

Louisville Metro Government Electric Vehicle Survey: Final Report

A report highlighting results from the Electric Vehicle Survey and providing the next steps Louisville Metro Government, and the community, can take to promote EV adoption in the metropolitan area.

Introduction

Louisville is a car-dependent city with almost 82% of commuters driving to work alone and 89% of households having access to one or more cars. Louisville commuters rely heavily on their personal vehicles because of policies optimizing vehicle travel, a culture emphasizing car usage, and limited public transportation options. Further, Louisville's growing logistics sector uses many heavy-duty vehicles to move goods throughout the region, most of which are fueled by traditional gasoline and diesel. Combined, these factors have strong implications for local air quality, greenhouse gas emissions, public health, and even socioeconomic equity.

This report will review responses from the Electric Vehicle Survey to determine what efforts Louisville Metro Government (LMG) can implement to increase electric vehicle (EV) adoption in the metropolitan area.

Overview

Louisville Metro Government seeks to foster a community that embraces EVs. Fully electric vehicles—which differ from other alternative fuel vehicles (AFVs) on the market—are powered by electricity from a battery, thus removing the need for gasoline or diesel fuels that produce unhealthy vehicle emissions.

The Department of Energy's Office of Energy Efficiency & Renewable Energy (EERE) defines two general categories for vehicle emissions: direct and life cycle. Direct emissions are emitted through the tailpipe, through evaporation from the fuel system, and during the fueling process."¹ Vehicles with traditional combustion engines produce direct emissions that contribute to climate change, produce smog-forming pollutants (nitrogen oxides), and other pollutants affecting air quality. Life cycle emissions, on the other hand, "include all emissions related to fuel and vehicle production, processing, distribution, use, and recycling/disposal."² As a life cycle emissions vehicle, EVs produce lower emissions compared to vehicles with combustion engines. Thus, promoting EV adoption in Louisville could bring significant changes to the city's transportation sector as well as improve air quality.

In 2017 LMG conducted the Electric Vehicle Survey to better understand EV culture in the community. By identifying barriers that impact EV adoption, the survey sought to increase EV infrastructure, promote EV ownership, and improve air quality. A portion of the survey focused on understanding the barriers that prevent EV adoption. The survey also sought to identify next steps Louisville Metro Government can develop to encourage EV adoption and increase electric vehicle charging infrastructure.

The top three barriers to EV ownership/use in Louisville Metro are 1) the price of electric vehicles, 2) the lack of charging stations, and 3) driving range. Results from the survey also

¹ Department of Energy. *Reducing Pollution with Electric Vehicles*. (05/16/2018). Retrieved from <https://www.energy.gov/eere/electricvehicles/reducing-pollution-electric-vehicles>

² *Id.*

highlighted factors that could potentially help promote EV adoption, which included constructing more EV charging stations, offering more incentives (i.e. rebates) when purchasing an EV, and a longer battery life could make one reconsider owning an electric vehicle.

Section I: Analysis

This section will discuss the survey methods used to better understand Louisville’s EV culture.

A. Survey Methods

Distributed electronically the survey sought to gain feedback from all residents. To capture responses from residents throughout Louisville Metro, we shared the electronic survey with Metro Councilmember listservs, LMG listservs, local community group listservs, social media platforms, and other entities.

Demographic Information

ZIP CODE	PERCENTAGE	NUMBER OF RESPONSES
40202	15.6%	91
40205	10.63%	62
40206	7.55%	44
40207	7.20%	42
40204	4.63%	27
40245	3.77%	22
40217	3.43%	20
Other (No Zip Code)	47.17%	275

The survey captured responses from two audiences: individuals that do not own an electric vehicle and current electric vehicle or alternative fuel vehicle owners. By slightly tailoring the survey questions specifically to each group we were better able to understand the following:

- Barriers that keep people from using or owning an EV
- The price people will pay to purchase an EV
- General knowledge about EVs
- Benefits of being and EV owner
- Considerations for converting to EV ownership

B. Survey Results

With 583 surveys collected, each response offers insight into Louisville’s EV culture. Additionally, the results provide information on where to place more electric vehicle supply equipment (EVSE).

1. Barriers to the Use and Ownership of EVs

The electric vehicle survey shows a strong correlation between infrastructure development, electric vehicle ownership, and other contributing factors that serve as barriers to the use and ownership of electric vehicles. The top three barriers to the use and ownership of EVs found in our survey were:

- EV cost
- Availability of charging stations
- EV driving range

Table: Barriers Keeping Louisville Residents from Owning an EV

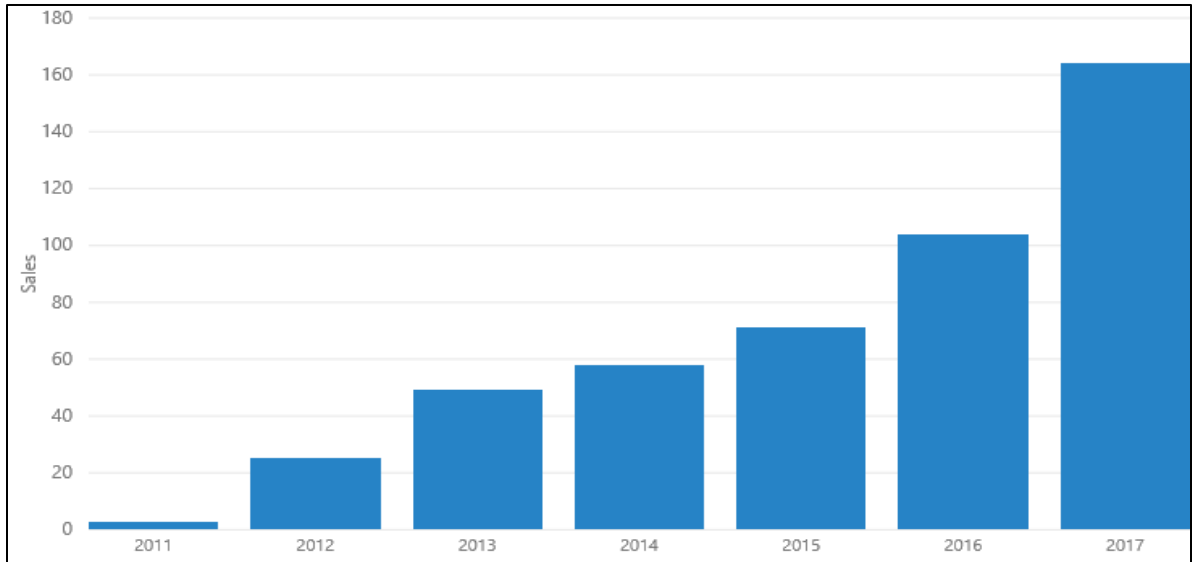
Barriers Keeping You from Owning an EV		
Choices	Percentage	Count
Cost of vehicles	54.03%	315
Availability of charging stations	53.00%	309
Vehicle driving range	35.33%	206
Unknown ownership/maintenance costs	27.44%	160
Trust in new technology	12.86%	75
Other (please specify below)	12.01%	70
Not at all interested in EVs	4.46%	26
	Total Entries	583
	<i>Unanswered</i>	98

a. *The Cost of Purchasing an EV*

In Kentucky, electric vehicle ownership makes up a small percentage of the U.S. market compared to other states. Currently there are 474 electric vehicles (excluding PHEVs) registered in Kentucky, which represents 0.1% of the states total EV sales.³ The following graph shows the number of battery electric vehicles (BEVs) sold in Kentucky 2011-2017. To date, Louisville Metro has 137 registered electric vehicles, a number which does not include registered plug-in hybrid electric vehicles.⁴

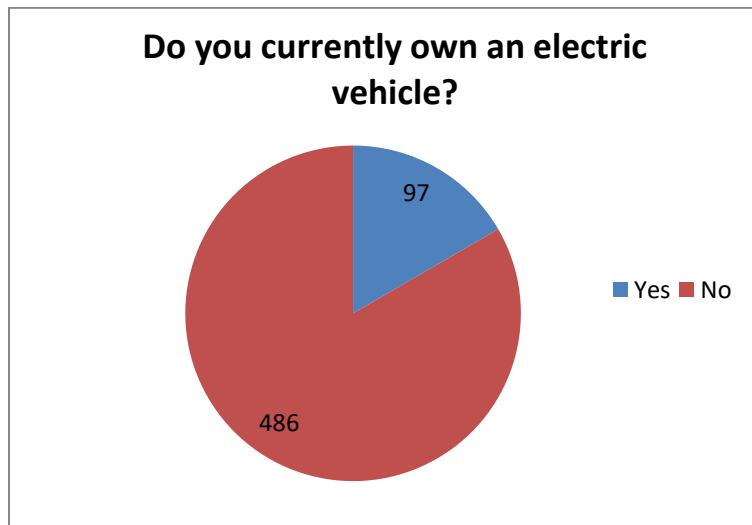
³ EV Hub. *State EV Sales Dashboard*. (05/08/2018) Retrieved from https://www.atlasevhub.com/materials/market-data/?utm_source=EV+Hub+Newsletter&utm_campaign=e4e6b3f9b8-EMAIL_CAMPAIGN_2018_05_07&utm_medium=email&utm_term=0_173e047b1f-e4e6b3f9b8-255481477

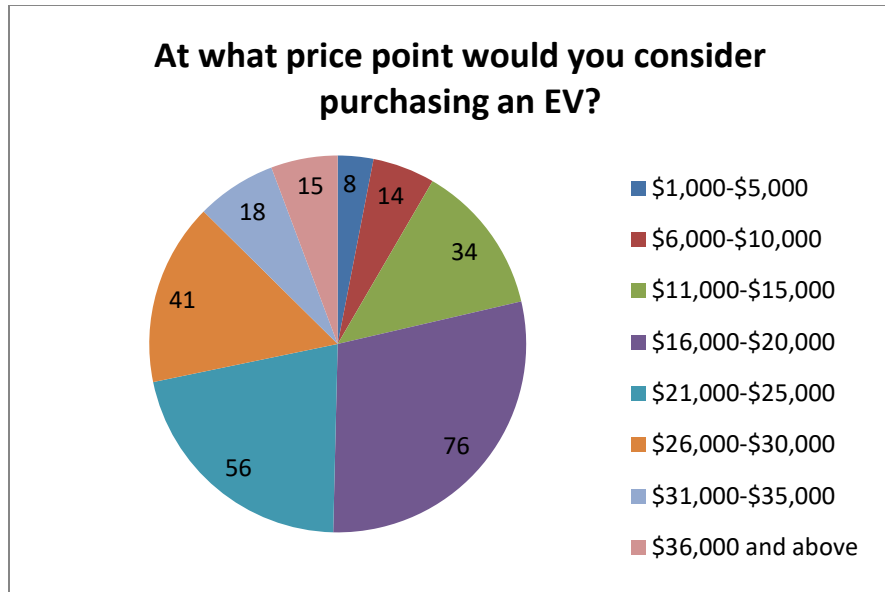
⁴ Retrieved from <http://datamart.business.transportation.ky.gov/>



Source: *EV Atlas Hub: State EV Sales Dashboard*. Retrieved from <https://www.atlasevhub.com/materials/market-data/>

With sixteen percent (ninety-seven respondents) of those surveyed owning electric vehicles, there are many opportunities to increase the use and ownership of electric vehicles in Louisville Metro. Thus, the survey asked respondents what price point they would consider purchasing an EV. Of the 262 individuals that answered the question, seventy-six stated they would purchase an EV priced \$16,000 to \$20,000.





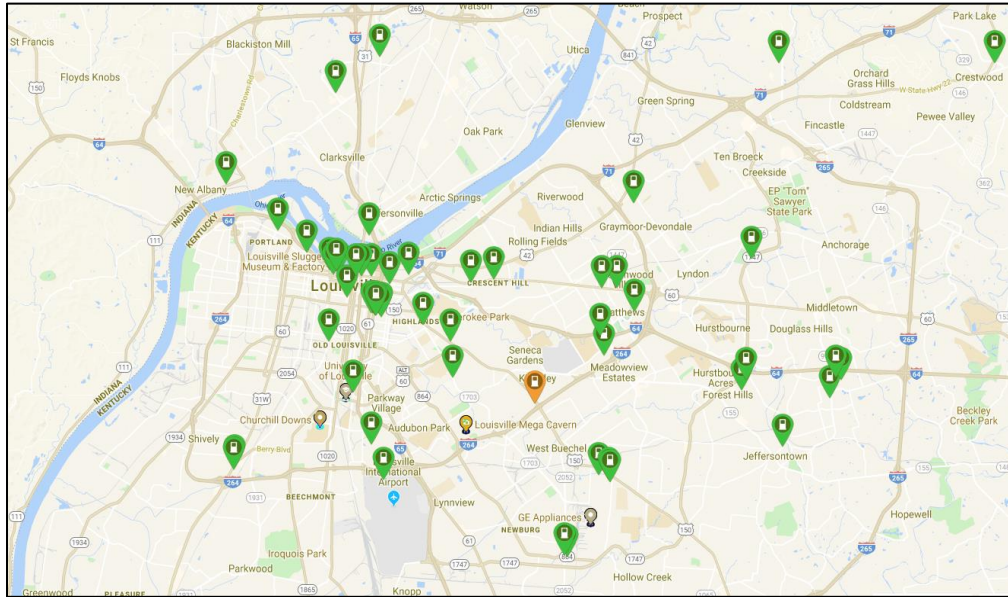
Many electric vehicles cost more than \$20,000, making cost a barrier to EV ownership. However, as technology advances and more used EVs enter the market, the cost to purchase an EV could potentially be less of a barrier. Used EVs, like used combustion engine vehicles, carry a far lighter price tag. Thus, the insurgence of used EVs may offer consumers greater for EV ownership.

b. The availability of charging stations

The number of available charging stations is the second barrier highlighted within the survey. Most respondents agreed that more electric vehicle supply equipment is needed to promote full EV adoption. Below are proposed sites for future charging station locations.

- Shelbyville Road Plaza
- Jewish Community Center
- Village 8 Theaters
- Metro Hall
- GE Plant
- Oxmoor center
- Local parks and high schools
- Iroquois Amphitheater

As of March 2018, national data shows there are 20,189 charging stations with 52,673 outlets.⁵ Kentucky has more than 50 charging stations located throughout the region but still not enough to prevent range anxiety, which can significantly impact EV adoption.



Source: *EV Charger Map*. Retrieved from <http://evolveky.org/ev-charger-map/>

c. *EV driving range*

Respondents also identified the limited driving range of EVs as a third barrier preventing ownership and use. Many early model EVs provided less than 100 miles to the battery. However, with improvements in technology, more automobile manufacturers are producing EVs with double the amount of mileage.

2. Electric Vehicles and Education

Results from the survey also showed how much individuals know about electric vehicles. Of the 485 respondents that answered the question “How much would you say you know about electric vehicles?” Seventy-six percent of those surveyed knew a moderate amount of information about electric vehicles.

⁵ Retrieved from <https://electricdrive.org/index.php?ht=d/sp/i/20952/pid/20952>

Section II: Moving Forward

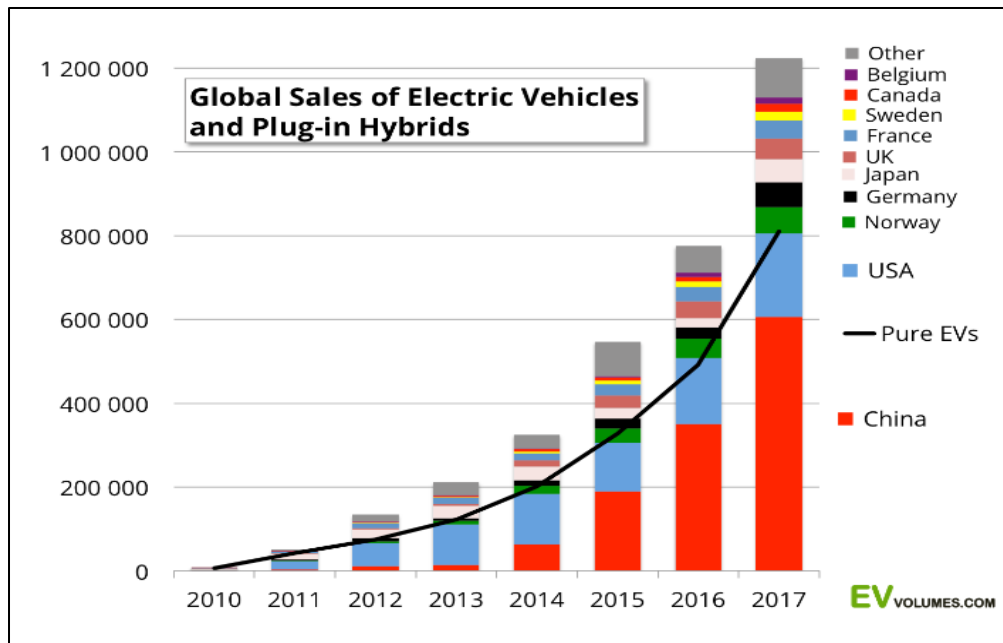
Across the United States electric vehicle adoption is occurring at a steady pace. Forecasts show that by 2025 America will have roughly 11.4 million EVs on the road with a market value over \$400 billion dollars. Therefore, Louisville should make plans to prepare for the influx of electric vehicles, which could include designing ways to promote EV adoption, educating the public about the benefits of electric vehicles and expanding the city’s charging station network. Many local governments offer incentives in the form of rebates and/or give access to HOV (High Occupancy Vehicle) lanes to entice consumers to transition to electric vehicles. Likewise, entities like Electrify America are investing in the charging station network by expanding the number of DC Fast and Level II chargers.

In addition, Louisville should create a plan outlining key stakeholder, goals, action items and other steps it should implement to support EV adoption. Many cities in the U.S. have developed initiatives to reduce gasoline use in transportation. For example, through the U.S. Department of Energy “Clean Cities” program, the city of Austin “developed a plan and template that supports regional stakeholders in the development and implementation of local codes...to enable cost-effective placement of charging infrastructure in the area between San Antonio and Georgetown, TX.”⁶

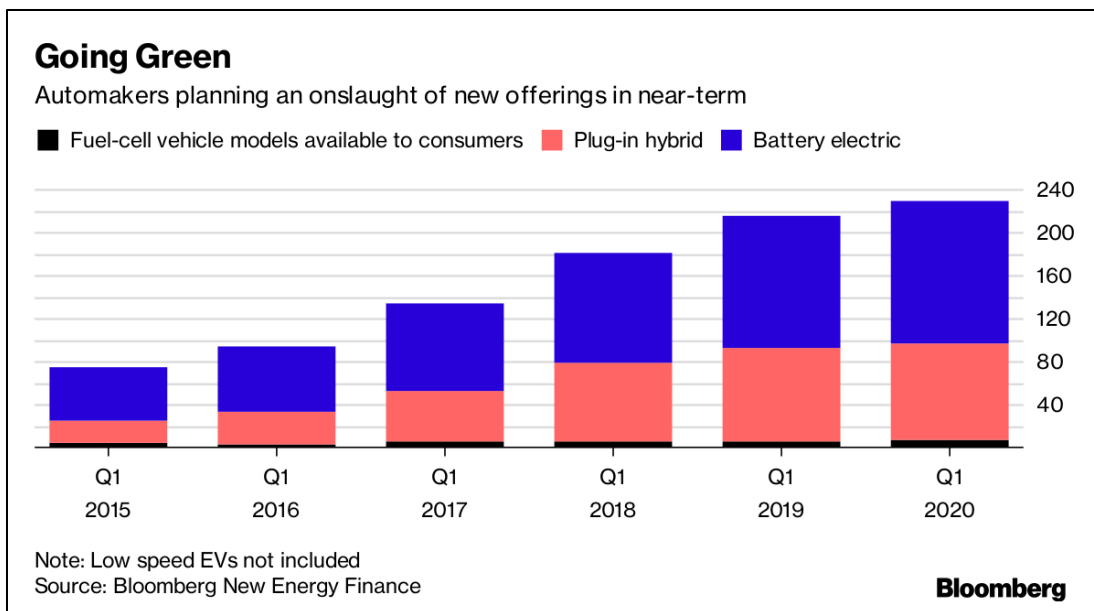
Global market data also shows an exponential growth in the purchase of electric vehicles and plug-in hybrids, with many countries drafting plans that promote EV adoption. For example, China—which leads in EV sales—sold roughly 600,000 electric and plug-in hybrid electric vehicles in 2017 alone.⁷

⁶ “Texas River Cities Plug-in Electric Vehicle Initiative Regional Plan and Final Report.” (n.d.) Retrieved at https://cleancities.energy.gov/files/u/projects_and_partnerships/project_material/supporting_material/252/texas_river_cities_readiness_plan.pdf

⁷ “Global Plug-in Vehicle Sales for 2017 – Final Results.” (n.d.) Retrieved from <http://www.ev-volumes.com/country/total-world-plug-in-vehicle-volumes/>



General Motors, a U.S.-based automotive manufacturer, plans to go 100 percent electric, with “at least 20” EVs in the line-up by 2023.⁸ Further, in 2017 Bloomberg posited that “EVs will make up to 15 percent to 30 percent of new vehicles by 2030.”⁹



⁸ Eisenstein, Paul A. “GM Is Going All Electric, Will Ditch Gas-and Diesel-Powered Cars.” Retrieved at <https://www.nbcnews.com/business/autos/gm-going-all-electric-will-ditch-gas-diesel-powered-cars-n806806>

⁹ Randall, Tom. “The Electric-Car Boom Is So Real Even Oil Companies Say It’s Coming.” Retrieved at <https://www.bloomberg.com/news/articles/2017-04-25/electric-car-boom-seen-triggering-peak-oil-demand-in-2030s>

There are many methods Louisville and the community can implement to increase the number of EVs on the road but creating an EV plan with specific action items is critical to long-term success. Moving forward, developing a strategic EV plan with community input should place special emphasis on efforts that address the barriers highlighted in these survey results:

- Create incentives that offset cost and promote EV adoption
- Develop materials/outreach to educate the public about EV ownership
- Expand the city’s charging network

Incentives

Louisville can also lead efforts to increase the purchase, ownership, and use of EVs by through incentive-based program. At the 2017 U.S. Energy Information Administration (EIA) Energy Conference, the administration compiled a list of states that provided 1) incentives when purchasing an electric vehicle, 2) incentives for using/owning an EV, and 3) waivers on access restrictions for those owning or operating an EV.¹⁰ For example, California, Colorado, Delaware, Maryland, Missouri and Oregon are states that offer incentives for purchasing an electric vehicle. Kentucky could mirror efforts and provide incentives in the form of state and local rebates), discounted vehicle registration, access to HOV lanes, or other incentives to make EV ownership more attractive.

Furthermore, the International Council on Clean Transportation’s (ICCT) 2014 White Paper titled the "Evaluation of State-Level U.S. Electric Vehicle Incentives," stated incentives are "playing a significant early role in reducing the effective cost of ownership and driving electric vehicle sales." Thus, implementing a local incentive program in Louisville could accelerate the rate of EV adoption.

Public Education

Educating the public about EV use and ownership is a critical step to promote full adoption. Developing local programs and strategically partnering with stakeholders—from community groups to automotive manufacturers—can provide the foundation needed to drive momentum. By focusing first on the barriers identified in the EV survey, LMG can address concerns and dispel myths through structured education and outreach efforts to the public.

Through the EV survey LMG found that seventy-six percent of those surveyed had a “moderate” understanding about EVs. However, we acknowledge there are still many within Louisville Metro unfamiliar with the technology. Thus, to increase consumer awareness it is important for LMG to create opportunities where consumers can personally experience EVs. For example, LMG could host and/or partner with local community groups to create “ride-and-

¹⁰ Lynes, Melissa. “Projecting light-duty electric vehicle sales in the National Energy Modeling System (NEMS) and World Energy Projection System plus (WEPS+).” Retrieved at https://www.eia.gov/conference/2017/pdf/presentations/melissa_lynes.pdf

drives.” The ride-and-drives would give residents the opportunity to see firsthand how EVs operate, learn more about their benefits, and overall familiarize the public with EV technology.

Furthermore, Louisville Metro Government can create messaging and marketing that supports EV adoption. For example, California has developed television commercials and pamphlets with information about EVs to enhance the public’s understanding. Public outreach in Louisville could include written materials discussing how much EVs cost, what EV models are available in the Louisville Metro area, what are the expected savings over the lifetime of an EV, how to charge an EV and any other beneficial information. For example, fifty-four percent of those surveyed indicated cost as the number one barrier to purchasing an EV. Creating literature for the public could provide the public with pertinent information needed to increase EV adoption in Louisville Metro.

Expand Louisville’s charging station network

As illustrated in the survey results, expanding Louisville’s charging station network is essential to promote EV adoption. To date, there are roughly thirty charging stations within and/or in close proximity to Louisville Metro.¹¹ However, Louisville’s charging station infrastructure is in its infancy compared to our peer cities (i.e. Nashville, Indianapolis, and Cincinnati).¹²

To accommodate the influx of EVs and other plug-in hybrid electric vehicle, Louisville should develop a robust charging station network. The charging station network would reflect both the type of EVSE needed as well as show *where* charging stations are needed. Specifically, Louisville should work to increase the number of DC fast chargers. Currently, Louisville Metro has one DC fast charger, which is owned, operated, and configured exclusively for Tesla owners/operators. To provide better infrastructure—including the ability to charge an EV in 20 to 30 minutes—Louisville should invest in both DC fast charging technology and Level II chargers but prioritize DC fast charging.

Louisville should also determine where charging stations are needed. In conjunction with the EV survey, respondents participated in a crowdsourcing application. Within the crowdsourcing application respondents were asked to drop “pins” on a map of Jefferson County to suggest future locations for electric vehicle charging stations. Based on information obtained, Louisville Metro Government can determine where charging stations should be placed.

¹¹ Plugshare. (n.d.). [Map of charging stations located in and around Kentucky]. Retrieved from <https://www.plugshare.com/>

¹² *Id.*

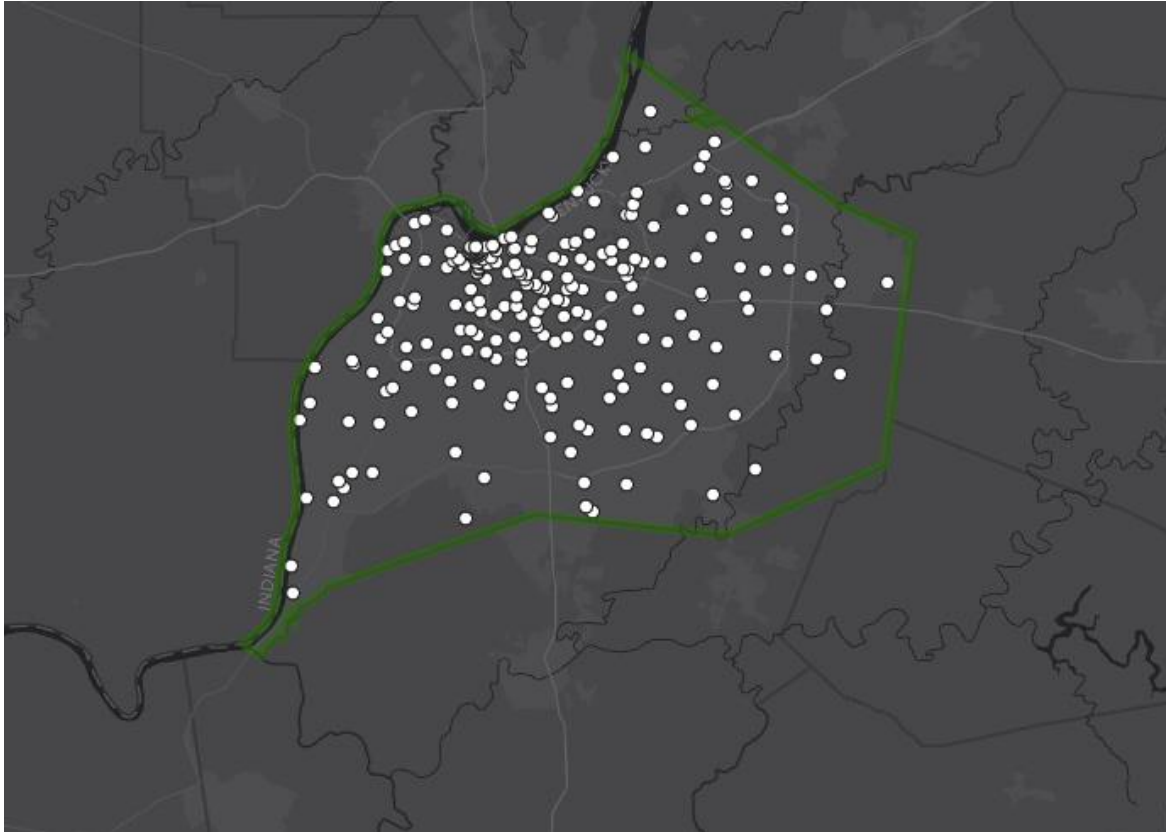


Image of suggested EV charging station locations from EV Survey crowdsourcing application

Section III: Conclusion

There are many efforts LMG and the community can take to increase EV adoption. From offering incentives to constructing more charging stations, EV adoption can become more mainstream and less unconventional. Thus, LMG and the community should work together to create an EV plan that supports EV adoption, educates the community and stakeholders about EV ownership and develop ways to accelerate EV infrastructure throughout the region. These steps are necessary in order to promote EV adoption and realize the benefits that come from a greater presence of EVs vehicles.

Appendix A: Suggested EV Charging Station Locations

(Taken from EV survey crowdsourcing application)

Location Name	Location Description	Number of Votes	Metro Council District	Zip Code
Kosmosdale	Kosmos Cement; on the way to/from Fort Knox, Radcliffe, West Point, Muldraugh	0	14	40272
LG&E Mill Creek Station	Get your charge at the source!	0	14	40272
Jefferson Memorial Forest Welcome Center	Park with hiking trails, fishing, activities	1	13	40118
Walmart Okolona	Walmart at Antle Drive and Standiford Plaza Drive	1	13	40229
Preston Crossings	Shopping; offices; stopping point to/from Bullitt County	1	13	40229
Dixie Highway at I-265 / Greenbelt Hwy and Bethany Ln	Convenient for travel to Fort Knox or Elizabethtown	0	14	40272
Riverside	Historic home and event venue, access to Louisville Loop	0	14	40272
Bardstown Road at Thixton Lane	Stopping point to/from Mount Washington and Bardstown; apartments nearby	0	20	40291
Southwest Regional Library		1	25	40272
McNeely Lake Park	Place charging station(s) in area with playground, gazebo, and picnic tables.	1	23	40229
Rave Cinemas Preston Crossings 16		1	24	40229
Valley Station High School	and Dixie Elementary school; stores nearby	0	14	40272
Fairdale High School	And businesses and church in walking distance	1	13	40118
JCTCS Southwest	College; hospital; schools nearby	0	25	40272
SOUTHWEST REGIONAL LIBRARY		0	25	40272
Turkey Run Park	Access to park facilities, walking trails, Louisville Loop	1	20	40291
Outer Loop at New Cut Road	Easy access from Outer Loop, New Cut Rd., I-265; large stores, smaller businesses	1	13	40214
Southern High School	and St. Rita church and elementary school across the road	1	24	40219
Shopping Plaza	Charge while eating at restaurants, shopping at stores or waiting at the Jefferson County Clerk's Office	0	23	40291

I-65 / Outer Loop interchange	Easy off/on spot for travelers.	2	13	40219
ValueMarket Grocery Store		2	23	40228
Jefferson Mall Food Court Entrance	EV charging stations located near the Food Court entrance	7	24	40219
Moore High School		0	23	40228
Bardstown Road at I-265	Convenient for travelers and shoppers at Kroger. etc.	0	22	40291
South Central Regional Library	Charge while you browse or research	3	24	40219
Southwest Government Center	Easy access; government center; small businesses nearby	3	12	40258
PRP High School	and Greenwood Elementary	0	12	40258
RIVERVIEW PARK	SPLASH PARK AND WALKING TRAILS	1	12	40258
I-265 at Billtown Road	Easy access; two schools	0	20	40299
Doss High School	High school; elementary school; small businesses nearby	0	25	40214
Preston Highway at Fern Valley Road	Easy access; big stores; smaller businesses	1	21	40219
Ford Louisville Assembly Plant	For Ford employees, some UPS employees, and employees and customers of other nearby businesses	1	13	40213
Fern Creek High School		0	22	40291
RiverPort Central	Many employers nearby	0	12	40258
Iroquois Amphitheater	Change while visiting the park or attending a performance	5	15	40214
Appliance Park South	Large employer; many small businesses nearby	2	24	40225
Preston Highway at Indian Trail	Easy access; shopping center; more small businesses	0	2	40219
UPS WorldPort	Major employer	1	13	40213
Holy Cross High School	High school; gym; restaurants; other businesses in walking distance	1	12	40216
Mercy Academy	High school; large and small employers across the road	1	2	40228
KROGER	KROGER AND COUNTY CLERKS OFFICE	2	3	40216
Preston Highway at Indian Trail	Easy access; shopping center; more small businesses	0	2	40219
Bardstown Road at Hurstbourne Parkway	Easy access; shopping center	2	22	40291
Vettiner Golf Course		1	20	40299
Technology Park	Multiple large employers	0	21	40214

Poplar Level Road at Indian Trail	Easy access; small businesses; school close by	0	2	40213
Iroquois High School	and Olmsted Academy South; short walk to Iroquois Park	1	21	40215
GE Plant		1	2	40225
Taylorsville Lake Road at Routt Road	Stop on the way to Taylorsville and Taylorsville Lake	1	20	40023
Western High School	and Waller Environmental School	0	3	40216
Saints Mary & Elizabeth	For staff, outpatients, and visitors of Sts. Mary & Elizabeth Hospital, ICF/MR, Hazelwood Elementary	1	15	40215
LG&E Cane Run Generating Station		0	1	40216
Bardstown Road at Breckenridge Lane	Easy access; private college and office buildings in walking distance	0	2	40218
Dixie Highway at I-264	Shopping center and convenient access from expressway	0	3	40216
Cane Run Park	Access from Cane Run Rd. and Lees Ln./Rockford Ln.; two schools; church; restaurant	1	1	40216
		0	1	40216
Male High School	And short walk to businesses	0	21	40213
Parklands	Floyd Fields soccer area parking lot	0	20	40299
Airport		8	21	40209
I-265 at Taylorsville Road	Easy access; shopping center; church	0	20	40299
I-264 at Crittenden Drive - Post Office	Easy access; post office	0	21	40209
Preston Highway at I-264	Large employers; easy access	0	21	40213
I-264 at Taylor Boulevard / Wyandotte Park	Easy off/on	1	15	40215
I-264 at Crittenden Drive	Easy off/on	1	21	40209
I-264 at 3rd Street	Easy off/on from expressway; easy access from Southern Pkwy. and 3rd St.	2	15	40214
Jeffersontown Downtown	Many small businesses in walking distance	2	20	40299
Butler High School		1	3	40216
7th Street Road / Manslick Road / Berry Boulevard	Easy access; many businesses in walking distance	0	3	40216
Hurstbourne Parkway at Six Mile Lane	Easy access; shopping center; many apartments close by	2	11	40299
Main Post Office	Large employer	1	10	40213
Fairgrounds		2	21	40209

Buechel	Easy access; shopping center and many small businesses in walking distance	0	10	40218
Tradewinds West	Access from Cane Run Rd. and Crums Ln.; shopping center; school and post office nearby	0	1	40216
Breckenridge Plaza	Shopping center; access from Breckenridge Ln. and Six Mile Ln.	1	26	40220
JCPS Headquarters	And large office buildings across the road	1	10	40218
Audubon Country Club	Charge while golfing; also walk to nearby businesses	0	10	40213
Papa John's Cardinal Stadium		1	15	40209
Bashford Manor		1	10	40218
Jeffersontown High School		0	11	40299
Mega Cavern	Multiple businesses and entertainment activities	0	10	40213
I-264 at Cane Run Road	Access from Shawnee Expressway and Cane Run Rd.; hotel; multiple small businesses	0	3	40216
Churchill Downs		1	15	40208
Patterson Stadium at U of Louisville		0	15	40208
Zoo		9	10	40213
Seneca High School		0	26	40220
Louisville Nature Center		2	10	40213
Rubbertown Central	Large employers nearby	0	1	40211
Atherton High School		2	8	40205
Taylorville Road at Hurstbourne Parkway	Shopping centers on both sides of road, convenient access	1	11	40220
Sullivan U. / Farmington	Private university; historic home and event venue; shopping center across the road	0	26	40205
Audubon Hospital	and medical office buildings	2	10	40217
Eastern Parkway at Preston Street		4	15	40217
U of L East	Parking garage	3	6	40208
Assumption High School	And St. Raphael Elementary School and businesses across the road	1	8	40205
Blankenbaker Parkway at I-64	Many businesses nearby, convenient access	1	20	40299
Beckley Creek Park, Egg Lawn	Park facilities, walking paths, access to Louisville Loop	6	20	40245
BECKLEY PARK	LOT OF PEOPLE COME HERE, OR AT LEAST THEY NEED TO.	2	20	40245
Hikes Point	Shopping center and numerous small businesses in walking distance	0	26	40220
Our Lady of Peace /	For staff and visitors of Our Lady of Peace Hospital,	2	10	40205

Bellarmine SW	Nazareth Home, faculty/staff and students of Bellarmine and St. Agnes Elementary			
U of L West		2	6	40208
Manual Stadium	Sports venue	1	10	40217
St. Xavier High School		1	10	40217
Commerce Center / MSD Service Center	Access from Cane Run Rd. and Algonquin Pkwy.; offices; small businesses	0	3	40211
7th Street Road at Industry Road / Metro Government Archives	Access from these two roads and Algonquin Pkwy.; multiple businesses and a school nearby	1	6	40208
Bellarmine University NE	For faculty/staff and students of Bellarmine, Highland Middle School, Shenanigans	5	8	40205
I-264 at Bells Lane		0	1	40211
Dupont Manual High School	And YPAS, Noe Middle School, U of L	2	6	40208
Kroger	Grocery Store	6	8	40205
On-Street Chargers	Douglass Loop Area	2	8	40205
Algonquin Parkway at Wilson Avenue/Cane Run Road	Access from two busy roads; two stores, multiple small businesses and one large employer in walking distance	0	3	40210
Jewish Community Center	Gym/Pool	5	26	40205
Medical Arts Center	Large doctors' office building; adjacent rehab center; shopping center in walking distance	3	8	40217
I-64 / Blankenbaker Pkwy interchange	Convenient for travelers and for megachurch services and activities	2	20	40299
Kroger		1	18	40223
Hurstbourne Parkway at Linn Station Road	Multiple large office buildings and many shops	1	18	40223
Douglass Community Center		0	8	40205
Seneca Golf Course	Golf course, multi-use trails	1	8	40205
		0	6	40208
On-Street Charger	Bardstown/Bonnycastle	0	8	40205
Panera/Mark's Parking Lot		1	8	40205
Big Rock	Picnic pavilion, swimming spot, walking trails	1	8	40205
Village 8 Theaters	Movie Theater	4	26	40207
On-Street Charger	Near Edgeland/Bardstown	0	8	40204
Baxter Ave Theaters	Perfect for when you go watch a movie.	8	8	40204
Miles Park	Hiking, nature; Valhalla Golf course across the road	1	19	40245
Shelbyville Road at	Easy access on the way to/from Shelbyville,	2	19	40023

Clark Station Road	Simpsonville; small businesses			
I-65 at St. Catherine Street	Easy off/on; dense housing and businesses in walking distance	4	6	40203
On-street Charger	Near Bardstown/Patterson	0	8	40204
Presbyterian Theological Seminary		2	8	40205
Hogan's Fountain	Picnic pavilion, baseball field, basketball court, walking trails	5	8	40205
Shelbyville Road at Beckley Station Road	Easy access; school, apartments, and businesses nearby	1	19	40245
Baptist East	Large hospital and doctors' office buildings, Brown Park	1	26	40207
Grinstead & Everett	It's the perfect size property. Could accommodate 6 - 12 vehicle with easy access to each spot from Grinstead.	2	8	40204
On-Street Spaces	Near Baxter/Highland Node	0	8	40204
Paristown Center	Future dense development	3	4	40204
Spalding U. / Breckenridge St. at 3rd St.	For faculty, staff and students of Spalding U., Presentation High School, Lockett & Farley, and other businesses	2	4	40203
Chicksaw Park	Near the tennis courts and picnic areas	2	5	40211
Baxter Avenue near Christy	At public parking lot. Convenient to staff and patrons of the numerous restaurants and businesses nearby, and the numerous apartment dwellers coming soon	3	8	40204
Eastern High School	And short walk to shopping center, Hite Elementary School	1	19	40243
		0	26	40207
Waggener High School		0	26	40207
Middletown East	Large stores and many smaller businesses	2	19	40223
Main Library	Charge while you browse or research	7	4	40203
Middletown West	Many small businesses	3	19	40243
3rd and York		2	4	40202
Brown Forman		1	6	40210
Seneca Park	Good charging point while residents are exercising or enjoying some fresh air.	3	9	40207
TARC Headquarters	For TARC, State of Kentucky, and LG&E employees	1	6	40203
Walden Theater and Autodemo	In front of Walden which has plays and day long events.	1	4	40204
JCTC Downtown	College; short walk to medical center, Wayside Christian Mission, shopping, and apartments	1	4	40202
Norton Hospital / Medical Center West	For hospital staff and outpatients	1	4	40202

Medical Center East / Chestnut St. at Hancock St.	For U of L Hospital staff and outpatients, Red Cross staff, Nucleus employees, etc.	2	4	40202
Oxmoor Center	Busy shopping mall where one can shop while the car is charging	8	18	40222
The Mall Saint Matthews	Level 2 chargers need to be placed where people spend time.	10	26	40207
Theater Square / Kindred	For Kindred Healthcare employees, Brown Hotel guests, employees and visitors of other businesses, including the multiple restaurants	1	4	40202
Louisville Urban League		1	4	40203
Southern Baptist Theological Seminary		1	9	40206
EV Charging Suggestion: St. Matthews/ Eline Library		2	9	40207
Nia Center	Career center and transit hub	1	6	40211
Guthrie Street	Near Ahrens HS, Brown School, office buildings	1	4	40202
Shawnee Library		1	5	40211
Ursuline Campus	For faculty/staff and students or parents at the multiple schools there	2	9	40206
Shelbyville Road Plaza (Trader Joe's)	Destination shopping. Multiple stores. Only Trader Joe's in area, so people drive from all over the county to shop there.	7	26	40207
Central High School		0	4	40203
Peterson-Dumesnil House / Barret Middle School	Historic home and event venue, middle school	2	9	40206
PARC	PARKING GARAGE	2	4	40202
U of L ShelbyHurst Campus / Forum Center	Shopping center and large office buildings, university campus	2	18	40222
Medical Center North	For staff, outpatients, and visitors at Jewish Hospital (or whatever it will be called next) and nearby businesses	2	4	40202
4th Street Live	And office buildings nearby	3	4	40202
PARC Louisville Gardens Lot	Consider adding special parking spaces for EVs in all PARC garages	3	4	40202
MSD Headquarters	and Kentuckiana Works, Hall of Justice, etc.	1	4	40203
Convention Center	in parking garage	2	4	40202
St. Matthews	Plenty of pedestrian traffic and amenities to take advantage of while charging.	4	9	40207
Kentucky Center for African American	In the visitor parking lot	4	4	40203

Heritage				
Kentucky International Convention Center		2	4	40202
Hall of Justice	Centrally located in high traffic area	2	4	40202
		0	4	40202
Metro Hall		5	4	40202
		0	4	40202
Shawnee Park		4	5	40211
Trinity High School	And small businesses in walking distance	2	9	40207
Cowger Garage		1	4	40202
Slugger Field / Exteme Park	Charge while attending a ballgame, rollerskating, visiting the Green Building, etc.	3	4	40202
		0	4	40206
Seventh and Market		0	4	40202
Butchertown	Swift meat packing plant, many smaller businesses and homes in walking distance	2	4	40206
Slugger Parking Deck		2	4	40202
American Printing House for the Blind	Printing house and school have employees who drive; many small business in walking distance; meeting venue across Frankfort Ave.	2	9	40206
KFC Yum Center	in parking garage	4	4	40202
		0	4	40202
		0	4	40202
Science Center and LouieLab	Great museum row location.	5	4	40202
River Road at Witherspoon Street	Can be used by Humana employees, Presbyterian Church employees, and other downtown workers as well as Waterfront Park visitors	1	4	40202
Belvedere	in parking garage; Ky Center for the Arts, Muhammad Ali Center, Galt House, office buildings	4	4	40202
		0	4	40202
		1	9	40206
		0	4	40202
Shawnee Park		2	5	40211
Hubbards Lane at Westport Road	Two shopping centers; office buildings; other businesses in walking distance	5	7	40207
Brownsboro Road at Hillcrest Avenue	Busy crossroad; many small businesses in walking distance	2	9	40206
Shawnee High School		1	5	40212
		0	9	40206
Mellwood Arts Center		3	9	40206
Big Four Bridge	For Waterfront Park visitors and bridge walkers	9	4	40206

	going to Jeffersonville			
Community Boathouse		6	4	40206
Ormsby Station	Multiple large office buildings and a few restaurants	0	18	40223
Brownsboro Road at Chenoweth Lane	Spot along Brownsboro Road (US 42); two small shopping centers, bank, hardware store, church in walking distance	3	7	40207
Anchorage	Restaurants, small businesses, post office, firehouse all in walking distance; two schools close by	0	17	40223
Mark Condon	Are these pre-determined or suggestions? How might we add suggestions?	1	7	40207
Eastpoint South	Easy access from I-265; multiple employers nearby	1	19	40223
I-64 at 22nd Street	A place to stop to/from New Albany, Corydon, etc.; entertainment venue and small businesses in walking distance	2	5	40212
Westport Village	Easy access; shopping center; many apartments	5	7	40222
I-264 at Bank Street	A place to stop to/from New Albany, Corydon, etc.	1	5	40212
Portland Library		2	5	40212
River Road at Zorn Avenue	A place to stop along River Road; hotel, nursing school, Champions Park in walking distance	5	9	40207
Brownsboro Center	Shopping center; grocery across the road	2	7	40207
Future VA Hospital		1	7	40222
		1	9	40207
Plantation	Place to stop along Westport Rd.; small businesses; two schools	0	7	40242
E.P Sawyer Park	main parking lot	0	17	40223
Eastpoint North	Large employers; Baptist Eastpoint hospital	0	19	40223
Holiday Manor	Shopping center; offices; easy access from I-264 and US 42	3	7	40222
		0	17	40223
Locust Grove	Historic home and event venue	1	16	40207
Westport Road at Hurstbourne Parkway	Easy access; shopping center; church; school	3	17	40241
La Grange Road at I-265	Shopping center; stopping point to/from Crestwood and Pewee Valley; access from freeway	3	19	40245
US 43 at Seminary Drive	Two large condo buildings; synagogue	0	16	40241
US 42 at Seminary Drive	Two large condo buildings; synagogue	0	16	40241
Louisville Boat Club	Commuting route; private club; birdwatching/hiking a short walk away	2	7	40207
		0	17	40241
Ford Kentucky Truck Plant	Major employer	5	17	40241
		0	17	40241

	The Paddock Shops (formerly The Summit of Louisville)	4	16	40241
River Road at Lime Kiln Lane	A place to stop; school nearby	2	16	40222
Norton Brownsboro	Two hospitals; doctors offices; shopping; restaurants nearby	7	16	40241
US 42 at Wolf Pen Branch Road	Easy access from US 42; partial access from I-265; two churches	2	16	40059
Meeting Street Norton Commons	Town Center	0	16	40059
Prospect Point	Shopping center; stop on the way to northern Oldham County	2	16	40059