RTI INTERNATIONAL | Memorandum

To: Joe Milazzo, Regional Transportation Alliance

From: Michael Hogan, RTI; RTA Policy and Research Coordinator
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Date: May 18, 2026

Subject: Gas Tax and Inflation Indexing: North Carolina Retrospective and Prospective Model

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Overview

State gas taxes are a critical component of the mix of revenue sources for the North Carolina Department of Transportation, supporting road construction and maintenance. The state has indexed its gas tax to address inflation since 1986. In 2016, the General Assembly passed legislation to set North Carolina's state gas tax per gallon at $0.34 plus an annual multiplier, indexing by population growth (75%) and the energy component of the consumer price index (25%)[1]. These changes were implemented by the legislature to address declining revenue because of falling gasoline prices in the mid-2010s.

Since 2016, the state motor fuels tax has risen from $0.34 to $0.41, representing an increase of $0.07 per gallon or 20.5%. While fuel tax revenue has grown over the last 10 years, driven by growth in state population and indexing by energy costs, it has not kept pace with inflation as measured by consumer price index nor with the costs of highway construction, tracked by the US Department of Transportation through the National Highway Construction Cost Index (NHCCI), as seen in **Table 1.** These rapidly increasing construction costs have placed a constraint on NCDOT's budget and its ability to deliver a timely and robust transportation program.

Potential Indexing Rate Alternatives

In the future, motor fuel taxes are projected to continue growing more slowly than inflation. The regional and statewide business community is interested in exploring potential alternative indexing options to allow state revenues to better keep pace with inflation and generate sufficient funding to address planning, construction, and maintenance needs. DMV fees and other state fees are also adjusted to address inflation. Costs such as license and vehicle registration fees are indexed every four years, based on the consumer price index (CPI-U) reported from the U.S. Bureau of Labor Statistics.

As this memo will show, alternative indexing measures such as the CPI-U or NHCCI would result in a higher gas tax and more revenue for the state to meet transportation funding needs. The balance of this report reviews potential alternative indexing options, and the potential financial impacts of various frameworks, from both a retrospective and prospective standpoint.

Retrospective: 2016-2026

From 2016 to 2026, the gas tax generated an estimated $22 billion for NCDOT, under the existing indexing framework of 75% population and 25% CPI-Energy in place since 2016. Had one of several alternative indexing scenarios been in place; for example, one that applied a higher weight to the consumer price index or NHCCI, the state would have a higher gas tax and higher annual revenue for NCDOT to address rising construction costs. Various scenarios presented in **Table 2** show the hypothetical gas tax and revenue in 2026 based on implementation at the end of 2016.

[1] Data from NCDOR: https://www.ncdor.gov/motor-fuels-tax-rates

Table 1: Comparison of Change over Time of Transportation Revenue, Costs, and Growth

Value	*Percentage Change, 2014-2025*
State Transportation Revenue Sources	
State Motor Fuels Tax Per Capita	17%
Highway Use Tax per Capita	53%
Vehicle Registration Fees per Capita	50%
State Sales Tax Per Capita[2]	88%
Cost Indices	
Consumer Price Index-Energy (CPI-Energy)	14%
Consumer Price Index (CPI)	34%
National Highway Construction Cost Index (NHCCI)	89%
Growth Indices	
State Population	12%
Registered vehicles	17%
Vehicle Miles Traveled	21%

[2] *State sales tax (4.75%) revenue collected is allocated to the general fund. Since 2023, an allocation of sales tax revenue has been transferred from the general fund to the Department of Transportation

Table 2: Hypothetical Gas Tax Indexing Alternatives and Impact: 2016-2026

Scenario: Annual Index for Gas Tax Revisions starting 2016 *at* $0.34/gal	Gas Tax Per Gallon (Jan 1, 2021)	Gas Tax Per Gallon (Jan 1, 2026)	Modeled Annual Revenue (2026)	Modeled Cumulative Revenue (2016-2026)	Increase in Cumulative Revenue over Baseline (2016-2025)
Baseline: 75% Population,25% CPI-Energy (current fuel tax index)	*$0.361*	*$0.410*	*$2.3 B*	*$22.0 B*	-
a) 75% CPI-U, 25% Population	$0.370	$0.439	$2.4 B	$22.6 B	$0.6 B (+3%)
b) 100% CPI-U *(current index for DMV fees)*	$0.375	$0.461	$2.5 B	$23.2 B	$1.2 B (+5%)
c) 75% CPI-Energy, 25% Population	$0.410	$0.477	$2.6 B	$24.6 B	$2.6 B (+12%)
d) 25% NHCCI, 75% CPI-U	$0.387	$0.507	$2.7B	$24.5 B	$2.5B (+12%)
e) 50% NHCCI, 50% CPI-U	$0.398	$0.557	$3.1 B	$25.9 B	$3.9 B (+18%)
f) 75% NHCCI, 25% Population	$0.404	$0.582	$3.2 B	$26.7 B	$4.7 B (+21%)
g) 75% NHCCI, 25% CPI-U	$0.410	$0.609	$3.4 B	$27.4 B	$5.4 B (+25%)
h) 100% NHCCI	$0.422	$0.665	$3.7 B	$28.9 B	$6.9 B (+31%)

Source: Baseline from NCDOR, alternatives from Bureau of Labor Statistics and U.S. Department of Transportation. Totals modeled by RTI, assuming indexing formula started at the end of 2016.

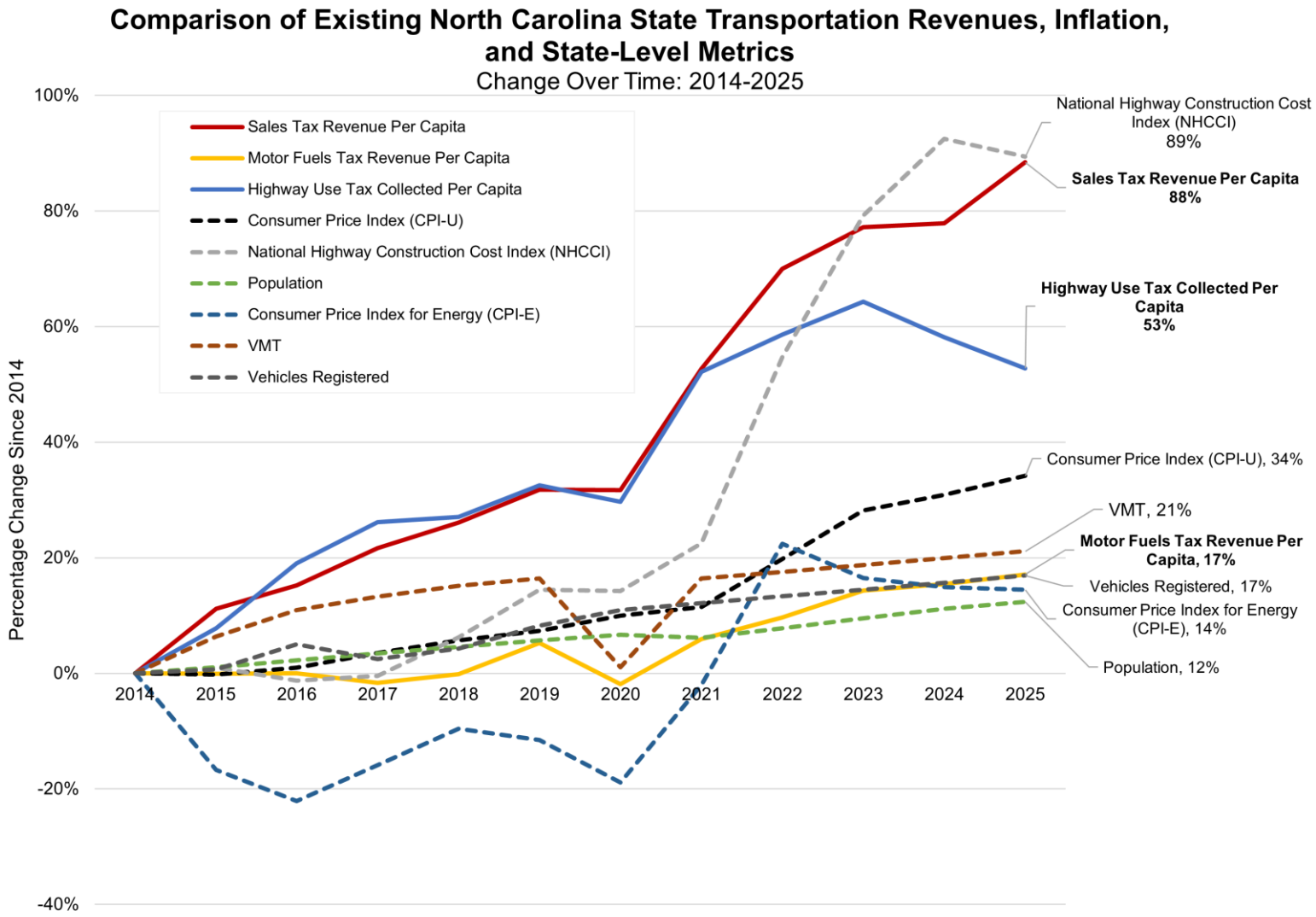
Had the North Carolina state gas tax been benchmarked to a standard measure of inflation (consumer price index or CPI-U), it would have produced a cumulative $1.2 billion or 5% more over a 10-year period, while other scenarios that account for construction costs (NHCCI) would have generated varying cumulative gas tax revenue increases up to 31% over the time period.

Since 2014, while standard measures of inflation have grown more quickly than population and gas tax revenue per vehicle, sales tax and highway use tax revenue per vehicle have kept track with inflation. Both measures are closely tied to the prices of consumer goods and cars, a key component of inflation. Energy CPI started to increase in 2017 following a decline in 2014-2016: that decline in energy prices was one of the motivators for the state legislature to change the funding formula following a loss in gas tax revenue.

Similarly, rates started to diverge between 2021 and 2022 when standard measures of inflation and construction costs saw sharp increases, driving the difference between gas tax revenue and cost indices like NHCCI and CPI as seen in **Figure 1.** As seen in **Figure 2,** total road use, vehicle registrations, and population growth were relatively consistent over the period between 2014 and 2025, excluding a sharp decline in Vehicle Miles Traveled (VMT) in 2020, driven by pandemic-era closures.

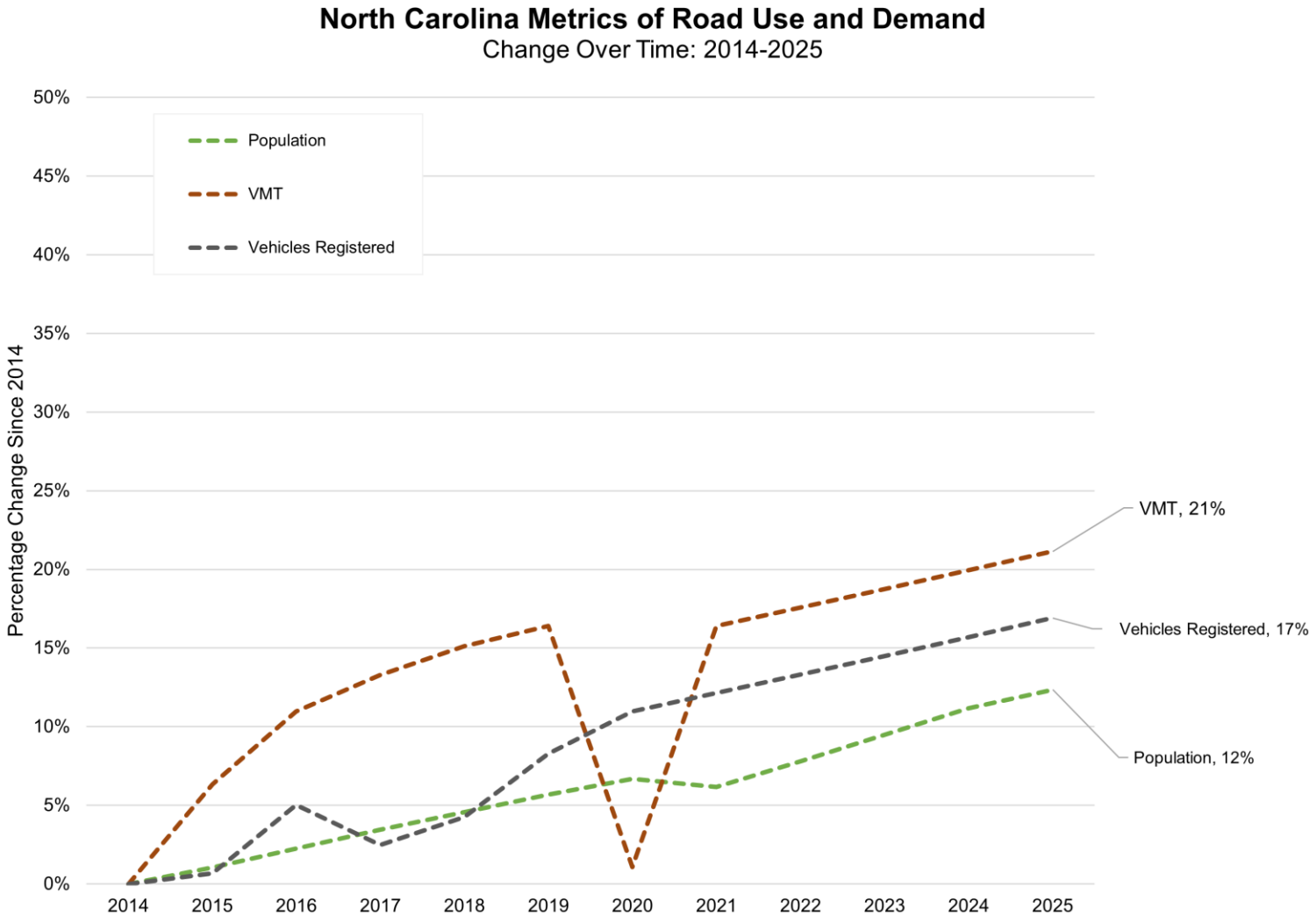
Had the gas tax been indexed by a different measure such as a combination of CPI and NHCCI, the state gas tax would have followed a different trajectory from 2016 (the year of implementation of the updated gas tax formula) to 2026, driven by faster growth in highway construction costs and consumer costs, as seen in **Figure 3** and **Figure 4.**

Figure 1: Comparison of North Carolina State Transportation Revenue, Inflation, and State Growth Rates



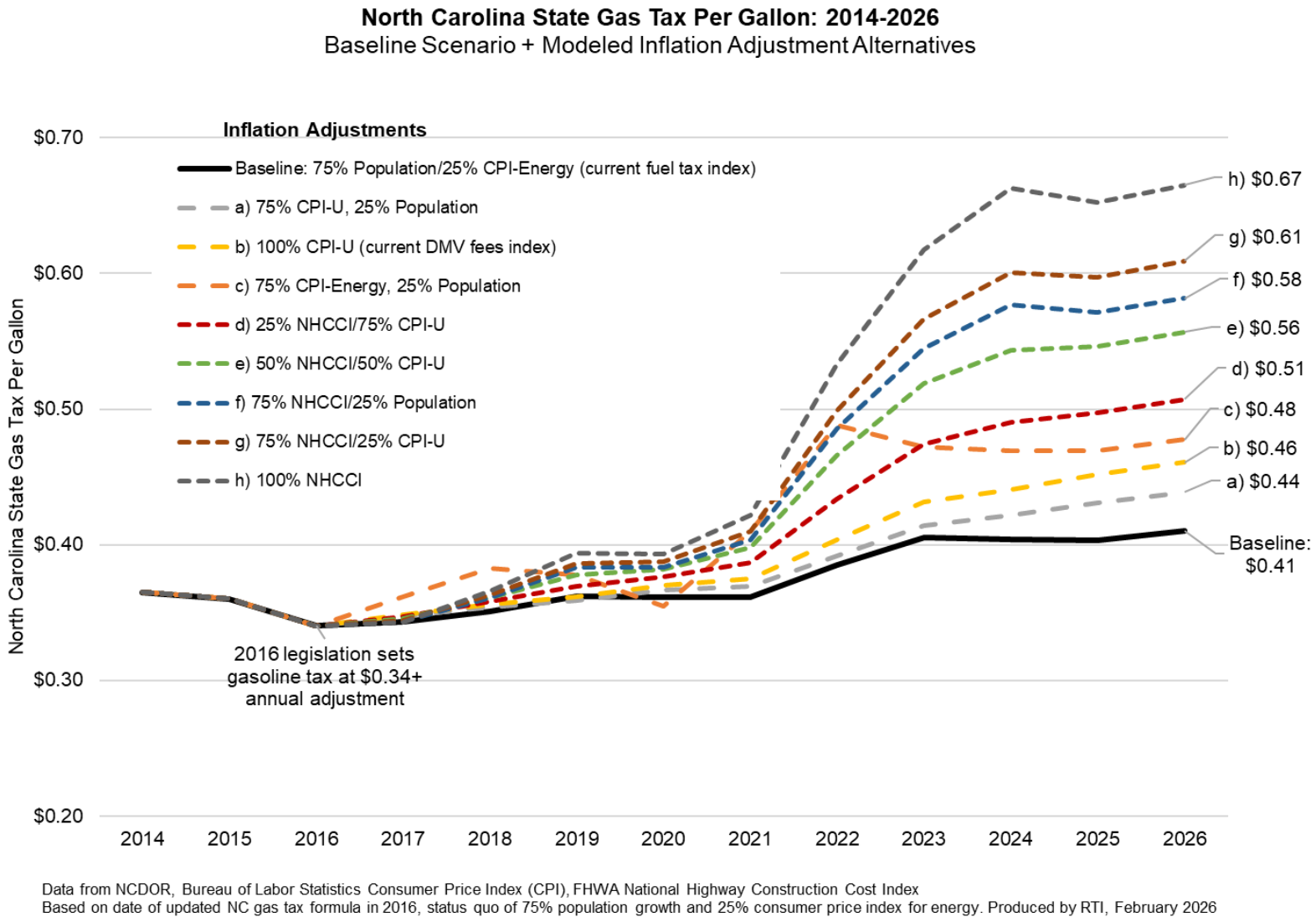
Data from NCDOR, NCDOT, Bureau of Labor Statistics Consumer Price Index (CPI), FHWA National Highway Construction Cost Index (NHCCI).
Produced by RTI, January 2026

Figure 2: Metrics of Road Use and Demand in North Carolina: Growth from 2014 to 2025 in VMT, Registered Vehicles, and Population



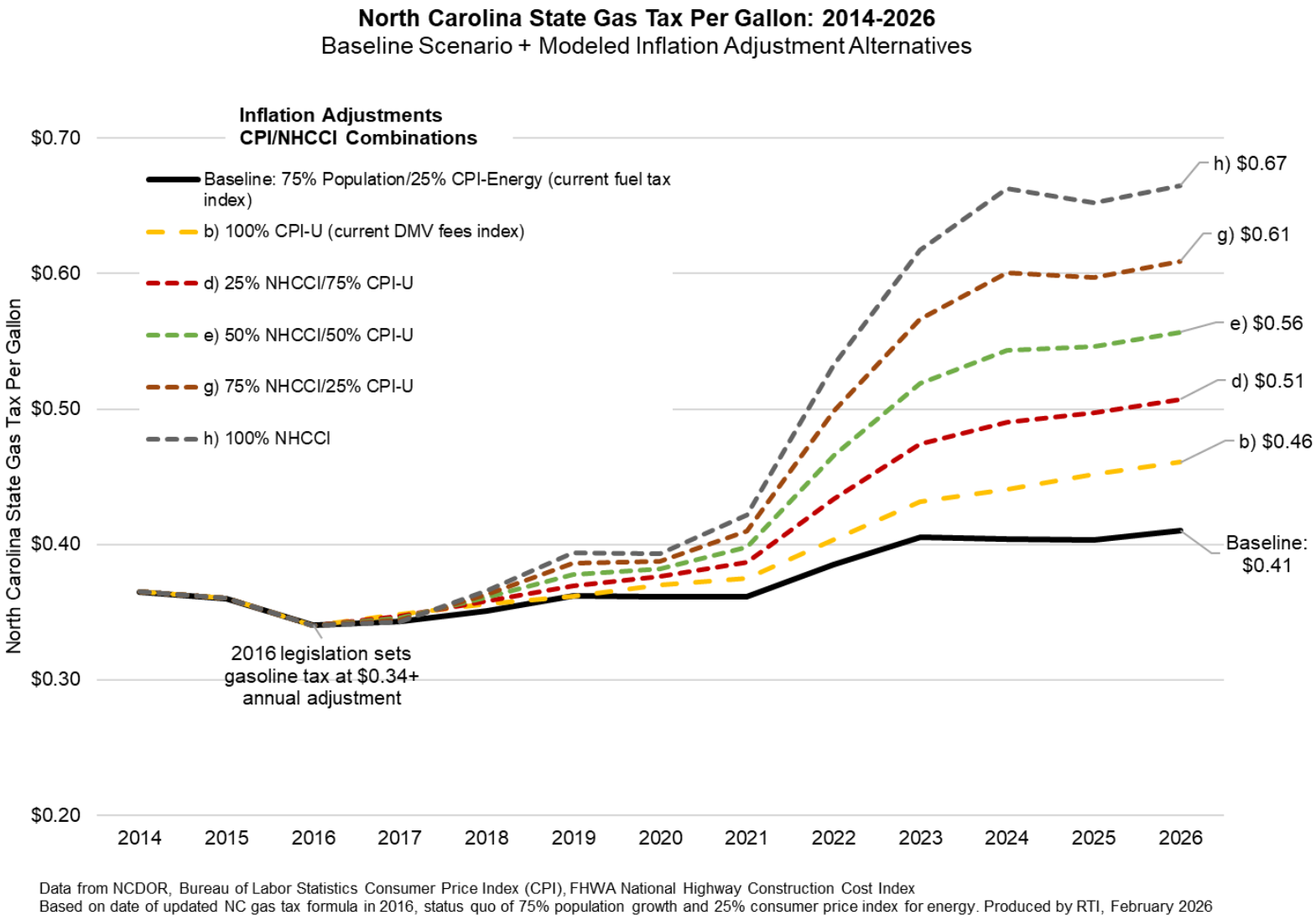
Data from NCDOR, NCDOT, Bureau of Labor Statistics Consumer Price Index (CPI), FHWA National Highway Construction Cost Index (NHCCI).
Produced by RTI, January 2026

Figure 3: Modeled Gas Tax in North Carolina Based on Alternative Indexing Formulas: 2016-2026



Data from NCDOR, Bureau of Labor Statistics Consumer Price Index (CPI), FHWA National Highway Construction Cost Index
Based on date of updated NC gas tax formula in 2016, status quo of 75% population growth and 25% consumer price index for energy. Produced by RTI, February 2026

Figure 4: Modeled Gas Tax in North Carolina Based on Alternative Indexing Formulas, Limited to CPI/NHCCI Measures. 2016-2026



Data from NCDOR, Bureau of Labor Statistics Consumer Price Index (CPI), FHWA National Highway Construction Cost Index
Based on date of updated NC gas tax formula in 2016, status quo of 75% population growth and 25% consumer price index for energy. Produced by RTI, February 2026

Prospective: 2027-2036

Similarly, future scenarios show how a different indexing formula could result in more revenue over the next decade. If a new gas tax index were implemented starting at the end of calendar year 2026 (starting January 1, 2027) based on a baseline of $0.41 per gallon in 2026 and indexed by a combination of CPI, population, and/or NHCCI growth, various scenarios would result in an increase in gas tax and annual state revenue over the next decade. While use of the current baseline would result in a cumulative $27B over the next decade, alternatives present a higher gas tax and overall state revenue from the gas tax ranging between a 3% and 31% increase as seen in **Table 3**. This is based on the assumptions that rates of growth in population, CPI, energy, and construction costs follow a similar trend to the prior decade.

Over the next decade, the range of scenarios outlined in **Figure 5** and **Figure 6** show the possibilities for a future gas tax, implemented at the start of 2027, based on one of a series of alternative funding formulas. Forecasts indicate that consumer, energy, and highway construction cost indices will grow more quickly than population, which would drive higher gas taxes under different scenarios.

Cumulatively, the different scenarios would result in an increase from the baseline between 3% and 31% in revenue over a 10-year period, reflecting the gap between state revenue and the increasing cost of highway construction and consumer prices, as noted in **Figure 7** and **Figure 8.**

Table 3: Projected Gas Tax Revenue Scenarios in North Carolina: 2027–2036

Scenario: Annual Index for Gas Tax Revisions Starting 2027 at $0.410/gal	Gas Tax Per Gallon (Jan 1, 2032)	Gas Tax Per Gallon (Jan 1, 2037)	Modeled Annual Revenue (2036)	Modeled Cumulative Revenue (2027-2036)	Increase in Cumulative Revenue from Baseline (2027-2036)
Baseline: 75% Population, 25% CPI-Energy (current fuel tax index)	*$0.452*	*$0.490*	*$2.7 B*	*$27.0 B*	-
a) 75% CPI-U, 25% Population	$0.466	$0.518	$2.8 B	$27.9 B	$0.9 B (+3%)
b) 100% CPI-U *(current index for DMV fees)*	$0.475	$0.538	$2.9 B	$28.5 B	$1.5 B (+6%)
c) 75% CPI-Energy, 25% Population	$0.480	$0.548	$3.0 B	$28.8 B	$1.8 B (+7%)
d) 25% NHCCI, 75% CPI-U	$0.500	$0.591	$3.2 B	$30.1 B	$3.1 B (+11%)
e) 50% NHCCI, 50% CPI-U	$0.526	$0.648	$3.5 B	$31.7 B	$4.7 B (+17%)
f) 75% NHCCI, 25% Population	$0.542	$0.685	$3.7 B	$32.8 B	$5.8 B (+21%)
g) 75% NHCCI, 25% CPI-U	$0.553	$0.710	$3.9 B	$33.5 B	$6.5 B (+24%)
h) 100% NHCCI	$0.582	$0.778	$4.2 B	$35.3 B	$8.3 B (+31%)

Source: Baseline from NCDOR, alternatives from Bureau of Labor Statistics and U.S. Department of Transportation. Totals modeled by RTI, assuming indexing formula started at the end of 2026.

Figure 5: Modeled Gas Tax in North Carolina B ased on Alternative Indexing Formulas, Forecast 2027-2036

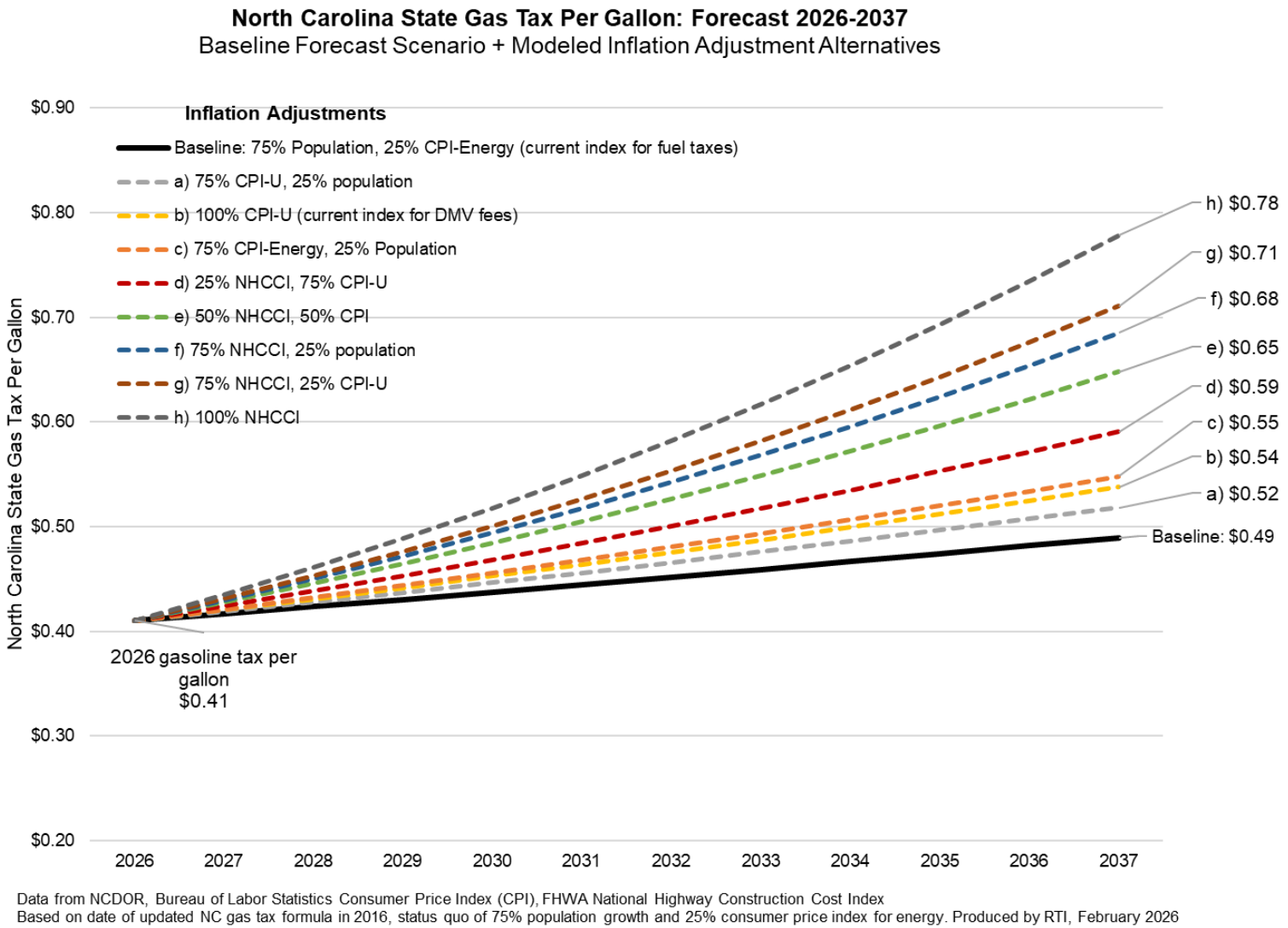
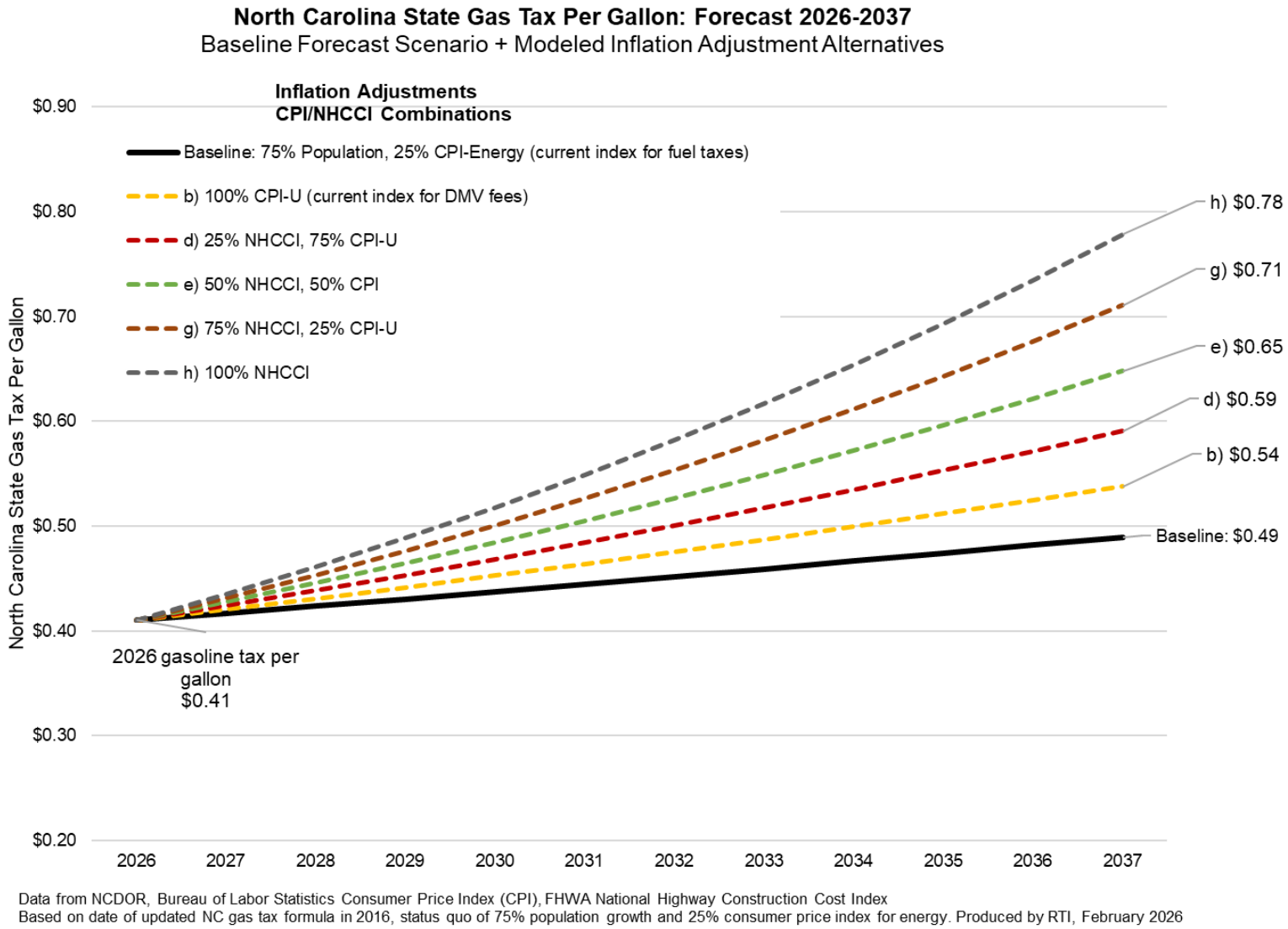
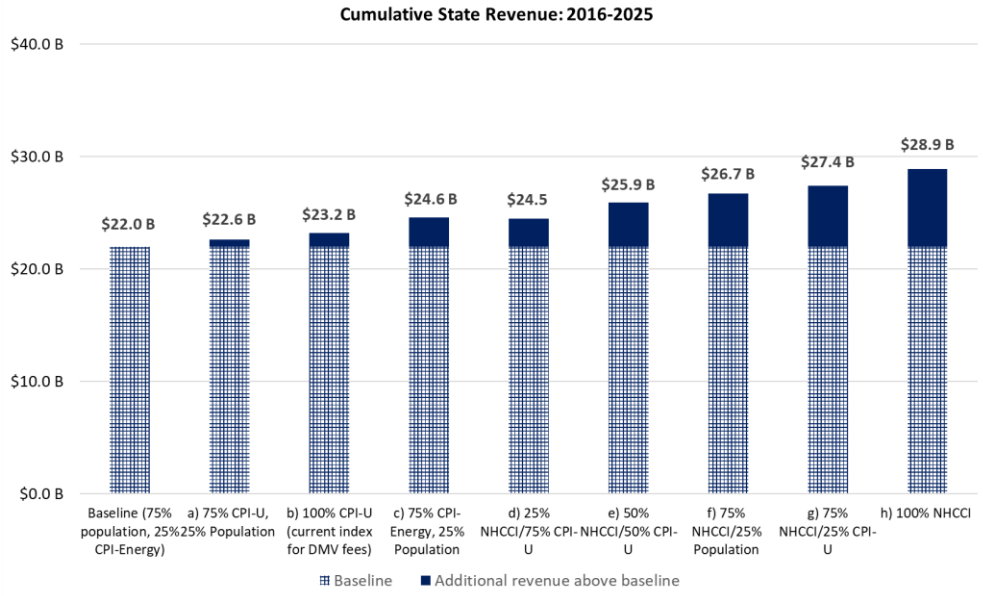


Figure 6: Modeled Gas Tax in North Carolina Based on Alternative Indexing Formulas, Limited to CPI/NHCCI. Forecast 2027-2036



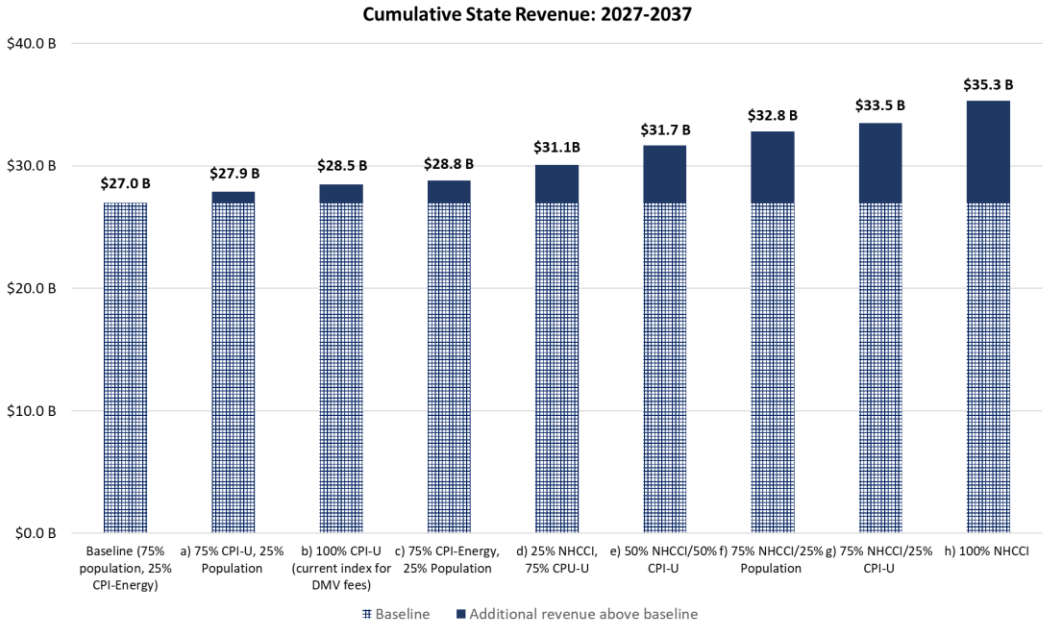
Data from NCDOR, Bureau of Labor Statistics Consumer Price Index (CPI), FHWA National Highway Construction Cost Index
Based on date of updated NC gas tax formula in 2016, status quo of 75% population growth and 25% consumer price index for energy. Produced by RTI, February 2026

Figure 7: Retrospective Cumulative Revenue of Alternative Gas Tax Indices, 2016-2025



Forecast of state revenue based on inputs from NCDOR, Bureau of Labor Statistics Consumer Price Index, National Highway Construction Cost Index. Baseline asssumes gas tax adjusted annually by 75% population, 25% Energy CPI based on state formula. Produced by RTI, January 2026

Figure 8: Prospective Forecast Cumulative Revenue of Alternative Gas Tax Indices, 2027-2037



Forecast of state revenue based on inputs from NCDOR, Bureau of Labor Statistics Consumer Price Index, National Highway Construction Cost Index. Baseline asssumes gas tax adjusted annually by 75% population, 25% Energy CPI based on state formula. Produced by RTI, January 2026