



OKLAHOMA **Transportation**

2020 – 2045 **Oklahoma Long Range Transportation Plan**

Chapter 9: Projected Costs and Forecasted Revenues

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1. INTRODUCTION

In planning for Oklahoma’s transportation future, it is important to understanding the anticipated costs of Oklahoma’s transportation needs and the revenues reasonably expected to ODOT and its partners under current law.

This chapter provides a discussion of:

- **Costs** – The estimated costs of meeting the 2020-2045 LRTP transportation needs by mode and investment category over the next 25 years.
- **Revenue** – A baseline forecast of the revenues available to meet ODOT transportation needs for the 2020-2045 planning period.
- **Funding Gap** – The difference between projected costs and anticipated baseline revenues over the 25-year planning period.
- **Potential Additional Revenue Sources** – A brief discussion of additional revenue sources that decision makers could consider addressing the funding gap.

Unless otherwise noted, all figures are presented in constant 2019 dollars.

2. FUNDING JURISDICTION AND RESPONSIBILITIES

ODOT is responsible for portions of Oklahoma’s transportation system and works with other partner entities to address needs on non-highway modes and needs for portions of the road-related infrastructure for which partners are primarily responsible. Transportation assets and functions are described as being “owned” or addressed by ODOT and/or other agencies.

2.1. ODOT RESPONSIBILITIES

ODOT is principally responsible for meeting the needs for state highway system bridges, roadways, interchanges, safety, and maintenance. In addition to the general upkeep of the highways and associated right-of-way, the maintenance category includes safety improvements, ports of entry, weigh stations, rest areas, and ITS technology. ODOT makes use of state funding from fuel taxes, vehicle registration fees, and transfers of general revenue funds as well as apportionments of federal funding to construct, maintain, and operate the state highway system.

2.2. PARTNERS TO ODOT

Numerous public and private entities partner with ODOT to deliver Oklahoma’s integrated multimodal transportation system. Partner-owned assets and functions include bicycle and pedestrian facilities, intermodal facilities, passenger rail, public

transportation, ports and waterways, congestion management, and locally owned public streets and roads. Partner entities ACOG, INCOG, LMPO, FMPO, RTPOs, OTA, cities, towns and counties, rural, urban, and tribal transit providers, and the U.S. Army Corps of Engineers (USACE).

Public-private or private entities such as Amtrak, private rail operators, private rail corporations, and private port and terminal operators also participate in the development and delivery of transportation in the state; however, only public costs and revenues are included in analyzing the Oklahoma transportation system's long-term costs, revenues, and funding gap.

3. COST AND REVENUE PROJECTIONS BY FUNCTION

This section discusses the costs associated with addressing the 2020-2045 LRTP needs identified in Chapter 8.

3.1. ODOT-OWNED ASSETS AND FUNCTIONS

Cost estimates for state highway system bridge and highway needs were determined using ODOT's PMS. Unit cost estimates for interchange needs were estimated using ODOT historical data on previous interchange construction projects. The costs of projected ancillary transportation appurtenance needs were estimated based on historical records and information from ODOT staff.

Table 3-1 summarizes the projected costs of addressing needs on the state highway system by function, the projected state and federal revenues anticipated to meet those needs, and the associated funding gap between needs and expected resources.

Projected 2045 LRTP costs associated with ODOT owned assets and functions total **\$33.4 billion**. Revenues available to meet these needs expected under current law total **\$26.3 billion**, leaving a funding gap of **\$7.1 billion**.

Table 3-1. Projected 2020-2045 Costs, Revenues, and Funding Gap for ODOT Responsibilities (Millions)

Function	Cost	State Funds	Federal Funds	Funding Gap
Highways	\$18,339.7			
<i>Pavement</i>	<i>\$17,538.6</i>			
<i>Expansion</i>	<i>\$801.1</i>			
Bridges	\$2,720.0			
Interchanges	\$4,581.8			
Safety	\$1,255.9			
Maintenance	\$6,547.7			
<i>General Maintenance</i>	<i>\$6,153.8</i>			
<i>Intelligent Transp. Systems</i>	<i>\$281.9</i>			
<i>Ports of Entry</i>	<i>\$64.1</i>			
<i>Rest Areas</i>	<i>\$10.5</i>			
<i>Weigh Stations</i>	<i>\$37.5</i>			
Total	\$33,445.2	\$16,284.7	\$10,042.8	\$7,117.7

3.2. PARTNER-OWNED ASSETS AND FUNCTIONS

ODOT is involved in multiple aspects of planning and developing the transportation system; yet there are many occasions where ODOT works in cooperation with partner agencies to address transportation problems and/or fund improvements. Cost estimates for other modal transportation assets and for non-highway modes were determined using data from the sponsoring agency, local councils of government, ODOT publications, and input from ODOT staff.

The 25-year needs for assets owned and managed by partners—including bicycle and pedestrian facilities, ports and waterways, freight rail, passenger rail, and public transportation—total **\$6.9 billion**. Total resources projected to be available to meet these needs is **\$4.8 billion**. Of this, **\$943.3 million** is projected to come from state or federal funds passed through ODOT.

Table 3-2 shows the partner-owned and managed assets by category. The table also provides an estimated breakdown of the anticipated federal, state, and partner funding for maintaining and improving these assets and functions over the next 25 years and the resulting gap between estimated costs and financial resources.

The amounts shown in the “Federal and State Funds” column of **Table 3-2** are included in the baseline revenue forecast. Bicycle and pedestrian funding is equal to the Recreational Trails program funding apportioned to Oklahoma under the 2019 Consolidated Appropriations Act plus half of Transportation Alternatives set-aside. Highway-rail grade crossing funding is based on the amount apportioned to Oklahoma under the 2019 Consolidated Appropriations Act plus associated matching funding from ODOT’s state funds. Passenger rail funding derives from ongoing annual transfers of \$2.9 million from state fuel tax and general revenue funds to the Tourism & Passenger Rail Revolving Fund. Public transportation funding is based on formula apportionments under the 2019 Consolidated Appropriations Act and historical averages of competitive federal grant funding for which ODOT is the custodial agency. In addition, the transit figure reflects \$5.7 million per year from the state’s Public Transit Revolving Fund, which is derived from motor fuel taxes and general revenue funds.

Table 3-2. Projected 2020-2045 Costs, Revenues, and Funding Gap for Partner Responsibilities (Millions)

Function	Cost	Federal and State Funds	Partner Funds	Funding Gap
Bicycle and Pedestrian	\$900.5	\$122.8	\$368.2	\$409.6
Ports and Waterways	\$225.8	\$0.0	\$101.6	\$124.2
Freight Rail	\$1,266.2	\$170.8	\$16.4	\$1,079.0
<i>Class I and Class III Railroads</i>	<i>\$1,056.2</i>	<i>\$0.0</i>	<i>\$0.0</i>	<i>\$1,056.2</i>
<i>Highway-Rail Grade Crossings</i>	<i>\$210.0</i>	<i>\$170.8</i>	<i>\$16.4</i>	<i>\$22.8</i>
Passenger Rail	\$262.0	\$58.6	\$0.0	\$203.4
Public Transportation	\$4,288.9	\$591.1	\$3,335.3	\$362.5
<i>Rural Transit</i>	<i>\$1,209.8</i>	<i>\$546.2</i>	<i>\$416.2</i>	<i>\$247.4</i>
<i>Urban Transit</i>	<i>\$2,737.8</i>	<i>\$44.9</i>	<i>\$2,692.9</i>	<i>\$0.0</i>
<i>Tribal Transit</i>	<i>\$341.3</i>	<i>\$0.0</i>	<i>\$226.2</i>	<i>\$115.1</i>
Total	\$6,943.4	\$943.3	\$3,821.4	\$2,178.6

3.2.1. BICYCLE AND PEDESTRIAN

The bicycle and pedestrian needs were examined for each metropolitan area by reviewing the regional bicycle plans and/or bicycle-pedestrian elements of the latest L RTPs of the state’s MPOs, and by analyzing historic needs/costs as identified through the ODOT Transportation Alternatives Program.

ODOT projects it will provide **\$122.8 million** to support bicycle and pedestrian facility improvements. Local governments are projected to fund an additional **\$268.2 million**, leaving an unmet need of **\$409.6 million**.

3.2.2. PORTS AND WATERWAYS

The estimated cost to meet the 25-year ports and waterway needs for critical maintenance and capacity expansion totals **\$225.8 million**. These costs were developed based on information provided by the ODOT Waterways Program and the USACE.

ODOT does not provide funding for ports and waterways. Projected revenues available to the USACE and private ports during the 2020-2045 period total **\$101.6 million**, leaving an unmet need of **\$124.2 million**.

3.2.3. FREIGHT RAIL

The estimated cost to meet the 25-year private freight rail needs totals **\$1.05 billion**. These costs will be borne by private railroads. In addition, highway-rail grade crossing needs are projected to be **\$210.0 million**. Through state funds and appropriations of federal funding, ODOT projects it will contribute **\$170.8 million** toward meeting this need. A further **\$16.4 million** is projected to be contributed by local governments and railroads, leaving **\$22.8 million** in unmet highway-rail grade crossing needs.

3.2.4. PASSENGER RAIL

The passenger rail cost estimates were developed based on information provided by the ODOT Rail Programs Division and the 2018 Oklahoma State Rail Plan. Over the next 25 years, operating costs are projected to be **\$262.0 million**, of which **\$58.6 million** will be provided by state funds passed through by ODOT, leaving \$203.4 million in unmet passenger rail needs.

3.2.5. PUBLIC TRANSIT

RURAL TRANSIT

Rural transit costs were projected based on an analysis of historical costs. Over the next 25 years, rural transit needs total **\$1.21 billion**. ODOT is projected to provide **\$546.2 million** in pass-through state and federal funding, and rural transit agencies are projected to provide **\$416.2 million** in local resources to meet rural transit needs. The unmet rural transit needs total **\$247.4 million**.

URBAN TRANSIT

Urban transit cost projections for partner agencies are based on information published in fiscally constrained metropolitan LRTPs. Over the next 25-years, urban transit needs

total **\$2,737.8 million**. About one third of this cost is covered through Federal Transit Administration funds provided directly to the metropolitan transit agencies. The remainder of the cost is the responsibility of the local governments and related transit agencies.

Over the next 25 years, ODOT is projected to provide **\$44.9 million** in state funds to support urban transit. The remaining **\$2,692.9 million** is projected to be met through local funding, fare revenues, and federal transit funding apportioned directly to urban transit providers.

TRIBAL TRANSIT

Over the next 25-years, tribal transit needs total **\$341.3 million**. Based on federal fiscal year 2019 formula apportionments and historical data regarding competitive awards from the 49 U.S.C. § 5311(c) Public Transportation on Indian Reservations program, ODOT projects **\$148.9 million** to be available in federal funding to address tribal transit needs. The federal funds are apportioned and awarded directly to tribal transit agencies and are not passed through ODOT. A further **\$226.2 million** is projected to be made available from tribal resources, resulting in an unmet need of **\$115.1 million**.

4. REVENUE FORECAST

A forecast that accurately reflects the complex structure of ODOT’s funding sources and portrays a consistent story of how these sources generate revenue over time is a critical component in understanding the nature and magnitude of future funding gaps. Scenario analysis powered by the forecast’s assumptions and parameters can inform discussions around new or enhanced funding sources for transportation in Oklahoma.

The baseline revenue forecast includes state revenues projected under current law and Oklahoma’s share of federal apportionments for highways and transit over the 25-year forecast period of fiscal years 2020 to 2045. To develop the forecast, historic revenues and funding were documented. Next, growth rate assumptions for the forecast period were developed for each revenue and funding line item, in collaboration with ODOT staff.

4.1.1. METHODOLOGY

All sources of federal funding remain at fiscal year 2019 funding levels through the forecast horizon. This assumption is based on uncertainty related to solvency issues of the Federal Highway Trust Fund and the lack of a long-term funding act for surface transportation. The most recently enacted surface transportation funding authorization was the FAST Act, which was signed into law in December 2015 and provided funding for federal fiscal years 2016 through 2020.

State revenues are projected according to the output of a model of the dynamics of Oklahoma's vehicle fleet, VMT, and vehicle registrations.

4.1.2. DEDUCTIONS

Deductions from the revenue forecast are made to account for required debt service payments on currently outstanding debt and an estimate of projected funds that will pay for non-infrastructure related costs such as the administration of ODOT, research, and planning.

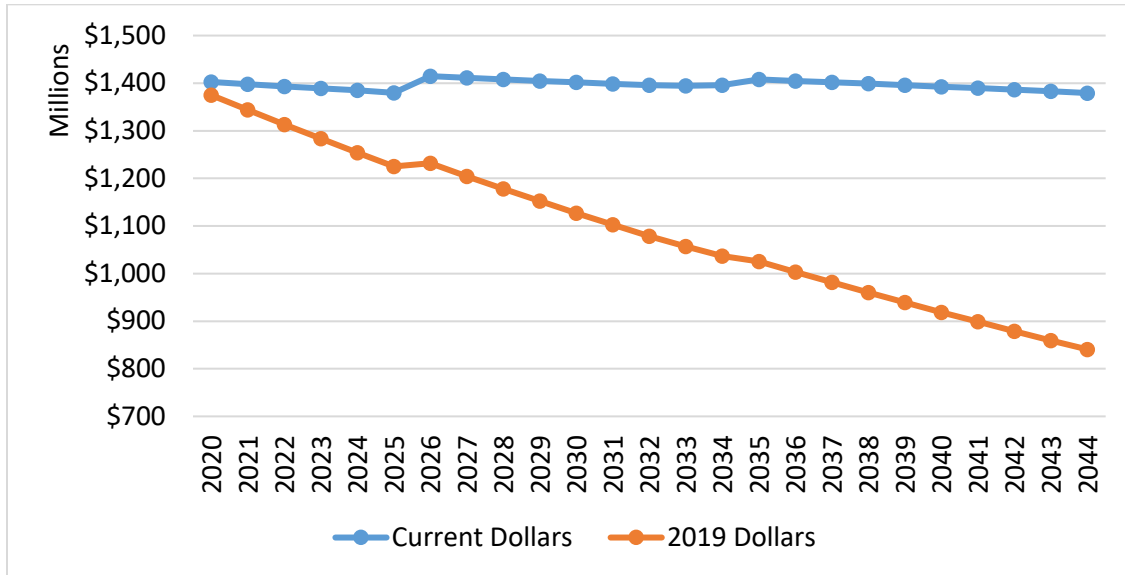
The baseline revenue forecast does not assume:

- Any changes to state or federal legislation that determine the amount of revenues ODOT receives.
- Any changes in tax rates, fee levels, or existing revenues.
- Receipt of any new revenue sources.
- Receipt of any proceeds from newly issued debt, general revenue appropriations from the state, or other special one-time funding.

4.1.3. FORECAST FINDINGS

As shown in **Figure 4-1**, over the forecast period, it is projected that state and federal funding to ODOT will total **\$34.9 billion** in current year dollars, which equates to **\$26.3 billion** in inflation-adjusted 2019 dollars. The adjustment for inflation assumes a 2.0 percent annual discount factor to equate the value of future dollars to the 2019 base year. The **\$34.9 billion** current year dollar amount is shown in **Figure 4-1** as the sum of the individual data points blue line. The **\$26.3 billion** inflation-adjusted amount is the sum of the individual data points on the orange line. The **\$8.6 billion** difference, or 24.6 percent cost of inflation, is the area between the blue and orange lines.

Figure 4-1. Projected Annual Revenue to ODOT



The model underlying the baseline revenue forecast produced several other outcomes relevant to long-term planning for Oklahoma’s transportation system. They include:

- The percentage of Oklahoma VMT that generates fuel tax revenue is projected to decrease from 99 percent in 2020 to 78 percent by 2045.
- Fleet fuel economy is projected to increase from 17.4 miles per gallon (mpg) in 2020 to 25.0 mpg by 2045.
- By 2045, the amount of fuel tax revenue generated per VMT is projected to decrease by 44.7 percent compared to the 2020 baseline.
- Assuming annual construction cost inflation averaging 2.0 percent, the purchasing power of fuel tax revenue generated per VMT will decrease by 65.6 percent by 2045 compared to 2020.
- Under current law, the annual transfer of general revenue funds to ODOT through the ROADS Fund will gradually decrease from **\$266.5 million** in 2020 to **\$115.0 million** by 2045 (current dollars). This is due to increases in projected vehicle registration fee revenue to ODOT growing at a greater rate than projected decreases in incremental fuel tax proceeds.

5. FUNDING GAP AND IMPLICATIONS

As in many states, Oklahoma faces long-term challenge to maintaining its transportation system in a state of good repair. Under current state and federal law, most of the revenue that supports Oklahoma’s transportation system is generated from fixed excise taxes on motor fuel tax. Over time, it is expected that this method of raising revenue will become increasingly obsolete because advancements in fleet fuel economy will cause less revenue to be raised from any given level of VMT. Increasing adoption of electric vehicles will exacerbate this problem, and the purchasing power of future revenues will be diminished by the compounding effects of inflation.

As shown in **Table 3-1** and **Table 3-2**, the gaps between projected needs and projected funding resources to meet needs on ODOT-owned infrastructure and assets that are owned and managed by partners stand at **\$7.1 billion** and **\$2.2 billion**, respectively. The aggregate **\$9.3 billion** gap on **\$40.4 billion** in aggregate need represents a 23.0 percent shortfall.

Based on projections of the long term trends on fleet fuel economy and the market share of electric vehicles, it is expected that the bulk of the **\$9.3 billion** gap will occur in the later years of the 2020-2045 timeline. Therefore, policymakers have some time to find solutions that are supported by the public, are sufficient to close the projected gap, and can be implemented before the transportation system deteriorates beyond repair.

6. POTENTIAL EXAMPLES TO ADDRESS THE FUNDING GAP

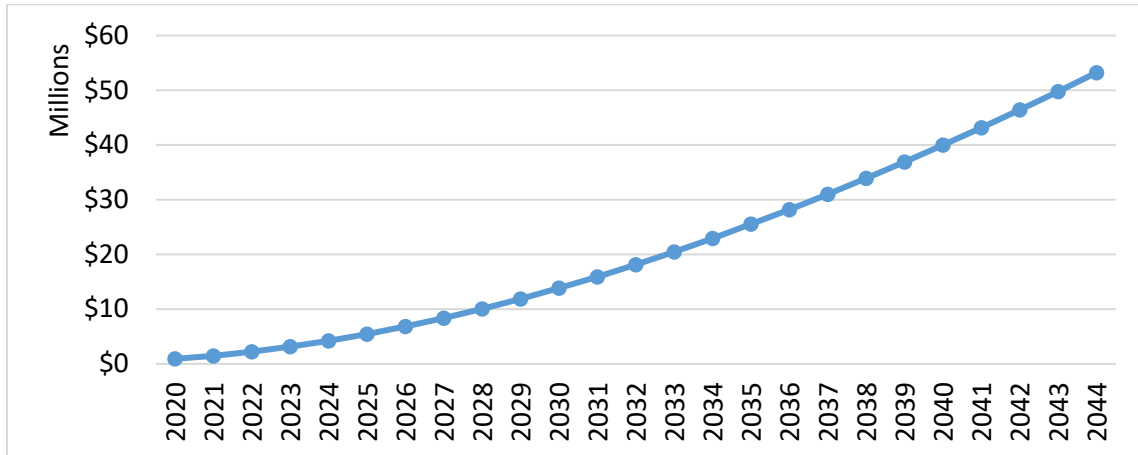
As motor fuel taxes are projected to cease to be a viable long-run source of funding for the transportation system, an analysis of three alternative sustainable sources of funding were examined. This section summarizes the benefits of three potential sources of new revenue for ODOT: Electric vehicle fees, indexing existing motor fuel tax rates to inflation, and levying a RUC.

6.1. ELECTRIC VEHICLE FEES

Until motor fuel excise taxes are replaced as the primary method of financing surface transportation, user fees for plug-in hybrid and fully electric vehicles will grow in importance as a method to address the structural gap in the transportation system’s finances.

The baseline forecasts projects that there will be almost 875,000 EVs on Oklahoma highways by 2045. If each of these vehicles were subject to a \$100 surcharge in lieu of paying fuel taxes, this would generate **\$772.9 million** for ODOT over the forecast period (**\$533.9 million** in constant 2019 dollars). **Figure 6-1** shows the projected growth of EV registration surcharge revenue over time in constant 2019 dollars.

Figure 6-1. Projected Annual Revenue from \$100 EV surcharge (2019 Dollars)



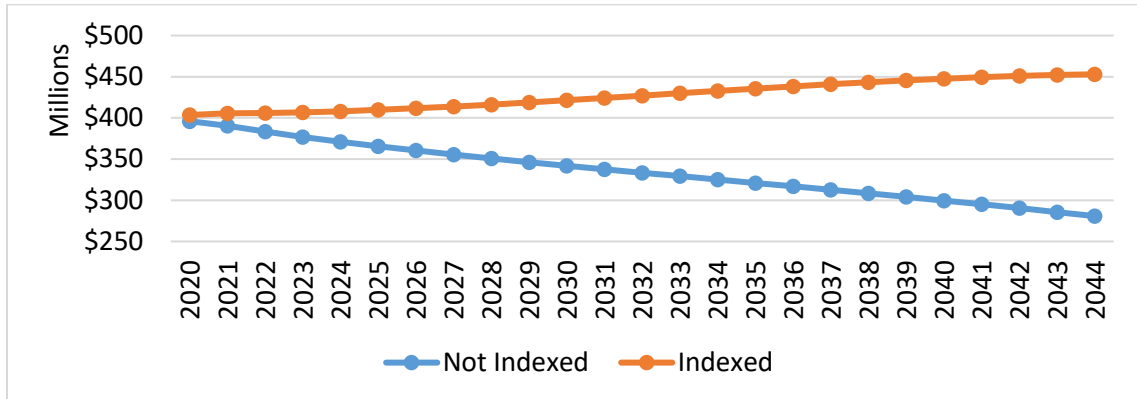
At present, the number of EVs registered in Oklahoma represents a fraction of 1.0 percent of vehicle registrations in the state. However, as EVs capture a larger share of the market over time, a revenue source that offsets the loss in motor fuel tax revenues will become an increasingly important tool to bridge some of the gap between needs and resources.

6.2. INDEXING MOTOR FUEL TAX RATES TO INFLATION

Indexing motor fuel tax rates to a measure of inflation ensures that the long-run purchasing power of the tax revenue generated from the sale of a gallon of motor fuel does not deteriorate. Motor fuel taxation will still become increasingly obsolete as a user fee and the primary source for funding the transportation system due to advancements in fleet fuel economy and the adoption of EVs. However, indexing tax rates will buy policymakers time in designing and securing popular support for a sustainable replacement.

If Oklahoma indexed existing state motor fuel taxes to inflation without changing the statutory distribution of tax revenues, and if inflation averaged 2.0 percent per year to 2045, this would result in an additional **\$1.67 billion** in revenue to ODOT through the forecast period. **Figure 6-2** shows the large cumulative impact of a small annual adjustment in motor fuel tax rates to preserve purchasing power.

Figure 6-2. Impact over Time of Indexing Motor Fuel Tax Rates (Current Dollars)



6.3. VMT FEES / ROAD USER CHARGES (RUC)

A RUC is a direct charge to the user of the transportation system where motor vehicle operators pay for their per-mile use of public roads.

A fee averaging \$0.01 per mile for passenger vehicles and \$0.04 per mile for commercial vehicles would generate an estimated **\$680.6 million** per year, growing at the same rate as VMT, and would be unaffected by the dynamics of fleet fuel economy or the increasing market share of EVs. Over 25 years at 1.0 percent annual VMT growth, this revenue source would generate **\$15.2 billion**. This hypothetical RUC schedule would raise more revenue for ODOT than its current share of all existing state taxes and fees under current law with respect to the ownership or operation of a motor vehicle.

Figure 6-3 shows the trajectory of this hypothetical revenue stream to ODOT with 1.0 percent annual VMT growth.

Figure 6-3. RUC receipts to ODOT with 1.0% Annual VMT Growth (Constant Dollars)

