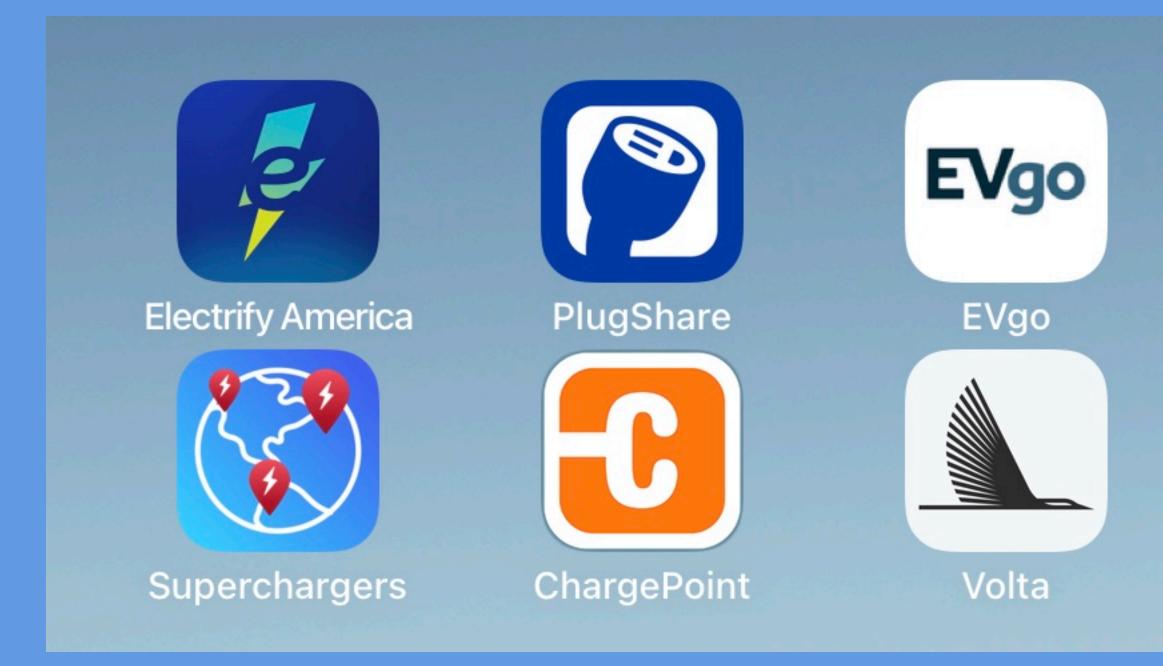
# Session 4: Range

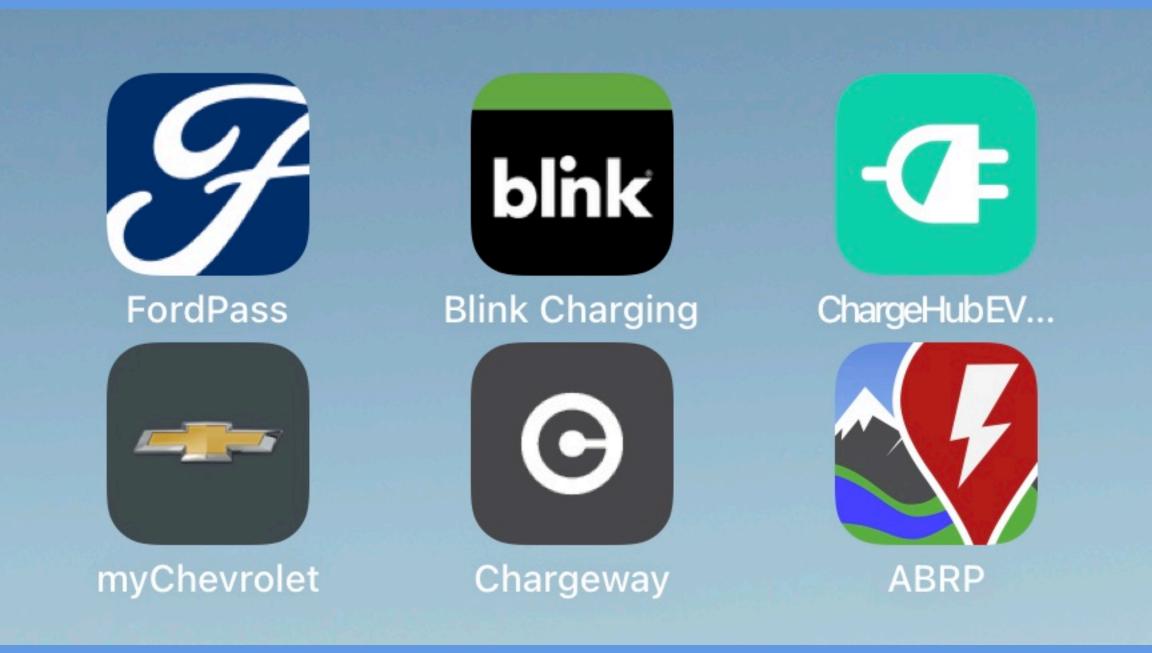


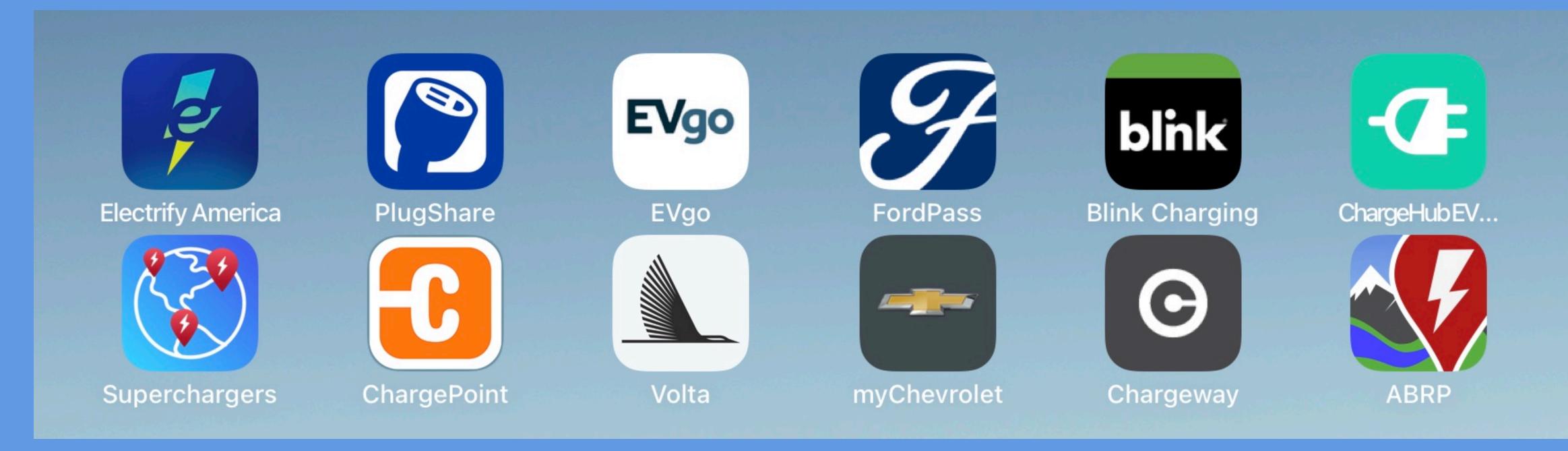
# Past Performance vs Future Results











There are a lot of apps for charging networks - some actually are charging networks - one in particular - is pretty good at finding chargers regardless of network. Some even claim to be a networks but are really just a list of chargers.

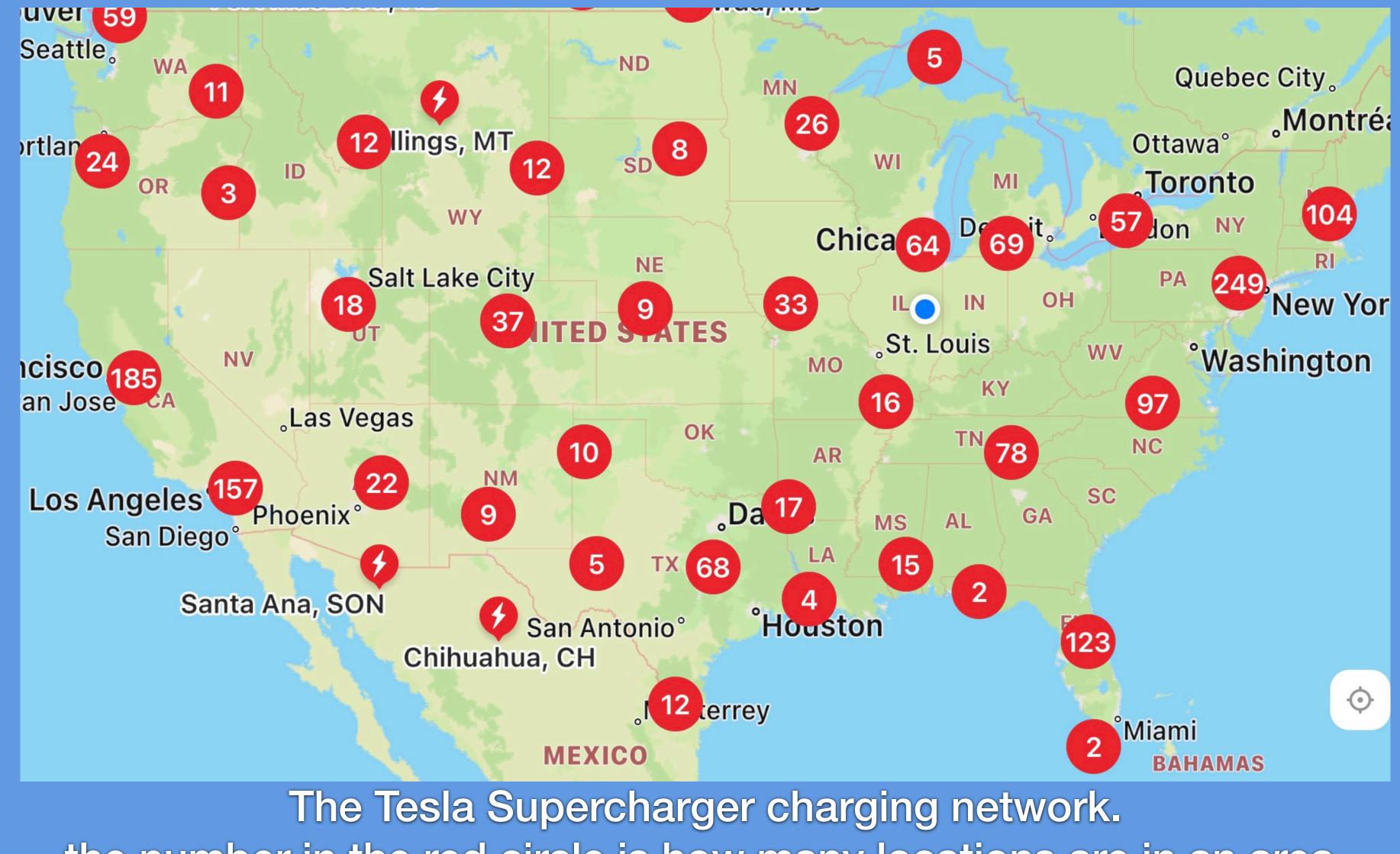




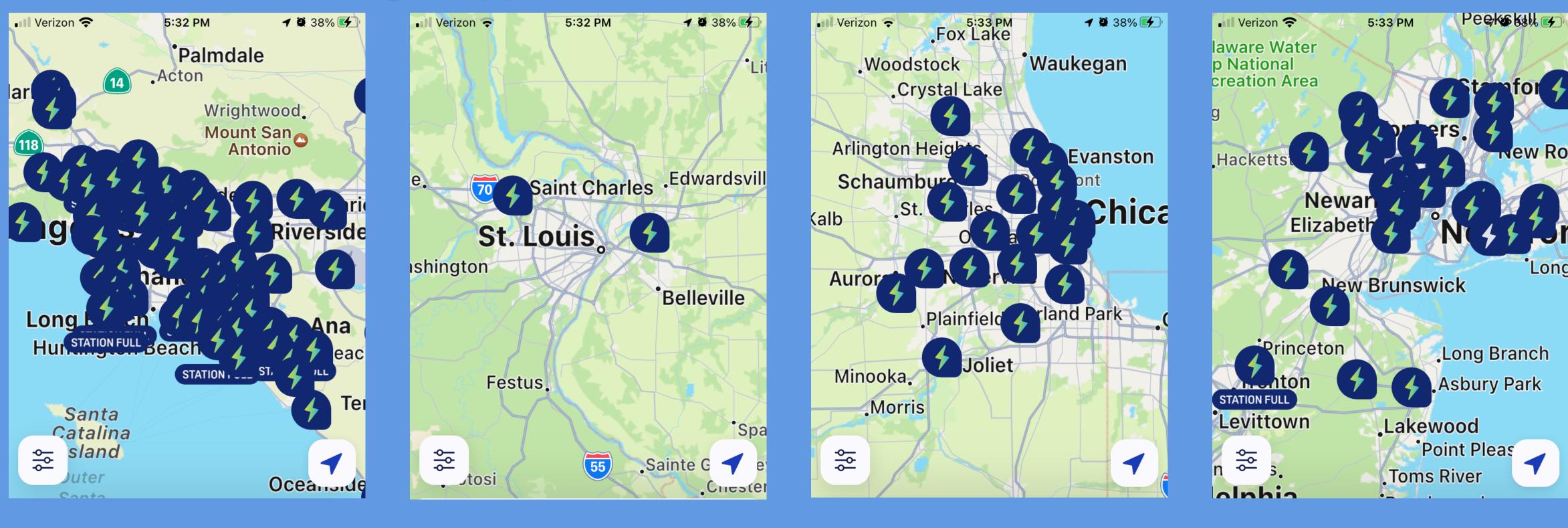
Starting with the ones that I find most useful. **Electrify America** Superchargers PlugShare ChargPoint



The Electrify America charging network. Showing every location - looks pretty.



The Tesla Supercharger charging network. the number in the red circle is how many locations are in an area, while EA shows every location.



# Los Angeles

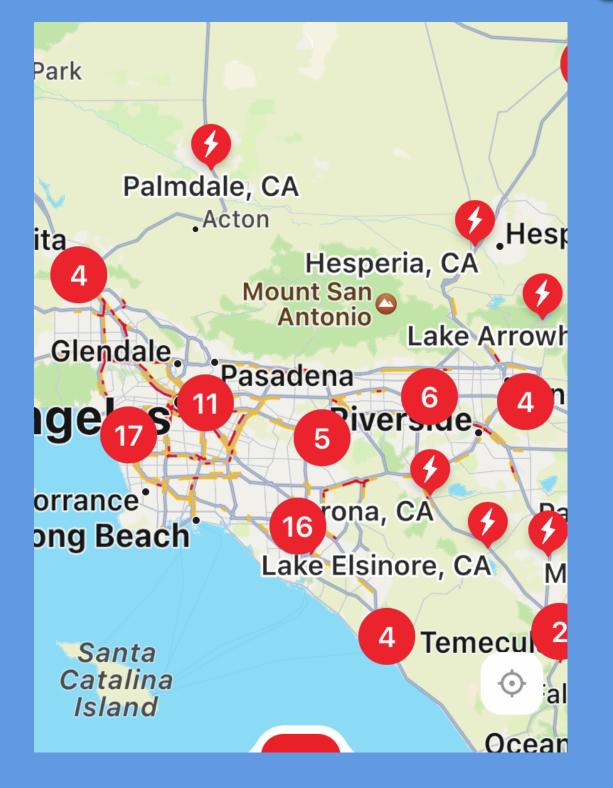
#### St Louis

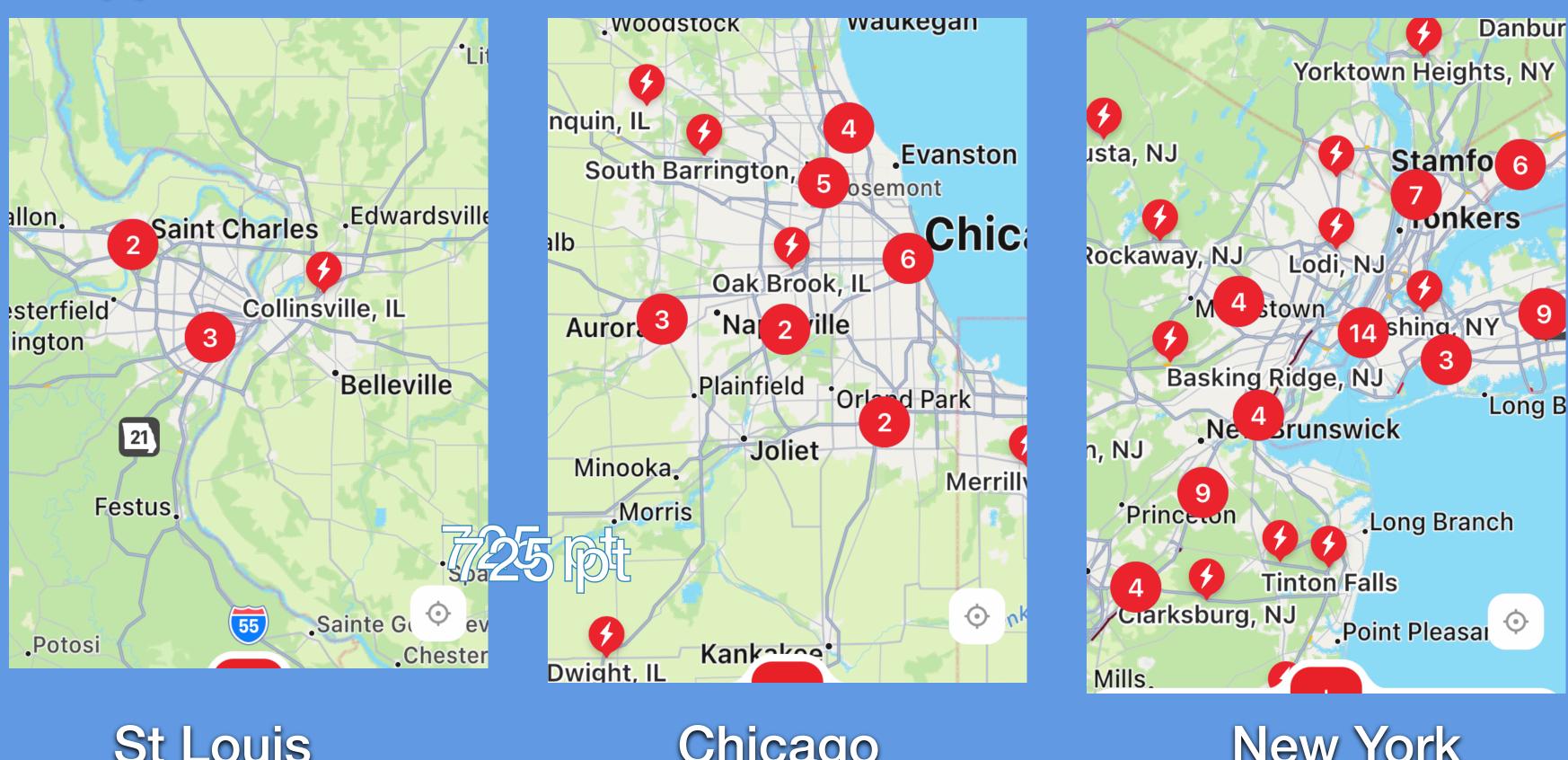
**Electrify America** Individual locations

Each map section is the same scale and shows how well each city is served by public charging. Note: it shows which locations are full.

# Chicago







# Los Angeles

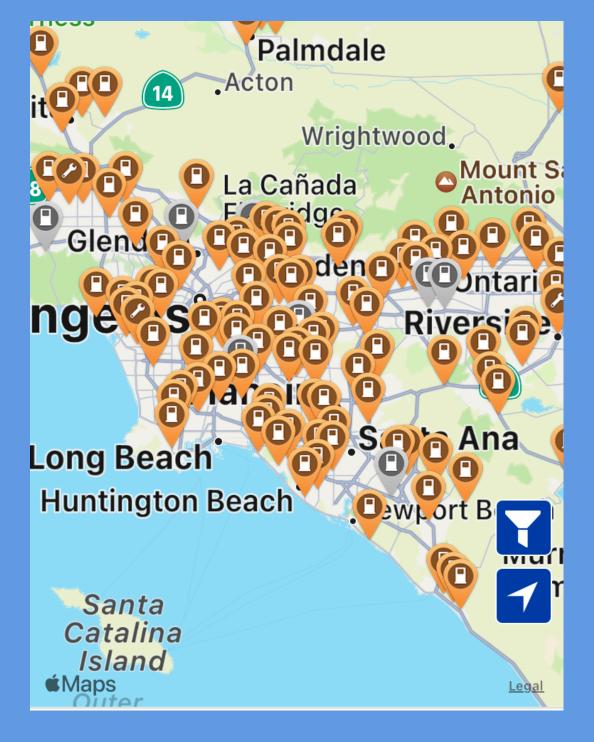
St Louis

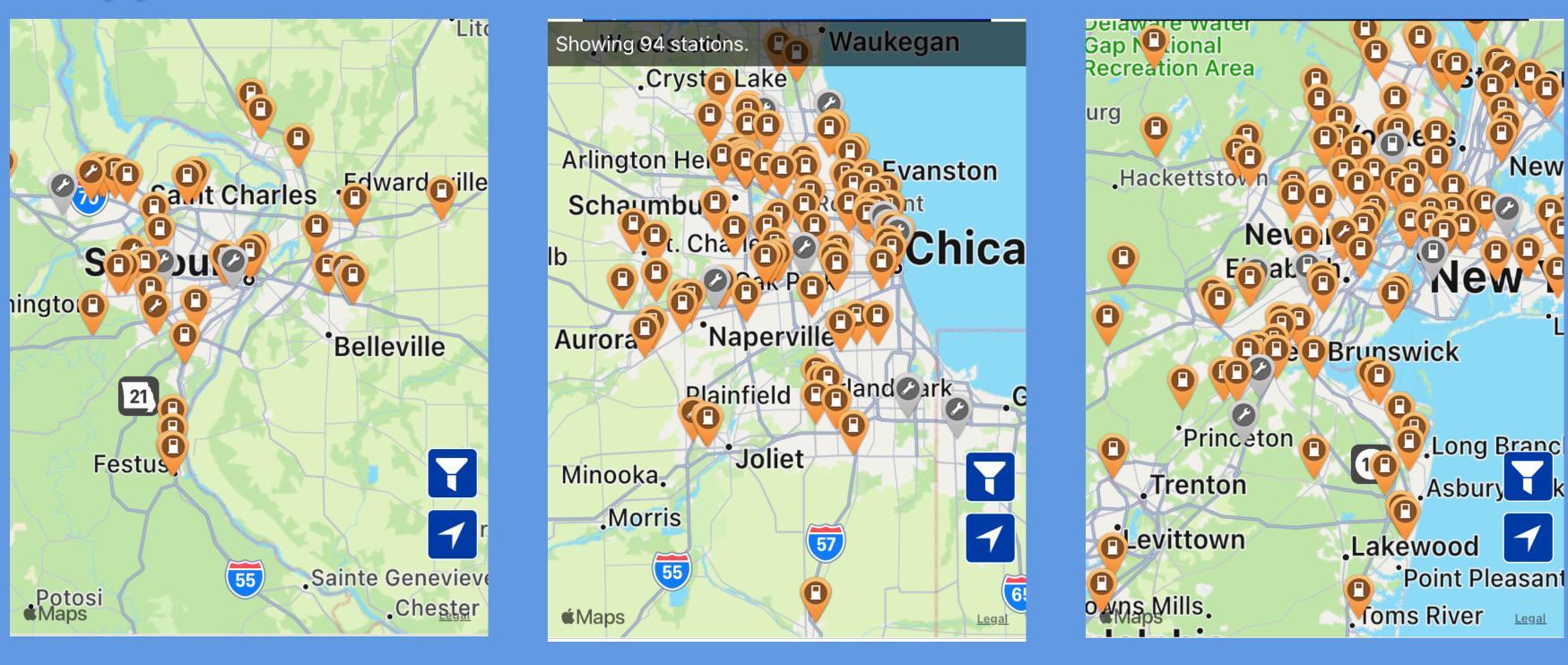
**Tesla Superchargers** Groups of locations

Each map section is the same scale and shows how well each city is served by public charging

Chicago







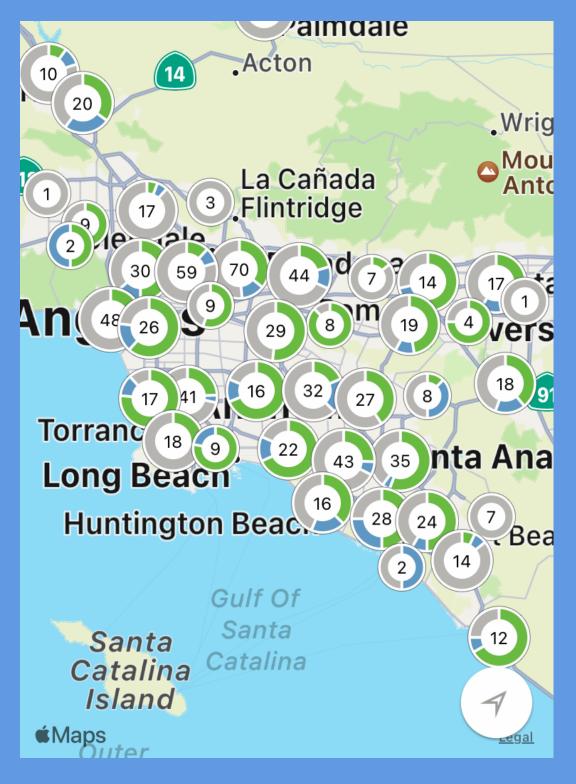
# Los Angeles

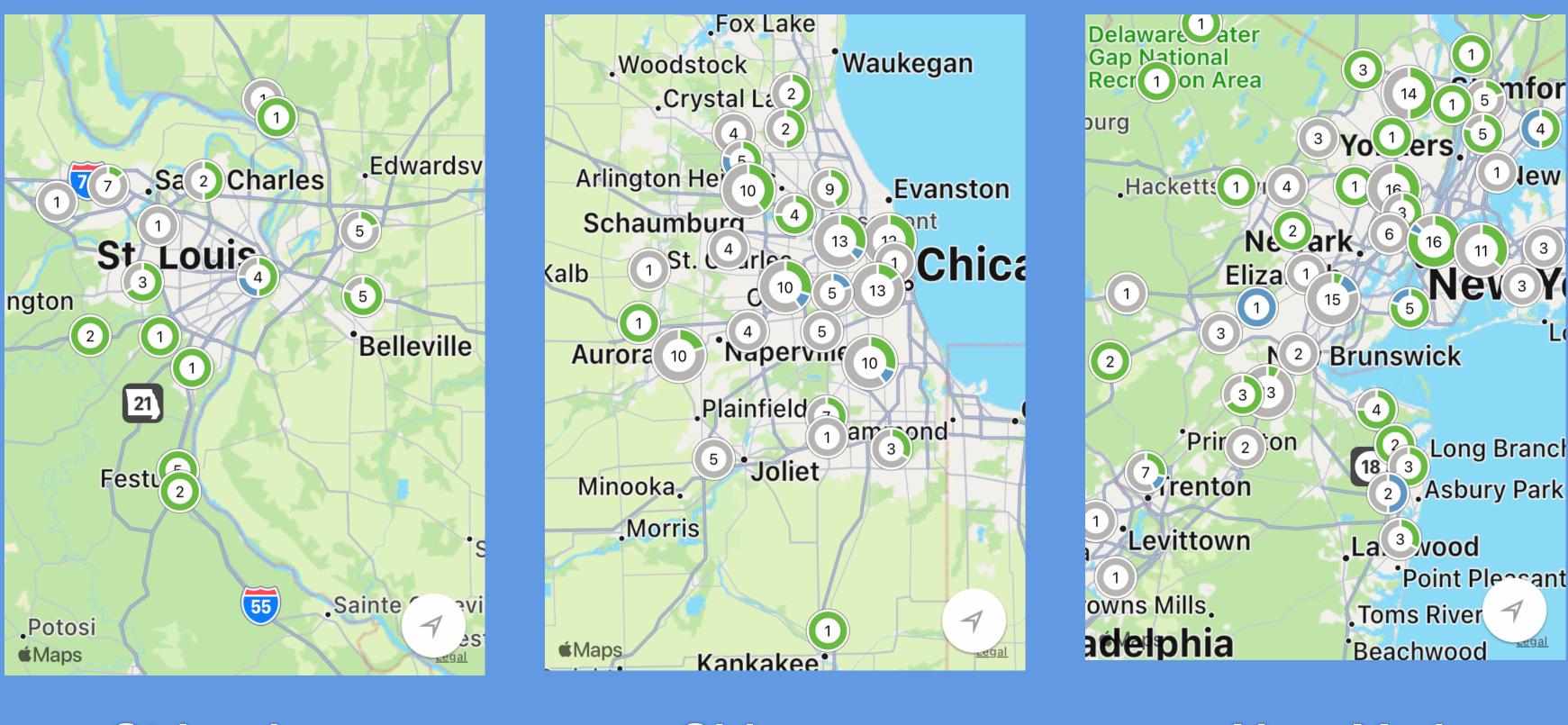
**St Louis** 

PlugShare Individual locations

Each map section is the same scale and shows how well each city is served by public charging

# Chicago





# Los Angeles

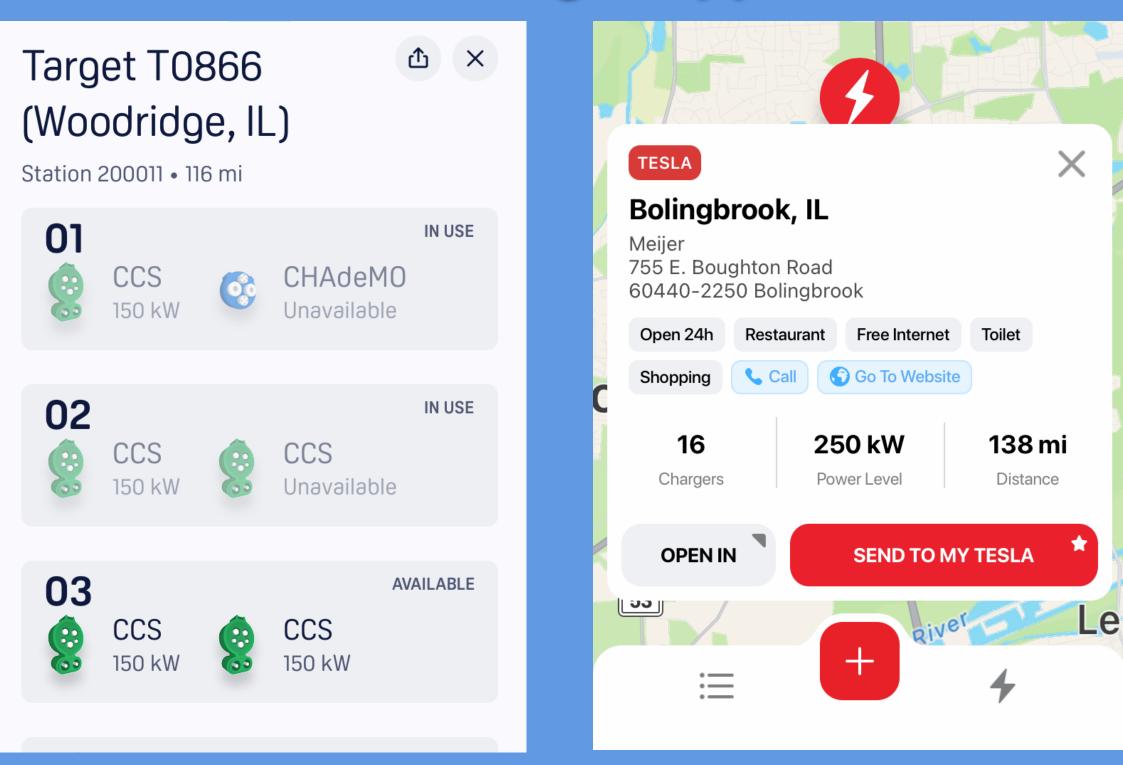
#### St Louis

ChargePoint Grouped locations and current usage.

Each map section is the same scale and shows how well each city is served by public charging

# Chicago





#### **Electrify America**

#### Tesla

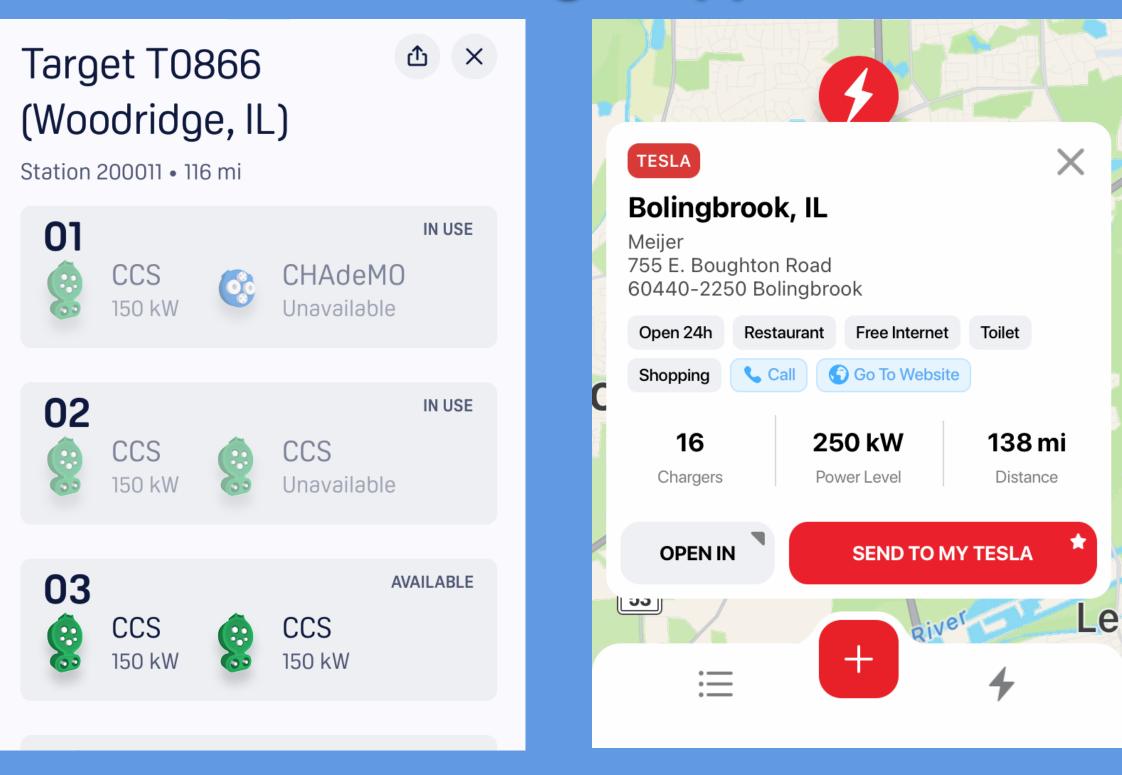
How the four apps display what is available at a location. Electrify America shows charger status and uses a GPS distance (off by 26 miles). Tesla, correct distance and amenities. PlugShare has distance correct, lists correct connectors, shows details with additional tap. (but not status). ChargePoint also does GPS distance, does list the chargers correctly.

Il Verizon 🗢	8:39 PM	<b>≁</b> ⊉ 98% 💭	III Verizon 奈			98% 🗖
Sack	PlugShare	•••	< larget	T0866 (Woo	$\bigcirc$	Û
	<b>et</b> CHAdeMO, CCS/SAI 141.77 miles, 2hr 11n	•	No Statu 150 mi/h 50 kW			
	<b>leMO</b> 1 stations y America	50 kW	No Statu 150 mi/h 50 kW			
	SAE 3 stations y America	150 kW	No Statu 150 mi/h 50 kW			
🛞 1 Unde	2 1 stations r Repair y America	7 kW	No Statu 20 mi/hr 6.6 kW			
Observices	S	tation Details	No Statu	s DC Fast Combo		
Checkins						

#### Plugshare

# ChargePoint





# **Electrify America**

#### Tesla

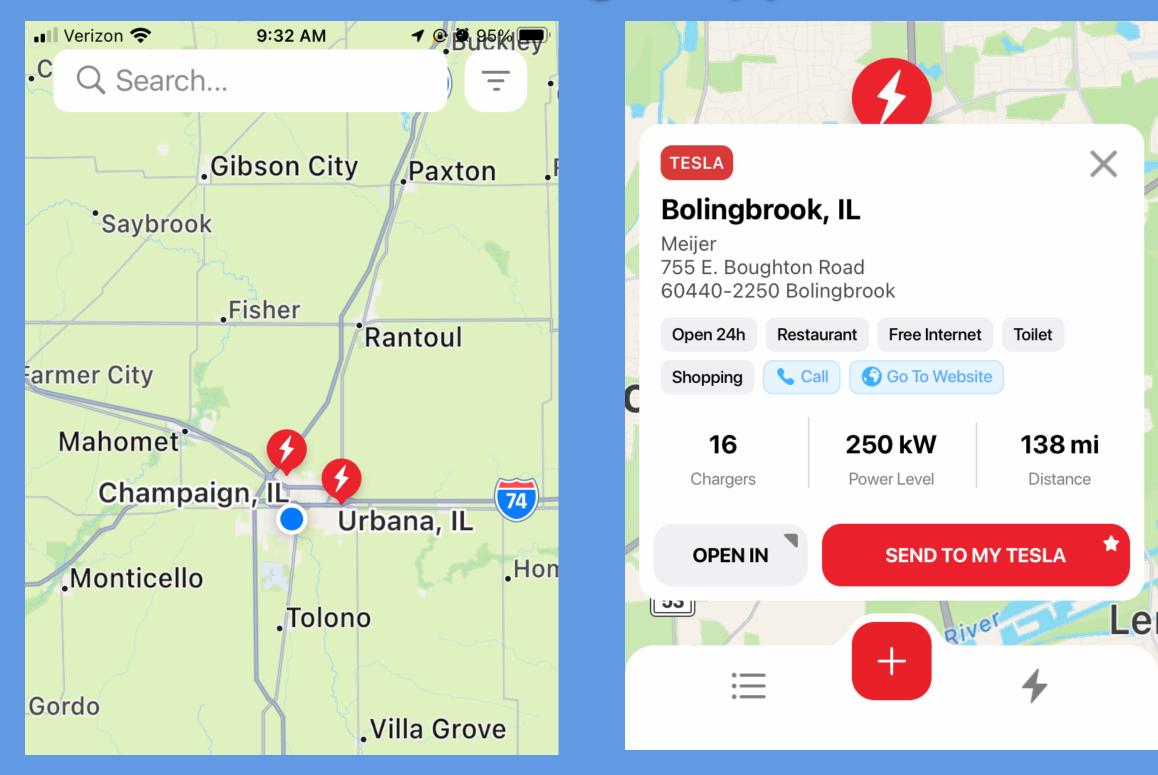
PlugShare is one of the few apps with comments and reviews. Tesla, Electrify America, ChargePoint and others generally will post if a charger is "unavailable" but will not have comments. PlugShare does not have access to network information and will not have information if a charger is currently in use.

II Verizon 奈 ✔ Back	<sup>8:39 рм</sup> PlugShare	<b>≁</b> 🖉 98% 🗩	Il Verizon 🤄		8:37 рм 866 (Woo	<b>1</b> 0	■ 88% (1)
7.0 Store, C		•	No S 150	tatus mi/hr kW	DC Fast CHAdeMO		
Plugs CHAde Electrify	MO 1 stations America	50 kW	No S 150	status mi/hr kW	<b>DC Fast</b> CHAdeMO		
CCS/SA	AE 3 stations America	150 kW	150	status mi/hr kW	<b>DC Fast</b> CHAdeMO		
J-1772 J-1772 J Under I Electrify	•	7 kW	20 r	itatus mi/hr kW	<b>AC</b> J1772		
Checkins	St	ation Details	No S	tatus	<b>DC Fast</b> Combo		

## Plugshare

# ChargePoint





# **Tesla**

# Both Tesla and Electrify America only show Fast Chargers

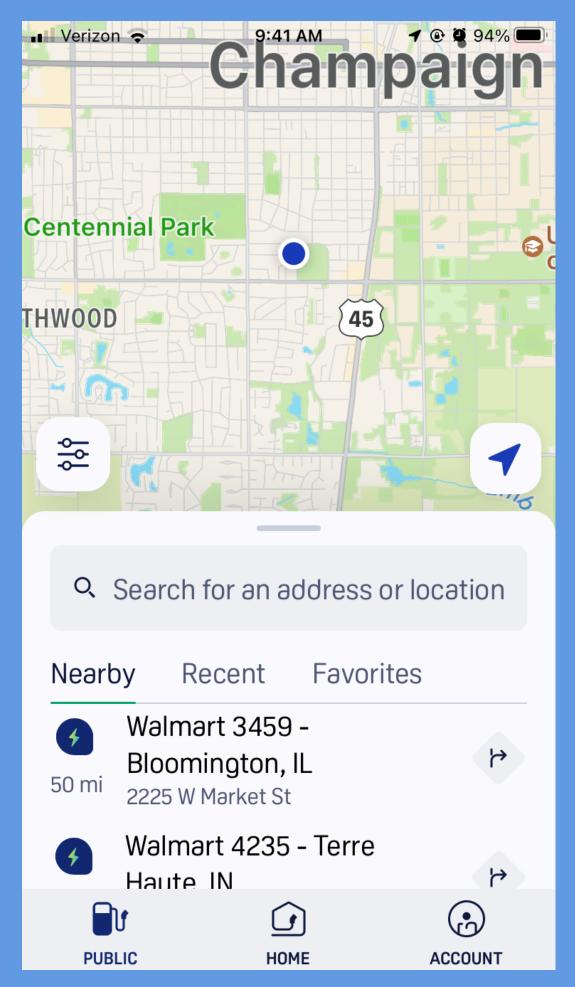
our locatio	on	
TESLA		9 min drive
Champaign,	il	
	spect Avenue 618	22 Champaig
8	150 kW	3 mi
Chargers	Power Level	Distance
TESLA		<b>12</b> min drive
Urbana, il		
2100 East Uni	versity Avenue	61802 Urban
8	250 kW	4 mi
Chargers	Power Level	Distance
TESLA		49 min drive

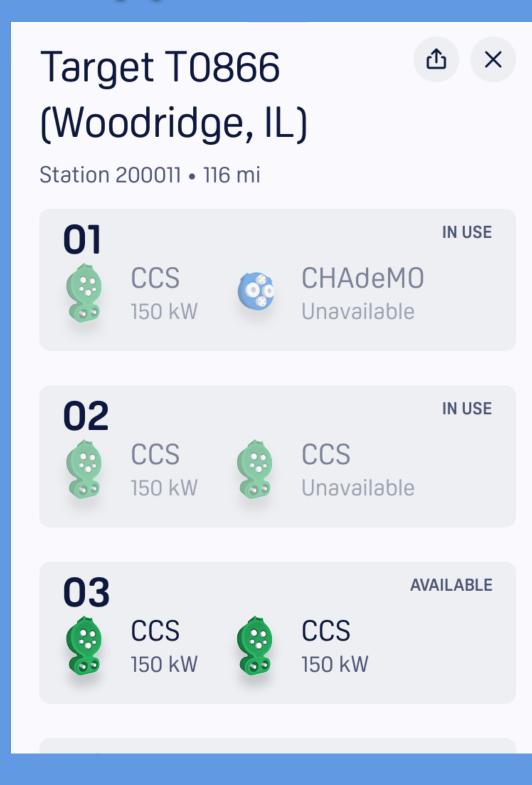
Tesla is its own world - you only need it if you own one.

Left image the start screen if you're in Champaign, center -the location on 1355, right - details of current location.









Electrify America

# Both Tesla and Electrify America only show Fast Chargers

#### Charge history $\leftarrow$

Public charges Public Level 2 and DC Fast Charges

LAST PUBLIC CHARGE	
Wed Nov 16, 3:47 PM	\$0.00
Target T0866 (Woodridge, IL)	40.6 kWh

>

EA- I find very useful because its the best high speed charging network. Left image the start screen if you're in Champaign, center -My go to location in the Chicago area, right - I like the charging history.





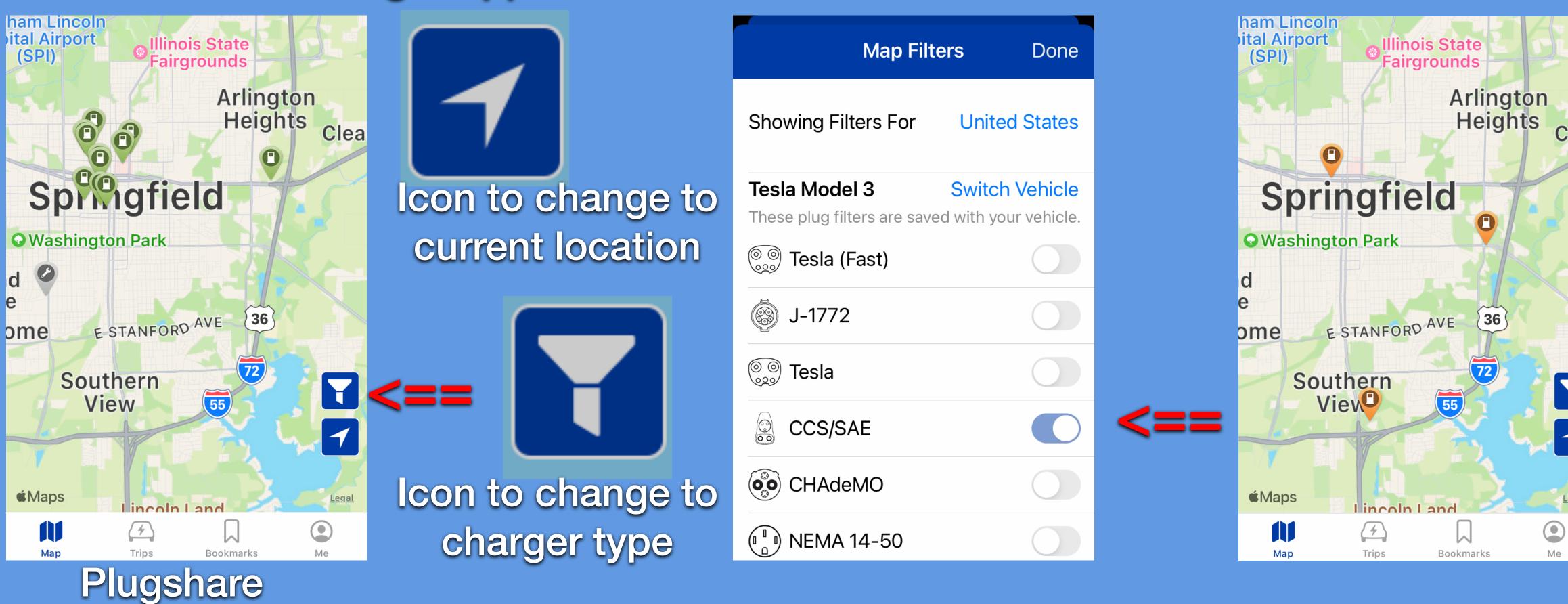
Nerizon 🗢 2:55 PM	🖉 70% 💷 (		2:57 рм Activity	<ul> <li>✓ Ø 69% □     <li>✓     <li>✓</li> </li></li></ul>		Revie	
rko rodaniell@att.net Tesla Model 3	Ċ	The Bovine c Parkhill Chev "Needed ev co 1 hour, 46 minu	vrolet Cadilla onnect app. No	ic	×	kkbird The hardware was I	0/9/22, 4.4 Rivia oroken 9/26/22, 8:4
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Leaderboards			at the firefly gril			CCS/SAE	9/26/22, 7:3
Activity Feed		myself changin 2 hours, 53 min	-	Effingham, IL		Jen Myerscough CHAdeMO	Nissan LEAF 9/23/22, 12:4
Rate Us on the App Store		<ul> <li>Xenoglossicis</li> <li>Alice Camp</li> <li>3 hours, 55 min</li> </ul>	bell Alumni nutes	Center Urbana, IL	8	Seth The hardware was Blocked off. Showing	Rivia <mark>oroken</mark> g error messag
Frequently Asked Questic	ns >	Steve checke Parking Lot "Worked great		pton Inn	8	CCS/SAE - 0.00kW Shawn Kovac The hardware was	Nissan
Send Feedback						The hardware was i	
Attributions	>		P	lugsha	<b>are</b> i	s a crow	d sour
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Plugshare

The "reviews" are checkins posted directly to a specific charger location, in this case the Wally's in Pontiac, still having charger problems.

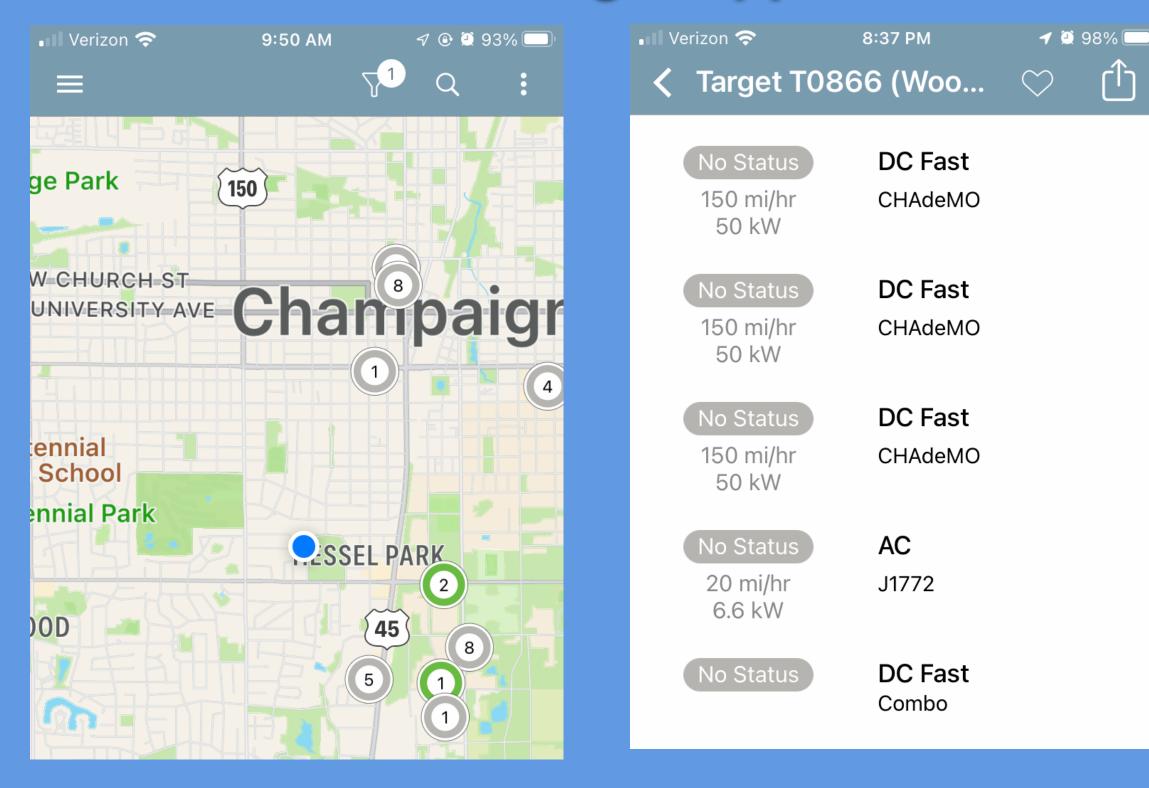
# **\pp**

add photos and review public chargers. Click on the "me" at the bottom, then "activity feed" (red arrows) and you will get the most recent checkins from an area within 50 miles or so from your current location.

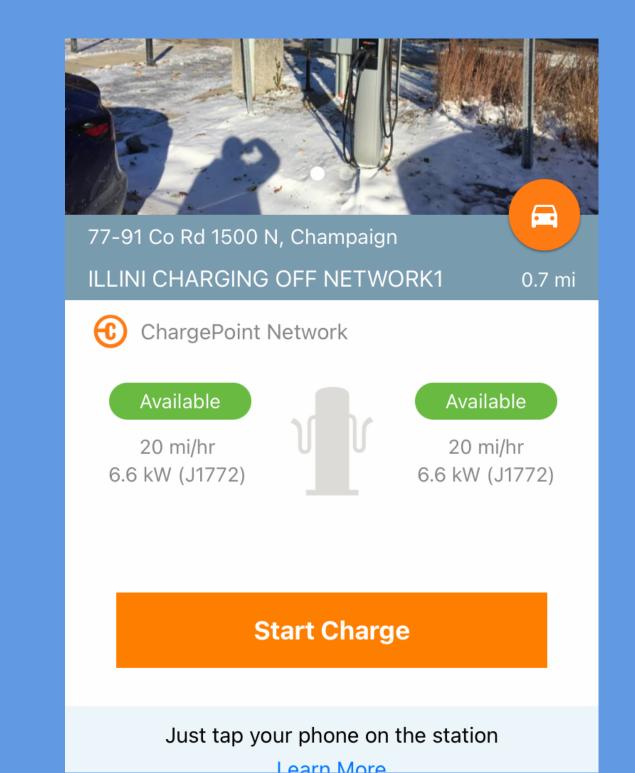


On some apps you can select which type of charger is bing searched. On the left app shows lots of level 2 locations. Click on the charger type icon. Select type of charger you want to see. Save and now the map shows CCS DCFC locations.



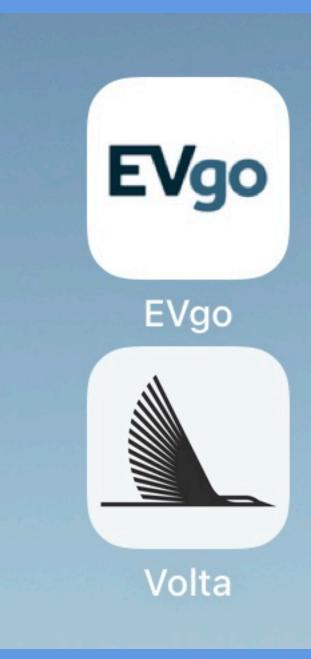


## ChargePoint

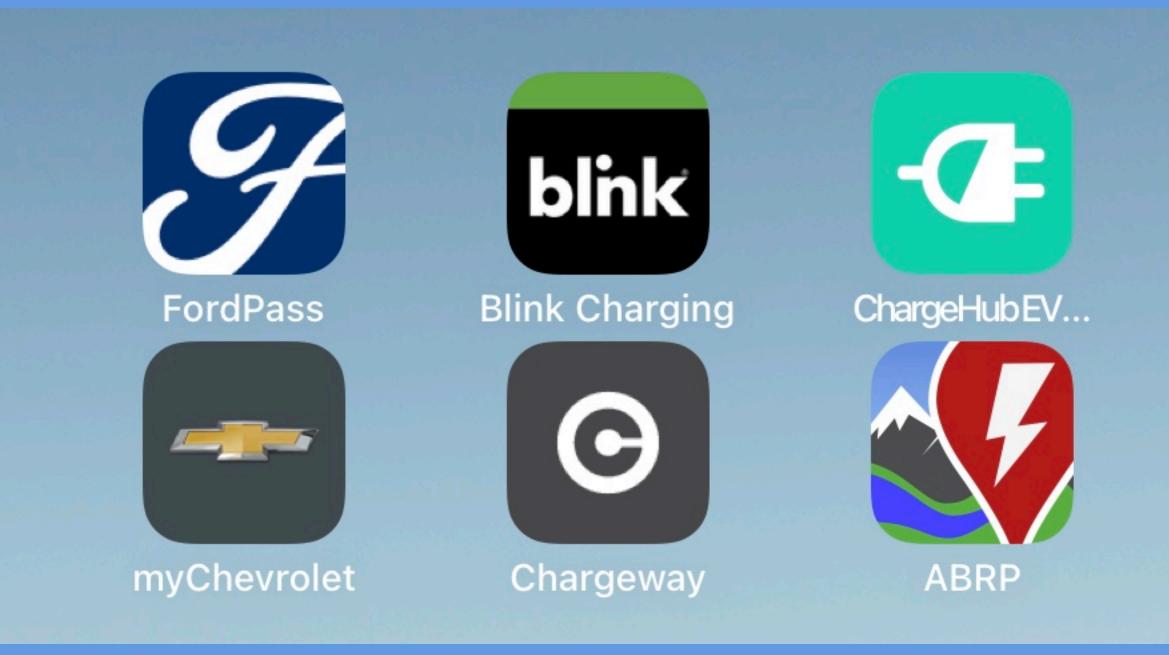


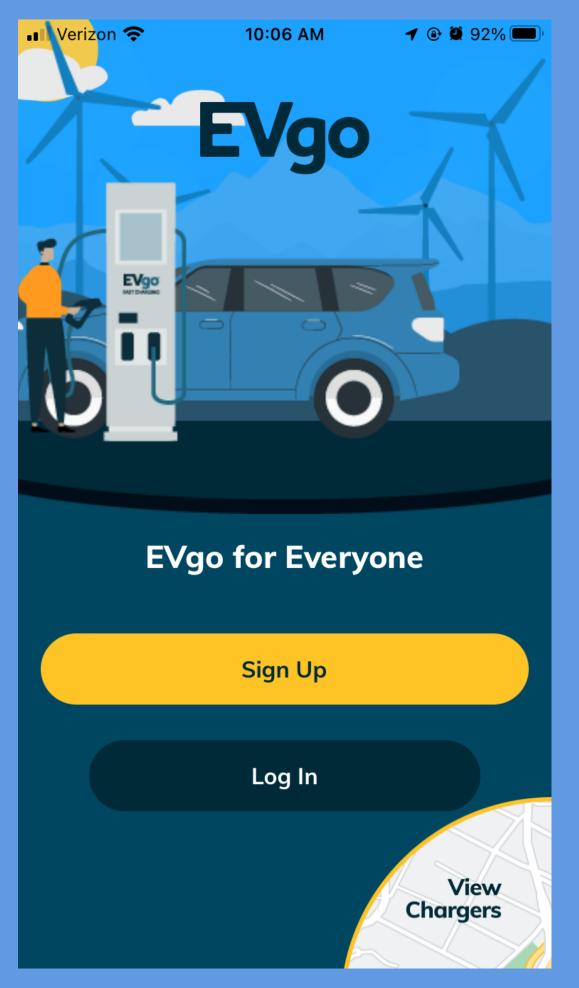
I don't find very useful except for using the app to when using a charge station (right screen) Left image the "home" screen if you're in Champaign, center - a description of an Electrify America location. I prefer to find Level2 stations with PlugShare, then switch to Chargepoint app if its one of theirs.



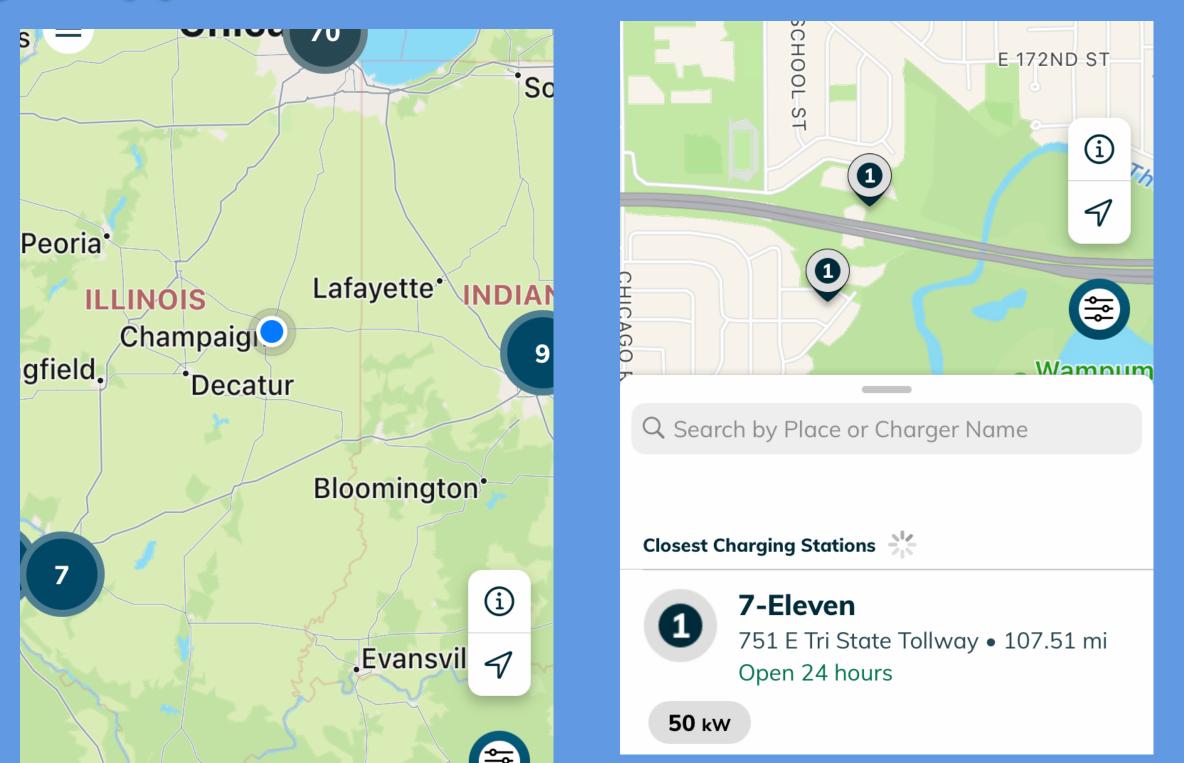


# A quick run-through of the others.





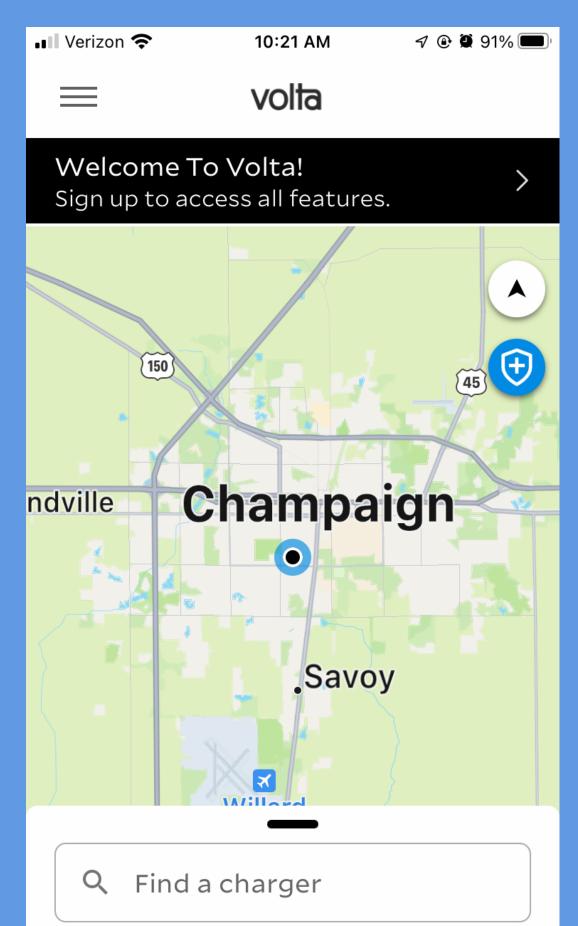


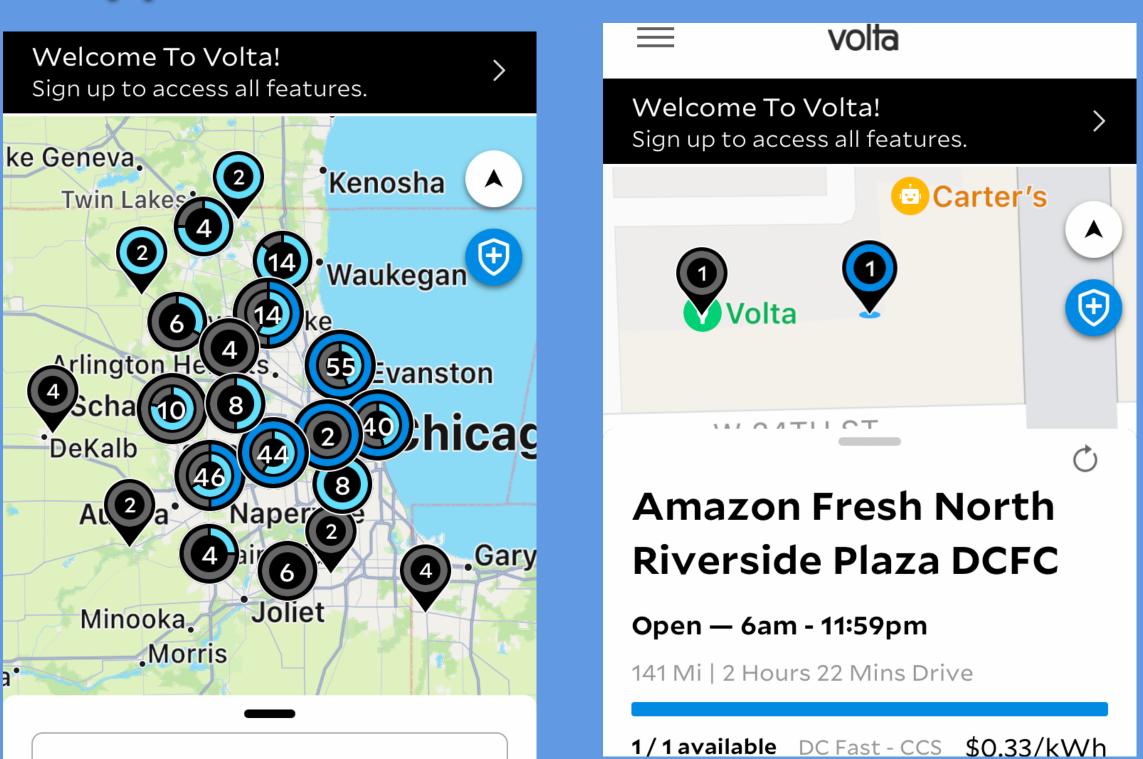


EVgo used to be somebody - until 2020. Their growth stalled and Electrify America was started with \$2 billion dollars of VW "Dieselgate money". EA rapidly outpaced them with locations with a minimum of 4 150kw chargers. EVgo is just beginning to grow again, adding locations with multiple chargers of 150 and 350 kw.

Left image the start screen, center -very few locations in Illinois, right details of a typical location with only one 50 kw charger.



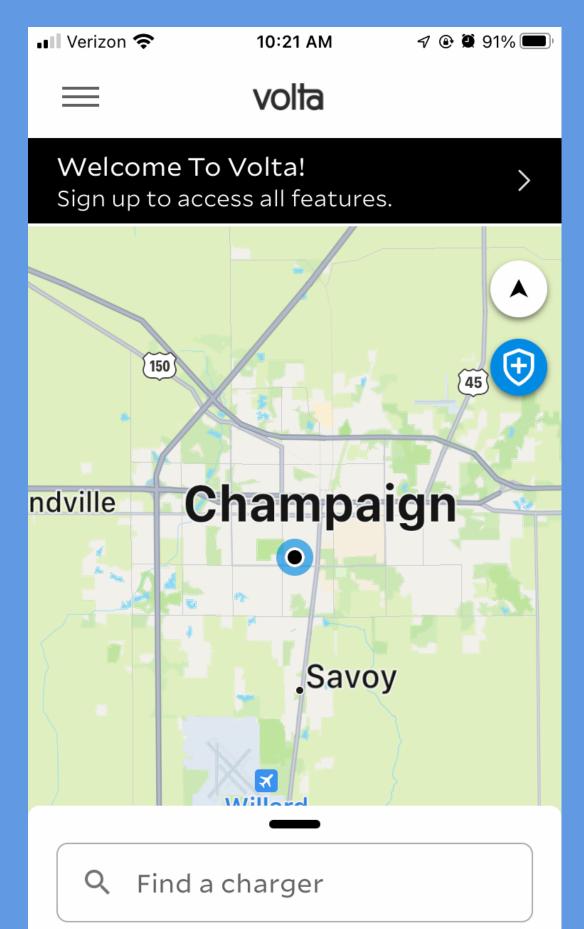


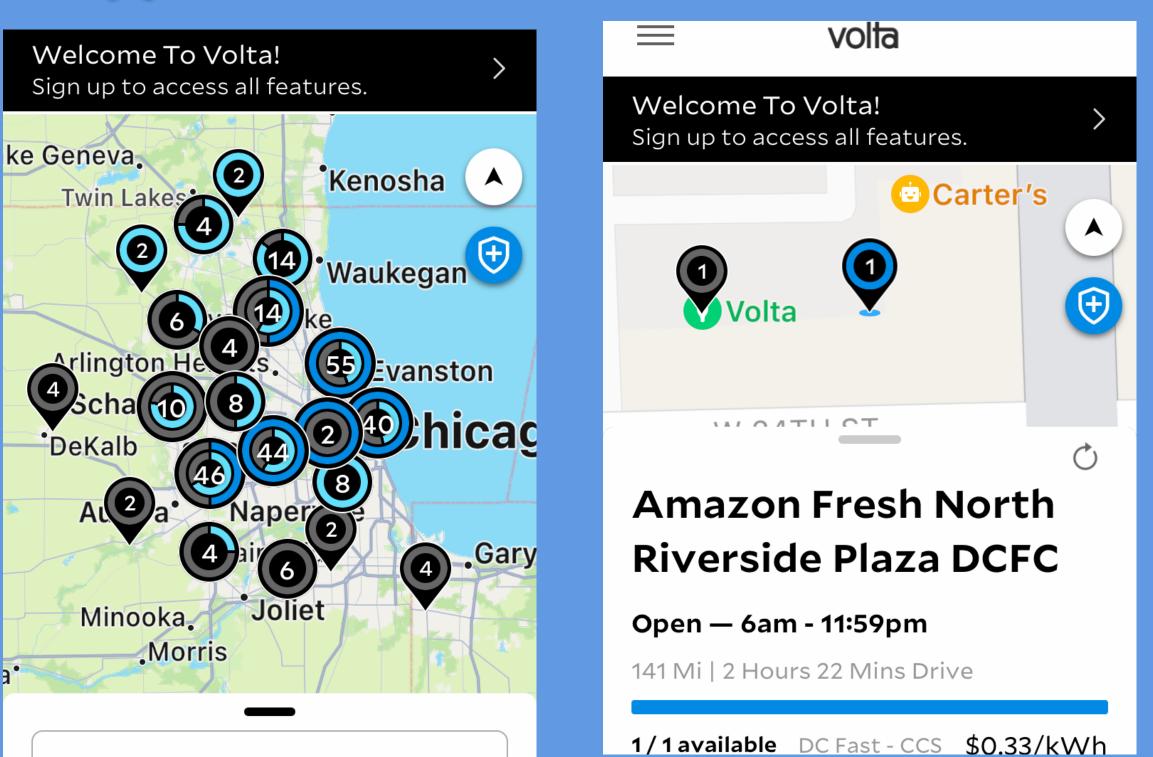


Mostly level 2 chargers that are FREE. They approach shopping sites, install chargers free to the stores, let EV drivers charge for free and make all of their money advertising on the Charger cabinet. Branching into DCFC, but those have a fee.







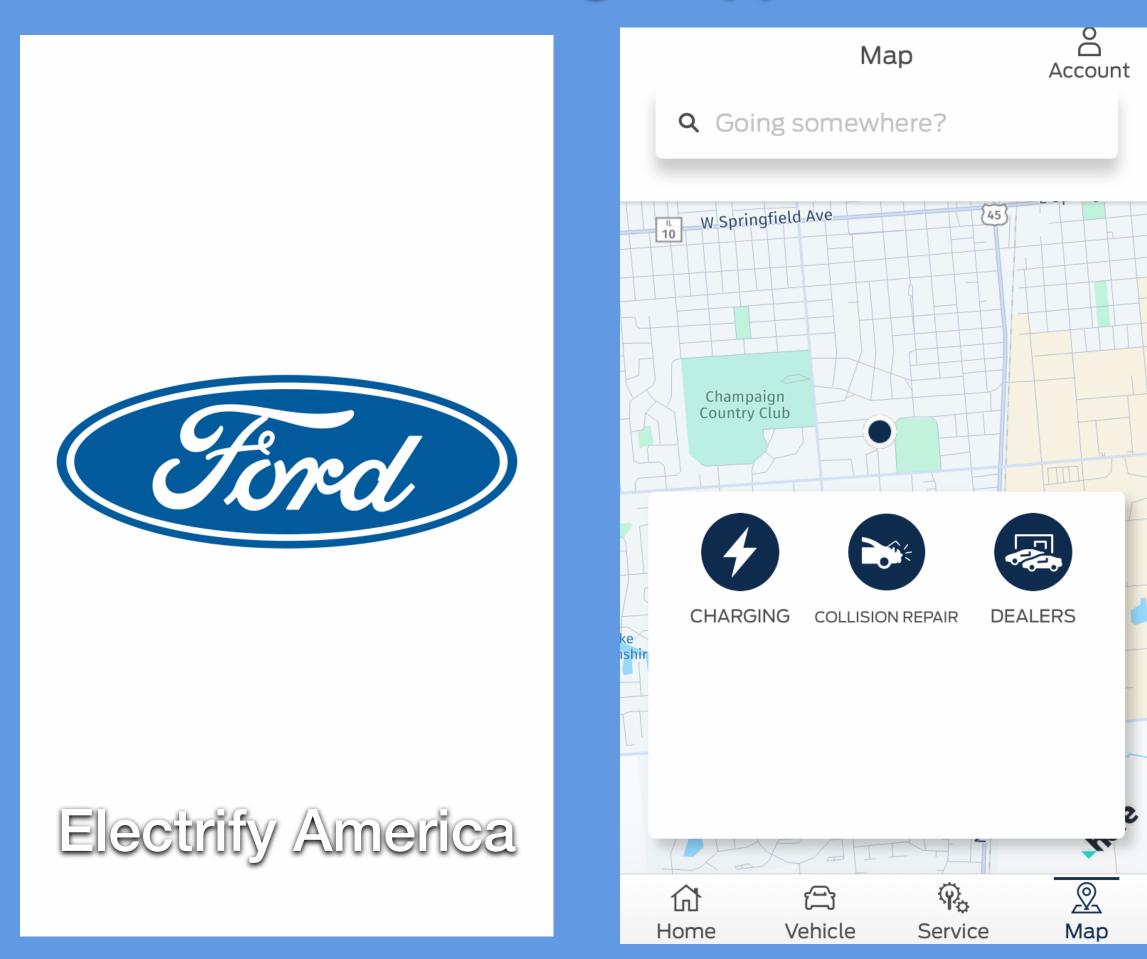


I LOVE Volta - I bought some stock, lost 90% of my money. Excellent charging experience, excellent business plan. Made every prudent long term move and the stock market hammered them. They deliberately slowed growth to wait for Jan 1st federal money.



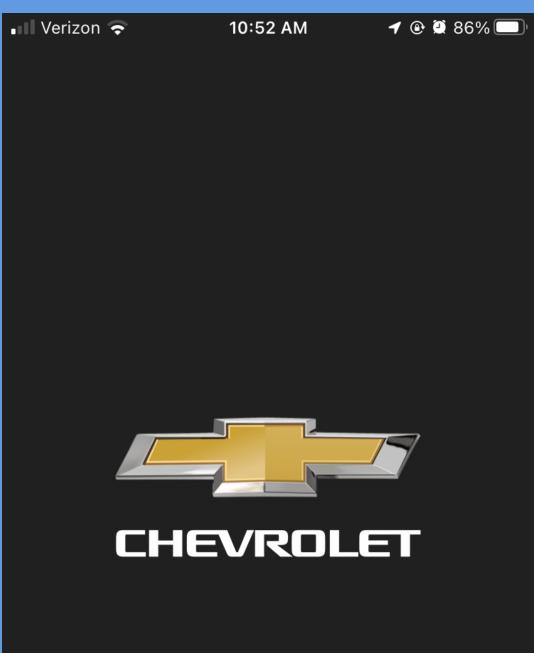
Left image the start screen, , center -Chicago locations, right - details of a location with DCFC charger. Volta DCFC are usually between 50-100 kw.







Its an app aimed at Ford owners. It has links to services other than charging. Ford does not have a network. When companies like them claim and name a network, almost always it is a partnership with actual charging networks.



# **Electrify America**

🛯 Verizon 🗢	1:54 PM	<b>@</b> 54%
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Find your VII	N on the driver or passe door frame	enger side
VIN		
Year		~
Make		~
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Nicknar	ne	
	Done	

Chevy an app is so aimed at Chevy owners you need a VIN to sign up.

Ford and Chevy apps are likely mediocre at finding chargers. Dedicated apps do a better job of giving information about the chargers and allow better decisions to be made.

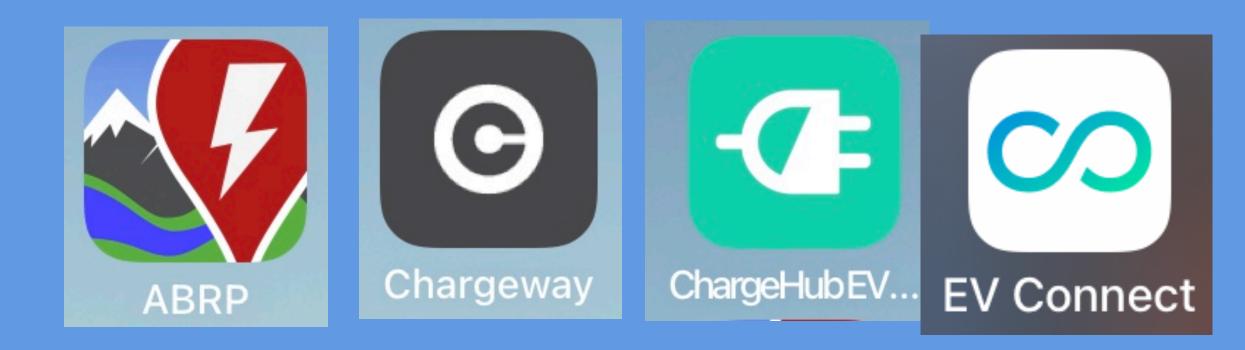




I mentioned before that Blink charger fees are high. Blink would be my last choice for a charger. But sometime it might be the only charger. If so consider signing up on the app to get discounted fees.



Shell is starting a program to install DCFC at gas stations. App call ShellReCharge. Charging network is Greenlots renamed. **Planning installation** of 500,000 chargers by 2025. Currently this app has little use (IMO)



ABRP (a better route planner); Chargeway; EVConnect; and ChargeHubEV. Primarily early attempt to make route planning easier. Interesting concept - try them. I personally will do most of my planning with Electrify America and use PlugShare to fill in the gaps. Both work quite well on the dining room table with a cup of coffee. (Or at a coffee shop)



