

Electric Vehicle Readiness Survey Results

Throughout April 2024, a survey was available for the public to provide feedback on electric vehicle (EV) awareness for the Fargo-Moorhead area. The survey was held online via survey monkey and received approximately 140 responses. Nearly 84% of respondents appear to be in the Fargo Moorhead area with the remaining 16% coming from the surrounding areas.

The Survey began with questions on the respondents travel patterns then lead into familiarity with EVs currently, including an open-ended question asking respondents' thoughts about EVs. Respondents that owned/leased an EV were directed to an additional set of questions while others were lead to the final questions including additional information on current and future EVs.

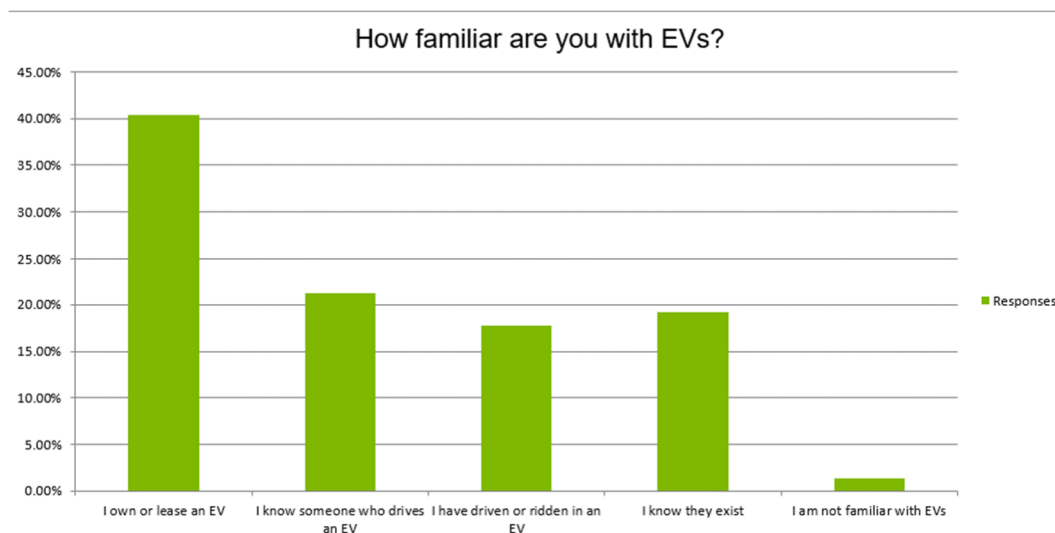
Travel Background

The first three questions asked respondents about their travel patterns. Around 97% of respondents rely on a personal vehicle for transportation. About, 66% travel 10-49 miles per trip on a typical day, which fits within the range of most EVs comfortably. When asked about traveling over 100 miles, about half (49.7%) of respondents said they travel that far only 1 or 2 times per month.

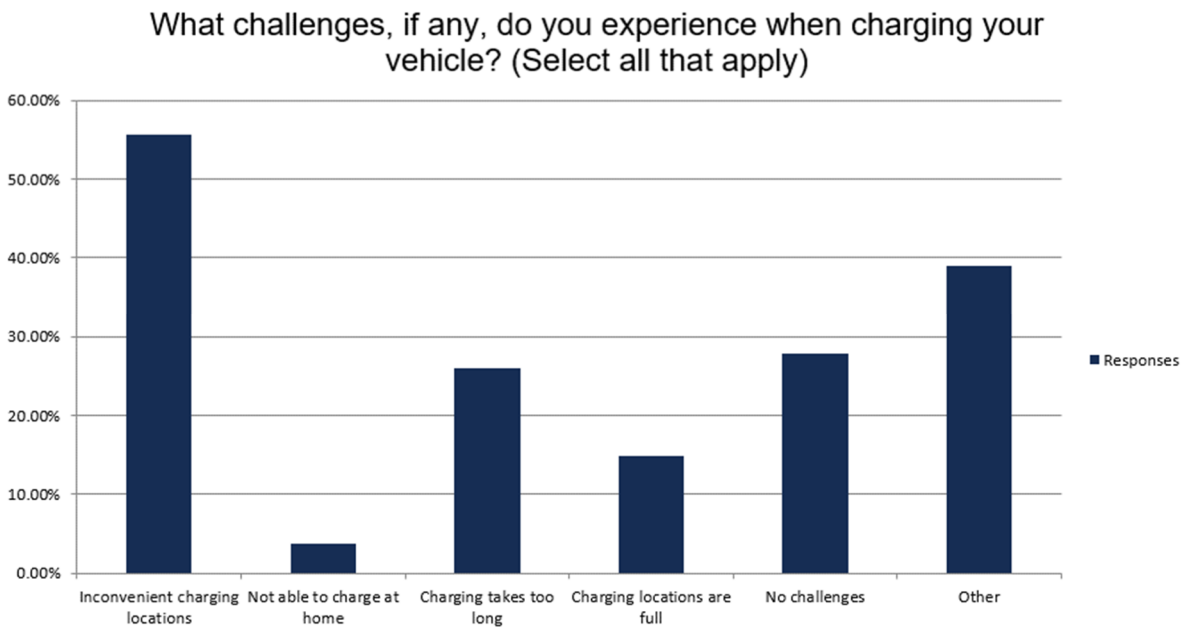
When respondents were asked to provide what words come to mind when thinking about EVs repeated responses by 8 or more people included expensive, quiet, future, clean and efficient.

Current EV Users

About 40% of respondents to this survey indicated they currently use an EV as one of the vehicles in their household.

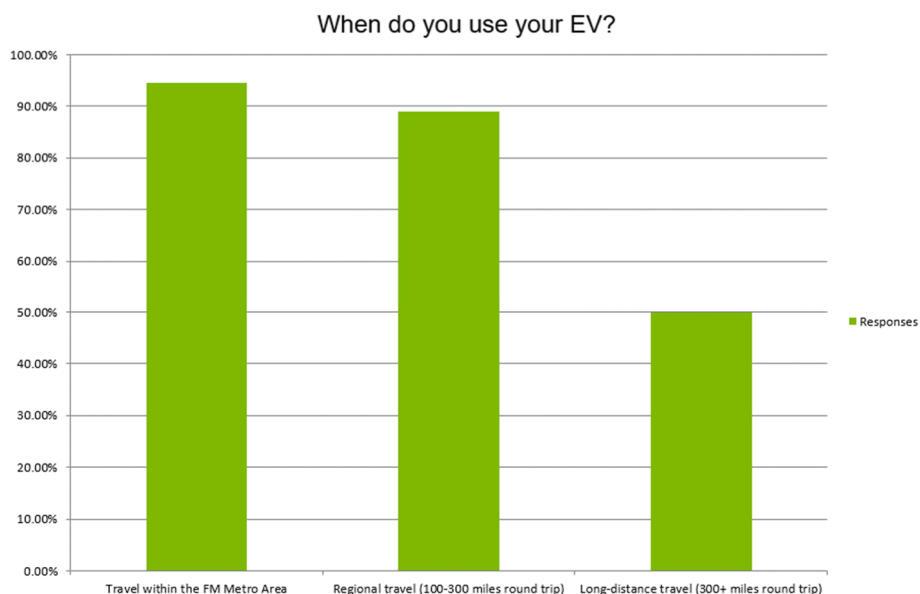


Of those that use EVs, over 70% reported that they have had some issues involved with charging their vehicle. More specifically, nearly 55% of responses noted one of their challenges is inconvenient charging locations.



These respondents shared that rapid charging stations at a variety of public locations would be very beneficial, preferred locations were shopping areas, grocery stores and gas stations with almost all respondents open to paying for chargers.

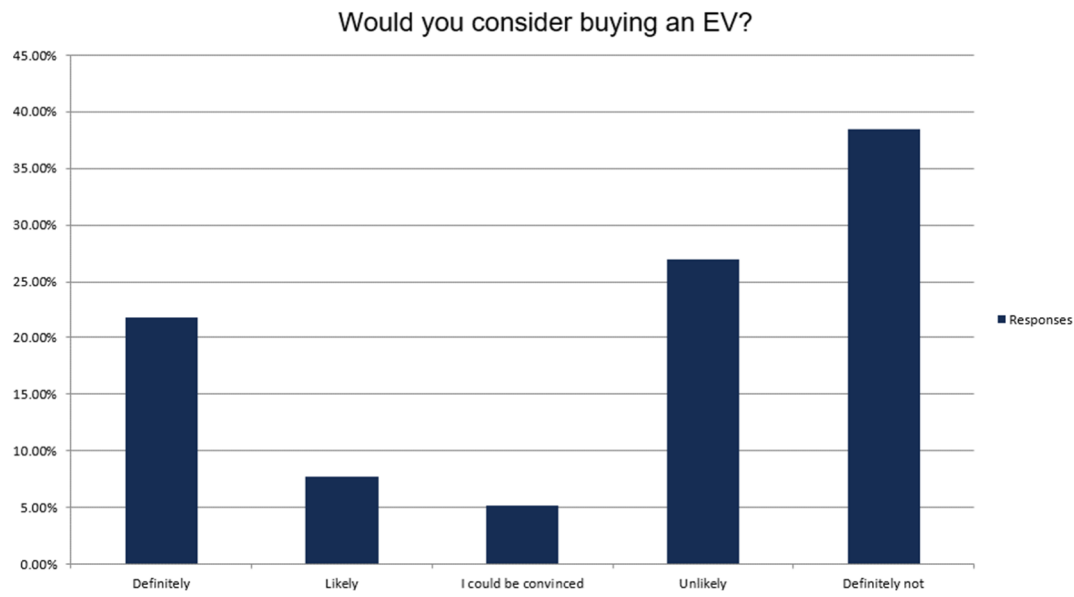
EV users routinely travel within the metro area with their vehicles, but almost 90% reported making regional trips (roundtrip distances up to 300 miles, which would deplete the range of most EVs) and half reported also traveling long-distance (more than 300 miles roundtrip) in their EVs. The results



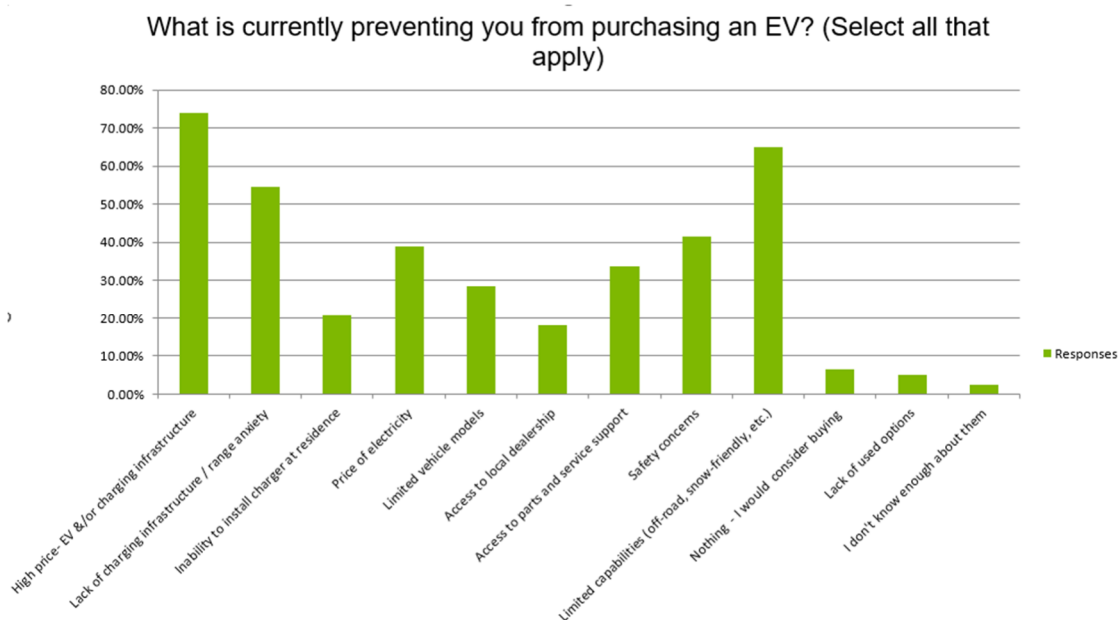
underscore the needs for fast charging capabilities on major highway corridors within and surrounding the Fargo-Moorhead metro.

Non-EV Users

Some questions were directed to respondents that do not currently use an EV to gauge their potential to become an EV user. Most respondents still seemed hesitant to say yes to owning an EV. However, over a quarter still indicated definitely or likely to becoming an EV owner.

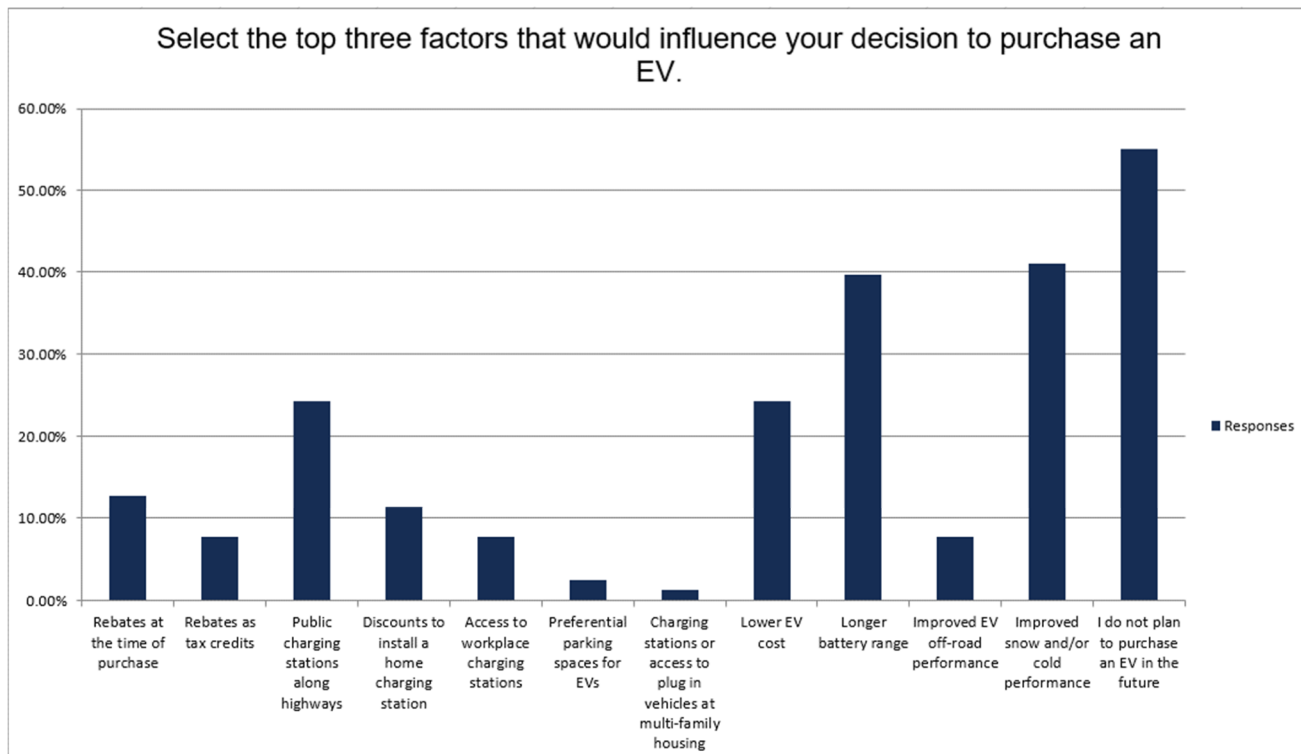


When asked what factors are stopping respondents from purchasing an EV the top reasons were the price of the vehicles, the limitations the vehicles have and the cost and availability of charging stations.



Some options were paraphrased for spacing in summary.

Respondents were then asked what would encourage them to purchase an EV. The top reasons selected were: if EVs were lower cost, if EVs had longer battery life, if EVs had improved snow/cold capabilities and an increase of charging stations along the highways.



EVs in the Community

All respondents, EV owners and others, were asked the same final questions. These questions focused mainly on community and demographic questions. Among EV owners and non-owners over 83% live in a single-family home. For EV owners that percentage was nearly 91% of respondents. The other respondents were closer to about 83% live in a single-family house.

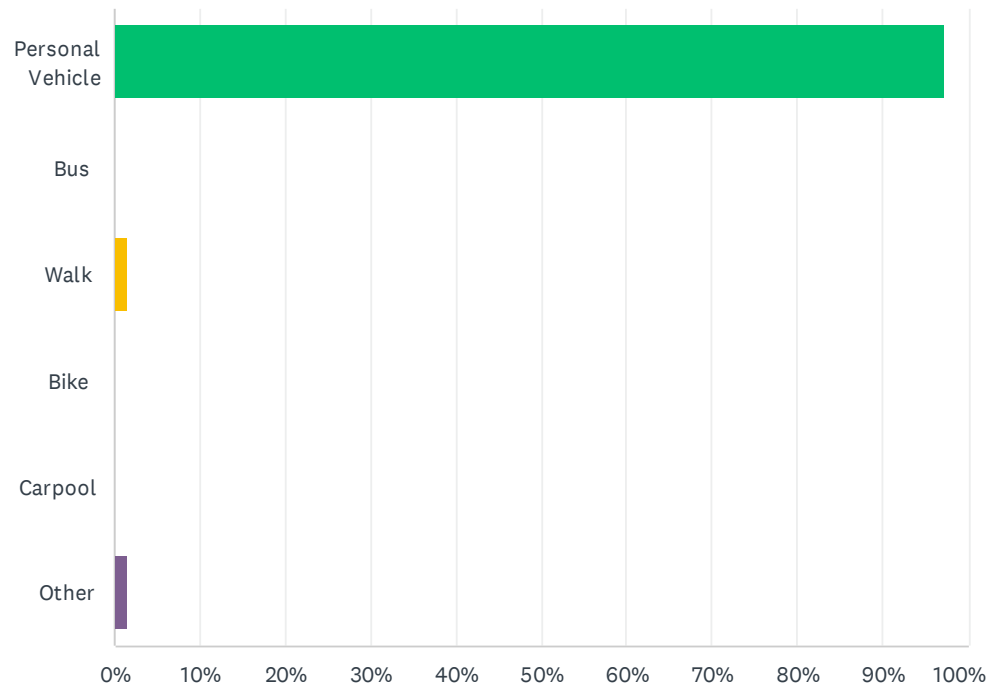
The information collected in this survey will be beneficial to the project team as they move forward with this study and create strategies that will be best for the Fargo-Moorhead area's future.

Full Survey results

Below are the results from all the survey questions.

Q1 What is your primary mode of transportation?

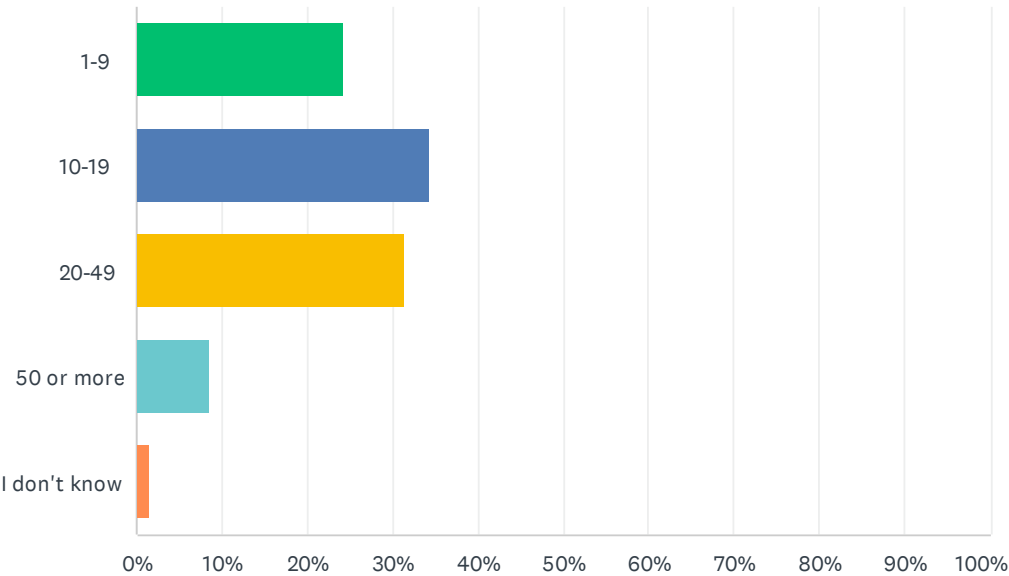
Answered: 140 Skipped: 6



ANSWER CHOICES	RESPONSES	
Personal Vehicle	97.14%	136
Bus	0.00%	0
Walk	1.43%	2
Bike	0.00%	0
Carpool	0.00%	0
Other	1.43%	2
TOTAL		140

Q2 How many miles per trip do you typically drive in one day?

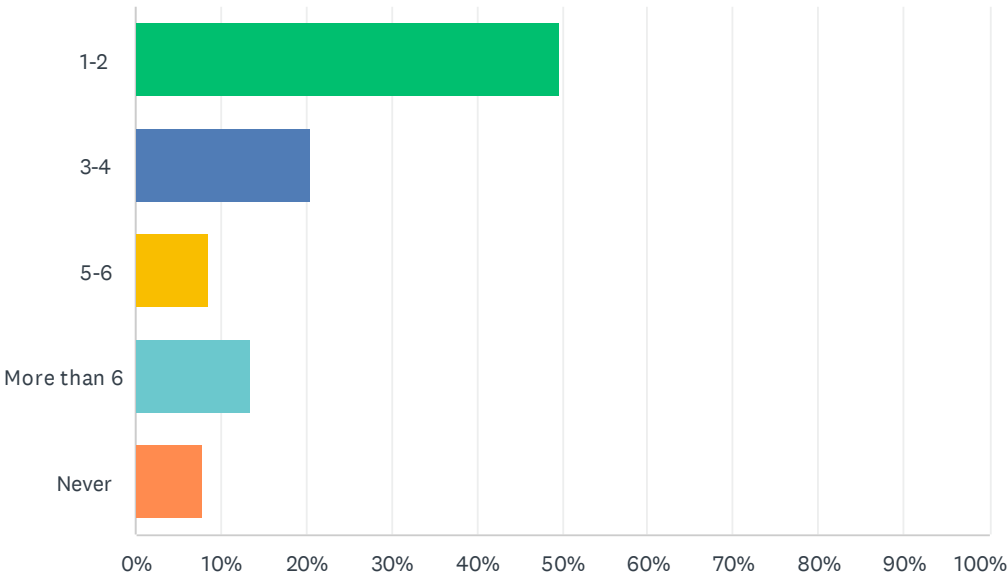
Answered: 140 Skipped: 6



ANSWER CHOICES		RESPONSES	
1-9		24.29%	34
10-19		34.29%	48
20-49		31.43%	44
50 or more		8.57%	12
I don't know		1.43%	2
TOTAL			140

Q3 How many times do you drive more than 100 miles during one trip within a month?

Answered: 141 Skipped: 5



ANSWER CHOICES	RESPONSES	
1-2	49.65%	70
3-4	20.57%	29
5-6	8.51%	12
More than 6	13.48%	19
Never	7.80%	11
TOTAL		141

Q4 What words come to mind when you think about EVs?

Answered: 140 Skipped: 6

#	RESPONSES	DATE
1	Quick clean quiet	4/23/2024 1:22 PM
2	Tesla	4/23/2024 1:13 PM
3	Tesla, awesome, solar panels, low reimbursement from electric company	4/23/2024 1:05 PM
4	Quiet, convenient, clean	4/22/2024 7:09 AM
5	quiet, environmental, lithium fires, chargers	4/22/2024 5:17 AM
6	the future, cleaner, fun, political, progressive	4/21/2024 10:08 AM
7	Quiet. Cheaper in the long run. Efficient.	4/20/2024 10:26 PM
8	Waste of money	4/20/2024 9:37 AM
9	I own an EV and believe there are only 2 spots that are readily available for charging in the FM area including Robert's garage downtown and west Acres even though there are only a couple of spots. There needs to be more places to charge with a significant increase in the number of stations	4/20/2024 9:20 AM
10	New Technology, quiet, fast	4/19/2024 10:23 PM
11	Green	4/19/2024 8:08 PM
12	Awesome	4/19/2024 7:46 PM
13	Equality Void	4/19/2024 6:09 PM
14	Range anxiety, cold weather affects battery and range, education for precharging, lack of L3 charging, fast, quick, torque, quiet, people aggressive toward EVs, conflict	4/19/2024 5:55 PM
15	Range anxiety, lack of L3 charging, cost to charge, cold batteries, expensive, quiet, torque	4/19/2024 5:46 PM
16	Yes! Eco-friendly! No gas!	4/19/2024 3:10 PM
17	Easy	4/19/2024 1:48 PM
18	I wish charging stations were closer to areas where one could eat	4/19/2024 11:57 AM
19	Expensive and unreliable	4/19/2024 11:35 AM
20	Futuristic	4/19/2024 10:19 AM
21	Unneeded	4/19/2024 7:04 AM
22	Love them!	4/19/2024 6:30 AM
23	Waste of money	4/19/2024 4:33 AM
24	Insufficient, not ready yet, not feasible.	4/19/2024 12:05 AM
25	practical, efficient, economical	4/18/2024 11:34 PM
26	wasteful, pointless, exploitation	4/18/2024 11:21 PM
27	Unbelievable that our tax monies are being used as incentive's to push EV sales. Unfair!	4/18/2024 9:20 PM
28	Awesome!!!	4/18/2024 9:02 PM
29	Clean, renewable	4/18/2024 8:35 PM
30	Good for environment, expensive	4/18/2024 8:08 PM

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31	Powerful, efficient, fun	4/18/2024 8:06 PM
32	Government sucks	4/18/2024 8:02 PM
33	30 below weather; where is all the electricity going to come from; how can you possibly accommodate that many EVs that is needed in today's society; how is this going to be affordable for a family that needs multiple vehicles?	4/18/2024 7:21 PM
34	Future	4/18/2024 7:19 PM
35	Future	4/18/2024 7:18 PM
36	Liberals	4/18/2024 7:12 PM
37	Future, climate friendly	4/18/2024 6:54 PM
38	Electric vehicles	4/18/2024 6:39 PM
39	Fire	4/18/2024 6:33 PM
40	Worthless	4/18/2024 6:25 PM
41	Worthless	4/18/2024 6:23 PM
42	Getting something crammed down my throat	4/18/2024 6:16 PM
43	acceleration	4/18/2024 6:15 PM
44	Junk	4/18/2024 6:13 PM
45	Not for me	4/18/2024 6:13 PM
46	Impractical	4/18/2024 6:03 PM
47	Technology	4/18/2024 5:56 PM
48	Failure	4/18/2024 5:51 PM
49	Reliable Juan	4/18/2024 5:14 PM
50	Love mine	4/18/2024 5:13 PM
51	Tesla	4/18/2024 5:08 PM
52	Lack of Charging	4/18/2024 4:59 PM
53	Very interesting & a very likely future purchase	4/18/2024 4:59 PM
54	Efficient	4/18/2024 4:58 PM
55	Quiet, boring, appliance, soulless, granola	4/18/2024 4:55 PM
56	Waste of money and resources	4/18/2024 4:33 PM
57	Not sustainable, wasteful, impractical for many in this area	4/18/2024 4:26 PM
58	Nonsense,everything comes from China or overseas	4/18/2024 4:25 PM
59	Not sustainable, wasteful, impractical for many in this area	4/18/2024 4:20 PM
60	Range	4/18/2024 4:16 PM
61	Price and winter cold effect on EVs	4/18/2024 4:15 PM
62	Tesla	4/18/2024 4:13 PM
63	Rebates are ridiculous!! Have to encourage someone to buy with money !! How about us that drive other cars??	4/18/2024 4:13 PM
64	Not for me!!	4/18/2024 4:04 PM
65	Where would I plug it in at work after commuting 55 miles	4/18/2024 4:01 PM
66	Low miles per charge. Lack of chargers. Time it takes to charge. Driving up electricity cost due to power grid capacity. Undocumented car on emissions to produce rare metals for batteries.	4/18/2024 3:41 PM

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Cold weather impacts on battery life. Cost to replace battery. Impractical to use for our annual winter trip to AZ and back based on my concerns mentioned.

67	Quiet, efficient, fun to drive	4/18/2024 3:34 PM
68	Tesla, expensive, ChargePoint, EnelX	4/18/2024 3:23 PM
69	Gay	4/18/2024 3:21 PM
70	Joke	4/18/2024 3:21 PM
71	The Future, Efficiency, Clean	4/18/2024 3:19 PM
72	Performance, expensive	4/18/2024 3:19 PM
73	Unreliable. Unfairly subsidized. Not for me	4/18/2024 3:17 PM
74	Unreliable. Subsidized unfairly. Not for me	4/18/2024 3:16 PM
75	we don't have the infrastructure, powered off coal	4/18/2024 3:15 PM
76	Minimum Maintenance	4/18/2024 3:14 PM
77	Progressive, efficient, fun	4/18/2024 3:14 PM
78	Electric vehicles	4/18/2024 3:13 PM
79	No way.	4/18/2024 3:11 PM
80	Stupid	4/18/2024 3:09 PM
81	NO	4/18/2024 2:53 PM
82	smooth, economical, fast	4/18/2024 2:33 PM
83	Winter months?????	4/18/2024 2:33 PM
84	none	4/18/2024 2:30 PM
85	I'm not interested in an EV.	4/18/2024 2:18 PM
86	Quiet, powerful vehicle	4/18/2024 11:28 AM
87	Limited infrastructure. I live 30 miles away from the Fargo Moorhead area and depending on the weather an EV may no meet my needs as far as getting to my destination, doing needed stops, and getting home again without needing a charge.	4/18/2024 11:01 AM
88	Over loading the electric grid! You cannot store electricity for emergency. Let's talk about and boost our electrical power grid BEFORE pushing EV's down our throat.	4/17/2024 2:34 PM
89	My favorite car ever; important step for addressing climate change	4/17/2024 10:51 AM
90	Concerned: technology is not advanced enough for this venture. Concerning that the rare materials needed for these batteries make the US dependent on foreign entities. Concerned that the grid isn't capable of supplying enough electricity to heat and cool our homes/businesses, now add EVs to the mix.	4/17/2024 10:34 AM
91	Gimmick, Forced Technology, Gas Lighting, Worse for environment	4/17/2024 7:52 AM
92	Dangerous: fire hazard especially in accident, not trustworthy in cold climate, the footprint expense of raw materials needed for batteries is being secretive, the extra weight means more road wear and tear, requires heavier duty brakes and tires and the fact the US will be patronizing China who supplies much of the products to make a battery. China isn't exactly a friend to USA.	4/17/2024 6:28 AM
93	Expensive, unreliable, untrustworthy	4/17/2024 6:22 AM
94	Insufficient, not compatible	4/17/2024 5:55 AM
95	Fast	4/13/2024 11:47 PM
96	cleaner, less reliable, very expensive, not fit for ND's climate.	4/13/2024 10:38 PM
97	batteries	4/13/2024 3:27 PM

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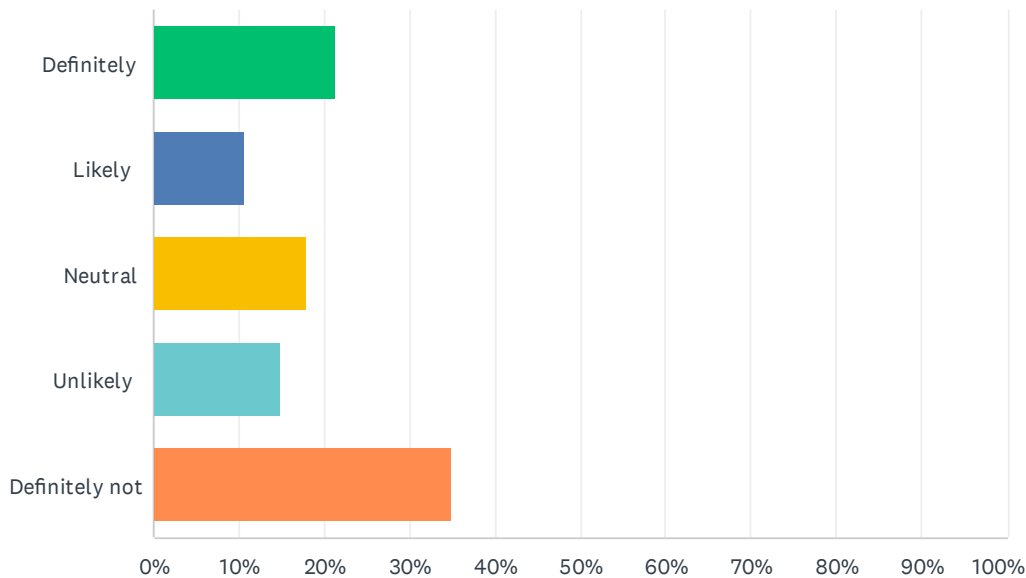
98	Hopeful future	4/13/2024 2:12 PM
99	Big joke	4/13/2024 7:17 AM
100	Fast.	4/12/2024 6:37 PM
101	Savings, Quick, Cheap, Fun	4/12/2024 8:48 AM
102	NEVER WILL HAVE ONE	4/12/2024 8:16 AM
103	No charging infrastructure, short mileage range between charges, cold weather shortens battery charge, hot weather increases risk of battery fire. must be towed if run out of charge. Not suitable for towing a travel trailer long distances.	4/12/2024 7:52 AM
104	Expensive, wasteful, unnecessary, impractical	4/12/2024 6:42 AM
105	saving gas	4/12/2024 2:46 AM
106	I'd buy a hybrid but not a full EV living in North Dakota	4/11/2024 11:08 PM
107	Cheap to run, environmental	4/11/2024 11:02 PM
108	Clean	4/11/2024 6:37 PM
109	Upfront cost, lower emissions, and battery	4/5/2024 10:56 AM
110	Juice	4/4/2024 9:26 PM
111	Gas savings	4/4/2024 12:36 PM
112	Clean air	4/4/2024 8:52 AM
113	Expensive, quick	4/3/2024 11:38 PM
114	Fuel savings	4/3/2024 11:37 PM
115	Clean	4/3/2024 9:45 PM
116	Independence	4/3/2024 8:37 PM
117	I own one	4/3/2024 8:20 PM
118	Efficient, fast, practical, technology, minimal, low maintenance, and fun.	4/3/2024 6:54 PM
119	Incomplete technology not suitable for our northern climate	4/3/2024 1:44 PM
120	Battery	4/3/2024 1:35 PM
121	Scam, government control, waste of energy	4/2/2024 6:59 PM
122	Expensive, not efficient for long trips	4/1/2024 6:31 AM
123	expensive, toxic, environmental disaster,	3/31/2024 9:08 AM
124	no emission	3/30/2024 8:32 PM
125	Sustainable energy	3/29/2024 5:35 PM
126	sustainable, responsible, expensive	3/29/2024 9:53 AM
127	Fast acceleration. Low operating costs.	3/29/2024 9:10 AM
128	Tesla	3/29/2024 8:31 AM
129	Cool	3/29/2024 7:30 AM
130	obvious	3/29/2024 6:26 AM
131	Caring, intelligent, decent, human being	3/28/2024 9:39 PM
132	Pass	3/28/2024 8:59 PM
133	A better mode of transportation	3/28/2024 8:00 PM
134	Over-priced, waste, greenwashing, elitest	3/28/2024 7:10 PM

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135	lithium	3/28/2024 6:41 PM
136	Awesome	3/28/2024 6:14 PM
137	Good	3/28/2024 6:13 PM
138	Clean, convenient. Economical,	3/28/2024 5:52 PM
139	The future.	3/28/2024 5:46 PM
140	They are the future.	3/28/2024 5:38 PM

Q5 Would you, or your company, be interested in training opportunities that would support the installation, maintenance, and repair of electric vehicles or charging stations?

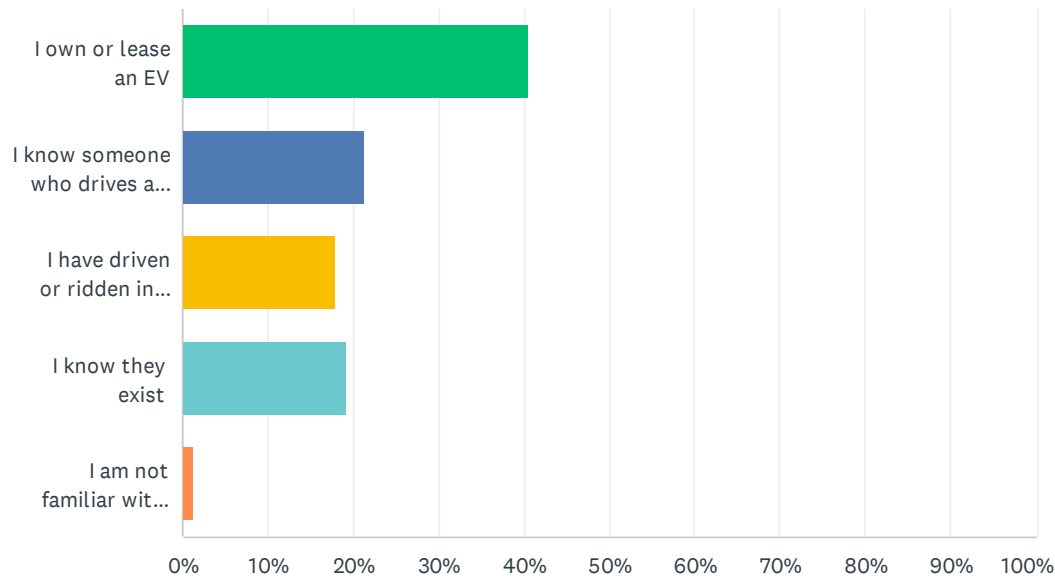
Answered: 140 Skipped: 6



ANSWER CHOICES	RESPONSES	
Definitely	21.43%	30
Likely	10.71%	15
Neutral	17.86%	25
Unlikely	15.00%	21
Definitely not	35.00%	49
TOTAL		140

Q6 How familiar are you with EVs?

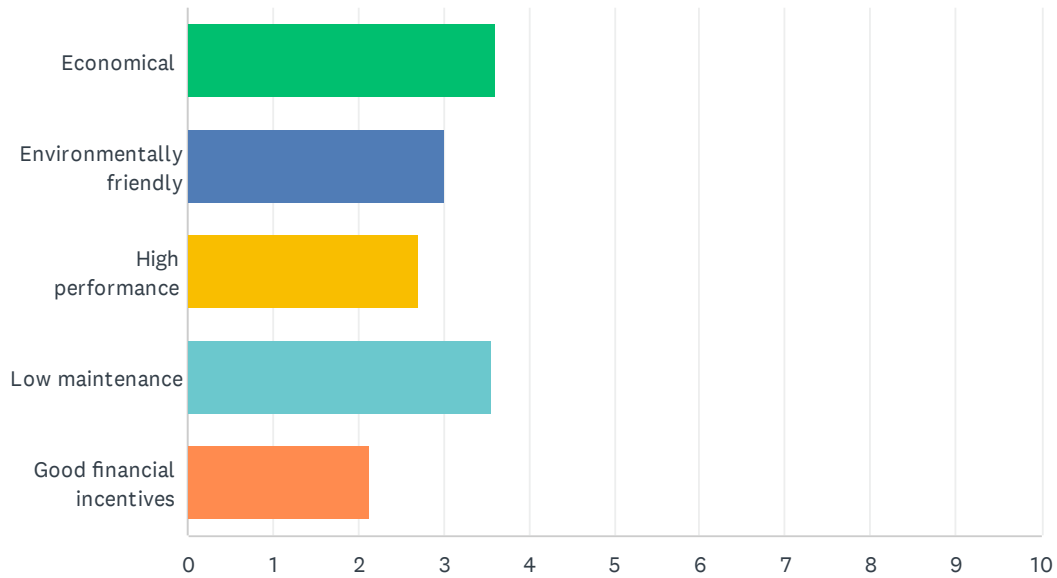
Answered: 146 Skipped: 0



ANSWER CHOICES	RESPONSES	
I own or lease an EV	40.41%	59
I know someone who drives an EV	21.23%	31
I have driven or ridden in an EV	17.81%	26
I know they exist	19.18%	28
I am not familiar with EVs	1.37%	2
TOTAL		146

Q7 Why do you own or lease an EV? Rank the following factors from most important to least important, with 1 being most important and 5 being least important.

Answered: 54 Skipped: 92



	1	2	3	4	5	TOTAL	SCORE
Economical	24.07% 13	35.19% 19	18.52% 10	22.22% 12	0.00% 0	54	3.61
Environmentally friendly	27.78% 15	9.26% 5	18.52% 10	24.07% 13	20.37% 11	54	3.00
High performance	16.67% 9	12.96% 7	22.22% 12	20.37% 11	27.78% 15	54	2.70
Low maintenance	22.22% 12	33.33% 18	27.78% 15	11.11% 6	5.56% 3	54	3.56
Good financial incentives	9.26% 5	9.26% 5	12.96% 7	22.22% 12	46.30% 25	54	2.13

Q8 Are there any other reasons you own or lease an EV that were not listed above?

Answered: 39 Skipped: 107

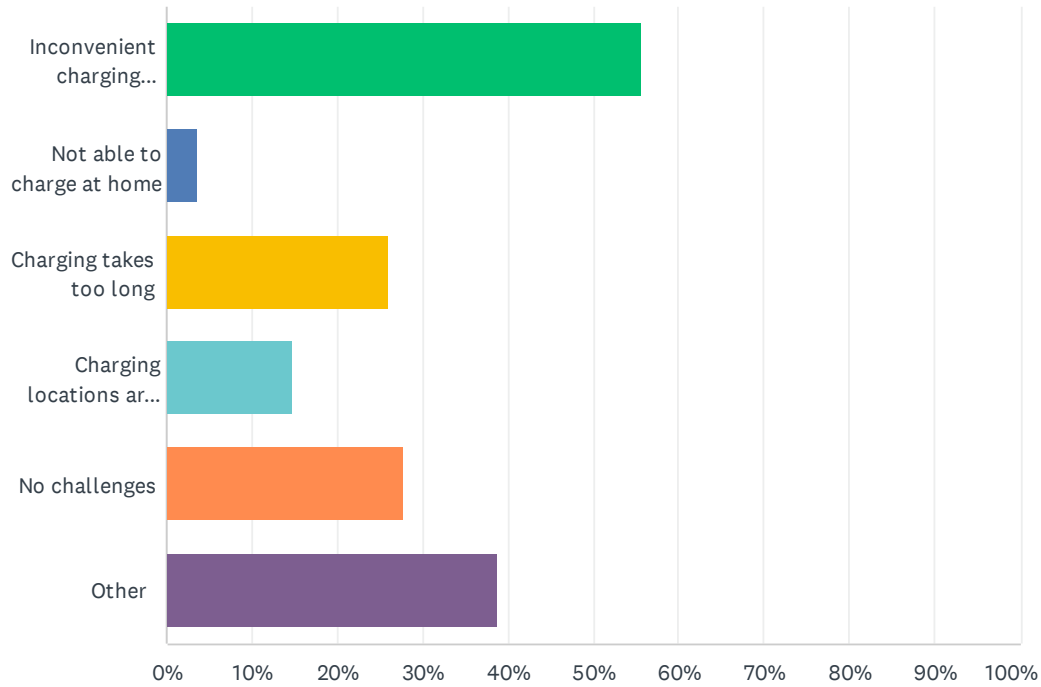
#	RESPONSES	DATE
1	No	4/23/2024 1:25 PM
2	NTSB saftey rating on tesla	4/23/2024 1:16 PM
3	Fun to drive	4/23/2024 1:08 PM
4	no	4/22/2024 7:13 AM
5	I purchased on a whim, test drove and loved it. And at the time there was a tax incentive. I probably wouldn't have purchased with that incentive due to cost.	4/21/2024 10:40 AM
6	No	4/20/2024 9:23 AM
7	I like new technology	4/19/2024 10:26 PM
8	Not having to fill up in - 20 deg weather	4/19/2024 7:49 PM
9	Stop supporting gas!	4/19/2024 3:12 PM
10	No	4/19/2024 11:58 AM
11	The enjoyable experience of driving one.	4/18/2024 11:37 PM
12	Leading technology. While the car may be more expensive, the gas savings are very real.	4/18/2024 9:18 PM
13	No	4/18/2024 8:10 PM
14	Far far far far more convenient.	4/18/2024 8:05 PM
15	One pedal driving I'd really like zero pedal driving supported at speeds under 25. This would be great for people with disabilities	4/18/2024 5:26 PM
16	No	4/18/2024 5:11 PM
17	Charging at home saves errand time	4/18/2024 5:03 PM
18	Cheaper than gas to charge	4/18/2024 5:02 PM
19	Cheaper to drive than ICE vehicles	4/18/2024 3:38 PM
20	I'm interested in learning about them so I can teach others.	4/18/2024 3:17 PM
21	Independence from direct oil prices	4/18/2024 3:16 PM
22	no	4/18/2024 2:33 PM
23	Technological innovation. Full self driving.	4/12/2024 6:40 PM
24	Fun to drive (High Performance), Fuel Savings (Economical), Lots of Storage (Sub-Trunk, Frunk)	4/12/2024 8:50 AM
25	Tax rebate	4/11/2024 11:04 PM
26	Quiet	4/11/2024 6:42 PM
27	No	4/3/2024 11:40 PM
28	Fun, cheap	4/3/2024 11:39 PM
29	No	4/3/2024 9:50 PM
30	I don't rely on fossil fuels and generate what my vehicle runs on at my house	4/3/2024 8:40 PM

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31	No	4/3/2024 8:22 PM
32	Technology. I realized how much I appreciate over the air software updates. This made me realize how important software is with Technology. It makes the car always feel new, and keeps me appreciating the same car. ni have no need to upgrade in the near future, because these features keep me satisfied.	4/3/2024 6:58 PM
33	High Tech.	3/29/2024 9:13 AM
34	No	3/29/2024 7:35 AM
35	I'm a nerd	3/28/2024 9:42 PM
36	Quiet, smooth, and can heat up in my closed garage without being poisoned.	3/28/2024 8:04 PM
37	Clean air. And I like the convenience of having "full tank" each morning when I go to garage... and not pumping gas when it's cold.	3/28/2024 6:19 PM
38	Found one at a good price.	3/28/2024 5:58 PM
39	No	3/28/2024 5:46 PM

Q9 What challenges, if any, do you experience when charging your vehicle? (Select all that apply)

Answered: 54 Skipped: 92



ANSWER CHOICES	RESPONSES	
Inconvenient charging locations	55.56%	30
Not able to charge at home	3.70%	2
Charging takes too long	25.93%	14
Charging locations are full	14.81%	8
No challenges	27.78%	15
Other	38.89%	21
Total Respondents: 54		

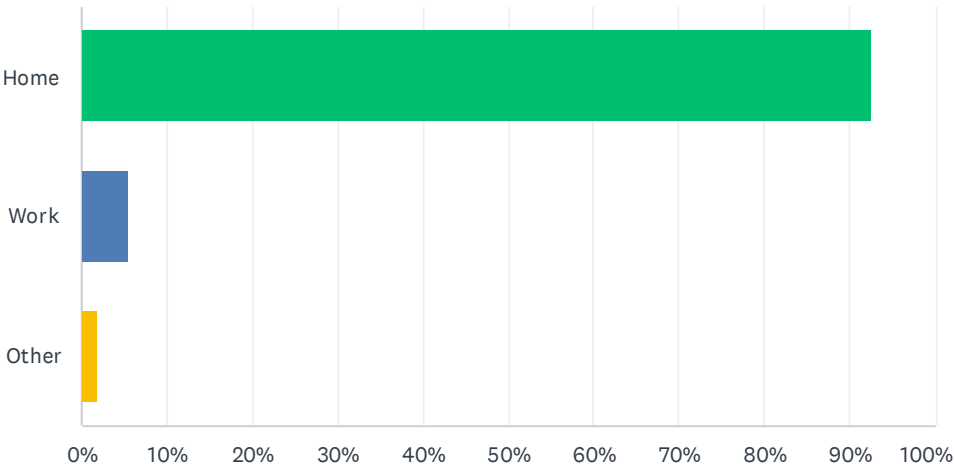
#	OTHER	DATE
1	Poor charging options in Fargo	4/23/2024 1:25 PM
2	in Roberts Common's garage, gas cars park in charging spots	4/22/2024 7:13 AM
3	Before we installed a charger at home, I used public chargers and during the winter it was sometimes a challenge. Snow and ice that hadn't been cleared to get to the charger. The cables were harder to manage stiff and harder to use. No restrooms nearby, dropped my drawers at -4 degrees behind a trash dumpster in a rural area (no one was around).	4/21/2024 10:40 AM
4	Poor charging station reliability	4/20/2024 10:30 PM
5	Not enough fast charging	4/19/2024 7:49 PM

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6	Cost to charge	4/19/2024 6:01 PM
7	Terrible Charger reliability and planning (Shell/ZEF horrible, Chargepoint OK, Tesla great, blink-etc haven't ever worked	4/19/2024 1:53 PM
8	1. I drive between Fargo and Jamestown daily. Outside of Tesla, there are no real fast chargers. The few charge point 'fast charger' are not fast. 2. With teh cold weather, you need level 2 chargers at the Airport.	4/18/2024 9:18 PM
9	Chargers are broken	4/18/2024 8:37 PM
10	More level 2 public charging at places to include churches and work places.	4/18/2024 8:05 PM
11	No fast chargers anywhere except for tesla	4/18/2024 7:20 PM
12	Chargers being intentionally blocked by parking ice vehicles although this is illegal law enforcement officers refusing to issue tickets	4/18/2024 5:26 PM
13	NO electricians willing/able to install an at-home charger, we have to use the backup trickle charger all the time	4/18/2024 5:03 PM
14	Not enough chargers in rural areas	4/18/2024 3:38 PM
15	non electric vehicles at public chargers	4/18/2024 2:33 PM
16	Broken charging stations	4/17/2024 11:06 AM
17	Lack of charging station in rural areas.	4/12/2024 6:40 PM
18	Not enough superchargers in ND	4/3/2024 9:50 PM
19	Charging locations are not available in rural areas.	3/29/2024 9:13 AM
20	Chargers broken or damaged	3/29/2024 7:35 AM
21	Generally none but my condo Association was problematic. Thankfully HB 1315 (think that was number) passed.	3/28/2024 6:19 PM

Q10 Where do you primarily charge your vehicle?

Answered: 54 Skipped: 92

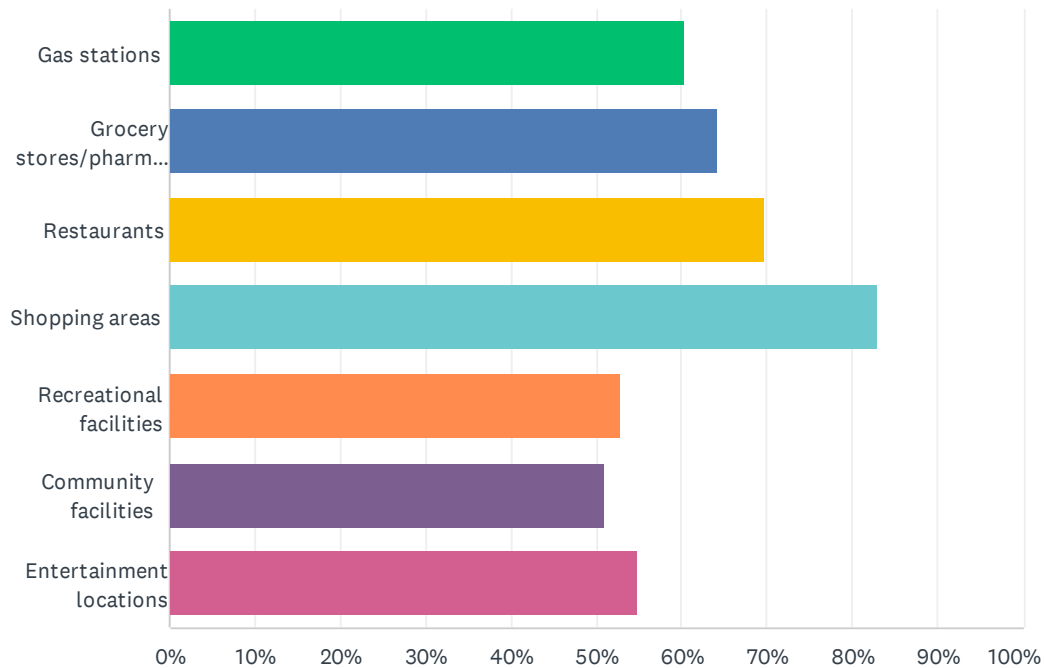


ANSWER CHOICES		RESPONSES	
Home		92.59%	50
Work		5.56%	3
Other		1.85%	1
TOTAL			54

#	OTHER	DATE
1	On the road wherever commuting	4/18/2024 5:02 PM

Q11 What types of locations would you like to see fast chargers placed?

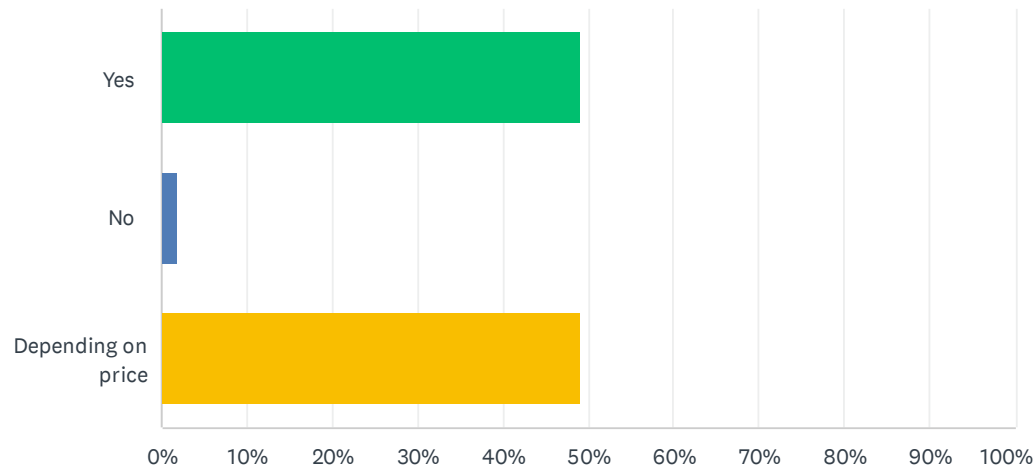
Answered: 53 Skipped: 93



ANSWER CHOICES	RESPONSES	
Gas stations	60.38%	32
Grocery stores/pharmacies	64.15%	34
Restaurants	69.81%	37
Shopping areas	83.02%	44
Recreational facilities	52.83%	28
Community facilities	50.94%	27
Entertainment locations	54.72%	29
Total Respondents: 53		

Q12 Are you willing to pay for publicly accessible charging?

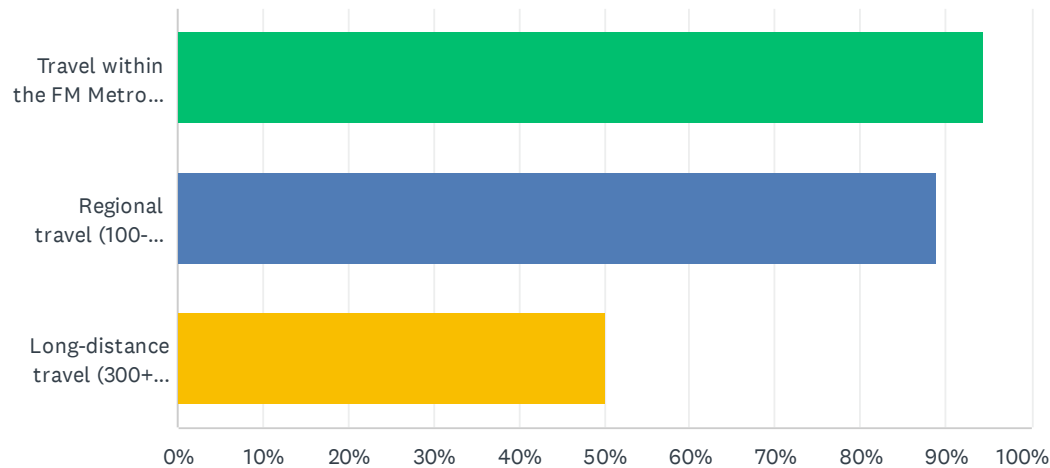
Answered: 53 Skipped: 93



ANSWER CHOICES	RESPONSES	
Yes	49.06%	26
No	1.89%	1
Depending on price	49.06%	26
TOTAL		53

Q13 When do you use your EV?

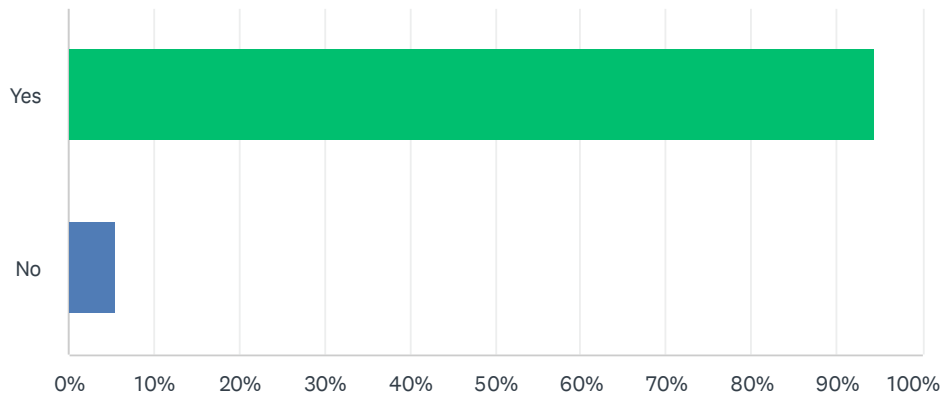
Answered: 54 Skipped: 92



ANSWER CHOICES	RESPONSES	
Travel within the FM Metro Area	94.44%	51
Regional travel (100-300 miles round trip)	88.89%	48
Long-distance travel (300+ miles round trip)	50.00%	27
Total Respondents: 54		

Q14 Do you operate your EV during all seasons?

Answered: 54 Skipped: 92



ANSWER CHOICES	RESPONSES	
Yes	94.44%	51
No	5.56%	3
TOTAL		54

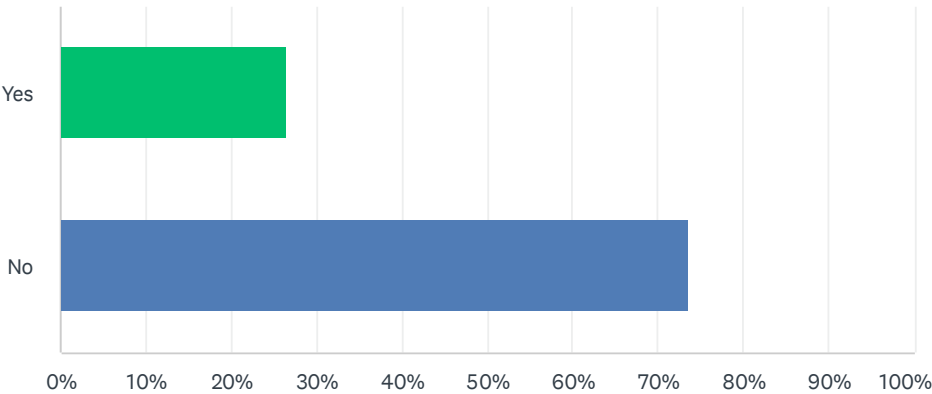
Q15 If you answered "No", please explain.

Answered: 12 Skipped: 134

#	RESPONSES	DATE
1	NA	4/19/2024 10:26 PM
2	I have an electric motorcycle.	4/19/2024 6:01 PM
3	Cold is an issue, you CANNOT drive south from Fargo on the freeway as you run out of power before getting to the next fast charger.	4/18/2024 9:18 PM
4	N/a	4/18/2024 5:11 PM
5	N/A, although it's definitely less efficient in winter	4/18/2024 5:03 PM
6	N/A	4/18/2024 5:02 PM
7	I do not drive it in the winter, if there is snow or ice on the ground. I have a different vehicle for winter	4/18/2024 3:38 PM
8	na	4/18/2024 2:33 PM
9	Winter in AZ, EV is left in ND. We trailer to AZ.	4/11/2024 6:42 PM
10	N/a	4/3/2024 11:40 PM
11	.	4/3/2024 9:50 PM
12	Na	3/29/2024 7:35 AM

Q16 Do you experience problems operating EVs during snowy or cold conditions or on gravel/dirt roads?

Answered: 53 Skipped: 93



ANSWER CHOICES	RESPONSES	
Yes	26.42%	14
No	73.58%	39
TOTAL		53

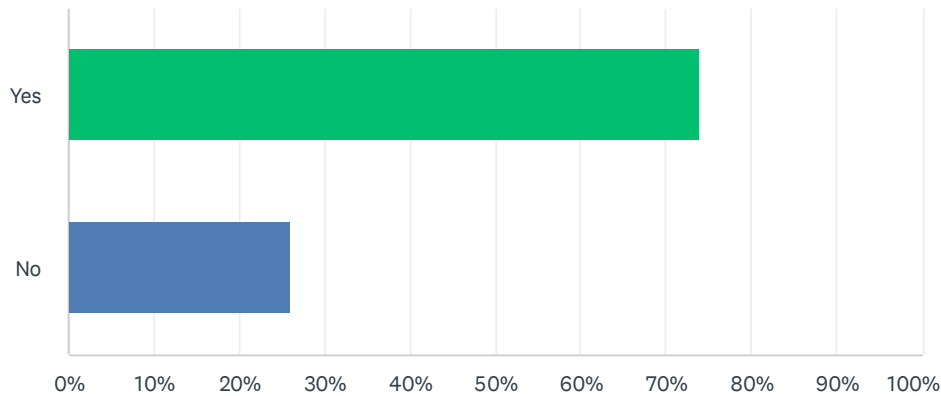
Q17 If you answered "Yes", please explain what challenges you have faced.

Answered: 22 Skipped: 124

#	RESPONSES	DATE
1	Uses a lot of charge per mile driven	4/23/2024 1:08 PM
2	Battery efficiency and usable capacity drop significantly with the colder weather resulting in a need for more frequent charging. Coupled with the lack of charging stations within the region this makes regional travel much more difficult.	4/20/2024 10:30 PM
3	NA	4/19/2024 10:26 PM
4	I have an electric motorcycle.	4/19/2024 6:01 PM
5	1. Level two chargers at the airport for longer trips where the car is in the cold. More important for Tesla's than my Rivian 2. No network to get in or out of Fargo from South Dakota. Fast charger south of Fargo, requires 3+ extra hours to drive into Minnesota and then south, unless I'm driving my Tesla. 3. Fast charging options between Fargo and Bismarck. Is limited to Electrify America in Jamestown. Station has frequent out of service issues. Snow removal creates an icy issue when trying to plug/unplug. 4. Suck the battery, There isn't one app that shows all 'fast chargers' available. Believe there might be a few options off path between Jamestown and Fargo but they aren't linked to the common apps. 5. When driving through FArGo, there isn't a real fast charger (50kw isn't fast for a road trip and is way overpriced ChargePoint at the mall) 6. If you want to encourage use of amenities, charger needs to be close access to the shop, not in the back of the parking lot or people will stay in their car in the cold.	4/18/2024 9:18 PM
6	Severe drop in mileage during cold/wind. It's difficult to travel to Minneapolis during the winter as a result.	4/18/2024 8:37 PM
7	I have a plug in hybrid. It will not run on full electric mode when less than 15 F.	4/18/2024 6:56 PM
8	It's no more of a challenge than in an ice vehicle. Also, the low end torque on an electric is great for snow The only disadvantage is slow charging at low temperatures	4/18/2024 5:26 PM
9	Bad battery performance	4/18/2024 5:11 PM
10	Charge percentage drops faster in winter. We have a Hyundai Ionic 6 where the door handles are flush with the door when locked and if they freeze over they can't unlock	4/18/2024 5:03 PM
11	N/A	4/18/2024 5:02 PM
12	Not the best traction	4/18/2024 3:38 PM
13	na	4/18/2024 2:33 PM
14	Range reduced by up to half in winter	4/17/2024 11:06 AM
15	Range drops in half of normal	4/17/2024 8:04 AM
16	Actually handles better in the snow than an ICE	4/12/2024 8:50 AM
17	N/a	4/3/2024 11:40 PM
18	Handles better in the snow	4/3/2024 11:39 PM
19	.	4/3/2024 9:50 PM
20	Lower battery/mileage	3/29/2024 7:35 AM
21	Reduced range	3/28/2024 9:42 PM
22	It loses range about 40%.	3/28/2024 5:46 PM

Q18 Do you or anyone in your household own a vehicle with a traditional internal combustion engine? (gas or diesel)

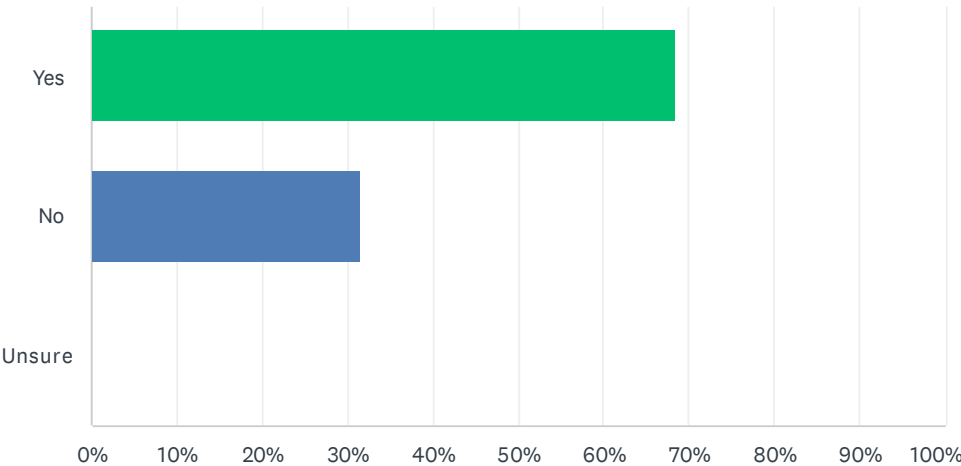
Answered: 54 Skipped: 92



ANSWER CHOICES		RESPONSES	
Yes		74.07%	40
No		25.93%	14
TOTAL			54

Q19 Does your home/neighborhood currently have EV charging stations?

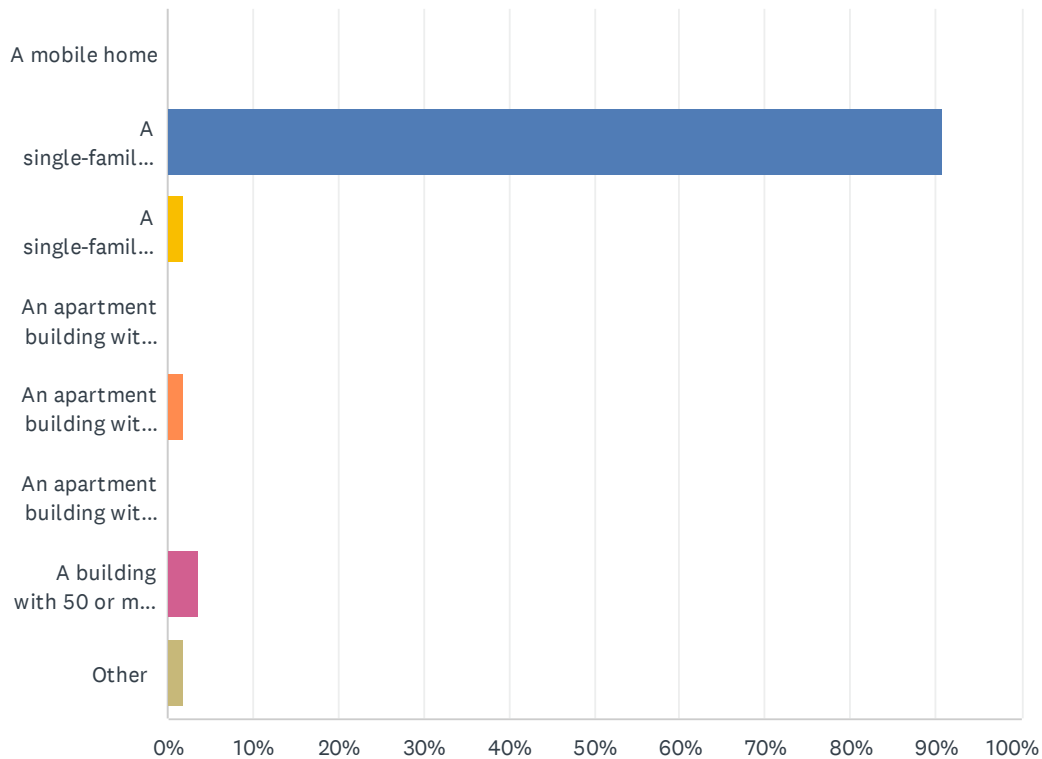
Answered: 54 Skipped: 92



ANSWER CHOICES	RESPONSES	
Yes	68.52%	37
No	31.48%	17
Unsure	0.00%	0
TOTAL		54

Q20 Which best describes where you currently live?

Answered: 54 Skipped: 92



ANSWER CHOICES	RESPONSES	
A mobile home	0.00%	0
A single-family house detached from any other houses	90.74%	49
A single-family house attached to one or more houses	1.85%	1
An apartment building with 2-9 apartments	0.00%	0
An apartment building with 10-19 apartments	1.85%	1
An apartment building with 20-49 apartments	0.00%	0
A building with 50 or more apartments	3.70%	2
Other	1.85%	1
TOTAL		54

Q21 What zip code do you live in?

Answered: 53 Skipped: 93

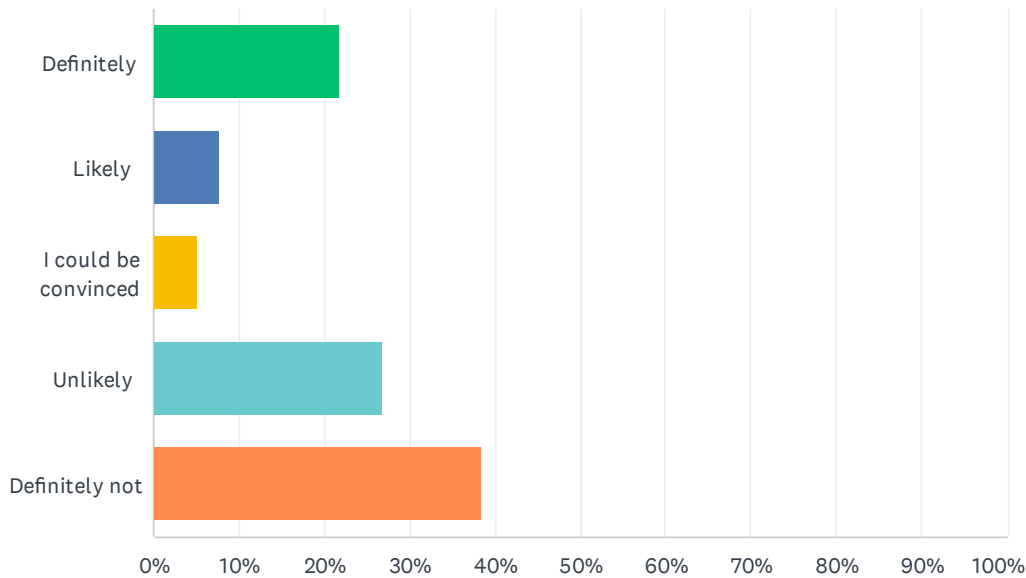
#	RESPONSES	DATE
1	58104	4/23/2024 1:25 PM
2	58104	4/23/2024 1:16 PM
3	58104	4/23/2024 1:08 PM
4	56560	4/22/2024 7:13 AM
5	58102	4/21/2024 10:40 AM
6	58078	4/20/2024 9:23 AM
7	58104	4/19/2024 10:26 PM
8	58078	4/19/2024 8:09 PM
9	56560	4/19/2024 7:49 PM
10	58102	4/19/2024 6:01 PM
11	58103	4/19/2024 3:12 PM
12	56560	4/19/2024 1:53 PM
13	58078	4/19/2024 11:58 AM
14	56560	4/19/2024 6:33 AM
15	58078	4/18/2024 11:37 PM
16	58104	4/18/2024 9:18 PM
17	58102	4/18/2024 8:37 PM
18	58104	4/18/2024 8:10 PM
19	58103	4/18/2024 8:05 PM
20	58103	4/18/2024 7:20 PM
21	58078	4/18/2024 6:56 PM
22	58078	4/18/2024 5:26 PM
23	58078	4/18/2024 5:16 PM
24	58102	4/18/2024 5:11 PM
25	58078	4/18/2024 5:03 PM
26	55403	4/18/2024 5:02 PM
27	58078	4/18/2024 3:38 PM
28	56560	4/18/2024 3:21 PM
29	58078	4/18/2024 3:17 PM
30	56514	4/18/2024 3:16 PM
31	58078	4/18/2024 2:33 PM
32	56560	4/17/2024 11:06 AM
33	56560	4/17/2024 8:04 AM

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34	56529	4/13/2024 11:49 PM
35	56529	4/12/2024 6:40 PM
36	56549	4/12/2024 8:50 AM
37	58104	4/11/2024 11:04 PM
38	58102	4/11/2024 6:42 PM
39	58078	4/4/2024 12:37 PM
40	58104	4/4/2024 8:55 AM
41	58078	4/3/2024 11:40 PM
42	56549	4/3/2024 11:39 PM
43	58047	4/3/2024 9:50 PM
44	56514	4/3/2024 8:40 PM
45	58103	4/3/2024 8:22 PM
46	58078	4/3/2024 6:58 PM
47	56529	3/29/2024 9:13 AM
48	701	3/29/2024 7:35 AM
49	56560	3/28/2024 9:42 PM
50	58078	3/28/2024 8:04 PM
51	701	3/28/2024 6:19 PM
52	58104	3/28/2024 5:58 PM
53	58104	3/28/2024 5:46 PM

Q22 Would you consider buying an EV?

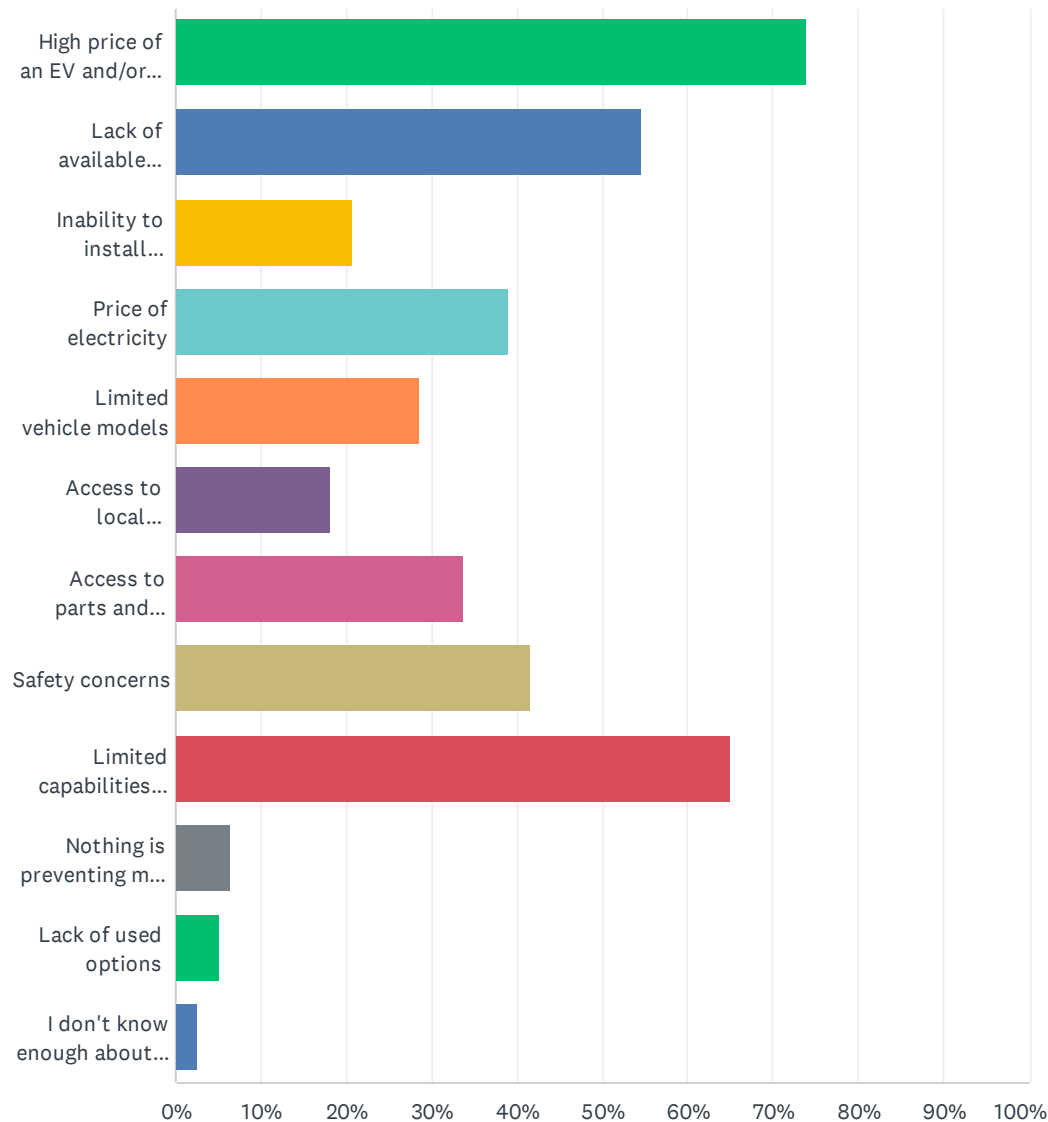
Answered: 78 Skipped: 68



ANSWER CHOICES		RESPONSES	
Definitely		21.79%	17
Likely		7.69%	6
I could be convinced		5.13%	4
Unlikely		26.92%	21
Definitely not		38.46%	30
TOTAL			78

Q23 What is currently preventing you from purchasing an EV? (Select all that apply)

Answered: 77 Skipped: 69

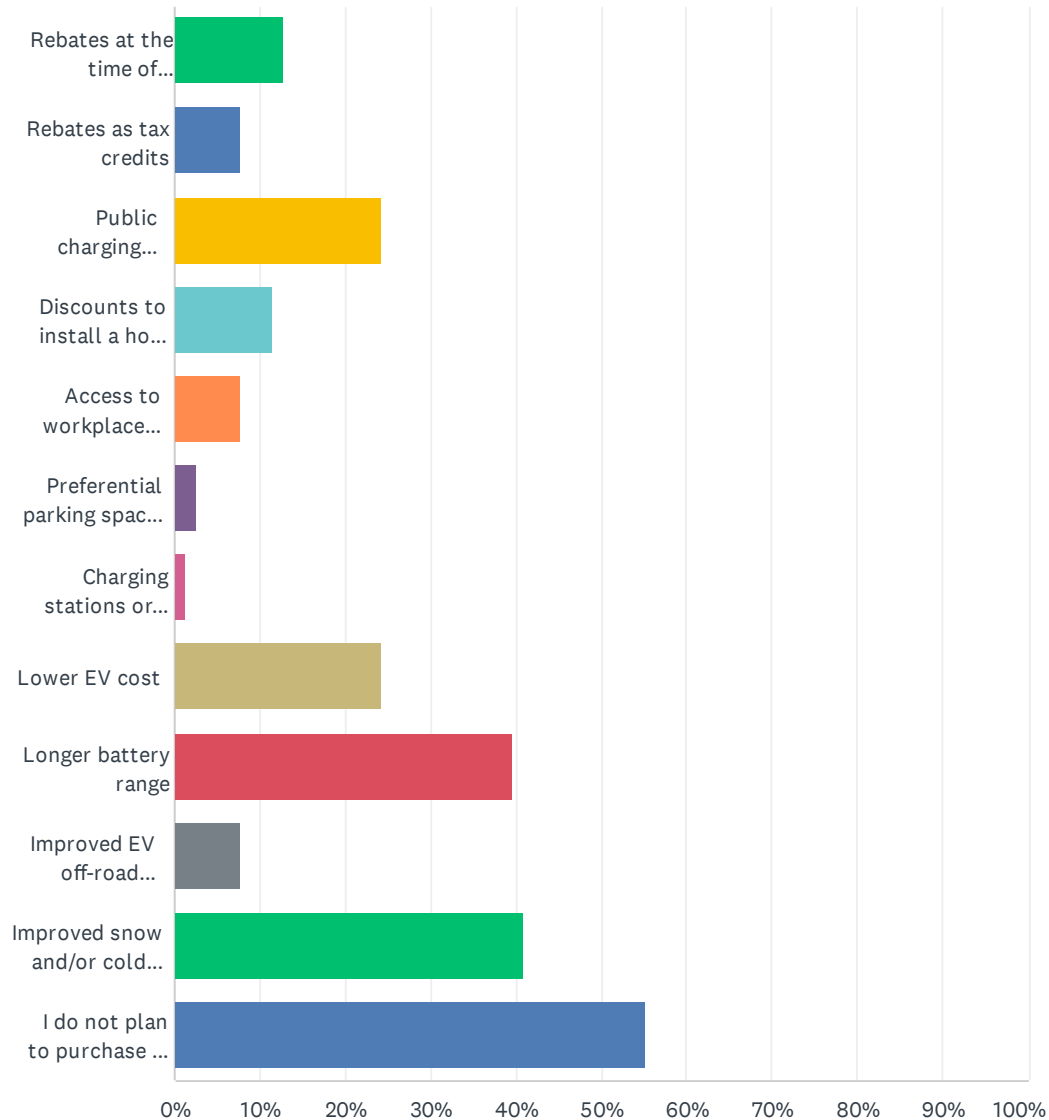


Electric Vehicle Readiness Study - Educational Survey

ANSWER CHOICES	RESPONSES	
High price of an EV and/or charging infrastructure	74.03%	57
Lack of available public or community charging infrastructure / range anxiety	54.55%	42
Inability to install charging infrastructure at my residence	20.78%	16
Price of electricity	38.96%	30
Limited vehicle models	28.57%	22
Access to local dealership	18.18%	14
Access to parts and service support	33.77%	26
Safety concerns	41.56%	32
Limited capabilities (off-road, snow-friendly, etc.)	64.94%	50
Nothing is preventing me - I would really consider buying one!	6.49%	5
Lack of used options	5.19%	4
I don't know enough about them	2.60%	2
Total Respondents: 77		

Q24 Select the top three factors that would influence your decision to purchase an EV.

Answered: 78 Skipped: 68

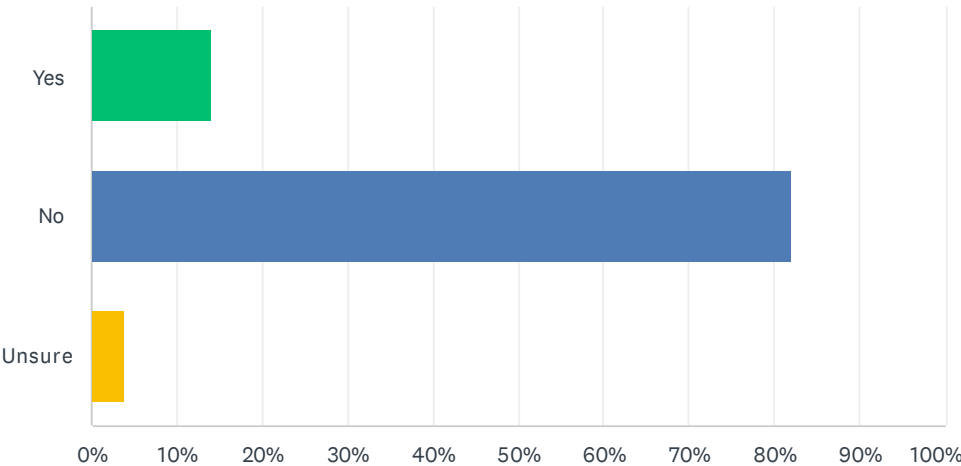


Electric Vehicle Readiness Study - Educational Survey

ANSWER CHOICES	RESPONSES	
Rebates at the time of purchase	12.82%	10
Rebates as tax credits	7.69%	6
Public charging stations along highways	24.36%	19
Discounts to install a home charging station	11.54%	9
Access to workplace charging stations	7.69%	6
Preferential parking spaces for EVs	2.56%	2
Charging stations or access to plug in vehicles at multi-family housing	1.28%	1
Lower EV cost	24.36%	19
Longer battery range	39.74%	31
Improved EV off-road performance	7.69%	6
Improved snow and/or cold performance	41.03%	32
I do not plan to purchase an EV in the future	55.13%	43
Total Respondents: 78		

Q25 Does your home/neighborhood currently have EV charging stations?

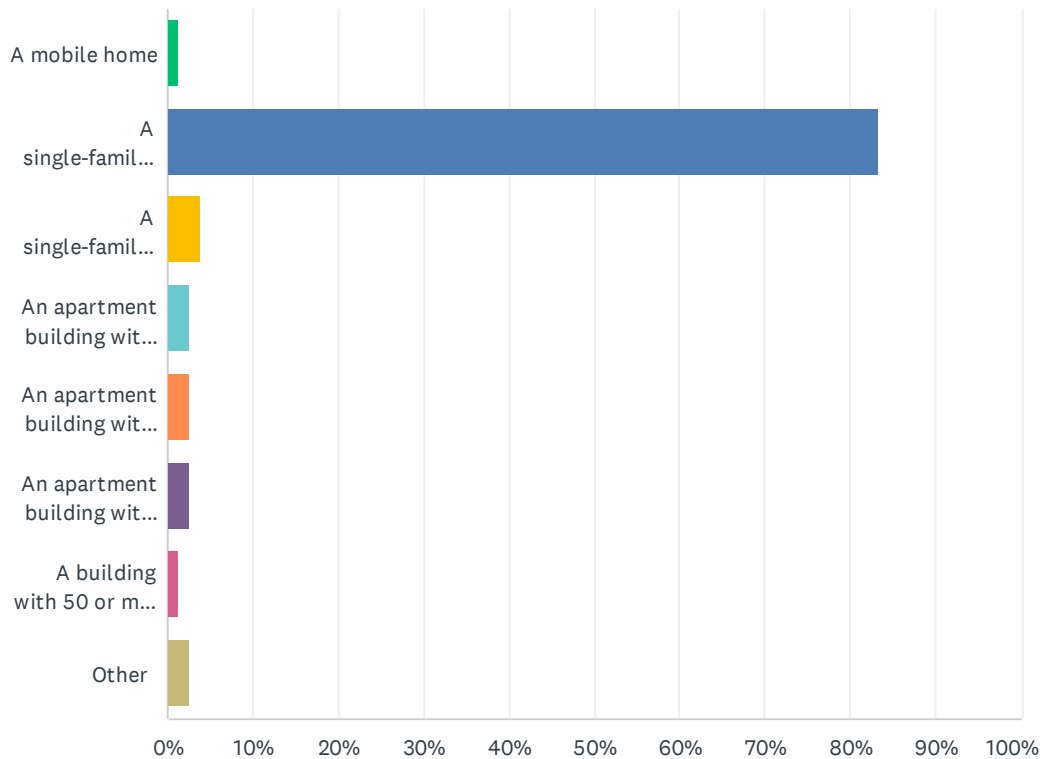
Answered: 78 Skipped: 68



ANSWER CHOICES		RESPONSES	
Yes		14.10%	11
No		82.05%	64
Unsure		3.85%	3
TOTAL			78

Q26 What best describes where you currently live?

Answered: 78 Skipped: 68



ANSWER CHOICES	RESPONSES	
A mobile home	1.28%	1
A single-family house detached from any other house	83.33%	65
A single-family house attached to one or more houses	3.85%	3
An apartment building with 2-9 apartments	2.56%	2
An apartment building with 10-19 apartments	2.56%	2
An apartment building with 20-49 apartments	2.56%	2
A building with 50 or more apartments	1.28%	1
Other	2.56%	2
TOTAL		78

Q27 What zip code do you live in?

Answered: 78 Skipped: 68

#	RESPONSES	DATE
1	58104	4/22/2024 5:18 AM
2	58104	4/20/2024 9:39 AM
3	58103	4/19/2024 6:12 PM
4	56573	4/19/2024 11:37 AM
5	58104	4/19/2024 10:20 AM
6	58103	4/19/2024 7:07 AM
7	58078	4/19/2024 4:34 AM
8	56560	4/19/2024 12:08 AM
9	58078	4/18/2024 11:22 PM
10	56560	4/18/2024 9:23 PM
11	58103	4/18/2024 8:10 PM
12	58102	4/18/2024 7:25 PM
13	58104	4/18/2024 6:42 PM
14	58102	4/18/2024 6:34 PM
15	58004	4/18/2024 6:26 PM
16	58004	4/18/2024 6:25 PM
17	58104	4/18/2024 6:18 PM
18	56535	4/18/2024 6:17 PM
19	58078	4/18/2024 6:15 PM
20	58104	4/18/2024 6:14 PM
21	58078	4/18/2024 6:04 PM
22	58201	4/18/2024 5:53 PM
23	58104	4/18/2024 5:01 PM
24	58078	4/18/2024 4:57 PM
25	56560	4/18/2024 4:35 PM
26	58078	4/18/2024 4:27 PM
27	58104	4/18/2024 4:22 PM
28	58104	4/18/2024 4:18 PM
29	58102	4/18/2024 4:15 PM
30	59102	4/18/2024 4:15 PM
31	56560	4/18/2024 4:08 PM
32	56501	4/18/2024 4:03 PM
33	58103	4/18/2024 3:42 PM

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34	58047	4/18/2024 3:25 PM
35	58005	4/18/2024 3:23 PM
36	58078	4/18/2024 3:22 PM
37	58102	4/18/2024 3:22 PM
38	58047	4/18/2024 3:20 PM
39	56580	4/18/2024 3:16 PM
40	56537	4/18/2024 3:16 PM
41	56560	4/18/2024 3:12 PM
42	58103	4/18/2024 3:12 PM
43	58103	4/18/2024 2:55 PM
44	58078	4/18/2024 2:34 PM
45	58102	4/18/2024 2:34 PM
46	58078	4/18/2024 2:20 PM
47	58104	4/18/2024 11:29 AM
48	56550	4/18/2024 11:04 AM
49	56560	4/17/2024 9:38 PM
50	58104	4/17/2024 2:37 PM
51	59103	4/17/2024 10:37 AM
52	56560	4/17/2024 6:31 AM
53	58012	4/17/2024 6:24 AM
54	56560	4/17/2024 5:59 AM
55	58104	4/13/2024 10:41 PM
56	58078	4/13/2024 3:29 PM
57	58102	4/13/2024 2:14 PM
58	58078	4/13/2024 7:18 AM
59	58102	4/12/2024 8:20 AM
60	58102	4/12/2024 7:56 AM
61	56560	4/12/2024 6:46 AM
62	56554	4/12/2024 2:48 AM
63	58078	4/11/2024 11:11 PM
64	58012	4/5/2024 10:59 AM
65	58103	4/3/2024 1:47 PM
66	58203	4/3/2024 1:38 PM
67	58103	4/2/2024 7:02 PM
68	58103	4/1/2024 6:32 AM
69	701	3/31/2024 9:10 AM
70	58103	3/30/2024 8:35 PM
71	56560	3/29/2024 5:37 PM

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72	58078	3/29/2024 9:53 AM
73	58103	3/29/2024 8:35 AM
74	58103	3/29/2024 6:27 AM
75	56560	3/28/2024 7:12 PM
76	58102	3/28/2024 6:45 PM
77	58051	3/28/2024 6:15 PM
78	56560	3/28/2024 5:49 PM