



# EV Purchases Reach 17% of New-Vehicle Sales in Washington State – 25% in King County



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## Washington State EV Purchasing Gets Serious

Stopping burning gasoline is important for Washington State doing its part to stop global overheating. In 2022, the Washington State Department of Ecology reported that [39%](#) of greenhouse gas emissions were from transportation, compared to 25% from heating for buildings. Those transportation emissions will be eliminated by a combination of reducing vehicle miles traveled and switching to electric vehicles for public transportation and for private use.

Until recently, electric vehicle purchasing did not look like it had caught on in Washington State. Less than 5% of new-vehicle purchases were EVs. Since then, a significant portion of Washington State new vehicle buyers have switched to electric vehicles. By Q3 2023, 17.0% of new vehicles were electric, up from 4% three years ago.

Since Q2 2020, EV rates in Washington State new-vehicle purchases have grown 80% annually. The current trend is that the Washington State EV rate will pass 50% in about two years.

New-vehicle purchases have already reached 25% EV in King County. The current trend is that King County will pass 50% a little over a year from now, in 2025.

## Vehicle Sales Data

This report is based on registration data from the Research and Analysis Office in the Washington State Department of Licensing that was updated on October 18, 2023 and made available on [Data.WA.gov](https://data.wa.gov). Data.WA.gov provides the data in two tables. [One table](#) reports

sales and registrations into Washington State without registration renewals from January 2017 through September 2023. [The second table](#) includes registration renewals. Renewals are necessary to report on what portion of currently registered vehicles are electric.

### Electric Vehicle

In this analysis, hybrid vehicles are not counted as “electric vehicles”. Hybrid vehicles and plug-in hybrids are not effective long-term solutions to global overheating. Hybrid vehicles will have to be replaced with fully electric vehicles before Washington State has eliminated greenhouse gas emissions. Analyses by other organizations may include hybrid vehicles as “electric” and metrics calculated in those analyses will not exactly match results shown here.

### New Versus Used/Old Vehicles

The DOL data includes whether the registration created an “Original Title” in Washington State. A used vehicle brought to Washington State gets an “Original” title the first time it is registered in Washington. Over 7,000 “Original” titles in the data are of vehicles that are more than 25 years old.

In this analysis, every registration that was recorded as a “Transfer Title” was flagged as a used/old vehicle. Every registration that was recorded as an “Original Title” that was for a vehicle with a model year more than six months before the registration month was also recorded as a “used/old” vehicle. For example, a 2017 model year vehicle purchased in 2016, 2017, or as late as July 2018 would be counted as “new”. If a 2017 model year vehicle was purchased in August 2018, it was counted as “used/old”. If a 2017 model year vehicle with 10 miles on its odometer were purchased from a dealer in August 2018, it is “new” in that it has not been driven by a customer before, but it is considered “old” in the industry: Its model year was available two years earlier. It is considered “Used/Old” here.

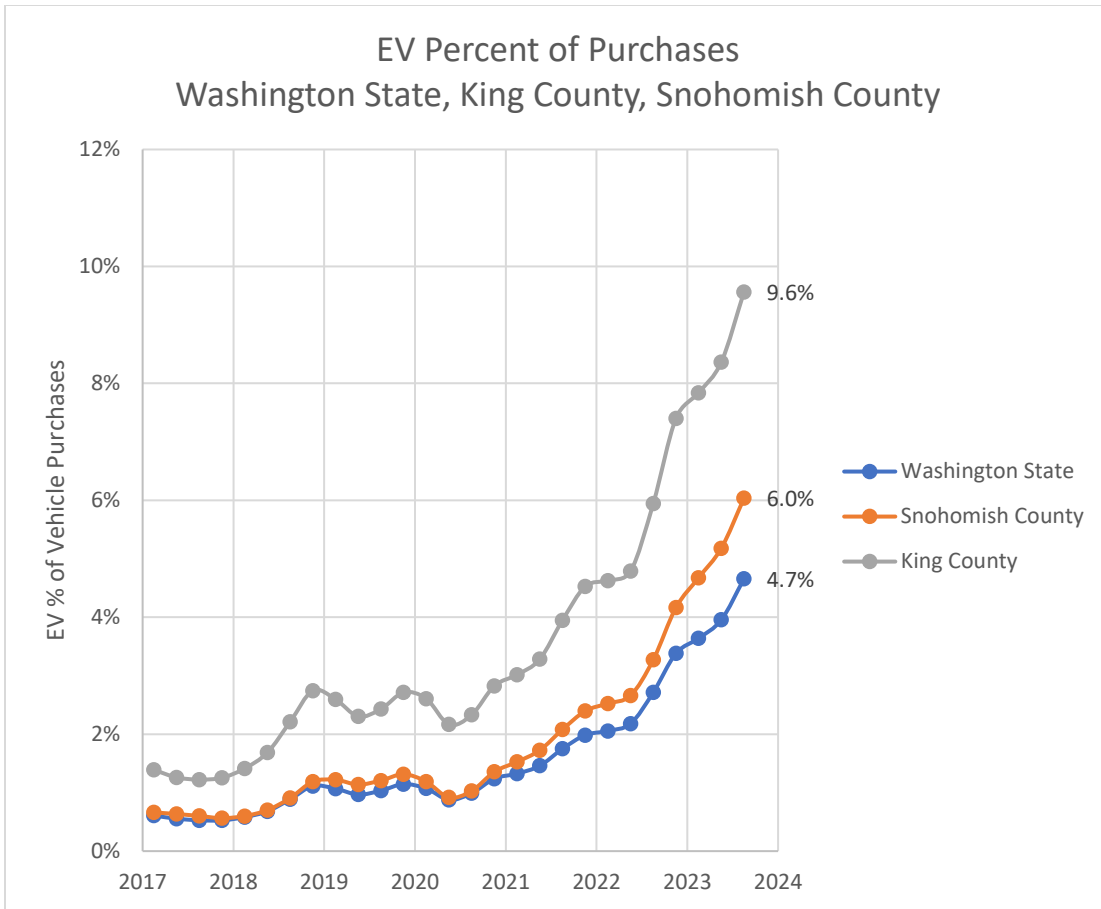
## Washington State, King County, & Snohomish County

A summary of all vehicle sales in Washington State shows that in Q3 2022, 2.5% of sales (new and used/old combined) were of electric vehicles. A year later, in Q3 2023, that rate had grown 90% to 4.7%. In King County, the EV rate grew 83%. In Snohomish County, it grew 107%.

All Vehicles

Q3	Washington State	Snohomish County	King County
<b>2022</b>	2.5%	2.9%	5.2%
<b>2023</b>	4.7%	6.0%	9.6%
<b>YOY</b>	90%	107%	83%

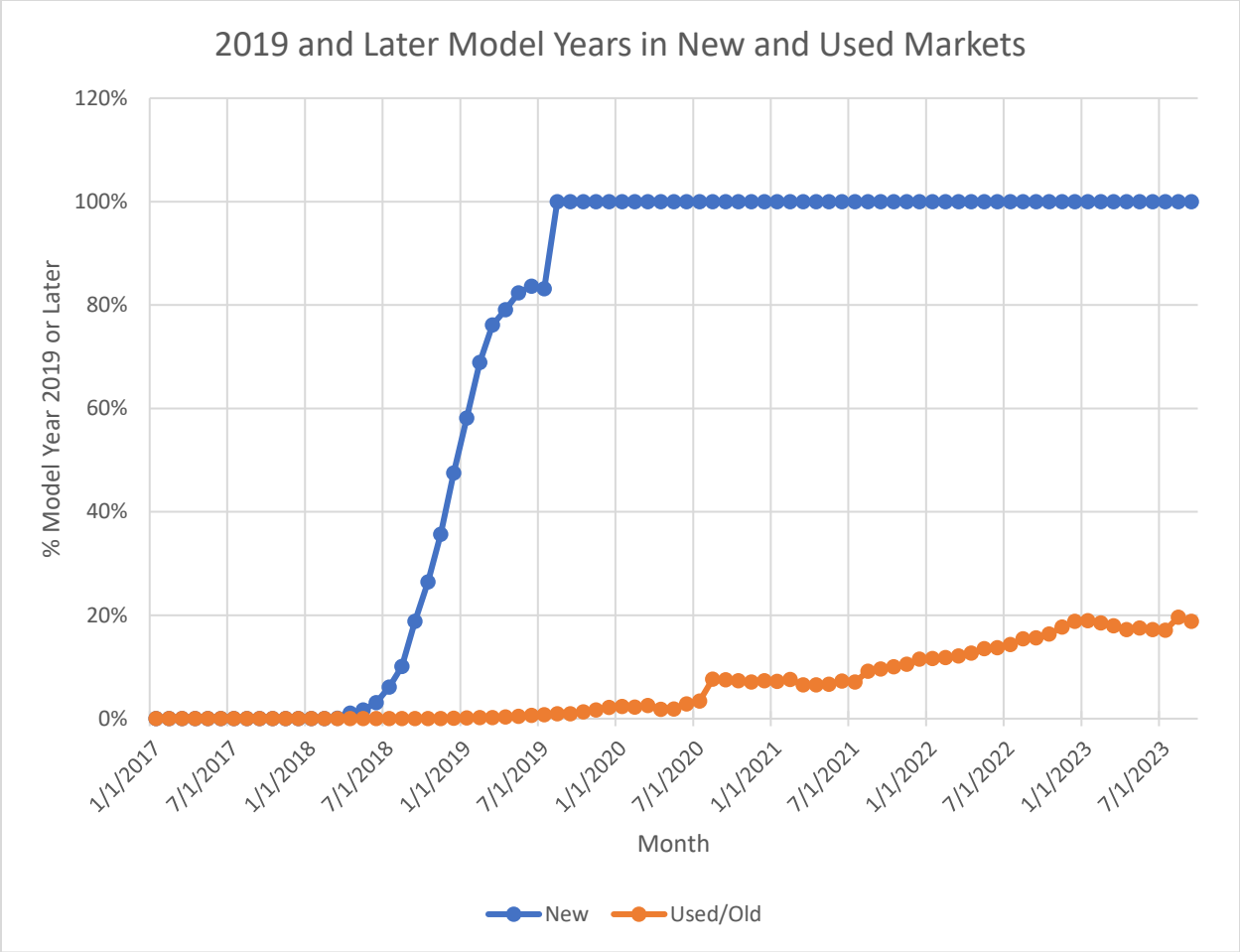
To highlight trends in the historical data, charts below show the data after applying a 1-2-1 smooth to the values other than the first and last percentages.



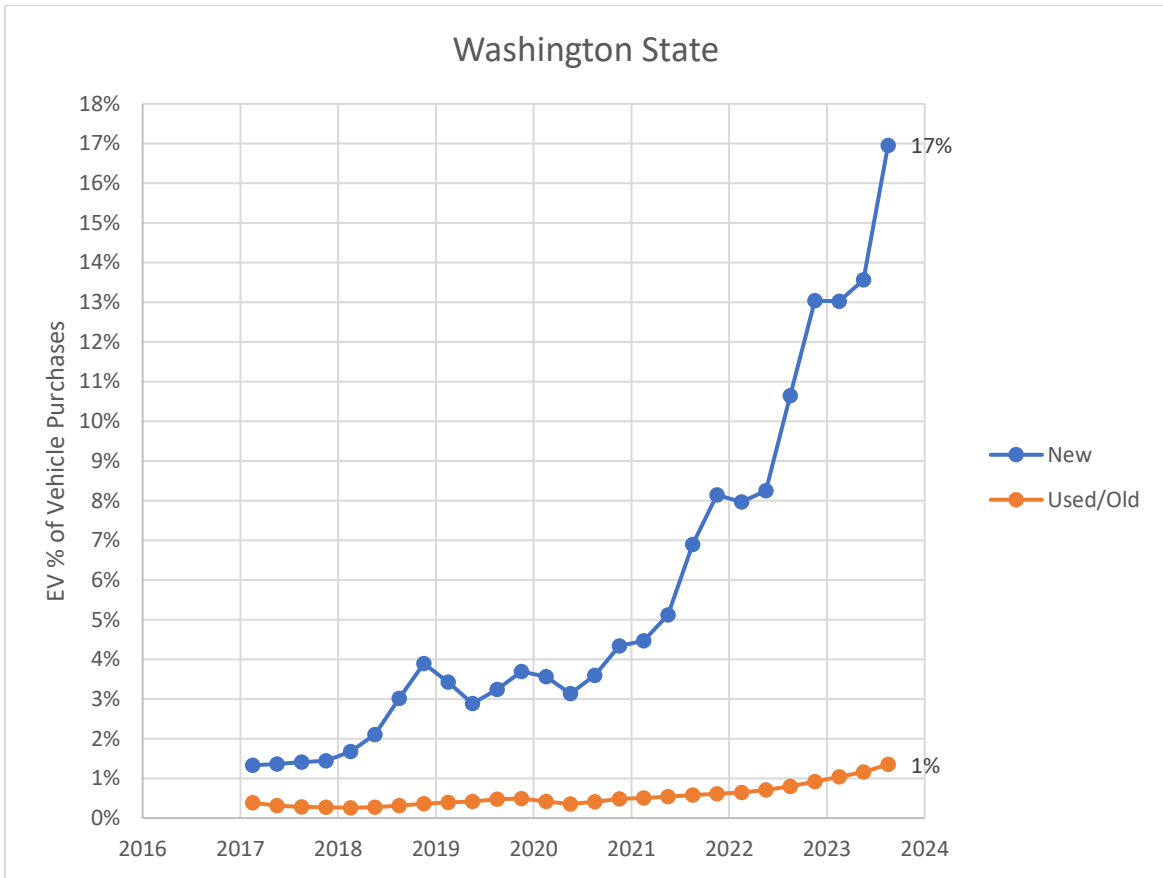
## New vs. Used Vehicles

EV rates for used/old vehicles lag EV rates for new vehicles. This lag happens for all technology changes. It takes a while for new-vehicle technology to show up in the used/old market. For example, if we look at model years of 2019 and later, some of those vehicles showed up as new vehicles in 2018. By August 2020, all new vehicles were model year 2019 or later. In the used/old-vehicle market, in August 2020, about 8% were model-year 2019 or later. By August 2023, five years after the model-year 2019 vehicles were first available, the portion of used vehicle sales that were model year 2019 or later had grown to 20%.

A rough model of what the used vehicle market is that about 5% of new vehicles show up on the used-vehicle market for the first time each year. That means that the portions of used/old vehicles with any new technology in a given year roughly matches the average new-vehicle rate for that technology over the previous 20 years.



By Q3 2023, 17% of Washington State new-vehicle purchases were of electric vehicles. In the used/old market, 1% were electric.

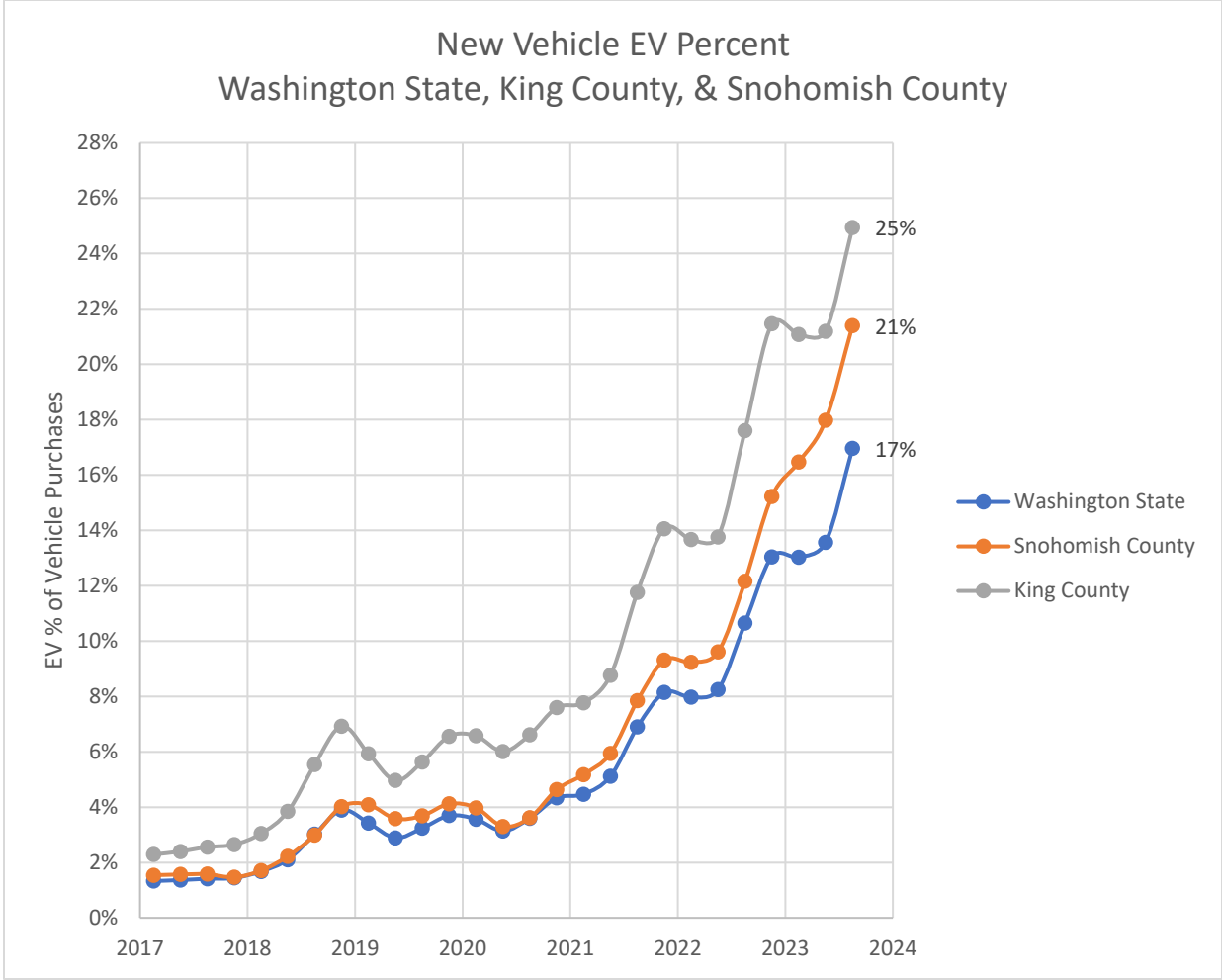


## New Vehicles

For new vehicles, the EV adoption rate for Washington State grew 71% from Q3 2022 to Q3 2023. In King County, it grew 54% from 16% to 25%. In Snohomish County, it grew 94% from 11% to 21%.

### New Vehicles

Q3	Washington State	Snohomish County	King County
<b>2022</b>	9.9%	11.0%	16.1%
<b>2023</b>	17.0%	21.4%	24.9%
<b>YOY</b>	71%	94%	54%

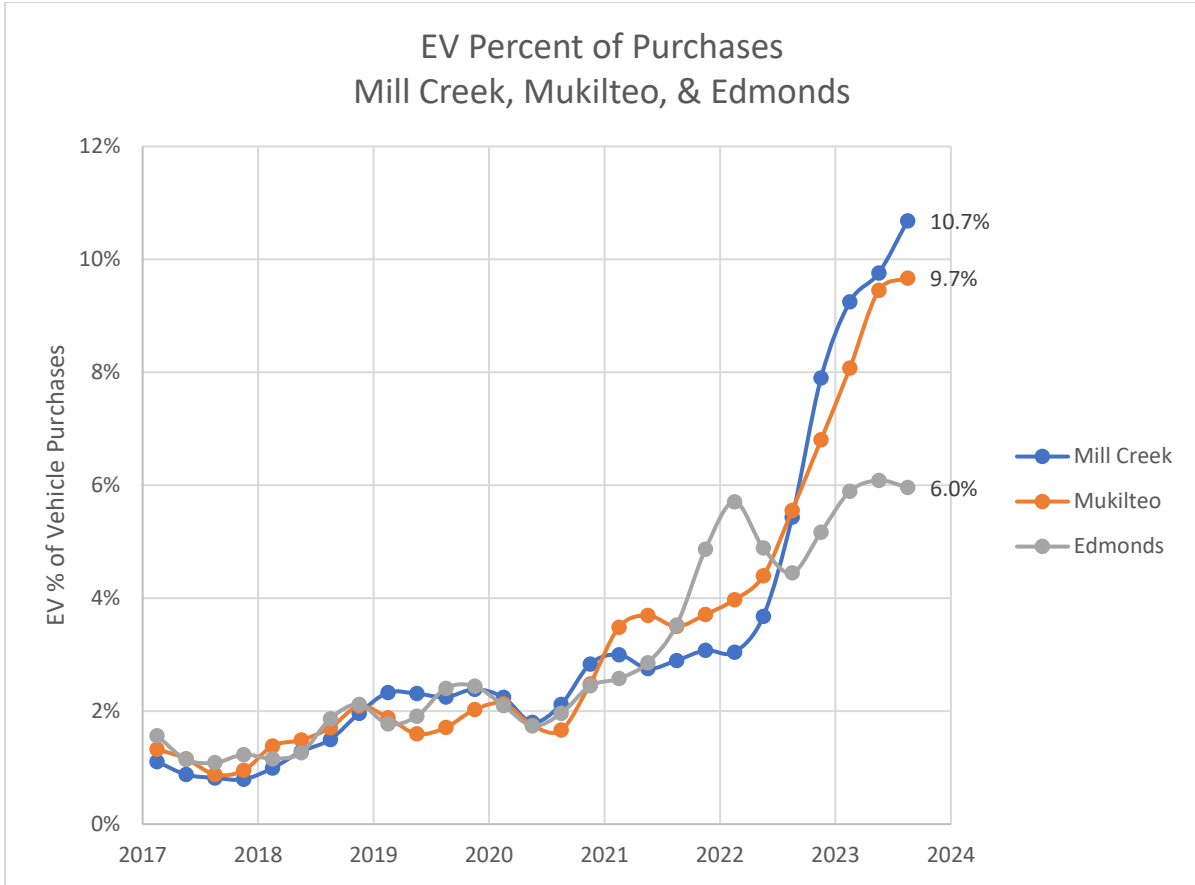


### Snohomish County Cities: Mill Creek, Mukilteo, & Edmonds

EV adoption varies by city within Snohomish County. From 2022 to 2023, EV adoption (for all vehicle purchases) rose 160% in Mill Creek. In Mukilteo, it rose 78% from 5.4% to 9.7%. In Edmonds, it rose 35% from 4.4% to 6.0%. These adoption rates all include used/old vehicles.

All Vehicles

Q3	Mill Creek	Mukilteo	Edmonds
<b>2022</b>	4.1%	5.4%	4.4%
<b>2023</b>	10.7%	9.7%	6.0%
<b>YOY</b>	160%	78%	35%

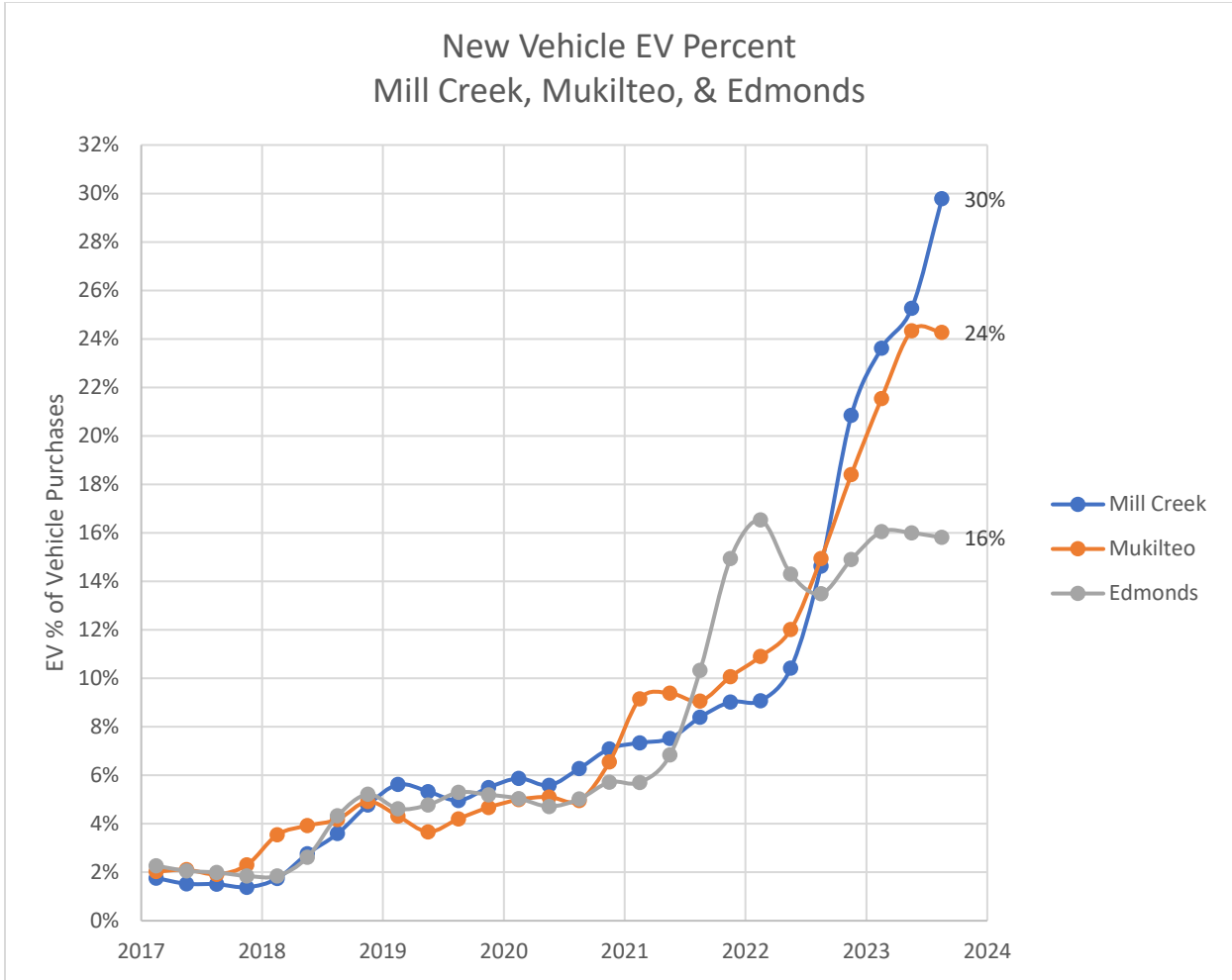


**Purchases of new vehicles**

The EV adoption rate for new vehicles in 2023 reached 30% in Mill Creek, up 196% over the Mill Creek 2022 level. In Mukilteo, the new-vehicle EV adoption rate grew 71% from 14% to 24%. In Edmonds, the rate grew 11% from 14% to 16%. It is not known why Edmonds’s growth was smaller than the growth in Mill Creek and Mukilteo. Mill Creek is the home of the current president of the Snohomish Electric Vehicle Association. That might have something to do with the greater recent growth in Mill Creek. Mukilteo is closer to the Boeing factory and may include more engineers than Edmonds. That may be related to the greater growth in Mukilteo. Neither of these factors are known to have any effect on EV adoption rates.

**New Vehicles**

Q3	Mill Creek	Mukilteo	Edmonds
<b>2022</b>	10.1%	14.2%	14.3%
<b>2023</b>	29.8%	24.3%	15.8%
<b>YOY</b>	196%	71%	11%



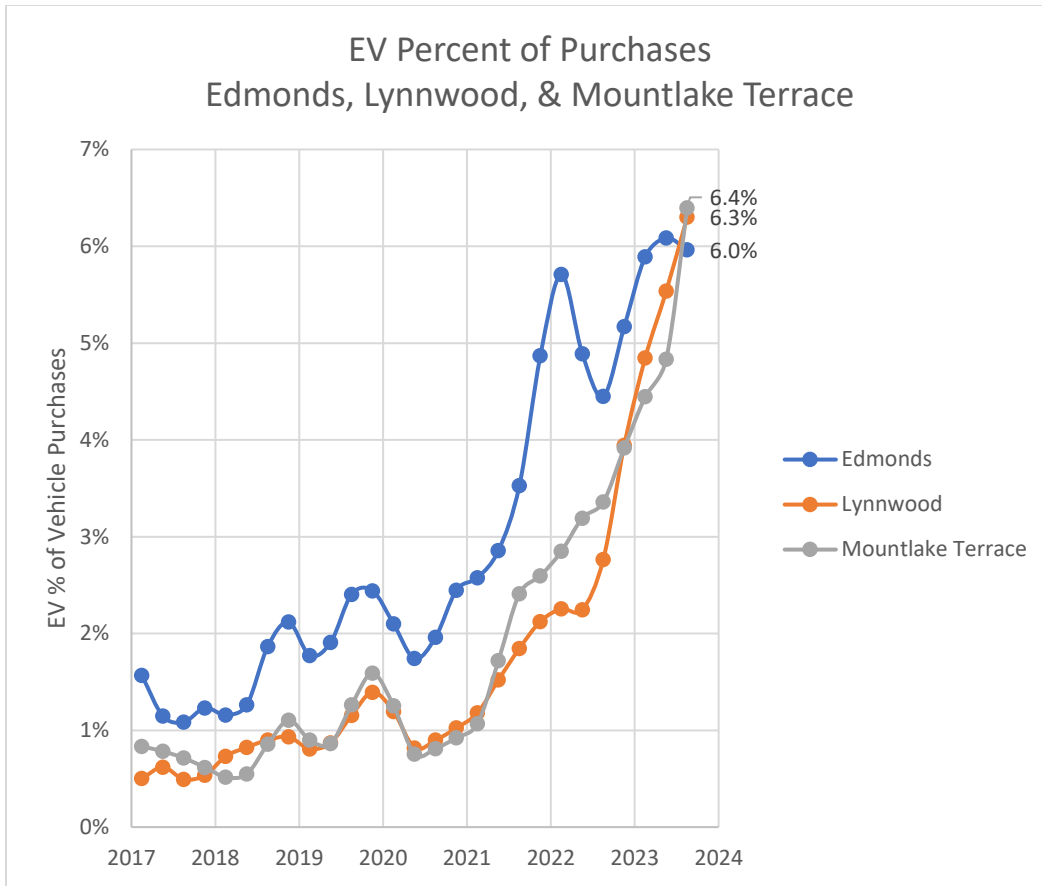
### Edmonds, Lynnwood, & Mountlake Terrace

For all vehicle purchases combined, Edmonds, Lynnwood, and Mountlake Terrace all have about the same adoption rate: about 6.2%.

All Vehicles

Q3	Edmonds	Lynnwood	Mountlake Terrace
<b>2022</b>	4.4%	2.1%	3.3%
<b>2023</b>	6.0%	6.3%	6.4%
<b>YOY</b>	35%	197%	96%



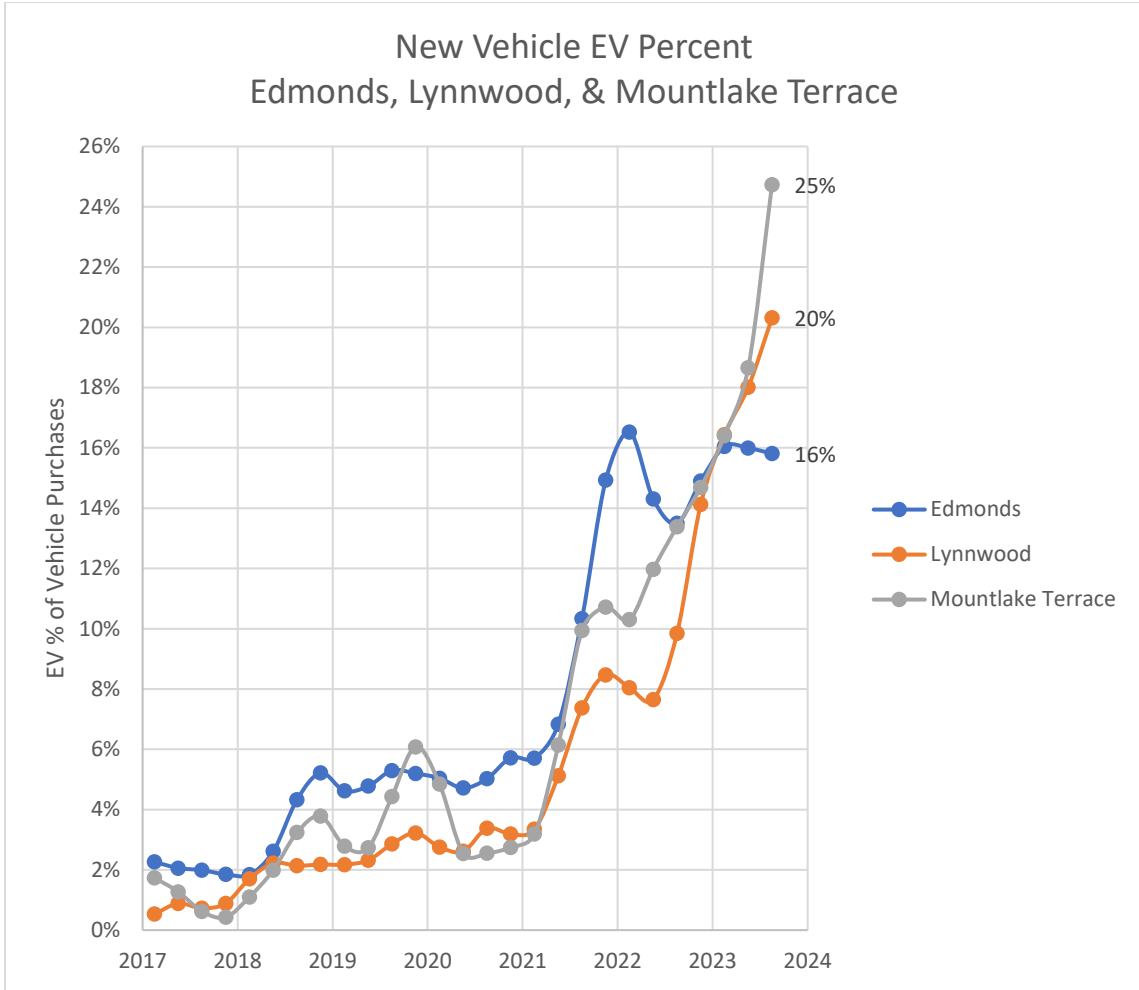


For new cars, EV adoption rates in Lynnwood and Mountlake Terrace (20% and 25%) have risen higher than in Edmonds (16%). It is not known why Edmonds’s new-car EV adoption rate is so much lower.

The low growth in Edmonds may be related in some way to the Edmonds EV spike in Q4 2021. It is not known how that spike might have slowed later adoption.

#### New Vehicles

Q3	Edmonds	Lynnwood	Mountlake Terrace
<b>2022</b>	14.3%	6.7%	13.4%
<b>2023</b>	15.8%	20.3%	24.7%
<b>YOY</b>	11%	201%	84%

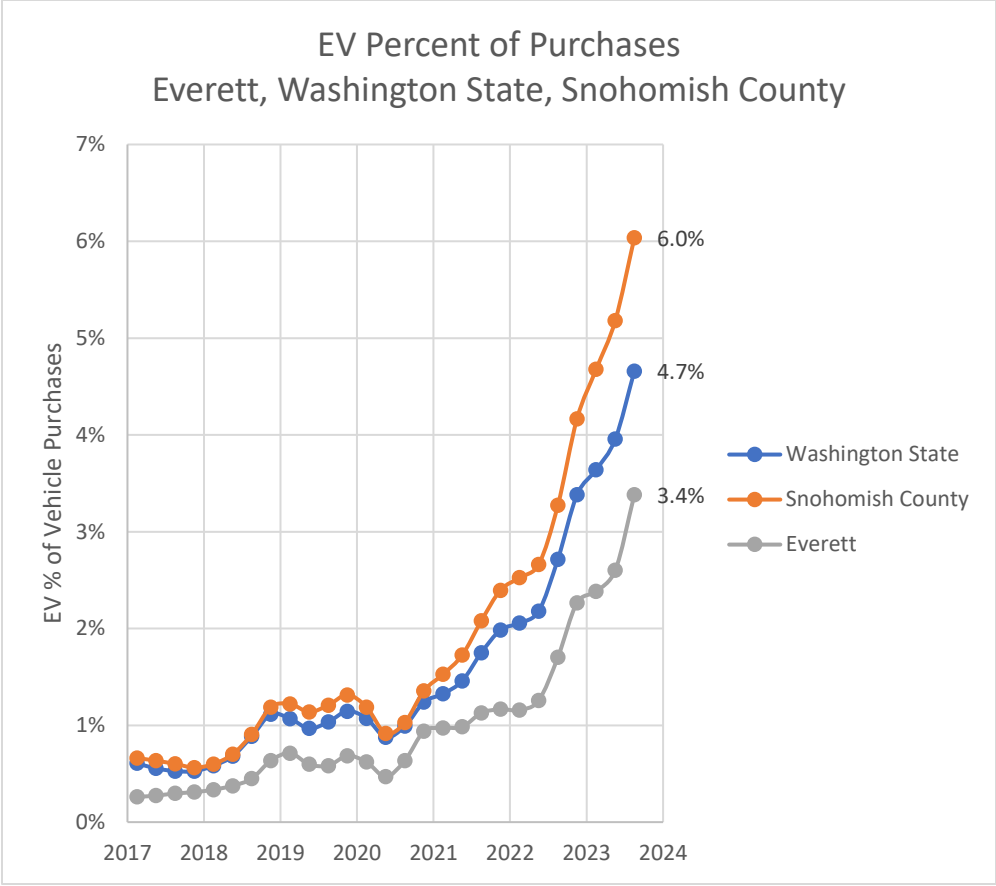


## Everett

In the combined new and Used/Old market, the Everett EV adoption rate grew 141% from 1.4% in Q3 2022 to 3.4% in Q3 2023.

### All Vehicles

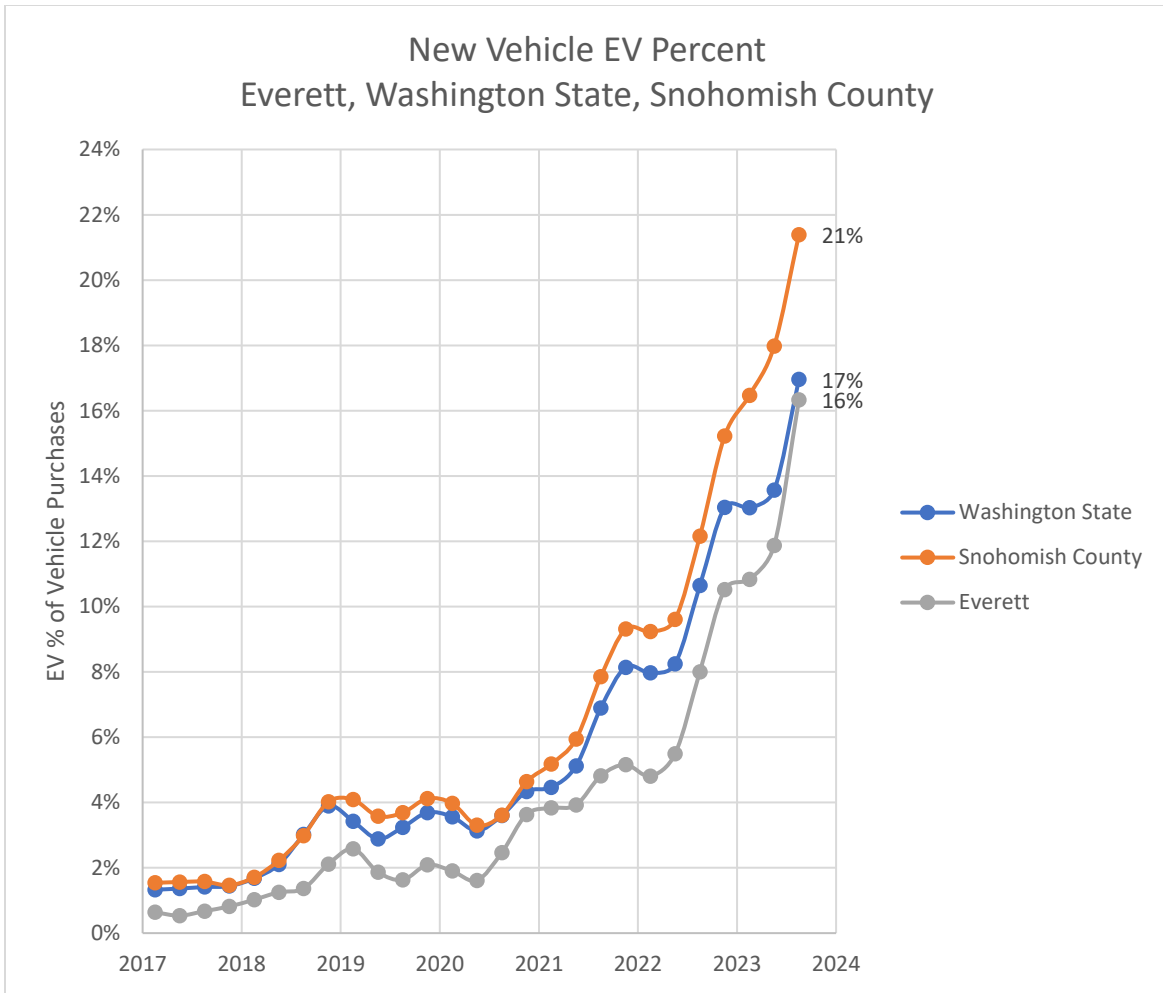
Q3	Washington State	Snohomish County	Everett
2022	2.5%	2.9%	1.4%
2023	4.7%	6.0%	3.4%
YOY	90%	107%	141%



In the new vehicle market, EV adoption in Everett grew 128% from 7.2% in Q3 2022 to 16.3% in Q3 2023. That growth brought new-vehicle EV adoption in Everett to roughly the rate seen in Washington State overall.

#### New Vehicles

Q3	Washington State	Snohomish County	Everett
2022	9.9%	11.0%	7.2%
2023	17.0%	21.4%	16.3%
YOY	71%	94%	128%



## Registered Vehicles

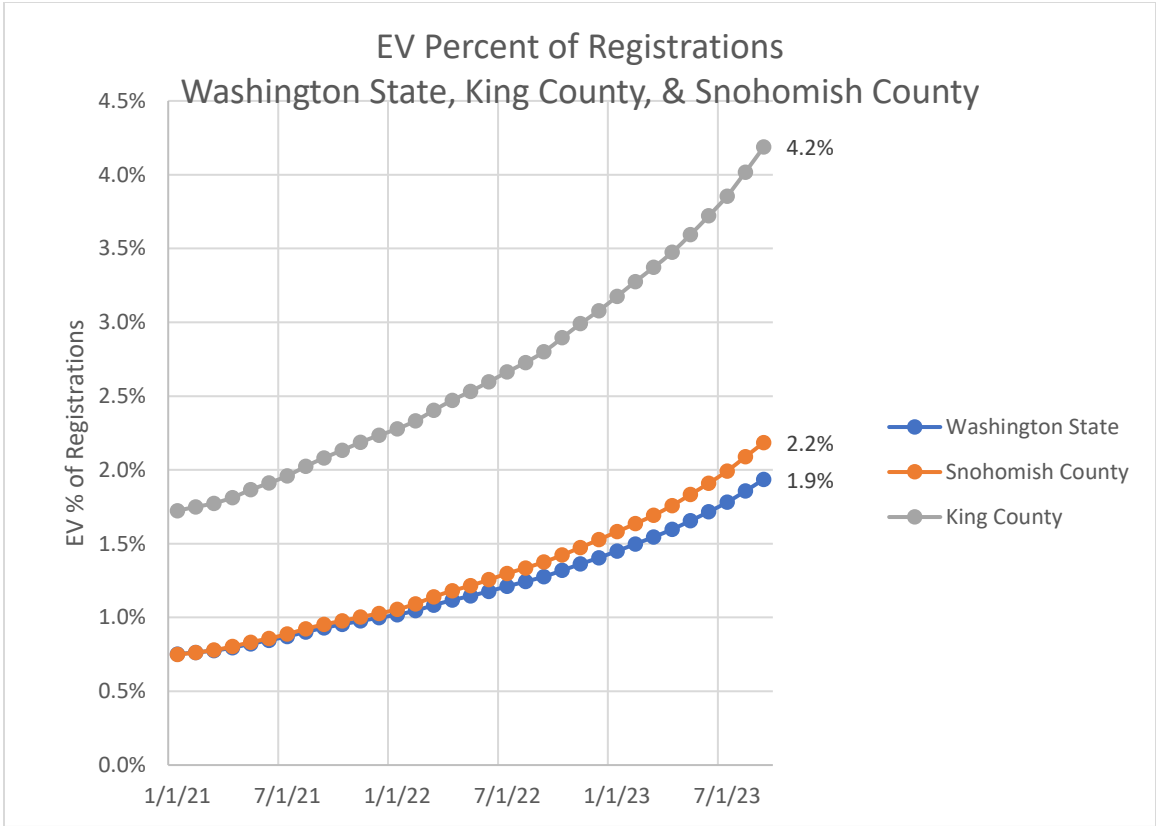
### Washington State, King County, & Snohomish County

In America, cars generally last about 20 years – longer for hobbyists. Most cars on the road are used/old cars. EV rates in registered cars tend to be closer to the 1% of used/old cars than the 17%-30% of new cars.

In Washington State overall, the portion of registered vehicles that were EVs grew 52% from 1.3% in Q3 2022 to 1.9% in Q3 2023. By Q3 2023, King County had reached 4.2% of the cars on the road being electric.

Registered Vehicles

September	Washington State	Snohomish County	King County
<b>2022</b>	1.3%	1.4%	2.8%
<b>2023</b>	1.9%	2.2%	4.2%
<b>YOY</b>	52%	59%	50%

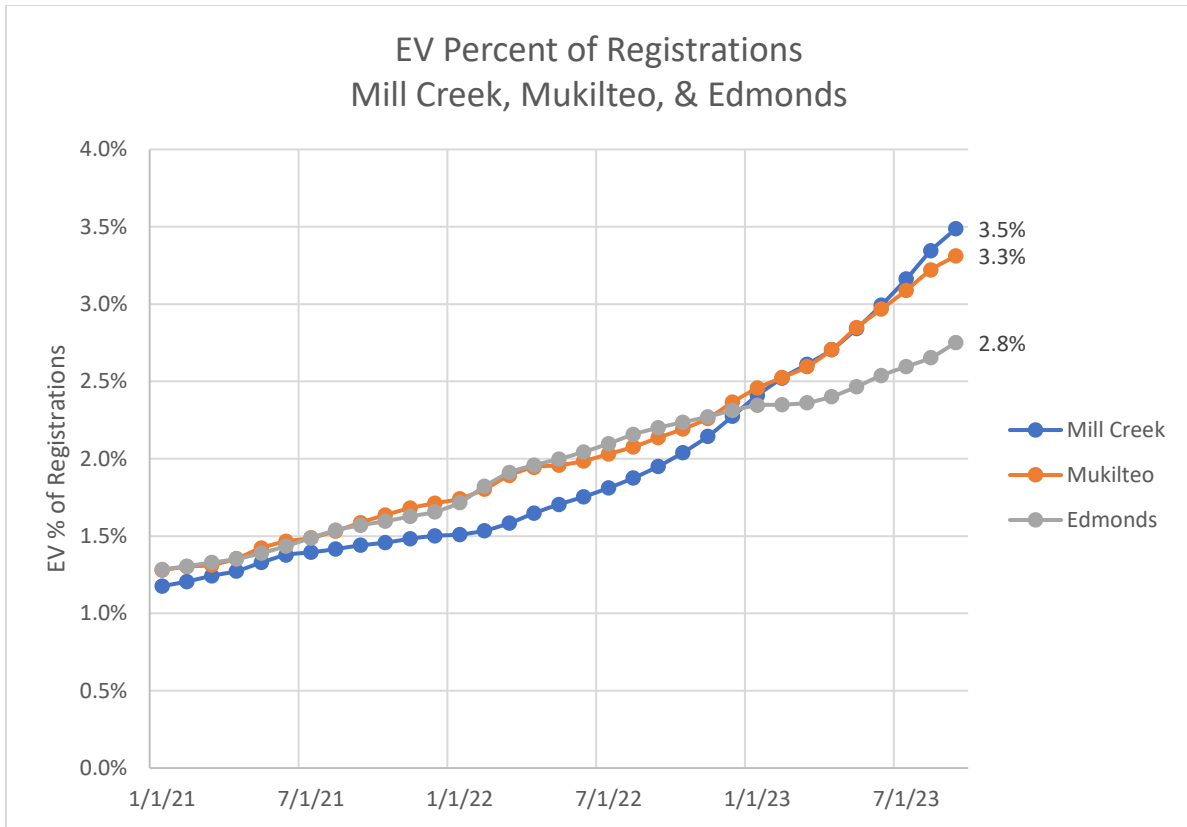


**Snohomish Cities: Mill Creek, Mukilteo, & Edmonds**

In Q3 2023, cities in Snohomish County reached 2.8% to 3.5% EV registration rates, up 25% to 80% over Q3 2022. Reflecting the trends seen above in purchasing, Edmonds growth was the lowest of Mill Creek, Mukilteo, and Edmonds.

Registered Vehicles

September	Mill Creek	Mukilteo	Edmonds
<b>2022</b>	1.9%	2.1%	2.2%
<b>2023</b>	3.5%	3.3%	2.8%
<b>YOY</b>	80%	54%	25%



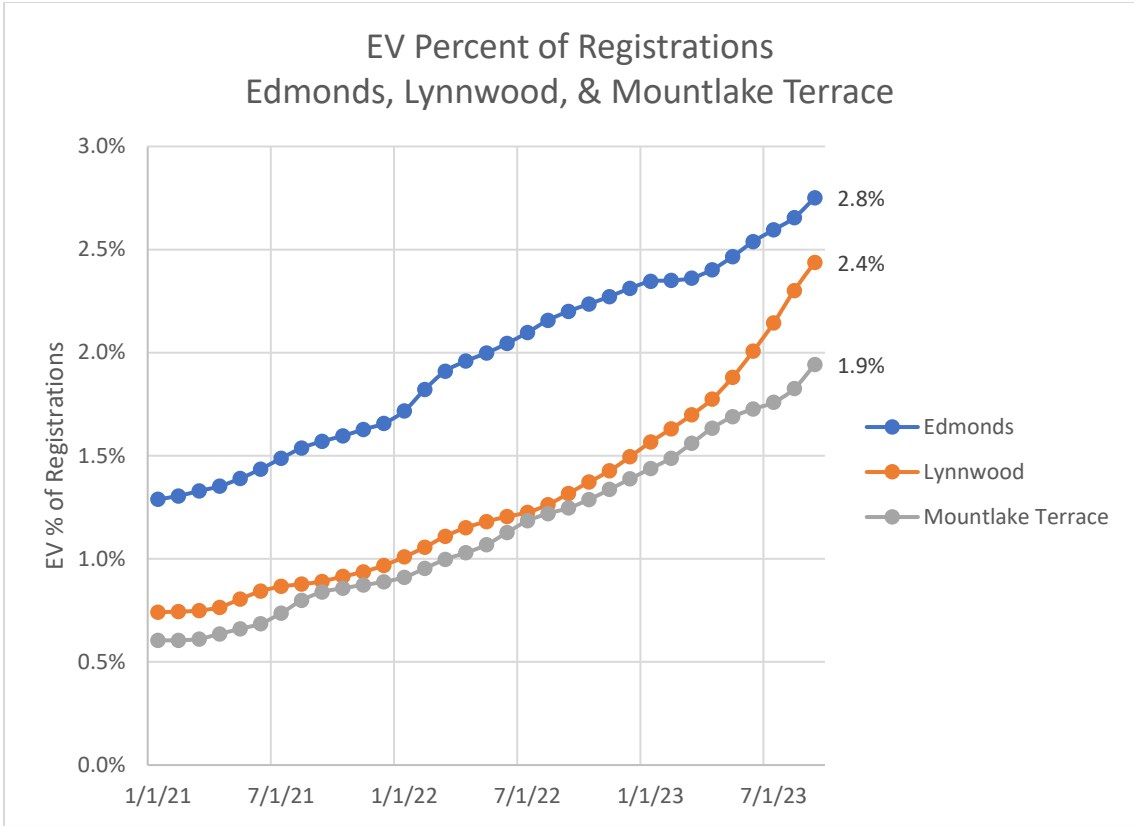
### Edmonds, Lynnwood, & Mountlake Terrace

Edmonds registrations reflect earlier adoption than Lynnwood and Mountlake Terrace. Current new-car purchasing in Lynnwood and Mountlake Terrace is higher than in Edmonds. Edmonds EV purchasing was higher from 2017 to 2021 – only when including used/old car purchasing. That previous higher purchasing puts Edmonds EV registrations rates higher than Lynnwood and Mountlake Terrace in Q3 2023.

There is something about Edmonds and used/old EV purchasing that is unusual.

Registered Vehicles

September	Edmonds	Lynnwood	Mountlake Terrace
<b>2022</b>	2.2%	1.3%	1.2%
<b>2023</b>	2.8%	2.4%	1.9%
<b>YOY</b>	25%	85%	56%

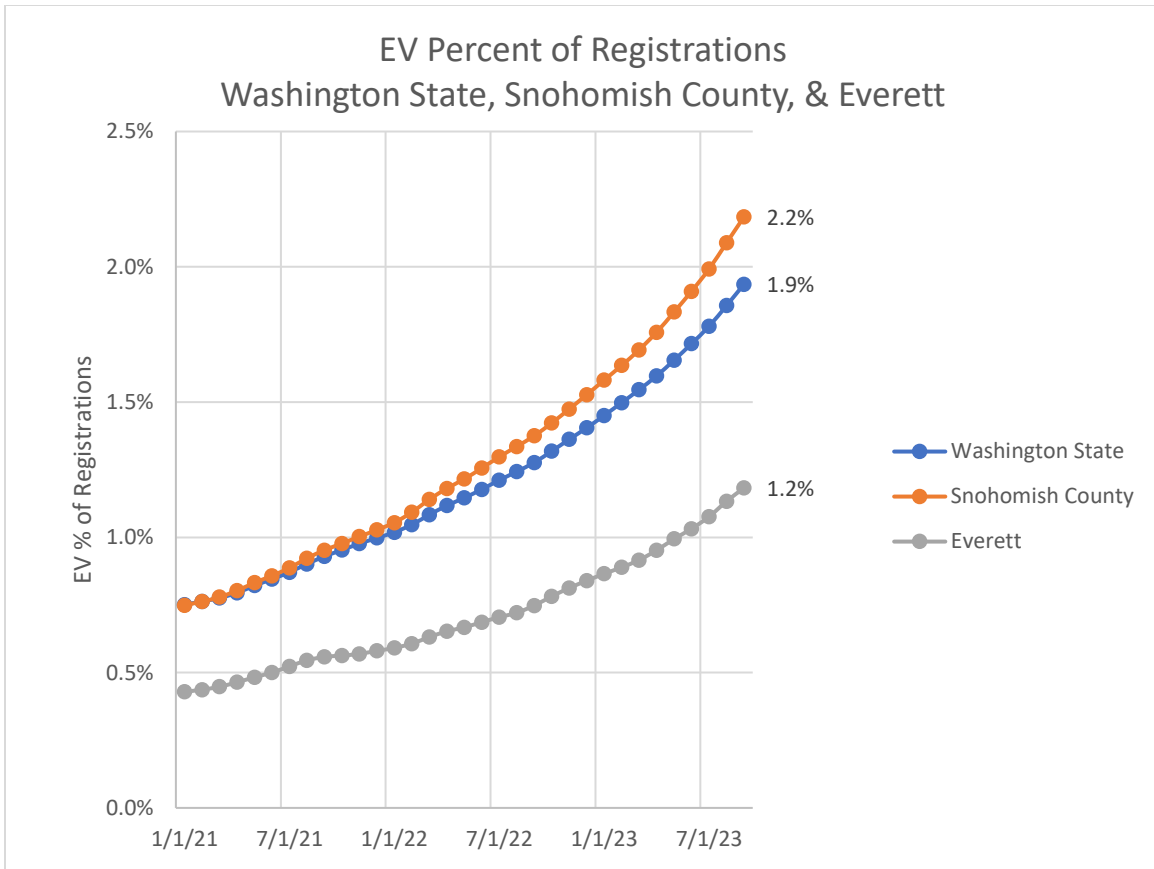


### Washington State, Snohomish County, & Everett

With a history of low EV adoption in purchasing over the last six years, Everett has a lower EV registration rate than Washington State and Snohomish County overall.

Registered Vehicles

September	Washington State	Snohomish County	Everett
<b>2022</b>	1.3%	1.4%	0.8%
<b>2023</b>	1.9%	2.2%	1.2%
<b>YOY</b>	52%	59%	58%



## Counts of Gasoline-Burning Vehicles

Stopping global overheating does not require buying electric vehicles. What it requires is stopping burning gasoline. That can be done by getting rid of gas-burning vehicles and not replacing them. Walking, telecommuting, and public transportation (on electric buses and electric trains) is a great way to stop releasing carbon dioxide and get exercise.

This report includes counts of gas vehicles registered in different locations. The changes in the number of gas vehicles is determined by how many people have vehicles, how many vehicles there are, and how many people there are.

A sensible metric would be the number of vehicles per person, but that is not available with the precision that might allow for comparisons from year to year. The Federal Census Bureau has provided population estimates for 2020 and 2022, but not for 2023.

The reporting here lists the counts of gas vehicles along with some indications of how populations changed from 2020 to 2022. The 2020-2022 population change rates are likely to have been seen in 2023, but that might not be what happened.

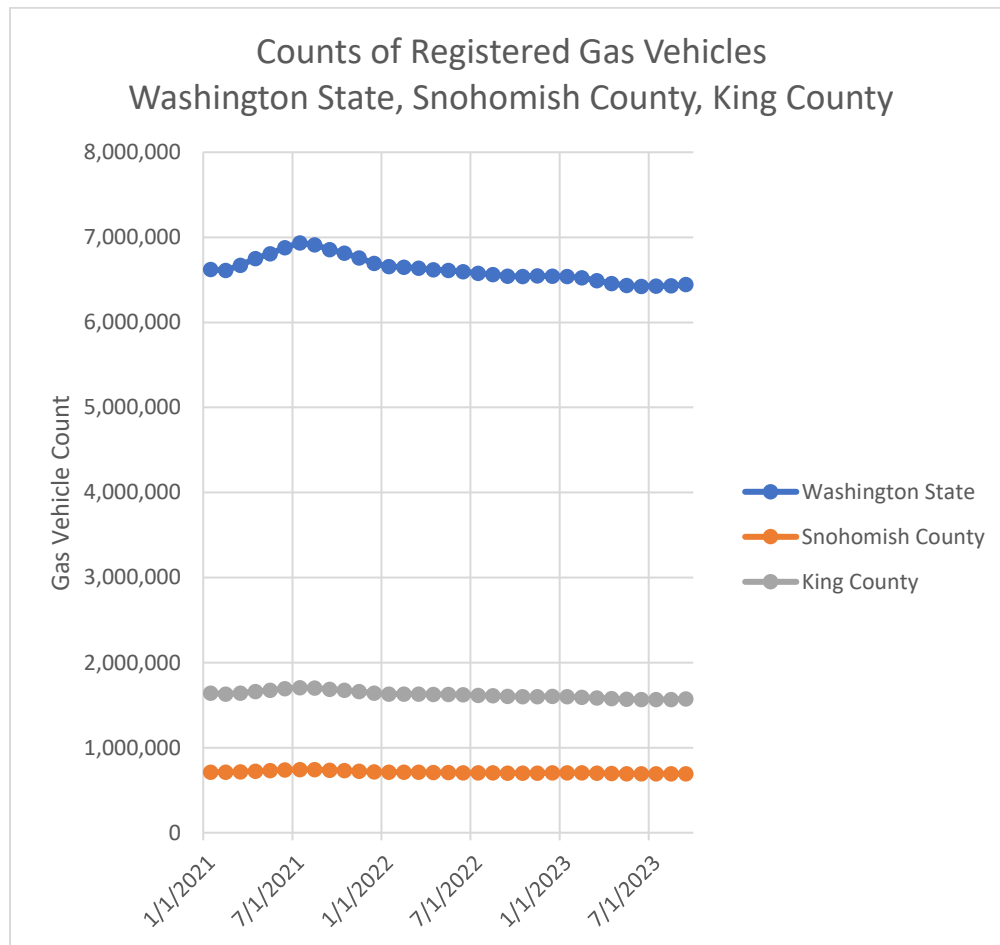


## Washington State, King County, & Snohomish County

Washington State population grew about 0.5% annually from 2020 to 2022. King County population dropped 0.05% annually. Snohomish County population grew by 0.7%.

In all three locations, the number of gas vehicles dropped. Snohomish County gas-vehicle rates dropped the least. That may be related to Snohomish County population growing the most. On a per person basis, Snohomish might have the same drop seen statewide, or greater.

September	Washington State	Snohomish County	King County
2022	6,536,858	701,330	1,600,468
2023	6,447,300	695,598	1,572,315
YOY	-1.4%	-0.8%	-1.8%



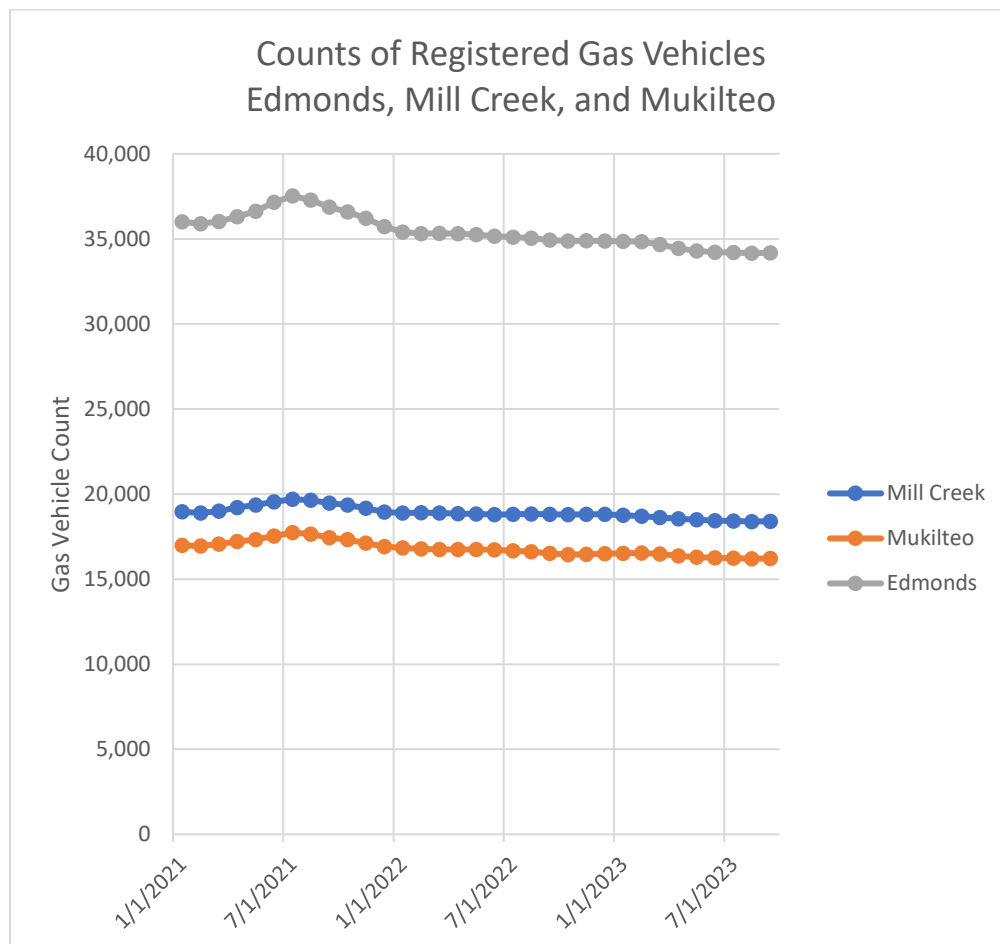
## Mill Creek, Mukilteo, Edmonds

The DOL data does not include cities. It does include tracts from the 2020 Census. To report on city counts, this analysis relied on sets of tracts that closely matched the municipal boundaries. Because

census tracts do not precisely match municipal boundaries, these sets do not provide perfect reporting on city registrations. To adjust the census-tract-based counts to approximate city counts, factors were calculated from 2020 populations reported for each city and 2020 populations reported in each census tract. The factors were the actual populations divided by the census tract populations. The adjustment factors ranged from .75 to 1.02. These factors were multiplied by the counts found in the census tracts to estimate the counts in the municipalities.

In Mill Creek, Mukilteo, and Edmonds, the number of gas vehicles dropped 2% from September 2022 to September 2023. Edmonds has about twice the population as Mill Creek and as Mukilteo.

September	Mill Creek	Mukilteo	Edmonds
<b>2022</b>	18,808	16,540	34,897
<b>2023</b>	18,399	16,223	34,190
<b>YOY</b>	-2.2%	-1.9%	-2.0%

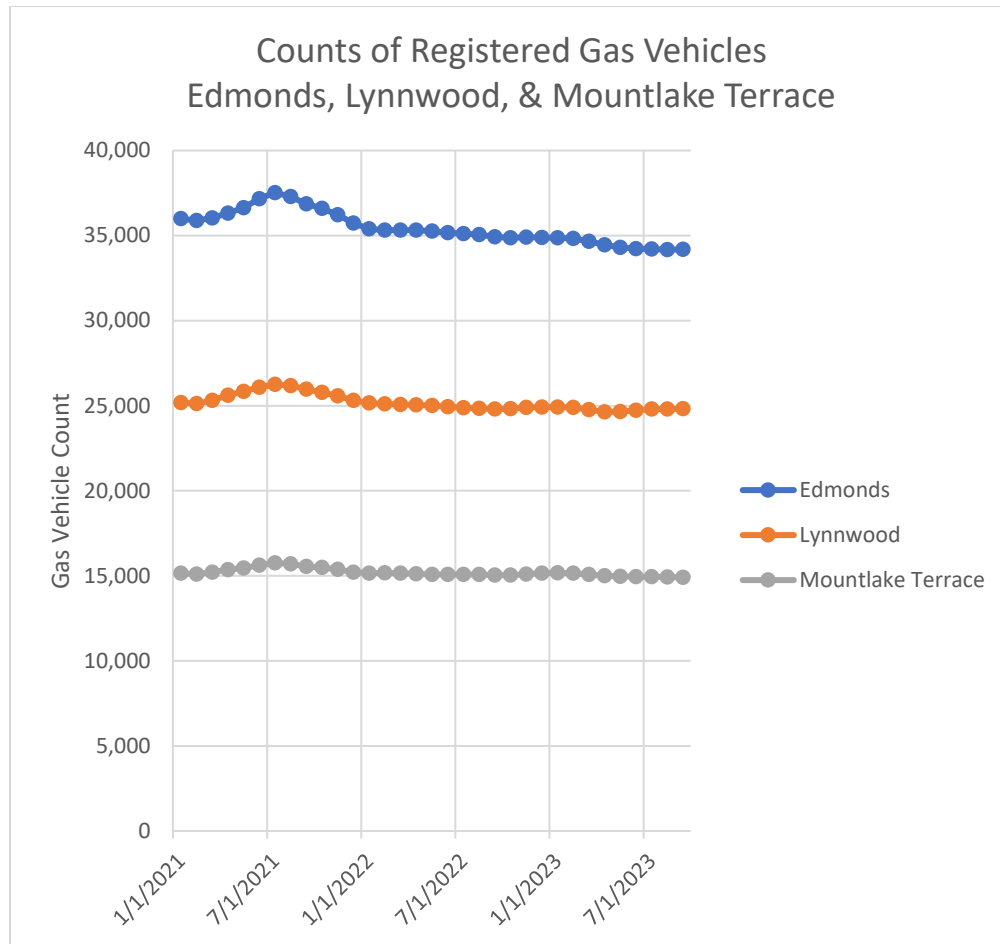


### Edmonds, Lynnwood, and Mountlake Terrace

From 2020 to 2022, Lynnwood grew at a rate of 6% per year. From 2022 to 2023, the number of gas cars in Lynnwood did not change. If Lynnwood growth continued at 6% to 2023, a steady count of gas cars

indicates a drop in per-person gas vehicle ownership. Mountlake Terrace has been growing by 0.6% per year, and the number of gas cars there fell 0.9% in 2023.

September	Edmonds	Lynnwood	Mountlake Terrace
2022	34,897	24,805	15,047
2023	34,190	24,816	14,908
YOY	-2.0%	0.0%	-0.9%



### Everett

Everett has been growing by 0.3% per year. From September 2022 to September 2023, Everett gas vehicle registration counts dropped 0.8% from 95,168 to 94,416.

## Natural Gas

Most of the greenhouse gases that are released by residents in Snohomish County are from burning gasoline in vehicles and from burning natural gas in homes.

Data on Edmonds natural gas burning is available [online](#). Edmonds charges a 6% tax on natural gas. Edmonds spending on natural gas consumption can be calculated by dividing by 0.06. PSE reports the prices they have charged [online](#). PSE prices are per therm. Total therms purchased are calculated by dividing the Edmonds spending by the PSE price.

There is one therm in each 100 cubic feet of natural gas, so cubic feet of natural gas can be calculated from Edmonds therm purchases by multiplying by 100.

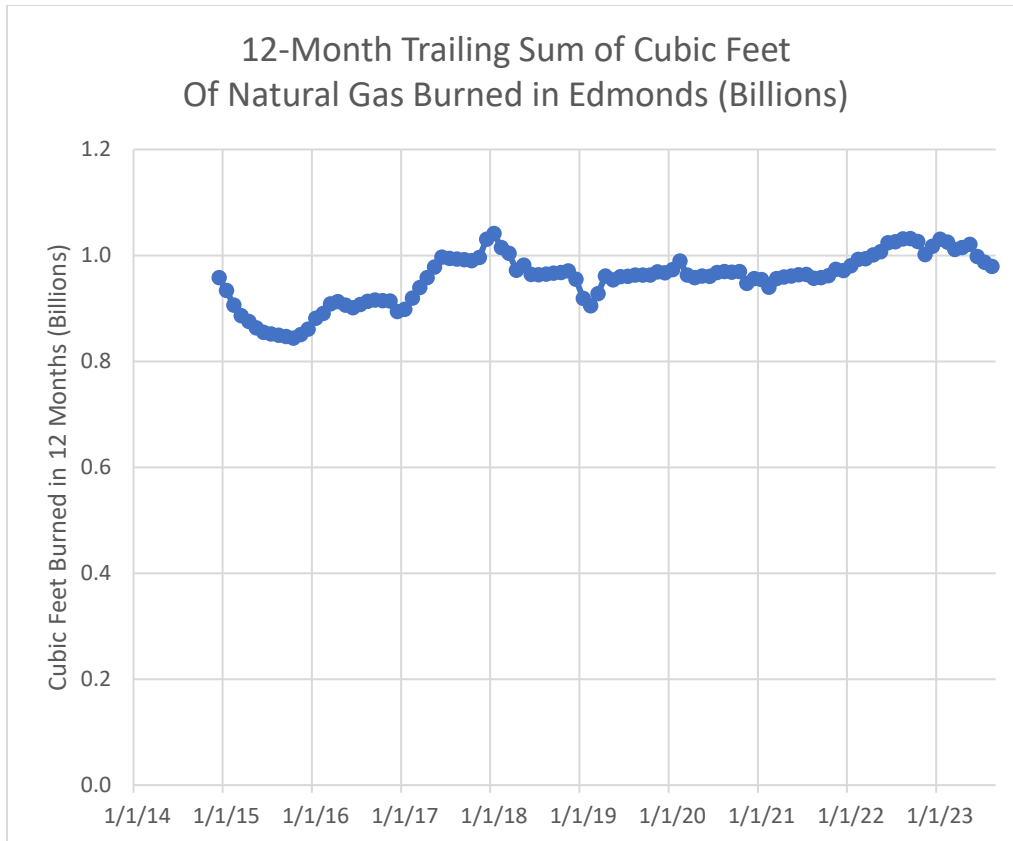
Recently, Edmonds has burned between 0.95 and 1.03 billion cubic feet each 12 months. Burning a billion cubic feet of natural gas releases about 55,000 metric tons of carbon dioxide.

According to the U.S. Department of Energy, about [1.4% of natural gas](#) leaks into the air during extraction, transportation, and combustion. For Edmonds, that would be 336 metric tons of natural gas. Over the course of 20 years, a ton of natural gas heats the planet about [85 times](#) more than a ton of carbon dioxide. The 336 tons of natural gas leaked for Edmonds last year added the equivalent of 28,600 tons of carbon dioxide. Before accounting for the greenhouse gas emissions of the equipment used to extract and deliver the natural gas, last year's Edmonds natural gas burning added the equivalent of about 83,000 tons of carbon dioxide into the air.

So far, natural gas tax revenues have not been obtained from other governments.

## 5% Improvement

There is some promising improvement in natural gas burning in Edmonds. In September 2021 through August 2022, Edmonds burned 1.03 billion cubic feet of natural gas. In the following 12 months – September 2022 through August 2023 – Edmonds residents and businesses burned 5% less: 0.98 billion cubic feet.



This 5% improvement is promising. And at the same time, it is not yet progress over recent natural gas burning. From 2017 through 2021, Edmonds burned between 0.95 and 0.98 billion cubic feet of natural gas every 12 months. If the drop continues, it will become a sign of real progress.

### Greenhouse Gas Emissions

The 1 billion cubic feet of natural gas burned in Edmonds over the last year released the equivalent of about 83,000 metric tons of carbon dioxide.

### Gasoline

Data on gasoline burning is not as available as Edmonds natural gas burning. Gasoline emissions have to be estimated from the number of gasoline cars, the number of miles a typical car is driving, and the average fuel efficiency. The DOL data provides current data on the number of gasoline vehicles. The latest available data on miles driven is not specific to each city and is not current. It is a report of vehicle miles driven in Snohomish County in 2018.

In 2018, there was an average of [16,607,806](#) vehicle miles driven in Snohomish County. In 2020, there were about 720,000 vehicles registered in Snohomish County. A very rough estimate is that the average Snohomish vehicle travels 23 miles a day. The [EPA reports](#) Fuel efficiencies of different vehicles. Averaging over the vehicles in Washington State shows that the average Washington State gasoline car gets about 22 miles per gallon.

Those estimates would mean that the average gasoline-powered vehicle burned about a gallon of gasoline a day and needed about seven gallons of gas each week.

A gallon of gasoline releases about 20 pounds of carbon dioxide. An average gasoline vehicle in Snohomish County releases about 7,300 pounds of carbon dioxide each year – about 3.3 metric tons.

In Edmonds, 3.3 metrics tons per gas vehicle adds up to 113,000 metrics tons each 12 months.

	Mill Creek	Mukilteo	Edmonds	Lynnwood	Mountlake Terrace	Everett
<b>2023 Gas Vehicles</b>	18,399	16,223	34,190	24,816	14,908	93,299
<b>Tons CO<sub>2</sub></b>	60,716	53,535	112,828	81,894	49,197	307,887

## Press Coverage

Danny Westneat wrote [a helpful column](#) about EV adoption in King County and statewide.

## Conclusions

In Paris in 2015, the United States joined almost all of the world in pledging net zero greenhouse gas emissions by 2050. In 2016, the U.S. indicated it would not live up to its word, but in 2020, the U.S. recommitted to the Paris agreement. For Washington State to do its part in living up the United States’ commitment, Washington State will have to reach net zero by 2050 as well.

Collecting carbon dioxide out of the atmosphere has not yet been shown to be a reliable strategy. Washington State will have to reach net zero by getting to actual zero greenhouse gas emissions by 2050. With current vehicle systems, outside of hobbyists, 2050 will be the last year of cars built in 2030.

To meet its responsibility to zero emissions by 2050, Washington State needs new car purchases to reach 100% before 2030. Current trends are that Washington State will reach 100% before 2030.

## Every Moment Counts

Around the world, global overheating is making more and more land unable to support agriculture. Farmers flee the devastation of global overheating in Syria, Guatemala, Somalia, Afghanistan, and elsewhere. If high-emissions countries (the U.S., Australia, Canada, etc.) dawdle up to 2050, more people die. The sooner we all get away from gasoline, natural gas, and coal, the more lives are saved.

## Reason for Hope

The idea that the last new gas car bought in 2030 will be junked in 2050 is based on the idea that other things do not change. At current trends, by 2031, half of the cars registered in Washington State will be electric vehicles. When that happens, the financial models that support gasoline stations will have changed enormously. Gas stations will go out of business. Driving a gas car will be a much bigger hassle as drivers have to travel greater and greater distances to find gas stations that are still in business. As that plays out from 2030 on, it is unlikely that current gas-car ownership patterns will continue. It would be reasonable to guess that, by 2040, the last used gasoline car will be junked.

We don't know how the full transition to electric cars will go. Full electrification by 2040 would be great, and farm families around the world would be grateful if that happens.

All we can do now is hurry the transition along as fast as we can and hope for the best.