

ELK GROVE COMMUNITY MOBILITY RESILIENCE PLAN WHITE PAPER

# Mobility and Fiscal Resilience Strategy



CITY OF  
**ELK GROVE**

**PREPARED FOR:**  
City of Elk Grove  
8401 Laguna Palms Way  
Elk Grove, CA 95758

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## Elk Grove Community Mobility Resilience Plan White Paper

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# LIST OF ABBREVIATIONS

ACVRP	Autonomous/Connected Vehicles Readiness Plan
AV	autonomous vehicle
CAP	Climate Action Plan
City	City of Elk Grove
CTA	Chicago Transit Authority
DDOT	Washington, DC Department of Transportation
EIR	environmental impact report
EMFAC	EMissions FACtors
PW	Department of Public Works
EV	electric vehicle
kWh	kilowatt-hours
MPG	miles per gallon
SB	Senate Bill
TfL	Transport for London
TNC	transportation network company
ULEZ	Ultra-Low Emission Zone
VMT	vehicle miles traveled

# 1 INTRODUCTION

The United States is currently undergoing a dramatic change in the mobility landscape. Transportation systems in cities have long been designed around single-occupancy vehicle use by residents and visitors. Over the last 5 years, however, there has been a decline in traditional vehicle ownership, and new technologies, including electric vehicles (EVs), ride-hailing applications, and micromobility (e.g., bike/car sharing services) have fueled changes in how people live and get around in their communities. The introduction of autonomous vehicles (AVs) will further impact mobility patterns across the country. California has been at the forefront of this phenomenon. Transportation network companies (TNCs) like Uber and Lyft are based in the San Francisco Bay Area and the State of California has enacted some of the most robust legislation to reduce vehicle emissions and incentivize the purchase and use of EVs.<sup>1</sup>

The City of Elk Grove (City) is currently developing the Community Mobility Resilience Plan (Plan) to prepare for the impacts of climate change, including increased heat and flooding. Alongside these impacts, the Plan is also investigating how the State's efforts to reduce greenhouse gas emissions (e.g., reduce fuel consumption, vehicle miles traveled (VMT), and single-occupancy vehicle use) will affect the City's fiscal health, specifically regarding gas tax and vehicle-related sales tax revenue for the City. This whitepaper evaluates the City's current revenues from vehicle-related sales tax, including vehicle sales as well as maintenance and fuel expenditures, and analyzes how the emerging trends in mobility will impact the City's overall financial standing in the future. The analysis then includes suggested strategies the City can adopt to help mitigate the projected fiscal shortfalls from these changes in the mobility landscape, focusing on innovative measures that are designed to work along with the changing mobility landscape.

The City is home to a large auto mall (Elk Grove Auto Mall) that attracts customers from around the Sacramento region. Due to the regional draw of the Auto Mall and the fact that the 2019 average vehicle sales price was just under \$40,000 (Kelley Blue Book 2019), vehicle-related sales activity is a major contributor to the City budget in the form of sales taxes. In 2018, 38 percent of the City's general fund came from sales tax revenue, 42 percent of which came from vehicle-related sales activities (for comparison, 15 percent of City of Sacramento's general fund came from all general<sup>2</sup> sales tax revenue, inclusive of auto sales and all other retail transaction, in the same year). Figure 1 illustrates these figures.

Sixteen percent of the City's general fund revenue came from vehicle-related sales activity in 2018. Projections show that the City will experience a "revenue ceiling" regarding vehicle related sales tax revenue by 2030. While the City's total population and number of cars in the City are projected to increase--perhaps substantially--the amount of revenue the City will raise from vehicle-related sources is not projected to increase at the same rate and may even decrease. Although the City has experienced decreases in vehicle ownership rates over the past decade, the projected increase in population will still result in a net increase in the number of cars in the City because of existing land use patterns that necessitate vehicle trips.

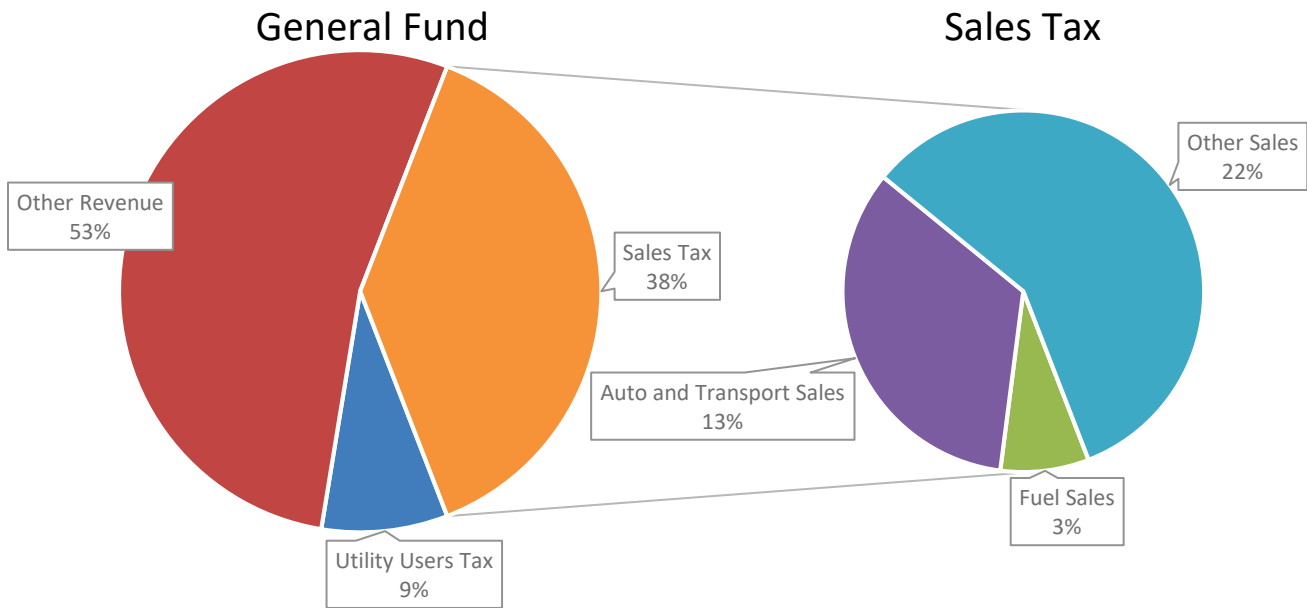
The City has recognized the fiscal vulnerability that is presented by relying heavily on one form of revenue, particularly one that is projected to plateau or diminish in the future. As a result, the City has convened a Fiscal Working Group of stakeholders including economic development specialists, local business owners in auto-related industries, and others to discuss and strategize ways to address the anticipated revenue gap. Many of the costs and indicators used in this analysis are difficult to predict over the long-term, such as gas prices, pace of EV charging infrastructure development/installation, EV charging rates, and the State's ongoing role in encouraging and subsidizing EV purchases. However, as the mobility landscape diversifies and introduces more options, including scooters, electric bikes, and TNCs, there are opportunities for the City to harness revenue sources from changing consumer spending to offset the anticipated reductions in revenue from traditional vehicle-related sources.

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<sup>1</sup> Because of the state's large population and significant air pollution problems, for decades California has set more stringent vehicle emission standards than the federal standards. This status is now being challenged as the federal government is planning to revoke California's waiver under the Clean Air Act. These changes may affect the State's ability to regulate and promote EVs (Young, 2019) and continue these new trends in mobility. Because this decision is still being processed, the analysis presented here assumes that the State will continue to promote aggressive adoption of EVs.

<sup>2</sup> Sacramento levies an additional sales tax beyond the statewide base rate of 1 percent for municipal revenue, which is not counted in the 15 percent figure quoted above. For more information, see the City of Sacramento budget: [http://www.cityofsacramento.org/-/media/Corporate/Files/Finance/Budget/FY20-Approved\\_Final.pdf?la=en](http://www.cityofsacramento.org/-/media/Corporate/Files/Finance/Budget/FY20-Approved_Final.pdf?la=en).

Figure 1 Elk Grove General Fund and Sales Tax Revenue Sources



The following section provides an overview of the anticipated developments in the City’s mobility landscape through 2050. This overview culminates in four scenarios regarding population growth, overall vehicle ownership, changes in VMT, EV ownership, and the adoption of AVs. The scenarios include variations in the aggressiveness of the variables listed above and are described in detail in Section 3. These scenarios are used to estimate changes in revenue and the overall fiscal impact of mobility changes on the City over the next three decades.

This whitepaper further analyzes the existing fiscal strategies the City has undertaken in preparation of a changing fiscal landscape, as well as case studies of other municipal policies that have been proposed or enacted to address vehicle-related revenue shifts. Finally, based on the projected fiscal impact analysis, this whitepaper presents strategy recommendations that the City may use for new forms of revenue generation and changes in land use that may lead to a more resilient local economy and municipal budget.

## 2 METHODOLOGY

This section provides a summary of the methodology and data used for each variable within the fiscal modeling and how these variables were combined to develop the scenarios used in the analysis.

### 2.1 HOUSEHOLDS AND VEHICLE OWNERSHIP

This whitepaper uses two projections for the number of households in Elk Grove and Sacramento County through 2050.<sup>3</sup> The lower projection uses the projected growth rate published as part of the Housing Element included in the City’s General Plan, at 1.3<sup>4</sup> percent per year (City of Elk Grove 2019a), and results in 78,710 total households in 2050, up from 51,350 in 2017 (U.S. Census Bureau 2017). The higher projection follows the historical household growth rate in

<sup>3</sup> Projecting the number of households in Sacramento County is necessary for estimating vehicle purchases due to the regional nature of the auto mall.

<sup>4</sup> The annual percentage change is retrieved from Table 3 on page 12-56 of Elk Grove General Plan published in 2019.

the City between 2005 and 2017, at 2.5 percent per year. At this rate, the projected number of households in the City is 115,763 in 2050, more than double the current number.

These household forecasts are combined with historical trends in vehicle ownership. Between 2005 and 2017, the share of households in the City with no vehicles grew faster than the shares of households with one, two, or more than two vehicles. Based on current trends in Elk Grove, this share is projected to grow from two percent of households in 2005 (U.S. Census Bureau 2005) to eight percent in 2050. Meanwhile, the share of households with two vehicles is shrinking most rapidly, projected to decrease from 48 percent in 2005 to 26 percent in 2050. The two-vehicle households will largely be replaced by one-vehicle households, projected to grow from 19 percent in 2005 to 37 percent in 2050.

Combining the projections in these four segments of vehicle ownership results in an estimated number of total cars in Elk Grove. The lower projection, which uses the lower household growth rate (included in the City's General Plan), results in 155,000 vehicles in 2050, and the higher projection estimates up to 225,000 vehicles in the City by 2050. Currently, the City has an estimated 110,000 cars on the road.

## 2.2 ELECTRIC VEHICLE ADOPTION

In January 2018, then-Governor Jerry Brown unveiled a goal to increase the number of EVs on California roads to 1.5 million by 2025 and five million by 2030 (Rogers 2018). At the time of the announcement, EVs represented about two percent of the total fleet, or 350,000 vehicles, and about seven percent of all new vehicle sales in the State. This represented a 1,000 percent increase in sales from 2011 when EVs made up one-half of one percent of all vehicle sales in California. Furthermore, in 2019, the California Air Resources Board began a study to identify strategies to significantly reduce transportation-related fossil fuel demand and emissions in the state, including transitioning to zero-emission vehicles, as part of the State's goal to achieve carbon neutrality by 2045 (California Environmental Protection Agency 2019). Some California lawmakers have proposed banning the sale of new internal combustion engine vehicles in the State by 2040 (Meza 2017). While the plan to achieve carbon neutrality by 2045 is still forming, and no legislation has been passed banning internal combustion vehicles, the State's efforts discussed above demonstrate the enthusiasm surrounding EVs as a tool in meeting the State's climate goals. These statements demonstrate that State-level regulation in California is likely to be favorable to EVs going forward and are in line with projections that show EV sales reaching 100 percent of new vehicle sales in the state by 2050.

To achieve Governor Brown's goal, the City of Sacramento estimated that the share of households with EVs will need to increase to 35 percent by 2025, with EVs making up 40 percent of all new sales (City of Sacramento 2017).<sup>5</sup> Using historical estimates from the California New Car Dealers Association on EV purchases and statewide projections from industry publication *EV Adoption*, EVs' share of new car purchases in the City is forecast to grow from 5.3 percent in 2017 to 30 percent in 2025, falling just short of Sacramento's goals (EV Adoption 2019). Based on the above trends and projections, all new vehicle purchases in the City are expected to be EVs by 2050, along with 75 to 80 percent of cars on the road. This is consistent with legislative goals, as discussed above.

## 2.3 AUTONOMOUS VEHICLE ADOPTION

Fully<sup>6</sup> autonomous vehicles are still in development, and their future is uncertain. However, a great deal of study has been conducted on what effect they will have on modern mobility systems. Broadly speaking, there are two main effects AVs are expected to have: an increase in VMT, and a decrease in vehicle ownership. The increase in VMT comes from the fact that driving will become less onerous. If it is possible to watch TV, nap, or work remotely while driving, that reduces the disincentive to drive, particularly long distances. The decrease in vehicle ownership comes from the distinct

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<sup>5</sup> Due to the regional nature of the Elk Grove Auto Mall's market area, Sacramento's trends in EV purchasing will be a major influence on vehicle purchase patterns in Elk Grove.

<sup>6</sup> The literature on autonomous vehicles describes a phasing-in of autonomy over five different levels, from sensors that beep and even break when you are too close to the car in front of you, to self-parking abilities and a cruise control that can follow curves in a lane, to full autonomy. For the purposes of this paper, only full autonomy is considered. For more information on levels of autonomy, see the National Highway Traffic Safety Administration's website: <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety>.



possibility that, once cars reach full autonomy, TNCs like Uber and Lyft will be able to run autonomous fleets cheaply. The availability of cheap TNC rides will mean that, for some households, it will make financial sense to forgo car ownership in favor of ridesharing.

The Elk Grove Autonomous/Connected Vehicles Readiness Plan (ACVRP) (City of Elk Grove 2019b) outlines two scenarios of AV adoption. By the year 2040, the ACVRP's aggressive estimate predicts that 60 percent of the vehicle fleet will be considered automated. The ACVRP's conservative estimate reduces the predicted rate of automation to 20 percent. These adoption figures are examined in the context of two other studies related to AVs to understand how the adoption of AVs will impact VMT and vehicle ownership in the City.

The first study examines how AV projections will impact VMT by using a travel choice model (FP Think 2018). Given that AV technology is currently in its early stages, the study models two different scenarios to inform potential VMT effects resulting from AV adoption. The first scenario assumes no additional regulation incentivizing ridesharing. In this scenario, single occupancy trips increase 21 percent and VMT increases by an average of 31 percent above current levels. The second scenario assumes regulation incentivizing ridesharing in conjunction with the adoption of AV technology.<sup>7</sup> This scenario predicts VMT increasing only 7 percent above current levels and single occupancy vehicle trips decreasing by 29 percent below current levels.<sup>8</sup>

The second study also looks at changes in VMT and vehicle ownership anticipated with AV technology, focusing on a largely suburban area. The travel model (similar to the one described above) used in the study projects a decrease of 10 percent in vehicle ownership, and an increase of 30 percent in VMT (Wenwen 2018). This study assumes that a large portion of TNC rides will be shared rides.<sup>9</sup>

While AV adoption is forecast to increase VMT and decrease vehicle ownership, these impacts are sensitive to regulations and incentives that will be defined as this market matures. To manage this complexity, we incorporate assumptions around AVs in a manner that reflects an upper and lower bound of impacts. For the outward bound of impacts based on the above studies, this whitepaper assumes that AVs will increase VMT by 31 percent and decrease vehicle ownership by 9.5 percent. Only certain scenarios incorporate these assumptions; see Section 3 for details on which scenarios incorporate which assumptions.

## 2.4 MODEL STRUCTURE

The model developed for this analysis uses the following steps to project sales tax, gas tax, and utility users tax revenue through 2050.

### 2.4.1 Vehicle Fleet

Projections on the number of households and the number of vehicles per household, as discussed in Section 2.1, are used to estimate the total size of the vehicle fleet each year through 2050. Even though the average number of vehicles per household is going down slightly, household growth outpaces it, meaning the vehicle fleet is expected to increase

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<sup>7</sup> The current dialogue in transportation and environmental planning around AVs is largely focused on harnessing the technology to achieve environmental and transportation goals. This includes reducing VMT (and therefore traffic and emissions), reducing the need for parking (thereby allowing more intensive use of land, which also reduces VMT), and reducing the need for vehicle ownership by increasing mobility options (which benefits those who cannot afford to purchase cars). The first scenario in this study is included as a baseline, while the second is included to show what a well-structured regulatory approach may be able to accomplish. By incentivizing ridesharing, households are more willing to forgo car ownership, as discussed at the beginning of this section. Once households no longer own cars, the marginal cost of driving (via TNC) relative to other forms of transportation (such as walking, biking, or public transit) becomes higher, incentivizing non-auto forms of transportation. While this transition away from vehicle trips would not work for many households, the transportation choice models show that there are enough households who would follow a pattern like this to make a dent in anticipated vehicle sales and VMT (FP Think, 2018).

<sup>8</sup> The decrease in single occupancy vehicle trips is due to an increase in multiple occupancy vehicle trips as TNCs and theoretical regulation facilitate and encourage shared trips.

<sup>9</sup> Shared rides already exist through both Uber and Lyft, but the large distances between pickups and drop-offs in suburban environments means that a shared ride typically add a considerable amount of time relative to driving or taking a direct ride. As TNC use grows (see discussion above), the increasing volume of pickup and drop-off locations will cluster them closer together, making shared rides more attractive.

through 2050. The model derives the number of vehicle purchases each year from both the increase in total fleet size and a vehicle turnover rate of 5.8 percent<sup>10</sup> on existing combustion engine vehicles. Starting in 2011, historical sales data from the California New Car Dealers Association combined with projections from *EV Adoption* inform the percentage of new vehicle purchases that are anticipated to be EVs. As the number of EVs grows over time, the EV percentage of the total fleet also increases.

EVs last longer than internal combustion engine vehicles and require less repair and maintenance over the lifetime of the vehicle (Kljaic 2018). The average EV is expected to last roughly 60 percent longer than an internal combustion engine vehicle (Clarke 2018). As a result, the model estimates turnover of EVs separately from combustion vehicles.

## 2.4.2 Vehicle Purchases

The number of vehicle purchases estimated in the previous section is used to determine the amount of spending on auto purchases. Vehicle purchases are based on consumers in Sacramento County, because of the regional pull of the Elk Grove Auto Mall. County and City taxable spending data (California Department of Tax and Fee Administration) were used to determine the percentage of county-wide spending resulting from auto purchases in Elk Grove, and then historical sales tax data was used to determine the spending per vehicle purchase. The model estimates that each new vehicle purchase generates roughly \$60,000 in taxable sales.<sup>11</sup> Note that this figure does not represent the average price of a car, but rather the average amount of spending in the “auto and transport sales” industry per new car sold, which includes things like maintenance and repair in addition to car sales.

## 2.4.3 Vehicle Miles Traveled

VMT is used to determine gasoline and electricity consumption, which affects sales tax, gas tax, and utility users tax revenue. The Environmental Impact Report (EIR) developed for the City’s recent General Plan update includes a baseline for current citywide annual VMT as well as projections for future increases in VMT. Importantly, the EIR notes that while VMT is projected to increase as the City grows, per capita VMT is projected to decrease because of increased efficiency for future land use development. Some scenarios used in the modeling include a higher VMT based on induced VMT associated with AV adoption (see Section 2.2) and other scenarios use a lower VMT based on VMT reduction strategies included in the City’s Climate Action Plan (CAP). All VMT projections, however, are based on the initial VMT projection from the City’s General Plan.

To project gasoline and vehicle-related electricity consumption, the VMT for each year was divided between the percent of the vehicle fleet in that year that is expected to be electric and the percent expected to use combustion engines (see Section 2.4.1).

## GASOLINE CONSUMPTION

For the portion of VMT expected to be traveled by combustion engine vehicles, the average miles per gallon (MPG) for the fleet on the roads was predicted using the California Air Resources Board Emissions FACTors (EMFAC) model. EMFAC predicts the average MPG for the total fleet of cars in circulation in Sacramento County, and this MPG is used to estimate the total gasoline consumption of cars in Elk Grove. The model assumes that Elk Grove’s average MPG, not including EVs, will be the same as Sacramento County’s.

State-level data on historic gasoline prices (United States Energy Information Administration 2019) was used to create an initial estimate of fuel sales tax revenue. This initial estimate was then compared with actual gasoline sales tax revenue in Elk Grove for the years in which there is both real data and a model output. From that comparison, the model approximates the gasoline consumption not resulting from vehicles belonging to residents of Elk Grove. This would include people driving through town on the 5 or the 99 and stopping for gas along the way, commercial users,

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<sup>10</sup> The 5.8 percent vehicle turnover rate represents the percentage of vehicles that are completely decommissioned each year; in other words, the percentage of cars that are replaced by new car purchases. This figure comes from study on vehicle recycling by Argonne National Laboratory.

<sup>11</sup> 2019 dollars

etc. The ratio between predicted sales and actual sales was used to adjust gasoline consumption projections through 2050. The adjusted gasoline sales estimate was combined with anticipated changes in gas price through 2050 (United States Energy Information Administration 2019) to predict future fuel sales tax revenue, along with gas tax revenue. See Section 4.2 for a description of the difference between gasoline sales tax and gas tax.

## ELECTRICITY CONSUMPTION

For the portion of VMT expected to be traveled by EVs, the average energy efficiency of the EV fleet was estimated at 30 kilowatt-hours (kWh) per 100 miles (U.S. Department of Energy 2019). Using current electricity prices in Sacramento County from Sacramento Municipal Utility District, indexed to a federal prediction of future electricity prices through 2050 (United States Energy Information Administration, 2019), and incorporating the adjustment for non-residents discussed above under Gasoline Consumption, the model predicts electricity usage and utility users tax revenue from EVs through 2050.

# 3 MOBILITY SCENARIOS

Forecasting the future is a complex process, and because of a lack of perfect knowledge about future conditions, uncertainty must be managed by assessing the key drivers of change under a range of scenarios. In this case, scenarios were selected that represent the extreme ends (highs and lows) of two major factors (Table 1): VMT and vehicle ownership.

- Scenario 1.** Individual Autonomous TNCs: VMT will increase, and vehicle ownership will decrease
- Scenario 2.** Personal AV Ownership: VMT will increase, but vehicle ownership will not be affected by AVs
- Scenario 3.** Shared Autonomous TNCs: vehicle ownership will decrease, but VMT will not be affected by AVs<sup>12</sup>
- Scenario 4.** Business as Usual: neither vehicle ownership nor VMT will be affected by AVs

**Table 1 Scenario Construction**

		Vehicle Ownership	
		<i>Decrease</i>	<i>No effect from AVs</i>
VMT	<i>Increase</i>	<b>Scenario 1, Individual Autonomous TNCs:</b> VMT will increase, and vehicle ownership will decrease	<b>Scenario 2, Personal AV Ownership:</b> VMT will increase, but vehicle ownership will not be affected by AVs
	<i>No effect from AVs</i>	<b>Scenario 3, Shared Autonomous TNCs:</b> vehicle ownership will decrease, but VMT will not be affected by AVs	<b>Scenario 4, Business as Usual:</b> neither vehicle ownership nor VMT will be affected by AVs

To capture the full range of possibilities, Scenario 1, Individual Autonomous TNCs, and Scenario 2, Personal AV Ownership, which have a higher VMT, do not incorporate VMT reductions from strategies included in the CAP. Scenario 3, Shared Autonomous TNCs, and Scenario 4, Business as Usual, which have a lower VMT, do incorporate VMT reductions from the CAP. Similarly, Scenario 1, Individual Autonomous TNCs, and Scenario 3, Shared Autonomous TNCs, which have lower vehicle ownership, use the lower growth projection described in Section 2.1 to provide the lowest possible estimate for vehicle purchasing. Scenario 2, Personal AV Ownership, and Scenario 4, Business as Usual, which have higher vehicle ownership, use the higher growth projection from Section 2.1 to represent the highest possible estimate for vehicle purchasing.

It should be noted that these scenarios are examined to understand the most extreme potential impacts of these conditions, rather than as balanced forecasts of the underlying conditions (e.g., Scenario 1, Individual Autonomous TNCs, seeks to examine the full potential impact of AVs, which includes the potential for increased VMT. Increased VMT

<sup>12</sup> The title of this scenario references the fact that one way in which TNC growth could moderate VMT growth is by encouraging shared rides (such as Uber Pool and Lyft Line).

is a component of the scenario construction, included to understand what broader economic conditions could result from large-scale AV adoption--though it is most likely that policy interventions would constrain VMT growth).

### 3.1 SCENARIO OVERVIEW

Each of the four scenarios examined is profiled here in relation to the other scenarios. Each scenario was constructed to consider changes in the City’s key fiscal drivers and to represent an outer boundary of impact resulting from significant changes in each key driver with and without AVs.

Scenario 1, Individual Autonomous TNCs, and Scenario 2, Personal AV Ownership, represent “autonomous traffic”: the idea that AVs will make driving so easy and undistruptive to the passenger that people will more frequently drive long distances, thereby increasing VMT significantly and creating or exacerbating traffic problems. Scenario 1, Individual Autonomous TNCs, and Scenario 3, Shared Autonomous TNCs, represent “mobility as a service”: the idea that AVs will make ridesharing so cheap that a portion of households will no longer own cars and instead use TNCs to get around. Scenario 4, Business as Usual, does not incorporate any anticipated impacts from AVs.

Table 2 shows the estimated number of vehicles and VMT in the City by 2050 for each scenario.

**Table 2 Vehicle and VMT Estimates by Scenario**

Scenario	Vehicles in Elk Grove	Vehicle Miles Traveled (VMT) in Elk Grove
Current Estimate (2018)	110,000 vehicles	4 million miles per day
Scenario 1, Individual Autonomous TNCs (2050)	140,000 vehicles	12 million miles per day
Scenario 2, Personal AV Ownership (2050)	225,000 vehicles	12 million miles per day
Scenario 3, Shared Autonomous TNCs (2050)	140,000 vehicles	9 million miles per day
Scenario 4, Business as Usual (2050)	225,000 vehicles	9 million miles per day

## 4 FISCAL IMPACTS

There are three main revenue streams for the City that are likely to be affected by the adoption of EVs and AVs: sales tax (both general sales tax and restricted Measure A<sup>13</sup> sales tax), gas tax, and utility users’ tax. Sales tax is the largest of those revenue sources, generating \$27 million of revenue for the City in 2018, \$11 million of which came from vehicle-related sources.

EV and AV adoption will decrease sales and gas tax revenue but increase utility users tax revenue. Population growth, vehicle ownership projections, EV adoption, and AV adoption affect the projected taxable spending on vehicle purchase and maintenance, which affects sales tax and Measure A revenue. Existing VMT projections, which are affected by CAP measures and AV adoption, along with EV adoption, affect the amount of fuel and electricity purchased, which affects all three revenue sources.

<sup>13</sup> Measure A is a one-half percent sales tax in Sacramento County, originally approved by voters in 1988 and renewed by voters in 2004. Measure A funds are reserved for transportation expenses, and although they are controlled by the county transportation authority, some funds are distributed to cities, including Elk Grove. Elk Grove uses its Measure A revenue to fund a significant portion of its road maintenance budget. For more information, see the Sacramento Transportation Authority website: [http://www.sacta.org/p\\_measurea.html](http://www.sacta.org/p_measurea.html).

## 4.1 SALES TAX

### 4.1.1 Background

Sales taxes (both general and Measure A) support two main parts of the City's budget: the general fund and the Department of Public Works (PW) operations and maintenance (O&M) budget.

The general fund is the core of the City's budget, as it is the unrestricted fund and can be used with discretion when each annual budget is written. The City uses it for expenses such as the Police Department, general administration, and other needs that do not have a dedicated revenue stream (City of Elk Grove 2019c).

The PW O&M budget does not receive any general sales tax revenue but receives Measure A revenue, a sales tax dedicated specifically for road maintenance and some road-related capital expenditures. The O&M budget is primarily dedicated to keeping roads and other fixed infrastructure, including stormwater drainage systems, in working condition. PW's O&M budget consists entirely of restricted funds and does not currently receive any general fund subsidy. Because drainage has its own dedicated revenue stream in the PW O&M budget, this analysis considers road maintenance to be the main subject for Measure A funds.

As shown in Figure 2, sales tax makes up a plurality of general fund revenue at 38 percent.<sup>14</sup> Measure A makes up a smaller, but still significant, portion of PW O&M revenue at 20 percent (see Figure 3).<sup>15</sup> Note that the remainder of the figures in this section show general fund sales tax revenue, but Measure A revenue will follow the same trend.

Due to the significant portion of the City budget coming from sales tax revenue, decreases in sales tax revenue could have substantial implications for the City if they are not recaptured through other revenue streams.

Forty-two percent of sales tax revenue in Elk Grove comes from vehicle-related sources, as shown in Figure 4. Of the City's top 25 sales tax producers, only eight are not related to vehicle sales or purchase of fuels. Note that sales tax on gasoline sales is different from "gas tax" revenue; more information on this in the Gas Tax section below (City of Elk Grove 2019c). This leaves a sizeable portion of the City's sales tax revenue subject to changes in spending patterns brought on by EVs and AVs, as well as CAP-related VMT reductions.

The remainder of this section discusses the projected sales tax deficit through 2050, and subsequent sections discuss fiscal impacts to the gas tax and utility users' tax.

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<sup>14</sup> The primary contributors to the City's general fund other than sales and utility users taxes are property tax (including the vehicle license fee in-lieu property tax share and the Police Services Mello Roos district), the transient occupancy tax, and franchise fees.

<sup>15</sup> The 50 percent of the O&M budget that comes from "other" is largely drainage fees, along with community facilities districts and other local maintenance districts.

Figure 2 Elk Grove General Fund Revenue by Source

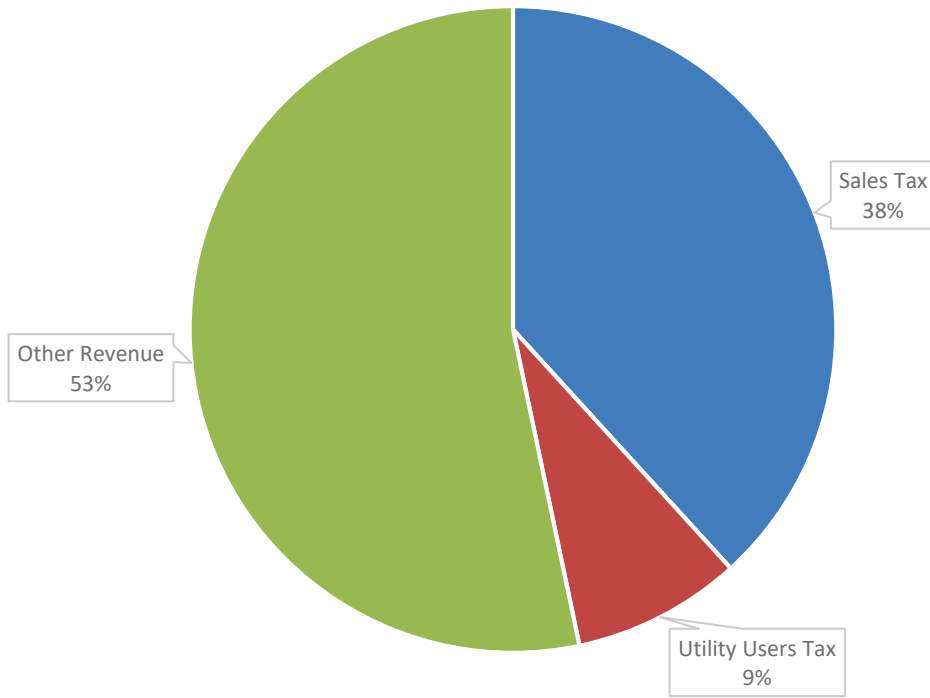


Figure 3 Elk Grove DPW Operations and Maintenance Revenue by Source

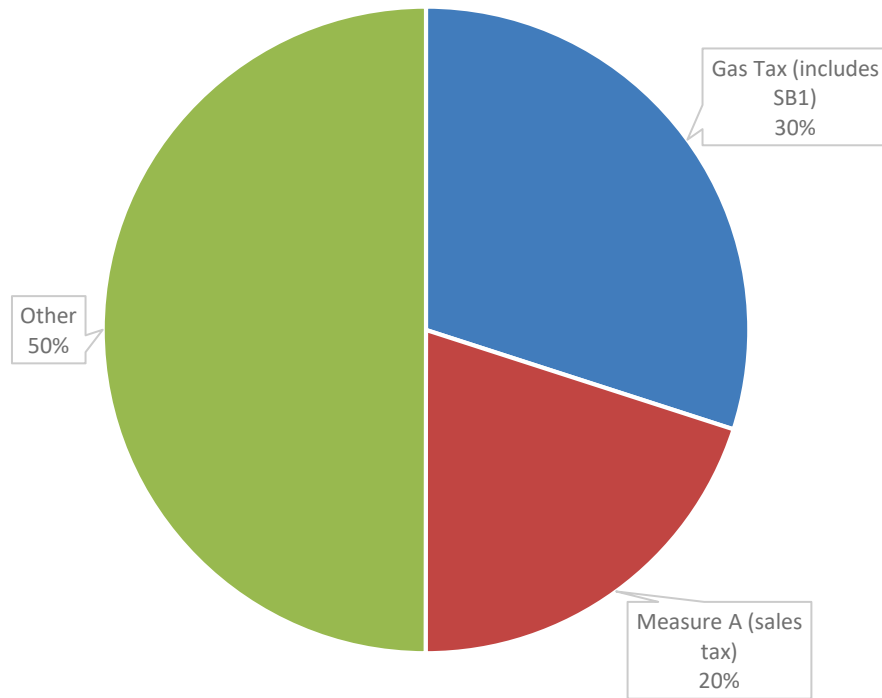
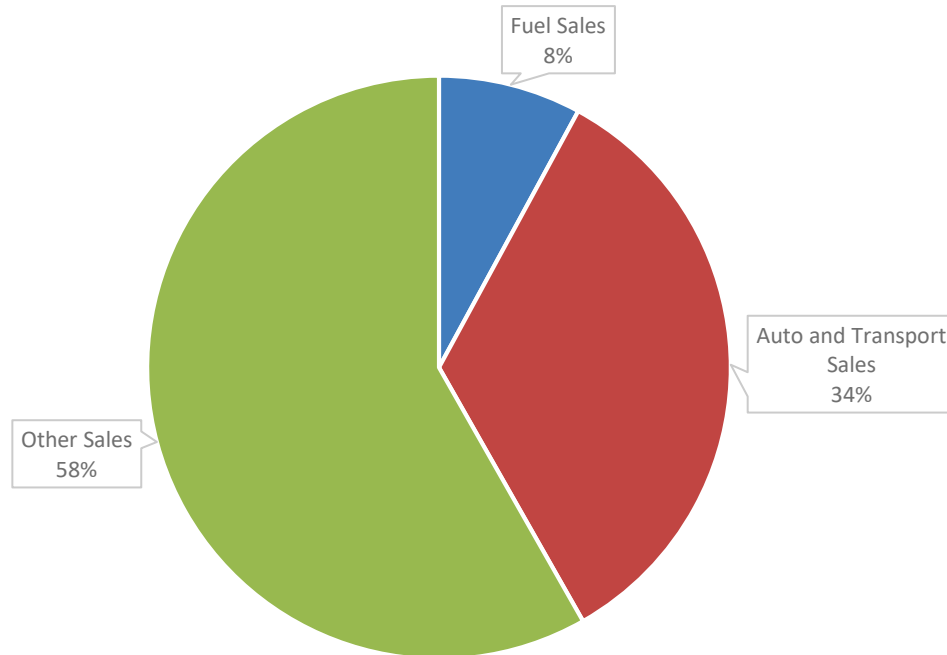


Figure 4 Elk Grove Sales Tax Revenue by Source



### 4.1.2 Fuel Sales Tax Findings

Although EVs’ use of electricity instead of gasoline generates some revenue from the utility users’ tax (discussed in the Utility Users Tax section below), electricity sales do not generate sales tax like fuel sales. As EVs’ market share grows, sales tax revenue from gasoline sales is expected to decline dramatically over the next 30 years. This will compound with the decline in sales tax revenue from vehicle sales as EVs last longer (discussed below).

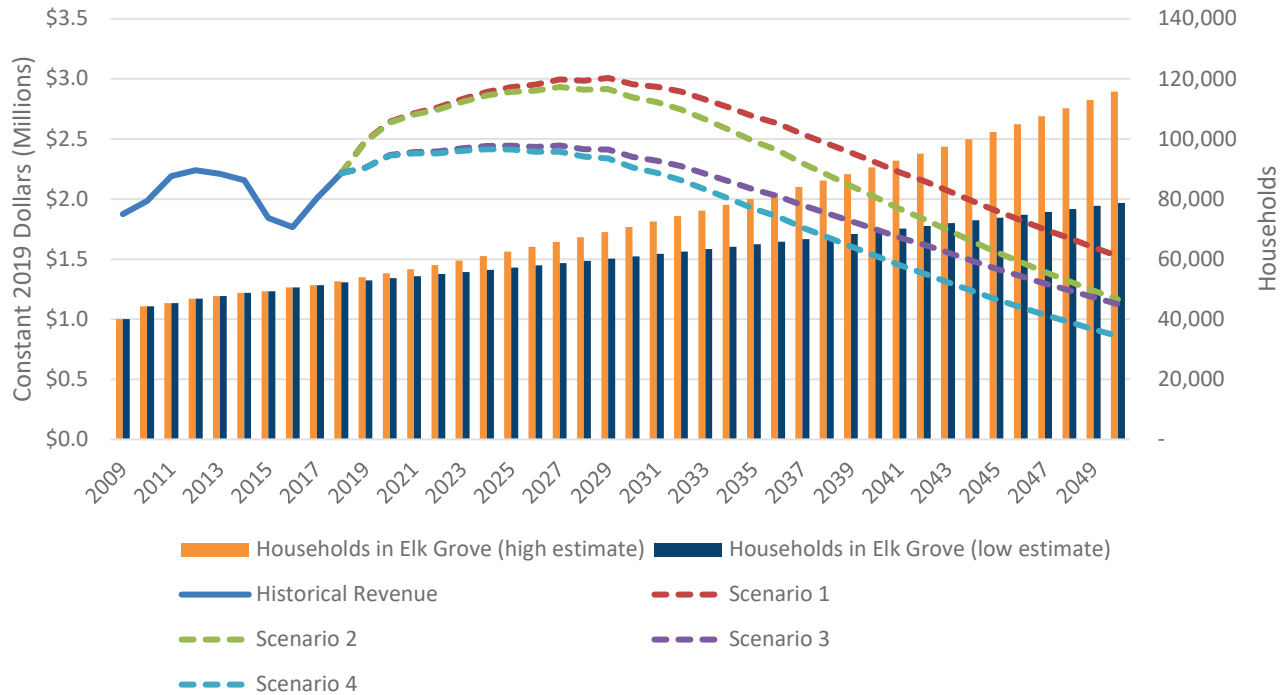
To examine sales tax impacts to 2050, revenues from fuel, auto and transportation-related sales are examined using the four scenarios described in Section 3. Scenario 2, Personal AV Ownership, and Scenario 4, Business as Usual, involve higher vehicle purchasing, and therefore faster EV adoption than Scenario 1, Individual Autonomous TNCs, and Scenario 3, Shared Autonomous TNCs.

Fiscal impacts under each scenario are illustrated in When combined with the higher VMT in Scenario 1, Individual Autonomous TNCs, and Scenario 2, Personal AV Ownership, fuel sales tax revenue is projected to be 31 percent (Scenario 1, Individual Autonomous TNCs,) to 61 percent (Scenario 4, Business as Usual,) below current levels by 2050.

Figure 5. Scenario 1, Individual Autonomous TNCs, assumes the highest VMT estimate and the slowest transition to EVs, which yields the highest estimate of gasoline sales tax revenue. Scenario 2, Personal AV Ownership, uses the higher VMT estimate that drives an initial revenue increase, but retains the faster transition to EVs, resulting in more rapid decrease in revenue than Scenario 1, Individual Autonomous TNCs. Scenario 3, Shared Autonomous TNCs, also uses the slower transition to EVs, but the lower VMT estimate produces lower tax revenue in the beginning. By 2050, the lower number of EVs in Scenario 3, Shared Autonomous TNCs, brings its gasoline consumption closer to Scenario 2, Personal AV Ownership. Scenario 4, Business as Usual, shows the most rapid decrease in gasoline sales tax revenue because it involves the highest vehicle purchasing rate, and therefore the fastest transition to an electric fleet, combined with the low-end VMT estimate.

When combined with the higher VMT in Scenario 1, Individual Autonomous TNCs, and Scenario 2, Personal AV Ownership, fuel sales tax revenue is projected to be 31 percent (Scenario 1, Individual Autonomous TNCs,) to 61 percent (Scenario 4, Business as Usual,) below current levels by 2050.

**Figure 5 Elk Grove Projected Fuel Sales Tax Revenue**



### 4.1.3 Auto and Transport-related Sales Tax Findings

One of the results from a transition to EVs that has implications for auto and transport-related sales taxes is that EVs are expected to last roughly 60 percent longer than internal combustion engine vehicles and require less repair and maintenance over the lifetime of the vehicle (Kljaic 2018). This means vehicle owners will not need to replace their cars as frequently; see Section 2.4.1 for additional discussion. Although EV batteries wear out and need to be replaced, they are the only engine component requiring significant regular maintenance in an EV (Clarke 2018). Compounding this trend is the possibility that, as discussed in Section 2.3, AVs will make it possible for households to have fewer cars. Together, these factors will cause a decrease in spending on vehicle purchasing, as well as the associated maintenance.

As The City currently receives approximately \$180 in auto and transport sales tax revenue per household per year. By 2050, that number is expected to decrease to between \$60 and \$140 in auto and transport sales tax revenue per household per year (in 2019 dollars). See Figure 7 for a year by year forecast.

Figure 6 shows, revenue from auto and transport sales tax is not expected to decline as steeply as fuel sales tax revenue (When combined with the higher VMT in Scenario 1, Individual Autonomous TNCs, and Scenario 2, Personal AV Ownership, fuel sales tax revenue is projected to be 31 percent (Scenario 1, Individual Autonomous TNCs,) to 61 percent (Scenario 4, Business as Usual,) below current levels by 2050.

Figure 5). Although households will replace their vehicles less frequently and the number of vehicles per household is expected to decrease, population growth in the region will partially offset the impact of decreased vehicle replacement and vehicles per household. Due to the population growth expected in the City, the number of households and total vehicles, as well as the associated demands on City services and road maintenance, will continue to increase.

The City currently receives approximately \$180 in auto and transport sales tax revenue per household per year.<sup>16</sup> By 2050, that number is expected to decrease to between \$60 and \$140 in auto and transport sales tax revenue per household per year (in 2019 dollars). See Figure 7 for a year by year forecast.

<sup>16</sup> Taxable sales data was received from the City's Finance Office in an email on Thursday, August 1, 2019.



Figure 6 Elk Grove Projected Auto and Transport Sales Tax Revenue

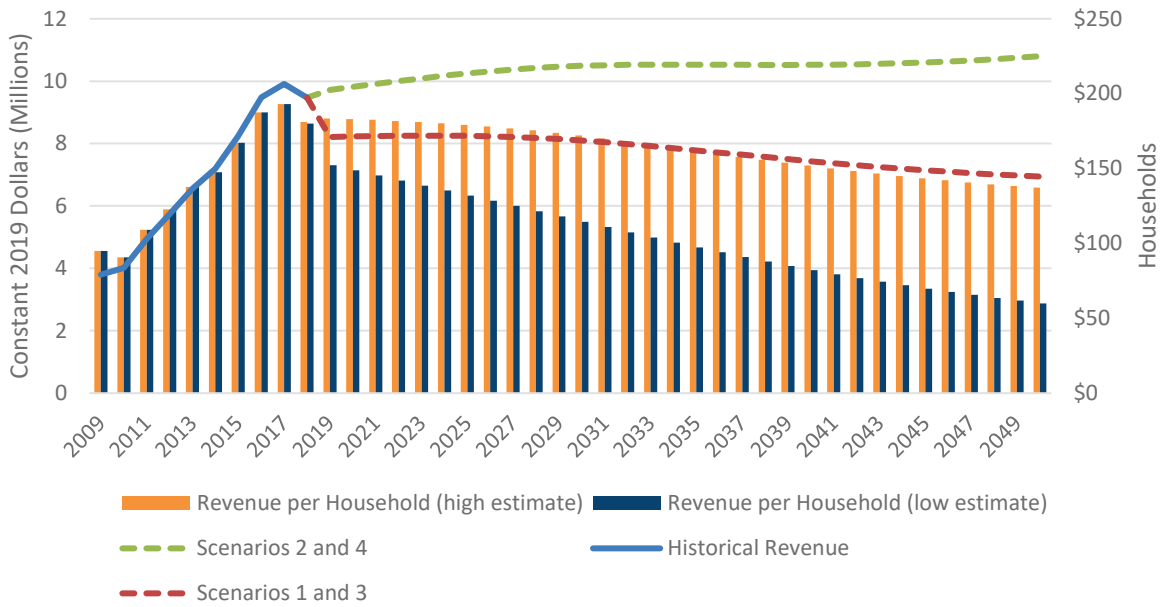
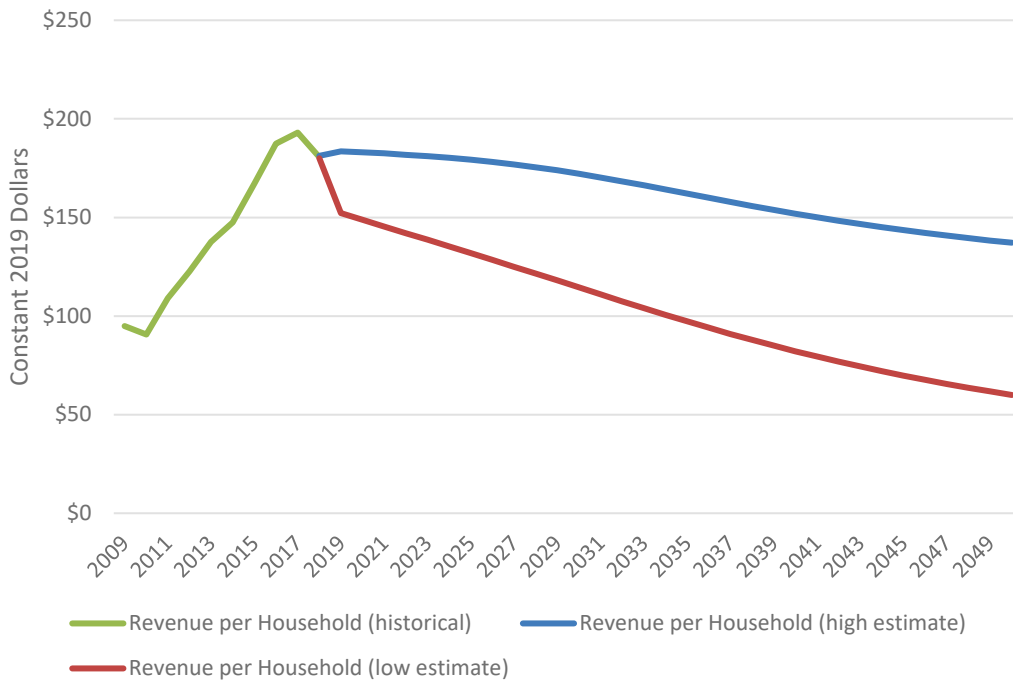


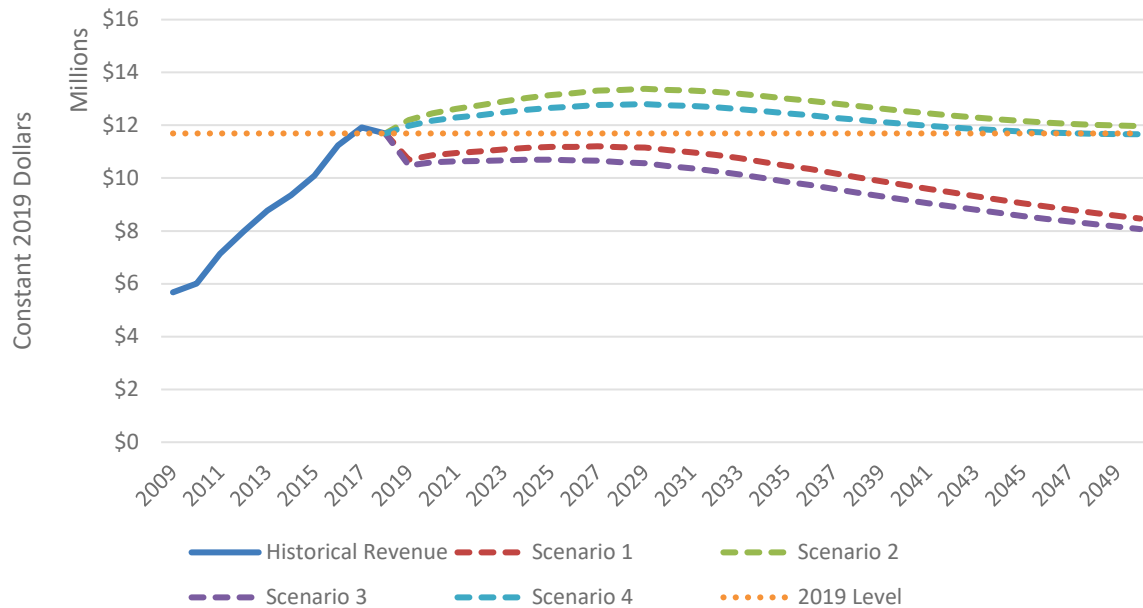
Figure 7 Elk Grove Projected Auto and Sales Tax Revenue per Household



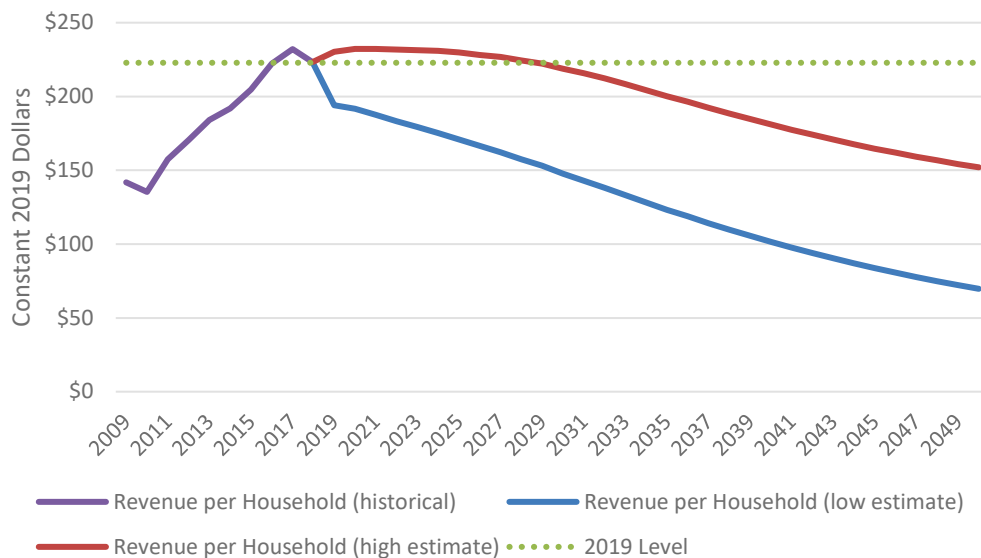
## 4.1.4 Combined Sales Tax Findings

Overall, vehicle-related sales tax revenue for the City is expected to either plateau or reduce slightly over the next 30 years in every scenario examined, as shown in Figure 8. However, in Scenario 2, Personal AV Ownership, and Scenario 4, Business as Usual, plateauing revenue assumes rapid population growth, which means that although total revenue may not be decreasing, sales tax revenue per resident household, or per car on the road, will drop significantly. See Figure 9 for a visual depiction of the impact of population growth on vehicle-related sales tax per household. Even at the upper edge (calculated using Scenario 2, Personal AV Ownership, combined with the low household estimate), revenue per household in 2050 is expected to be below 2011 levels.

**Figure 8 Vehicle-Related Sales Tax Revenue in Elk Grove**



**Figure 9 Vehicle-Related Sales Tax Revenue in Elk Grove, per Household**



## 4.2 GAS TAX

### 4.2.1 Background

In addition to sales tax on fuel sales, the State imposes an excise tax on fuel sales known as the gas tax. The gas tax is a flat per-gallon fee imposed on gasoline sales, which adjusts each year with inflation. California's adoption of Senate Bill (SB) 1 in 2017 increased the gas tax and introduced an annual increase to match inflation. This analysis incorporates the new, higher gas tax rate imposed by SB 1.<sup>17</sup> Currently, the total gas tax collected by the State is \$0.473 per gallon (California Department of Tax and Fee Administration n.d.). However, only a fraction of that goes to the City. Gas tax is collected at the State level and then distributed to municipalities based on their population and road network size.<sup>18</sup>

### 4.2.2 Findings

Figure 10 shows the projected gas tax revenue for Elk Grove through 2050. The trend is similar to the projected fuel sales tax revenue in When combined with the higher VMT in Scenario 1, Individual Autonomous TNCs, and Scenario 2, Personal AV Ownership, fuel sales tax revenue is projected to be 31 percent (Scenario 1, Individual Autonomous TNCs,) to 61 percent (Scenario 4, Business as Usual,) below current levels by 2050.

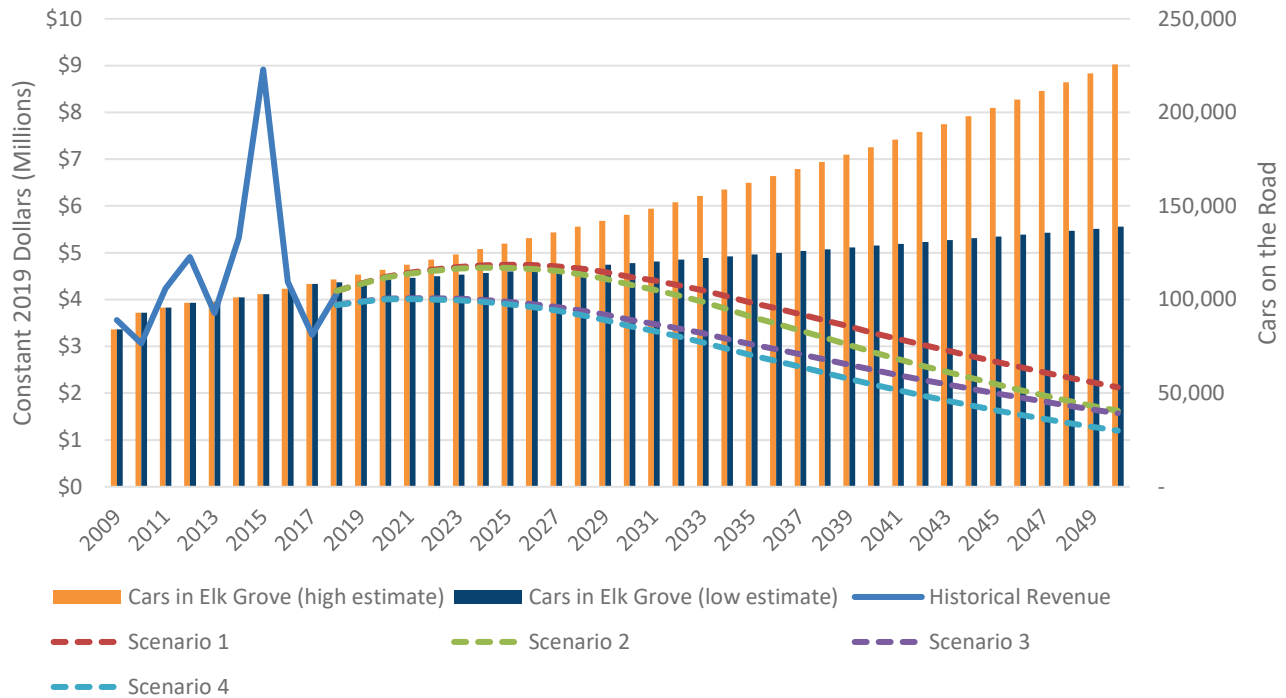
Figure 5 but reaches its peak sooner since it is a flat tax and is not affected by projected increases in the cost of fuel. It is possible that the State will raise the gas tax beyond inflation, but that is outside of the City's control.

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<sup>17</sup> SB1 raised the gas tax and annual vehicle registration fees, which all goes to the State government initially. In addition to the pass through that comes to the City discussed above, the revenues also fund grant programs which may mean additional money to the City. However, because grant programs are competitive and unpredictable, they are not included in the above model. Grants are currently awarded out of a flat annual appropriation that is unlikely to fluctuate with changes in SB 1 revenue. For more information, see <https://catc.ca.gov/programs/sb1/local-streets-roads-program>.

<sup>18</sup> The model assumes that trends in Elk Grove gas sales will mimic statewide gas sales trends and that Elk Grove's share of the State population and road network size will remain roughly the same over time or change proportionately to each other.

**Figure 10 Gas Tax Revenue in Elk Grove**



As shown in Figure 3 (see Section 4.1.1), the gas tax represents 30 percent of PW’s O&M budget. By 2050, gas tax revenue is projected to be 50 percent (Scenario 1, Individual Autonomous TNCs) to 70 percent (Scenario 4, Business as Usual) below current levels. This will result in a sizeable deficit in funding for road maintenance in Elk Grove. Although EVs do not generate gas tax revenue, they drive on the roads like any other car, causing wear and tear as well as congestion. The projected shortage of O&M funding will mean either a deterioration in road quality as PW loses funding or a deterioration in other City services as the general fund is used to subsidize the losses in PW’s budget. The existing utility users tax, discussed in the next section, will offset this effect to a certain extent, but it is not forecast to be enough to fully make up the loss in gas tax revenue.

## 4.3 UTILITY USERS TAX

### 4.3.1 Background

The Elk Grove Utility Users Tax is a 2.25 percent<sup>19</sup> tax on most common household utilities, such as telephone, electricity, gas, sewer, and video services. EVs consume a significant amount of electricity and therefore will cause an increase in utility users tax revenue from the additional electricity consumption. As shown in Figure 2, revenue from this tax goes into the general fund, currently making up 9 percent of total general fund revenues.<sup>20</sup>

### 4.3.2 Findings

As EVs become more common, electricity consumption will increase as more households and visitors use electricity to power their vehicles instead of gasoline. However, it is unlikely that increases in utility users tax revenue from increased consumption will offset losses in fuel sales tax revenue.

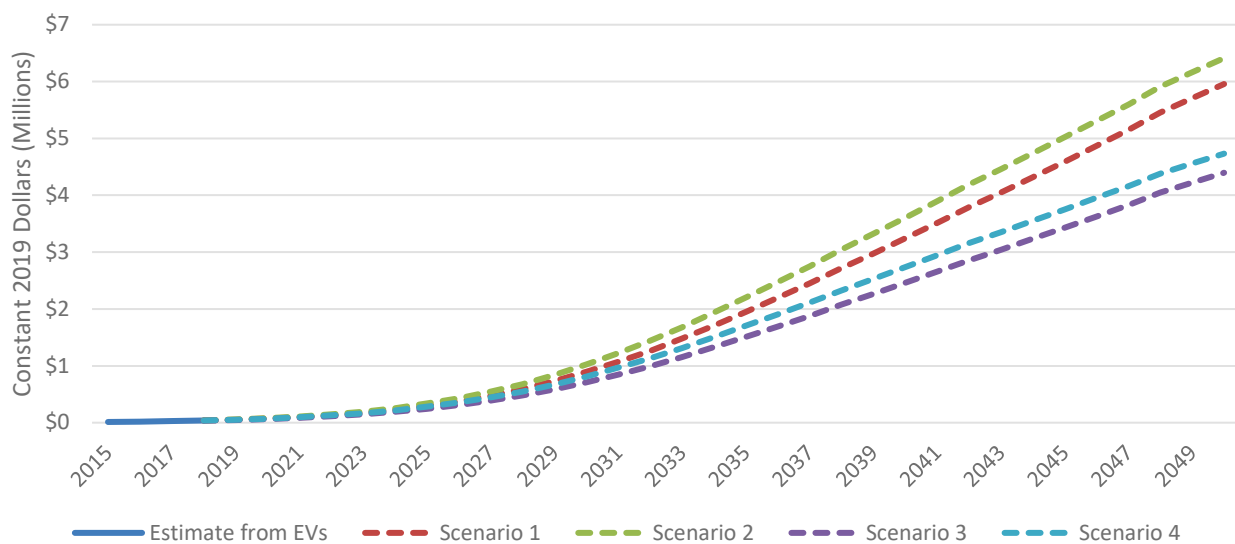
<sup>19</sup> The tax rate on prepaid wireless services is 1.5 percent. For more information, see [http://www.uutinfo.org/uutinfo\\_city\\_info/elk\\_grove/uutinfo\\_elk\\_grove.htm](http://www.uutinfo.org/uutinfo_city_info/elk_grove/uutinfo_elk_grove.htm).

<sup>20</sup> Note that this 9 percent figure includes utility users tax revenue from all utilities, not just electricity.

The utility users tax is unlikely to fully replace revenues from the gas tax for two main reasons. First, using electricity to power a vehicle is more energy efficient than using gasoline, and this efficiency is only going to increase as battery technology improves. A gallon of gasoline has the equivalent of 33.7 kWh of energy (U.S. Department of Energy 2014). As discussed in Section 2.4.3, the average EV uses 30 kWh per 100 miles. This is the equivalent of 112 miles per gallon, much better mileage than the vast majority of combustion engine vehicles. Even when considering that electricity is more expensive to produce than gasoline per kWh, the per-mile cost of fueling an EV in Elk Grove is less than half the cost of fueling a combustion engine vehicle.<sup>21</sup> Second, since gasoline is only used for fueling on-road vehicles (with minor exceptions), the State can justify levying a per-gallon excise tax on gasoline sales (the “gas tax” discussed in Section 4.2) and reserving that money entirely for transportation purposes. Electricity, however, is used for several purposes, many of which are not transportation-related, which would make it politically difficult to devote additional utility users tax to transportation-related expenses like the gas tax is. There is no simple way to levy an equivalent transportation network tax on electricity used for powering EVs without also taxing all other equipment that uses electricity or making a significant investment in new electricity meters that track outdoor plugs separately (and even then, individuals may run extension cords from inside their homes to their EVs to circumvent the tax).

Figure 11 shows the estimated and projected utility users tax revenue from the charging of EVs. EV charging currently makes up less than one percent of utility users tax revenue and generates less than \$1 per household per year. In 2050, EV charging is expected to generate \$40 to \$80 in utility users tax per household per year, a significant increase relative to current levels, but still less than the decrease expected in vehicle sales tax revenue over the same time period, as discussed above.

**Figure 11 Utility Users Tax Revenue from the Charging of Electric Vehicles**

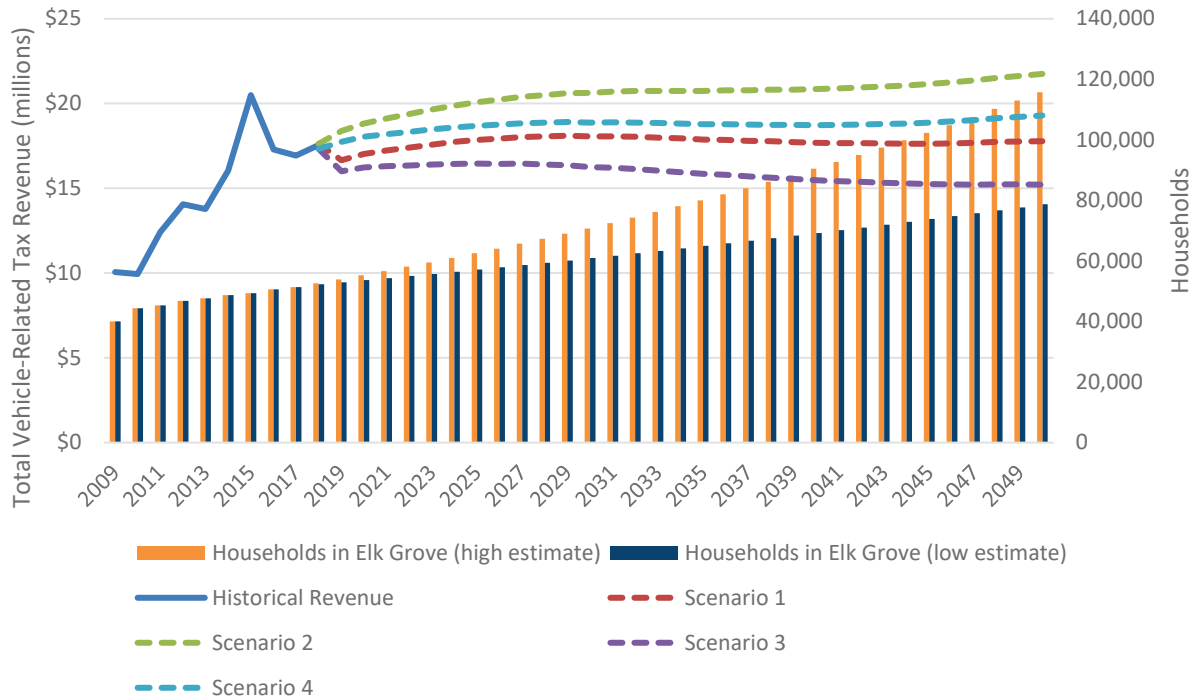


## 4.4 TOTAL FISCAL IMPACTS

Figure 12 shows the total projected tax revenue from vehicle-related sources in Elk Grove through 2050. Scenario 2, Personal AV Ownership, and Scenario 4, Business as Usual, result in higher vehicle-related tax revenue generation, while Scenario 1, Individual Autonomous TNCs, and Scenario 3, Shared Autonomous TNCs, yield lower vehicle-related tax revenue generation.

<sup>21</sup> The average pre-tax cost of a gallon of gas in California in 2019 was \$2.92 (United States Energy Information Administration, 2019). This fueled the average combustion engine vehicle on the road in Sacramento County for 27.1 miles (California Air Resources Board, 2019). The average cost of electricity in Sacramento County for 2019 was \$0.1469 per kWh (Sacramento Municipal Utilities District, 2019). To go 27.1 miles, the average EV uses 8.1 kWh of electricity, costing about \$1.20 before taxes.

**Figure 12 Total Vehicle-Related Tax Revenue in Elk Grove**



**Error! Not a valid bookmark self-reference.** breaks down the revenue sources for Scenario 2, Personal AV Ownership, the highest revenue estimate, and Figure 14 does the same for Scenario 3, Shared Autonomous TNCs, the lowest revenue estimate.

**Figure 13 Per-Source Breakdown of Scenario 2, Personal AV Ownership, – High Estimate**

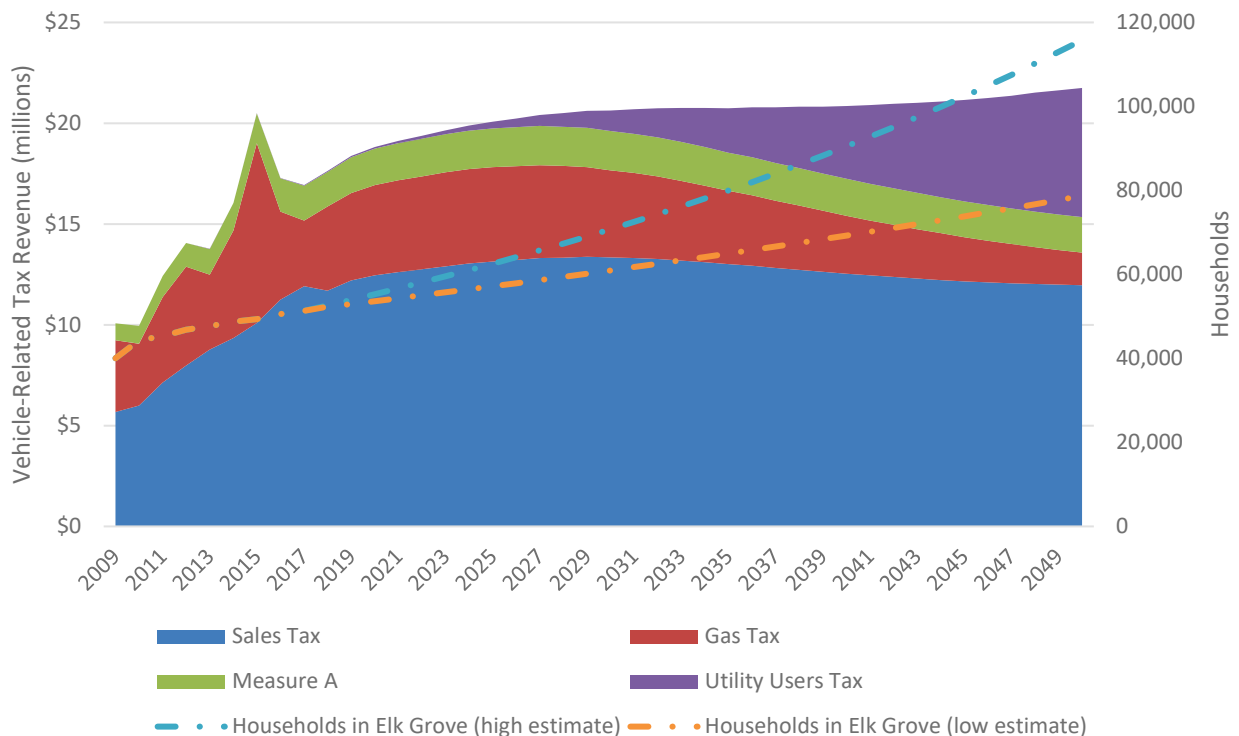


Figure 14 Per-Source Breakdown of Scenario 3, Shared Autonomous TNCs, – Low Estimate

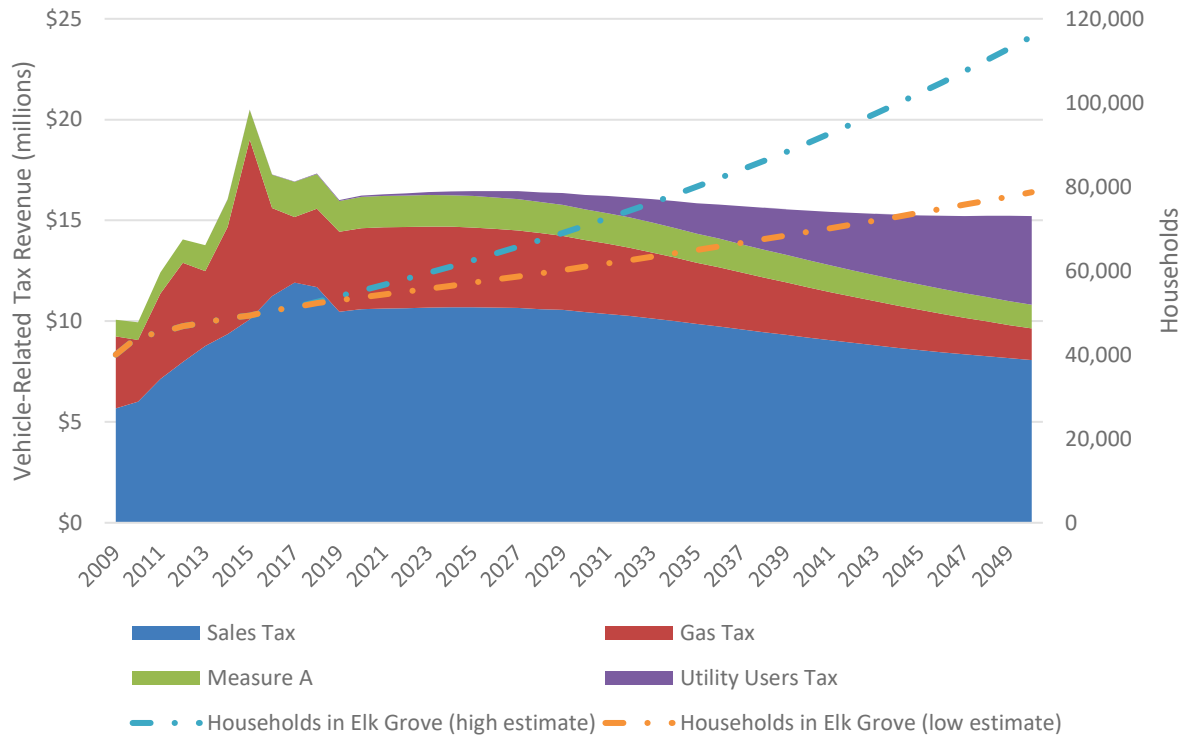


Figure 15 Total City Revenue per Household

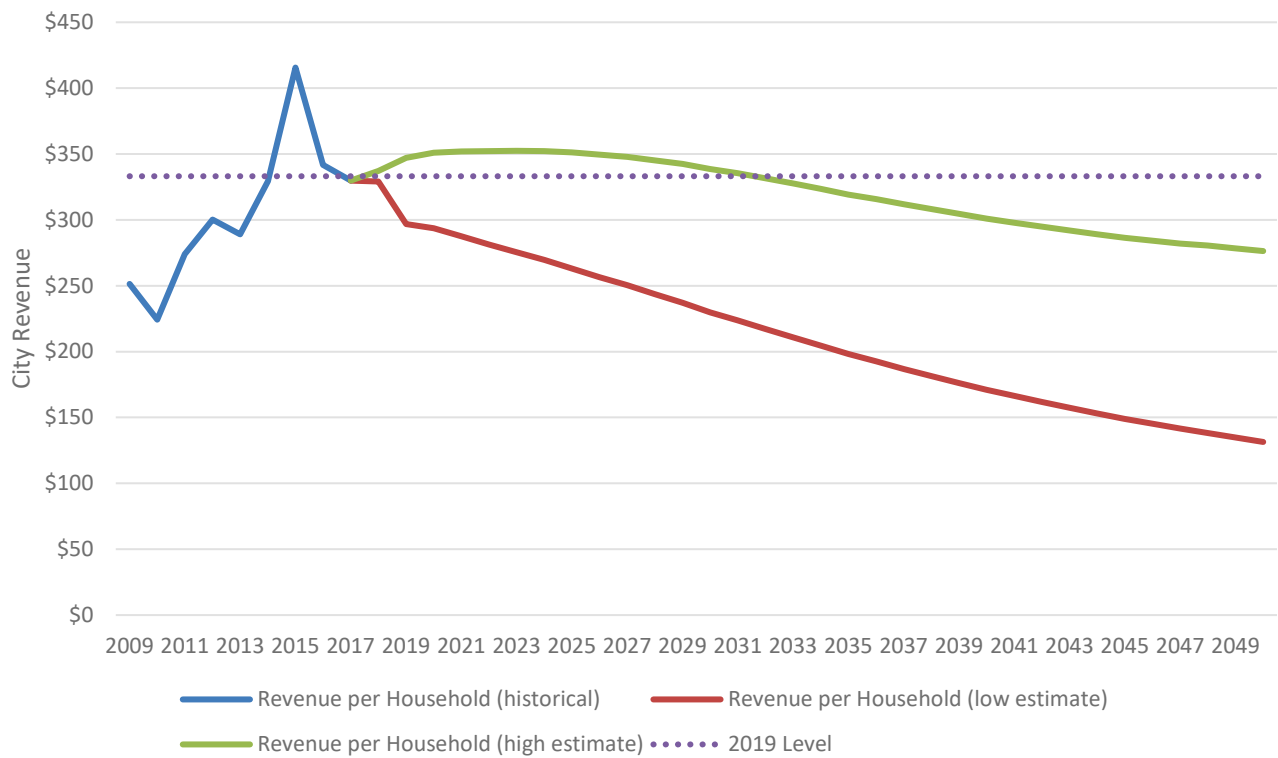


Figure 15 shows the high and low estimates for revenue per household through 2050, combining the high revenue estimate with the low household estimate for the high end, to show the highest possible outcome, and doing the inverse for the low end.

## 5 EXISTING PROGRAMS AND POLICIES

This section explores the City's previous experience with ensuring and maintaining City revenues to understand methods that have been used historically to provide additional streams of revenue. Although some existing approaches may be relevant, wholly different tax or fee structures, to augment and, eventually, replace the revenue that will be lost as vehicle purchasing activity slows, may be necessary going forward.

Sales tax is the City's largest source of revenue, and vehicle-related sales tax revenue makes up a sizeable portion of the general fund, as discussed earlier. When faced with the need to generate additional revenue in the past, the City has primarily taken measures to expand commercial development, to garner additional sales tax revenue (City of Elk Grove 2018). As part of this strategy, the City commissioned a study on strategies to attract more retail businesses, which discussed the generation of local sales tax revenue (City of Elk Grove 2018). Noting that Elk Grove is "overly dependent on sales tax generated from 'Autos and Transportation' and 'Fuel' transactions," the study recommended diversification of the sales tax base to, in part, safeguard the City against potential dips in auto and fuel sales.

The Fiscal Working Group has discussed past programs designed to spur sales tax revenue in the City, including the retail strategy mentioned above. In relation to supporting vehicle-related sales tax revenue, the City implemented a car purchase incentive program, which introduced a flat fee, paid to a vehicle dealership, for households that switch out cars regularly. However, the cost was prohibitive, the number of consumers who used the service was small, and it did not have a meaningful impact on sales rates. In contrast, a successful approach to managing potential declines in sales tax revenue resulted from legislative action at the State level. To address concerns that online sales have been eating into local sales tax revenue, which has been discussed at the fiscal working group as well as nationally (Jossi 2003), California began charging sales tax to online vendors in 2019. As a result, the shift to online sales is no longer expected to result in a major decline in sales tax revenues at the local level (Woolfolk 2019).

The remainder of this report focuses on innovative strategies to replace projected future revenue losses.

## 6 CASE STUDIES

In anticipation of the revenue and fiscal challenges facing the City as a result of changing travel options and patterns, this section presents best practices from the United States and abroad, illustrating how cities have responded to these challenges and filled funding gaps. The majority of cities examined have taken new approaches in the context of transportation management policies, and created programs that reduce costs for some users while increasing costs for "premium" users: those who use public resources most and who add most to congestion. One city has taken a broader approach by changing development patterns—not just travel patterns—via zoning.

Thus far, the cities which have taken the most innovative measures to generate new vehicle-related revenue streams have been cities much larger and more urban than Elk Grove. However, with EVs on the path to a significantly larger market share, and AVs poised to potentially create significant changes in the way people get around, Elk Grove will need to be on the cutting edge of developing new revenue approaches tailored to the needs of smaller, suburban cities.

### 6.1 Oregon - OReGO VMT Tax Pilot Program



The State of Oregon launched its VMT-based pricing program called OReGO in 2015, which is in a permanent pilot phase (National Association of City Transportation Officials n.d.). The program was created in response to decreasing fuel tax returns and the subsequent need for a reliable source of revenue to fund transportation projects and is run by the Oregon Department of Transportation



(National Association of City Transportation Officials n.d.). Voluntary participants pay a road usage charge of 1.7 cents per mile they drive, instead of paying a fuel tax. There are approximately 5,000 participants in the program. The program is designed so that any vehicle with lower than 20 MPG fuel economy would pay less than the current gas tax. Program volunteers receive a device to measure VMT and are reimbursed for State gas taxes paid at the pump (National Association of City Transportation Officials n.d.).

The State of California is in the process of researching how a similar program could work in California, including implementing city-level pilot programs (Bizjak 2017). The program still has several issues to work out, including data privacy concerns, revenue collection methods, and organizational design (California State Transportation Agency 2017). If California were to implement a statewide program like this, it would likely function similar to the OReGO program, where opt-in is voluntary at first (in exchange for refunds on gas tax paid at the pump), and funds would be distributed to cities based on the same formula as the current gas tax. If such an approach was taken in California, this would effectively eliminate the loss in gas tax revenue associated with EVs, but not the loss in fuel sales tax revenue.

## 6.2 WASHINGTON DC - CURBSIDE DEMAND-BASED PRICING



Beginning in 2015, Washington DC's District Department of Transportation (DDOT) implemented curbside demand-based pricing for commercial vehicles (called the Commercial Loading Zone Management Program, or CLZMP), developing loading zone permitting procedures and charged higher prices for specific loading zones during peak hours (Hao 2018). The program incentivized trucks to deliver overnight, helping to alleviate daytime congestion in commercial districts and reducing commercial vehicles double-parked in car spots and stopping in the middle of the street (Hao 2018). The District was able to do this by inventorying and mapping its commercial loading zones and analyzing curb occupancy data by commercial vehicles (U.S. Department of Transportation n.d.). As part of this initiative, DDOT also doubled the fine for unauthorized vehicles using loading zone spaces. As a result of the program, more than 12,000 metered transactions occurred during the first three months, and more than 70 businesses obtained annual permits in its first six months (U.S. Department of Transportation n.d.). Though Elk Grove does not currently have metered parking; instituting a demand-based program similar to this represent a potential source of additional revenue. The congestion management component may not be as relevant to Elk Grove currently—though given future household growth, it may be increasingly relevant—but designing a responsive pricing program that charges higher amounts at peak hours and lower amounts at times of lesser demand could maximize revenue for the City while optimizing street parking availability for street parking users.

## 6.3 CHICAGO - PER-RIDE RIDE-SHARING FEES



In 2017, the City of Chicago implemented a 72-cent per-ride surcharge on all ride-sharing trips to incentivize transit use and generate revenue for the transit system. (National Association of City Transportation Officials n.d.). Per-ride taxes and user fees are designed to discourage types of single-occupancy vehicle trips at certain times and places. User fees are typically applied to ride-hail/ride-sharing trips (e.g., Uber, Lyft), as in the case of Chicago. This was originally passed by Chicago's City Council in 2015. Proceeds from the original surcharge in 2015 went into the City's general budget and accessible vehicle fleets (e.g., paratransit), while the 2018 proceeds are being invested in the Chicago Transit Authority (CTA) for 'L' train upgrades and safety enhancements. In 2017, the City raised \$86.9 million from the fee and projected to raise an additional \$37 million for CTA as of 2019 (National Association of City Transportation Officials n.d.). Mayor Lori Lightfoot proposed a plan in 2019 that would reduce the fee for shared trips to 65 cents per ride and increase the fee to \$1.25 for single rides Citywide, as well as tiered rates for the downtown zone (Pratt, Byrne, & Wisniewski 2019). The proposed plan passed the City Council vote in November 2019 (Greenfield 2019).

## 6.4 LONDON - CONGESTION PRICING



London, UK implemented congestion pricing, called the London Congestion Charge, in 2003 due to high congestion and poor air quality in the central city (Centre for Public Impact 2016). The greater London region transport agency, Transport for London (TfL), operates the program. The charging period runs from 7 a.m. to 6 p.m. every day and the standard charge is currently £11.50 per day on weekdays. By law, the revenue raised (approximately £137 million per year) is invested in London's transport infrastructure. Certain vehicles are exempt, such as buses, taxis, and EVs and certain drivers, such as the disabled, are also exempt, and residents who live in the charging zone receive a 90 percent discount (Centre for Public Impact 2016). In the first year of the program, there was a 37 percent increase in the number of passengers entering the congestion charging zone by bus, and by 2006, the congestion charging zone had reduced congestion in central London by 26 percent from its 2002 levels (Centre for Public Impact 2016). In 2019, London additionally implemented an Ultra-Low Emission Zone (ULEZ) to reduce the number of high-polluting vehicles entering central London because of poor air quality in the city. Similar to the program in London, Singapore (Federal Highway Administration n.d.) and Stockholm (Hugosson & Eliasson 2006) also have forms of congestion pricing. In March 2019, New York State approved congestion pricing for New York City, the first of its kind in North America. At the time of writing, implementation is planned to begin in 2021 (Paybarah 2019).

## 6.5 BUFFALO - FLEXIBLE ZONING



Buffalo, NY used a code-based approach to meet multiple goals, including reducing VMT and increasing municipal revenue generation. Buffalo began development of a "green code" land use plan in 2012 to prioritize economic well-being, social equity, and environmental quality. A key aspect of the code is place-based planning: instead of focusing on conventional land use considerations, it focuses on the "look, feel, form, and character" of a place. The code encourages community use of space while allowing the market to determine whether development should be residential, retail, office, etc. (One Region Forward 2012). This flexible approach is designed to create mixed-use neighborhoods that have a cohesive look and feel, creating places that serve multiple needs within a small area, and reducing the need for long VMT-intensive trips. The reduction in necessary parking space, road usage, and road maintenance with this approach creates additional municipal revenue in the form of additional property tax collections resulting from higher property values, more development fees per acre due to more intensive use, and savings on road and utility maintenance per household.

# 7 FISCAL RESILIENCE STRATEGIES

Addressing the anticipated loss in municipal revenue may take several forms, from traditional methods such as a new parcel tax or sales tax, to innovative methods currently being explored by larger cities across the country, as examined in the prior section. The following matrix (Table 3) presents innovative policy recommendations that have been implemented elsewhere and could be implemented in Elk Grove in response to the scenarios described earlier in this report. The matrix includes the following:

- ▶ a high-level definition of each policy;
- ▶ examples of other cities and states where the policy has been implemented, piloted, or planned;
- ▶ the governing authority that could implement the policy; and
- ▶ potential considerations and effects that the policy could have, both positive outcomes and drawbacks or challenges.

This section also includes a table of other revenue collection methods at the end.

**Table 3 Strategy Recommendation Matrix**

Strategy	Definition	Examples	Governing Authority	Potential Considerations and Effects (revenue impacts in bold)
<b>Vehicle Miles Traveled (VMT) Tax</b>	A road usage tax based on the number of miles a vehicle drives. This would essentially serve as a replacement to the gas tax (which will prove necessary as EVs become more common) and would likely be implemented at the State level.	Oregon – VMT pricing pilot program	State	<ul style="list-style-type: none"> <li>▶ <b>Can ensure stable revenue considering changing vehicle fuel economies and ownership models</b></li> <li>▶ <b>Does not distinguish between more fuel-efficient vehicles or EVs</b></li> <li>▶ Directly prices distance traveled</li> </ul>
<b>Zoning: Parking</b>	Changing parking-related elements of the zoning code such as reducing/eliminating minimum parking requirements, creating flexible parking policies, and adjusting parking standards	Buffalo, NY – Eliminated parking requirements citywide in 2017	Municipality	<ul style="list-style-type: none"> <li>▶ <b>More intensive land use raises property values and property tax revenue</b></li> <li>▶ <b>May take a long time for revenue increases to manifest</b></li> <li>▶ Flexible parking policies can allow for the reduction or elimination of certain parking requirements as AV market penetration increases (Henaghan, 2018)</li> <li>▶ Enables increased densities (by reducing the amount of land needed for parking)</li> <li>▶ Creates opportunities for underutilized land uses previously used for parking</li> <li>▶ May increase ride-hailing/sharing usage, and VMT</li> </ul>
<b>Zoning: Land Use</b>	Amending prescriptive use regulations in zoning codes with flexible approaches to land use such as form-based codes and performance zoning	Buffalo, NY – The Buffalo Green Code	Municipality	<ul style="list-style-type: none"> <li>▶ <b>Market-based land use approach means highest-value land use will prevail, maximizing property tax revenue</b></li> <li>▶ Flexibly accommodates demand for conversion of existing properties and emergence of new uses</li> <li>▶ Enables increased densities to meet affordable housing and other development goals (Henaghan 2018)</li> </ul>
<b>Congestion Pricing (also called Cordon Pricing)</b>	Charges a fee to enter a specific zone or zones of a city. Cities can establish zones based on land use, geography, or existing levels of congestion (National Association of City Transportation Officials n.d.).	<p>London, UK – Congestion Charge</p> <p>New York City – Central Business District Tolling Program</p>	Municipality or Municipal Transportation Agency	<ul style="list-style-type: none"> <li>▶ <b>Creates a stream of revenue, typically used for public transportation improvements</b></li> <li>▶ Reduces congestion and emissions</li> <li>▶ Can disincentivize certain types of vehicles by only charging those types (e.g., high-polluting vehicles or large trucks)</li> <li>▶ Would require additional study and infrastructure</li> </ul>

Strategy	Definition	Examples	Governing Authority	Potential Considerations and Effects (revenue impacts in bold)
<b>Curbside Use Fees</b>	Charges a fee based on use and/or time the curb space is occupied. A loading fee may be assessed for freight and passenger pick-up/drop-off (National Association of City Transportation Officials n.d.).	Washington DC - Commercial Loading Zone Management Program	Municipality or Municipal Transportation Agency	<ul style="list-style-type: none"> <li>▶ <b>Provides a new revenue stream based on curb space demand, which can increase over time</b></li> <li>▶ Alleviates congestion caused by double-parking</li> <li>▶ Relies on enforcement of curbside usage</li> <li>▶ Difficult to implement without an inventory of curbside loading zones and usage</li> <li>▶ Improved GPS and sensor technology could increase opportunities for curb pricing in the future</li> <li>▶ Although street parking is not currently common in Elk Grove, changes to the City's parking requirements could make street parking more common</li> </ul>
<b>Pay-per-Ride Taxes and User Fees</b>	Pay-per ride taxes and user fees are designed to discourage types of single-occupancy vehicle trips at certain times and places. User fees are most usually charged on ride-hail trips (National Association of City Transportation Officials n.d.).	Chicago, IL - Per-Ride Ride-Sharing Fees	Municipality or Municipal Transportation Agency	<ul style="list-style-type: none"> <li>▶ <b>Provides a revenue stream but is dependent on the volume of ride-hailing/sharing</b></li> <li>▶ Some forms (depending on how they are structured) of the fee create a stronger incentive to reduce driving</li> </ul>

**Table 4 Other Revenue Collection Methods**

Strategy	Definition	Examples	Governing Authority	Potential Considerations and Effects (revenue impacts in bold)
<b>Sales Tax Increase</b>	A tax on most purchases, both physical and digital, in the City of Elk Grove.	Sacramento Measure U Sales Tax – a one-cent sales tax that goes to the general fund	Municipality	<ul style="list-style-type: none"> <li>▶ <b>Proven method of revenue generation</b></li> <li>▶ Pre-existing system for collection</li> <li>▶ Increases reliance on existing revenue sources</li> <li>▶ Makes regional shopping destinations in Elk Grove (e.g., Elk Grove Auto Mall) less competitive</li> <li>▶ Especially volatile in economic downturns</li> <li>▶ May disproportionately affect low-income residents</li> </ul>
<b>Parcel Tax</b>	A tax on real property, typically a flat tax per parcel.	California City Measure C – an annual \$182 tax per	Municipality	<ul style="list-style-type: none"> <li>▶ <b>Proven method of revenue generation</b></li> <li>▶ Pre-existing system for collection</li> </ul>

Strategy	Definition	Examples	Governing Authority	Potential Considerations and Effects (revenue impacts in bold)
		parcel that goes to the general fund.		<ul style="list-style-type: none"> <li>▶ Increases reliance on existing revenue sources</li> <li>▶ May decrease property values</li> </ul>
<b>Utility Users Tax Increase</b>	A tax on utility usage, in which different rates can be specified for different types of utilities (e.g., electricity, gas, etc.)	Elk Grove last changed its utility users tax rate in 2010 through Measure J.	Municipality	<ul style="list-style-type: none"> <li>▶ <b>Proven method of revenue generation</b></li> <li>▶ Pre-existing system for collection</li> <li>▶ Increases reliance on existing revenue sources</li> <li>▶ May disincentivize EV adoption</li> <li>▶ May disproportionately affect low-income residents</li> </ul>

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