EVI-LOCATE

EVSE Planning Tool and Cost Estimator

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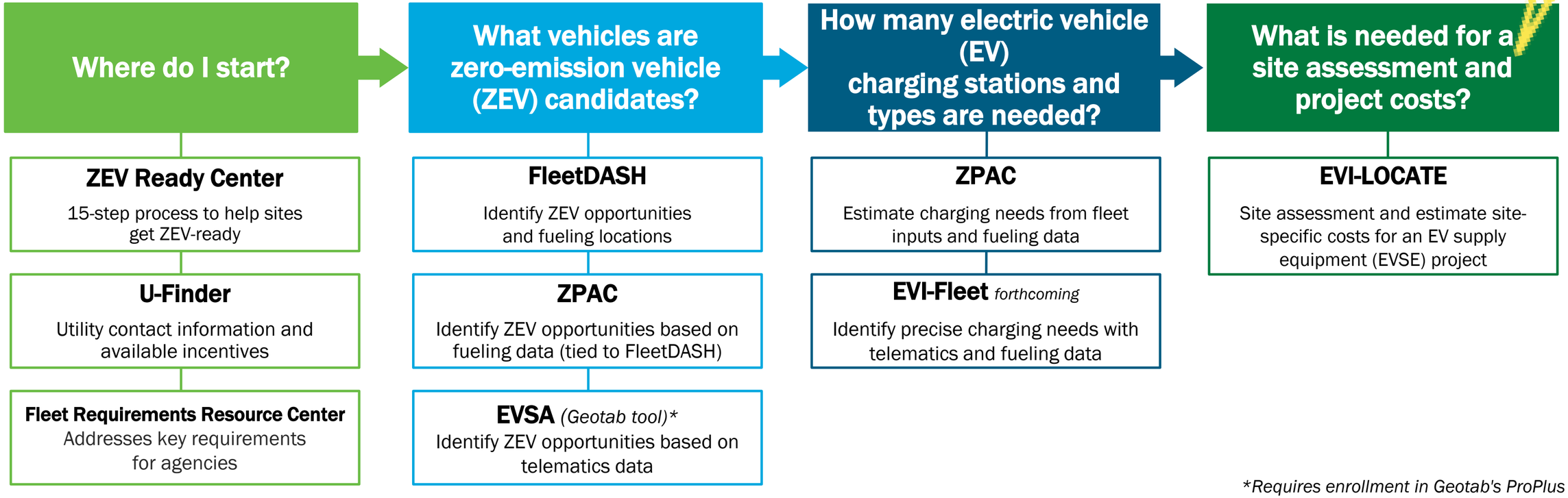
GSA EVSE Empower Week

Plug Into the Future: Energize Your Skills!

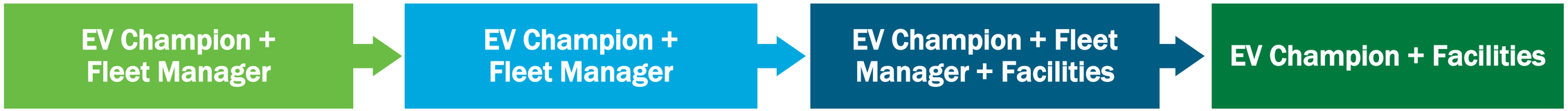
August 2024

Federal Fleet Tools



*Requires enrollment in Geotab's ProPlus plan to use

Who should take the lead on using the tool?



Source: https://www.energy.gov/femp/overview-zev-ready-federal-fleet-electrification-process

Federal Fleet Email: federal.fleets@nrel.gov

Problem and Objective

Problem Statement: Design costs and timelines add significantly to EVSE installation scope.

Objective: Simplify the EVSE design and cost estimation process with a web tool.

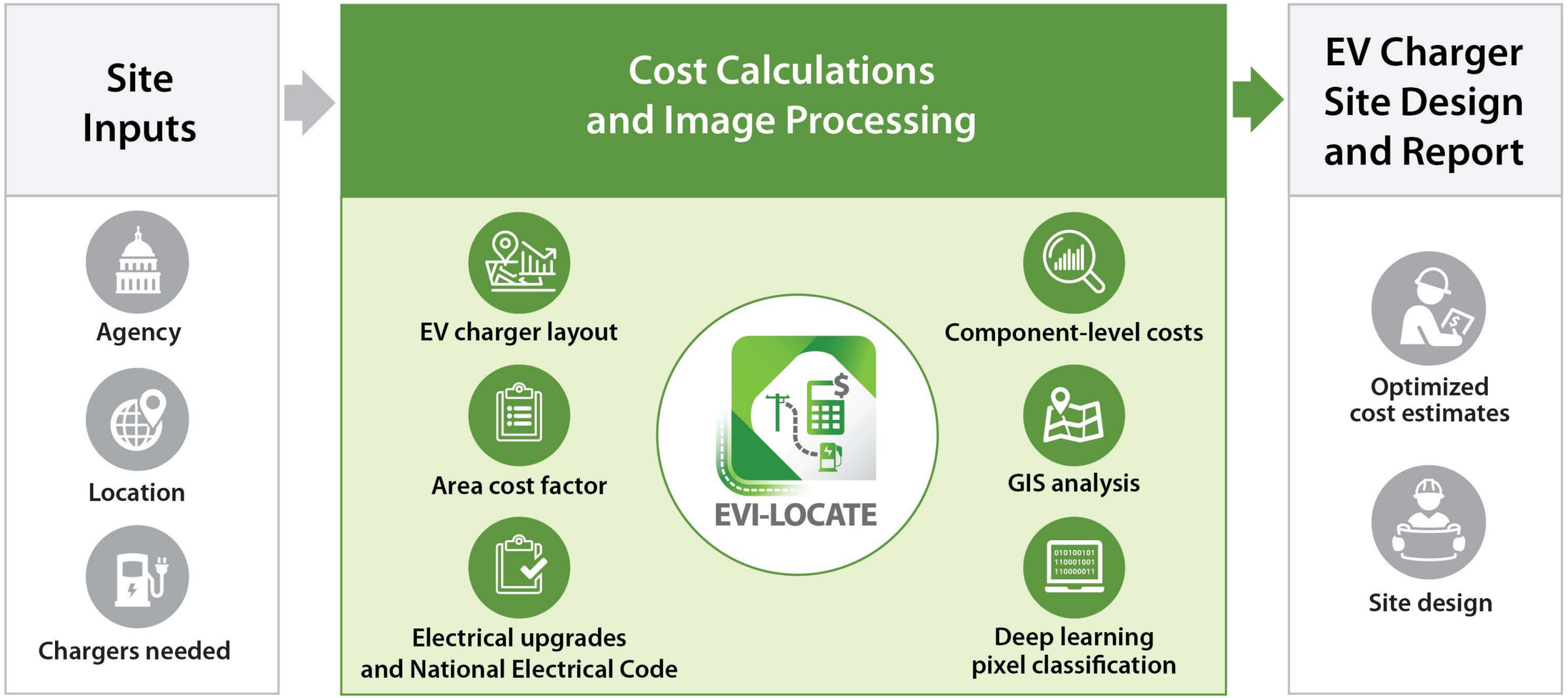
EVI-LOCATE (Electric Vehicle Infrastructure–Locally Optimized Charging Assessment Tool and Estimator)

Plan charging station deployments

Assess site-specific electrical needs

Calculate local project costs

EVI-LOCATE: EV Charging Stations Site Assessment Tool



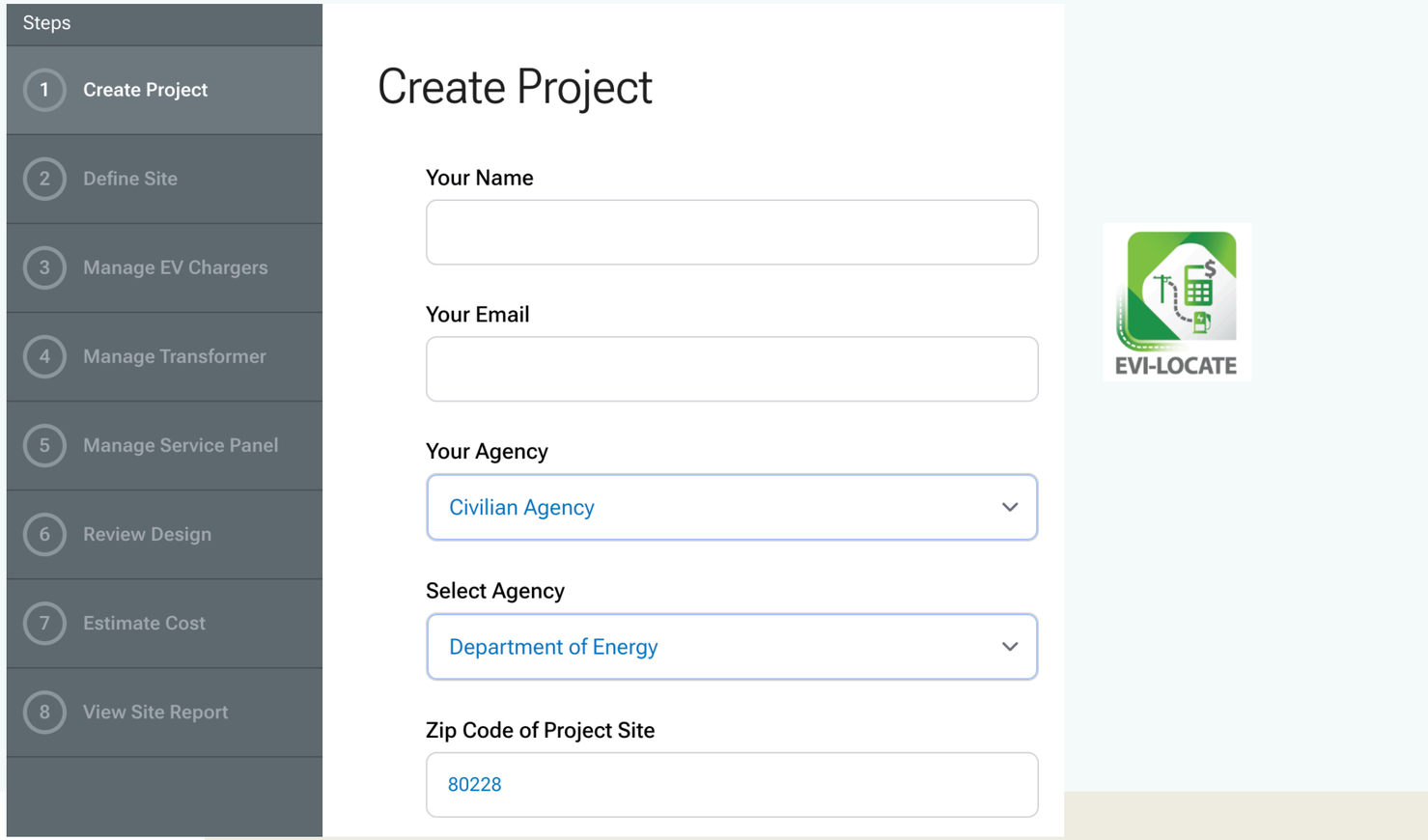
EVI-LOCATE (Electric Vehicle Infrastructure - Locally Optimized Charging Assessment Tool and Estimator) [SWR-23-52]. Web. doi:10.11578/dc.20230920.2.

EVI-LOCATE

Electric Vehicle Infrastructure — Locally Optimized Charging Assessment Tool and Estimator

- Website: https://evi-locate.nrel.gov.
- Email: evi-locate@nrel.gov.
- Federal employees can sign up for accounts directly.
- Federal contractors need to email evi-locate@nrel.gov with federal EVI-LOCATE users CCed.

Don't have an account? Sign Up

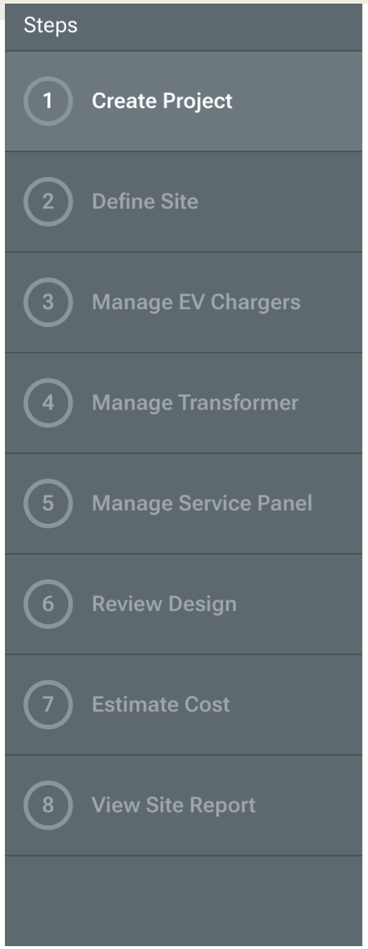


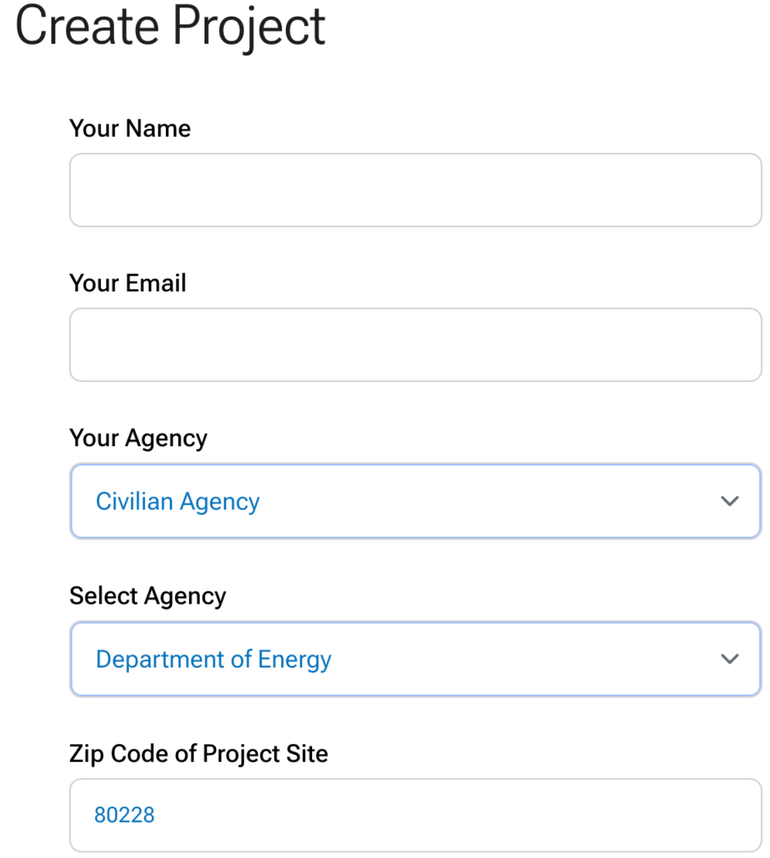
Site Selection

Select Agency

Select State

For Department of Defense >Select Base

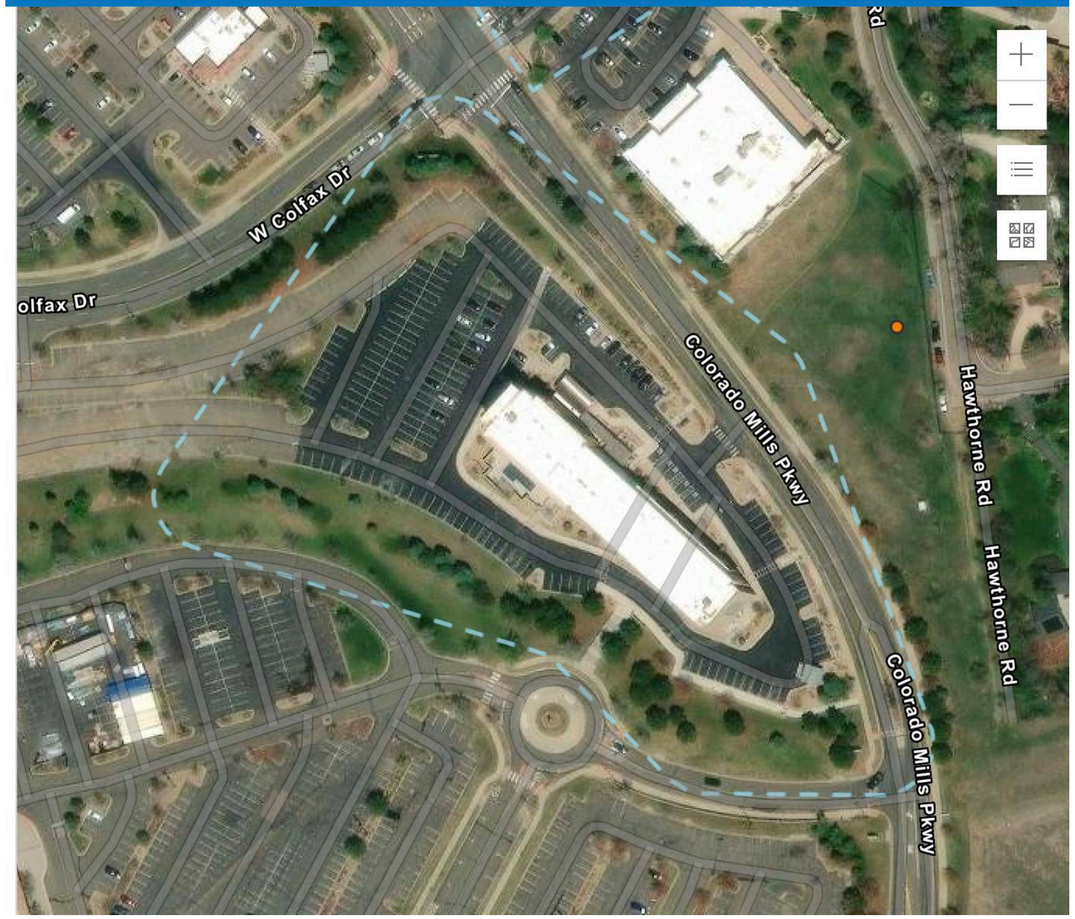




Define Site Boundary

Define Site

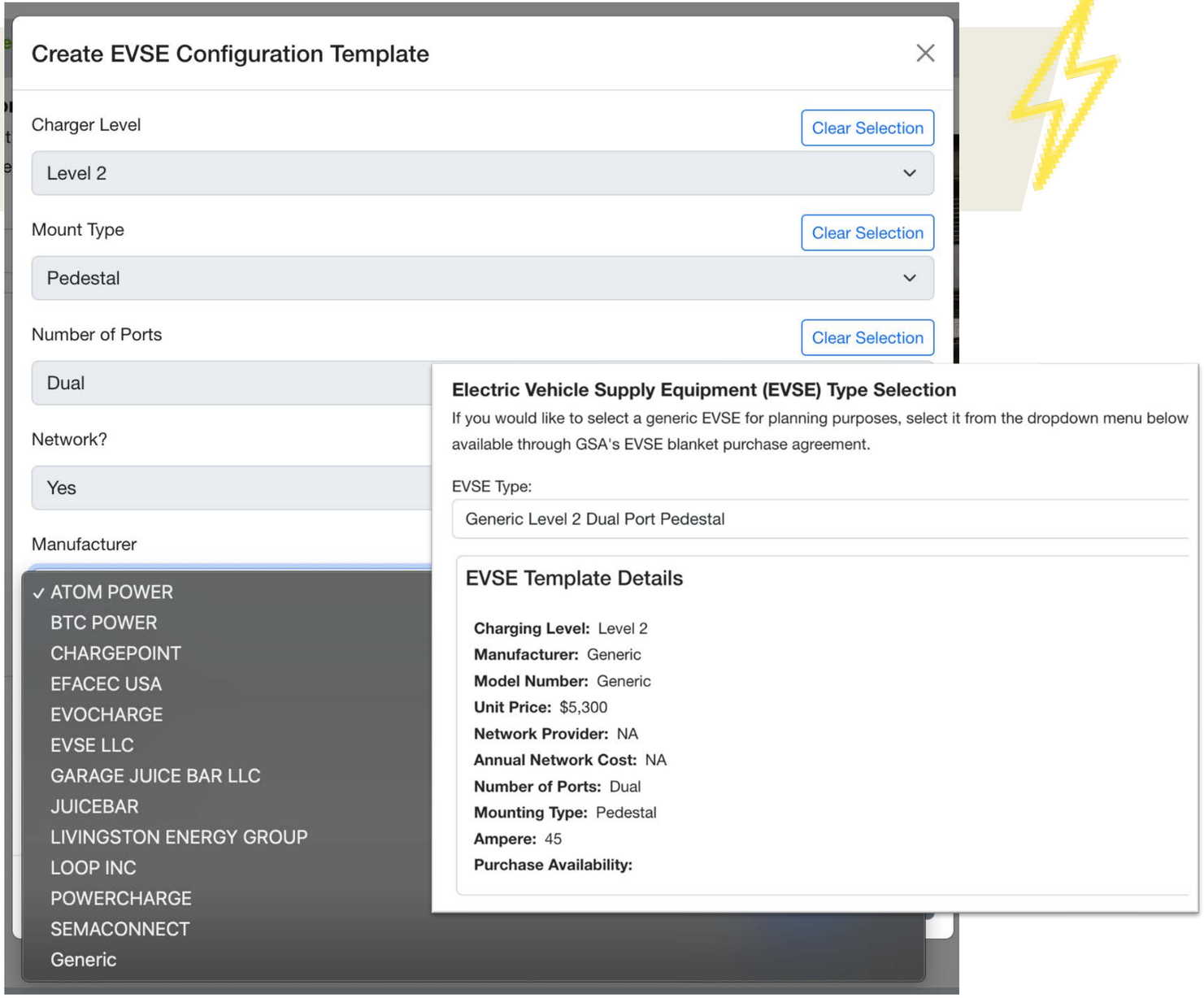
- Draw a polygon around EV parking area
- Name your site
- Make sure the polygon is large enough to include service transformer, panel, and charging stations.



Select EVSE Type

Select EVSE Charger Template

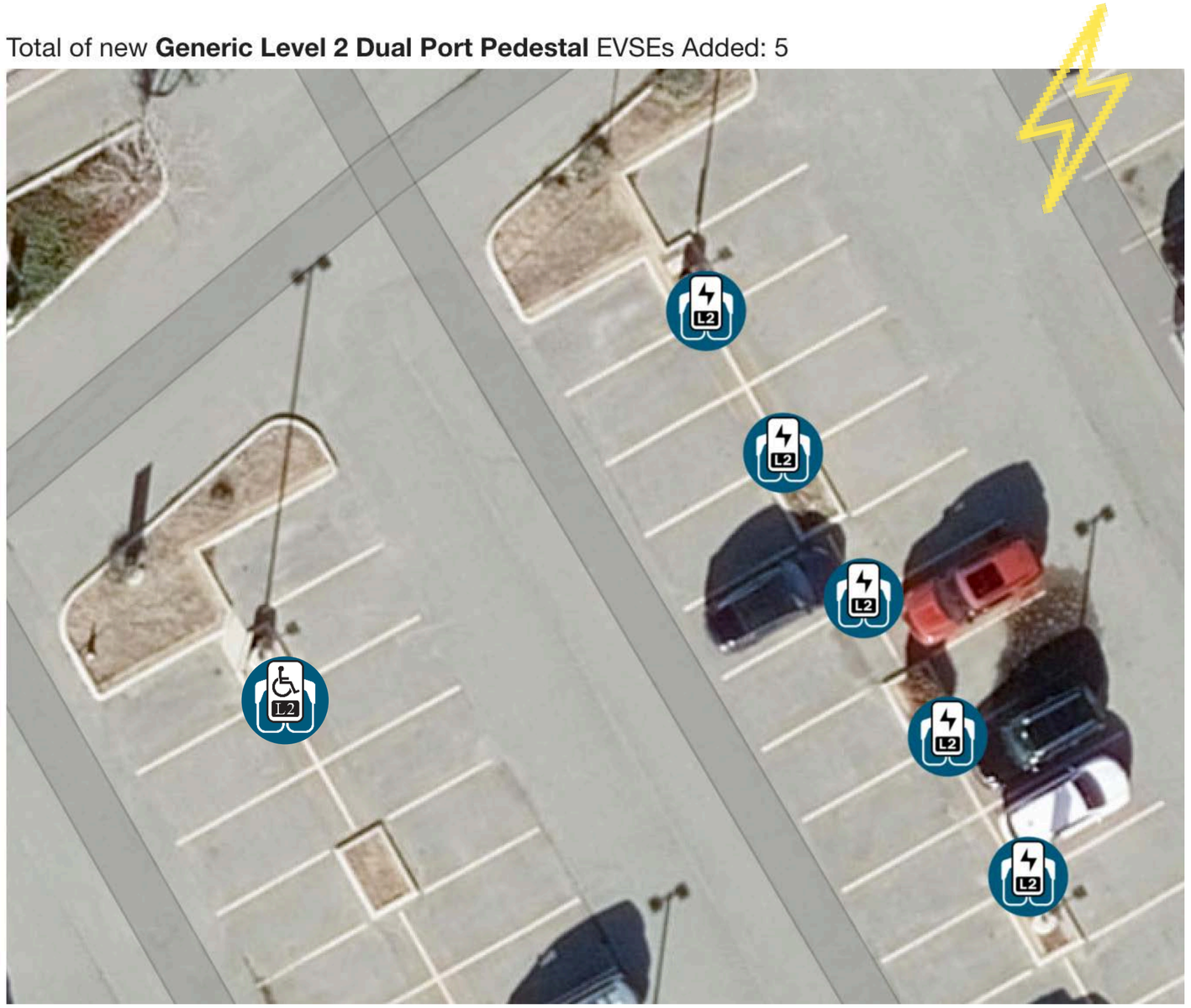
- Users can filter to their preferred charger or select generic charger option.



Locate Chargers

Drop Chargers on Map

- Currently, users can only select AC Level 1 and Level 2 unidirectional chargers.
- Working on DC fast chargers and bidirectional chargers.



Manage Transformer

These questions will help you identify whether you need a new transformer to support EVSE charging stations or have sufficient physical and electrical capacity to use your existing transformer. You can default to a new transformer if you would like.

Would you like to include Transformer costs in your project estimate?

- (•) Yes
- ( ) No

Details

EVSE Charger Level: Level 2

Total Number of EVSE Ports: 16

Amperage: 45

Power Factor: 0.95 Edit

Loading Limit: 85% Edit

Do you want to add a new transformer or upgrade an existing transformer?

- ( ) Add New
- (•) Upgrade Existing

What is the secondary voltage rating for the existing transformer?

208V

What is the rating (in kVA) of the existing transformer?

200 kVA

What is the total peak load (in kVA) drawn from the existing transformer? Must be less than 170 (existing rating x loading limit)

50 kVA

Success! Your existing transformer appears to have sufficient capacity to connect the EVSE charging stations that you would like to install. Therefore, EVI-LOCATE will assume that you connect your charging stations to this transformer and that a new transformer is not required.

EVI-LOCATE Transformer Page

What is the voltage rating of your service panel?

208V

Are there any open spaces to install additional circuit breakers in the existing service panel?

Yes No

How many unused Circuit Breaker spaces are available on the existing service panel to support EVSE charging stations?

10 spaces

What is the current rating in ampere (A) of the Main Circuit Breaker on the existing service panel?

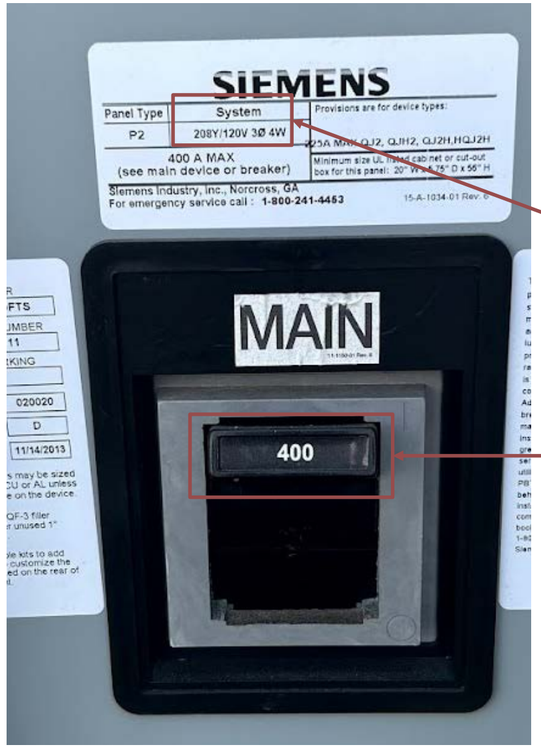
200 ampere (A)

What is the total peak load (kW) drawn from the existing service panel?

50 kilowatt (kW)

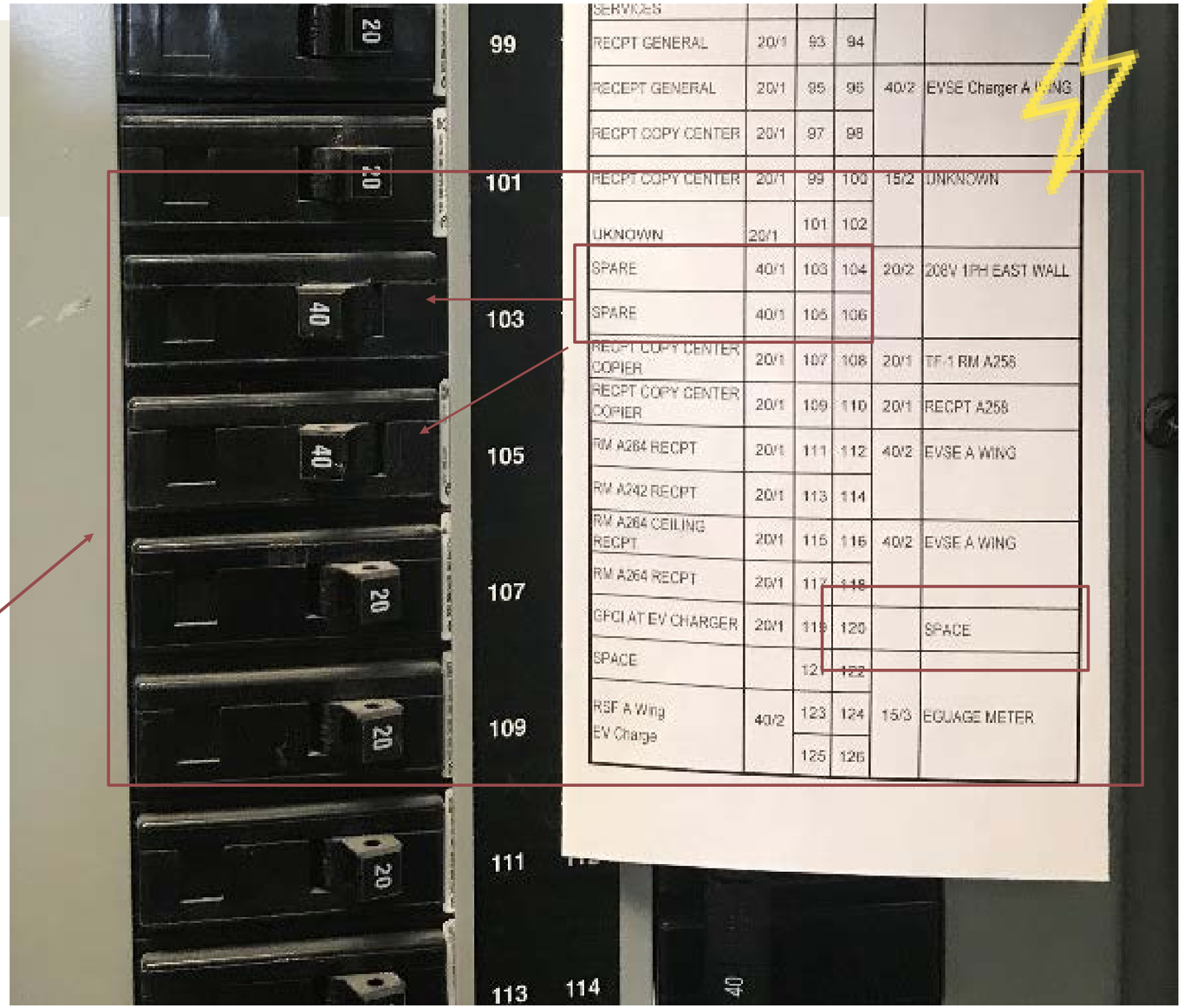
EVI-LOCATE Service Panel Page

Panel Questions



Determine Service Panel Needs

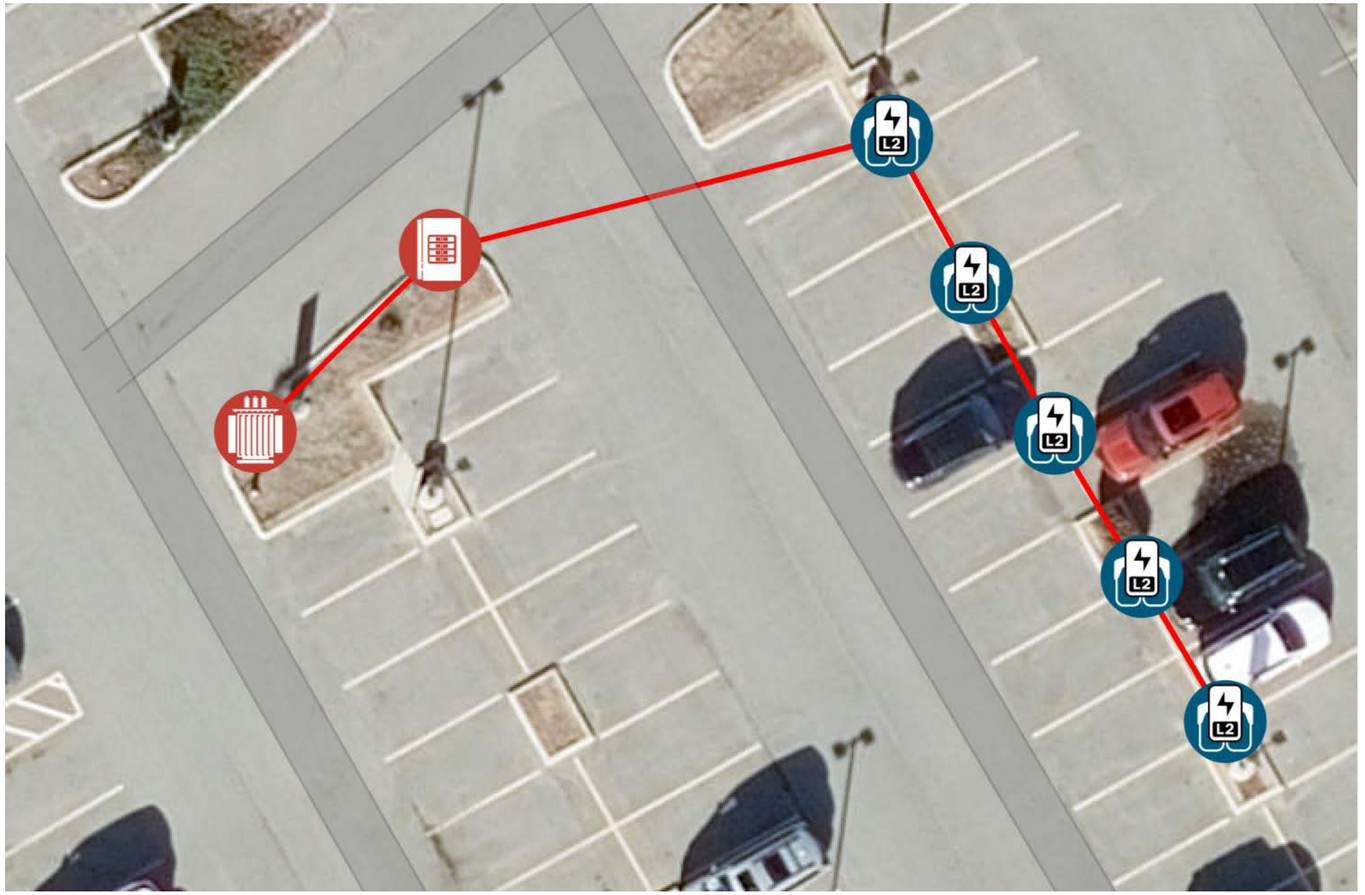
- Voltage rating?
- Unused circuit breaker spaces?
- Main breaker current rating?
- Existing peak load?



Wiring: Connecting the Equipment

Wiring Run

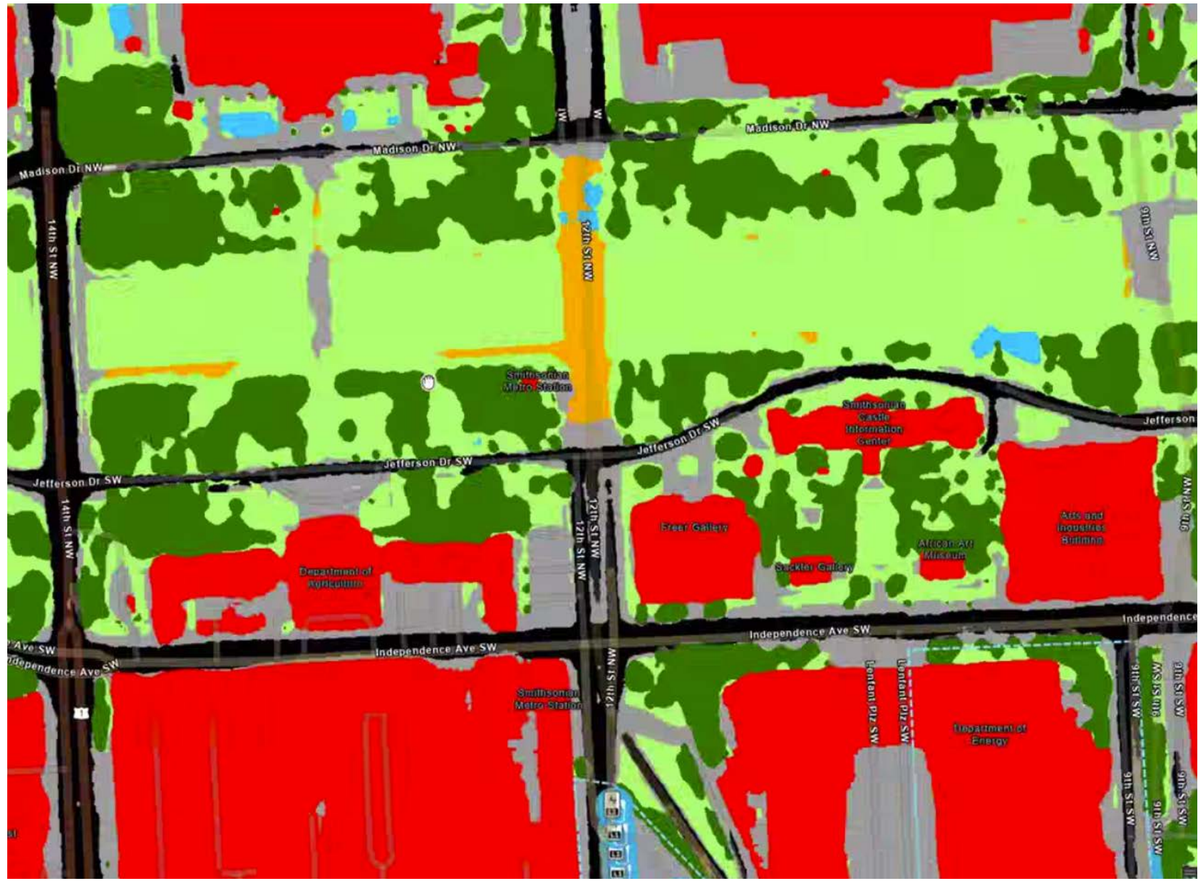
- Tool identifies low-cost line from transformer to panel to chargers.
- Identifies hardscape and softscape.



Wiring: Behind the Scenes

Wiring Run

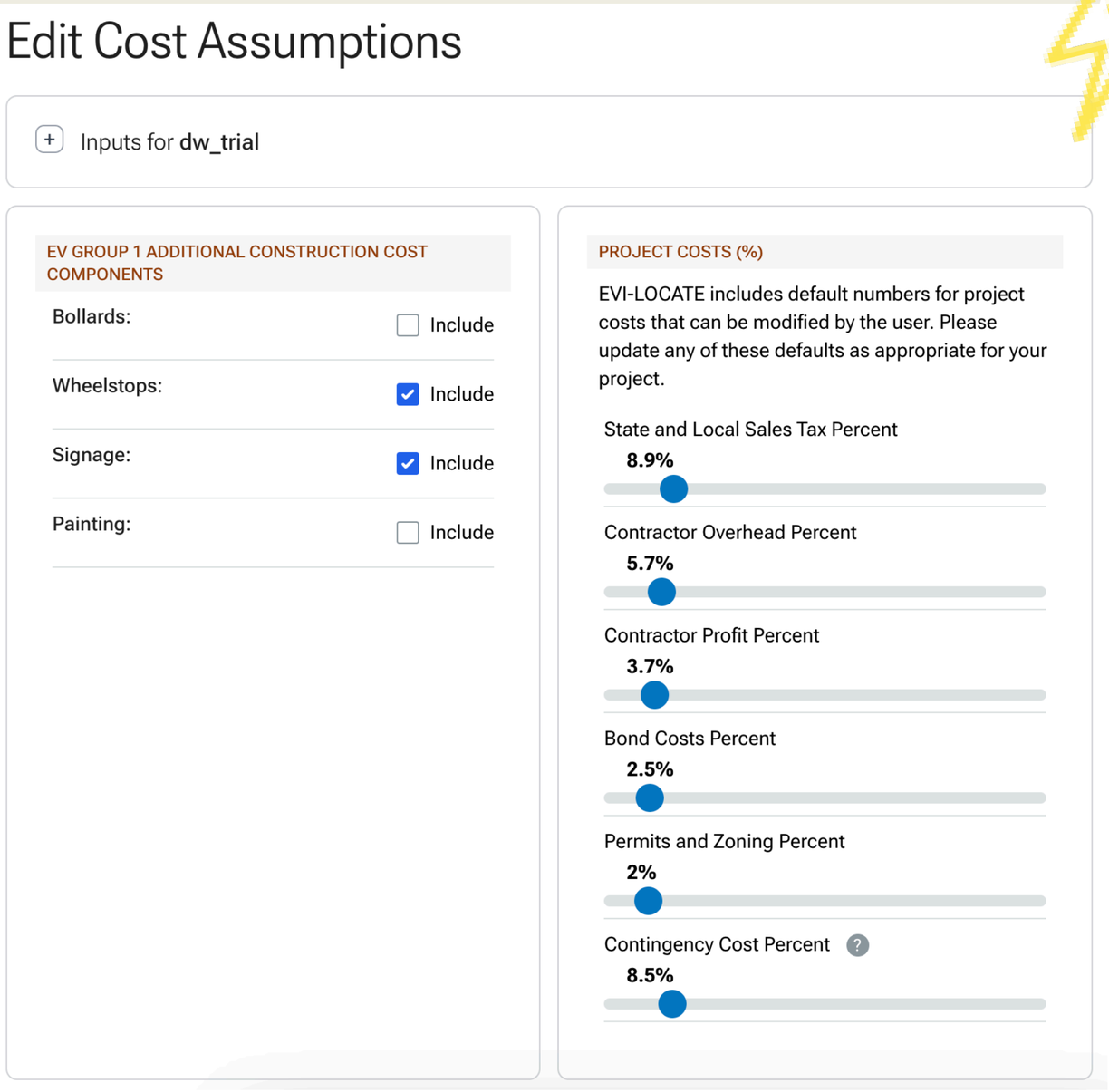
- Siting algorithm uses near-infrared imagery to distinguish surface type and buildings.
- Identifies least-cost path to run conductors and conduit.



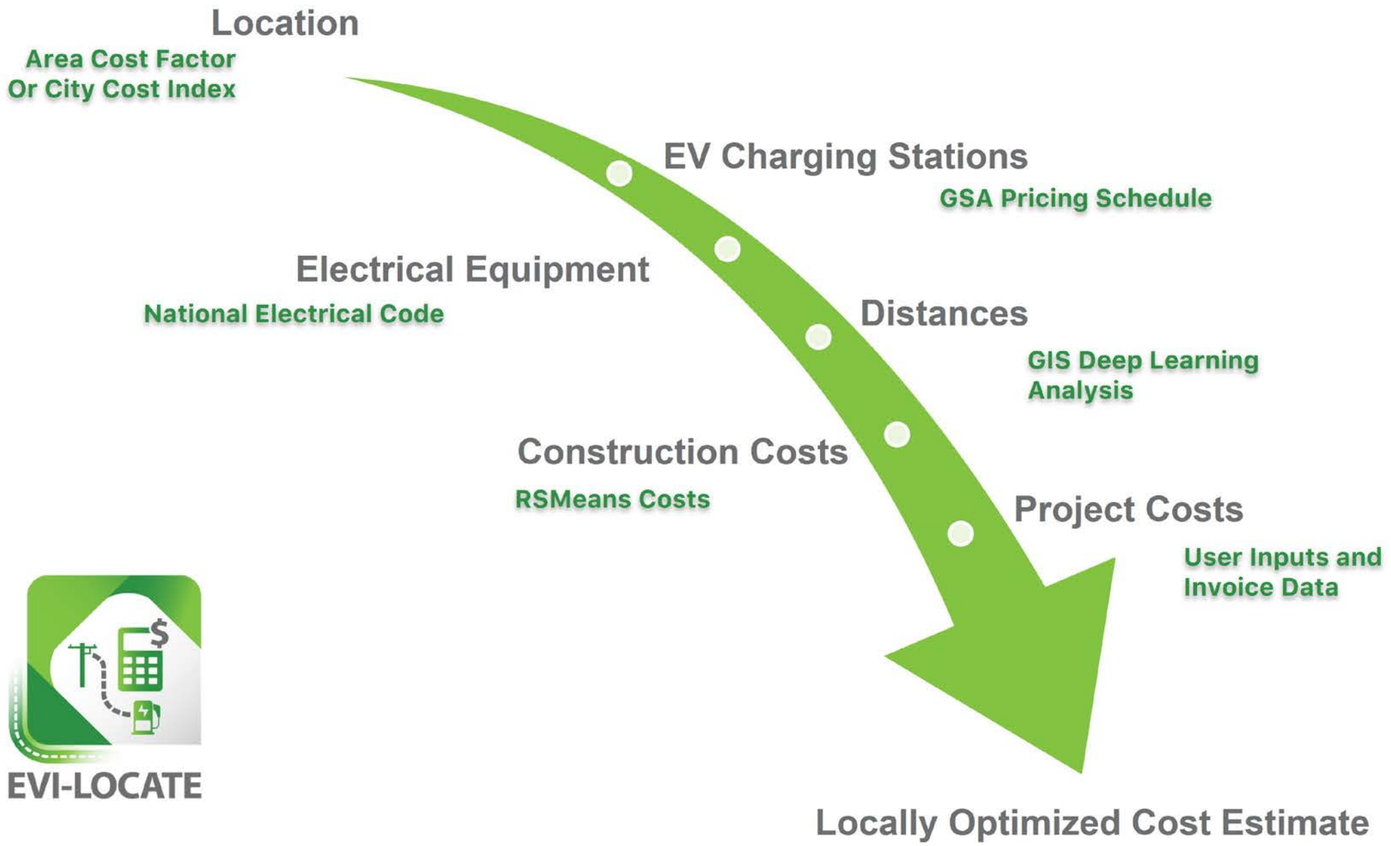
Cost Calculations

Cost Adjustment

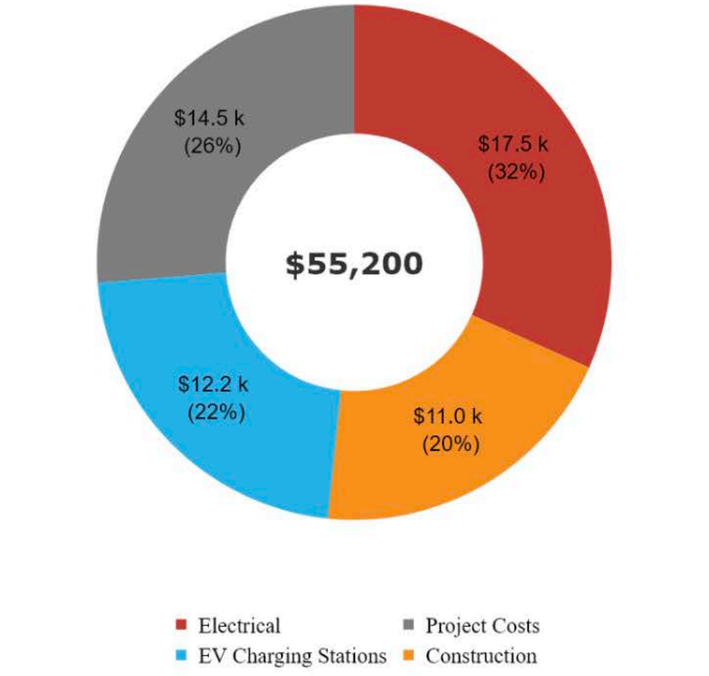
- Slider bars for project costs (e.g., feds may not need to pay taxes).

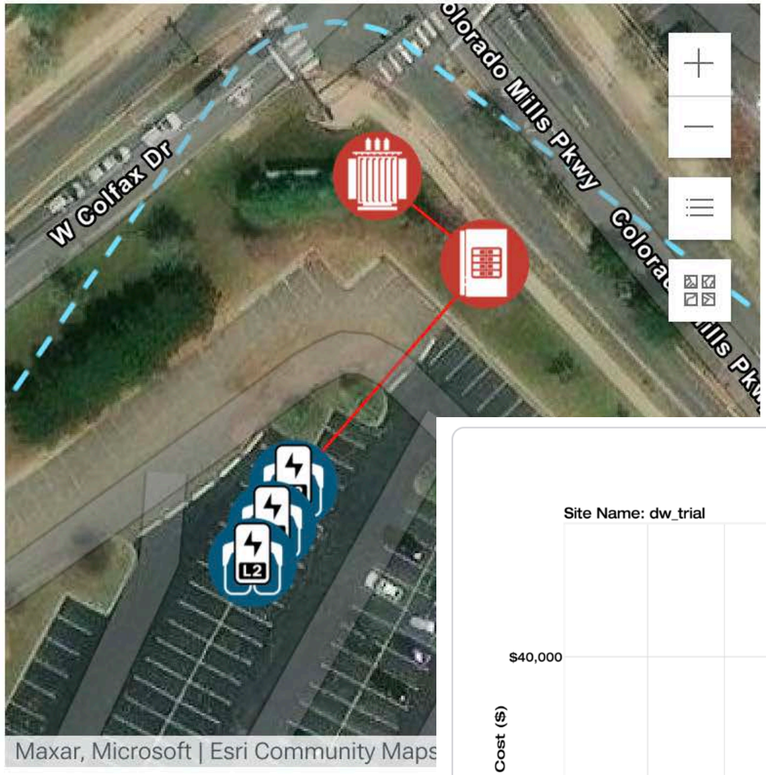


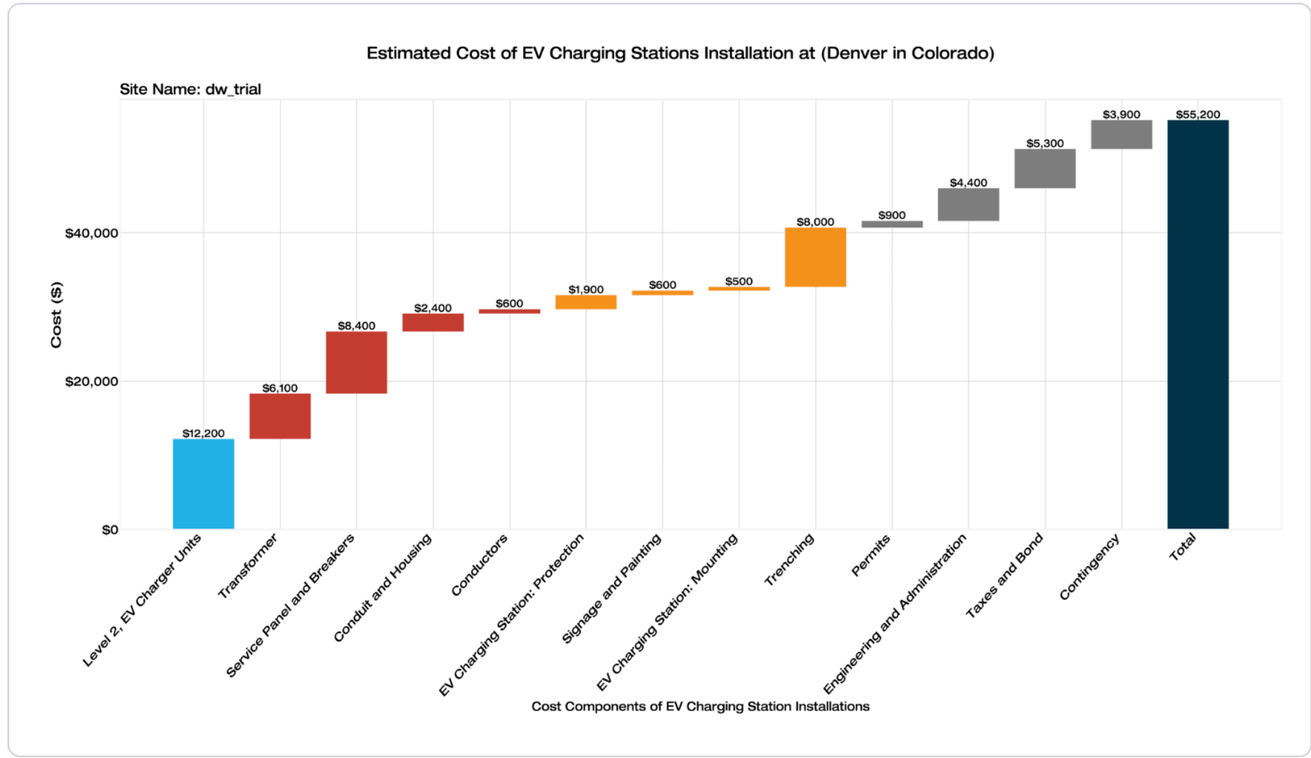
Cost Estimator Components and Data Sources



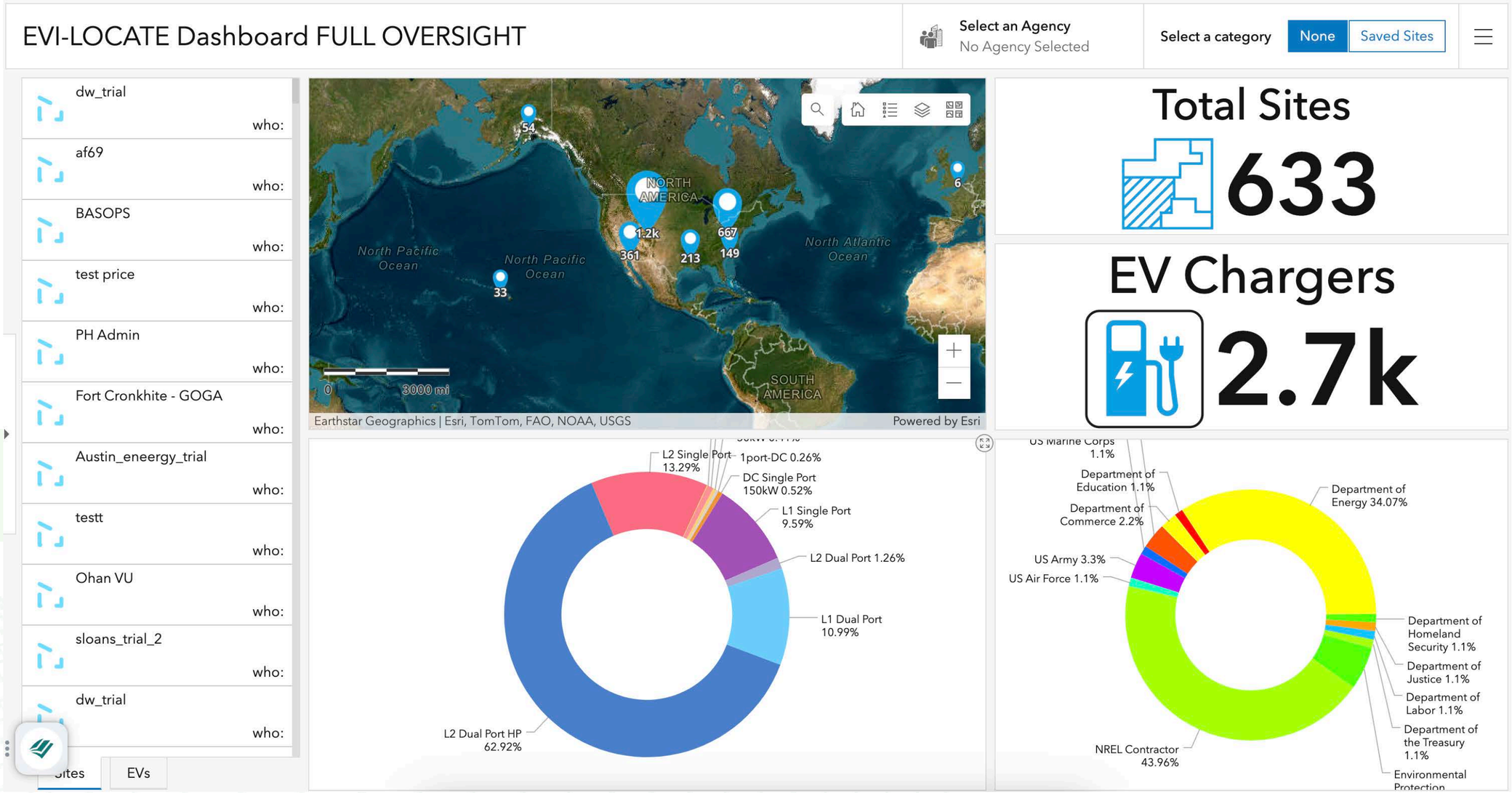
Detailed Cost Estimates







Dashboard


EVI-LOCATE Dashboard FULL OVERSIGHT
Select an Agency
No Agency Selected
Select a category
None
Saved Sites
dw_trial
who:
af69
who:
BASOPS
who:
test price
who:
PH Admin
who:
Fort Cronkhite - GOGA
who:
Austin_eneergy_trial
who:
testt
who:
Ohan VU
who:
sloans_trial_2
who:
dw_trial
who:
Sites
EVs
54
NORTH AMERICA
1.2k
361
213
667
149
6
33
North Pacific Ocean
North Pacific Ocean
North Atlantic Ocean
SOUTH AMERICA
0
3000 mi
Earthstar Geographics | Esri, TomTom, FAO, NOAA, USGS
Powered by Esri
Total Sites
633
EV Chargers
2.7k
L2 Single Port 13.29%
1port-DC 0.26%
DC Single Port 150kW 0.52%
L1 Single Port 9.59%
L2 Dual Port 1.26%
L1 Dual Port 10.99%
L2 Dual Port HP 62.92%
US Marine Corps 1.1%
Department of Education 1.1%
Department of Commerce 2.2%
US Army 3.3%
US Air Force 1.1%
Department of Energy 34.07%
Department of Homeland Security 1.1%
Department of Justice 1.1%
Department of Labor 1.1%
Department of the Treasury 1.1%
Environmental Protection
NREL Contractor 43.96%

Register Today for the Updated EV Champion Training Series

Register at: https://www.wbdg.org/continuing-education/femp-courses/femplw08292024

EV Champion Training Series	Date and Time
Training 1: ZEV and EV Charging Fundamentals	Thurs., Aug. 29, 12–2 p.m. ET
Training 2: ZEV and EV Charging Planning	Wed., Sept. 11, 2–4 p.m. ET
Training 3: EV Charging Site Assessments and Budgeting	Wed., Sept. 18, 2–4 p.m. ET
Training 4: EV and EV Charging Design and Implementation	Wed., Oct. 2, 2–4 p.m. ET

Training updates reflect current industry trends and business charging models. The training will follow the ZEV Ready Center framework.

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Thank you!

Want to learn more? EV Champion training is coming every 2 weeks, starting Aug. 14. Learn more here:

This work was authored by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy Federal Energy Management Program Office. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government. The U.S. Government retains and the publisher, by accepting the article for publication, acknowledges that the U.S. Government retains a nonexclusive, paid-up, irrevocable, worldwide license to publish or reproduce the published form of this work, or allow others to do so, for U.S. Government purposes.

NREL/PR-5400-90858