major collector streets.</li> <li>• 230.3 miles of local street paving.</li> <li>• 471.7 miles of other pavement treatments, such as crack and fog sealing, on local streets.</li> </ul>
<p><b>Bicycle lanes</b></p> <ul style="list-style-type: none"> <li>• Installed 40.4 miles of lanes.</li> </ul>
<p><b>Streetlights</b></p> <ul style="list-style-type: none"> <li>• Installed 862 new streetlights.</li> </ul>
<p><b>Sidewalks</b></p> <ul style="list-style-type: none"> <li>• Constructed 22.5 miles of sidewalks.</li> </ul>
<p><b>Mobility studies</b></p> <ul style="list-style-type: none"> <li>• Completed four mobility studies.</li> </ul>
<p><b>Intersection technology enhancements</b></p> <ul style="list-style-type: none"> <li>• Replaced 483 street signs at major intersections with illuminated signs.</li> <li>• Repainted all signal poles at 79 major intersections to extend their lifecycles.</li> <li>• Installed 44 new left-turn arrows at warranted intersections.</li> <li>• Installed 16 pedestrian High-intensity Activated crossWalks (HAWKs).</li> </ul>

## Pilot Programs

In March 2020, Phoenix launched the Recycled Asphalt Pavement (RAP) Program. Asphalt millings generated from mill and overlay projects are crushed and screened to an engineered specification for reuse. RAP can be used in resurfacing projects, such as slurry seal and microsurfacing, to replace 100% of the aggregate. By using RAP, the city reduces the use of mined materials. The project team also expects to realize cost savings through these sustainable practices.

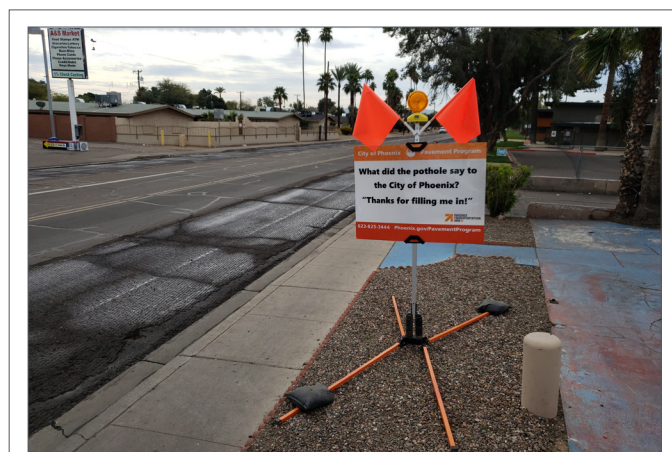
Another test program, Phoenix’s Cool Pavement Pilot Program, debuted at Esteban Park at 32nd Street and Roeser Road on June 11, 2020 (pictured below). The water-based asphalt treatment is applied on top of the existing asphalt. Nine areas across the city will receive cool pavement. In collaboration with Arizona State University, the new treatment will be studied to see how well the product helps mitigate the heat island effect and whether those effects are sustainable over time. For more information, please visit [phoenix.gov/streets/coolpavement](http://phoenix.gov/streets/coolpavement).



## Intersection and Technology Enhancements

Street technology enhancements range from repainting traffic signal poles to extend their lifecycles to installing High-intensity Activated crossWalks (HAWKs) to enhance pedestrian safety at busy intersections and mid-block locations. Other T2050 technology enhancements include improving and maintaining traffic control equipment, adding left-turn arrows at warranted intersections, replacing street name signs with retroreflective signs that feature light-emitting diode (LED) lighting and installing updated signals, signage, detection equipment and traffic management and monitoring systems.

January 2020 marked the completion of the citywide conversion of nearly 100,000 high-pressure sodium streetlights to energy-efficient LED fixtures. This conversion is one of the largest completed by any U.S. city. The new LED streetlights are anticipated to reduce electricity needed to illuminate the streets by approximately 53% and save the city approximately \$3.5 million annually. LED streetlights also have longer lifespans, produce better light quality and are expected to reduce maintenance costs over their service life. More information is available at [phoenix.gov/streets/led](http://phoenix.gov/streets/led).



The Street Transportation Department dispatches crews to fill about 21,600 potholes each year.

## Information Technology and GIS



The Information Technology Division digitizes, validates and reports on assets. Location data on bikeways, pavement, lighted street signs and ADA curb ramps, for example, is catalogued using geographic information system (GIS) technology.

During the past year, new tools have been added to create more effective asset management. Traffic signal and streetlight data tracking now records the scope and type of asset. Other new GIS tools provide the ability to link the asset location and maintenance records, which results in more efficient planning, analysis and reporting.

Areas where GIS is improving department decision-making include:

- Reworking existing traffic signal data to make it more accurate, useful and available to the entire department.
- Creating tools that leverage pavement condition data, which, when combined with underlying soil condition data, provides engineers with a broader understanding of any problematic areas.
- Updating bikeway data to give the Active Transportation Program team accurate information to use for planning and implementing improvements.
- Researching and editing thousands of ADA ramp records to build and update the database.

Residents also can access map services and applications such as a live active [HAWK traffic signal web map](#), [the pavement maintenance dashboard](#), [bikeways map services](#) and [e-scooter facilities mapping](#).

As more live updates are made by staff members in the field, efficiencies in workflow occur and allow for near real-time analysis and reporting.





On June 25, 2020, Phoenix's 66th HAWK pedestrian crossing signal was activated at 18th Street and Roosevelt Street. HAWKs make streets safer for people who walk, bike and drive by providing clear alerts when people intend to cross the road.

**Table 4.3 T2050 Street Maintenance and Improvements**

Planned for FY 2022–2025
<b>Street projects</b>
<ul style="list-style-type: none"> <li>• Conduct 12 major street project assessments.</li> <li>• Design six major street projects.</li> <li>• Continue construction on 29 major street projects.</li> </ul>
<b>Street pavement and overlays</b>
<ul style="list-style-type: none"> <li>• Pave at least 78 miles of new pavement on major streets.</li> </ul>
<b>Bicycle lanes</b>
<ul style="list-style-type: none"> <li>• Install 123 miles of bike lanes.</li> </ul>
<b>Streetlights</b>
<ul style="list-style-type: none"> <li>• Install 240 new streetlights.</li> </ul>
<b>Sidewalks</b>
<ul style="list-style-type: none"> <li>• Construct 15 miles of sidewalks.</li> </ul>
<b>Intersection technology enhancements</b>
<ul style="list-style-type: none"> <li>• Repaint all signal poles at 550 major intersections.</li> </ul>

**Table 4.2 T2050 Street Maintenance and Improvements**

Planned for FY 2021
<b>Street projects</b>
<ul style="list-style-type: none"> <li>• Conduct three major street project assessments.</li> <li>• Design seven major street projects.</li> <li>• Continue construction on 43 major street projects.</li> </ul>
<b>Street pavement and overlays</b>
<ul style="list-style-type: none"> <li>• Pave 19 miles on major streets.</li> </ul>
<b>Bicycle lanes</b>
<ul style="list-style-type: none"> <li>• Install 30 miles of bike lanes.</li> </ul>
<b>Streetlights</b>
<ul style="list-style-type: none"> <li>• Install 60 new streetlights.</li> </ul>
<b>Sidewalks</b>
<ul style="list-style-type: none"> <li>• Construct four miles of new sidewalks.</li> </ul>
<b>Mobility studies</b>
<ul style="list-style-type: none"> <li>• Complete one mobility study.</li> </ul>
<b>Intersection technology enhancements</b>
<ul style="list-style-type: none"> <li>• Repaint all signal poles at 110 major intersections.</li> <li>• Install five left-turn arrows at warranted intersections.</li> </ul>

5.0



# Appendix



# APPENDIX

## Lifecycle Programming Assumptions

As with any long-term plan, preparation of the financial model for the T2050 program required many assumptions for estimated costs, revenues and timing of projects and new services. Key assumptions of the T2050 program include:

- The implementation of projects and new services is projected to occur over the course of the 35-year plan as funding allows and service demand dictates.
- Capital and operating costs are estimated to grow at average inflation rates of 3–4% annually over the life of the plan. These inflation rates are somewhat higher than the typical annual increases the city has experienced in the large transit contracts, and provide for more conservative cost estimates.
- T2050 sales tax revenues are estimated to grow at an average annual rate of 4.75%, which is slightly lower than the 5.2% average annual growth rate in the Arizona Department of Transportation's most recent forecast prepared in September 2019 for the Proposition 400 Maricopa County Transportation Excise Tax.

- The existing 0.5% Proposition 400 regional tax, currently in place through Dec. 31, 2025, is assumed to be extended for at least 20 years.
- Federal transit formula funds are assumed to continue through the life of the plan, with very modest increases over time, and are consistent with Maricopa Association of Governments' long-term Regional Transportation Plan.



The T2050 team received an Award of Merit from the Public Relations Society of America for the 2019 T2050 Annual Progress Report.



- The financial model is consistent with Valley Metro assumptions, ranging from 0% to 39%, for the funding level from discretionary federal Capital Investment Grants for light rail capital costs. Discretionary federal Capital Investment Grants, on average, fund more than 40% of total project costs for current rail projects across the country.
- Transit fares are assumed to continue to be lower than the regional fare policy goal of 25% recovery of direct transit operations costs, reflecting the current fare recovery rate.
- Some capital funding is assumed to be provided through financing, as needed, with the corresponding costs estimated using typical municipal bond offerings. Less expensive and more flexible types of financing will be explored to minimize financing costs.
- Other revenues, such as transit advertising and interest earnings on fund balance, are forecasted using very low growth rates.
- An operating reserve equivalent to 15% of annual public transit operating costs is assumed to be maintained throughout the life of the plan.



Over 43 million bus and light rail boardings occurred within Phoenix last year.

## Impact of COVID-19

While economic variations are expected over time, the COVID-19 pandemic altered a multitude of processes. Many of the effects are not yet completely determined, but it is apparent that there will be a downward correction to the revenue projections for the coming years.

Changes experienced due to the pandemic are noted within each program area of this report and are anticipated to be reflected in the upcoming FY 2021 Annual Progress Report (July 1, 2020 through June 30, 2021) as well.



## T2050 Sales Tax Projected Revenue Stream

The following table includes the projected sales tax revenue for each year of the T2050 plan. Additionally, the table shows the anticipated allocation to the Public Transit and Street Transportation departments.

**Table A.1 T2050 Sales Tax Projected Revenue Stream**

Fiscal Year	Overall T2050 (2015 Forecast)	Actual Overall	Forecasted Public Transit (86.2%)	Actual Public Transit	Forecasted Street Transportation (13.8%)	Actual Street Transportation
2016	\$89,125,000	\$98,593,240	\$76,826,000	\$85,095,392	\$12,299,000	\$13,497,848
2017	\$204,006,000	\$203,352,480	\$175,853,000	\$175,430,201	\$28,153,000	\$27,922,279
2018	\$213,696,000	\$215,805,685	\$184,206,000	\$185,998,894	\$29,490,000	\$29,806,791
2019	\$224,401,000	\$239,179,006	\$193,434,000	\$206,200,341	\$30,967,000	\$32,978,665
2020	\$235,642,000	\$247,592,555	\$203,123,000	\$213,437,765	\$32,519,000	\$34,154,790
2021	\$246,835,000		\$212,772,000		\$34,063,000	
2022	\$258,559,000		\$222,878,000		\$35,681,000	
2023	\$270,841,000		\$233,465,000		\$37,376,000	
2024	\$283,706,000		\$244,555,000		\$39,151,000	
2025	\$297,182,000		\$256,171,000		\$41,011,000	
2026	\$311,298,000		\$268,339,000		\$42,959,000	
2027	\$326,085,000		\$281,085,000		\$45,000,000	
2028	\$341,574,000		\$294,437,000		\$47,137,000	
2029	\$357,799,000		\$308,423,000		\$49,377,000	
2030	\$374,794,000		\$323,072,000		\$51,722,000	
2031	\$392,597,000		\$338,419,000		\$54,178,000	
2032	\$411,245,000		\$354,493,000		\$56,752,000	
2033	\$430,779,000		\$371,331,000		\$59,448,000	
2034	\$451,241,000		\$388,970,000		\$62,271,000	
2035	\$472,675,000		\$407,446,000		\$65,229,000	
2036	\$495,127,000		\$426,799,000		\$68,328,000	
2037	\$518,646,000		\$447,073,000		\$71,573,000	
2038	\$543,281,000		\$468,308,000		\$74,973,000	
2039	\$569,087,000		\$490,553,000		\$78,534,000	
2040	\$596,119,000		\$513,855,000		\$82,264,000	
2041	\$624,435,000		\$538,263,000		\$86,172,000	
2042	\$654,095,000		\$563,830,000		\$90,265,000	
2043	\$685,165,000		\$590,612,000		\$94,553,000	
2044	\$717,710,000		\$618,666,000		\$99,044,000	
2045	\$751,801,000		\$648,052,000		\$103,749,000	
2046	\$787,512,000		\$678,835,000		\$108,677,000	
2047	\$824,919,000		\$711,080,000		\$113,839,000	
2048	\$864,102,000		\$744,856,000		\$119,246,000	
2049	\$905,147,000		\$780,237,000		\$124,910,000	
2050	\$948,142,000		\$817,299,000		\$130,844,000	
Total	\$16,679,368,000		\$14,377,615,000		\$2,301,753,000	

## FY 2020 Financial Overview

The FY 2020 Financial Overview table summarizes the budgeted and actual revenue and expenditures during FY 2020.

**Table A.2 FY 2020 Financial Overview (July 1, 2019–June 30, 2020)**

	Budget	Actuals	Amount Over/ (Under Budget)	Percent Over/ Under Budget	Footnotes
<b>Source of Funds</b>					
Dedicated Sales Tax – T2050	\$240,578,000	\$247,593,000	\$7,015,000	2.9%	
Local Transportation Assistance	4,300,000	4,220,217	(79,783)	-1.9%	
Bus Fare Revenue	30,069,412	20,498,807	(9,570,605)	-31.8%	1
Dial-a-Ride Fare Revenue	986,340	793,439	(192,901)	-19.6%	2
Rail Fare Revenue	7,400,000	5,127,519	(2,272,481)	-30.7%	3
Federal Transit Funds	224,125,984	153,907,515	(70,218,469)	-31.3%	4
Regional Transportation Tax	21,646,921	6,964,429	(14,682,492)	-67.8%	5
Debt Proceeds	-	200,000,000	200,000,000	0.0%	6
Other Revenue	8,512,794	24,908,434	16,395,640	192.6%	7
Fund Balance	140,004,843	(126,133,671)	(266,138,514)	-190.1%	
<b>Total Revenues</b>	<b>\$677,624,294</b>	<b>\$537,879,688</b>	<b>\$(139,744,606)</b>	<b>-20.6%</b>	
<b>Use of Funds</b>					
<b>Transit Operations</b>					
Local Fixed Route Bus	\$147,890,068	\$137,974,086	\$(9,915,982)	-6.7%	
RAPID Commuter Bus	4,124,027	3,847,512	(276,515)	-6.7%	
Neighborhood Circulator	3,840,325	3,582,833	(257,493)	-6.7%	
Dial-a-Ride Operations	19,827,161	18,664,827	(1,162,334)	-5.9%	
Light Rail Operations	39,455,449	36,342,398	(3,113,051)	-7.9%	
Bus Rapid Transit	-	-	-	0.0%	
Security	11,836,389	11,646,637	(189,752)	-1.6%	
Administration & Support	22,492,403	21,969,503	(522,900)	-2.3%	
<b>Total Operations</b>	<b>\$249,465,822</b>	<b>\$234,027,796</b>	<b>\$(15,438,026)</b>	<b>-6.2%</b>	
<b>Debt Service</b>	<b>\$70,789,000</b>	<b>\$70,687,109</b>	<b>\$(101,891)</b>	<b>-0.1%</b>	
<b>Capital Projects</b>					
Bus and DAR Vehicles	\$45,482,337	\$45,200,866	\$(281,471)	-0.6%	
Bus Passenger Facilities	6,852,961	722,273	(6,130,688)	-89.5%	8
Bus O & M Facilities	5,503,907	2,745,157	(2,758,750)	-50.1%	9
Bus and DAR Technology	60,059,874	78,546	(59,981,328)	-99.9%	10
Other Bus Capital	15,064,364	1,601,547	(13,462,817)	-89.4%	11
South Central LRT	82,831,479	79,723,220	(3,108,259)	-3.8%	
Northwest Phase II LRT	36,995,797	20,648,819	(16,346,978)	-44.2%	12
Capitol/I-10 West Phase I LRT	30,000	-	(30,000)	-100.0%	13
50th Street LRT Station	20,000	24,374	4,374	21.9%	14
LRT Other	1,491,789	26,511	(1,465,278)	-98.2%	15
Bus Rapid Transit	4,966,976	-	(4,966,976)	0.0%	16
Streets – Major Maintenance	90,087,000	92,411,555	2,324,555	2.6%	17
Streets – Major Transportation Projects	4,828,473	4,309,851	(518,622)	-10.7%	18
Streets – Mobility Projects	1,850,515	1,711,268	(139,247)	-7.5%	19
Streets – Other	507,000	347,543	(159,457)	-31.5%	20
Streets – Technology	797,000	1,147,131	350,131	43.9%	21
<b>Total Capital Projects</b>	<b>\$357,369,472</b>	<b>\$250,698,662</b>	<b>\$(106,670,810)</b>	<b>-29.8%</b>	
<b>Total Expenditures</b>	<b>\$677,624,294</b>	<b>\$555,413,567</b>	<b>\$(122,210,727)</b>	<b>-18.0%</b>	



Footnotes detailing the FY 2020 Financial Overview table found on the preceding page include:

1. Rear door boardings and fareboxes not being used since March, and reduced ridership due to COVID-19.
2. Reduced ridership due to COVID-19.
3. Reduced ridership due to COVID-19.
4. Decrease due to capital project deferrals.
5. Decrease due to capital project deferrals.
6. Finance Department issued short-term debt near the end of the fiscal year.
7. Reinstatement of the Alternative Fuel Tax Credit and prior year expenditure recovery.
8. Laveen Park-and-Ride deferred.
9. Various 302 Building project budgets over-programmed.
10. Fare Collection System Replacement project delays. Funds were carried over to FY 2020-21.
11. Unused contingency.
12. Project deferred.
13. Project deferred.
14. Testing, land acquisition settlement and other internal costs were higher than budgeted.
15. Over-programed budget for disposal of remnant properties, Business Assistance Program and other LRT-related projects.
16. Project deferral. Funds were carried over to FY 2020-21.

17. Bond program was priority; funds were carried over.
18. Unused capacity for contracted services. Funds were carried over to FY 2020-21.
19. Unused capacity for contracted services. Funds were carried over to FY 2020-21.
20. Unused capacity for contracted services. Funds were carried over to FY 2020-21.
21. Unused capacity for contracted services. Funds were carried over to FY 2020-21.



To see when and where Phoenix will be paving, visit the interactive dashboard at [phoenix.gov/PavementProgram](https://phoenix.gov/PavementProgram). Select "Treatments Dashboard," then either click on the magnifying glass to enter an address or zoom in on the map.





## Five-Year Implementation Plan

The Five-Year Implementation Plan table summarizes the projected distribution of funds collected over the next five years. The table does not include actual collections. *Note:* Bus Rapid Transit (BRT) capital and operations expenditures are planned to be incurred during this five-year plan, and the amounts reflected are preliminary, pending the results of the BRT study.

**Table A.3 Five-Year Implementation Plan (FY 2021–2025)**

	FY 2020–2021	FY 2021–2022	FY 2022–2023	FY 2023–2024	FY 2024–2025
<b>Source of Funds</b>					
Dedicated Sales Tax – T2050	\$249,230,000	\$260,433,000	\$271,850,000	\$283,851,000	\$297,011,000
Local Transportation Assistance	4,300,000	4,300,000	4,300,000	4,300,000	4,300,000
Bus Fare Revenue	10,928,000	17,580,000	22,145,000	30,163,000	38,037,000
DAR Fare Revenue	375,000	1,046,000	1,046,000	1,046,000	1,150,000
Rail Fare Revenue	1,672,000	4,795,000	5,960,000	9,280,000	14,847,000
Federal Transit Funds	387,644,000	224,298,000	190,652,000	234,843,000	175,215,000
Regional Transportation Tax	156,242,224	164,643,730	63,084,472	52,594,966	39,996,745
Debt Proceeds	83,043,000	45,356,000	218,204,000	135,620,000	75,989,000
Other Revenue	8,305,078	8,429,654	8,556,099	8,684,440	8,814,707
Fund Balance	127,935,017	115,813,359	8,091,307	(36,877,771)	(58,826,548)
<b>Total Revenues</b>	<b>\$1,029,674,318</b>	<b>\$846,694,743</b>	<b>\$793,888,879</b>	<b>\$723,504,636</b>	<b>\$596,533,904</b>
<b>Use of Funds</b>					
<b>Transit Operations</b>					
Local Fixed Route Bus	\$143,257,689	\$147,538,835	\$152,008,650	\$156,492,442	\$161,164,901
RAPID Commuter Bus	7,674,375	7,903,733	8,143,983	10,799,949	11,122,937
Neighborhood Circulator	5,119,455	5,274,967	5,826,105	5,999,620	6,179,809
Bus Rapid Transit	-	-	2,119,360	2,181,520	7,441,200
DAR Operations	20,158,130	20,762,874	21,385,760	22,027,333	22,688,153
Light Rail Operations	40,217,631	41,555,619	42,802,288	48,992,938	60,320,098
Security	12,173,570	12,538,777	12,914,940	13,302,389	13,701,460
Administration & Support	22,792,376	23,476,147	24,180,431	24,905,844	25,653,020
<b>Total Operations</b>	<b>\$251,393,225</b>	<b>\$259,050,952</b>	<b>\$269,381,519</b>	<b>\$284,702,035</b>	<b>\$308,271,577</b>
<b>Debt Service</b>	<b>\$8,074,000</b>	<b>\$25,418,000</b>	<b>\$27,230,000</b>	<b>\$35,958,000</b>	<b>\$44,497,000</b>
<b>Capital Projects</b>					
Bus and DAR Vehicles	\$26,122,960	\$43,020,000	\$46,046,000	\$44,622,000	\$45,945,000
Bus Passenger Facilities	12,538,861	4,392,000	6,125,000	3,830,000	3,830,000
Bus O&M Facilities	26,579,551	1,850,000	1,850,000	1,850,000	1,850,000
Bus and DAR Technology	70,124,235	1,750,000	1,500,000	1,200,000	8,000,000
Other Bus Capital	9,866,722	2,012,000	1,530,000	1,530,000	1,463,000
South Central LRT	392,355,000	288,529,000	205,894,000	103,181,000	34,587,000
Northwest Phase II LRT	92,654,000	78,084,000	73,775,000	35,346,000	-
Capitol/I-10 West Phase I LRT	12,282,000	38,441,000	50,885,000	60,851,000	64,440,000
Other Light Rail	1,841,457	-	-	-	-
Bus Rapid Transit	7,567,700	18,250,000	79,750,000	123,750,000	61,500,000
<b>Total Public Transit T2050 Capital Projects</b>	<b>\$651,932,486</b>	<b>\$476,328,000</b>	<b>\$467,355,000</b>	<b>\$376,160,000</b>	<b>\$221,615,000</b>
Streets – Major Maintenance	\$91,263,000	\$55,053,000	\$18,130,000	\$19,790,000	\$19,790,000
Streets – Major Transportation Projects	21,190,862	16,083,654	2,834,000	2,247,000	1,315,000
Streets – Mobility Projects	2,719,745	10,714,137	6,536,360	3,697,601	\$95,327
Streets – Other	240,000	240,000	240,000	240,000	240,000
Streets – Technology	2,861,000	3,807,000	2,182,000	710,000	710,000
<b>Total Streets T2050 Capital Projects</b>	<b>\$118,274,607</b>	<b>\$85,897,791</b>	<b>\$29,922,360</b>	<b>\$26,684,601</b>	<b>\$22,150,327</b>
<b>Total Capital Projects</b>	<b>\$770,207,093</b>	<b>\$562,225,791</b>	<b>\$497,277,360</b>	<b>\$402,844,601</b>	<b>\$243,765,327</b>
<b>Total Expenditures</b>	<b>\$1,029,674,318</b>	<b>\$846,694,743</b>	<b>\$793,888,879</b>	<b>\$723,504,636</b>	<b>\$596,533,904</b>
<b>Fund Balance: Public Transit</b>	\$86,136,453	\$38,085,886	\$40,203,938	\$31,398,310	\$38,191,185
<b>Fund Balance: Streets</b>	60,280,712	(7,482,079)	(17,691,439)	27,991,960	80,025,633
<b>Total Fund Balance</b>	<b>\$146,417,165</b>	<b>\$30,603,806</b>	<b>\$22,512,499</b>	<b>\$59,390,270</b>	<b>\$118,216,818</b>



More information about T2050 is available at <https://www.phoenix.gov/t2050>.



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