New Mexico 2045 Plan

Revenue Forecast Technical Memorandum

February 4, 2021

Prepared by

HIGH STREET

Table of Contents

List of Figures

List of Tables

1. INTRODUCTION

An important part of the New Mexico 2045 Plan development effort included establishing an understanding of the New Mexico Department of Transportation's (NMDOT) revenue sources and forecasting how these sources are projected to change over time. Developing this projection helps agency decision makers assess whether NMDOT's current funding sources will be adequate to fund the future construction, maintenance, and operations needs of the transportation system over the 25-year planning horizon.

The New Mexico 2045 Plan revenue forecast reflects the structure of NMDOT's funding sources and seeks to provide a consistent story about how these sources generate revenue through 2045. When combined with the quantification of the future transportation system needs, the revenue forecast helps NMDOT understand the nature and magnitude of future funding gaps. Additionally, scenario analyses powered by the forecast's assumptions and parameters can inform discussions about the need for new or enhanced transportation funding sources in New Mexico.

This technical memorandum sets forth the revenue forecast results for the New Mexico 2045 Plan. The revenue forecast includes:

1. **Baseline Revenue Forecast.** The project team developed a spreadsheet tool in consultation with the NMDOT staff economist and established assumptions to model a baseline revenue forecast of the NMDOT's transportation funding for infrastructure investment from State Fiscal Year (SFY) 2020 to FY2045.[1]
2. **Alternative Revenue Sources.** The project team identified and explored new and enhanced revenue options that NMDOT could potentially utilize to help close the gap between estimated transportation investment needs and anticipated current law revenues. These examples were then assessed with respect to their advantages, disadvantages, and implementation issues.

Each subtask is described below.

2. BASELINE NMDOT REVENUE FORECAST

The project team built a Microsoft Excel spreadsheet tool to model the dynamics of all NMDOT's major state and federal revenue sources. The model is a live, linked spreadsheet calibrated to the July 2020 NMDOT revenue forecast of SFY 2020-2024, NMDOT FY 2021 appropriations as set forth in House Bill 3, and Federal Fiscal Year (FFY) 2020 Federal Highway Administration (FHWA) and Federal Transit Administration (FTA)

[1] The federal fiscal year runs from October 1 through September 30. New Mexico's fiscal year runs from July 1 to June 30.

apportionment tables. In alignment with other parts of the New Mexico 2045 Plan, revenue is presented in constant 2020 dollars. To calculate figures in constant 2020 dollars, future revenues are discounted annually by 2.0 percent, which is the median annual percentage increase from 2010-2019 in the West Region Consumer Price Index for Urban Consumers (CPI-U) published by the US Bureau of Labor Statistics (U.S. Bureau of Labor Statistics, n.d.).

Scenarios around alternative funding sources are driven by a small number of assumptions regarding the evolution of New Mexico's fleet of personal and commercial vehicles. A user-friendly interface allows the model user to rapidly generate scenario alternatives by changing one or more key assumptions.

The baseline NMDOT revenue forecast includes state revenues projected under current state and federal law and NMDOT's share of federal apportionments for highways and transit over the 25-year forecast period of SFY 2020 to SFY 2045. Growth rates for each revenue and funding line item were developed based on historical averages and, where possible, on external forecasts of relevant economic and demographic variables by government agencies and universities.

The baseline revenue forecast does not assume:

- any changes to state or federal legislation that determine the amount of revenues NMDOT receives;
- any changes in tax rates, fee levels, or existing revenues;
- receipt of any new revenue sources; nor
- receipt of any proceeds from newly issued debt, general-purpose appropriations from the state, or other special one-time funding not already awarded to NMDOT.

The primary revenue sources and their associated growth rate assumptions are described in subsequent sections. Funding for debt service and NMDOT program administration that reduce the amount available to meet modal needs are discussed in the Deductions section.

2.1. FEDERAL FUNDING

All sources of federal funding are assumed to remain at nominal FFY 2020 funding levels and adjusted to 2020 dollars 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 is the Fixing America's Surface Transportation (FAST) Act, signed into law in December 2015, which provided funding for FFY 2016 through FFY 2020, and was subsequently extended through FFY 2021.

Federal funds apportioned directly to metropolitan planning organizations (MPOs), local governments, tribal governments, and urban transit agencies are excluded from the NMDOT revenue forecast figures.

2.2. STATE REVENUES

The baseline model builds from the January 2020 NMDOT revenue forecast, which was published with a horizon of four full fiscal years through SFY 2024. From SFY 2025 onwards, annual growth is projected forward based on historical averages and/or projected growth in population or real gross domestic product. Annual growth rates for the state's gasoline and special fuel taxes are based on the low oil price scenario of the US Energy Information Administration's Fleet Vehicle Energy Use forecast for passenger vehicles and commercial light trucks (U.S. Energy Information Administration, 2019).

Projections of revenue streams from alternative sources are projected according to the output of a model of the dynamics of New Mexico's vehicle fleet characteristics, vehicle miles traveled (VMT), and vehicle registrations. Key assumptions are detailed in the following sections.

2.2.1. VEHICLE MILES TRAVELED (VMT)

The FHWA Office of Policy Information reports that vehicles traveled 27.3 billion miles over New Mexico's public highways in 2018 (USDOT, FHWA, Office of Highway Policy Information, 2019). The alternative revenue scenarios are calibrated to 0.47 percent growth in VMT per year throughout the forecast period. This figure is equal to the compound annual average growth rate of New Mexico's population through calendar year 2040 as projected by the University of New Mexico (University of New Mexico Geospatial and Population Studies, n.d.).

2.2.2. MOTOR VEHICLE REGISTRATIONS

Using 2018 data from the US Bureau of the Census American Community Survey, the alternative revenue scenario baseline estimates 1.42 million registered passenger vehicles in New Mexico (U.S. Census Bureau, 2018). The alternative revenue scenario baseline is for 0.47 percent growth in vehicle registrations, the same factor as for VMT.

2.2.3. COMMERCIAL VMT

The FHWA Office of Highway Policy Information reported that 10.3 percent of VMT on New Mexico roads is attributable to commercial vehicles (USDOT, FHWA, Office of Highway Policy Information, 2019). This percentage remains static through the forecast and is relevant to the discussion presented in the Alternative Revenue Sources section.

2.2.4. TURNOVER OF THE EXISTING VEHICLE FLEET

Based on state-level data from the Alliance of Automobile Manufacturers, the alternative revenue scenarios assume that in any given year, 3.8 percent of vehicles are retired from New Mexico's fleet (Alliance of Automobile Manufacturers, 2019). This assumption remains static through the forecast. It informs projections of the growth of electric vehicle (EV) market share.

2.2.5. ADOPTION OF ELECTRIC VEHICLES (EVS)

In 2018, 0.14 percent of New Mexico's registered vehicles were electric or plug-in hybrid vehicles.[Error! Bookmark not defined.] The baseline forecast assumes that 1.0 percent of new vehicle sales in New Mexico in 2019 are EVs and that this figure increases by 1.0 percentage points per year through the forecast period. By 2045, it is thus projected that 26.0 percent of new vehicles will be EVs. Combined with other assumptions about growth in total vehicle registrations and the rate at which vehicles are retired from the fleet, it is projected that 21.2 percent of the total registered vehicles in New Mexico will be EVs by SFY 2045. This assumption is relevant to the discussion of alternative revenue sources.

2.3. FORECAST FINDINGS

This section discusses the results of the revenue forecast, both in terms of expected state and federal levels under current law, and of other model outputs that inform the long-term viability of the current system of transportation finance in New Mexico.

2.3.1. GROSS REVENUE BEFORE DEDUCTIONS

The baseline revenue forecast projects $22.1 billion in gross revenue to NMDOT in current dollars over 25 years. This equates to $17.5 billion in constant 2020 dollars, of which $10.3 billion is projected from state funding sources and $7.2 billion is projected from federal highway and transit apportionments to NMDOT.

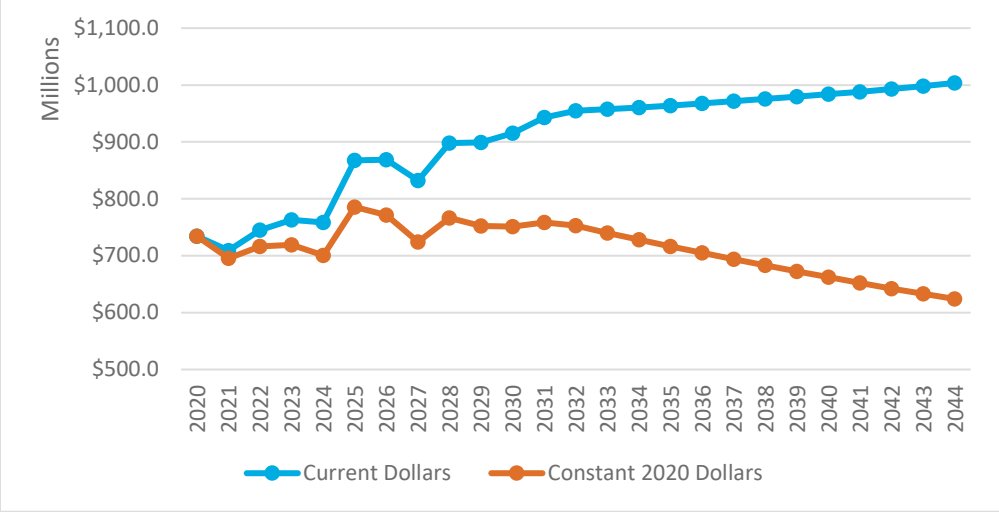
Table 2-1: Projected Gross Revenue to NMDOT, 2020 to 2045

Funding Source	Current Dollars (millions)	Constant 2020 Dollars (millions)
Road Fund	$ 12,608.6	$ 9,973.6
Highway Infrastructure Fund	$ 205.5	$ 162.3
Aviation Fund	$ 145.7	$ 115.8
Transportation Fund	$ 51.9	$ 41.3
FHWA Formula Apportionments	$ 8,451.1	$ 6,731.8
FTA Formula Apportionments	$ 594.8	$ 473.8
TOTAL	**$ 22,057.6**	**$ 17,498.5**

2.3.2. BASELINE PROJECTED REVENUES NET OF DEBT SERVICE

As shown in **Figure 2-1**, over the forecast period, it is projected that state and federal funding to NMDOT will total $22.6 billion in current year dollars net of debt service, which equates to $17.8 billion in inflation-adjusted 2020 dollars. The adjustment for inflation assumes a 2.0 percent annual discount factor to equate the value of future dollars to the 2020 base year. The $22.6 billion current year dollar amount is shown in **Figure 2-1** as the sum of the individual data points on the blue line. The $17.8 billion inflation-adjusted amount is the sum of the individual data points on the orange line. The $4.9 billion difference, or 21.4 percent cost of inflation, is the area between the blue and orange lines.

Figure 2-1: Projected Revenue to NMDOT Net of Debt Service



2.3.3. 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 NMDOT, safety enforcement, research, and planning. **Table 2-2** summarizes deductions from revenues projected to be available to meet transportation needs.

Table 2-2: Projected Deductions from Available Revenues: 2020 - 2045

Administration and Debt Service	Current Dollars (millions)	Constant 2020 Dollars (millions)
Administration (State Funds)	$ 5,631.5	$ 4,395.4
Administration (Federal Funds)	$ 445.7	$ 347.9
Debt Service	$ 1,231.4	$ 1,138.3
TOTAL	**$ 7,308.6**	**$ 5,881.6**

2.3.4. NET NMDOT REVENUES AVAILABLE TO MEET NEEDS

After deductions for debt service and administrative costs, the baseline revenue forecast projects $14.7 billion in current dollars will be available under current law to meet needs identified in the New Mexico 2045 Plan. This equates to $11.6 billion in constant 2020 dollars.

3. ALTERNATIVE REVENUE SOURCES

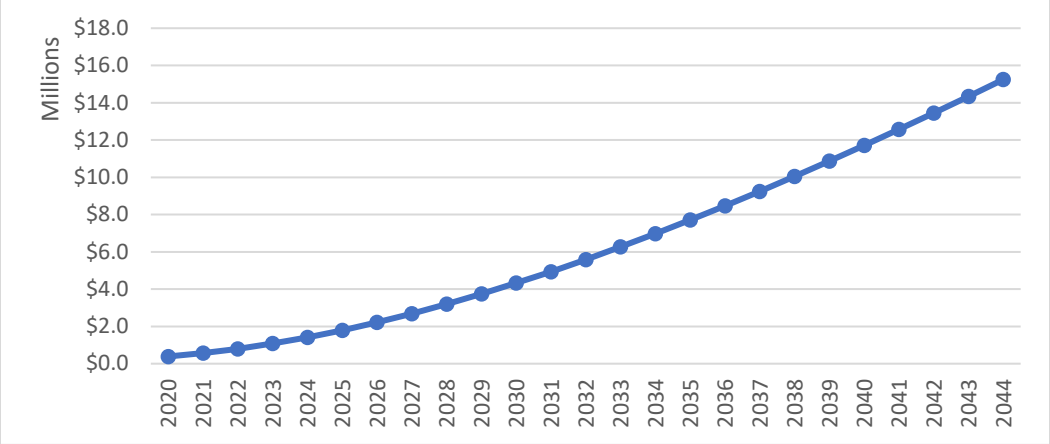
Given the likely decline in motor fuel taxes as a viable primary long-run source of funding for the transportation system, this forecast includes an analysis of three alternative sustainable sources of funding for NMDOT. This section investigates three sources of new revenue for NMDOT: electric vehicle fees, indexing existing motor fuel tax rates to inflation, and levying a road user charge (RUC) on passenger vehicles. While each of these options has drawbacks, they all could provide sustainable sources of funding that are directly related to the ownership or operation of a motor vehicle.

3.1. 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 forecast projects that there will be approximately 245,000 EVs on New Mexico highways by 2045. If each of these vehicles were subject to a $100 annual surcharge in lieu of paying fuel taxes, this would generate $225.6 million for NMDOT over the forecast period ($159.6 million in constant 2020 dollars). **Figure 3-1** shows the projected growth of EV registration surcharge revenue over time in constant 2020 dollars.

Figure 3-1: Projected Annual Revenue from $100 EV Surcharge (2020 Dollars)



At present, the number of EVs registered in New Mexico represents a fraction of 1.0 percent of vehicle registrations in the state. Therefore, a surcharge on electric vehicles would not be an immediate solution to addressing the gap between projected revenues and the projected costs of maintaining the highway system. In addition, a flat surcharge that is uncorrelated to where, when, and how often the EV owner uses the highway system is a weak proxy for a user fee.

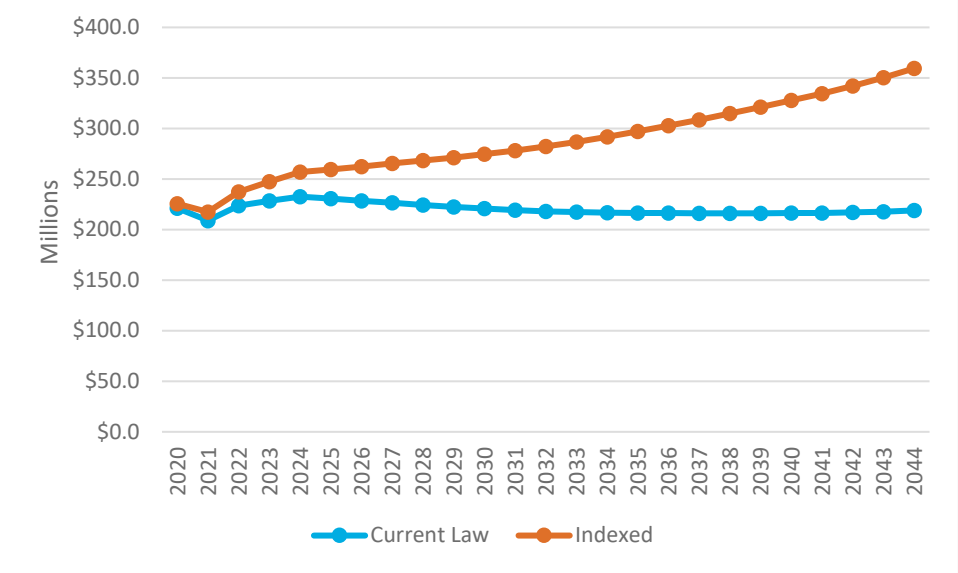
3.2. INDEXING MOTOR FUEL TAX RATES TO INFLATION

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 tax rates in twenty-two states and the District of Columbia adjust to inflation or fuel prices without legislative action (National Conference of State Legislatures, 2020). These jurisdictions comprise a majority of the population of the United States (Cammenga, 2019).

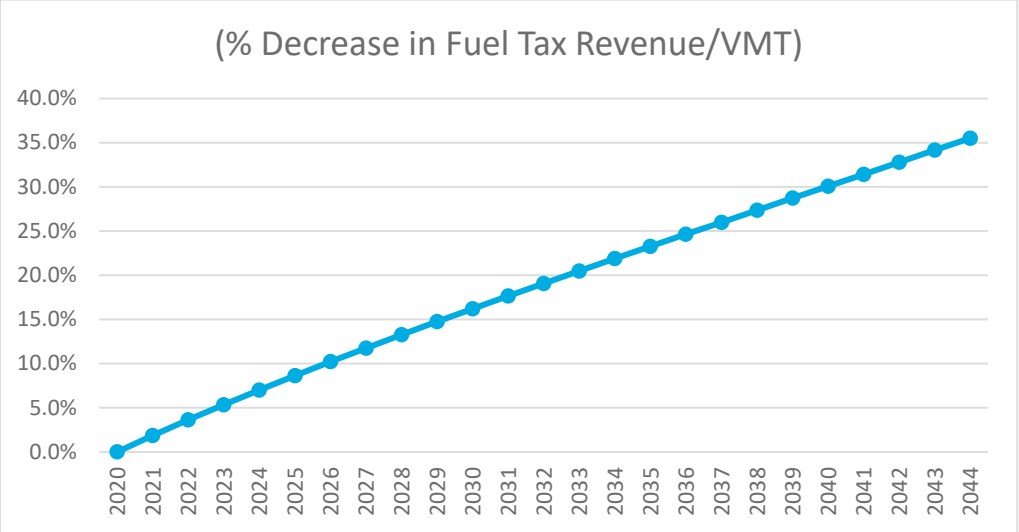
If New Mexico indexed existing state motor fuel taxes to inflation without changing the statutory distribution of tax revenues, and if inflation averaged 2.0 percent per year to 2045, this would result in an additional $1.68 billion in revenue (current dollars) to NMDOT through the forecast period, which equates to $1.22 billion in constant 2020 dollars. **Figure 3-2** shows the large cumulative impact of a small annual adjustment in motor fuel tax rates to preserve purchasing power. This assumes demand for motor fuel is price-inelastic; that is, the aggregate statewide demand for motor fuel is not sensitive to small annual increases in fuel taxes.

Figure 3-2: Fuel Tax Revenue over Time: Baseline and Indexed Rates (Current Dollars)



It should be noted that indexing motor fuel tax rates to a broad measure of inflation will not address revenue lost from increasing fleet fuel economy and/or a larger market share of EVs. **Figure 3-3** shows the projected percentage decrease in the amount of fuel tax paid for any given level of VMT under current law due to the combined effects of electric vehicle adoption and increasing fleet fuel economy.

Figure 3-3: Combined Erosion of Fuel Tax Revenues and Purchasing Power



Motor fuel taxation will still become increasingly obsolete as a user fee and the primary source for funding the transportation system; however, indexing tax rates will buy policymakers time in designing and securing popular support for a sustainable replacement.

3.3. VMT FEES / ROAD USER CHARGES (RUC) FOR PASSENGER VEHICLES

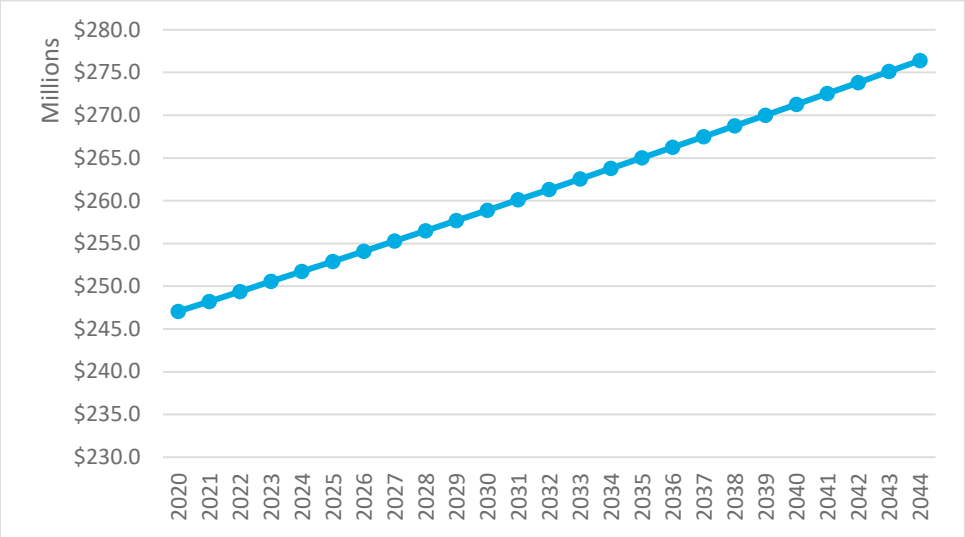
A Road User Charge (RUC) is a direct charge to the user of the transportation system where motor vehicle operators pay for their per-mile use of public roads. Commercial vehicles in New Mexico with declared gross weights in excess of 26,000 pounds presently pay a form of a RUC: the weight-distance tax set forth in New Mexico Statutes Annotated (N.M.S.A.) § 7-15A-3 (New Mexico Compilation Commission, n.d.).

A fee averaging $0.01 per mile for passenger vehicles would raise an estimated $247.1 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. This compares favorably to the $221.2 million the State Road Fund received from its statutory share of the state's gasoline and diesel taxes in FY 2020. Like the motor fuels tax, however, the RUC fee per mile would need to be increased occasionally to maintain consistent purchasing power.

The $0.01 per mile user fee rate for passenger vehicles could be easily communicated to the public, major stakeholders, and elected officials. In addition, it is a powerful demonstration of the enormous value provided to the traveling public from a modern system of streets and highways.

Figure 3-4 shows the trajectory of this hypothetical revenue stream to NMDOT with 0.47 percent annual VMT growth.

Figure 3-4: Passenger Vehicle RUC Receipts to NMDOT with 0.47% Annual VMT Growth (Current Dollars)



It is possible to devise a system where the per-mile fee varies depending on time, location, and/or vehicle characteristics. This application has the potential to address many of the undesirable externalities present in the surface transportation system today, such as congestion and air pollution. Examples of this approach include High-occupancy/Toll (HO/T) lanes such as the I-95 and I-495 Express Lanes in Northern Virginia, the I-25 Central Express Lanes in downtown Denver, Colorado, and the US 36 Express Lanes between Denver and Boulder, Colorado.

The administration of intelligent transportation systems needed for a RUC could present significant upfront costs to implement and would likely be more expensive to administer than the existing system. To finance the technical infrastructure, upfront costs and administration could be factored into the per-mile fee schedule and would represent a few hundreds of a cent per mile to the user.

4. FUNDING GAP

The New Mexico 2045 Plan has identified $28.4 billion in anticipated needs on the elements of New Mexico's transportation system for which NMDOT owns, operates, or has a supervisory or funding responsibility. Compared to $11.8 billion in anticipated

revenues available under current law, this yields a projected gap of $16.6 billion. **Table 4-1** shows projected needs, funding, and the resultant gap by transportation mode.

Table 4-1: Projected 2045 Funding Gap by Mode (millions of constant 2020 dollars)

Mode	Needs	Funding	Gap
Bridge and Highway	$ 26,144.3	$ 10,315.7	$ 15,828.6
Safety	$ 590.0	$ 590.0	$ -
Intelligent Transportation Systems (ITS)	$ 63.3	$ -	$ 63.3
Freight	$ 0.9	$ -	$ 0.9
Aviation	$ 115.8	$ 115.8	$ -
Land Ports of Entry	$ 215.5	$ -	$ 215.5
Public Transit	$ 709.7	$ 473.8	$ 235.9
Bicycle and Pedestrian	$ 536.1	$ 120.7	$ 415.4
TOTAL	**$ 28,375.6**	**$ 11,616.9**	**$ 16,758.7**

As ITS, Freight, and Land Ports of Entry do not have dedicated funding sources, the funding for these modal areas in **Table 4-1** is shown as zero and their funding gaps are shown as being equal to their anticipated needs. Funding for these areas will come out of what would otherwise be available for highways and bridges.

This revenue forecast anticipates $90.3 million in federal funding from the Transportation Alternatives Set-Aside program routed through NMDOT. These funds are allocated to the bicycle and pedestrian funding area; however, the funds ultimately are dedicated to off-system transportation improvements. NMDOT's annual apportionment of federal highway funding under the Congestion Mitigation & Air Quality (CMAQ) program may also be used to fund bicycle and pedestrian elements of transportation projects. CMAQ funds are represented in the Bridge and Highway funding but may also be used for transit projects.

Compared to the projected $15.6 billion gap in bridge and highway needs, the hypothetical alternative revenue sources discussed in Section 3 raise a combined $7.9 billion in constant 2020 dollars.

5. REFERENCES

Alliance of Automobile Manufacturers. (2019). *State Facts: Autos drive New Mexico forward*. Retrieved from In Your State: https://autoalliance.org/in-your-state/NM/

Cammenga, J. (2019, July 31). *State Gasoline Tax Rates as of July 2019*. Retrieved from Tax Foundation: https://taxfoundation.org/state-gas-tax-rates-2019/

National Conference of State Legislatures. (2020, August 31). *Variable Rate Gas Taxes*. Retrieved from Transportation Research: https://www.ncsl.org/research/transportation/variable-rate-gas-taxes.aspx

New Mexico Compilation Commission. (n.d.). *Article 37 Imposition of Property Tax*. Retrieved from Chapter 7 Taxation (1990): https://laws.nmonesource.com/w/nmos/Chapter-7-NMSA-1978-1990

U.S. Bureau of Labor Statistics. (n.d.). *CPI for All Urban Consumers (CPI-U) - West Region*. Retrieved 2020, from Databases, Tables & Calculators by Subject: https://data.bls.gov/timeseries/CUUR0400SA0&output_view=pct_12mths

U.S. Census Bureau. (2018). *Table 2504 Physical Housing Characteristics for Occupied Housing Units*, ACS 1-Year Estimate. Retrieved 2020, from American Community Survey Tables: https://data.census.gov/cedsci/table?q=vehicle%20ownership&g=0400000US35&y=2018&tid=ACSST1Y2018.S2504&hidePreview=true

U.S. Energy Information Administration. (2019). *Annual Energy Outlook 2020 - Table 43. Transportation Fleet Car and Truck Fuel Consumption by Type and Technology*. Retrieved 2020, from Data Browser: https://www.eia.gov/outlooks/aeo/data/browser/#/?id=53-AEO2020

University of New Mexico Geospatial and Population Studies. (n.d.). *Projections*. Retrieved 2020, from Geospatial and Population Studies: https://gps.unm.edu/pru/projections

USDOT, FHWA, Office of Highway Policy Information. (2019, October). *Table PS-1 Selected Measures for Identifying Peer States - 2018*. Retrieved from Highway Statistics 2018: fhwa.dot.gov/policyinformation/statistics/2018/ps1.cfm

USDOT, FHWA, Office of Highway Policy Information. (2019, August 30). *Table VM-3*. Retrieved 2020, from Highway Statistics 2018: https://www.fhwa.dot.gov/policyinformation/statistics/2018/vm3.cfm