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Access User Fee - Overview

Increased fuel efficiency, electric vehicle adoption, and changes in miles driven are among the factors driving volatility in revenue collected from the state motor fuels tax. **The regional and statewide business community has proposed an “access user fee” concept as a potential method of replacing the gas tax to modernize and stabilize funding for transportation.**

We determined the potential value of an access user fee based on the average gas tax paid annually per vehicle, national average fuel economy, average vehicle miles traveled (VMT), and the state gas tax rate. The proposed access user fee would initially apply to gasoline, gas-electric hybrid, electric, and hydrogen-powered vehicles. These represent more than 90% of the vehicles registered in North Carolina. Diesel vehicles, the majority of which are commercial, would be treated separately from this proposal.

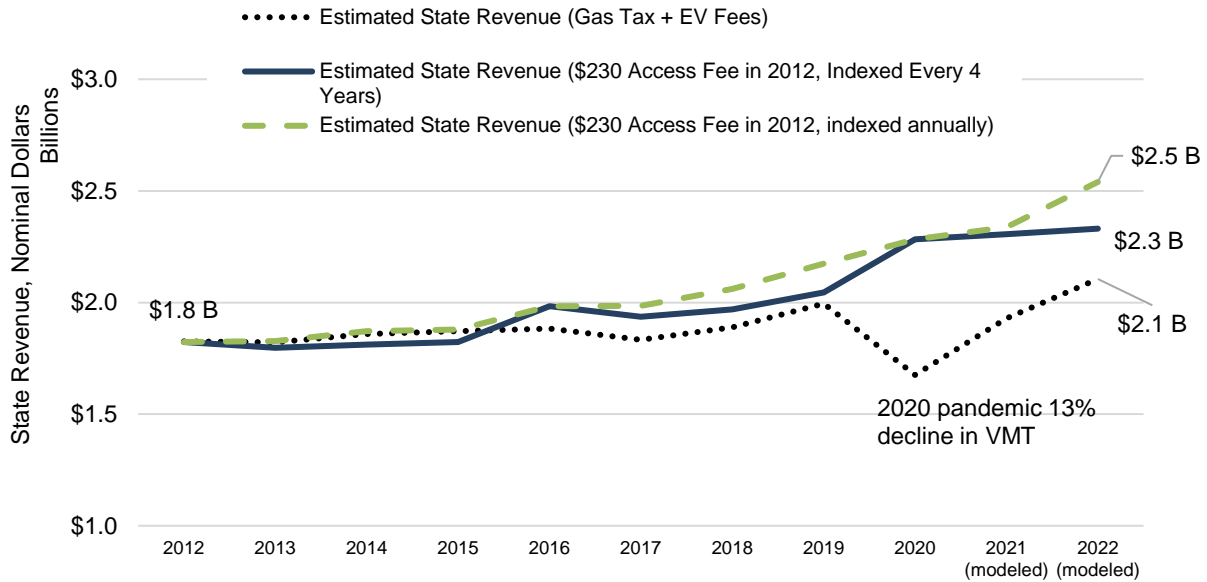
State gasoline taxes and the existing electric vehicle (EV) fee would be replaced by the proposed access user fee for all non-diesel-powered vehicles under this proposal.

Key findings

- **An access user fee activated in 2023, in concert with the elimination of all state gas taxes and EV fees, would be around \$251 per year, or about \$21 per month, assuming revenue neutrality at the time of implementation.**
- North Carolinians are paying **nearly \$50 less per vehicle** in annual gas taxes today compared to 2012, when adjusted for inflation.
- If an access fee had been implemented in 2012 (based on fuel efficiency, VMT, and gas tax rates that year), and then adjusted for inflation quadrennially (like vehicle registration fees) or annually (like gas taxes), the current access fee would be between \$261 and \$285 per year, or \$22 to \$24 per month.
- **Had an access fee been in place since 2012, the state would now be collecting between \$2.3 billion and \$2.5 billion annually, compared to \$2.1 billion currently with the gas tax**
- **Were an access fee in place since 2012, the state would have collected an additional \$1.4 billion to \$2.1 billion in cumulative revenue over the past decade.**
- **An access fee mitigates revenue risk** from both ongoing increases in fleet fuel economy and volatility in vehicle miles traveled due to the pandemic and economic cycles.
- If an access fee had been in place prior to the pandemic, the state would have retained between \$400 million and \$600 million in additional revenue during 2020 alone.
- Activating an access fee and eliminating state gas taxes will result in lower gas prices, encouraging greater sales at convenience stores and additional state sales tax revenue – up to 6% of which will be dedicated to transportation as a result of 2022 state legislative provisions.

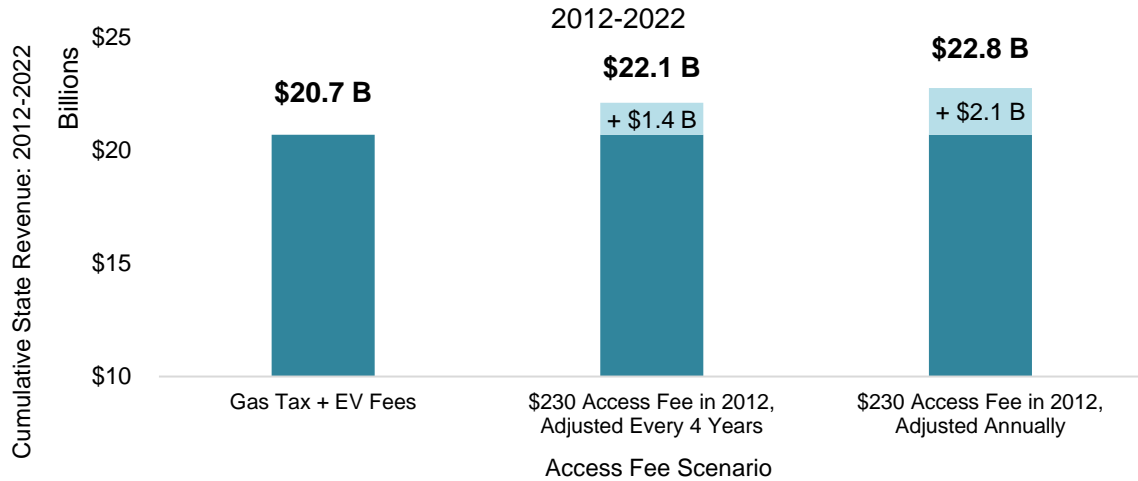
Key summary graphs

Estimated Annual State Revenue from Gas Tax Alternatives



Values modeled based on data from Federal Highway Administration, EPA, NCDOR

Estimated Cumulative State Revenue from Gas Tax Alternatives



Values modeled based on data from Federal Highway Administration, EPA, NCDOR

Access Fee Calculation, Implementation and Annual Revenue

State motor fuels taxes make up approximately half of state transportation revenue. In determining the potential value of an access user fee, the model uses a per-vehicle access fee, based on the average gas tax paid annually per vehicle (not per driver), the national average fuel economy for the entire motor vehicle fleet, average vehicle miles traveled (VMT), and the state motor fuels tax rate per gallon.

2022 access fee calculations

RTI examined the equivalent of an access user fee to replace North Carolina's existing gasoline tax of **\$0.385** per gallon in 2022. On average, each vehicle in 2022 contributed just under \$237 per year to fund transportation through gasoline taxes in North Carolina, based on 14,369 annual miles driven per registered vehicle in NC and average fuel efficiency of 23.3 MPG.

- 14,369 miles annual miles per driver based on 2019 values of 122,475 million vehicle miles traveled, with 8.5 million total vehicles registered in North Carolina according to FHWA. Note we did not use 2020 values due to an estimated 13% decline in vehicle miles traveled due to the pandemic.
- Fuel efficiency is for the entire stock of vehicles on the road in 2019, including new and existing vehicles, as reported by EPA.
- Electric vehicles currently pay a \$140.25 fee in NC in lieu of fuel taxes; as this is below the \$237 average annual fuel tax paid, electric vehicles pay an estimated \$97 per year less to access NC roads.

A hypothetical uniform access user fee implemented in 2022 of **\$237 per year, or about \$20 per month**, would be revenue neutral at the time of implementation and would offset the loss of revenue from eliminating the current gas tax and all EV fees.

In 2022, the state will collect an estimated \$2.1 billion in gas taxes and EV fees; a uniform access fee of \$237/year on all non-diesel vehicles (gasoline, hybrid, and electric) would generate an estimated **\$2.1 billion annually** (while replacing all gas taxes and EV fees).

2023 access fee calculations

In the fall of 2022, the NC Department of Revenue announced an increase to the motor fuels tax for 2023¹ to 40.5 cents per gallon, adjusting for the energy price changes in the consumer price index. At 40.5 cents per gallon, we estimate the average vehicle will contribute \$251 per year in gas fuels taxes to the state in 2022 based on a constant estimate of VMT and slight increase in fuel efficiency, as projected by the EPA. An access user fee implemented in 2023 would thus be **\$251 per year, or around \$21 per month**, in 2022 dollars, assuming revenue neutrality at the time of implementation.

In 2023, gas taxes are projected to generate an estimated \$2.3 billion in revenue for the state, which represents a slight increase above 2022 levels but remaining below pre-2020 levels of gas taxes paid per vehicle. An access fee implemented in 2023 would generate the same **\$2.3 billion** amount of revenue.

¹ <https://www.ncdor.gov/news/press-releases/2022/11/22/motor-fuels-tax-rate-will-increase-405-cents-per-gallon-2023>

Access User Fees and Vehicle Registration Fees

Vehicle owners currently pay a base rate of \$38.75 per year to register a private passenger vehicle in North Carolina plus additional local taxes and fees; the base amount of \$38.75 works out to just over \$3 per month. An access user fee would be *in addition to* vehicle registration fees.

For ease of payment, NC DMV could consider creating a combined registration fee and access fee charge. If implemented in 2022, in concert with repeal of the state gas tax and EV fees, that would be around \$276 per year (i.e., \$39 + \$237 access fee), or about \$23 per month (i.e., \$3 + \$20 access fee).

Annual revenue impact – 10-year retrospective

A hypothetical scenario can provide potential impacts to annual revenue over the past decade. In 2012, drivers paid an average annual motor fuels tax of \$230 per vehicle, or around \$285 per vehicle in inflation-adjusted 2022 dollars. Compared with 2022 annual fuel tax payments calculation of \$237 above, this \$50 difference represents a 17% drop in annual revenue for each registered vehicle, and thus not collected by the state. The reduction in annual revenue in 2022 has been driven primarily by increases in fuel efficiency and by a gas tax rate that has increased more slowly than the overall rate of inflation. *Note that since 2017, annual adjustments to the gas tax rate are based on state population growth and the energy component of the consumer price index (CPI), which prior to 2022 grew at a slower pace than the overall rate of inflation*². Reduced travel during the prior years of the pandemic was not the only source of declining revenue per vehicle, which will be described in the following paragraphs and sections.

Had an access fee been in place since 2012, the state would have collected between \$1.4 billion and \$2.1 billion in cumulative additional revenue the past decade, assuming periodic inflation adjustments in the access fee rate, since the access fee substantially mitigates revenue risk from both ongoing increases in fleet fuel economy and volatility in vehicle miles traveled due to the pandemic and economic cycles.

If a \$230 access fee had been implemented in 2012, equivalent to the average motor fuels tax paid by drivers that year in 2012 dollars, and subsequently adjusted for inflation every four years (like state vehicle registration fees currently are), drivers in 2022 would now be paying an access fee of \$261/year, or about \$22/month. The increments would have been as follows:

- 2012-15: \$230 annual access user fee
- 2016-19: \$240 annual access user fee
- 2020-23: \$261 annual access user fee

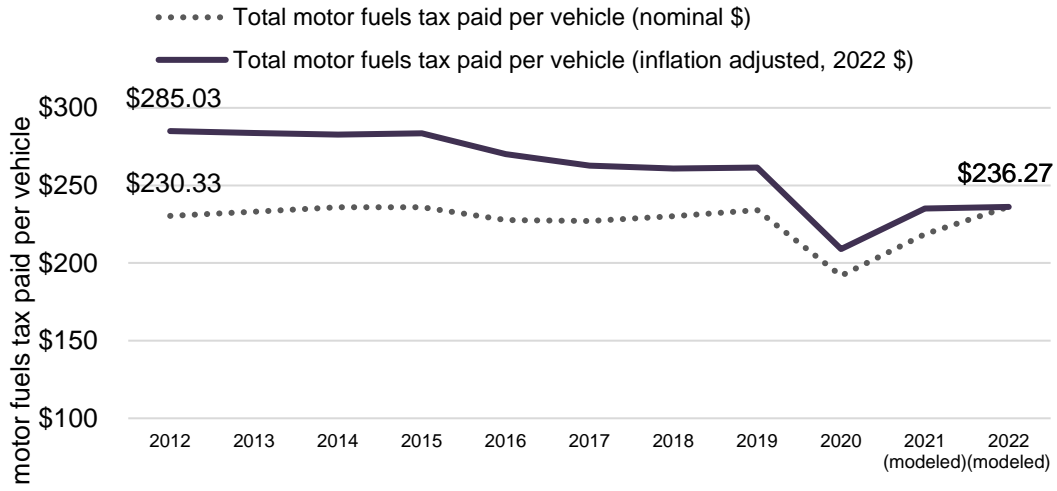
*In 2022 under this scenario, a \$261 annual access fee would be generating \$2.3 billion in annual revenue (compared to \$2.1 billion today with the gas tax), which is a 17% increase. This scenario meets the state requirements for quadrennial CPI-Based inflation adjustment under GS 20-4.02.*³

If a \$230 access fee had been implemented in 2012, and subsequently adjusted annually for inflation (like state gas taxes currently are), drivers in 2022 would now be paying an access fee of \$285/year based on annual inflation adjustments, or about \$24/month. *In 2022 under this scenario, a \$285 annual access fee would be generating \$2.5 billion in annual revenue (compared to \$2.1 billion today with the gas tax).*

² <https://www.ncdor.gov/taxes-forms/motor-fuels-tax/motor-fuels-tax-rates>

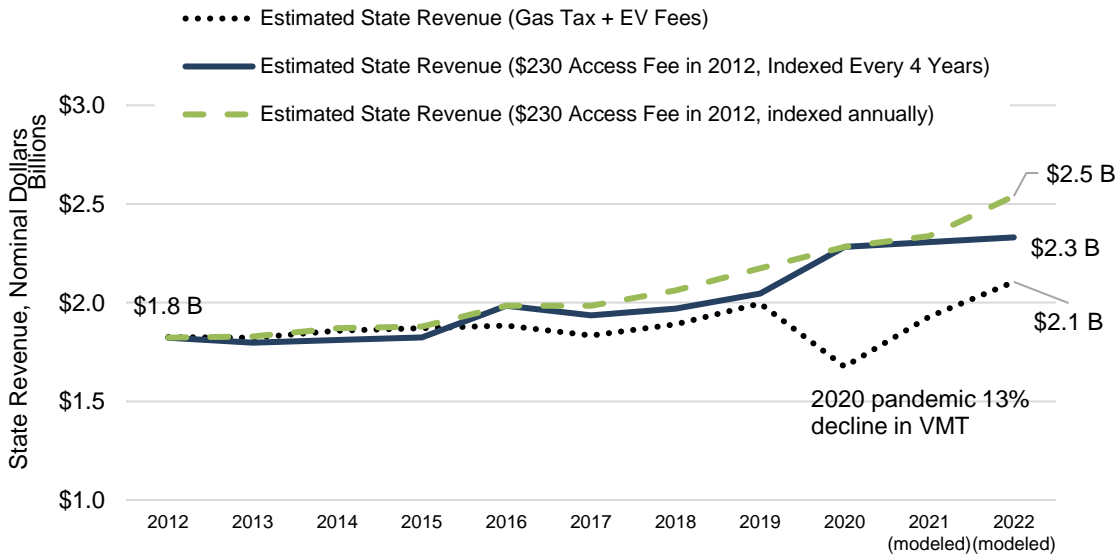
³ https://www.ncleg.gov/EnactedLegislation/Statutes/PDF/BySection/Chapter_20/GS_20-4.02.pdf

Figure 1: Annual Average North Carolina Motor Fuels Tax Paid per Vehicle



Source: FHWA Highway Statistics, Bureau of Transportation Statistics Fuel Efficiency Estimates, NCDOR Motor Fuels Tax Rate. CPI from Bureau of Labor Statistics

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Cumulative Revenue Impact – 10-year Retrospective

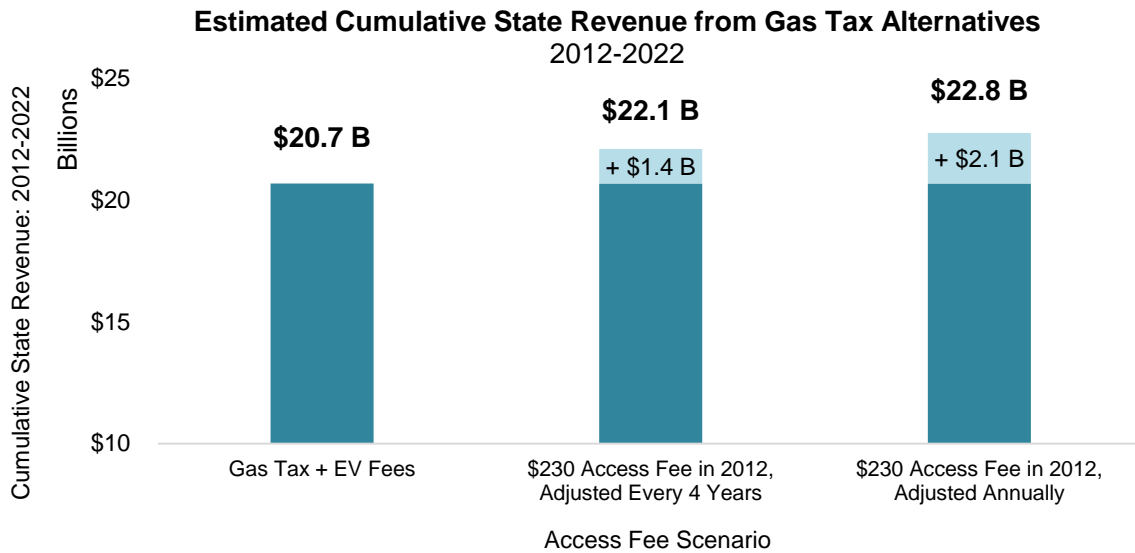
In examining the potential cumulative revenue impact of an access fee, a hypothetical scenario provides potential impacts to state revenue over the past decade. In 2012, drivers paid an average motor fuels tax of \$230 per vehicle. Adjusted for inflation, that would be equivalent to either \$261 or \$285 today, depending on whether inflation adjustments occurred quadrennially or annually.

If a \$230 access fee had been implemented in 2012 (equivalent to the average motor fuels tax paid by drivers that year in 2012 dollars), and subsequently adjusted for inflation every four years like state vehicle registration fees currently are, that would have resulted in a cumulative increase in revenue of \$1.4 billion over the ten-year period compared with revenue from state gas taxes and EV fees paid during that time.

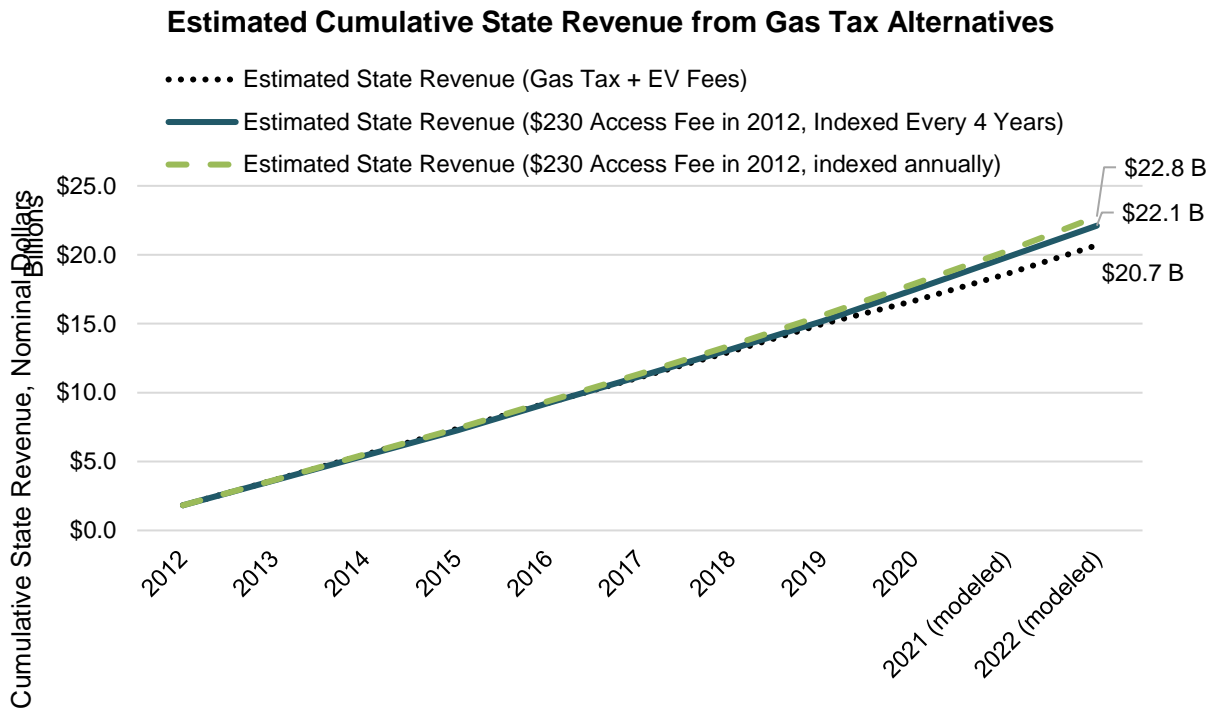
- *In this scenario, drivers in 2022 would now be paying an access fee of \$261/year based on inflation adjustments in 2016 and 2020, or about \$22/month, as noted above.*

If a \$230 access fee in 2012 had been subsequently adjusted for inflation annually like state gas taxes currently are, this would have resulted in a cumulative increase in revenue of \$2.1 billion over the 10-year period from 2012 to 2022 compared with revenue from state gas taxes and EV fees paid during that time.

- *In this scenario, drivers in 2022 would now be paying an access fee of \$285/year based on annual inflation adjustments, or about \$24/month, as noted above.*



Values modeled based on data from Federal Highway Administration, EPA, NCDOR



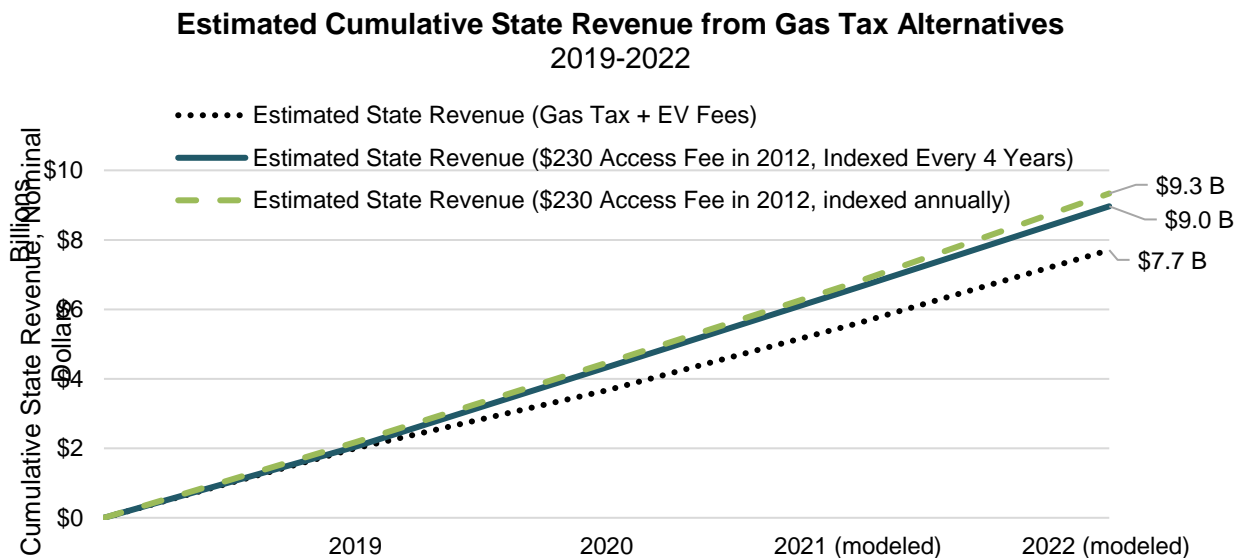
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Cumulative Revenue Impact – Focus on Pandemic Resilience

The above calculations on cumulative impact reflect the revenue resilience of the access fee under conditions of reduced vehicle miles traveled due to a pandemic and/or economic downturn.

Had an access fee been in place prior to 2020 in lieu of a gas tax and adjusted for inflation as described above, the state would have retained between \$400 and \$600 million in lost revenue from the 13% drop in vehicle miles traveled attributed to the COVID-19 pandemic, just during calendar 2020.

Over a four-year period (2019-2022), an access fee would have enabled the state to retain between \$1.3 billion and \$1.6 billion in revenue compared with what we experienced with gas taxes. North Carolina would have received either \$9.0 billion or \$9.3 billion with an access fee in place during that four-year period versus \$7.7 billion under the existing gas tax framework. The specific amount of total or additional revenue retained by an access fee depends on whether the access fee rate was indexed quadrennially (like vehicle registration fees are) or annually (like gas taxes are).



Values modeled based on data from Federal Highway Administration, EPA, NCDOR

Revenue Impact – Gas Price Reductions and Out-of-State Motorists

The access fee proposal generates questions about how much of the savings would be passed on to consumers and how out-of-state vehicles would pay for road use. This is a valid question and worthy of additional investigation. Between 2013 and 2022, various studies estimated the effect of short-term gas tax holidays on prices and cross-border travel, and found that:

- Between **50%** and **87%** of the cost savings of a temporary gas tax reduction were passed on to consumers, with the remainder going to higher prices to wholesalers, higher mileage traveled, and gas stations near state borders raising prices to generate more profit from out-of-state consumers.
- In the case of states with high cross-border travel and different state gas taxes such as Illinois and Indiana, there is little evidence to show that drivers actively go out of their way to cross state lines and buy gas at a lower price – in most cases cross-state gas purchases are a result of existing commuting or travel patterns and not active “price shopping”.

Although not necessarily 100% of savings would get passed on to consumers, eliminating state gas taxes will result in lower retail gas prices at the pump, which could potentially increase sales at convenience stores, generating more state sales tax revenue as drivers are more likely to spend more at convenience stores when gas prices are lower. This could indirectly offset some of the potential “free rider” problem that could result from out of state drivers buying gas in the state or using the state roads without paying the access fee, and in 2022 North Carolina approved 6 percent of sales tax revenue to be dedicated to transportation.

We explore this in more detail in a companion research brief on price effects and out-of-state purchasing. Both research briefs are available via www.letsgetmoving.org/AccessUserFee.