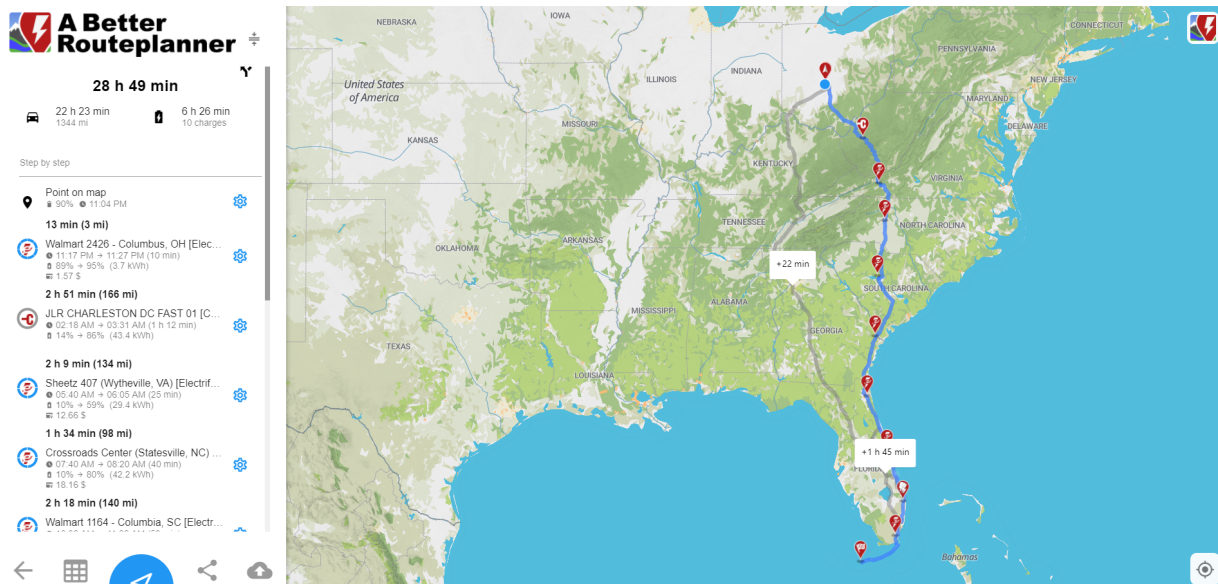


## Columbus to Key West and back in a Kia Niro EV -- Our 2800 mile round trip vacation By Mryia Williams (with input from Todd Williams)

In our home garage, we have 2 fully electric vehicles - a 2017 Nissan Leaf which is used as a commuter car and a 2019 Kia Niro EV which is used for a variety of trips both short and long. Like most everyone else, we spent 2020 primarily at home so we started planning where we would want to go for our next vacation. We have family in Homestead, Florida (which is south of Miami) and we thought it would be great to visit with them. We decided that we would be taking our Niro EV and started to plan our road trip.

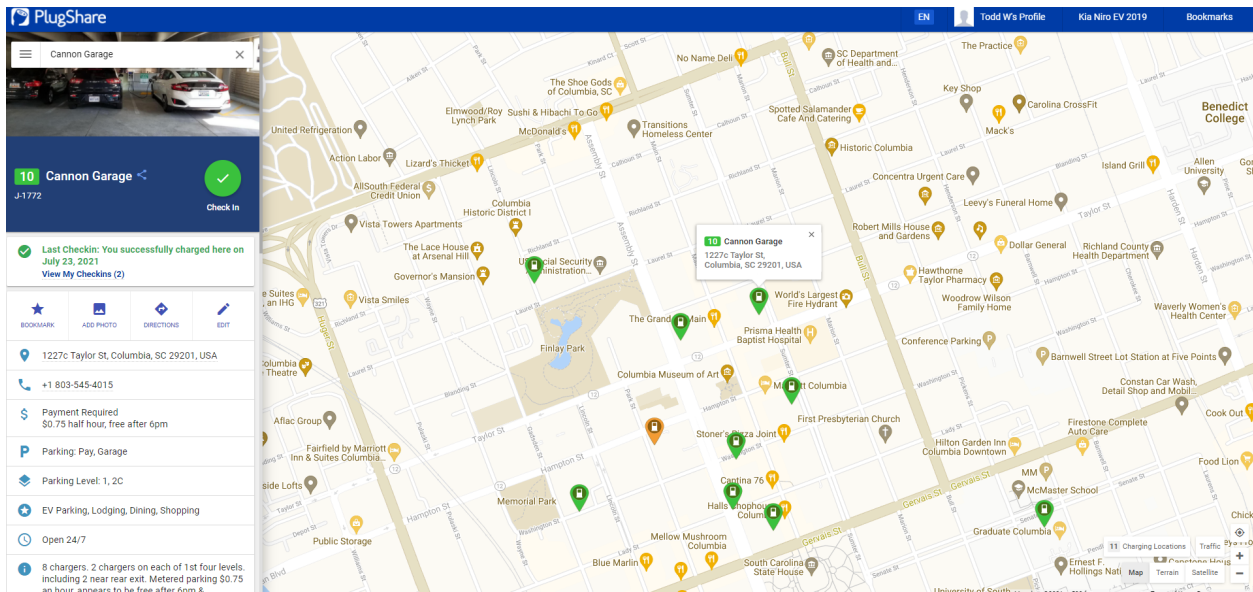
First, a little background. We aren't new to driving longer distances with our Niro. We actually purchased it, sight unseen, in the D.C. area and our "test drive" was the 425+ mile journey home. With family in South-Eastern Ohio and our daughter having recently graduated from Kent State, we have taken many 350+ mile round trips so even jumping to a 2800 mile round trip didn't feel like too big of a step. We knew with the right plan such a trip would easily be possible.

We have long been users of ABetterRoutePlanner (both the app and website), and it was our first step in planning. We entered our Columbus, Ohio starting point and entered our Key West, Florida destination. We also added in the appropriate variables including our luggage approximate weight along with the weight of some estate furniture we would be hauling to our family, and summer temperatures. We have often found ABRP to be conservative on the range we can expect so it didn't surprise or concern us when it showed it felt we would need to drive slowly in West Virginia (55mph) in order to cross the entire state. Looking at the 187 mile gap between Gallipolis, Ohio and Wythville, VA we knew we would easily make it, at highway speeds even given our additional cargo haul and 90+ degree temperatures. No other distances concerned the app nor gave us warning so we continued on with our plans without hesitation.



ABRP - If we were leaving now (Sept. 2021) instead of our trip in July 2021 the path looks a little different with a DCFC coming online in Charleston, WV.

For step 2 of planning, we looked up each stop of the trip on Plugshare to check on reliability, see what the backup charging options would be, and to locate amenities near each location. We prefer to drive for 3 to 4 hours and then stop for a meal/break and we planned to split the drive into two days of travel so we made slight adjustments to the ABRP guide when it advised a shorter leg. We settled on aiming to stay overnight in Columbia, SC because of the availability of Level 2 units near hotels and a solid backup plan of DCFC which could be used in the morning if overnight recharging fell through. We ended up deciding on Hotel Trundle because it was located across the street from a garage with 8 L2s which had a rating of 10 on Plugshare, it was within walking distance of several restaurants, and the accommodations met our needs.



Plugshare - Columbia, SC had several solid options for getting a Level 2 overnight recharge. We opted for a hotel near a garage with multiple units and a high reliability rating.

The night before we started our trip, we set our Niro to recharge to 100% at home. While we usually opt to stop at 80%, we knew we wanted a full battery for the first leg of our trip which would mean less time at our first stop. The EPA estimated range of our Niro is 239 miles but we often far exceed it, so we were not surprised when we started our trip with the range estimator showing 301 miles. Our first stop was in Gallipolis, Ohio where we used a Chargepoint DCFC and walked to a local coffee shop. By the time we received our drinks and walked back, our EV was ready to go.



Our Niro, fully loaded, with our luggage for 10 days and a large heirloom cedar chest which we were hauling to drop off with a family member in Florida. Both Chargepoint DCFC were available when we arrived.

West Virginia is a bit of a charging desert, which meant that unless we wanted to sit for hours at a Level 2 EVSE, we were aimed at Wytheville, VA for our second stop. 187 miles of driving on the highway through the beautiful rolling foothills of the Appalachians, we arrived at Sheetz and had our choice from all 4 Electrify America DCFC. We plugged in and ducked inside for a much needed restroom break. Then we were back on the road for our next leg to Statesville, NC.

It was dinner time for us, so before our 3rd recharge we grabbed BBQ and milkshakes to picnic with while our EV recharged with Electrify America for the second time of the day. We were excited to find that we had charging buddies at Statesville. We parked in-between an Audi E-Tron and a brand new Chevy Bolt EUV which was getting its first ever fast charge on the drive home from the dealership. We had a nice chat with the owner of the Bolt EUV and took a moment to commiserate about having to drive out of your home state to locate the EV that you want (he was from South Carolina but couldn't find all of the features he wanted on an EV nearby). Between having a great meal and making a new acquaintance, the recharge time flew by and we were back on the road for our last leg of the day. One of the significant advantages to driving electric is the technology available in most EVs; the Niro has safety and driver assist

features available (these include but aren't limited to Lane Keep Assist, Lane Departure Warning, Blind Spot and Forward Collision Avoidance, and Smart Cruise Control with Stop & Go). On long distance trips, using these features simplifies the driver experience. While you still need to pay attention and maintain control of the EV at all times, using the available features will let you relax a little and allow you to enjoy the drive that much more.

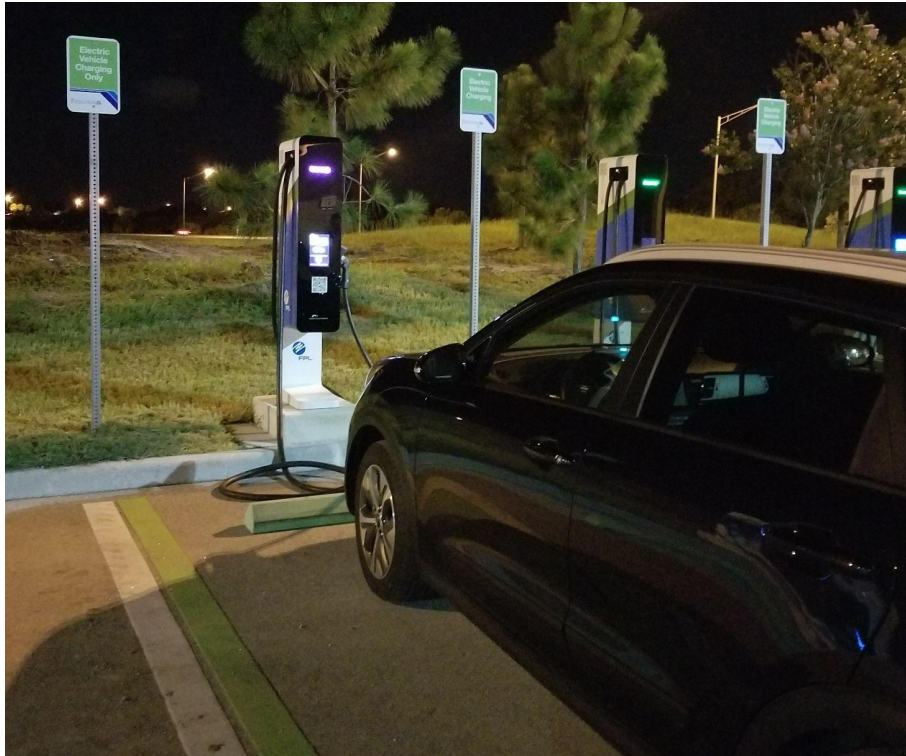
We arrived at Hotel Trundle in Columbia, SC and were surprised to learn we could self park at the garage Level 2s at no cost with a pass provided by the hotel. We happily plugged in, setting our Niro to recharge to 100% overnight, and checked into our room. It was such a nice stay and we appreciated being offered a selection of complimentary beverages (wines, ales on tap, soda, or sparkling water) to take to our room, so much so that we actually changed our return trip reservations to stay at the same hotel.

As we loaded our EV to leave the garage on the morning of day 2, a Honda Clarity pulled in to use the second side of our dual cord unit. We always love seeing other EVs taking advantage of public infrastructure. As we were driving, the onboard navigation alerted us to a traffic situation on the highway and rerouted us to avoid the stoppage. The EV automatically calculated the route change, letting us know that while we were adding about 12 miles to the leg that we were saving 45 minutes in traffic and because of the lower speed on state roads we would use 5% less battery even with the additional mileage to go around the accident. We arrived in Pooler, GA at a 6-bay Electrify America site and used the 30 minute stop to grab breakfast and coffee. One of the points we often hear about Electric Vehicles is the increased time it takes to recharge versus filling with gas, but we have found that we don't really notice the time difference since we now only make one stop (EVSE are typically located at restaurants, shopping centers, service plazas, and other destinations so instead of stopping for fuel, restrooms, food, activities, etc. separately, we are often able to take care of everything in one place).

On to Jacksonville, Florida where we had a tiny guffaw - we plugged in to an Electrify America station (a VW ID4 was unplugging as we arrived) and decided we would grab early dinner at Buffalo Wild Wings. Unlike filling at a gas station, you don't need to stay with your EV while it fuels and once recharged, your EV and/or the charging provider will notify you by App Push or text. We had just finished our meal when we were notified that our EV had completed recharging. Many EVSE have idling fees to discourage folks from leaving their EVs parked at a station after charging is finished, and oftentimes idling fees are higher rates than recharging to make sure you take them seriously. The 10 minute countdown was on to get our check, pay, and get to our EV before the fees would start. We made it back to our EV in time but it just goes to show that sometimes recharging might just be too fast because a sit-down meal can take longer than the EV recharge time to complete.

Off again, for this leg we decided to try one of the new FPL Evolution stations on the Florida Turnpike. We pulled into the Port St. Lucie/Fort Pierce Service Plaza to find 6 DCFC plus a Tesla SuperCharger (which was still being installed). We started drawing 76 kW immediately and ran inside for a much needed stretch and refresh. The stations were really easy to use,

offered great amenities, and were located on the far side of the building away from the gas station which provided a nice buffer from the gasoline and exhaust smells.



The FPL Evolution DCFC were compact in size but connected and worked smoothly.

Back on the road, we were aimed at Homestead to offload the cedar chest and picked up 3 more passengers to take to Key West. It was pretty late when we got there, so we spent a night in a hotel, grabbed a recharge in the morning while we had coffee, and then swapped the cedar chest for the extra family members. Fitting 3 adults and 2 teens plus multiple days of luggage for everyone in the Niro EV was a little snug but we made it work without strapping anyone to the roof (though the two teens did barter with us a bit trying to get us to strap the other sibling up).

We didn't need a recharge to reach Key West, but we did make a stop at the Turtle Hospital in Marathon where we learned about rescuing sea turtles and got to make some new shelled friends. With everyone stretched and ready to get back on the road, we finished our drive to Key West and found our AirBnB. After paddling around on a glass bottom, nighttime kayak tour of some mangroves, we swung by an Electrify America station where we were surprised to find our quick recharge was free. We spent the next couple days enjoying the beaches, sunsets, Fort Taylor, and family time before heading back north from the southernmost point in the continental USA.

Reaching the halfway point of both our vacation time and route, we started back north. From Key West, we headed back to Homestead to swap some luggage and split into two vehicles. Since we wouldn't all be traveling in the same vehicle from Homestead to St. Augustine, we made sure both the ICE driver and the EV driver had copies of the route plan. While the ICE vehicle would have been able to make the trip on one tank of gas, we knew we would need one recharge stop with the Niro during the 350 mile journey. Surprisingly, my sister driving the ICE was happy about this because she has a very hard time driving that far without a restroom and stretch break so knowing that we would have to be off the road for 30 to 45 minutes worked perfectly for her. We chose to stop at one of the turnpike service plazas and again found the FPL Evolution units to be very simple to use and as a bonus we found the installation crew on site working on the Tesla Superchargers so we got to take a peek inside one of them! We made use of the recharge time by grabbing lunch together and then got back on the road to St. Augustine for a few more days with the family at a second location.

At our AirBnB in St. Augustine, we found a washer and dryer in the garage meaning we had access to an outlet to power our portable Level 2 EVSE which we had brought along. We quickly learned that it was great that we planned to recharge at the house because St. Aug rolls up the sidewalks really early (no restaurants, family activities, really nothing open after 9pm). We made the situation work by plugging in, ordering from Doordash, and having a family movie night. After spending a couple days with family visiting the Fountain of Youth, having fun on the beach at Anastasia State Park, and sitting on the porch in the evening to listen to the frogs sing, we reached the end of our time in Florida. We set out for a fairly easy day knowing we would need just one recharge on route to Columbia, SC. We took advantage of the break at the Electrify America station in Pooler, Georgia to eat some peach soft-serve that we grabbed at a roadside stop and to stretch before the second leg of our drive for the day. We made it into Columbia, SC and since we were staying overnight at Hotel Trundle again we had been issued a garage parking pass in advance, so we plugged in before even going to our room or heading to dinner at Hendrix. It was nice to know that we would have a Level 2 parking space available for the night so that we would be able to leave for our final day of travel with a full charge.



There were several Level 2 units in the garage and Hotel Trundle had 2 charge spots on their reserved floor.

We got on the road for our final day of travel facing 3 planned stops and about 550 miles of travel. Under optimal conditions we could have eliminated one of the stops but due to DCFC spacing, we needed to catch all 3 stops so that we wouldn't have too large of a gap in infrastructure. The bright side of adding the extra stop was that each one would take less time.

At Statesville, NC we picked up food from CookOut (2 BBQ sandwich meals with sides and 2 milkshakes for under \$15) and parked at the Electrify America station. The first unit had a damaged CCS Combo handle on one of the cords (we made sure it was reported to them so that a repair order would be filed) but we found all the other units were ready and waiting to give us a quick charge to get back on the road. About 30 minutes later, we were back on the road with full bellies heading to Wytheville, VA.

Our last Electrify America stop ended up being the one with the most that went wrong our entire trip. When we pulled in, 1 of 4 stations was in use by a VW e-golf. We pulled up to unit number 4, plugged in, and found it would not connect. We unplugged, tried the second handle, and still the communications handshake wasn't working. Upon glancing to the left, we realized that unit 3 was in a reboot cycle and showing a Linux screen. We moved our Niro EV to unit 1 and plugged in only to be greeted by the same communications issue. I called Electrify America and spoke with a rep, she quickly pulled up data logs from the location and could see where we had now tried unsuccessfully at two units, one unit was registering as offline, and then one was in use. She asked me to try connecting again and then she was able to clear up the connection issue. With the electrons humming into our Niro, we ran inside Sheetz to grab some drinks and use the bathroom. All in all, we only had about 5 minutes added to our stop from the situation and hanging out for the extra time let us meet the VW e-golf family as they walked up to unplug just as we were getting ready to leave. It turned out they were a multiple EV household with a Nissan Leaf and Chevy Bolt at home!

With one more recharge ahead of us, we were back on the road again. With no DCFC along the route in West Virginia, we were heading for Gallipolis, Ohio. Having grown up in the Ohio Valley, we knew there would be limited food choices available late in the evening, so we planned ahead and had a small veggie tray and cheese cubes in the cooler with our drinks. Both Chargepoint DCFC were available when we arrived so we were able to plug right in and about a half hour later we were back on the road to home.



Todd looked completely thrilled about me snapping one final DCFC picture on our trip.

Overall, we had a great trip. We spent around \$125 for recharging on our 2800 miles of travel. We never needed an adapter because the CCS network was easily able to get us to our destination, though we did choose to supplement with overnight J1772 (Level 2) recharging when available. All of our recharge stops served the dual purpose of meals, restrooms, or destinations so we never felt like we were wasting time stopping for “fuel”. We did have to do a bit of route planning but I have always planned hotels and often restaurants ahead for trips so this wasn’t that different. We had one small hiccup with recharging, but it was solved within minutes with a call. We never waited in line for electrons and had several conversations at stops with fellow EV drivers all while seeing a mix of different Electric Vehicles. While this was our longest EV roadtrip to date, it definitely won’t be our last (we have actually already completed another 500 mile trip since then).