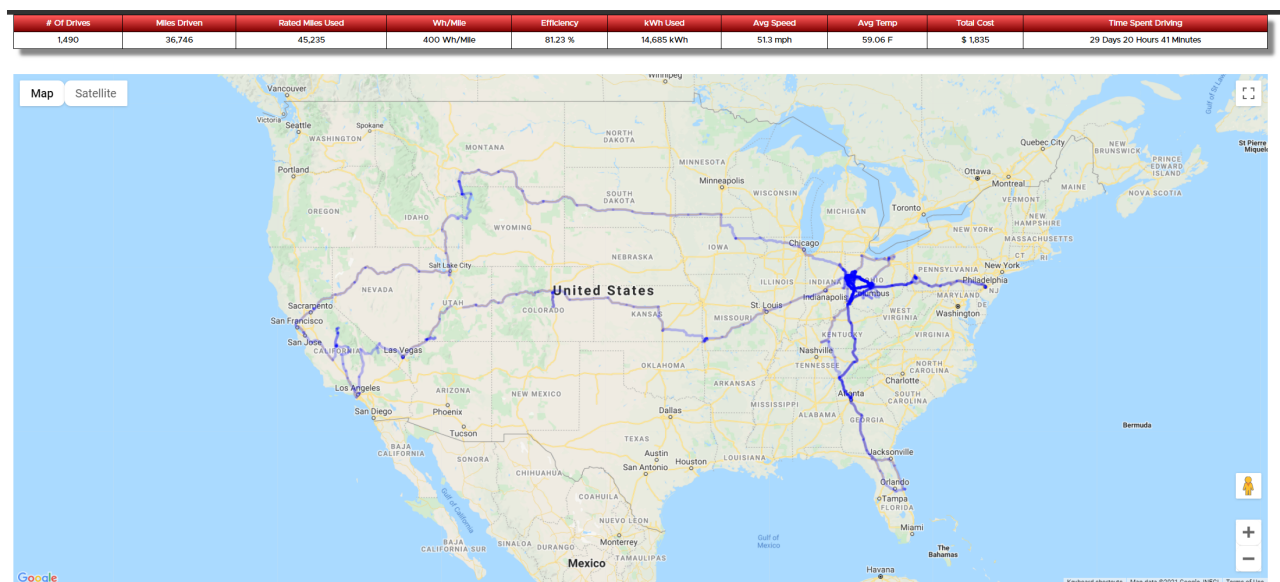


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## Background:

Have you ever wondered about road tripping in an EV or what about towing with an EV? Over the past 3 years I have done many road trips including a 2-week cross country trip to visit several National Parks and recently pulled a trailer from Ohio to Philadelphia. In under 3 years, I have logged over 91,000 miles in my Model X 75D. Below you can see a heat map of my travels from July of 2020 until today.



## Cross Country Trip

Back in 2020, the year everyone wants to put behind them, I had an opportunity due to furlough at my place of employment, to take a trip of a lifetime and visit several National Parks around the United States. This trip took a lot of planning. If you would have driven a gas car or an electric car, you would have had to plan. For this trip I knew my time frame as well as what I wanted to see. The first thing I did was map out


## Road Tripping and Towing with an EV by Craig Hart


on Google Maps where I all wanted to go and things I wanted to see. From there, I used my favorite EV trip planning map, [abetterrouteplanner.com](https://abetterrouteplanner.com) also known as ABRP. Here you can enter in your car information or log into your car's account to get real time data on how you drive. ABRP also allows for all customizations that will affect your range such as: weather, speed, cargo, and other items. You can even choose to use specific brands of chargers or level 2 vs DC fast chargers. You can view [this video](#) from Transport Evolved on how to use ABRP.


Having the information on how long the drive would be with charging, I then matched up the drive with hotels that have destination chargers. In the reference filed below, you can find a map of Marriott and Hilton hotels with EV charges. You can even look at RV parks if they have a 30- or 50-amp hookup. Please note some are for specific cars and other hotels may charge you to use. You can always look on PlugShare as well for a list of chargers around the world. There is a link in the Planning Links section below. With this information, I mapped out my journey with a custom Google Map. Find video on how to do that [here](#). You can also use an Excel export from ABRP and import to Google Maps.

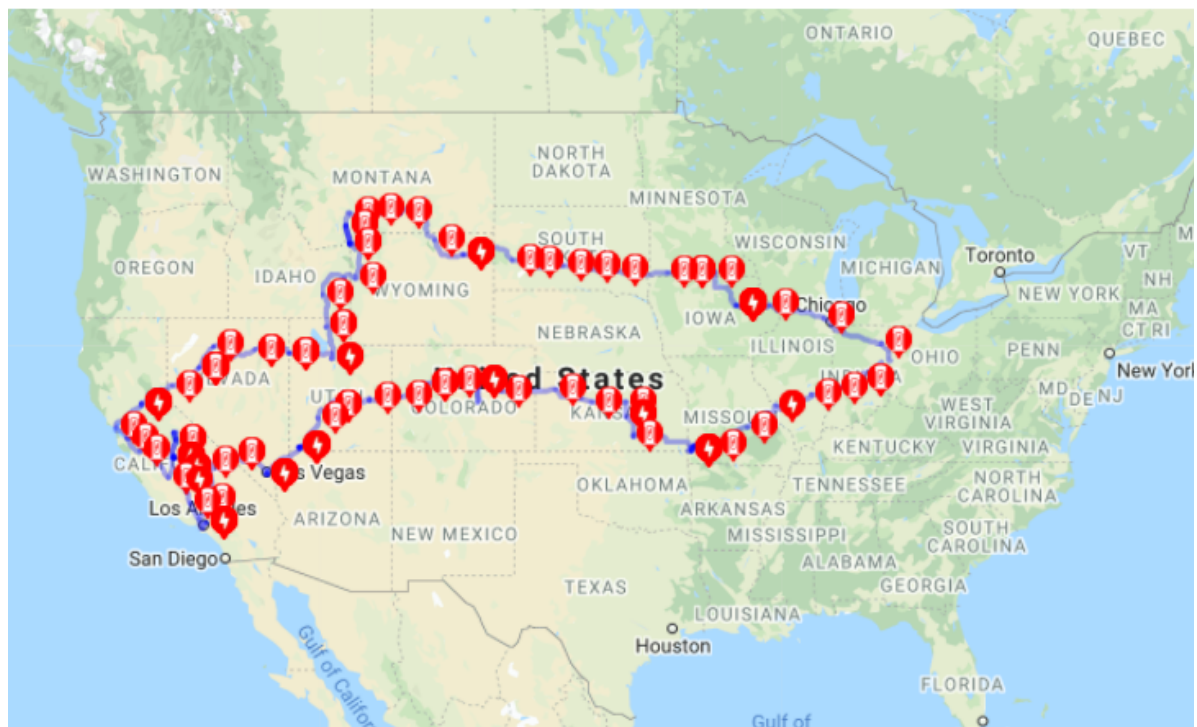
Having all this data, hotels booked, and route mapped, I headed out, but not before I signed up for TeslaFi. This allowed data to be pulled from my Model X and be logged onto their servers for data tracking. Below you can see where I traveled, how long I charged and how much energy I used.

## Road Tripping and Towing with an EV by Craig Hart

	136 Drives
Total Miles Driven	7,116.31
Rated Miles Used	8,164.10
Efficiency	87.17 %
Time Driven	5 Days 20 Hours 49 Minutes
kWh Used	2614.80 kWh
Wh/Mile	367 Wh
Total Cost	\$ 326.83
Average Temp	83.05 F

	71 Charges
kWh Added	1919.32 kWh
Total Savings	\$ 239.92
Time Charging	1 Days 8 Hours 21 Minutes



	41 Travel Charges
kWh Added	589.93 kWh
Total Savings	\$ 82.91
Time Charging	3 Days 19 Hours 38 Minutes



## Towing a Trailer





In July of 2021, I had the opportunity to help a friend move from Ohio to Philadelphia, PA. Like my cross-country trip, I planned the route using ABRP updating the information to reflect the extra weight and decrease in efficiency. I was able to get information online about how my car would perform with the trailer prior to picking it up, but also had an extra day to do some testing of 60 miles just to see how accurate the information was. The data below is a one-way 5\*8 U-Haul trailer about 60% loaded. On the way out, we left in the afternoon from the far west side of Ohio and stopped in Pittsburgh, PA at another friend's house to visit for the night. He does not have a home charger, so we just plugged into a 110 outlet, but I first unhooked the trailer and ventured into the city to charge from my arrival 20% up to 70% at a DC fast charge.


The big take away from towing was speed and weight kill range. Most of the drive out to Philadelphia I was in the right lane doing the speed limit or 5 under compared to the way home doing 5-10 over in the left lane. The other thing to keep in mind is not all chargers have availability to pull in with a trailer. As seen below, there is a spot for a trailer, but it was taken by another car. Fortunately, there were other open charges where I could pull in, but at two of the stops, I did have to remove the trailer to chargers. Do not worry though, I stayed with the car and would have moved if all the other spots were full.

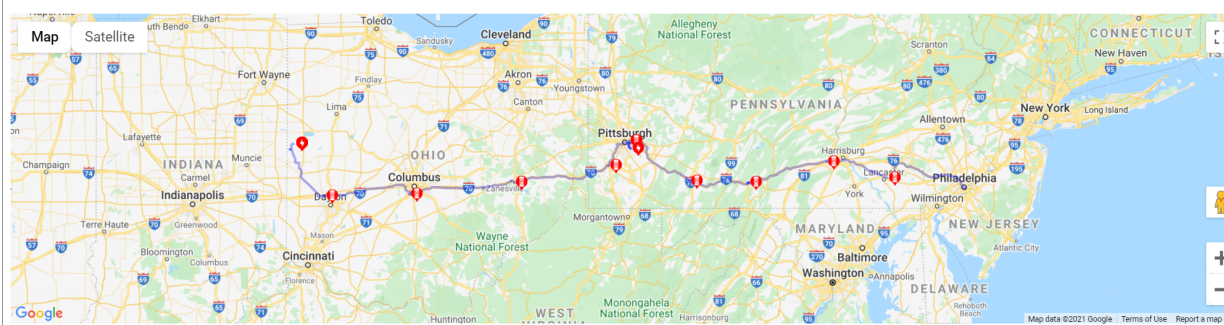
With Trailer		Without Trailer	
	19 Drives		15 Drives
Total Miles Driven	688.81	Total Miles Driven	528.04
Rated Miles Used	1,175.88	Rated Miles Used	631.61
Efficiency	58.58 %	Efficiency	83.6 %
Time Driven	13 Hours 24 Minutes	Time Driven	9 Hours 1 Minutes
kWh Used	384.03 kWh	kWh Used	205.00 kWh
Wh/Mile	558 Wh	Wh/Mile	388 Wh
Total Cost	\$ 48	Total Cost	\$ 25.64
Average Temp	70.12 F	Average Temp	74.6 F

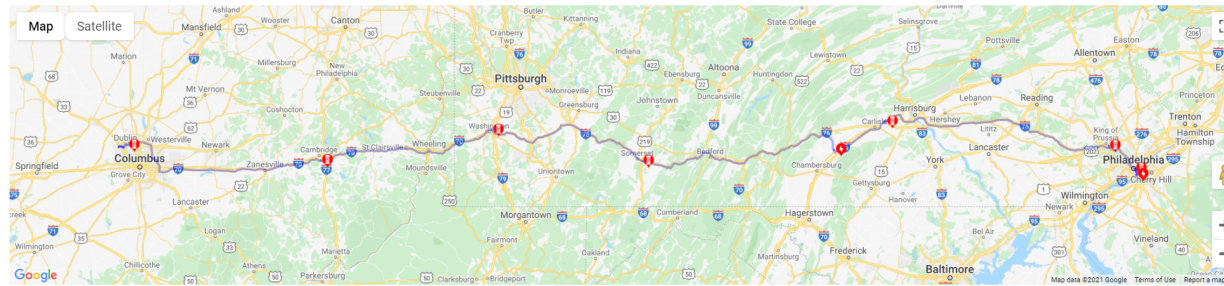
This trip was ~160 miles less as I stopped at my sister's house in Columbus for the night.

## Road Tripping and Towing with an EV by Craig Hart

	1 Travel Charge		2 Travel Charges	Add another 40 minutes for charging and 2 hours for driving to be like for like.
kWh Added	9.27 kWh	kWh Added	50.17 kWh	
Total Savings	\$ 1.57	Total Savings	\$ 7.05	
Time Charging	9 Hours 13 Minutes	Time Charging	9 Hours 2 Minutes	
	10 Charges		8 Charges	
kWh Added	299.86 kWh	kWh Added	164.9 kWh	
Total Savings	\$ 37.48	Total Savings	\$ 20.61	
Time Charging	4 Hours 55 Minutes	Time Charging	2 Hours 42 Minutes	









## Conclusions

Driving an EV across the country or with a trailer is possible. Like any trip, you will have to do some planning, but there are numerous resources available on the internet as well as with our local club. Please feel free to reach out to me via my personal social media or via [Drive Electric Columbus](#).

[Facebook](#)

[LinkedIn](#)

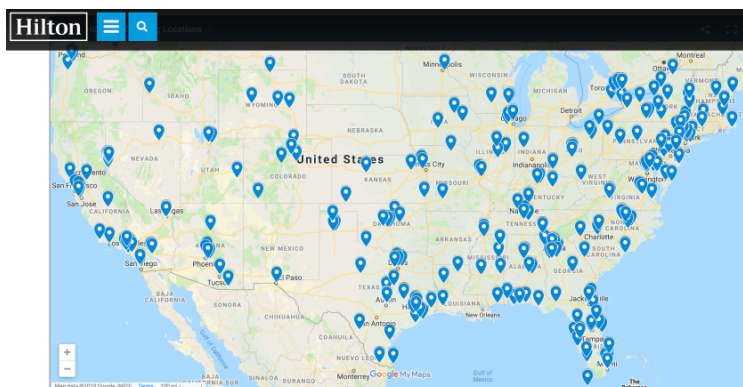
[Twitter](#)

## Planning Links

<https://abetterrouteplanner.com/>

[PlugShare - EV Charging Station Map - Find a place to charge your car!](#)

Hilton EV Chargers could not find the interactive map anymore.



[Marriott EV Chargers](#)

[Marriott EV Map](#) \*May have some incorrect data as I created this in 2020:

[Map of Hotels with EV Charging | PlugShare](#)