



# GSA Virtual EVSE Showcase

August 29 & 30, 2023

## Getting Federal Fleet Sites "ZEV Ready"

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# AGENDA

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- 1 Federal Fleet Electrification**
- 2 The ZEV Ready Vision**
- 3 ZEV Ready Center and Steps**
- 4 ZPAC and the ZEV Ready Process**
- 5 Achieving ZEV Ready Designation**

# Administration priority: *Transitioning to a ZEV fleet*

## Executive Order 14057



100% light-duty ZEV acquisitions by FY27



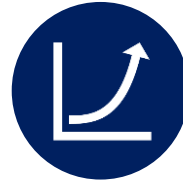
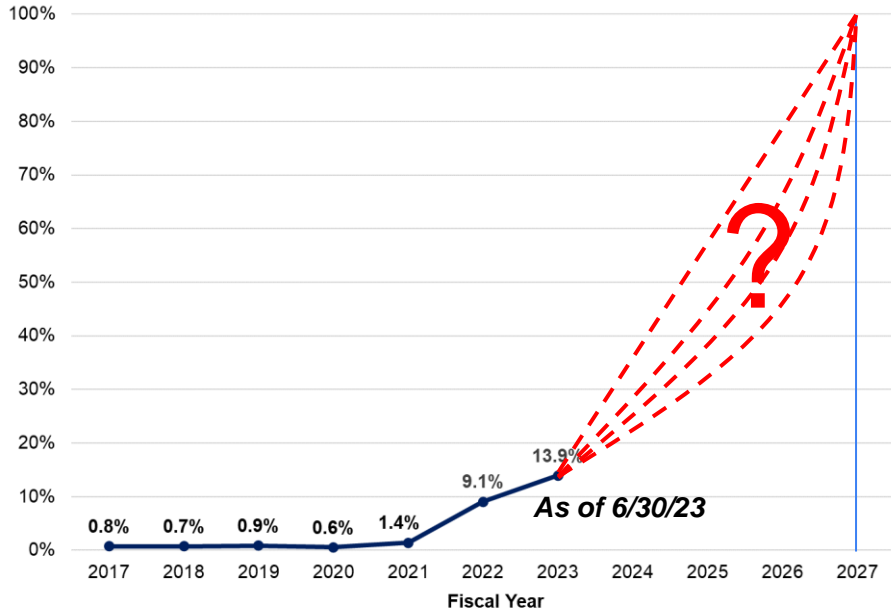
100% overall ZEV acquisitions by FY35



Update annual ZEV strategic plans

# Ramping up EV acquisitions through FY 2027

## EVs as Percent of LDV Acquisitions



What is the “right” ramp rate towards 100% LDV acquisitions in FY 2027?



What vehicle/types can be electrified today and will be available by FY 2027?



How to plan for deployment of charging infrastructure to support future EV acquisitions?



How can Federal fleets move towards transforming their fleets to ZEVs (*ZEV Ready*)?

# Agency process for fleet electrification

**1**  
Overall Fleet  
Planning

How do BEVs and PHEVs fit in my overall fleet plan?

**2**  
Identify ZEV  
Opportunities

What are my candidate ZEVs and optimal locations for deployment, and EVSE needs?

**3**  
Develop  
EVSE  
Deployment  
Plan

How do I prioritize facilities, and infrastructure needs?

**4**  
Fleet EVSE  
Acquisition  
& Installation

How do I acquire and install the right EVSE?

**5**  
Fleet ZEV  
Acquisition

How do I acquire the right ZEVs?

**6**  
ZEV and  
EVSE  
Operations

How do I support ZEV and EVSE operation, maintenance, and data collection?

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**1** Federal Fleet Electrification

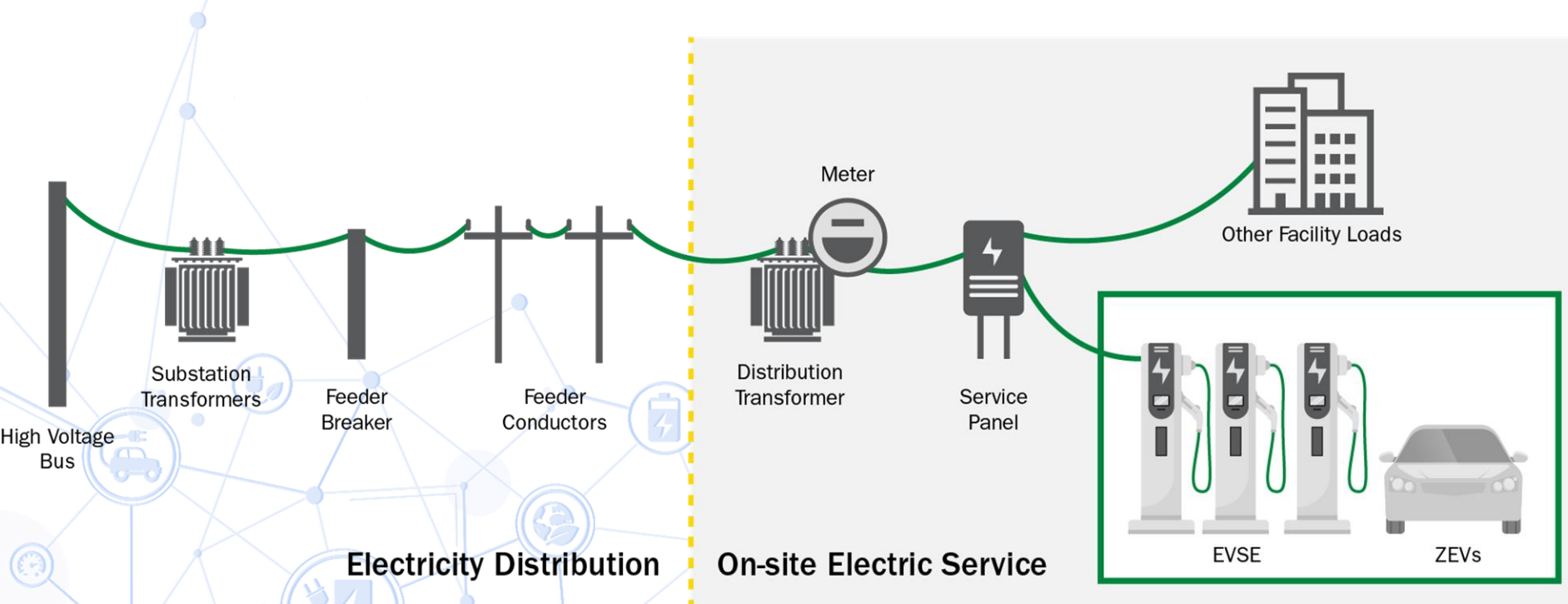
**2** The ZEV Ready Vision

**3** ZEV Ready Center and Steps

**4** ZPAC and the ZEV Ready Process

**5** Achieving ZEV Ready Designation

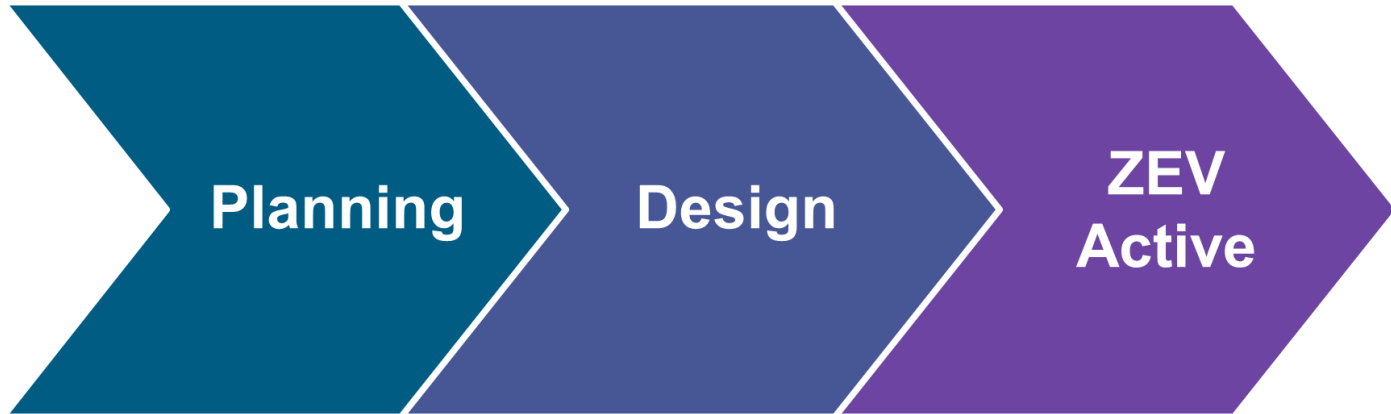
# Site-level fleet electrification doesn't just happen



# What is “ZEV Ready”?

## The ZEV Ready Solution

Framework to simplify and guide fleets through the **process** to electrify each fleet location





# Why designate sites as “ZEV Ready”?

## Simplifies & Standardizes Process

EO 14057

Reward

Replicable &  
Scalable  
Framework

Integration

Sustainability

Resiliency

Certificates  
and  
Designations

ZEV Ready  
Center  
Guidance

ZEV Ready  
Tracker

Tools

Engage  
Stakeholders

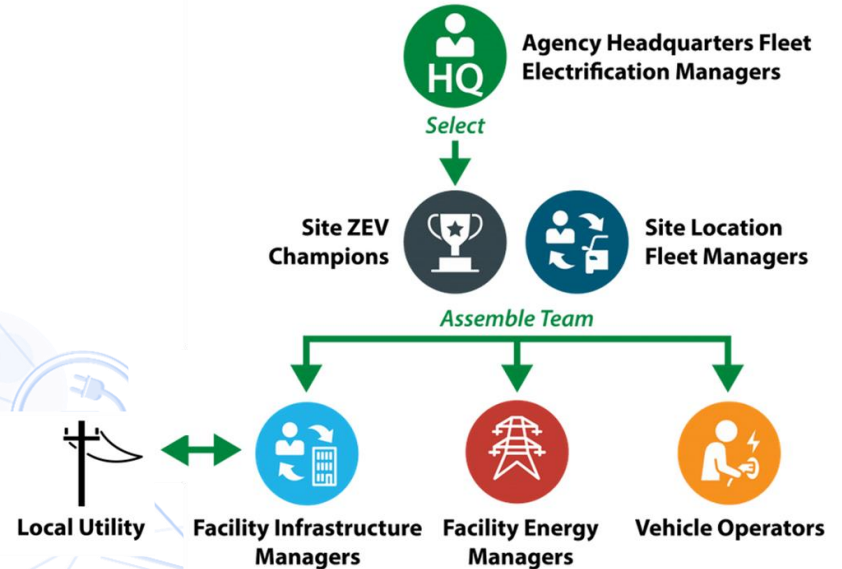
Training

# Teamwork and Coordination

## The ZEV Ready Solution

Helps sites **engage and form a team** of key electrification stakeholders

Supports **coordination and collaboration**



# Guidance and Tools

## The ZEV Ready Solution

**Integrates with** web-based guidance targeted to each stakeholder's needs

**Centralized access to FEMP/GSA fleet electrification resources**

<https://www.energy.gov/femp/federal-fleet-zev-ready-center>

# Benefits

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Identify key stakeholders

To-do list for optimal process

Requires communication

Design guidance

Honor sites as “ZEV Ready”



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**2** The ZEV Ready Vision

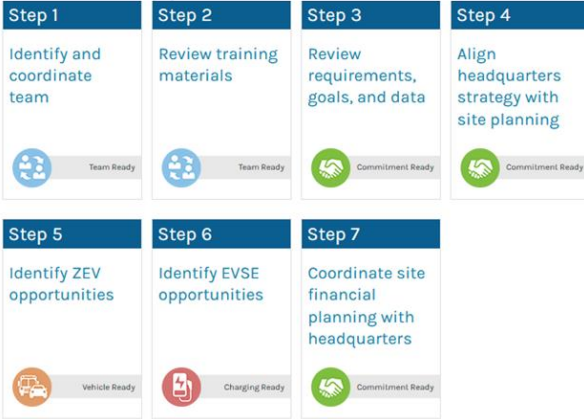
**3** ZEV Ready Center and Steps

**4** ZPAC and the ZEV Ready Process

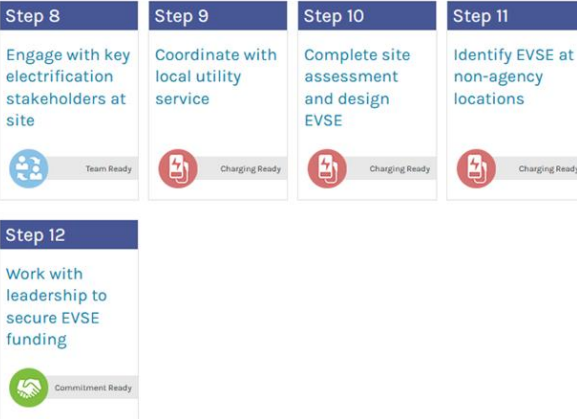
**5** Achieving ZEV Ready Designation

# ZEV Ready simplifies site-level fleet electrification

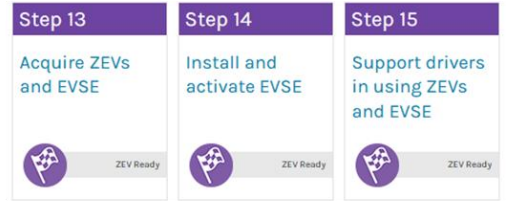
## Planning



## Design



## ZEV Active



**FEMP's recommended site-level fleet electrification planning process consists of 15 process steps organized into three phases**

# ZEV Ready is organized into 4 planning component areas



# Planning Phase – Training Materials










**Step 2**

Review training materials



Team Ready

## REQUIRED TRAININGS FOR ZEV READY DESIGNATION

TRAINING	FORMAT	RECOMMENDED ZEV STAKEHOLDERS						DURATION	SUBJECT AREA AND LEVEL
FEMP EV Technology Overview	Video							12 minutes	EV and EVSE (Beginner)
FEMP EV Financial Considerations	Video							9 minutes	Financial (Beginner)



# Planning Phase – ZPAC Tool

## Step 5

Identify ZEV opportunities



Vehicle Ready

## Step 6

Identify EVSE opportunities



Charging Ready

1. Entire fleet

2. Good EV candidates

3. Minus unsuitable vehicles

4. At priority sites

Garage	Vehicles	Predicted EVs
NREL Bldg. 16	25	17
NREL STM Lot	65	44
NREL Flatirons	10	9

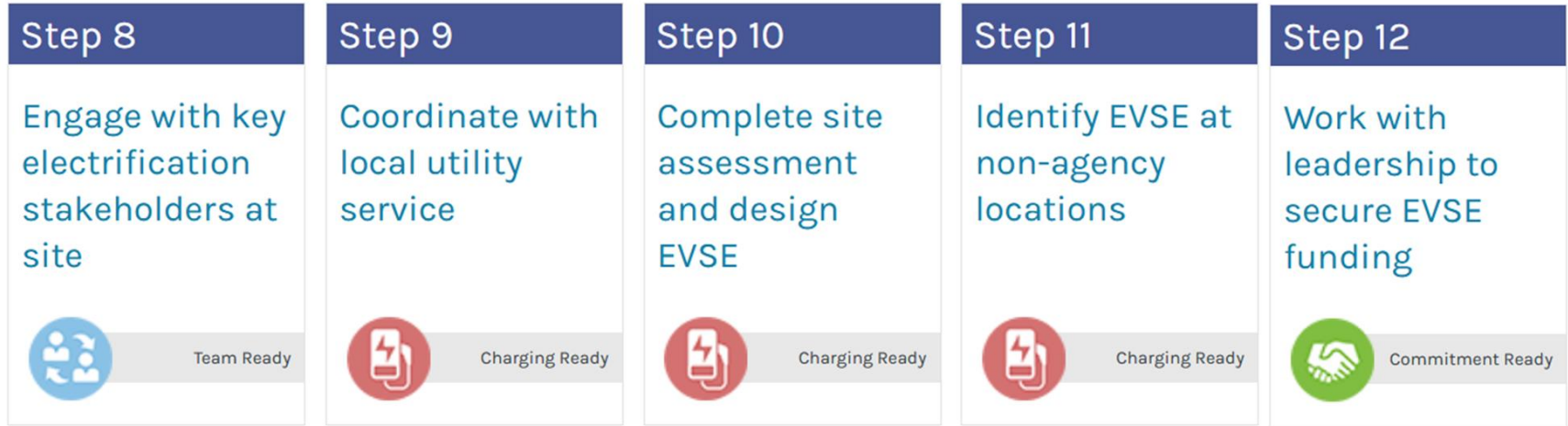
Garage	Predicted EVs	Selected EVs
NREL Bldg. 16	<del>17</del>	12
NREL STM Lot	<del>44</del>	36
NREL Flatirons	<del>9</del>	4

Garage	Selected EVs
NREL Bldg. 16	12
NREL STM Lot	36
<del>NREL Flatirons</del>	<del>4</del>

FEMP Tip: Plan 5 years into future

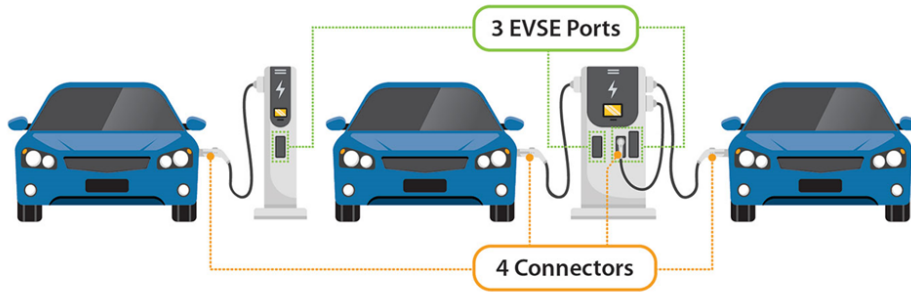
# ZEV Ready Design Phase

## Design Phase



# Design – Site assessment and design of EVSE

## 1 Station Location



1

### IDENTIFY EVSE NEEDS

Determine number of EVSE ports

Select EVSE power level

Decide access to EVSE

Determine data management needs

2

### EVSE SITING ANALYSIS

Locate Charging Stations

Site considerations in charging station design

3

### ADVANCED CHARGING

Assess managed charging options

Evaluate advanced charging options

4

### COSTS

EVSE cost estimates

# ZEV Ready → EVI-LOCATE

## Step 10

Complete site  
assessment  
and design  
EVSE



Charging Ready



# ZEV Ready Active Phase

## ZEV Active Phase

### Step 13

Acquire ZEVs  
and EVSE



ZEV Ready

### Step 14

Install and  
activate EVSE



ZEV Ready

### Step 15

Support drivers  
in using ZEVs  
and EVSE



ZEV Ready

<https://www.energy.gov/femp/federal-fleet-zev-ready-center>

# ZEV Ready → GSA Procurement Options

## Step 13

Acquire ZEVs  
and EVSE



ZEV Ready

## EVSE Options from GSA

- Multiple Award Schedule (MAS)
- EVSE Blanket Purchase Agreement (BPA)
- EVSE Design-Build and Construction Contract

## ZEV Options from GSA

- Alternative Fuel Vehicle (AFV) Guide

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# Zero Emission Vehicle Planning and Charging Tool (ZPAC)

## Zero Emission Vehicle (ZEV) Planning and Charging (ZPAC) Tool

Identify ZEV Opportunities:  
Which vehicles to electrify?

Site EVSE Plan:  
How many EVSE of what type?

ZPAC is an optional tool.

Email [mark.singer@nrel.gov](mailto:mark.singer@nrel.gov) for your FY 23 fleet-specific copy.

- Coordinate with agency national fleet manager when possible



# FY 2023 ZPAC Inputs and Overview

Provides an initial **framework for targeting ZEVs and EVSE.**

FY22 FAST submission provides your agency's **complete inventory.**

FleetDASH provides additional attributes, **analysis**, and **mapping capability.**

GSA AFV guide provides **ZEV vehicle type availability.**

**User-provided vehicle locations** are based on available inventory fields.

Supports **ZEV Strategic Plans** and **Quarterly EVSE Deployment** reporting.



# ZPAC Process

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Step 1:  
Define Fleet  
Site  
Locations

Step 2:  
Evaluate  
Vehicles  
and Plan  
ZEV  
Acquisitions

Step 3:  
Evaluate  
EVSE  
Needs for  
ZEV  
Acquisitions

Step 4:  
Evaluate  
High Level  
Plan

# ZPAC Vehicle Location Definition

User provides the site location for each vehicle.

Fleet Information					Key Input	FAST Vehicle ID	FAST VIN (from Vehicle ID)	License Plate (FleetDASH)
FAST Fleet Parent Name	FAST Fleet Abbreviation	FAST Fleet Name	BOAC (FleetDASH)	FAST ZIP	STEP 1. REQUIRED Site Name (Entry Necessary to relate to EVSE Needs & Prioritization Tab)			
Fleet Parent 1		Fleet 1	BOAC 2	ZIP 1	Site 1	VIN 1	VIN 1	TAG 1
Fleet Parent 1		Fleet 1	BOAC 2	ZIP 1	Site 1	VIN 2	VIN 2	TAG 2
Fleet Parent 1		Fleet 1	BOAC 23	ZIP 2	Site 1	VIN 3	VIN 3	TAG 3

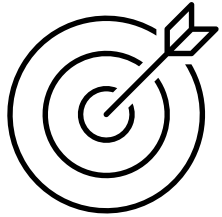
Existing fleet organization information is provided.

Additional fields may be available at agency request.

Specific parking structures support optimal plans.

# Which Vehicles to Electrify?

**Step 2:  
Evaluate  
Vehicles and  
Plan ZEV  
Acquisitions**



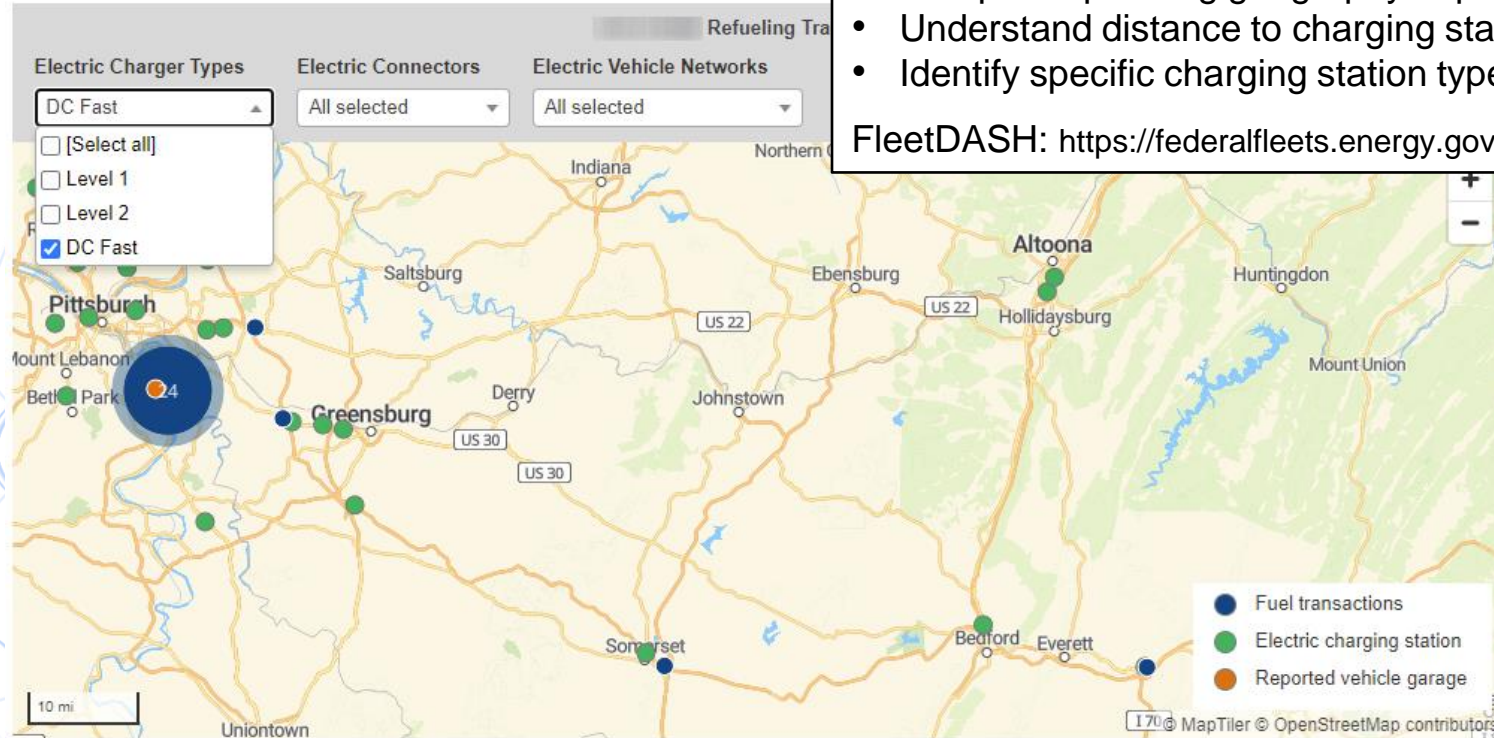
What Vehicles to Electrify?				
BEV Considerations				
BEV SIN Availability	Modeled BEV Range Concerns*	Reported BEV Range Concerns (Dropdown)	BEV GHG Emission Reduction Potential	Quality of BEV Candidate
2 - Similar BEV	3 - Unknown		1 - Very High	2 - Good
ZEV replacement available?	3 - Unknown	Nightly charging sufficient? Limit mission disruption	1 - Very High	2 - Good
	3 - Unknown			2 - Good
2 - Similar BEV	3 - Unknown		1 - Very High	2 - Good
2 - Similar BEV	4 - Frequent Public Charging Likely		1 - Very High	3 - Mediocre
2 - Similar BEV	5 - Very Frequent Public Charging Likely		1 - Very High	4 - Challenging

Decision Point
ZEV Preference
BEV
BEV
<b>User Identifies ZEV Targets</b>
Eliminate

# Vehicle Links to FleetDASH AFV Screening Tool

AFV Screening: Vehicle

[View this vehicle's transaction history](#)



- Compare operating geography to public charging
- Understand distance to charging stations
- Identify specific charging station types

FleetDASH: <https://federalfleets.energy.gov/FleetDASH>

# How Many EVSE of What Type?

Location summaries are created based on planned ZEVs.

Priority	Site Information			BEVs - Level 2 Charging Ports	PHEVs - Level 1 Charging Ports		
Priority EVSE Deployment	Agency	Site Name	ZIP	Existing Level 2 Ports at Site	Planned Additional Level 2 Ports at Site	Existing Level 1 Ports at Site	Planned Additional Level 1 Ports at Site
Yes	Federal Agency	Site 1	ZIP 1	2	12	1	1

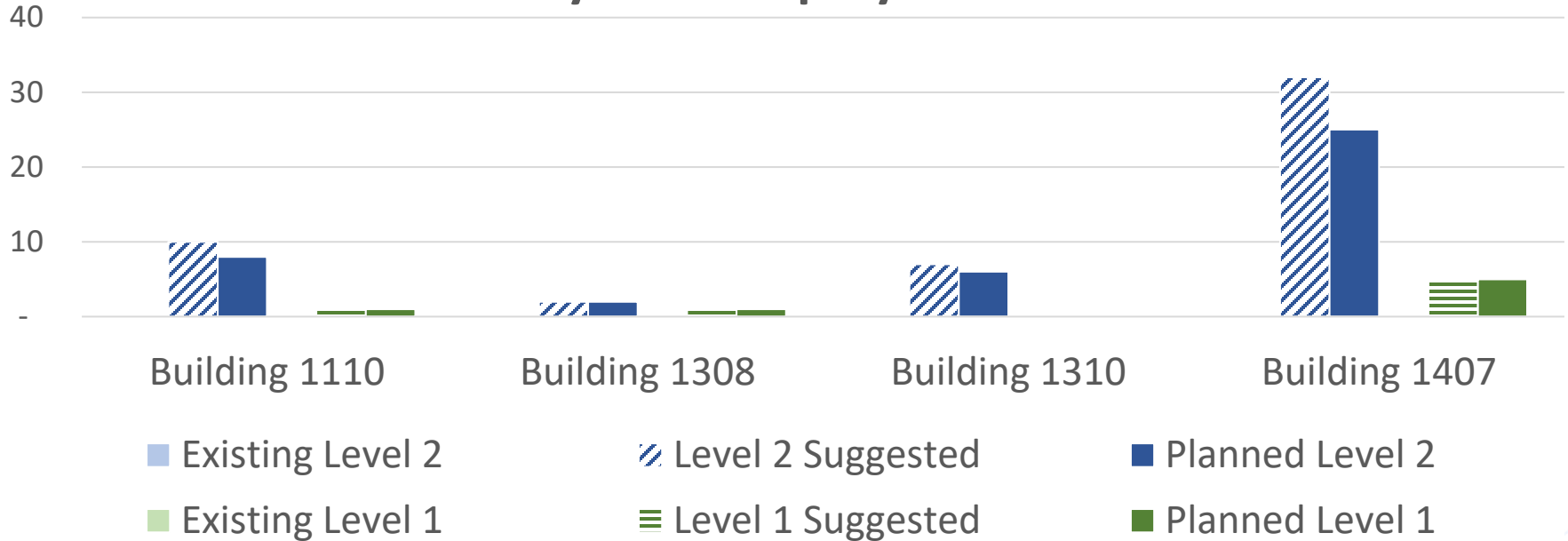
**Vehicle Location Summary**

**Size EVSE for specific locations and ZEV targets**

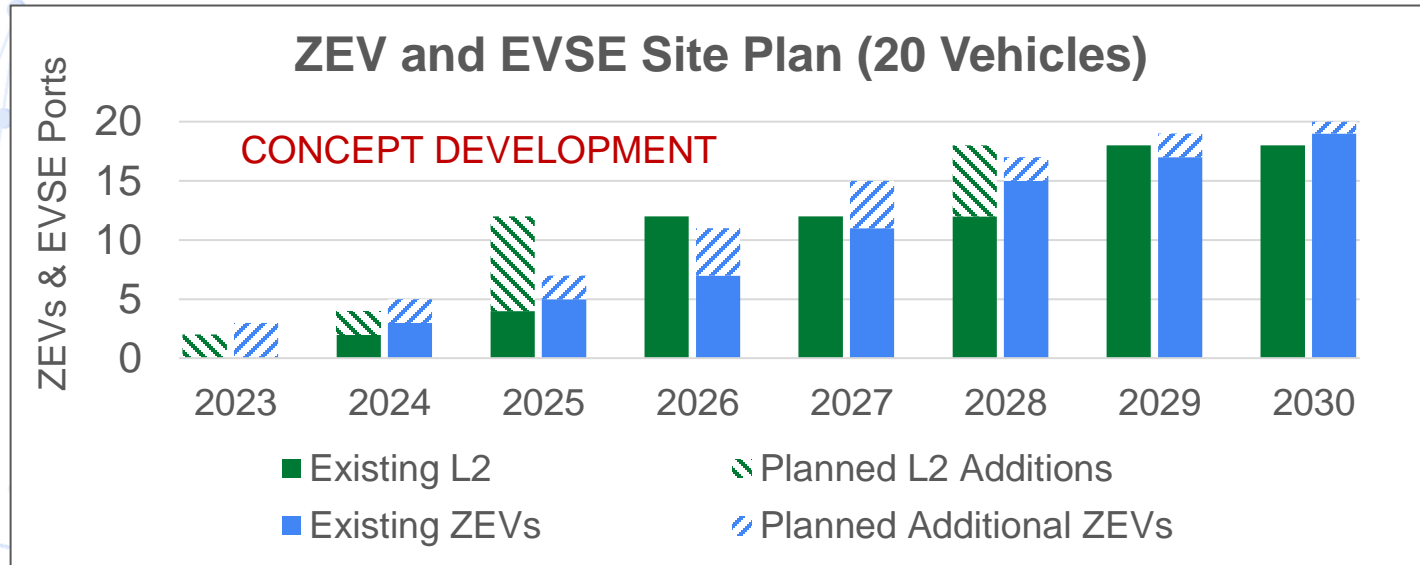
# Summary Planning Metrics

Step 4:  
Evaluate High  
Level Plan

## Priority EVSE Deployment Sites



# Investigating FY 2024 ZPAC Updates



Track progress of electrification plans.

Output formatted to align with reporting requirements.

Simplify site list definition.














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# ZEV Ready Tracker


## Track progress and earn FEMP designation

ZEV Ready Step	Action	Complete?	Stakeholders
<b>1. Identify and coordinate team</b>   <b>Team Ready</b>	Identify a site ZEV champion	Not Started	 
	Identify key electrification stakeholders at site	Not Started	   
	Identify other stakeholders to ensure a coordinated approach	Not Started	   

 Agency Headquarters Fleet Electrification Managers

 Site ZEV Champion

 Site Location Fleet Manager

 Facility Infrastructure Manager

 Facility Energy Manager

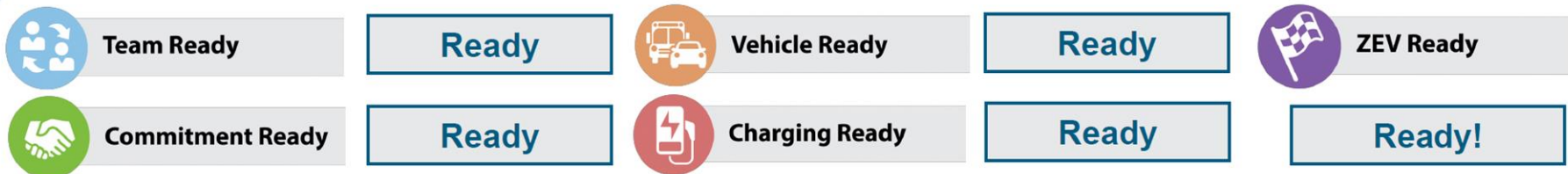
 Vehicle Operator

# ZEV Ready Tracker

## Federal Fleet ZEV Ready Tracker



**Site Champions:** Track completion of ZEV Ready actions within each step and designate site as ZEV Ready  
View your ZEV Ready status below (auto-populates based on completed actions)



- Individual steps roll up to “Ready” segments
- Complete all 4 “Ready” segments to get designated as “ZEV Ready”
- Email FEMP for a certificate of designation

# ZEV Ready Tracker to monitor ZEV Ready progress at site

## ZEV Champion manages ZEV Ready designation

1. **Assigns and coordinates actions** with key stakeholders
2. **Enters completion** of each action in ZEV Ready Tracker
3. **Tracker monitors ZEV Ready status**
4. **Site designated as overall ZEV Ready** when all four ZEV Ready components are complete



**Team Ready**



**Vehicle Ready**



**Charging Ready**



**Commitment Ready**



# ZEV Ready

May 31, 2023

This certificate acknowledges that

## Federal Fleet Site

has achieved ZEV Ready designation



**Team Ready**



**Vehicle Ready**



**Charging Ready**



**Commitment Ready**

**Jane McChampion**

Federal Fleet Site  
ZEV Champion



**ZEV Ready**

**Sonya Smith-Pickel**

US Department of Energy FEMP  
Federal Fleet Program Manager

U.S. DEPARTMENT OF  
**ENERGY**

**FEMP**  
Federal Energy Management Program

**Certificate  
of ZEV  
Ready  
Designation**

