State of Arizona Electric Vehicle Infrastructure Deployment Plan

2024 Update

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Revision History

Version History	Date	Revisions
Version 1	8/01/2022	Original
Version 2	9/01/2022	Appendix E: Cyber Security Specifications added
Version 3	2/07/2023	Appendix C: Utility Capacity, Appendix D: EV Charging Costs, and Appendix E: Public Engagement Summary added
Version 4	8/1/2023	2023 Plan Update
Version 5	9/27/2023	2023 Plan Update with FHWA Feedback
Version 6	9/1/2024	2024 Plan Update
Version 7	12/13/2024	Final 2024 Plan with Joint Office & FHWA Feedback

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Introduction

Adopting electric vehicles (EVs) reduces traffic noise, ozone formation and carbon monoxide, carbon dioxide and particulate emissions, which have negative impacts on people and the environment. As more Arizonans and visitors to the state are driving EVs, the state is working to incorporate federal funding opportunities into development of infrastructure needed to support increasing EV drivers. The Arizona Department of Transportation (ADOT), utilizing funding from the Bipartisan Infrastructure Law (BIL) and the National Electric Vehicle Infrastructure (NEVI) Formula Program, has developed Arizona's EV Infrastructure Deployment Plan (Plan), which seeks to foster EV adoption and long-range mobility by reducing gaps in electric vehicle supply equipment infrastructure (EVSE; i.e., an EV charging station) while contributing to an equitable, reliable, resilient, and accessible national EVSE network.

The development of the 2022 Deployment Plan (2022 Plan) commenced in May 2022, and was approved by the Federal Highway Administration (FHWA) in September of 2022. The subsequent 2023 Deployment Plan (2023 Plan) was based on finalized NEVI Formula Program Guidance and the NEVI Standards and Requirements (23 CFR Part 680) released in February 2023. This updated 2024 Deployment Plan (2024 Plan) incorporates newly proposed Alternative Fuel Corridors (AFCs).

Development Process

The Plan was developed in response to the provision of funding for EV adoption that was included in the BIL, which was enacted as the Infrastructure Investment Jobs Act, Public Law 117-58 (November 15, 2021). The NEVI Formula Program is a $5 billion program established in the BIL to serve as a catalyst for the construction and implementation of a national network of 500,000 EVSE by 2030.

State departments of transportation can nominate corridors along the National Highway System (NHS) within their states to become AFCs,[1] which are eligible for funding of EVSE installations and upgrades under the BIL.

Study Area

The 2022 Plan addressed Arizona's designated AFCs, which are all part of the Interstate Highway System. In 2022, the Arizona State Highway System had 7,767 total centerline miles, including 1,168 centerline miles of Interstate highway. Arizona's entire roadway network (including local roads) had 74,606 centerline miles. While Interstate highways make up less than two percent of the state's total roadway network, they account for 21.4 percent of the vehicle miles traveled (VMT) on Arizona roads.[2]

In 2023, ADOT nominated seven additional highways for AFC status. These routes were the focus of last year's 2023 Plan update.

In 2024, ADOT nominated nine additional highways for AFC status. These routes are the focus of this 2024 Plan update.

[1] Alternative Fuel Corridors (AFCs) is an FHWA designation that supports deployment of alternative fueling infrastructure along highways.

[2] ADOT. (n.d.) Fast Facts from ADOT. Retrieved from https://azdot.gov/fast-facts

Plan Development

The 2022 Plan, the 2023 Plan update, and the 2024 Plan update were developed in accordance with federal law, NEVI Formula Program guidance, Arizona law, and ADOT policies. ADOT has hosted and will continue to host engagement activities with the public; community-based organizations; and federal, state, local, and tribal representatives, as well as other impacted groups, in order to develop a Plan that is equitable and beneficial to the entire state. The state agencies included the Arizona Department of Environmental Quality, Arizona Commerce Authority, Arizona Corporation Commission, Arizona Department of Administration, Arizona State Parks, Arizona Residential Utility Consumer Office, Community Action Association and the Governor's Office.

Plan Vision and Goals

The vision of the Plan is to aid in the deployment of a national EVSE network and make EV driving accessible and reliable in the State of Arizona.

ADOT has six goals for an interconnected EVSE network:

1. Reduce range anxiety by closing gaps in the EVSE network along Arizona's AFCs; thereby, fostering EV adoption.
2. Support the development of an EVSE network that is resilient, equitable, accessible, and reliable.
3. Engage stakeholders and the public in the planning, development, and installation of EVSE.
4. Identify potential new AFC locations during the outreach process.
5. Utilize efficient contracting and procurement mechanisms to maximize the amount of infrastructure that can be built; consider future needs; and reduce current risk(s) to support the EVSE network's long-term viability.
6. Use data and performance metrics to evaluate charger installation and operations to inform the development of program improvements.

Plan Milestones

Major milestones and anticipated dates of EVSE deployment include:

2022 Goals

The following goals have been completed at the time of submitting this plan:

1. Complete and submit the 2022 Plan.
2. Solicit public and stakeholder input on potential new AFCs to be considered for nomination.

2023 Goals

The following goals have been completed at the time of submitting this plan:

1. Begin the solicitation process for new/upgraded EVSE stations.
2. Nominate new AFCs through the federal process.
3. Complete and submit the 2023 Plan.

2024 Goals

The following goals have been completed in 2024:

1. Nominate new AFCs through the federal process.
2. Prepare the 2024 Plan update.
3. Award contract(s) to upgrade existing stations and/or construct new stations, as identified in the 2022 Plan.
4. Begin the process to solicit and award contracts to upgrade existing stations and/or construct new EVSE stations on AFCs identified in the 2023 to 2024 plans, with available funding.

2025 to 2026 Goals

The following goals are anticipated to be completed by 2026:

1. Nominate new AFCs through the federal process.
2. Prepare the 2025 Plan update.
3. Solicit and award remaining funding for EVSE construction.
4. Install EVSEs in 2025-2026.
5. Evaluate the performance of NEVI Formula Program implementation.

Updates from Prior Plans

The following changes and updates have been made in the 2024 Plan:

- **State Agency Coordination**
  - Addition of a state agency coordination meeting on July 25, 2024.
- **Public Engagement**
  - Information and updates from engagement events held from August 2023 to July 2024 have been added, including details about:
    - The public hearing held on October 18, 2023.
    - An updated Public Involvement Plan for the 2024 Plan.
    - A statewide virtual public meeting held on July 10, 2024, to present the 2024 Plan update.
    - The 2024 Plan update public comment period held from July 11 - 17, 2024.
- **Plan Vision and Goals**

  The following goals originally listed in the 2023 Plan have been completed:
  - Begin the solicitation process for new/upgraded EVSE stations.
  - Nominate new AFCs through the federal process.
  - Update the EV Infrastructure Deployment Plan to include the newly nominated AFCs.
- **Contracting**
  - ADOT released a Request for Proposals (RFP) for the 2022 plan utilizing a single-step procurement in January 2024.
  - The RFP solicited contractors who will design, construct, potentially upgrade, operate and maintain charging stations.
  - Conditional awards for 18 stations along the Interstates were issued in August 2024.
- **Existing and Future Conditions Analysis**

- Risks and mitigations were updated to reflect current conditions.
- All statistics were updated to reflect the current data available.

- **Infrastructure Deployment**
  - Previously identified NEVI creditable stations in the 2022 and 2023 Plans. As these stations now do not meet NEVI Standards and Requirements, they are now identified as potential new/upgrade sites (to be confirmed). The locations in the 2022 Plan will be re-investigated in the 2025 Plan. Three creditable stations identified in the 2023 Plan will be included in the next solicitation for station deployment and have been added to the 2023 AFC corridors in this Plan update.
  - Nine new AFCs were added for the 2024 Plan.
  - Seventeen new proposed stations were added for inclusion in the 2024 Plan.
  - Proposed and upgraded station locations are now considered at more than one interchange for deployment to allow more flexibility in charger siting.
- **Labor and Workforce Development**
  - The available workforce development opportunities were updated to reflect newly identified programs.
- **Physical Security and Cybersecurity**
  - Infrastructure cybersecurity specifications have been updated as part of the 2024 Plan to adhere to the latest regulations on securing charger ecosystems.

State Agency Coordination

ADOT recognizes the importance of coordinating with state, federal, and tribal agencies in the development of this Plan.

ADOT initially met with state agency partners on June 16, 2022, to gather input to inform the development of the 2022 Plan. The following agencies were identified as key stakeholders and invited to the 2022 meeting:

- Arizona Department of Environmental Quality
- Arizona Commerce Authority
- Arizona Corporation Commission
- Arizona Department of Administration
- Arizona Residential Utility Consumer Office
- Arizona Governor's Office

The department also distributed a stakeholder survey to the agencies, contacted certain agencies for additional information, and notified the agencies of virtual and in-person public meetings and public surveys.

ADOT also met with staff of Grand Canyon National Park during the development of the 2022 Plan.

In preparing the 2023 Plan, ADOT held separate meetings with state, federal, and Tribes on July 7, 2023, and July 12, 2023, to share progress made since the 2022 Plan and to gather feedback on draft recommendations developed for the update. Representatives of the entities listed in **Table 1** were invited to the meetings. An additional state agency coordination meeting was held on July 25, 2024, to discuss the 2024 Plan and highlight updates and changes from the earlier plans.

Table 1: Invitees to Agency Coordination Meetings, 2022-2024 Plans

Entity	Government Entity Type
Arizona State Parks	State
Residential Utility Consumer Office	State
Arizona Department of Environmental Quality	State
Arizona Commerce Authority	State economic development organization
Arizona Corporation Commission	State
Arizona Governor's Office	State
Navajo Nation	Tribe
Inter-Tribal Council of Arizona	Organization
Hopi Tribe	Tribe

Entity	Government Entity Type
San Juan Southern Paiute Tribe	Tribe
Fort McDowell Yavapai Nation	Tribe
Colorado River Indian Tribes	Tribe
Ak-Chin Indian Community	Tribe
Tonto Apache Tribe	Tribe
Gila River Indian Community	Tribe
Salt River Pima-Maricopa Indian Community	Tribe
Hualapai Tribe	Tribe
Fort Mojave Indian Tribe	Tribe
U.S. Bureau of Reclamation	Federal
U.S. National Park Service	Federal
Grand Canyon National Park	Federal
Federal Highway Administration	Federal
U.S. Bureau of Indian Affairs	Federal
U.S. Forest Service	Federal

Memoranda of Understanding with Other Agencies

ADOT has not entered into any memoranda of understanding at the time of writing of this report.

Interagency Working Group(s)

ADOT did not establish any interagency working groups at the time of writing of this report.

Plans to Utilize Domestic EVSE

ADOT will act in accordance with the NEVI Formula Program rulemaking to maximize opportunities to utilize EVSE made in the United States. ADOT recognizes that the Buy America requirements of 23 U.S.C. 313 and the Build America, Buy America Act apply to the use of NEVI Formula Program funds and that it is the intent of the FHWA to maximize, consistent with the law, the use of goods, products, and materials produced in the United States. ADOT will ensure that EVSE station owners comply with all relevant regulations. When appropriate, ADOT may seek waivers from these provisions as provided by law and Executive Order 14005 (“Ensuring the Future is Made in All of America by All of America’s Workers”).

Public Engagement

Stakeholder Engagement and Public Involvement Goals

ADOT has been and continues to be committed to effective stakeholder engagement and inclusive public involvement processes throughout the development of the Plan. To achieve these goals, a Public Involvement Plan was developed as part of the 2022 Plan to identify public involvement goals and methods to inform and engage key stakeholders and the public and to ensure equitable access for underserved and Disadvantaged Communities (DACs) in engagement activities. The Public Involvement Plan supports equitable statewide reach and encourages participation through virtual methods, as well as in-person methods at a local level.

This year's activities are a continuation of the initial Public Involvement Plan and included multiple methods for the public and key stakeholders to learn about and provide input on the 2024 Plan update prior to submission.

Outreach was modeled after the International Association for Public Participation's Spectrum of Public Participation[3] process, a globally recognized system for designing intentional engagement activities that best suit the public's role in the planning process. ADOT's overall public participation goal is to consult the public and key stakeholders in the Plan's development.

Throughout public engagement, ADOT has and will continue to advance these engagement goals:

- Keep the public and stakeholders informed.
- Obtain feedback on the Plan analysis, alternatives, and/or decisions.
- Listen to and acknowledge concerns and aspirations from the public and key stakeholders.
- Provide feedback on how public and key stakeholder input influenced the Plan recommendations.

Specific sub-goals of this process include to:

- Provide information about and facilitate informed public and stakeholder input on: Plan objectives, EVSE types and their charging speeds, federal requirements, guidelines for implementing the EVSE network, and the timeline for Plan submission and implementation.
- Secure participation from a broad cross-section of the community, as well as key stakeholders with an interest in EVSE development, with an emphasis on reaching DACs as identified in the Justice40 mapping tool.
- Gain insight to supplement the data available on existing and future conditions.
- Gain insight into Arizona residents' propensity for, and barriers to, use of EVs.
- Understand the public's desires and priorities related to siting EVSE and prioritizing EVSE corridors, particularly in relation to how equity is evaluated and integrated into the prioritization process.

[3] IAP2 International Federation (2018). IAP2 Spectrum of Public Participation. Retrieved from https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf

- Determine the community's perceptions and concerns regarding the EVSE network and inform future outreach efforts.

Stakeholder and Public Involvement Activities

Public involvement is critical to the Plan's development and successful implementation. **Table 2** provides a description and status of stakeholder and public involvement activities conducted between August 2023 and July 2024. Initial results, based on activities conducted through July 2023 were previously reported in the revised 2023 Plan, dated September 27, 2023.

Table 2: Stakeholder and Public Involvement Activities

Activity	Status
Public hearing for the 2023 Plan	Completed October 18, 2023
Updated the Public Involvement Plan for the 2024 Plan.	Completed May 17, 2024
Statewide virtual public meeting to discuss the 2024 Plan. Meeting presentation and recording posted to the website for those unable to attend.	Meeting July 10, 2024 Recording posted July 15, 2024
Public comment period on 2024 Plan.	Completed July 11 - July 17, 2024

Stakeholders Involved in Plan Development

An extensive and diverse list of key stakeholders for the Plan was developed. It includes:

- City and county staff in communities along the AFCs
- Representatives from every metropolitan planning organization (MPO)/council of governments (COG) in Arizona
- Governor's Office
- Various state agencies including the Arizona Department of Environmental Quality
- The tribal communities with land along the AFCs
- EV industry representatives (including EVSE operators, EV automobile manufacturers, other EV suppliers, and EV advocacy organizations, Environmental Justice Groups)
- Utility companies
- Chambers of commerce
- Other business or commerce organizations
- Large employers
- Roadway users, including current EV users, are also stakeholders in the Plan.
- Others with interests in the Plan's development

Table 3 lists the organizations that were invited to participate in the Plan's development. Stakeholder organizations that address the goals of the Justice40 Initiative, identified in Executive Order 14008, are shown in italic text.

Table 3: Stakeholders Involved in Plan Development

Organization Category	Organizations Targeted for Engagement
Transportation planning organizations	• *Central Arizona Governments* • *Central Yavapai MPO* • *Lake Havasu MPO* • *Maricopa Association of Governments (MAG)* • *MetroPlan Metropolitan Planning Organization for Greater Flagstaff* • *Northern Arizona COG* • *Pima Association of Governments* • *Sierra Vista MPO* • *Southeastern Arizona Governments Organization* • *Sun Corridor MPO* • *Western Arizona COG* • *Yuma MPO*
Counties, cities, and towns	• *Apache County* • *Coconino County* • *Cochise County* • *Gila County* • *Graham County* • *Greenlee County* • *La Paz County* • *Maricopa County* • *Mohave County* • *Navajo County* • *Pima County* • *Pinal County* • *Santa Cruz County* • *Yavapai County* • *Yuma County* • *Avondale* • *Benson* • *Black Canyon City* • *Buckeye* • *Bowie* • *Camp Verde* • *Casa Grande* • *Chambers* • *Chandler* • *Cochise*

Organization Category	Organizations Targeted for Engagement
	• *Coolidge* • *Cordes Junction* • *Eloy* • *Flagstaff* • *Gila Bend* • *Holbrook* • *Joseph City* • *Kingman* • *Marana* • *Maricopa* • *Nogales* • *Phoenix* • *Quartzsite* • *Sahuarita* • *San Luis* • *San Simon* • *Sanders* • *Seligman* • *Tempe* • *Tucson* • *Wellton* • *Willcox* • *Williams* • *Winslow* • *Yuma*
State Administrative Agencies	• *Arizona Department of Administration* • *Arizona Governor's Office*
Environmental protection agencies	• *Arizona Department of Environmental Quality* • *U.S. Environmental Protection Agency*
State economic development agencies	• *Arizona Commerce Authority* • *Economics Collaborative of Northern Arizona* • *Greater Phoenix Economic Council* • *Mohave County Economic Department* • *City of Sahuarita Economic Development Departmen*t
Public transportation agencies	• *City of Phoenix Public Transit* • *Arizona Transit Authority* • *Mountain Line*
22 Federally Recognized Tribes in Arizona	• *Ak-Chin Indian Community* • *Cocopah Indian Tribe*

Organization Category	Organizations Targeted for Engagement
	• *Colorado River Indian Tribes* • *Fort McDowell Yavapai Nation* • *Fort Mojave Indian Tribe* • *Fort Yuma Quechan Indian Tribe* • *Gila River Indian Community* • *Havasupai Tribe* • *Hopi Tribe* • *Hualapai Tribe* • *Kaibab Band of Paiute Indians* • *Navajo Nation* • *Pascua Yaqui Tribe* • *Pueblo of Zuni* • *Salt River Pima-Maricopa Indian Community* • *San Carlos Apache Tribe* • *San Juan Southern Paiute Tribe* • *Tohono O'odham Nation* • *Tonto Apache Tribe* • *White Mountain Apache Tribe* • *Yavapai Apache Nation* • *Yavapai-Prescott Indian Tribe*
Electric utilities; transmission and distribution owners and regulators	• *Aha Macav Power Service* • *Anza Electric Cooperative* • *Arizona Corporation Commission* • *Arizona Electric Power Co-Op* • *Arizona G&T Cooperatives* • *Arizona Public Service* • *Arizona Residential Utility Consumer Office* • *CLEAResult* • *Duncan Valley Electric Cooperative* • *Garkane Energy Cooperative* • *Graham County Electric Cooperative* • *Grand Canyon State Cooperatives* • *Mohave Electric Cooperative* • *Pinnacle West* • *Salt River Project (SRP)* • *Sierra Southwest Cooperative* • *Southwestern Power Group* • *Sulphur Springs Valley Electric Cooperative* • *Trico Electric Cooperative* • *Tucson Electric Power (TEP) and UniSource Energy Services*

Organization Category	Organizations Targeted for Engagement
Community-based organizations, small business associations, chambers of commerce, labor organizations, and private entities	• *Arizona Chamber of Commerce* • *Arizona Hispanic Chamber of Commerce* • *Arizona League of Cities and Towns* • *Arizona Small Business Association* • *Asian Corporate and Entrepreneur Leaders* • *Black Chamber Arizona* • *Chinese Chamber of Arizona* • *Economics Collaborative of Northern Arizona* • *Flagstaff Chamber of Commerce* • *Fortis Networks* • *Greater Flagstaff Chamber of Commerce/Northern Arizona Chamber Organization* • *Greater Phoenix Chamber* • *Kingman Chamber of Commerce* • *Tucson Metro Chamber* • *Valley Partnership*
Private-sector EVSE owners and network operators	• *Blink Charging* • *Charge Point* • *Charge Zero* • *Electrify America* • *EVgo* • *Francis Energy* • *Tesla*
Vehicle manufacturers/ Tier 1 suppliers	• *Audi* • *BMW* • *Cruise* • *DeMenna (representing Avis)* • *FCA Group* • *General Motors* • *Goodyear* • *Lucid Motors* • *Nikola Motor / Nikola Defense* • *Proterra* • *Tesla* • *Toyota* • *Waymo*
Minority- and women-based organizations	• Arizona Minority Contractors Association • Chicanos Por La Causa • Greater Phoenix Urban League • NAACP Maricopa County Branch

Organization Category	Organizations Targeted for Engagement
Freight industry	• *Arizona Trucking Association*
Environmental and other community advocacy organizations with an interest in EVSE	• *Arizona Forward* • *Ceres* • *Southwest Energy Efficiency Project (SWEEP)* • *The Nature Conservancy* • *Valley of the Sun Clean Cities Coalition* • *Western Resource Advocates*
EV industry organizations and EV advocacy groups	• *Alliance for Automotive Innovation* • *Alliance for Transportation Electrification* • *Arizona Technology Council* • *EV Noire* • *EV Transportation Alliance* • *Fourth Mobility* • *Phoenix Electric Automotive Association* • *Plug In America* • *Tucson Electric Vehicle Association* • *Zero EV*
Gas station owners and operators	• *Circle K* • *Flying J* • *Love's* • *Shell Recharge Solutions*
Ride-share drivers/taxi drivers	• *Lyft* • *Uber*
Emergency management and public safety agencies	• *Arizona Governor's Office*
Other parties	• *Atlas Public Policy* • *Electric Power Research Institute* • *Triadvocates* • *Generation Seven Strategic Partners* • *Phoenix IDA* • *QCM Technologies* • *Verdek*

Stakeholder organizations that address the goals of the Justice40 Initiative, identified in Executive Order 14008, are shown in italic text

Community Engagement Outcomes Report

Public Outreach and Notification

ADOT utilized various methods for promoting awareness of the EV plan, its development process, draft recommendations, and planned engagement events for the public at each phase of outreach. The methods used in 2022, 2023, and 2024 are summarized below:

- ADOT EV website updated with information about the plan and how to participate and provide comments.
- Notifications to the public via multiple methods, including news releases, mass email alerts to the EV subscriber list (more than 4,300 subscribers) and ADOT social media platforms.
- Paid advertising in print and online news media statewide in English- and Spanish-language and tribal publications. The open house meetings in late 2022 were promoted in 13 publications, with web advertisements promoting the accompanying online survey viewed over 446,000 times. The summer 2023 statewide meeting was promoted in 11 different local publications. The 2024 virtual public meeting was promoted in seven publications.
- Collaboration with stakeholders to reach their constituents and audiences.
- Earned news media coverage of the Plan and public engagement activities, including outlets such as the news radio station KTAR in Glendale, National Public Radio member station KJZZ in Tempe, television station KTVK in Phoenix, and television station KGUN in Tucson.

2024 Public Engagement

Following ADOT's identification of recommended future EV corridors, ADOT conducted additional public engagement in summer 2024. The focus of the 2024 EV Plan update for public engagement was to:

- Inform the public and key stakeholders of the additional state highway corridors on the NHS identified as AFCs as part of the next phase of ADOT EV plan implementation.

This engagement focused on the following activities:

- Conducting a statewide virtual public meeting.
- Meeting with state agencies, as well as utility company coordination.
- Holding a public comment period.
- Broadly notifying the public and stakeholders about the EV Plan update and opportunities to provide input**.**

Statewide Virtual Public Meeting

To share progress and gather input on the 2024 Plan, ADOT hosted a statewide virtual public meeting on July 10, 2024. The meeting was held via the Zoom online meeting platform and attended by 264 people. The meeting consisted of a presentation followed by a question-and-answer session between the public and a panel of technical and public engagement staff working on the Plan. ADOT provided live interpretation in Spanish and in Diné (Navajo) and allowed participants to call in to the meeting, rather than only join by Zoom, to facilitate access for residents who do not have reliable internet service.

The purpose of the meeting was to share information about the 2024 Plan update, including a review of the NEVI program and ADOT's role in administration and implementation and an update of the status of 2022 Plan implementation. The meeting addressed the new routes and stations proposed in the 2024 Plan, as well as routes to potentially be added in future updates, based on both technical analysis and input from the public and key stakeholders.

The question-and-answer session followed the presentation. Attendees online were able to submit their questions through the Zoom "Q&A" feature, while a portion of the session was set aside to receive questions and comments verbally from attendees joining by phone. Participants entered 152 questions and comments into the Q&A feature. Questions on similar topics were aggregated with 76 questions verbally answered by the panelists. The most common themes discussed in the question-and-answer session included:

- **Charging Technology—**Recent announcements in the EV industry about charging connector standards; the potential for installing chargers with higher wattages than 150 kilowatts (kW); charging compatibility with vehicles that use different connector types; impacts of extreme heat on vehicles and charging infrastructure
- **Station Features and Amenities—**Potential for charging larger EVs such as medium- and heavy-duty trucks and buses at planned stations; inclusion of the network in charging station locator apps and maps; inclusion of shade structures and pull-through charging at stations; placing stations at locations with food and drink options and restrooms
- **Station Operations—**Charging prices and the ability to regulate prices; station maintenance and the ability to ensure minimal station downtime, particularly during holidays and peak travel days/times; power availability and impacts to the electrical grid; safety considerations, including fire prevention, electrical hazards, and the security of equipment and of users
- **Planning and Implementation—**Timeline for station construction and charger installation; number of chargers and stations ADOT anticipates can be funded through NEVI; consideration of local and wider environmental impacts
- **Stakeholder and Public Engagement—**Public involvement in the planning process; stakeholder, government, and agency coordination; coordination with neighboring states; suggestions for partnering with various businesses and industries for station hosting

ADOT requested that meeting attendees and those providing comments through the comment form during the comment period complete a self-identification survey for Title VI reporting purposes, which asks participants to list their race/ethnicity. A total of 89 people completed the self-identification survey. Of the 89 self-identification survey responses, 87 identified as White, five participants identified as Hispanic/Latino, two identified as African American/Black, three identified as Asian, and two identified as American Indian/Alaskan Native. Some survey responses included multiple selections.

ADOT also offered the opportunity to provide comments via an online survey/online comment form, email, phone, or mail with the comment period open through July 17, 2024. 284 comments were submitted. A link to final public comments is included in **Appendix E**.

Public Meeting Notification

The July 10, 2024 virtual public meeting was publicized through the ADOT project website, ADOT GovDelivery email alerts, print ads, ADOT social media posts and a news release.

Project Website

ADOT hosts a project website at https://azdot.gov/EVPlan. The project website is intended to increase accessibility by serving as a resource that provides a project overview, including information about the 2022 Plan, the 2023 Plan update, and the 2024 Plan update along with meeting presentations and recordings. A link to an online survey/comment form was also included through July 17, 2024.

GovDelivery Emails

Information on how to participate in the virtual public meeting and provide comments on the 2024 Plan update were distributed by ADOT on June 19, June 26, July 8, July 9 and July 15, 2024, to the EV subscriber list in GovDelivery. Each notice included over 4,300 contacts and on average had a 42 percent open rate. Copies of the GovDelivery notices can be found in **Appendix E**.

Print Ads

The virtual public meeting and comment period were advertised in the publications listed in **Table 4.**

Table 4: Advertising Publications, 2024

Publication(s)	Run Date(s)	Includes Spanish Placement	Coverage Includes Tribal Communities
Arizona Republic	June 30, July 3, July 6		
La Voz Arizona	June 30, July 3, July 6	✓	
Navajo Hopi Observer	July 3	✓	✓
Gila River Indian News	July 5		✓
Navajo Times	July 3		✓
Fort McDowell Yavapai Nation News	July 3		
Yuma-Yuma Sun	July 5		✓
Bullhead City-Mohave Valley Daily News	July 3		

News Release

ADOT Public Information staff distributed two news releases to media outlets on June 19, 2024, and July 8, 2024.

Social Media

ADOT Digital Communications staff posted to ADOT's Facebook, Twitter, and NextDoor accounts multiple times between June 19 and July 14, 2024, providing information about the public meeting and commenting opportunities. During the commenting period, the EV specific posts garnered 795,258

social media impressions. The news releases were included in the following link https://azdot.gov/adot-news.

Tribal Engagement

In 2023, Tribes potentially impacted by the Plan, as well as agencies relevant to Tribes, were invited to a coordination meeting held on July 12, 2023. ADOT shared progress on the 2022 Plan and presented draft recommendations developed for the 2023 Plan update. Attendees communicated overall support for the program and their questions focused on the schedule for implementation, the selection of AFCs, and station locations.

The following entities were invited to the tribal coordination meeting in 2023:

- Colorado River Indian Tribes
- Hopi Tribe
- Ak-Chin Indian Community
- Fort Mojave Indian Tribe
- Fort McDowell Yavapai Nation
- Gila River Indian Community
- Hualapai Tribe
- Tonto Apache Tribe
- Navajo Department of Transportation
- Navajo Nation
- Salt River Pima-Maricopa Indian Community
- Mazatzal Casino
- Bureau of Indian Affairs
- FHWA Tribal Coordinator
- Inter Tribal Council of Arizona

ADOT also presented an overview of the 2023 Plan update at the ADOT-Navajo Nation DOT Partnership meeting in Window Rock on June 15, 2023. In preparation for the 2024 Plan, ADOT communicated with the Hopi Tribe and Navajo Nation. The meeting included Navajo interpretation.

Utility Engagement

Utility coordination and engagement is vital to developing an effective charging infrastructure network. To support the implementation of the 2022-2024 Plan updates, a survey was distributed each year to the state's utilities to gather information. The survey presented new proposed charger locations, including nearest route and exit number, and questions on the following topics:

- The nearest substation location at the town level.
- The proposed stations' charger load impacts the electric grid.
- Whether 600kW (700kW on the grid side with 85% PF) of power would overload the existing substation, would nearly reach full load, or would not overload the substation during peak hours.

- Whether three-phase service is available at each proposed station location.

The survey relevant to the 2022 Plan was sent in 2022 to the utilities listed in **Table 5**.

Table 5: 2022 Plan Service Area by Utility

Utility	Service Area
Arizona Public Service	Flagstaff, Prescott, Phoenix, Yuma
TEP/Trico	Tucson
Mohave Electric Cooperative	Mohave, Yavapai, and Coconino counties
Unisource	Mohave and Santa Cruz counties
Sulphur Springs Valley Electric Cooperative	Cochise, Graham, Pima, and Santa Cruz counties
Navopache Electric Cooperative	Apache, Greenlee, Gila, and Navajo counties

For the 2023 Plan, surveys were distributed to understand grid capacity at the planned deployments, including the utilities listed in **Table 6**.

Table 6: 2023 Plan Service Area by Utility

Utility	Service Area
Unisource Energy Services	Mohave and Santa Cruz counties
Arizona Public Service	Flagstaff, Prescott, Phoenix, Yuma
Electrical District No. 3	Maricopa and Stanfield
SRP	Phoenix
Navopache Electric Cooperative	Apache, Greenlee, Gila, and Navajo counties
Navajo Tribal Utility Authority (NTUA)	Navajo Nation
Page Utility Enterprises	The Greater Page Area

For the 2024 Plan, surveys were distributed to understand grid capacity at the planned deployments, including the utilities listed in **Table 7**.

Table 7: 2024 Plan Service Area by Utility

Utility	Service Area
Arizona Public Service	Part of Gila, Pinal, Navajo, and Apache counties
Navopache Electric Cooperative	Apache, Greenlee, Gila, and Navajo counties
Mohave Electric Cooperative	Mohave, Yavapai, and Coconino counties

Sulphur Springs Valley Electric Cooperative	Cochise, Graham, Pima, and Santa Cruz counties

Metropolitan Planning Organization / Council of Government Engagement

ADOT presented an overview of the draft 2023 Plan update to Arizona's Metropolitan Planning Organization (MPOs) and Council of Government (COGs) (i.e., rural planning organizations) to a statewide planners' meeting on June 9, 2023. An update of the 2024 plan was provided at the MPO COG Planners meeting on August 29, 2024. The following MPOs and COGs were invited to the meetings:

- Central Arizona Governments
- Central Yavapai MPO
- Lake Havasu MPO
- Maricopa Association of Governments
- MetroPlan Metropolitan Planning Organization for Greater Flagstaff
- Northern Arizona COG
- Pima Association of Governments
- Sierra Vista MPO
- Southeastern Arizona Governments Organization
- Sun Corridor MPO
- Western Arizona COG
- Yuma MPO

Site-Specific Public Engagement

ADOT issued an RFP in January 2024 for the implementation of charging stations along the Interstate highways, per the 2022 Plan. The RFP and the awarded contracts contained requirements pertaining to public engagement during the implementation of charging stations. See the Community Engagement During Station Implementation section for more information.

Plan Vision and Goals

To create a framework for the successful implementation of a statewide charging infrastructure network, ADOT developed the following vision and goals for the Plan. These goals will provide a baseline for program evaluation that will monitor three key areas to determine success: data collection, equitable access, and network reliability.

Vision

The Plan seeks to increase long-range mobility for EV drivers by closing the current gaps in the availability of charging station infrastructure along Arizona's AFCs, and supporting the development of an equitable, accessible, and reliable nationwide network of fast EV chargers.

Goals

ADOT has set six goals that an interconnected EVSE network must achieve to realize the agency's vision:

1. **Reduce range anxiety by closing gaps** in the EVSE network along Arizona's AFCs; thereby, fostering EV adoption.
2. Support the development of an EVSE network that is **resilient, equitable, accessible, and reliable.**
3. **Engage stakeholders and the public** in the planning, development, and installation of EVSE.
4. Identify **potential new AFC locations** during the outreach process.
5. Utilize **efficient contracting and procurement mechanisms**, maximizing the amount of infrastructure that can be built, considering future needs, and reducing risk(s) to support the EVSE network's long-term viability.
6. **Use data and performance metrics** to evaluate EVSE installation and operations to inform program improvements.

Annual Goals

The following 5-year program identifies specific goals for each year through 2026:

Completed Goals

The following goals have already been completed at the time of this publication:

2022 Goals

The following goals have been completed at the time of submitting this plan:

- Completed and submitted the 2022 Plan.
- Solicited public and stakeholder input on potential new AFCs to be considered for nomination.

2023 Goals

The following goals have been completed at the time of submitting this plan:

- Began the solicitation process for new/upgraded EVSE stations.
- Nominated new AFCs through the federal process.

- Completed and submitted the 2023 Plan.

2024 Goals

The following goals have been completed or will be underway in 2024.:

- Nominated new AFCs through the federal process.
- Prepared the 2024 Plan update.
- Awarded conditional contract(s) to upgrade existing stations and/or construct new stations, as identified in the 2022 Plan.
- The process to solicit and award contracts to upgrade existing stations and/or construct new EVSE stations on AFCs identified in the 2023 and 2024 Plan will begin in fall of 2024.

2025 – 2026 Goals

The following goals are anticipated:

- Nominate new AFCs through the federal process.
- Prepare the 2025 Plan update.
- Solicit and award remaining funding for EVSE construction.
- Install the EVSE.
- Evaluate the performance of NEVI Formula Program implementation.

5-Year Goal

The 5-year program culminates in the following 5-year goal:

- Use NEVI funds to complete the charging network on Arizona's 24 AFCs (including the 2025 preliminary proposed AFCs).

The Plan will be updated annually through 2025 to reflect the addition of new AFCs and station locations, based on available funding for the upcoming year.

Contracting

Status of Contracting Process

ADOT is using a public-private partnership contracting process to support this work and developed an RFP to select contractors who will design, build, own, operate, and maintain the charging stations (which may include upgrades) identified in the 2022 Plan. The contractor will also provide the required 20 percent match, with the remaining 80 percent covered by NEVI formula funds. All awards will be reimbursement-based; no advances of funds will be provided.

If a charging station identified in the Plan is installed on public land, such as a national park, funds may be awarded directly to public agencies.

To help inform RFP development, ADOT issued a Request for Information (RFI) on June 29, 2023, to gather industry feedback and met one-on-one with prospective proposers on August 8 to 9, 2023. In January 2024, the first RFP was issued for the 2022 charging stations. The solicitation closed in April 2024 with 49 applications received from nine proposers. ADOT intends to issue conditional awards by August 2024 with the contracting timeline shown in **Table 8**.

Table 8: Contracting Timeline

Milestone	Timeline
RFP Released for 2022 Locations	January 2024
Proposals Received	April 2024
Notice of Conditional Awards Anticipated	August 2024

ADOT is authorized to enter into agreements with public or private entities for the purposes of this program under Title 28, Chapter 22 ("Public-Private Partnerships in Transportation") of the Arizona Revised Statutes (A.R.S.). All contracting and procurement activities will be subject to the applicable requirements of 2 CFR Part 200 and 2 CFR Part 1200.

Awarded Contracts

ADOT has issued conditional awards for the eighteen locations for which proposals were received on the Interstates. The conditional awards involve sites designed to fill in gaps in the availability of fast charging stations along interstates I-10, I-8, I-40, I-17 and I-19. Final awards will be issued upon completion of NEPA approval of the selected sites and the issuance of signed contracts later this year. The Arizona interstate EV Infrastructure conditional award locations are illustrated in **Figure 1** and **Table 9** below.

Figure 1: Map of Conditional Arizona NEVI Awards Along Interstates

Table 9: Electric Vehicle Charging Stations – Phase 1 Conditional Award Locations

NEVI Zone	Route	County	NEVI Area	Conditional Awardee	Location	Number of Ports
1	I-10	La Paz	Salome	**Pilot**	Pilot Travel Center 48286 Vicksburg Road Salome, AZ 85346	4

NEVI Zone	Route	County	NEVI Area	Conditional Awardee	Location	Number of Ports
2	I-10	Maricopa	Tonopah	**No Proposals Received**		
3	I-10	Pinal	Casa Grande	**Tesla**	Culver's 2453 E. Florence Blvd. Casa Grande, AZ 85194	6 (upgrade)
4	I-10	Pinal	Eloy	**Trillium**	Love's Travel Stop 5000 N. Sunland Gin Road Eloy, AZ 85131	4
5	I-10	Pima	Tucson	**Tesla**	Rudy's 2130 E. Ajo Way Tucson, AZ 85713	7
6	I-10	Cochise	Willcox	**Tesla**	Holiday Inn Express 1251 Virginia Avenue Willcox, AZ 85643	5 (upgrade)
7	I-10	Cochise	San Simon	**EV Gateway**	76 Gas Station 2500 W. Business I-10 San Simon, AZ 85632	4
8	I-17	Yavapai	Cordes Junction	**Trillium**	Love's Travel Stop 14414 S. Cross L Road Mayer, AZ 86333	4

NEVI Zone	Route	County	NEVI Area	Conditional Awardee	Location	Number of Ports
9	I-17	Yavapai	Camp Verde	**Red E Charge**	Starbucks 1620 AZ-260 Camp Verde, AZ 86322	4
10	I-17	Coconino	Munds Park	**Red E Charge**	Kota's Coffee 17680 S. Munds Ranch Road Munds Park, AZ 86017	4
11	I-19	Santa Cruz	Nogales	**Trillium**	Love's Travel Stop 739 Frontage Road Nogales, AZ 85621	4
12	I-19	Pima	Green Valley	**Francis Energy**	Valley Verde Center 140 W. Duval Mine Road Green Valley, AZ 85614	4
13	I-40	Mohave	Lake Havasu	**Trillium**	Love's Travel Stop 14875 AZ-95 Lake Havasu City, AZ 86404	4
14	I-40	Mohave	Kingman	**Trillium**	Love's Speedco 875 TY Road Kingman, AZ 86401	4
15	I-40	Yavapai	Seligman	**Tesla**	Chevron Gas Station 21355 I-40 Seligman, AZ 86334	5

NEVI Zone	Route	County	NEVI Area	Conditional Awardee	Location	Number of Ports
16	I-40	Coconino	Twin Arrows Casino	**Francis Energy**	Mobil Gas Station 140 Meteor Crater Road Winslow, AZ 86047	4
17	I-40	Navajo	Holbrook	**Tesla**	Burger King 2096 Navajo Blvd. Holbrook, AZ 86025	7
18	I-40	Apache	Petrified Forest National Park	**No Proposals Received**		
19	I-40	Apache	Sanders	**No Proposals Received**		
20	I-8	Yuma	Tacna	**Tesla**	Chevron Gas Station 28864 Commerce Way Wellton, AZ 85356	7
21	I-8	Maricopa	Gila Bend	**Trillium**	Love's Travel Stop 820 W. Pima Street Gila Bend, AZ 85337	4

Scoring Methodologies Utilized

ADOT issued an RFP in 2024 to select contractors to design, build, own, operate, and maintain the charging stations identified in the 2022 Plan. The scoring methodology included in the RFP for each technical package is detailed in this section and in **Tables 10** and **11**.

Table 10: Technical Package Points and Evaluation Criteria

Scoring Element	Points
Proposer Experience and Qualifications	500
Proposer Organization and Management Extent to which the Proposer's (and the Proposer's Project partners, subcontractors, and suppliers) overall qualifications, including management background, experience, and technical competence, indicate the likely success of the Project in terms of meeting ADOT's goals/objectives and the requirements set forth in the Project Agreement.	100
Proposer Experience Extent to which the Proposer demonstrates firm experience in the deployment and successful operation of EVSE and the extent to which the Proposer demonstrates experience engaging with underserved and disadvantaged communities, including local, small, women-owned, minority-owned, veteran-owned, and/or other diverse business and or workforce in project delivery. Preferred experience includes: implementation and operation of EVSE with similar requirements to the NEVI Formula Program; EVSE in operation for durations of six months or longer; and EVSE experience with multiple agencies/states. The number of EVSE sites in active operation will also be considered.	200
Key Staff Experience with Resumes Designates a Project Manager, Design Manager, Construction Manager/Electrician and O&M Manager that demonstrates experience and qualifications in the management of complex projects and programs and satisfies those qualifications set forth in PA Exhibit 2-1 (*Key Personnel Requirements*). Preferred experience includes: understanding of schedule drivers related to EVSE implementation; experience with Title 23 federal-aid projects is preferred. The Key Personnel proposed in the Proposer's Proposal shall not be changed prior to Project Agreement execution without ADOT's prior approval.	200
Project Approach	500
Approach to Project Development Extent to which the Proposer clearly and concisely responds to the applicable directions and describes its understanding and approach of the necessary activities to successfully develop and deliver the Project in compliance with all applicable state and federal standards.	200

Scoring Element	Points
Approach to Operations and Maintenance Extent to which the Proposer clearly and concisely responds to the applicable directions and describes its understanding and approach of the necessary activities to successfully operate and maintain the Project.	200
Approach to Data Interface and Cybersecurity Extent to which the Proposer clearly and concisely responds to the applicable directions and describes its understanding and approach of the necessary activities to safely and securely obtaining, managing, and reporting required data.	60
Approach to Safety, Training and Workforce Development Extent to which the Proposer clearly and concisely responds to the applicable directions and describes its understanding and approach to manage and mitigate incidents during all project activities, develop a training program, and develop workforce and educate third-parties. Extent to which the Proposer clearly demonstrates its intent to engage with underserved and disadvantaged communities, including local, small, women-owned, minority-owned, veteran-owned and/or other diverse businesses and/or workforces in delivery of the Project.	40
Total Evaluation Score	**1000**

Table 11: Technical Package Points for Multiple NEVI Zone Submittal Package Submissions

Scoring Element	Points
Proposer has submitted a responsive NEVI Zone Submittal Package for 2 to 3 different NEVI Zones.	20
Proposer has submitted a responsive NEVI Zone Submittal Package for 4 to 5 different NEVI Zones.	40
Proposer has submitted a responsive NEVI Zone Submittal Package for 6+ different NEVI Zones.	60

Each NEVI Zone Site Information Package will be evaluated to determine its ability to meet or exceed the project goals, values, and requirements. The NEVI Zone Site Information Package will be scored as described in **Tables 12 and 13**.

Table 12: Proposer NEVI Zone Site Information Package Points and Evaluation Criteria

Scoring Element	Points
NEVI Zone Site Information	600
Access and Site Layout Extent to which the site is easily accessible and is located in a convenient area of the property. Extent to which the Site is in compliance with the ADA.	300
Power Availability Extent to which the site is capable of meeting or exceeding the total power requirements and the total ports available.	50
Communications Extent to which the site is capable of meeting or exceeding the communications and networking requirements.	50
Innovation and Resiliency Extent to which the site incorporates innovation and resiliency in its construction means and methods, site layout, and other solutions such as energy storage, back-up power, make-ready inclusion or others.	100
Schedule Extent to which the Proposer has proposed a realistic schedule for development of the site and that the completion date meets project requirements. Extent to which Proposer has identified key risks and considerations and approaches to mitigate and maintain schedule.	100

Table 13: NEVI Zone Site Information Package Points for NEVI Zone Site Enhancements

Scoring Element	Points
Site design includes futureproofing concept beyond the minimum requirements for the Project (e.g., make-readies, space for additional ports)	20
At least one EV charging port at the station allows for a vehicle with a trailer to pull through and not have to back up when charging is complete.	20
Charging capacity is equal to or greater than 300 kilowatt ("kW") for at least one port.*	20
Charging capacity is equal to or greater than 300 kW for all ports.*	50

** Only one bonus, for 20 points or 50 points, will be applied per NEVI Zone Site Information Package Points determination.*

Evaluation of the NEVI Zone Pricing Package

Each NEVI Zone Pricing Package will be evaluated by ADOT to determine its ability to meet or exceed the project goals, values, and requirements. The "NEVI Zone Pricing Package" will be reviewed based on the pass/fail criteria in Section 3.1.3 of the RFP. A Price Value will be calculated by ADOT for those packages that pass the pass/fail review.

A Proposer's Price Value for each NEVI Zone for which such Proposer submits a proposal will be the total requested federal share reflected in Line 6 of ITP Form 6-1 (*Price Summary)*.

Each Proposer shall also provide supplemental financial plan information as required by ITP Form 7 (*Supplemental Financial Plan Information)* to assist in ADOT's review of the Proposer's plan of finance and financial capacity to perform the project.

Best Value Determination

The best value determination for each NEVI Zone will be based on a 60-30-10 percentage weighting. The Proposer Technical Score will represent approximately 60 percent of the total score, the NEVI Zone Site Score will represent approximately 30 percent of the total score, and the NEVI Zone Price Score will represent approximately 10 percent of the total score. The determination of apparent Best Value Proposer for an applicable NEVI Zone will be calculated based on the highest Total Proposal Score for such NEVI Zone computed using the following formula:

Total Proposal Score = Proposer Technical Score + NEVI Zone Site Score + NEVI Zone Price Score

Proposer Technical Score

The Proposer Technical Score will be calculated based on the total evaluation score for the Technical Package (maximum of 1,000 points, plus any applicable bonus points as described in Table 3.2B) as described in ITP Section 3.2 of the RFP. The Proposer Technical Score will be calculated using the following formula:

Proposer Technical Score = Proposer's total evaluation score x 0.06

NEVI Zone Site Score

The NEVI Zone Site Score will be calculated based on the total evaluation score for the NEVI Site Information Package (maximum of 600 points, plus any applicable bonus points for enhancements as described in Table 3.3B) as described in ITP Section 3.3 of the RFP. The NEVI Zone Site Score will be calculated using the following formula:

NEVI Zone Site Score = (Proposer's total evaluation score for the applicable NEVI Zone / Highest total evaluation score for the applicable NEVI Zone) x 30

Proposer's total evaluation score = Proposer's total evaluation score as determined pursuant to ITP Section 3.3 of the RFP.

Highest total evaluation score = Highest total evaluation score for a Proposer for the applicable NEVI Zone as determined pursuant to ITP Section 3.3 of the RFP.

NEVI Zone Price Score

The NEVI Zone Price Score will be calculated using the following formula:

NEVI Zone Price Score = (Lowest Price Value / Proposer's Price Value) x 10

Lowest Price Value = Lowest Price Value submitted by a Proposer for the applicable NEVI Zone as determined pursuant to ITP Section 3.4 of the RFP.

Proposer's Price Value = Proposer's Price Value for the applicable NEVI Zone as determined pursuant to ITP Section 3.4.

Notice of Conditional Award

Following ADOT's determination of the Best Value Proposer for the project associated with a NEVI Zone, ADOT will issue to the Best Value Proposer for such NEVI Zone a notice of conditional selection for the project (such notice, the "Notice of Conditional Award") and a notice of non-selection to all other Proposers.

After the issuance of the Notice of Conditional Award, the conditionally selected Proposer for such NEVI Zone will be referred to as the "Conditional Awardee," and the Conditional Awardee will be deemed to have a "Conditional Award." For the avoidance of doubt, a Conditional Award is not a commitment to issue an award.

Conditional Award Requirements

Conditional Awards are contingent on completion of the processes required in this ITP Section 3.7, subject to ITP Section 3.7.3 of the RFP.

National Environmental Policy Act Clearance

The Conditional Awardee must work with ADOT to obtain environmental clearances for the site and work related to EVSE installation as required by the National Environmental Policy Act (NEPA) and described in ITP Section 1.3.4. The anticipated duration for the NEPA process is 60 days. If ADOT determines, in its sole discretion, that the NEPA process (i) will take longer than 60 days, (ii) would result in an undue cost or burden to ADOT, or (iii) would result in a negative impact to the environment, ADOT reserves the right to request additional information or reject the project site and select the next Best Value Proposer for the NEVI Zone. ADOT does not intend to execute a Project Agreement with respect to a NEVI Zone prior to obtaining the required NEPA clearance related thereto.

Conditional Awardees are advised that the NEPA process could result in the selection of a no-build alternative for a project. Nothing contained in this RFP or the Project Agreement commits ADOT or a Conditional Awardee to the construction of a project site, or any project alternative unless NEPA approval is obtained (and then only to the extent set forth in the NEPA approval). After a successful NEPA approval has been received, a final award will be issued.

Justice40 and Status of Disadvantaged Locations

The Justice40 and disadvantaged status for the locations proposed in the first RFP are shown in **Table 14**.

Table 14: Justice40 and Disadvantaged Status for 2022 Plan Locations

NEVI Zone Number	Route	Exit Numbers	Tract	Identified as Disadvantaged?
1	I-10	45	04012020501	Yes
2	I-10	94	04013050603	No proposals received/Yes
3	I-10	194	4021001407	Partial
4	I-10	200	04021001900	Yes
5	I-10	263	Various	No
6	I-10	336	04003000201, 04003000202	Yes
7	I-10	378	4003000100	Yes
8	I-17	262	04025001500, 04025001401	Yes
9	I-17	287, 289, 293	04025001601, 04025001603	Yes
10	I-17	322	04005001500	No
11	I-19	12	Various	Yes
12	I-19	69	04019004317 other various	No
13	I-40	9	4015954800	Yes
14	I-40	66	4015954800	Yes
15	I-40	123	4025002100	Yes
16	I-40	211, 219, 233	04005001500	No
17	I-40	283, 285, 286, 289, 292, 294	04017960200	Yes
18	I-40	311, 325	4001945100	No proposals received 311- No; 325 - No
19	I-40	333, 339, 341,	04001945100,	No proposals

NEVI Zone Number	Route	Exit Numbers	Tract	Identified as Disadvantaged?
		351	04001945002	received/Yes
20	I-8	30, 42	04027011201, 04027011202	Yes
21	I-8	115	04013723305	Yes

Strategies Leading to Efficient and Effective Deployment Against Plan Goals

ADOT will use NEVI Formula Program funds for new EVSE station operations and maintenance costs.

ADOT will require, via contract terms, that infrastructure be maintained and operated at the same location for a period of no less than five years from the installation date with the consideration of providing service beyond the use of NEVI Formula Program funds. Contract terms may require that awardees for new stations post a performance bond to guarantee that the EVSE remains operational for the five-year performance period.

Community Engagement During Station Implementation

Contractors must ensure the locations are in line with the community's needs, barriers to implementation are identified upfront, and the station will ultimately be used by the community. Community engagement requirements will be included in all contracts. Community engagement activities shall comply with civil rights requirements, the ADOT Public Involvement Plan, and the NEVI Standards and Requirements.

Compliance with State and Federal Requirements

Solicitations will comply with all applicable federal and state requirements. They will be advertised and made available to potential proposers through appropriate distribution channels. ADOT will hold a pre-proposal meeting or other meetings, as appropriate, with potential proposers to discuss program goals, selection criteria, and other topics.

Solicitation documents will provide detailed information on submittal requirements, eligibility, program goals, and standards for station upgrade, installation, operation, and maintenance, as applicable. Administrative and other applicable requirements including NEVI Formula Program requirements, applicable state requirements, and applicant responsibilities relating thereto, and other relevant information will also be included.

ADOT will ensure that solicitation documents and contracts executed with all parties awarded NEVI Formula Program funding comply with Title 23 U.S.C., 23 CFR Part 680; or FHWA Special Experimental Project No. 14; and all applicable requirements under 2 CFR Part 200. Contract provisions will require that all applicable federal requirements are met by the awardee, and appropriate monitoring will be conducted to verify compliance.

Public Disclosure Requirements

ADOT intends to comply with the NEVI Standards and Requirements relating to contracting with private entities. The following strategies are based on the Standards and Requirements.

- ADOT will comply with the FHWA's public disclosure requirements, as published in the NEVI Standards and Requirements, for the documents concerning the operations of EVSE including the procurement process used, price of award, the number of bids received, the identification of the awardee, the proposed contract with the awardee and, in accordance with state law and the financial summary of contract payments. ADOT will ensure these items are made publicly available whether through an announcement, public comment period, or other means.
- Any agreements for the operation and maintenance of an EVSE will be subject to A.R.S. Title 28 (Transportation), Chapter 22 (Public-Private Partnerships in Transportation), 2 CFR Part 200 and 2 CFR Part 1200.

Additional Public Disclosure Considerations

ADOT will encourage station owners to consider electricity rates in the surrounding community when setting a pricing structure to confirm users are being reasonably charged. The rate should offset the lifetime cost of the charging station, including:

- Need to recover fixed operating costs
- Need to recover usage-based or other variable operating costs
- Management of vehicles left in EVSE parking spaces for extended periods or other misuse patterns
- Incentivizing charging during lower-cost off-peak hours
- Ability of targeted users to access or enable the EVSE
- Ability of targeted users to pay for and afford charging rates
- Need for networked versus non-network stations to apply charges and process payment

Station owners will be encouraged to take advantage of offerings from local utilities to minimize upfront and operational costs. Additionally, electric utility providers may offer electricity rates that encourage the recharging of vehicles during off-peak, overnight times that may be much lower than on-peak, midday times.

Prior to finalizing the RFP that will solicit prospective contractors to implement the 2022 plan, ADOT was required by A.R.S. Section 28-7704(I) to hold a public hearing on charging station usage costs. A public hearing was held on October 18, 2023.

Environmental Compliance

Projects that require federal approval and are funded by FHWA must meet the requirements of the NEPA. Development of the statewide EV Plan qualifies as a Categorical Exclusion (CE) under 23 CFR 771.117I(1) because it is a planning activity.

The installation of EV charging infrastructure is a separate activity that will require an additional environmental approval. ADOT anticipates performing the environmental review and approval of the awarded EV charging sites. A vast majority of federal-aid projects have no significant environmental

impacts and can be determined to be a CE. It is anticipated that EV charging sites would meet the definition of a CE under 23 CFR 771.117(c)(21). Pursuant to 23 U.S.C. 326, the FHWA Arizona Division and ADOT have entered into a Memorandum of Understanding (MOU) for the State Assumption of Responsibility for CEs. The CE Assignment MOU (326 MOU) was signed by the FHWA and ADOT on January 3, 2018, and the second renewal was signed on December 20, 2023. CEs listed under 23 CFR 771.117(c) are approved by ADOT under the 326 MOU.

All CE determinations follow documentation requirements, proper CE determination under 23 CFR 771.117 (c) and (d), environmental analysis, re-evaluation under 23 CFR 771.129, evaluation of "unusual circumstances," inclusion of environmental commitments, and exercise of proper approval authority under the aforementioned 326 MOU. Utilizing an ADOT CE Checklist, supported by cultural, biology, hazardous materials, air quality, and noise, among other technical evaluation criteria, assesses project impacts. The environmental review and required documentation would be appropriate to the scope of each project and specific conditions at each site. Upgrade sites located at existing charging sites that require minimal or no ground disturbance may be covered by a CE type that reflects minimal cultural, biology, and hazardous materials investigations. Sites where new charging stations are installed may experience more ground disturbance and would require a higher level of environmental study and documentation. If project activities have the potential to impact cultural resources, these sites may require cultural resources investigations and consultation under Section 106 of the National Historic Preservation Act. Land ownership of the site will also be considered. Any sites on tribal land may require additional approvals or outreach to the affected Native American Tribes.

The timeline for CE approval is dependent upon project-specific circumstances and approvals. CEs for upgrades to existing charging sites with minimal ground disturbance can be expected to take approximately three months to complete and obtain approval. CEs for new build sites with more ground-disturbing activities, or those requiring cultural resources survey and/or Section 106 consultation, may take up to six months to complete and obtain approval. In addition, certain technical studies such as hazardous materials or biological surveys may need to be updated if extensive time has transpired between conclusion of the environmental process and the start of construction. Any subsequent environmental fieldwork is often completed prior to the start of construction and execution time should be considered in site location scheduling.

Civil Rights

ADOT will comply with NEVI Standards and Requirements as they relate to civil rights. To ensure all EVSE customers and participants are provided with equitable opportunities to engage in EVSE offerings, the Plan complies with state and federal civil rights laws and regulations, including Title VI of the Civil Rights Act of 1964 (Title VI), the Americans with Disabilities Act (ADA) of 1990, Section 504 of the Rehabilitation Act of 1973, Executive Order 12898 on Environmental Justice, and Executive Order 13166 on Improving Access to Services for Persons with Limited English Proficiency (LEP).

Title VI prohibits discrimination on the basis of race, color, or national origin, either directly or indirectly in the types; quantity, quality, or timeliness of program services; aids; or benefits that they provide or in the manner in which they provide them, in any program that receives federal funds or other federal financial assistance. Executive Order 13166 for LEP requires recipients of federal financial assistance to take reasonable steps to provide LEP individuals with language services (oral or written) to ensure

meaningful access to the agency's programs, activities, and services. Identification of LEP persons is required to ensure access to language services pursuant to this Executive Order. To ensure nondiscriminatory practices based on Title VI, ADOT will:

- Ensure public outreach materials, including handouts, posters, and other communications, are accessible to all persons in alternative language formats and provide vital documents in English and Spanish.
- Ensure EVSE stations provide information, instructions, and other communications in English and Spanish by including these requirements in future contracting and procurement mechanisms.
- Ensure that automated toll-free phone numbers and short messaging service (SMS) payment options are accessible to all persons in alternative language formats.

ADA prohibits discrimination and guarantees that people with disabilities have the same opportunities as everyone else to participate in the mainstream of American life, including employment opportunities, purchasing goods and services, and participating in state and local government services. The following efforts will be instituted to comply with the statutory requirements of the ADA and the NEVI Standards and Requirements:

- Ensure EVSE stations include accessible parking spaces and are developed in accordance with ADA and Architectural Barriers Act Disability Guidelines for transportation facilities, including but not limited to the Public Right-of-Way Accessibility Guide.
- Follow procedures outlined in ADOT's Transition Plan for Public Rights-of-Way, including Title II: Public Services and Transportation.
- Maintain EVSE station signage that clearly designates all available facilities and accessible entrances and exits from those facilities.
- Ensure that access for people with disabilities be provided in the creation of payment instructions, SMS payment options, and toll-free phone numbers.
- Ensure that public meetings and outreach efforts are ADA-compliant. This includes, among other efforts, ensuring that public meetings are accessible to everyone, including those with disabilities, that venues are accessible by ADA-compliant transportation options, and information provided is in accessible formats for persons with vision or hearing disabilities.

Section 504 of the Rehabilitation Act protects qualified individuals from discrimination based on their disability by forbidding organizations and employers from excluding or denying individuals with disabilities an equal opportunity to receive program benefits and services. To ensure nondiscriminatory practices based on Section 504, ADOT will:

- Provide Notice of Reasonable Accommodations language at EV charging stations in English and Spanish.

Executive Order 12898 on Environmental Justice requires "the fair treatment and meaningful involvement of all people, particularly minority and low-income populations, in the environmental decision-making process." The United States Department of Transportation (USDOT) Order 5610.2(a) and FHWA Order 6640.23A require compliance with Executive Order 12898. This includes the "full and fair participation by all potentially affected communities in the transportation decision-making process."

Executive Order 14008 on Tackling the Climate Crisis (Justice40) states that "40 percent of the overall benefits" of federal investments from covered programs should flow to DACs. To respond to the Justice40 directive, ADOT will adhere to and comply with the NEVI Standards and Requirements.

To ensure nondiscriminatory practices based on Environmental Justice, ADOT will:

- Identify and engage low-income and minority populations in the Plan development.
- Identify and consider low-income and minority populations in siting EVSE stations.
- Follow the plan outlined in the *Equity* section of this Plan.
- Follow the other mandates of Justice40 as they evolve.

Nondiscrimination practices will be implemented and enforced in compliance with NEVI Standards and Requirements.

Existing and Future Conditions Analysis

This analysis summarizes current EV and associated equipment technologies, Arizona geography and travel patterns, existing and planned EVSE infrastructure, a forecast on EV adoption, and a charging demand analysis for Arizona through 2040. This section has been updated to include the latest data on existing conditions and new AFC designations for the 2024 Plan.

Electric Vehicle Basics

EVs are powered by electric motors, while internal combustion engine (ICE) vehicles are powered by fossil fuels. Current specifications for a typical EV are shown in **Table 15**.

Table 15: Typical EV Technical Specifications

Specification	Description	Value
Vehicle size	Types of EV available on the market	Commonly sedans. Beginning to develop SUVs and trucks.
Range	The distance that a battery in an EV vehicle can travel before needing to be recharged	150 to 400 miles[4]
Efficiency	The mileage of an EV per unit capacity of the battery	3.73 mi/kilowatt hour (kWh)[5]
Battery size	The battery capacity of an EV	70-123 kWh[6]
Battery pack cost	The cost of an EV battery per unit capacity	$134/kWh[7]

Charger Types

EV chargers come with different connector types and power outputs, which directly affect the charging time of the vehicle. The higher the power output, the shorter the charging time required. There are three classifications for charger power levels.

Level 1 chargers utilize standard 20-ampere, 120-volt outlets commonly found in homes. Charging speeds are slow, providing a rate of 2 to 5 miles of range per hour. These chargers are suitable for home and overnight charging locations. However, Level 1 charging is becoming less common as battery capacity increases, and they are now primarily used as emergency chargers.

[4] U.S. Department of Energy. (n.d.) Electric Vehicles. Alternative Fuels Data Center. Retrieved from https://afdc.energy.gov/vehicles/electric.

[5] BloombergNEF, Marklines, EPA, Cartac. (n.d.) Global average BEV efficiency.

[6] BloombergNEF. (n.d.) Impact of learning rate scenarios on year of upfront price parity by pack region, vehicle segment, pack size and market share.

[7] BloombergNEF. (n.d.) Implication for battery pack price parity point.

Level 2 chargers require higher-voltage outlets, specifically 220 volts, the same as the voltage outlets used by a clothes dryer. The higher voltage enables a faster charging rate of 10 to 30 miles of range per hour. Level 2 chargers are typically found in EV charging stations at workplaces, curbside parking spots, hotels, parks, and other public destinations and are most beneficial at locations where longer dwell times are expected.

Level 3 chargers, also known as DCFC chargers, allow for even higher speed charging but necessitate commercial-grade power levels. Power output levels vary from 50kW to 350kW, with NEVI requiring a minimum of 150kW per charging port. Charging times are generally less than a half-hour. Installing Level 3 chargers requires close collaboration with the local electric utility because these chargers demand higher power capacity and quality than Levels 1 or 2 chargers.

For DCFC chargers, the NEVI program requires that each charger use the J1772 Combined Charging System (CCS) connector. NEVI formula funds may be used for the installation of other proprietary and nonproprietary connectors in addition to CCS. This includes the SAE J3400, North American Charging Standard (NACS) connectors, used by Tesla charging stations and increasingly by other auto manufacturers (**Table 16**). ADOT is planning to include NACS as an option in addition to CCS in the next solicitation.

Table 16: Common EV Connector Types

EV Connector Type	Charger Description
 J1772	The primary connector type used for Level 1 and Level 2 charging.
 CCS	A CCS is a J1772 connector with additional ports to enable DCFC.
 CHAdeMO	Used on many U.S. cars for DCFC only. Vehicles with CHAdeMO will have a second inlet (SAE J1772) for Level 1 and Level 2 charging.
 NACS Combo	Used by Tesla (for Level 1, Level 2, and DCFC). NACS has been adopted recently as the new standard for numerous other manufacturers. NACS is being standardized with the SAE J3400 connector.

Public Charging Infrastructure

The availability of a publicly accessible charging network plays a critical role in promoting the adoption of EVs in an equitable and inclusive manner. A network of widely available public charging infrastructure offers several important benefits such as:

- *Providing alternatives to at-home EVSE installation:* Many individuals encounter obstacles when attempting to install EVSE at their residences. High installation costs or the complexities associated with rental units and multi-family dwellings can be challenges. By having a comprehensive public EVSE network in place, people may consider purchasing an EV even if they

lack access to an EVSE at home. Additionally, at-home charging may not be the most convenient charging location for EV owners. Workplace and public charging stations provide flexible recharging options for owners' daily use.

- *Reducing driver range anxiety:* One of the most common reasons cited by drivers in not choosing to drive an EV is the fear of running out of battery charge before reaching the desired destination or a charging location. This fear is commonly referred to as range anxiety. A robust network of public EVSE infrastructure can alleviate this concern by providing convenient charging options.
- *Facilitating inter- and intra-state travel:* To enable long-distance EV travel across the U.S., it is necessary to establish an EVSE network along major highway corridors. The USDOT has collaborated with states to develop the AFC program, which aims to identify roads on the NHS as corridors for the development of infrastructure for a range of alternative fuels, including a national network of EV chargers. NEVI formula funds can only be spent on EVSE infrastructure on AFCs. These chargers will be fully accessible to the public and strategically placed with sufficient density to support long distance travel within states and across the country.

Existing State Characteristics

State Geography, Terrain, Climate, and Land Use Patterns

Geography and Terrain

Arizona is located in the southwestern part of the U.S. and shares borders with California, Nevada, Utah, Colorado, and New Mexico. The state borders Mexico to the south. The western border of Arizona is formed by the Colorado River, which flows from the Grand Canyon in the north through Lake Mead, and passes along Bullhead City, Lake Havasu City, Parker, and Yuma in the southwestern corner of the state.

Arizona has vast stretches of arid desert land, mainly in the central, southern, and western parts, including the Sonoran, Chihuahuan, and Mohave deserts. Despite having extensive low-lying desert landscapes, over half of the state's area lies above an elevation of 4,000 feet above sea level. The elevation increases to the north and east, leading to more mountainous regions characterized by the Mogollon Rim, which cuts diagonally across the state's higher-elevation mountainous area, and the Colorado Plateau, where the Navajo and Hopi tribal lands are located. Arizona boasts internationally recognized natural landmarks such as the Grand Canyon, Painted Desert, Petrified Forest, Chiricahua National Monument, and Monument Valley.

Geographically, Arizona can be divided into three regions: the Colorado Plateau, the Basin and Range Province, and the Central Highlands. The northeastern part of the state is known as the Colorado Plateau, which also extends into Utah, Colorado, and New Mexico. In Arizona, this area consists mostly of tablelands occasionally interrupted by mesas and plateaus, exemplified by Monument Valley. The highest peaks in the state, Humphrey's Peak (12,633 feet) in the San Francisco Mountains and Baldy Mountain (11,403 feet) in the White Mountains, are situated in the southern part of the Colorado Plateau. This region then transitions into the Central Highlands, characterized by plateaus, rugged mountain peaks, and rolling hills. The Basin and Range Province occupies a significant portion of the Sonoran Desert, where vast open valleys provide the environment for the expansive urban growth of major cities like Phoenix and Tucson.

Arizona possesses a diverse range of natural and built landscapes, including large urban metropolitan areas, snow-capped volcanic peaks in the San Francisco Mountains, the sprawling Sonoran Desert, extensive tribal lands, and the lush Coconino National Forest. These landscapes offer both opportunities and limitations for efficient transportation of goods and people. Most of Arizona's built environments were developed after World War II and have been influenced by the construction of faster transportation options, particularly Interstate highways. The Phoenix metropolitan area, the fifth largest in the country, serves as the primary hub of development and economic opportunities. The region has experienced accelerated growth, partly due to the efficient vehicular transportation systems in place, also including Interstate highways, a modern freeway system, and a well-developed urban arterial grid-based network.

Climate

Arizona experiences a diverse range of weather patterns that vary depending on the season and region of the state. The weather in Arizona can be broadly categorized into two climates: The southern and western parts of the state, including Maricopa, Yuma, Pima, La Paz, Mohave, Santa Cruz, Pinal, Cochise, and Graham counties, consist mainly of arid lands. Conversely, the northern and eastern regions, including Coconino, Yavapai, Gila, Greenlee, Navajo, and Apache counties, have a more alpine climate.

During summer, temperatures in Arizona generally reach their peak, with daytime highs frequently ranging from 90 degrees Fahrenheit (°F) to 110°F. The hottest areas are located in the Sonoran Desert in the south, central, and southwest regions. Summer nights typically bring temperatures between 50°F and 90°F. These significant fluctuations between high and low temperatures contribute to a high potential for dust storms and monsoon storms. Coupled with the dry terrain, these weather phenomena can lead to flash floods and unsafe travel conditions.

Winters in Arizona are comparatively milder than summers, with average highs around 70°F in lower-elevation areas. However, nighttime temperatures regularly dip below freezing. The northern highlands, including Flagstaff, the largest city in northern Arizona, experience the most severe winter conditions, with an average annual low temperature of 32°F.

In terms of rainfall, Arizona receives an average of 13 inches per year, with the majority occurring during late summer and fall. The northern high elevations can experience greater rainfall, reaching up to 20 inches annually, while the southern desert regions receive less frequent rainfall but have late summer monsoon seasons that contribute significantly to the total yearly rainfall. Areas with the highest annual rainfall include Payson (20 inches), Coronado National Monument (21 inches), Flagstaff (21 inches), and Williams (22 inches). Conversely, the lowest annual rainfall is concentrated in western Arizona, including Parker (4.6 inches), Lake Havasu City (4.2 inches), and Yuma (3.3 inches). Snowfall is more common in the northern and eastern parts of the state, occurring between November and March. Locations with the highest annual snowfall include Show Low (19 inches), Grand Canyon Village (43 inches), Williams (65 inches), and Flagstaff (90 inches). Despite some of these snowy areas having fewer inhabitants, Arizona is home to numerous popular recreational areas that attract significant traffic even during adverse weather conditions.

Land Use

The development patterns in Arizona are closely intertwined with land use and transportation. In the early history of the state, towns initially sprouted around and in proximity to train stops. Over time, as

technology advanced, land use patterns continued to align with transportation trends, particularly with the rise of automobiles and, more significantly, the Interstate Highway System. This period coincided with Arizona's most prominent growth phase.

Land in Arizona is categorized into private, public, and state property. Approximately 18 percent of the land is privately owned. The federal government owns 39 percent (28.1 million acres out of 72.7 million acres) of land in Arizona, primarily allocated among the U.S. Forest Service, National Park Service, Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation, and the U.S. Department of Defense. The State of Arizona itself possesses an additional 13 percent of land (9.6 million acres) through the state trust, resulting in just over 51 percent of Arizona's land being under government control.

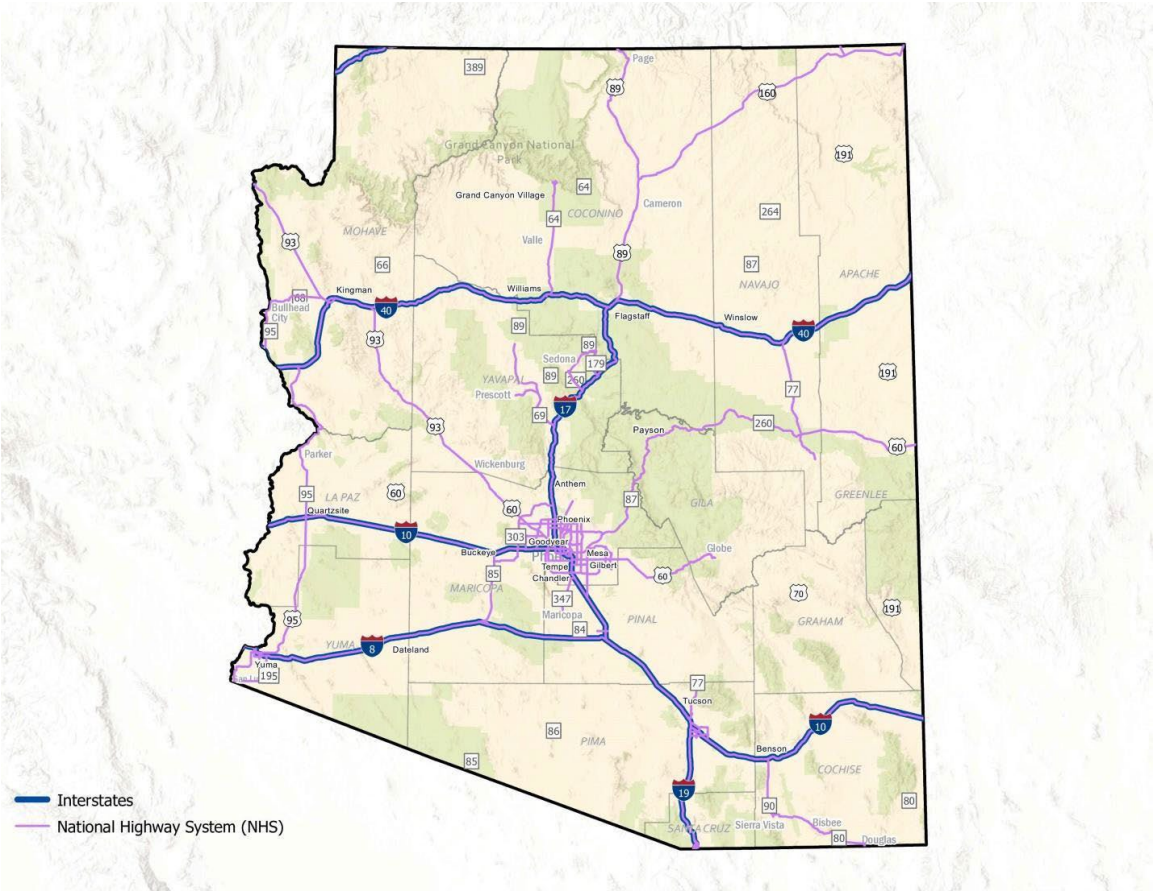
Moreover, Arizona encompasses extensive tribal lands, with the largest being the Navajo Nation, spanning 17.54 million acres across northeastern Arizona, Utah, and New Mexico. Overall, 28 percent of the land in Arizona (equivalent to 20.1 million acres) is occupied by 22 Federally Recognized Indian Tribes.

State Travel Patterns, Public Transportation Needs, Freight and Other Supply Chain Needs

In 2021, the Arizona State Highway System totaled 7,767 centerline miles, including 1,168 centerline miles of Interstate highway. A map of the NHS, the road system important to the nation's economy, defense, and mobility, in Arizona is shown in **Figure 2**. Arizona's entire roadway network (including local roads) had 74,863 centerline miles.[8]

[8] ADOT. (n.d.) Fast Facts from ADOT. Retrieved from https://azdot.gov/fast-facts

Figure 2: Arizona National Highway System



As EVs are increasingly adopted for private use, they are also increasingly being adopted by public transit agencies and fleet operators. Many public transit agencies across the state have already begun to plan for electrification of their fleets or are already in implementation phases. The cities of Phoenix and Tempe have begun converting their bus fleets to low-emission and zero-emission fuel sources, with the goal of achieving a zero-emission bus fleet by 2040.[9] The City of Phoenix officially procured the electric buses at the beginning of 2023. Phoenix and Valley Metro, the agency that operates transit systems in the Phoenix metropolitan area, have also received a $16.3 million grant from the Federal Transit Administration (FTA) to help fund the purchase of electric buses and construct charging infrastructure.[10] Additionally, the Phoenix Union High School District began using electric buses in 2020 and is continuing efforts to fully transition the fleet to EVs.[11] Using funds from the FTA's Low-No Emission Grant Program, the Sun Tran bus system and the City of Tucson have been introducing electric buses to their already 100

[9] Phoenix Commits to 100% Zero-Emission Bus Fleet by 2020 (December, 2022). Retrieved at https://www.phoenix.gov/newsroom/district-7/2600.

[10] Gallego and Stanton Announce $16 Million for Valley Metro to Improve Electric Bus Infrastructure (2022, August). Retrieved from https://rubengallego.house.gov/media-center/press-releases/gallego-and-stanton-announce-16-million-valley-metro-improve-electric.

[11] The Future is Electric – Phoenix Celebrates First Electric School Bus. LCV. (2020, January). Retrieved from https://www.lcv.org/article/future-electric-phoenix-celebrates-first-electric-school-bus/

percent clean fuel fleet.[12] Mountain Line, the transit agency in the Flagstaff area, has completed a Zero Emissions Bus Plan, and will transition their bus fleet by 2034.[13]

Table 17 shows the VMT along each of the NHS routes that have been identified as AFCs.[14] Approximately 17 percent of VMT in Arizona along the designated AFCs are attributed to truck traffic, with significant contributions from major ports in California for cross-country transportation on Interstate highways. The movement of goods into and within Arizona poses additional considerations for the implementation of electric trucking statewide and the provision of charging infrastructure along the AFCs, as these trucks will require charging as fleets transition to electric. In 2018, freight flow in and out of the state amounted to 98 billion ton-miles (the transportation of one ton of freight over a distance of 1 mile).

Table 17: AFCs VMT Data (2022)

Corridors	VMT per Day (million miles)
I-8	0.5
I-10	6.0
I-15	0.1
I-17	2.1
I-19	0.4
I-40	1.1
US 93	2.5
SR 95	3.1
SR 347	0.8
US 89	1.5
SR 87	5.0
SR 260	2.4
SR 64	0.5
US 160	0.7

[12] Sun Tran rolls out GILLIG battery-electric bus. AzTA. (n.d.) Retrieved from https://www.azta.org/news/sun-tran-starts-service-of-first-electric-bus

[13] Mountain Line Zero-Emission Bus Implementation Plan. (2020, December). Retrieved from: https://mountainline.az.gov/wp-content/uploads/2021/03/Phase-2-Implementation-FINAL.pdf

[14] Alternative Fuel Corridors (AFCs) is an FHWA designation that supports deployment of alternative fueling infrastructure along highways.

Corridors	VMT per Day (million miles)
SR 68	0.3
US 60	3.9
SR 80	0.1
SR 90	0.5
Total	31.6

Electric Vehicle Industry and Market Conditions

The global EV market has grown over the past decade, largely attributed to increased availability, improved vehicle range, cost competitiveness with ICE vehicles due to maturing battery technology, and the wide availability of tax rebates and other incentives. Emission reduction targets set by government agencies have also led to an increased focus on expanding EV usage.

Overview and Purpose

To support Arizona's EV market analysis, an assessment of the existing number of registered light-duty EVs in Arizona was conducted based on current vehicle registration data, existing market information, and EV adoption projections.

Electric Vehicle Ownership

ADOT reports the number of vehicles registered within Arizona, as shown in **Table 18**, for the previous three fiscal years (FY20 to FY23). There were 80,613 EVs registered in Arizona in 2023 which accounts for 1.01 percent of all registered vehicles. Vehicle sales and historical EV adoption data provide insight into future EV adoption at the localized level.

Table 18: Arizona Vehicle Registrations by Year

	2020	2021	2022	2023
Vehicles registered	7,828,255	7,444,032	7,764,367	7,969,576
EVs registered	34,898	40,964	58,219	80,613[15]
Percentage of EVs registered	0.45%	0.55%	0.75%	1.01%[16]

To date, EVs do not represent a significant market share in Arizona, although Arizona's share of nationwide EV sales is greater than the national average.[16] Barriers to the aggressive adoption of EVs are likely attributed to:

[15] ADOT. (n.d.) Fast Facts from ADOT. Retrieved from https://azdot.gov/fast-facts

[16] EV Market Share by State. EV Adoption. (n.d.) Retrieved from https://evadoption.com/ev-market-share/ev-market-share-state/

- Initial capital costs: While studies show that operations and maintenance costs throughout the life cycle of an EV are significantly lower than those of traditional ICE vehicles, EVs have a higher purchase cost which can be a barrier.
- Weather concerns: Extreme hot and cold temperatures can reduce EV range. In the case of Arizona, the majority of the state's population lives in areas that experience mild winters, but the summers present very hot temperatures. Higher temperatures can reduce EV range—the electricity needed for heating and cooling systems is diverted away from the drivetrain and thus reduces the amount of onboard energy. Given that Arizona experiences extremely hot temperatures throughout the summer, drivers have indicated concern about range limitations.
- Inconsistent charger locations: A barrier for many drivers is that rural areas tend to lack the large amount of charging resources when compared to urban areas. In Arizona's case, containing a large amount of rural land, makes it difficult for riders who travel across the state to purchase an EV.
- Electric grid impacts: EV adoption would require a higher load on the state electric grid, providing a barrier for customers who are concerned about potentially higher electricity costs and power outages affecting their ability to rely on an EV.
- Range anxiety: Research has indicated that a primary barrier to EV adoption is concern around range anxiety, the fear that their vehicle will not have sufficient battery capacity and/or that they will not be able to easily access an EV charger to cover their desired driving distance or reach their intended destination.

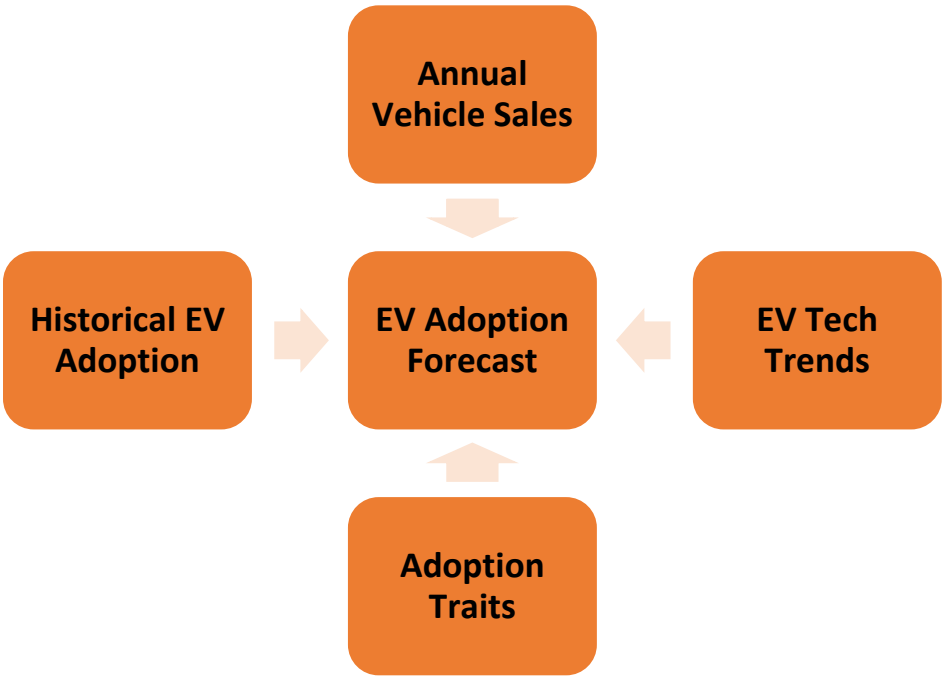
These barriers may eventually be lowered through incentives to make initial purchases of EVs more affordable, improvements to battery capacity and vehicle range, and the expansion of the DCFC network.

Electric Vehicle Adoption Forecast

Methodology

Industry trends, localized EV adoption factors, and historical vehicle trends in Arizona were used to build the EV adoption forecast to estimate the anticipated rate of EV adoption and the percent of Arizona's anticipated passenger EV market over the next 20 years (**Figure 3**). For each future year modeled, the adoption forecast is recalculated based on projected changes in the EV market of preceding years.

Figure 3: EV Adoption Forecast Methodology Flow Diagram



Electric Vehicle Adoption Forecast Factors

For each year modeled, an EV adoption factor was calculated representing the percentage of annual total vehicle sales that is anticipated to be EVs. The calculation itself was developed based on two input categories correlated to EV adoption: industry trends and state characteristics. The calculation was also tested and refined to verify that the forecasted results aligned with both historical data and other industry projections.

Electric Vehicle Tech Trends—Industry Trends

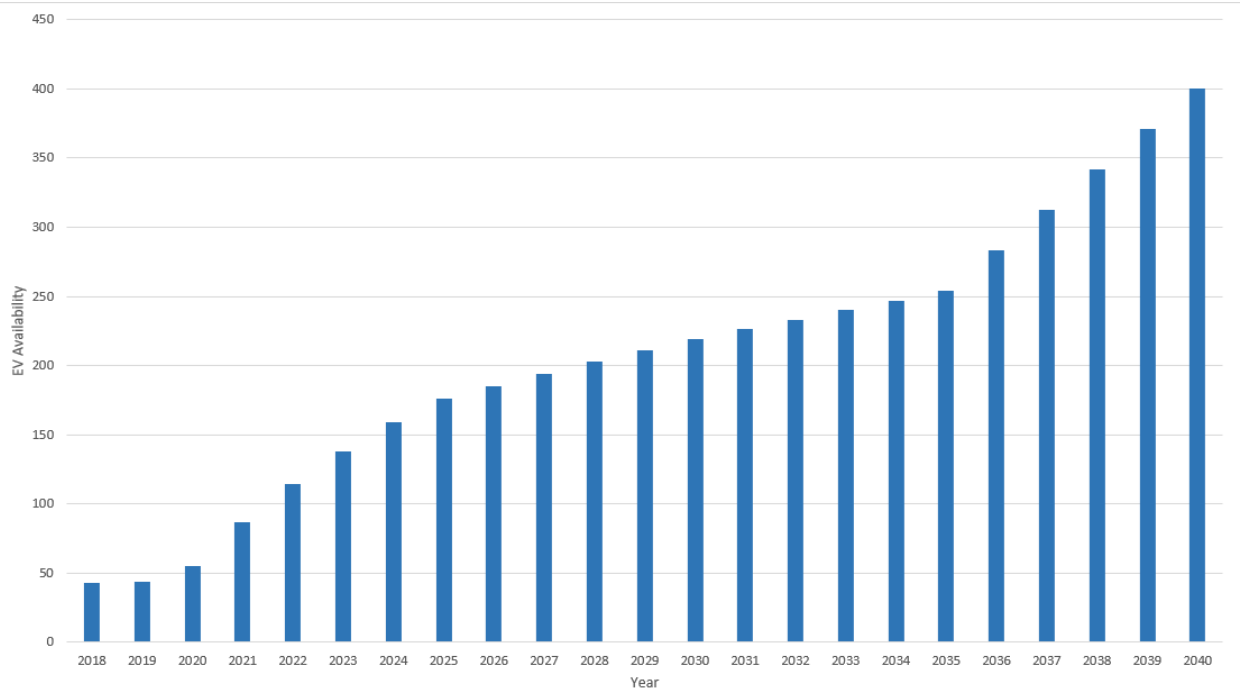
Battery technology improvements, reduced up-front vehicle costs, and the development of a public charging network are all changing the EV industry by lowering barriers to entry and further encouraging current and future EV purchases. These trends are prerequisite to providing potential vehicle buyers with the evidence needed to be confident that EVs are becoming as capable, affordable, and accessible as ICEs. The projection model uses industry trends as input factors for EV adoption, by examining model availability and initial EV capital cost when compared to an ICE vehicle. The density of the public charging network is also utilized in the model.

Electric Vehicle Tech Trends—Model Availability

The expanded availability of EV options on the market gives drivers enough flexibility to select EVs that fit within their preferences, budget, lifestyles, and preferred manufacturer. Model availability was estimated using the number of currently available EV models on the market; projections through 2040 for model availability are based on announcements and electrification commitments from major vehicle manufacturers. Both industry trends, due to public preference as well as federal targets and commitments to reduce emissions, suggest that manufacturers will continue progressing toward fully

electrified fleets by 2040. **Figure 4** displays the availability projections for some of the major vehicle manufacturers.

Figure 4: EV Availability Forecast



Electric Vehicle Tech Trends—Costs

One of the primary barriers to EV adoption is the higher upfront cost of an EV when compared to an ICE vehicle. According to Kelly Blue Book, in April 2024 the average price to purchase a new EV was $55,242, compared to a new ICE vehicle at an average of $44,949. Despite the higher purchase price, the current disparity between ICEs and EVs is expected to decrease and lead to increased EV adoption. The adoption model utilizes a projected cost reduction of EVs through 2040, due to declining battery prices, as an input. Anticipated cost competitiveness between EVs and ICEs is expected to occur in 2025 based on the projection.

Adoption Traits—Arizona Characteristics

EV adoption varies significantly depending on numerous indicators, such as the potential purchaser's income, educational attainment, environmental concern, home ownership, and the number of vehicles already owned. For example, drivers with higher levels of household income or higher concern for the environment are more likely to purchase an EV than those with lower income or less concern for the environment.[17] These factors can vary geographically, thus they were assessed on a localized level to yield the EV adoption outputs for Arizona.

[17] Stockkamp, C.; Schäfer, J.; Millemann, J.A.; Heidenreich, S. (2021, October 2). Identifying Factors Associated with Consumers' Adoption of e-Mobility—A Systematic Literature Review. Sustainability 2021, 13, 10975. Retrieved from https://doi.org/10.3390/su131910975.

In Arizona, the average gallon of gasoline costs $3.93 as of May 15, 2024 (higher than the national average of $3.61).[18] Due to global and national macroeconomic factors, gas prices are expected to continue to increase or to stay elevated for the near future, which could make purchasing an EV more attractive to consumers as the difference in operating costs between EVs and ICE vehicles continues to grow.

For EV adoption in Arizona, state level data for residents were assembled from publicly available sources. Each factor is presented in **Table 19** along with the applicable data source.

Table 19: Arizona State Characteristics that Influence EV Adoption

State Characteristic	Factor Measurement	Arizona Value	Source
Median household income	Household income	$61,529	2020 U.S. Census
Environmental concern	Election results	49 percent voted for a platform that supported environmental policies, including EV infrastructure development	2020 Federal Election Results
3+ car households	Number of households with three or more cars	590,173	2020 Automobile Consumer Services (ACS) 5-Year Estimates
Total households	Households	2,643,430	2020 ACS 5-Year Estimates
College education attained	Percentage of residents with a bachelor's degree or higher	30.3%	2020 U.S. Census
Homeowner percentage	Percentage of single unit detached households in Arizona	65.3%	2020 U.S. Census
Vehicle count	Number of registered passenger vehicles	4,818,711	ADOT
Existing level 2 ports	Number of Level 2 charging ports installed	1810	Alternative Fuels Data Center
Existing DCFC ports	Number of DCFC charging ports installed	459	Alternative Fuels Data Center

[18] Gas Prices. AAA. (n.d.) Retrieved from https://gasprices.aaa.com/.

State Characteristic	Factor Measurement	Arizona Value	Source
EV policies	Policies that drive EV adoption, including charging infrastructure plans, emission/adoption goals, building codes, and incentives. Arizona value based on EV programs available compared to other states as detailed in the source.	19%	American Council for an Energy-Efficient Economy
Annual vehicle sales	Arizona share of new vehicle registrations in the U.S.	2.19%	National Automobile Dealers Association
Historical EV adoption	Number of registered EVs in Arizona	2019: 28,770 2020: 34,898 2021: 40,964 2022: 58,219 2023: 80,613	ADOT

Electric Vehicle Adoption Forecast Assumptions

The following key assumptions were made to forecast EV adoption through the year 2040:

- Between 2035 and 2040, car manufacturers will exceed current EV commitments by electrifying their full fleet, including all sedans, SUVs, and trucks.
- Operational and maintenance costs are not included as consumers are typically more concerned with the initial price (rather than full life-cycle costs) when determining which vehicle type to purchase, although it should be noted that the recent significant surge in gas prices has begun to shift this consumer mindset.
- Battery technology will mature by 2030, leading to upfront cost declines of EVs. Beyond 2030, costs are assumed to be constant.
- An optimal amount of charging infrastructure will be developed to meet the estimated increase in adoption (e.g., 4 DCFCs per 1,000 EVs, 60 public Level 2 chargers per 1,000 EVs, and at-home charging is available for homeowners).[19] Each year, the expanded charging network infrastructure is used as the input factor for adoption for the subsequent year being modeled as an iterative process.

[19] Federal EV policy. Union of Concerned Scientists. (n.d.). Retrieved January 31, 2022, from https://www.ucsusa.org/resources/federal-ev-policy.

- Vehicle sales are constant throughout 2040 as total new vehicles sales have remained generally constant in the United States between 2015-2019; however, impacts from COVID-19 and policy pressure to further encourage EV adoption may impact this assumption in the future.[20]

Electric Vehicle Adoption Scenarios

Three scenarios were analyzed to identify the potential magnitude of growth in EV adoption due to economic and policy trends (**Table 20**). These scenarios were applied to the EV adoption forecasts to quantify the range of potential EV adoption in Arizona. Due to the current economic factors and supply chain shortages, the low-growth scenario describes current circumstances; however, recent EV policy direction and the long-term outlook for widespread EV adoption required the analysis of medium- and high-growth scenarios as well.

Table 20: EV Market Model Growth Scenarios

Growth Scenario	Description
Low	Reduce model availability by 25 percent compared to the medium projection. This scenario accounts for supply shortages of EV components.
Medium	Scale high-growth scenario to better align with historical EV adoption trends. This scenario accounts for the unique EV adoption factors in Arizona and projections of the EV market into the future.
High	Increase in the cost parity of an EV compared to an ICE vehicle by 25 percent compared to the medium projection to reflect rising gas prices. This scenario reflects other policies and infrastructure deployment to meet a high-growth projection of 1.5 million EVs on the road in 2038.[21]

Findings

The model generated estimates for Arizona's EV adoption based on the three growth scenarios (**Figure 5**). EV adoption estimates for 2030 range between 6 and 14 percent of the total Arizona passenger vehicle market being electric, with 11 to 25 percent of new sales being EVs (**Table 21, Figure 6**). For comparison, forecasts predict 9 percent of the country's fleet will be electric in the same time period, with 36 percent of new sales being EVs; this is driven by recent federal government targets of 50 percent of all vehicle sales to be EVs by 2030.[22, 23]

[20] New and used passenger car and light truck sales and leases. New and Used Passenger Car and Light Truck Sales and Leases | Bureau of Transportation Statistics. (n.d.). Retrieved January 31, 2022, from https://www.bts.gov/content/new-and-used-passenger-car-sales-and-leases-thousands-vehicles.

[21] Arizona Statewide Transportation Electrification Plan (2019, December). Retrieved from https://illumeadvising.com/files/Arizona-Phase-1-TE-Report-Final.pdf

[22] Bauer, G.; Hsu, C.; Nicholas, M.; Lutsey, N. (2021, July). Charging up America: Assessing the growing need for U.S. Charging Infrastructure through 20230. Retrieved January 31, 2022, from https://theicct.org/sites/default/files/publications/charging-up-america-jul2021.pdf

Figure 5: Expected EV Adoption in Arizona, 2020-2040 Total Registrations

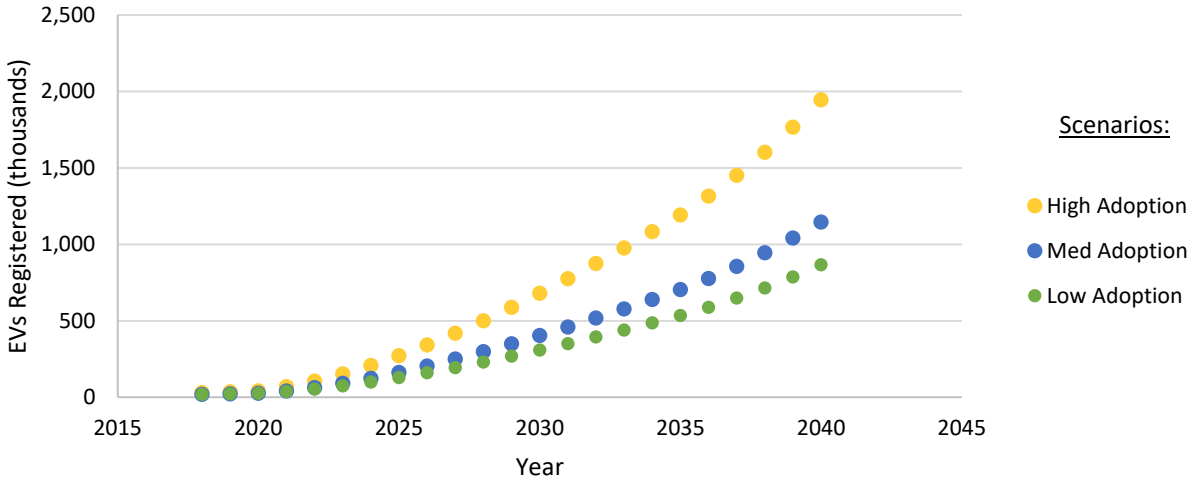


Figure 6: Expected EV Adoption in Arizona, 2020-2040 by New Sales

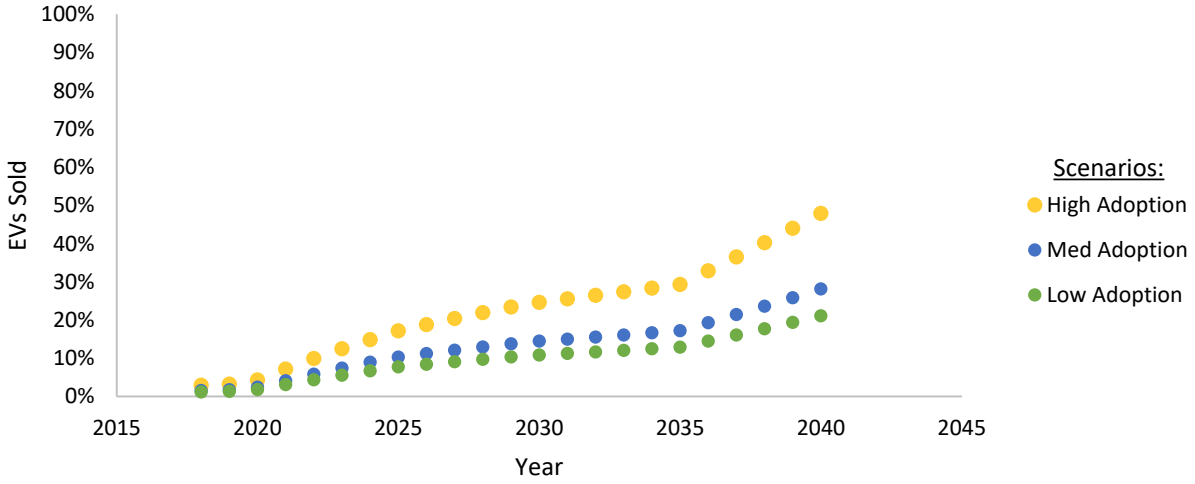


Table 21: Expected In-State EV Adoption

	EV Estimate 2030		EV Estimate 2040	
Growth Scenario	EVs Registered	In-state EV Market %	EVs Registered	In-state EV Market %
Low	307,897	6.4%	864,991	18.0%

[23] The United States Government. (2021, August 5). Fact sheet: President Biden announces steps to drive American leadership forward on clean cars and trucks. The White House. Retrieved January 31, 2022, from https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/

	EV Estimate 2030		EV Estimate 2040	
Medium	402,293	8.3%	1,145,084	23.8%
High	678,920	14.1%	1,944,045	40.3%

Understanding factors driving EV adoption are key when comparing the various growth scenarios:

- EV models are directly correlated with the number of EVs registered. The low-growth scenario assumes a 25 percent reduction in EV models available compared to the medium-growth scenario, resulting in only three-quarters as many EVs on the road. EV model availability is a primary factor in any adoption increases, as ICE models are expected to become rare if manufacturers begin to offer only EVs.
- As the initial price of EVs continues to reach parity with ICE vehicles, new EV sales continue to rise in the near-term. The rate of growth of EV sales will begin to slow, though still continue to increase if EVs become the more economical option; modeling indicates that this period of slower growth is mostly due to an anticipated lack of new EV models being introduced between 2026 and 2035, and the modeling assumption that rapid EV model development does not begin until 2035.
- While new EV sales are expected to continue to rise annually, growth will be tempered since vehicle fleet stock takes a significant amount of time to turn over (even in the most aggressive scenario). For example, ICEs have an average vehicle life of approximately 10 years.

The most likely growth scenario for Arizona over the analysis period is the medium forecast. Continued deployment of EV charging infrastructure, education on the benefits of EVs, federal and local government policy support, and financial assistance will support the forecasted adoption rate.

Recommendations and Considerations

Based on the existing and future conditions assessment, recommendations and considerations are as follows:

- By the year 2030, the medium-growth scenario predicts 402,293 vehicles (8.3 percent) on Arizona roadways to be EVs. This is expected to be the most likely forecast scenario, as it aligns with historical adoption data and is reflective of federal policies and local governments' trends to encourage EV adoption. However, due to lingering COVID-19 impacts and current supply chain storages, this trend may start as a low-growth scenario in the near-term, then develop into the medium-growth scenario. To achieve the high-growth scenario, aggressive state and federal policies would need to be enacted to further encourage EV adoption.
- Despite Arizona currently having a small number of EVs on the road, all growth scenarios predict that the number of EVs will at least double between 2021 and 2023. The active participation of the Arizona state government, including its coordination with local jurisdictions and electric utilities, is critical to supporting this transition by following best practices to plan for and accelerate EV adoption. Potential initiatives include developing EV readiness plans, providing educational materials, hosting workshops to facilitate cross-stakeholder collaboration (to share

best practices and help streamline efforts across the state), or adopting state EV-adoption targets.

- Policy levers may be utilized to accelerate adoption rates and turn over existing vehicle stock more quickly, and they could include early vehicle retirement programs or incentives on new vehicle purchases.
- The long-term COVID-19 pandemic impacts may hinder EV adoption due to economic constraints on individual households and the global automobile market. These impacts should be considered along with any additional EV adoption barriers that may be faced, particularly by disadvantaged or vulnerable populations. Comprehensive electrification considerations—such as incentives for the purchase of EVs, expanded funding sources, partnerships, and streamlined permitting processes—can all support reducing barriers to electrification. The overall EV adoption trends are expected to remain fairly consistent based on current projections, and the trends point toward an increasingly aggressive nationwide electrification trajectory to reduce emissions and promote public health.

Arizona Charging Demand Analysis

To properly plan for future EV needs, it is important to understand and forecast anticipated charging infrastructure demands.

Widespread EV adoption can bring benefits to both individuals and the environment, but there is also a significant challenge in ensuring the availability of an adequate network of public charging infrastructure to meet the growing charging demand. Meeting this demand also poses the issue of ensuring local electric utilities can continue to provide reliable service even with the added load of transportation electrification. If not properly planned for, the impacts resulting from increased electrification on the charging network and impacts to electricity demand can lead to rising electricity prices, grid constraints, and blackouts.

Charging Demand Methodology

The charging demand analysis was conducted using traffic data relevant to the AFCs, accounting for the results from the EV market analysis. The analysis calculated the expected annual electricity consumption of EVs traveling on the AFCs through the year 2040 and accounted for traffic pattern changes, anticipated improvements to battery economy, and the impacts of Arizona weather conditions on EV performance. The calculation steps were:

- Utilize the EV adoption forecast to estimate statewide EV traffic using existing average annual daily traffic (AADT) data and applying an annual average growth rate.
- Calculate the AADT of EVs traveling on each individual AFC to understand charging demand needs.
- Calculate the yearly energy consumption factor by multiplying the mileage by the estimated fuel efficiency (in kWh/mile).

Electric Vehicle Traffic and Mileage

ADOT records daily passenger vehicular traffic and mileage data for each highway corridor (**Table 22**). To account for increases in traffic resulting from population and economic growth, a 2.1 percent average annual growth rate was assigned to the AADT.[24]

Table 22: AADT of EVs in Arizona, 2022

Corridor	Length of Corridor (miles)	2022 AADT (miles)	Forecast 2040 AADT (miles)
I-8	178.3	2,728	3,965
I-10	391.2	15,265	22,189
I-15	29.4	4,017	5,839
I-17	146.5	14,314	20,807
I-19	63.1	6,623	9,627
I-40	359.6	2,988	4,343
US 93	306.15	8,287	12,047
SR 95	185.58	16,513	24,004
SR 347	28.7	26,348	38,301
US 89	136.5	11,353	16,503
SR 87	272.7	18,324	26,636
SR 260	217.8	11,083	16,110
SR 64	108.3	4,609	6,700
US 160	159.35	4,293	6,240
SR 68	27.88	12,414	18,045
US 60	191.79	20,446	29,721
SR 80	45.28	2,294	3,335
SR 90	46.77	11,702	17,011

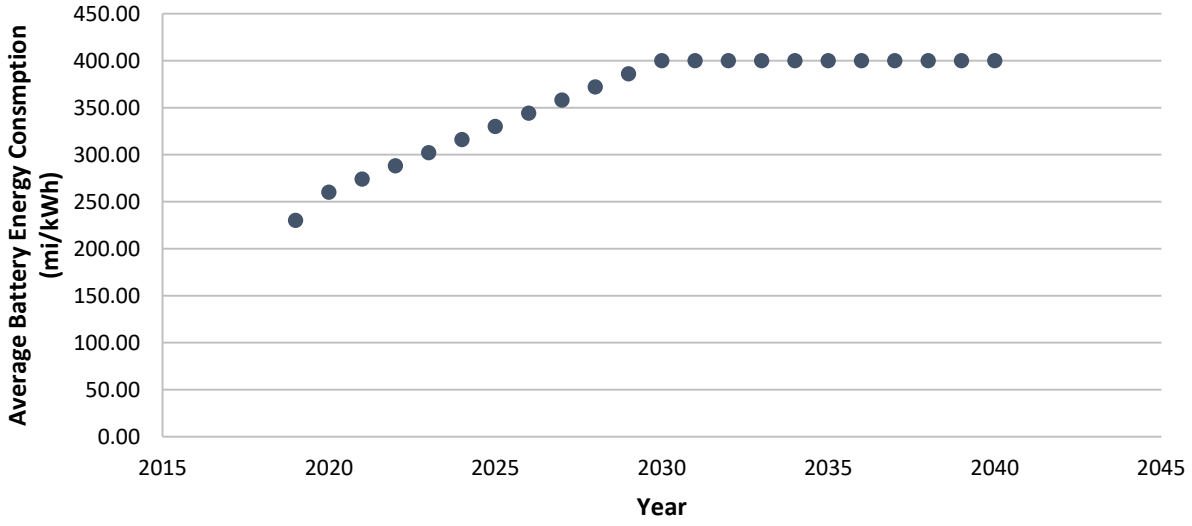
To determine the future EV AADT, forecasted totals of passenger EVs traveling in Arizona by the year 2040 was used. It should be noted that values are anticipated to change annually due to changes in EV adoption. For this analysis, it was assumed that the percentage of EVs in Arizona's vehicle fleet is equal to EV AADT as a percentage of statewide AADT.

[24] The 2.1% growth rate is based on historical VMT trends and will fluctuate slightly from year to year.

Annual EV energy consumption was calculated by applying an average battery capacity (in kWh/mile) for passenger EV vehicles to the known AADT on the routes.[25] The resulting value represents the amount of electricity an EV is estimated to consume on each designated travel corridor; additional mileage is accumulated traveling to and from the corridor.

Figure 7 displays the expected average battery energy consumption of light-duty passenger vehicles (e.g., sedans, SUVs, and trucks) and are based on current EV specifications and forecasted future improvements. Battery fuel economy is assumed constant after 2030 due to limitations on our knowledge of standards and technology improvements past that point.

Figure 7: Forecast of EV Battery Energy Consumption



Localized Weather Impacts

As weather impacts can affect battery range, it is important to account for localized weather patterns. Arizona experiences a broad range of temperatures throughout the state, throughout the year, and between day and night. EV performance can be affected by weather due to energy from the vehicle's battery being used to support cooling and heating systems (to condition both the vehicle cabin and to maintain battery temperature) in addition to standard propulsion, which leads to decreased travel range. Studies show that an ambient temperature of 20°F results in a 41 percent reduction in driving range, while a temperature of 95° F results in a 17 percent reduction (both results compared to testing at 75°F).[26] Other factors, such as elevation, wind, and precipitation affect vehicle range; however, these other factors are taken into consideration in the annual fuel efficiency metric.

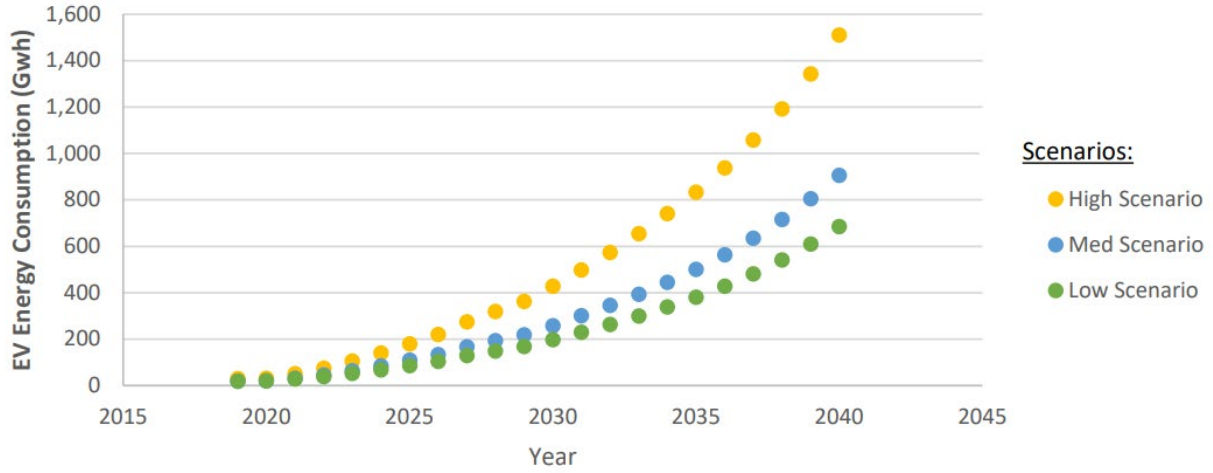
[25] Battery energy consumption refers to the energy consumption rate of the EV and accounts for propulsion, cabin climate control, and other subsystems. It does not include losses during charging.

[26] AAA Electric Vehicle Range Testing. AAA. (2019, February). Retrieved January 31, 2022, from https://www.aaa.com/AAA/common/AAR/files/AAA-Electric-Vehicle-Range-Testing-Report.pdf

Charging Demand Results

The charging demand analysis estimates that EVs will account for between 3.0 million and 6.6 million miles of Interstate travel daily in Arizona by the year 2030. A significant amount of electricity would be required to recharge the vehicles under assumed vehicle efficiencies, estimated to be between 684 gigawatt hours (GWh) and 1,509 GWh as seen in **Figure 8**. Much of this electricity will be consumed through home or workplace charging; however, this underlies the importance of deploying a public DCFC network capable of supporting EV growth.

Figure 8: Forecasted EV Energy Consumption



Electric Grid Capacity

The high-power output of DCFC requires adequate capacity on the electrical grid and specific electrical service conditions such as three-phase power. An understanding of where three-phase service and adequate electrical capacity exists will play a critical role in identifying sites for proposed charging stations. Sites that do not have adequate electrical conditions will need to be upgraded, adding to the cost and timeline of deployment. ADOT currently lacks data on available grid capacity but plans to collaborate with Arizona electric utilities to understand grid conditions at the proposed sites. A utility capacity survey was issued to each utility annually to identify if charger sites identified for upgrade or construction can accommodate the added power capacity for charging infrastructure. Coordination with utilities on substation capacity is still ongoing; **Appendix C** provides latest responses on newly proposed charging stations. Following engagement, ADOT may revise the proposed sites if constraints are identified. ADOT will continue to collaborate with utilities throughout the planning and deployment stages of the NEVI program.

Known Risks and Challenges

Table 23 lists the risks and challenges identified in Arizona regarding the deployment of EV charging infrastructure.

Table 23: Known Risks and Challenges

Risk/Challenge	Description	Mitigation
Staffing	The Plan implementation will require a significant number of ADOT staff, including environmental, cybersecurity, contracts, legal, and project management, as well as staff to monitor contractor performance, collect data, and prepare federal reports. NEVI funds cannot be used to create and fill new staff positions and ADOT is unlikely to have the resources to create new positions specifically for this program.	Continue to develop a contracting mechanism that enables effective implementation of the Plan with existing staff.
Stranded assets	To close gaps and help to meet needs of underserved communities, some stations will be placed in rural, tribal, and/or low-income communities; these areas might initially have low station utilization and may be unprofitable for some time, but their installation is required for sufficient infrastructure coverage. Private businesses selected to implement the EV Plans may abandon stations if they prove unprofitable.	Develop contracting mechanisms that require private companies to own the stations and keep them running long-term.
Equity	The stations that are most profitable and easiest to develop have already been built by private companies. Many proposed EV station locations are in rural, tribal, and underserved areas that have not attracted private developers.	Bundle several stations, entire corridors, and/or geographic areas into a single contract to make development more attractive.
Cybersecurity	Cyber-attacks are a risk to customers' financial transaction data, personal data, and vehicle-connected devices. Any identified EVSE vulnerabilities can introduce the potential of malware installation and propagation to vehicles, charging infrastructure, and other connected technologies. Exposing equipment to breaches in cybersecurity can put payment data and personal information of the customer at risk, and also present risks to the charging network and electrical grid.	Develop and maintain a robust cybersecurity plan throughout the lifetime of the infrastructure. Include requirements from the plan in all applicable contracts.
Location viability and	Some proposed infrastructure locations might be space-constrained and/or on private/leased	Prepare permits and agreements in clear language and streamline permitting

Risk/Challenge	Description	Mitigation
permitting	property.	processes. Consider space constraints during the selection and design of potential EV station sites. All real property acquisitions must comply with The Uniform Relocation Assistance and Real Property Acquisition Act per NEVI guidance. These projects are considered construction projects, so Title 23 requirements apply, including acquiring adequate property interests.
Charger types	Multiple connector types exist for DCFC charging. Inclusion of only one type might exclude certain vehicles from being able to utilize the charging infrastructure.	Consider connectors and/or adapters that can be used by different vehicles. Consider including NACS connectors, if feasible.
Communication reliability	All chargers will be networked, and any loss of connection would result in the charger(s) going out of service.	Include up-time performance metrics of charging infrastructure in operating contracts to maintain a very high level of reliability, which could include redundancies of different networks if the primary network goes down.
Unbanked population	Not everyone has access to a credit/debit card as some of the population remains unbanked.	Consider the feasibility and utility of alternative payment methods, such as prepaid debit cards. Require charging stations to accept payment through an automated toll-free phone number or a MS, per NEVI requirements.
Demand charges	During peak period usage, it is more costly to provide electricity. Utility providers may add additional demand charges on top of standard	Consider software at charging stations to allow for variable pricing. This would help in

Risk/Challenge	Description	Mitigation
	electricity prices to compensate for the increased delivery costs.	managing peak demand and minimizing operating costs while still providing adequate levels of charging.
Vandalism and Damage	Charging stations could be vandalized if not properly secured or damaged from improper use (e.g., vehicle crash, driving over charging cords).	Implement security features such as protective bollards, retractable cords, vandal-proof chargers, closed circuit television.
Supply chain shortages	All 50 states are simultaneously procuring and deploying NEVI-compliant infrastructure, which could further exacerbate existing supply chain issues.	Actively plan for and incorporate longer than expected lead times for the procurement of materials when developing schedules.
Extreme weather and battery fires	During the extreme heat of the summer months, EVs are more susceptible to lithium-ion battery fires. These fires are difficult to extinguish. During extreme heat or cold, EV range declines as the vehicle uses battery power for heating or cooling, rather than propulsion.	Require contractors to establish mitigation strategies, such as adequate fire suppression. Build station locations to provide sufficient availability of chargers.
Changing Technology	EV technology is rapidly evolving and could quickly outpace currently available EV infrastructure.	Futureproof new station locations by adding larger conduits and other cost-effective improvements to enable future upgrades. Consider requiring chargers that operate at 400 and 800 volts.

Incentives

Arizona offers a variety of incentives (both monetary and policy oriented) to encourage low and zero-emission vehicle adoption. They are typically stated in relation to alternative fuel vehicles (AFVs) to be more encompassing than just EVs, but in some cases include hybrid vehicles.

State

ADOT issues special license plates dedicated to AFVs that are powered by propane, compressed natural gas (CNG), electricity, or hydrogen. The plates provide eligible drivers with incentives for driving AFVs, including the ability to park without penalty in parking areas designated for carpool operators and in

spaces designed for EV charging.[27,28] Similarly, A.R.S. 28-2416 allows qualified AFVs to use high-occupancy vehicle lanes, regardless of the number of occupants, although this exemption will expire in September 2025.[29] Owners of qualified AFVs that are registered in Arizona for the first time are not required to complete emissions testing in their first year only, unless they are used for commuting into Phoenix or Tucson.[30]

A financial incentive is also currently provided. AFVs purchased in 2022 or earlier have a reduced annual vehicle license tax assessment based on a percent of the suggested retail price.[31]

Private Incentives

Utility providers within Arizona offer various incentives and rebates to encourage development of the charging infrastructure network. APS operates the EV Fleet Advisory Service Program which offers aid to develop a fleet electrification plan. Qualifying organizations include schools, municipalities, public transit agencies, and other companies operating fleets in DACs.[32]

SRP and Navopache Electric Cooperative offer residential customers who operate an EV or plug-in hybrid vehicle the opportunity to use time-of-use electricity rates for at-home charging during super off-peak hours (11 p.m. to 5 a.m., year-round) and additional off-peak hours (varies by season) on weekends, holidays, and some weekday hours. A separate smart submeter is required for EV charger usage and is provided by SRP.[33] SRP also has rebates for commercial users and offers funding to trained vendors who study electrification. These opportunities can be for commercial non-road equipment through the Electric Qualified Service Provider Assessment Program and on-road electrification opportunities for fleets under the Fleet Advisory Services Program.[34]

On the infrastructure side, SRP provides rebates for installing charging infrastructure. SRP has a marketplace for individuals to purchase Level 2 chargers with instant rebates applied at the time of purchase. Businesses can receive $2,500 per networked Level 2 charging station port. Government, non-profit, and school customers can receive $4,000 per Level 2 port. The amount increases to $20,000 per DCFC port for businesses and $25,000 per DCFC port for government, non-profit, and school customers. Rebates are limited to three DCFC ports per customer per program year. Electrical District No. 3 is also providing a $250 rebate to commercial and residential customers for purchase of Level 2 charging equipment.

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[27] State of Arizona (2014, 2015). AZ Statutes 1-215 and 28-877

[28] State of Arizona (2005). Arizona Revised Statutes 28-876

[29] State of Arizona (2014, 2015). AZ Statutes 1-215 and 28-2416

[30] State of Arizona (2018, 2005). AZ Statutes 49-542 and 49-542.05

[31] State of Arizona (2014, 2015, 2015). AZ Statutes 1-215, 28-5805, and 28-5801

[32] Solutions for Business. APS. (n.d.) Retrieved from https://www.aps.com/en/Business/Save-Money-and-Energy/Business-Solutions

[33] Electric Vehicle (EV) Price Plan. SRP. (n.d.) Retrieved from https://www.srpnet.com/prices/home/electricvehicle.aspx.

[34] Electrification rebates. SRP (n.d.). Retrieved from https://www.srpnet.com/energy-savings-rebates/business/rebates/electrification.

In February 2023, Unisource Electrical Service approved its three-year plan to provide at-home EV charger incentives for its residential customers. These include a $500 rebate on home charger installation, and up to $800 for lower-income customers. They are also introducing residential and commercial EV rates similar to SRP, allowing customers lower rates during off-peak hours when energy demand is lower.[35] At the time of writing of this Plan, NTUA and Page Utility had yet to offer EV-based incentives.

Compliances

ADOT is working to meet federal requirements. Under the Code of Federal Regulations, Title 23 Part 680 – NEVI Standards and Requirements (23 CFR Part 680), specifications are described to ensure safe public access to EV charging infrastructure. These regulations include:

- Charging stations must provide secure payment methods;
- Implementation of cybersecurity strategies to safeguard user identities and access management;
- Mechanisms for customers to report charging station issues;
- Up-to-date charger hardware;
- Periodic data reports; and
- Secure communication between charging networks, electric utilities, and energy providers.

Alternative Fuel Corridor Designations

Since 2016, the FHWA has accepted nominations from state departments of transportation, including ADOT, for AFCs. Those considered "corridor ready" contain enough fueling facilities to enable travel with the designated alternative fuel; those considered "corridor pending" lack sufficient existing facilities to support AFV travel. Arizona's AFCs are presented in list format in **Table 24** and in map format in **Figure 9**.

Table 24: Arizona AFC

Status	Corridor Name	Location
2024: Nominated, but not yet approved by the FHWA		
Corridor Pending	US 160	US 89 to Four Corners
	US 95	Quartzite to San Luis
	SR 68	US 93 to Bullhead City
	US 60	Phoenix to Globe; Show Low to New Mexico; and Phoenix to Wickenburg
	US 93	Wickenburg to I-40

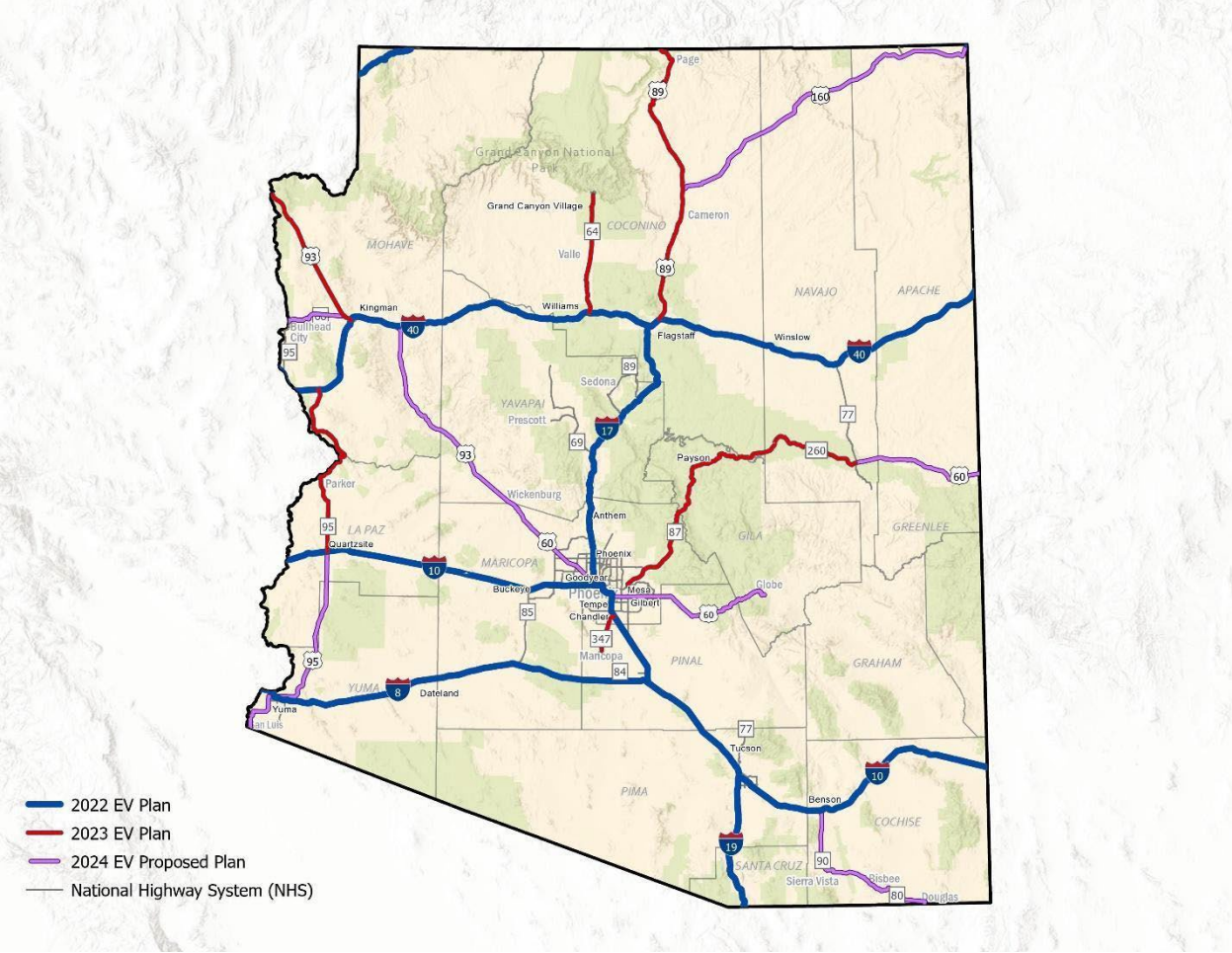
[35] Our EV Plan Gets Green Light. (Feb 2023). Retried from https://www.uesaz.com/news/our-ev-plan-gets-green-light/#:~:text=As%20part%20of%20our%20plan,rebate%20for%20lower%20income%20customers.

Status	Corridor Name	Location
	SR 80	Bisbee to Douglas
	SR 90	I-10 to Bisbee
2023: Designated as AFCs by the FHWA		
Corridor Ready	US 93	Kingman to the Nevada border
	SR 95	I-40 to Quartzsite
	SR 347	Maricopa to I-10
	US 89	Flagstaff to Utah
	SR 87	Phoenix to Payson
	SR 260	Payson to Show Low
	SR 64	I-40 to Grand Canyon National Park
2022: Designated as AFCs by the FHWA		
Corridor Pending	I-19	AZ/Mexico border to I-19/I-10 interchange in Tucson (includes all of I-19))
Corridor Ready	I-10	Buckeye to Benson
	I-17	West Anthem Way in Phoenix to Camelback Road in Phoenix
	I-40	I-40/I-17 interchange in Flagstaff to Winslow
Corridor Pending	I-8	AZ/CA border to the I-8/1-10 interchange in Casa Grande
	I-10	AZ/CA border to Buckeye and between the AZ/NM border and Benson
	I-17	I-17/I-10 interchange in Phoenix to Camelback Road in Phoenix; from Camelback Road in Phoenix to the I-17/I-40 interchange in Flagstaff
	I-40	AZ/CA border and I-40/I-17 interchange in Flagstaff; between the AZ/NM border and Winslow
Corridor Ready	I-15	AZ/Nevada border to the AZ/UT border
Corridor Ready	I-10	Tucson to Phoenix
Corridor Pending	I-10	AZ/NM border to Tucson and from the AZ/CA border to Phoenix

Status	Corridor Name	Location
	I-17	Phoenix to Flagstaff

Source: https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/

Figure 9: Arizona Alternative Fuel Corridors



Existing Charging Stations

Table 25 presents the existing locations of Level 2 and DCFC (Level 3) charging infrastructure along the AFCs as of June 13, 2024. **Figure 10** displays Interstate charging locations on a map of Arizona. Although the Plan is focused on the deployment of DCFC, Level 2 chargers are also listed in **Table 25** because they support the EV charging network.

Table 25: Locations of Existing Charging Infrastructure Along AFCs (as of 6/14/2024)

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
39853	L2	Avondale	1	TBD	TBD	No
39855	L2	Lake Havasu City	1	TBD	TBD	No
39856	L2	Mesa	1	TBD	TBD	No
39861	Both	Phoenix	4	TBD	TBD	No
39863	Both	Tempe	2	TBD	TBD	No
61294	L2	Chandler	2	ChargePoint Network	TBD	No
61295	L2	Chandler	2	ChargePoint Network	TBD	No
66290	L2	Phoenix	2	ChargePoint Network	TBD	No
66794	L2	Phoenix	2	ChargePoint Network	TBD	No
68409	L2	Maricopa	4	TBD	TBD	No
76160	L2	Phoenix	2	ChargePoint Network	TBD	No
76161	L2	Phoenix	2	ChargePoint Network	TBD	No
76907	L2	Flagstaff	2	AmpUp	TBD	No
79028	L2	Sierra Vista	1	TBD	TBD	No
79956	L2	Phoenix	2	ChargePoint Network	TBD	No
80014	L2	Phoenix	2	ChargePoint Network	TBD	No
85633	L2	Phoenix	2	ChargePoint Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
95568	L2	Phoenix	2	Blink Network	TBD	No
95706	L2	Phoenix	6	Blink Network	TBD	No
95707	L2	Phoenix	2	Blink Network	TBD	No
96011	L2	Mesa	1	Blink Network	TBD	No
96019	L2	Phoenix	4	Blink Network	TBD	No
96059	L2	Phoenix	2	Blink Network	TBD	No
96060	L2	Phoenix	1	Blink Network	TBD	No
96100	L2	Phoenix	2	Blink Network	TBD	No
101980	L2	Phoenix	1	ChargePoint Network	TBD	No
101981	L2	Flagstaff	2	Tesla Destination	TBD	No
101982	L2	Flagstaff	1	Tesla Destination	TBD	No
101984	L2	Flagstaff	1	Tesla Destination	TBD	No
101985	L2	Flagstaff	3	Tesla Destination	TBD	No
101986	L2	Flagstaff	2	Tesla Destination	TBD	No
101987	L2	Globe	3	Tesla Destination	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
101989	L2	Grand Canyon Village	3	Tesla Destination	TBD	No
101990	L2	Kingman	2	Tesla Destination	TBD	No
101994	L2	Lake Havasu City	3	Tesla Destination	TBD	No
101996	L2	Mesa	3	Tesla Destination	TBD	No
101997	L2	Parker	3	Tesla Destination	TBD	No
104200	L2	Payson	1	Tesla Destination	TBD	No
112761	L2	Phoenix	2	Tesla Destination	TBD	No
112762	L2	Tuba City	3	Tesla Destination	TBD	No
112763	L2	Tucson	3	Tesla Destination	TBD	No
112764	L2	Sierra Vista	2	ChargePoint Network	TBD	No
112765	L2	Phoenix	6	Tesla Destination	TBD	No
112768	L2	Phoenix	1	Volta	TBD	No
112769	L2	Phoenix	2	ChargePoint Network	TBD	No
112770	L2	Phoenix	2	ChargePoint Network	TBD	No
112771	L2	Phoenix	2	ChargePoint Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
112776	L2	Phoenix	2	ChargePoint Network	TBD	No
112778	L2	Phoenix	2	ChargePoint Network	TBD	No
112779	L2	Phoenix	2	ChargePoint Network	TBD	No
112783	L2	Phoenix	2	ChargePoint Network	TBD	No
112825	L2	Phoenix	2	ChargePoint Network	TBD	No
112831	L2	Grand Canyon Village	12	TBD	TBD	No
117722	L2	Grand Canyon Village	8	TBD	TBD	No
121227	L2	Phoenix	2	Blink Network	TBD	No
121828	L2	Superior	4	Tesla Destination	TBD	No
121833	L2	Mesa	2	ChargePoint Network	TBD	No
122249	L2	Goodyear	2	ChargePoint Network	TBD	No
122346	L2	Mesa	1	ChargePoint Network	TBD	No
122359	L2	Chandler	2	Blink Network	TBD	No
123483	L2	Phoenix	3	Blink Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
124348	L2	Tucson	4	Blink Network	TBD	No
127934	L2	Phoenix	2	ChargePoint Network	TBD	No
135874	L2	Buckeye	2	ChargePoint Network	TBD	No
145281	L2	Goodyear	2	ChargePoint Network	TBD	No
145653	L2	Tempe	2	ChargePoint Network	TBD	No
145749	L2	Flagstaff	2	ChargePoint Network	TBD	No
146891	L2	Flagstaff	2	ChargePoint Network	TBD	No
146892	L2	Williams	3	Tesla Destination	TBD	No
147040	L2	Phoenix	3	Blink Network	TBD	No
147041	L2	Phoenix	2	ChargePoint Network	TBD	No
147118	L2	Phoenix	2	ChargePoint Network	TBD	No
147121	L2	Phoenix	2	ChargePoint Network	TBD	No
147458	L2	Phoenix	2	ChargePoint Network	TBD	No
149194	L2	Phoenix	2	ChargePoint Network	TBD	No
149457	L2	Phoenix	2	ChargePoint Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
150187	L2	Phoenix	1	ChargePoint Network	TBD	No
150334	L2	Phoenix	2	ChargePoint Network	TBD	No
150748	L2	Goodyear	2	ChargePoint Network	TBD	No
151953	L2	Tucson	1	ChargePoint Network	TBD	No
153411	L2	Tucson	1	ChargePoint Network	TBD	No
153422	L2	Tucson	1	ChargePoint Network	TBD	No
154797	L2	Tucson	1	ChargePoint Network	TBD	No
155339	L2	Flagstaff	2	TBD	TBD	No
156367	L2	Williams	2	TBD	TBD	No
157941	L2	Phoenix	2	ChargePoint Network	TBD	No
163511	L2	Phoenix	2	ChargePoint Network	TBD	No
164142	L2	Goodyear	1	TBD	TBD	No
164254	L2	Peoria	1	TBD	TBD	No
164414	L2	Phoenix	2	TBD	TBD	No
164787	L2	Phoenix	3	TBD	TBD	No
165214	L2	Tempe	1	TBD	TBD	No
166787	L2	Chandler	2	TBD	TBD	No
166942	L2	Chandler	1	TBD	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
167342	L2	Mesa	1	TBD	TBD	No
167343	L2	Gilbert	2	TBD	TBD	No
168852	L2	White Hills	2	Blink Network	TBD	No
169411	L2	Phoenix	2	ChargePoint Network	TBD	No
170168	L2	Phoenix	3	Blink Network	TBD	No
171760	L2	Tucson	2	Blink Network	TBD	No
171771	L2	Tucson	2	Blink Network	TBD	No
171772	L2	Parker	2	ChargePoint Network	TBD	No
171839	L2	Parker	2	ChargePoint Network	TBD	No
171845	L2	Yuma	2	Blink Network	TBD	No
171846	L2	Phoenix	1	Blink Network	TBD	No
171928	L2	Phoenix	2	ChargePoint Network	TBD	No
174635	L2	Tempe	1	ChargePoint Network	TBD	No
175685	L2	Tempe	2	ChargePoint Network	TBD	No
182918	L2	Tempe	2	ChargePoint Network	TBD	No
182919	L2	Phoenix	2	ChargePoint	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
				Network		
182920	L2	Phoenix	2	ChargePoint Network	TBD	No
182921	L2	Phoenix	2	ChargePoint Network	TBD	No
184916	L2	Phoenix	2	ChargePoint Network	TBD	No
185095	L2	Phoenix	2	Blink Network	TBD	No
185097	L2	Phoenix	4	Blink Network	TBD	No
186033	L2	Phoenix	2	Blink Network	TBD	No
186034	L2	Phoenix	2	Blink Network	TBD	No
186193	L2	Tucson	2	ChargePoint Network	TBD	No
186194	L2	Tucson	2	ChargePoint Network	TBD	No
186198	L2	Maricopa	4	Blink Network	TBD	No
186348	L2	Mesa	2	ChargePoint Network	TBD	No
186349	L2	Mesa	2	ChargePoint Network	TBD	No
186350	L2	Flagstaff	2	ChargePoint Network	TBD	No
186351	L2	Flagstaff	2	ChargePoint Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
186354	L2	Gilbert	2	ChargePoint Network	TBD	No
186355	L2	Gilbert	2	ChargePoint Network	TBD	No
187213	L2	Flagstaff	2	ChargePoint Network	TBD	No
187569	L2	Flagstaff	2	ChargePoint Network	TBD	No
187879	L2	Mesa	2	Blink Network	TBD	No
187884	L2	Yuma	4	TBD	TBD	No
187948	L2	Surprise	4	TBD	TBD	No
189037	L2	Phoenix	4	TBD	TBD	No
189050	L2	Flagstaff	4	TBD	TBD	No
189253	L2	Peoria	4	TBD	TBD	No
189254	L2	Holbrook	4	TBD	TBD	No
189311	L2	Goodyear	4	TBD	TBD	No
189658	L2	Phoenix	4	TBD	TBD	No
190647	L2	Phoenix	4	TBD	TBD	No
191561	L2	Glendale	4	TBD	TBD	No
191609	L2	Glendale	4	TBD	TBD	No
191617	L2	Glendale	4	TBD	TBD	No
191618	L2	Phoenix	4	TBD	TBD	No
193276	L2	Casa Grande	2	Volta	TBD	No
193277	L2	Mesa	6	AmpUp	TBD	No
193278	L2	Avondale	2	ChargePoint	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
				Network		
193279	L2	Avondale	2	ChargePoint Network	TBD	No
195717	L2	Yuma	2	ChargePoint Network	TBD	No
195718	L2	Williams	2	ChargePoint Network	TBD	No
195719	L2	Williams	2	ChargePoint Network	TBD	No
195724	L2	Tucson	2	ChargePoint Network	TBD	No
195733	L2	Tempe	2	Volta	TBD	No
195734	L2	Gilbert	2	ChargePoint Network	TBD	No
195863	L2	Gilbert	2	ChargePoint Network	TBD	No
195918	L2	Green Valley	1	ChargePoint Network	TBD	No
195919	L2	Flagstaff	4	TBD	TBD	No
196011	L2	Winslow	4	TBD	TBD	No
196012	L2	Goodyear	4	TBD	TBD	No
199499	L2	Mesa	7	TBD	TBD	No
199500	L2	Mesa	2	TBD	TBD	No
201449	L2	Surprise	4	TBD	TBD	No
201450	L2	Phoenix	8	TBD	TBD	No
201873	L2	Globe	4	TBD	TBD	No
202355	L2	Douglas	2	ChargePoint	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
				Network		
202358	L2	Douglas	2	ChargePoint Network	TBD	No
202359	L2	Globe	1	Blink Network	TBD	No
202365	L2	Phoenix	1	ChargePoint Network	TBD	No
202367	L2	Phoenix	2	Blink Network	TBD	No
202369	L2	Phoenix	2	Blink Network	TBD	No
202371	L2	Peoria	2	Blink Network	TBD	No
202372	L2	Mesa	2	ChargePoint Network	TBD	No
202374	L2	Mesa	2	Blink Network	TBD	No
202376	L2	Phoenix	2	ChargePoint Network	TBD	No
202377	L2	Phoenix	2	ChargePoint Network	TBD	No
202378	L2	Goodyear	3	Blink Network	TBD	No
202383	L2	Goodyear	4	Blink Network	TBD	No
202395	L2	Goodyear	4	Blink Network	TBD	No
203319	L2	Holbrook	2	Blink Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
205051	L2	Phoenix	2	ChargePoint Network	TBD	No
205566	L2	Tempe	6	Blink Network	TBD	No
205762	L2	Phoenix	2	ChargePoint Network	TBD	No
206318	L2	Peoria	2	ChargePoint Network	TBD	No
206432	L2	Phoenix	2	AmpUp	TBD	No
206433	L2	Phoenix	2	AmpUp	TBD	No
206479	L2	Phoenix	2	AmpUp	TBD	No
206610	L2	Phoenix	2	AmpUp	TBD	No
207277	L2	Phoenix	2	AmpUp	TBD	No
207916	L2	Mesa	6	AmpUp	TBD	No
211679	L2	Phoenix	2	AmpUp	TBD	No
211680	L2	Phoenix	2	AmpUp	TBD	No
211831	L2	Tucson	4	Volta	TBD	No
212778	L2	Flagstaff	2	ChargePoint Network	TBD	No
212779	L2	Phoenix	2	ChargePoint Network	TBD	No
212782	L2	Phoenix	2	ChargePoint Network	TBD	No
212783	L2	Flagstaff	2	ChargePoint Network	TBD	No
212785	L2	Tucson	2	ChargePoint Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
213153	L2	Tucson	2	ChargePoint Network	TBD	No
213154	L2	Tucson	2	ChargePoint Network	TBD	No
213155	L2	Show Low	1	CHARGELAB	TBD	No
217277	L2	Avondale	2	ChargePoint Network	TBD	No
221541	L2	Winslow	2	Blink Network	TBD	No
222166	L2	Avondale	2	ChargePoint Network	TBD	No
222397	L2	Williams	4	Blink Network	TBD	No
222451	L2	Phoenix	4	Blink Network	TBD	No
222452	Both	Tempe	11	Blink Network	TBD	No
224153	L2	Phoenix	3	Blink Network	TBD	No
224374	L2	Tempe	1	ChargePoint Network	TBD	No
224411	L2	Tempe	1	ChargePoint Network	TBD	No
224527	L2	Tempe	1	ChargePoint Network	TBD	No
224611	L2	Tempe	1	ChargePoint Network	TBD	No
224612	L2	Goodyear	3	Blink Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
225063	L2	Buckeye	2	ChargePoint Network	TBD	No
225065	L2	Tucson	4	TBD	TBD	No
225066	Both	Tucson	3	TBD	TBD	No
225653	L2	Tucson	2	TBD	TBD	No
226598	L2	Green Valley	1	TBD	TBD	No
226788	L2	Tucson	20	TBD	TBD	No
227368	L2	Tubac	1	TBD	TBD	No
228197	L2	Nogales	1	TBD	TBD	No
228807	L2	Bisbee	1	TBD	TBD	No
228933	L2	Grand Canyon Village	4	TBD	TBD	No
229547	L2	Mesa	1	Blink Network	TBD	No
229548	L2	Phoenix	4	Blink Network	TBD	No
229549	L2	Mesa	2	ChargePoint Network	TBD	No
229551	L2	Mesa	2	ChargePoint Network	TBD	No
229553	L2	Yuma	2	ChargePoint Network	TBD	No
229554	L2	Phoenix	1	Volta	TBD	No
230225	L2	El Mirage	1	ChargePoint Network	TBD	No
230457	L2	Flagstaff	2	ChargePoint Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
231117	L2	Phoenix	2	ChargePoint Network	TBD	No
234432	L2	Phoenix	2	ChargePoint Network	TBD	No
234551	L2	Phoenix	2	ChargePoint Network	TBD	No
234992	L2	Yuma	2	TBD	TBD	No
234993	L2	Mesa	1	EV Connect	TBD	No
235435	L2	Tucson	2	ChargePoint Network	TBD	No
235807	L2	Tucson	2	ChargePoint Network	TBD	No
235808	L2	Phoenix	2	ChargePoint Network	TBD	No
235809	L2	Bisbee	2	ChargePoint Network	TBD	No
237622	L2	Bisbee	2	ChargePoint Network	TBD	No
237636	L2	Phoenix	2	ChargePoint Network	TBD	No
237677	L2	Phoenix	2	ChargePoint Network	TBD	No
238321	L2	Phoenix	1	Blink Network	TBD	No
238503	L2	Phoenix	4	Blink Network	TBD	No
238573	L2	Phoenix	2	Blink Network	TBD	No
238674	L2	Phoenix	4	Blink	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
				Network		
238831	L2	Sierra Vista	2	EV Connect	TBD	No
241220	Both	Sierra Vista	3	EV Connect	TBD	No
241221	Both	Sierra Vista	3	EV Connect	TBD	No
241285	L2	Winslow	2	ChargePoint Network	TBD	No
250388	L2	Mesa	2	Blink Network	TBD	No
250410	Both	Glendale	5	EV Connect	TBD	No
252845	L2	Peoria	2	ChargePoint Network	TBD	No
252846	L2	Glendale	1	ChargePoint Network	TBD	No
252847	L2	Avondale	1	ChargePoint Network	TBD	No
252848	L2	Phoenix	6	Blink Network	TBD	No
254406	L2	Goodyear	2	ChargePoint Network	TBD	No
255165	L2	Phoenix	1	Blink Network	TBD	No
255525	L2	Tucson	10	Blink Network	TBD	No
256095	L2	Globe	2	TurnOnGreen	TBD	No
256100	L2	Chandler	1	TurnOnGreen	TBD	No
256101	L2	Winslow	2	ChargePoint Network	TBD	No
256108	L2	Winslow	2	ChargePoint	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
				Network		
256111	L2	Phoenix	4	TBD	TBD	No
256112	L2	Marana	1	Blink Network	TBD	No
256113	L2	Tempe	5	Blink Network	TBD	No
256116	L2	Tucson	2	Blink Network	TBD	No
256120	L2	Peoria	2	ChargePoint Network	TBD	No
257004	L2	Phoenix	1	Blink Network	TBD	No
257486	L2	Phoenix	1	Blink Network	TBD	No
257531	L2	Tempe	2	ChargePoint Network	TBD	No
257570	L2	Phoenix	1	Blink Network	TBD	No
257571	L2	Phoenix	2	ChargePoint Network	TBD	No
257861	L2	Mesa	2	ChargePoint Network	TBD	No
257873	L2	Mesa	2	ChargePoint Network	TBD	No
258270	L2	Mesa	2	ChargePoint Network	TBD	No
259259	L2	Phoenix	1	Blink Network	TBD	No
260638	L2	Surprise	2	ChargePoint	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
				Network		
261245	L2	Surprise	2	ChargePoint Network	TBD	No
261318	L2	Surprise	2	ChargePoint Network	TBD	No
261319	L2	Surprise	2	ChargePoint Network	TBD	No
261441	L2	Yuma	2	ChargePoint Network	TBD	No
261654	L2	Yuma	2	ChargePoint Network	TBD	No
261815	L2	Goodyear	2	ChargePoint Network	TBD	No
279502	L2	Goodyear	2	ChargePoint Network	TBD	No
293702	L2	Goodyear	2	ChargePoint Network	TBD	No
293703	L2	Scottsdale	2	ChargePoint Network	TBD	No
307451	L2	Scottsdale	2	ChargePoint Network	TBD	No
307861	L2	Scottsdale	2	ChargePoint Network	TBD	No
307862	L2	Scottsdale	2	ChargePoint Network	TBD	No
307941	L2	Scottsdale	2	ChargePoint Network	TBD	No
307944	L2	Page	2	Noodoe	TBD	No
308415	L2	Mesa	6	Noodoe	TBD	No

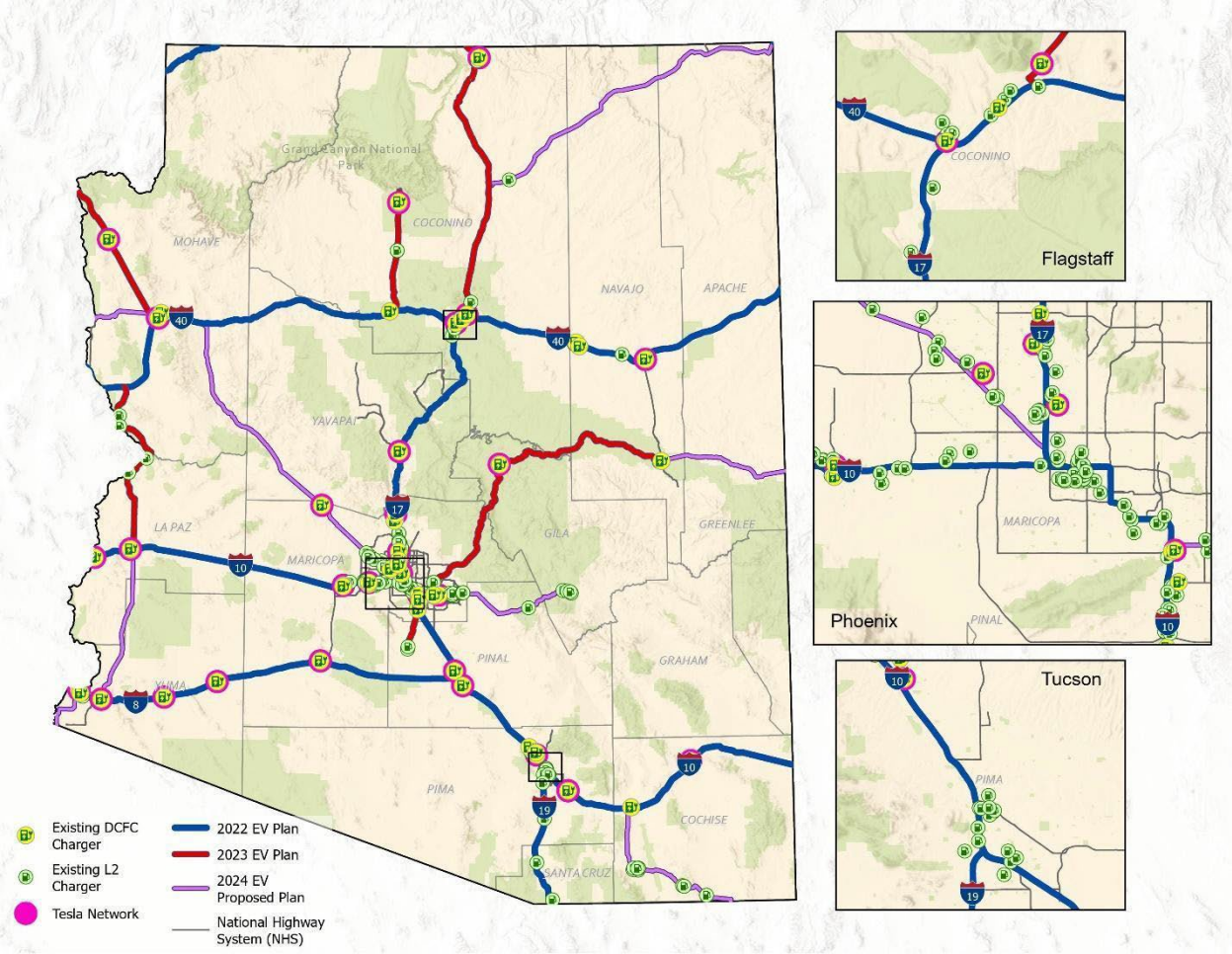
Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
309345	DCFC	Buckeye	12	Tesla	TBD	No
309994	DCFC	Casa Grande	6	Tesla	TBD	No
310073	DCFC	Flagstaff	12	Tesla	TBD	No
310314	DCFC	Holbrook	12	Tesla	TBD	No
310982	DCFC	Kingman	10	Tesla	TBD	No
310983	DCFC	Mayer	8	Tesla	TBD	No
310984	DCFC	Page	8	Tesla	TBD	No
311322	DCFC	Phoenix	16	Tesla	TBD	No
312030	DCFC	Quartzsite	36	Tesla	TBD	No
312602	DCFC	Tucson	10	Tesla	TBD	No
312712	DCFC	Willcox	8	Tesla	TBD	No
312713	DCFC	Yuma	12	Tesla	TBD	No
315748	DCFC	Payson	12	Tesla	TBD	No
315837	DCFC	Buckeye	4	Electrify America	TBD	No
316319	DCFC	Yuma	4	Electrify America	TBD	No
316906	DCFC	Gila Bend	16	Tesla	TBD	No
318178	DCFC	Wickenburg	8	Tesla	TBD	No
319648	DCFC	Benson	4	Electrify America	TBD	No
320218	DCFC	Anthem	4	Electrify America	TBD	No
320304	DCFC	Flagstaff	4	Electrify America	TBD	No
320976	DCFC	Winslow	4	Electrify	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
				America		
320990	DCFC	Tucson	10	Electrify America	TBD	No
321147	DCFC	Tempe	8	Electrify America	TBD	No
321284	DCFC	New River	10	Tesla	TBD	No
321285	DCFC	Ehrenberg	8	Tesla	TBD	No
321404	DCFC	Tusayan	12	Tesla	TBD	No
324341	DCFC	Tacna	8	Tesla	TBD	No
326522	DCFC	Willow Beach	8	Tesla	TBD	No
326904	DCFC	Dateland	4	Electrify America	TBD	No
327466	DCFC	Williams	4	Electrify America	TBD	No
327935	DCFC	Kingman	4	Electrify America	TBD	No
328032	DCFC	Quartzsite	4	Electrify America	TBD	No
328035	DCFC	Chandler	4	Electrify America	TBD	No
329001	DCFC	Kingman	16	Tesla	TBD	No
329385	DCFC	Tucson	16	Tesla	TBD	No
329805	DCFC	Show Low	4	Electrify America	TBD	No
330490	DCFC	Tempe	14	Tesla	TBD	No
330491	DCFC	Phoenix	4	eVgo Network	TBD	No

Station ID	Charger Level (DCFC, L2)	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
330492	DCFC	Goodyear	6	eVgo Network	TBD	No
331451	DCFC	Gilbert	4	eVgo Network	TBD	No
331512	DCFC	Yuma	16	Tesla	TBD	No
331513	DCFC	Phoenix	12	Tesla	TBD	No
331514	DCFC	Mesa	12	Tesla	TBD	No
331515	DCFC	Payson	4	Electrify America	TBD	No
331632	DCFC	Tempe	4	eVgo Network	TBD	No
331633	DCFC	Flagstaff	24	Tesla	TBD	No
331933	DCFC	Eloy	28	Tesla	TBD	No
331935	DCFC	Dateland	40	Tesla	TBD	No
331936	DCFC	Mesa	4	Electrify America	TBD	No
332011	DCFC	Grand Canyon Village	6	Electrify America	TBD	No
332012	DCFC	Quartzsite	84	Tesla	TBD	No
332013	DCFC	Glendale	16	Tesla	TBD	No
332014	DCFC	Phoenix	16	Tesla	TBD	No
332015	DCFC	Winslow	4	eVgo Network	TBD	No
332937	DCFC	Goodyear	12	Tesla	TBD	No
332981	DCFC	Tucson	6	eVgo Network	TBD	No

All State EV Charging Location Unique IDs are defined by the state and are found in the State's applicable GIS databases.

Figure 10: Existing Charging Stations on AFCs in Arizona



Electric Vehicle Charging Infrastructure Deployment

Developing a nationwide public EVSE network is key to creating a convenient, affordable, reliable, and equitable charging network. To achieve this goal, the NEVI Formula Program designates that a state may receive funding to deploy EVSE that meet NEVI Standards and Requirements along its AFCs. The requirements include, but are not limited to, the following:

- Publicly accessible EVSEs must be within 50 miles of each other. In addition, stations will be placed within 25 miles of the state's borders. Discretionary exceptions may be granted.
- EVSE must be less than 1 driving mile from a highway exit.
- Site power capability must be at least 600kW, to support at least 150kW per port simultaneously across four ports.
- Each charger must be equipped with a CCS connector.

Arizona's EV Charging Infrastructure Deployment Plan will comply with the aforementioned requirements. The 2024 Plan accounts for progress made in EV charging infrastructure deployment since the approval of the 2023 Plan and the 2022 Plan. The 2024 Plan identifies the locations of new and

upgraded EVSE stations along newly proposed AFCs. All the proposed corridors are pending AFC designation by the USDOT:

- US 160, US 89 to Four Corners
- US 95, Quartzite to San Luis
- SR 68, US 93 to Bullhead City
- US 60 Phoenix to Globe
- US 93, Wickenburg to I-40
- US 60, Show Low to New Mexico
- US 60, Phoenix to Wickenburg
- SR 80, Bisbee to Douglas
- SR 90, I-10 to Bisbee

Funding Sources

The deployment of ADOT's EV infrastructure will involve partnerships with private companies that have the interest, expertise, and resources to meet federal funding match requirements. These partners will upgrade existing or design, build, own, maintain, and operate new EVSE locations, as well as meet the required non-federal share to match the NEVI Formula Program funds.

Potential funding sources for EVSE stations in Arizona are displayed in **Table 26**. These sources include utility incentives for which EVSE station owners may be eligible, federal NEVI Formula Program funds, and the required non-federal match. Additional programs, such as time of use programs offered by local utilities, are also available to reduce the cost of EV ownership but are excluded from this list as they do not directly reduce upfront EVSE costs.

Table 26: Potential Funding Sources

Name	Program Description	Type of Funding	Administering Organization(s)	Amount
Business EV charging and fleet electrification program – Level 2	Rebate for installing networked Level 2 chargers at commercial, workplace, or multi-family sites.	Rebate	SRP	$1,500 per port for business, $4,000 per port for government, multifamily, nonprofit, and schools
Business EV charging and fleet electrification program – DCFC	Rebate for installing networked Level 2 chargers at commercial, workplace, or multi-family sites.	Rebate	SRP	$15,000 per station for business, $20,000 per station for government, multifamily,

Name	Program Description	Type of Funding	Administering Organization(s)	Amount
				nonprofit, and schools
Smart EV Charging Program	Rebate for the purchase and installation of EV charging stations for businesses, multifamily complexes, and nonprofit agencies.	Rebate	TEP	$9,000 per port for Level 2 charging stations, $40,000 per port for DCFC Chargers
EV Charging Station Rebate	Rebate to cover installation of Level 2 charger at residential sites.	Rebate	TEP	$500 for two-way charger, $250 for one-way
NEVI Formula Program	Funding to build EVSE every 50 miles within 1 mile of AFCs to establish an interconnected network.	Formula funding	FHWA	$76,483,976 over 5 years
Non-Federal Share (Match)	Private entity investment in EVSE and EVSE operations every 50 miles within 1 mile of AFCs.	Private investment	EVSE station owners	$19,120,994
Charging and Fueling Infrastructure Discretionary Grant Program	Funding to deploy EVSE along AFCs and in communities.	Grant	FHWA	$2.5 billion nationally

ADOT anticipates allocation of the federal NEVI Formula Program funds across the five-year life of the program as shown below by federal fiscal year (FFY):

- FFY 2022 to FFY 2023: $27,600,000
    - FFY 2022: $11,300,000 (rolled over to FFY 2023)
    - FFY 2023: $16,300,000
- FFY 2024: $16,300,000
- FFY 2025: $16,300,000
- FFY 2026: $16,283,976

The deployment strategy for 2024 is described below. Each subsequent year, the Plan will be updated with funding allocation amounts for the upcoming year.

2024 Electric Vehicle Supply Equipment Deployment Strategy

ADOT proposes an EVSE deployment strategy, aligning with the 2024 Plan. This strategy is designed to meet the objectives set forth in the *Vision and Goals* section of this Plan. This includes increasing the long-range mobility for EV drivers and supporting the development of an equitable national charging network by closing gaps in charging infrastructure along the state's highway system. The strategy includes:

- Utilizing existing creditable stations that meet NEVI Standards and Requirements
- Using discretionary exemptions as appropriate
- Closing remaining gaps with DCFC station upgrades or the construction of new stations

National Electric Vehicle Infrastructure-Creditable Electric Vehicle Supply Equipment Stations

The previous 2023 and 2022 Plans identified charging stations on the highways that were creditable (i.e., met NEVI Standards and Requirements). However, ADOT has decided to build out all locations that were previously identified as creditable in future advertisements as these stations do not meet the data sharing requirements under the NEVI Standards. ADOT will reinvestigate sites along the Interstate highways, now identified as potential new/upgrade sites (to be confirmed (TBC)), as part of the 2025 Plan and determine which sites need to be solicited as part of the 2026 advertisement. Previously identified creditable sites at Show Low, Payson, and Grand Canyon Village were removed from this list as they will be included in the 2025 advertisement for new or upgraded stations. All potential new/upgrade sites (TBC) along the Interstate highways are listed in **Table 27**. **Figure 11** shows the distance in miles between each existing potential new/upgrade site (TBC).

Table 27: NEVI Potential New/Upgrade Sites (TBC)*, 2022 - 2024

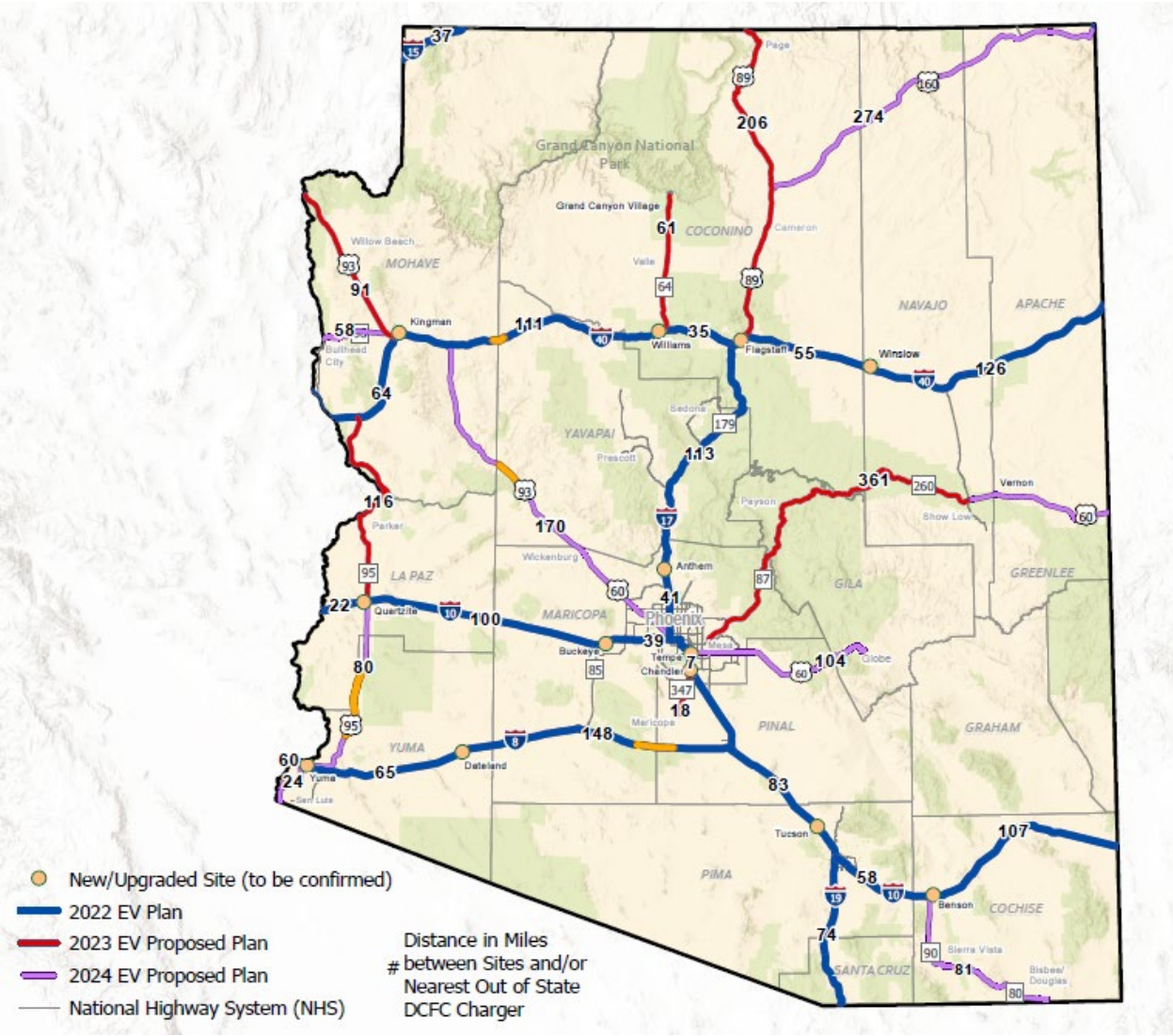
State EVSE Location Unique ID	Route	Locations	Address	Exit Number	EVSE Network	Utility Territories	Station Ownership
198884	I-8	Yuma	1450 South Yuma Palms Parkway	2	EVgo Network	Arizona Public Service	Existing
149194	I-10	Tempe	5000 South Arizona Mills Circle	154	Electrify America* Tesla	Salt River Project	Existing
187879	I-40	Kingman	3490 Stockton Hill Road	51	Electrify America* Rivian	UniSource Energy Services	Existing
184916	I-40	Williams	1100 W. Cataract Lake	163	Electrify	Arizona Public	Existing

State EVSE Location Unique ID	Route	Locations	Address	Exit Number	EVSE Network	Utility Territories	Station Ownership
			Road		America*	Service	
127934	I-40	Flagstaff	2601 East Huntington Road	198	Electrify America*	Arizona Public Service	Existing
135874	I-40	Winslow	700 Mike's Pike Street	253	Electrify America*	Arizona Public Service	Existing
187948	I-10	Quartzsite	760 South Quartzsite Boulevard	17	Electrify America* Rivian Tesla	Arizona Public Service	Existing
121828	I-10	Buckeye	1060 South Watson	117	Electrify America* Tesla	Arizona Public Service	Existing
191561	I-10	Chandler	4976 Premium Outlets Way	162	Electrify America*	Gila River Indian Community Utility Authority	Existing
169411	I-8	Dateland	1734 Avenue 64 East	67	Electrify America* Tesla	Arizona Public Service	Existing
145749	I-10/I-19	Tucson	6401 West Marana Center Boulevard	244	Electrify America*	Tucson Electric Power	Existing
123483	I-10	Benson	201 South Prickly Pear Avenue	303	Electrify America*	Sulphur Springs Valley Electric Co-op	Existing
124348	I-17	Anthem	4435 West Anthem Way	229	Electrify America*	Arizona Public	Existing

State EVSE Location Unique ID	Route	Locations	Address	Exit Number	EVSE Network	Utility Territories	Station Ownership
						Service	

*Pending verification by the Joint Office of Energy and Transportation. Site may not be upgradeable, may require new proposed site.

Figure 11: NEVI Potential New/Upgrade Sites (TBC), Arizona, 2022 to 2024



Discretionary Exemptions

ADOT is requesting four discretionary exemptions from the requirement that charging infrastructure be installed every 50 miles along the state's AFCs. Two of these exemptions were approved for the 2022 Plan. The proposed discretionary exemptions are described below and illustrated in **Figure 12**. Additional information regarding the discretionary exemptions may be found in **Appendix A**.

Kingman to Seligman

The 57-mile segment of I-40 between Kingman and Seligman is in a rural area with no existing amenities within 1 mile of the corridor. ADOT limited the distance of this gap as much as possible by proposing a new charging station just east of Kingman. The proposed exemption is for a 7-mile gap, as NEVI-compliant chargers will be sited 57 miles apart from each other.

Gila Bend to Casa Grande/Eloy

East of Gila Bend, I-8 is a rural area with no existing amenities within 1 mile of the corridor until reaching the interchange with I-10. ADOT proposed upgrading the existing stations in Casa Grande and installing a new site in Eloy to ensure convenient charging options for both westbound and eastbound I-10. The proposed exemption is for a 17-mile gap, as NEVI-compliant chargers will be sited 67 miles apart.

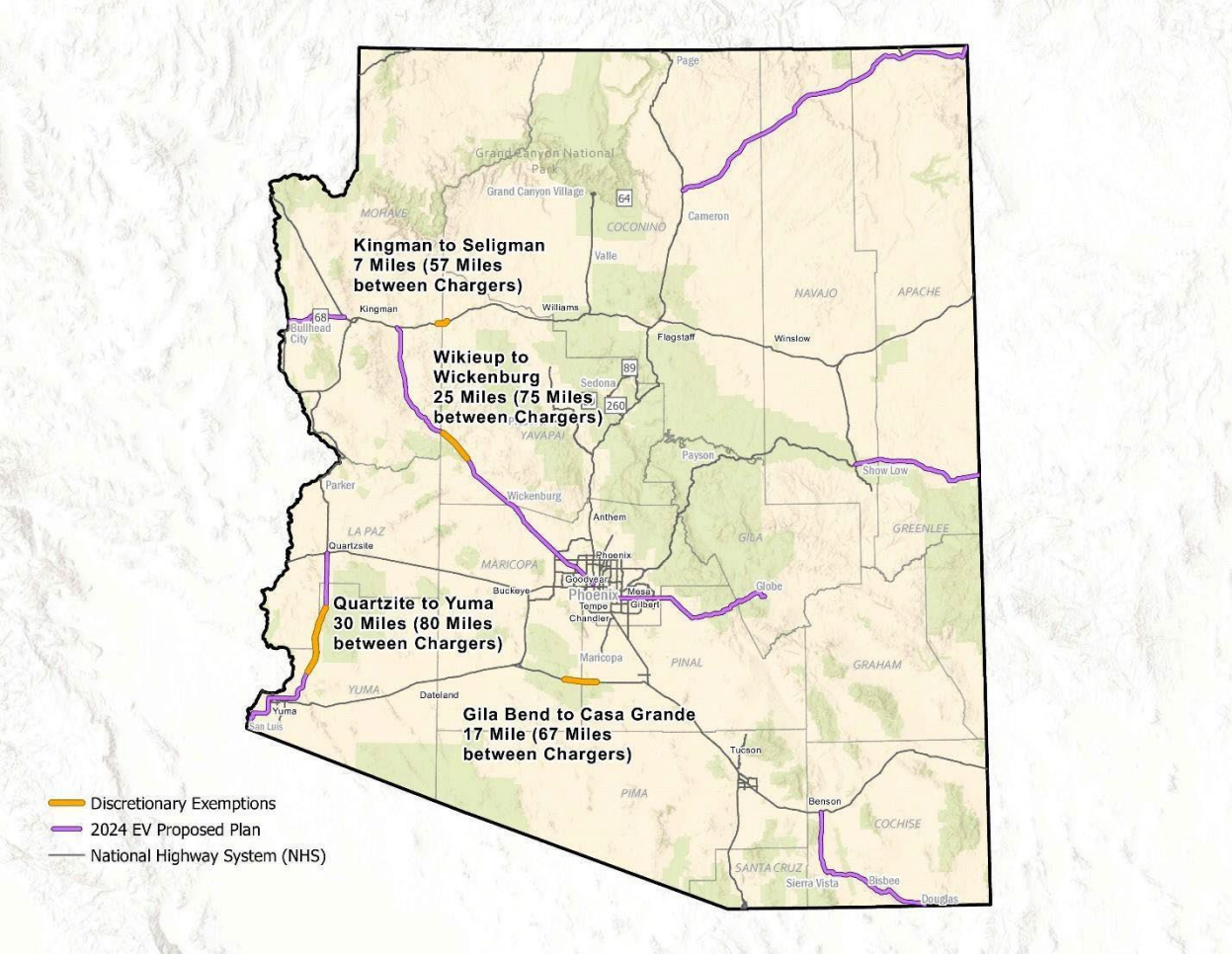
Wikieup to Wickenburg

The 25-mile segment of I-60 between Wikieup and Wickenburg is in a rural area with no existing amenities within one mile of the corridor. ADOT limited the distance of this gap as much as possible by proposing a new charging station just south of Wikieup. The proposed exemption is for a 25-mile gap, as NEVI-compliant chargers will be sited 75 miles apart from each other.

Quartzite to Yuma

South of Quartzite, I-95 is a rural area with no existing amenities within 1 mile of the corridor. The proposed exemption is for a 30-mile gap, as NEVI-compliant chargers will be sited 80 miles apart.

Figure 12: Discretionary Exemption Requests, 2022 to 2024



Closing Gaps in the Existing Network with New and Upgraded Stations

The 2022 Plan identified eight existing stations with the potential to be upgraded (or new build) to meet NEVI requirements, as well as locations for the construction of new stations, along the Interstate highways. The 2023 Plan identified an additional two stations with the potential to be upgraded (or new build) and 11 locations for new stations. The previously identified creditable stations at Show Low, Payson, and Grand Canyon Village are now added as potential update sites for 2023, making a total of five potential upgrades or new builds (as they are along 2023 corridors). The 2024 Plan identifies 17 locations for new charging stations and no potential upgrade locations.

Stations that need to be upgraded may need various improvements to be considered as creditable per NEVI, including installation of CCS ports, ensuring four ports capable of 150kW simultaneous charging, and meeting other NEVI requirements.

Locations identified in this plan for new construction are presented as general locations, rather than specific addresses and sites, as doing so would require coordination and communication with stakeholders regarding specific projects. At certain locations more than one interchange may be eligible as sites for station construction. Where possible, numerous exit locations are listed as potential options to allow proposers flexibility in selecting their site. The selected contractor will work with property owners and ADOT to establish exact locations. These sites will be identified in the contract.

Proposed station locations were identified using NEVI Standards and Requirements and the following criteria:

- Traffic volume
- Availability of amenities
- Presence of infrastructure
- Justice40 designations
- Cost
- Proximity to other EVSE stations in Arizona and neighboring states
- Utility capacity
- Public and stakeholder feedback

Table 28 and **Figure 13** show the existing stations identified for potential upgrade and the locations identified for new stations in the 2022-2024 plans.

Table 28: Potential Upgrades and New EVSE Station Locations, 2022 to 2024

Stations to be potentially upgraded indicated in bold.

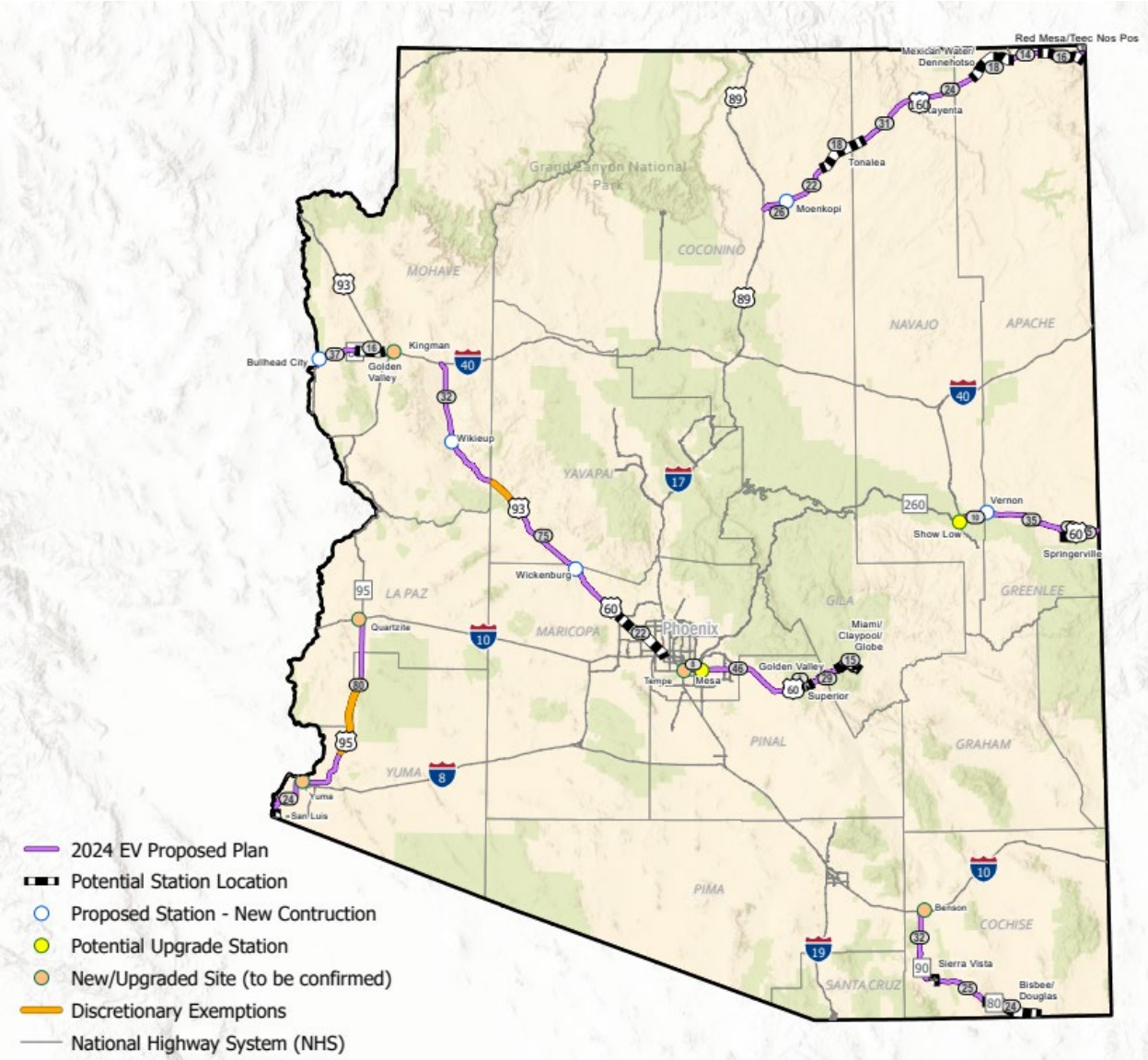
State EVSE Location Unique ID	Route	Location	Exit Number	Utility Territories	NEVI Funding Sources	Number of Ports	Estimated Year Operational and Cost	Tribal or DAC Designation
2024								
TBD	US 160	Moenkopi	AZ 264 E, Moenkopi	APS	FFY 25	4	TBD	Yes
TBD	US 160	Tonalea	BIA Route 21/ BIA Route 2121	Navajo Tribal Utility Authority (NTUA)	FFY 25	4	TBD	Yes
TBD	US 160	Kayenta	US 163, Kayenta	Navajo Tribal Utility Authority (NTUA)	FFY 25	4	TBD	Yes
TBD	US 160	Mexican Water/ Dennehotso	BIA Route 119	Navajo Tribal Utility Authority (NTUA)	FFY 25	4	TBD	Yes
TBD	US 160	Red Mesa/ Teec Nos Pos	US 162	Navajo Tribal Utility Authority (NTUA)	FFY 25	4	TBD	Yes
TBD	SR 68	Golden Valley	Verde Road	Mohave Electric Cooperative	FFY 25	4	TBD	Yes
TBD	SR 68	Bullhead City	Bullhead Parkway	Mohave Electric Cooperative	FFY 25	4	TBD	No
TBD	US 93	Wikieup	Chicken Springs Road	Mohave Electric Cooperative	FFY 25	4	TBD	Yes
TBD	US 93	Wickenburg	North Tegner Street	APS	FFY 25	4	TBD	No
TBD	US 93	Goodyear	Wickenburg Way	APS	FFY 25	4	TBD	Yes
TBD	US 260	Vernon	Vernon McNary Road	Navopache Electric Cooperative	FFY 25	4	TBD	No
TBD	US-60	Springerville	South Mountain	Navopache Electric	FFY 25	4	TBD	Yes

State EVSE Location Unique ID	Route	Location	Exit Number	Utility Territories	NEVI Funding Sources	Number of Ports	Estimated Year Operational and Cost	Tribal or DAC Designation
			Avenue	Cooperative				
TBD	US-60	Superior	Main Street	APS	FFY 25	4	TBD	Yes
TBD	US-60	Miami/Claypool/ Globe	South Miami Avenue	APS	FFY 25	4	TBD	Yes
TBD	**US-60**	**Mesa**	**AZ 87**	**TBD**	**FFY25**	**4**	**TBD**	**Yes**
TBD	SR-90	Sierra Vista	North Buffalo Soldier Trail	Sulphur Springs Valley Electric Cooperative	FFY 25	4	TBD	Yes
TBD	SR-90	Bisbee/ Douglas	Tombstone Canyon	APS	FFY 25	4	TBD	Yes
2023								
TBD	US 89	Page	Haul Road	Page Utility Enterprises	FFY 24	4	TBD	No
TBD	US 89	The Gap	498 US 89, Cameron,	NTUA	FFY 24	4	TBD	Yes
TBD	US 89	Cameron	Cameron Bridge Bypass Road	APS	FFY 24	4	TBD	Yes
TBD	SR 87	Fort McDowell	Fort McDowell Road	SRP	FFY 24	4	TBD	Yes
TBD	SR 87	Rye	South Beeline Hwy	APS	FFY 24	4	TBD	Yes
TBD	SR 260	Forest Lakes Estates	Highway Loop	APS	FFY 24	4	TBD	No
TBD	SR 260	Overgaard	Mogollon	Navopache Electric Cooperative	FFY 24	4	TBD	Yes
TBD	SR 347	Maricopa	West Smith Enke Road	Electrical District No. 3	FFY 24	4	TBD	Yes
TBD	SR 64	Valle	US 180	APS	FFY 24	4	TBD	No
TBD	SR 95	Lake Havasu City	McCulloch Boulevard	Unisource	FFY 24	4	TBD	Yes

State EVSE Location Unique ID	Route	Location	Exit Number	Utility Territories	NEVI Funding Sources	Number of Ports	Estimated Year Operational and Cost	Tribal or DAC Designation
			North					
TBD	SR 95	Parker	West Riverside Drive	APS	FFY 24	4	TBD	Yes
TBD	**US 93**	**Willow Beach**	**CR145**	**UNS Electric**	**FFY 24**	**8**	**N/A**	**No**
TBD	**SR 260**	**Show Low**	**North 9th Street**	**Unknown at time of Plan submittal**	**FFY24**	**4**	**TBD**	**Yes**
TBD	**SR 260**	**Payson**	**East Granite Avenue**	**Unknown at time of Plan submittal**	**FFY24**	**4**	**TBD**	**Yes**
TBD/153422	**US 180**	**Grand Canyon Village/ Tusayan**	**Canyon Plaza Lane/Long Jim Loop**	**APS**	**FFY24**	**4/12**	**TBD**	**Yes**
2022								
TBD	I-40	Lake Havasu City	9	UNS Electric	FFY 22/23	4	TBD	Yes
TBD	I-40	Seligman	123	APS	FFY 22/23	4	TBD	Yes
TBD	I-40	Kingman	66	Mohave Electric Cooperative	FFY 22/23	4	TBD	Yes
TBD	I-40	Twin Arrows	219	APS & NTUA	FFY 22/23	4	TBD	No
TBD	I-40	Petrified Forest	311	APS	FFY 22/23	4	TBD	Yes
TBD	I-40	Sanders	339	Navopache Electric Cooperative	FFY 22/23	4	TBD	No
TBD	I-17	Munds Park	322	APS	FFY 22/23	4	TBD	No
TBD	I-17	Camp Verde	287	APS	FFY 22/23	4	TBD	Yes
TBD	I-10	Salome	45	APS	FFY 22/23	4	TBD	Yes
TBD	I-10	Tonopah	94	APS	FFY	4	TBD	Yes

State EVSE Location Unique ID	Route	Location	Exit Number	Utility Territories	NEVI Funding Sources	Number of Ports	Estimated Year Operational and Cost	Tribal or DAC Designation
					22/23			
TBD	I-10	San Simon	378	Sulphur Springs Valley Electric Cooperative	FFY 22/23	4	TBD	Yes
TBD	I-19	Nogales	4	Unisource	FFY 22/23	4	TBD	Yes
TBD	I-10	Eloy	200	APS	FFY 22/23	4	TBD	Yes
101984	**I-40**	**Holbrook**	**286**	**APS**	**FFY 22/23**	**12**	**N/A**	**Yes**
101986	**I-17**	**Cordes Lakes / Cordes Junction**	**262**	**APS**	**FFY 22/23**	**8**	**N/A**	**Yes**
101981 or 198884	**I-17**	**Casa Grande**	**194**	**APS**	**FFY 22/23**	**6 or 4**	**N/A**	**Yes**
101994	**I-10**	**Tucson**	**273**	**TEP**	**FFY 22/23**	**10**	**N/A**	**Yes**
154797	**I-8**	**Tacna**	**42**	**Wellton-Mohawk Irrigation District**	**FFY 22/23**	**8**	**N/A**	**Yes**
122249	**I-8**	**Gila Bend**	**115**	**APS**	**FFY 22/23**	**16**	**N/A**	**Yes**
101996	**I-10**	**Willcox**	**340**	**Sulphur Springs Valley Electric Cooperative**	**FFY 22/23**	**8**	**N/A**	**Yes**
205372, 211832	**I-19**	**Green Valley**	**69**	**TEP/Trico**	**FFY 22/23**	**4**	**N/A**	**Yes**

Figure 13: Proposed Charging Network, 2024



2024 Electric Vehicle Supply Equipment Deployment Strategy Summary

As described previously, ADOT's 2024 EVSE deployment strategy aims to increase long-range mobility for EV drivers by closing gaps in charging infrastructure along the state's AFCs and supporting the development of an equitable national charging network. The deployment strategy identifies NEVI creditable EVSE stations and non-compliant DCFC stations for potential upgrades, then fills in gaps by providing funding for the design, installation, operation, and maintenance of new stations in locations addressing those gaps. Exemptions are being requested only as necessary and will not jeopardize a convenient, affordable, reliable, and equitable national EV charging network. A map displaying the full network build-out is shown in **Figure 14**. ADOT intends to issue a combined RFP for the 2023 and 2024 Plan locations early in 2025.

Figure 14: Proposed Charging Network, 2022 to 2024

2025 to 2026 Deployment Strategy

ADOT has solicited information from stakeholders and the public about what additional routes should be considered for AFC nomination. Only routes on the NHS are eligible for nomination as AFCs. Based on feedback from the solicitation, the proposed AFC nominations for 2025 are found in **Table 29** and **Figure 15**.

Table 29: Preliminary List of Proposed New AFC Candidates, 2025

Corridor Name	Location
SR 69	I-17 to Prescott

Corridor Name	Location
SR 77	SR 260 to I-40
SR 85	I-8 to I-10
SR 260	Camp Verde to Sedona
SR 77	Tucson to north end of NHS route (Pima/Pinal County border)
SR 179	I-17 to Sedona
SR 287	Casa Grande to I-10
SR 89/89A	SR 69/SR 169 to north end of NHS route

Figure 15: Proposed New AFC Candidates, 2025

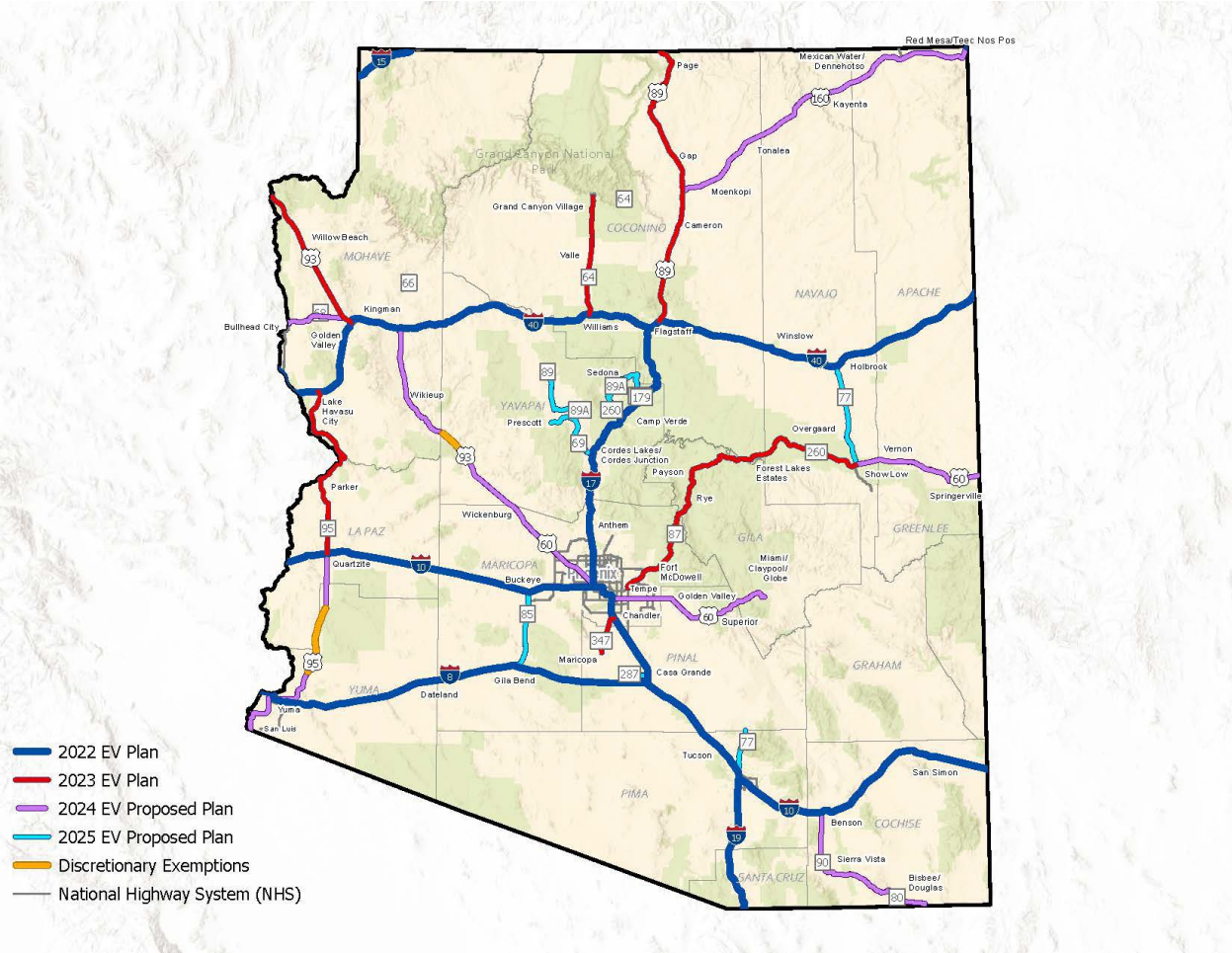
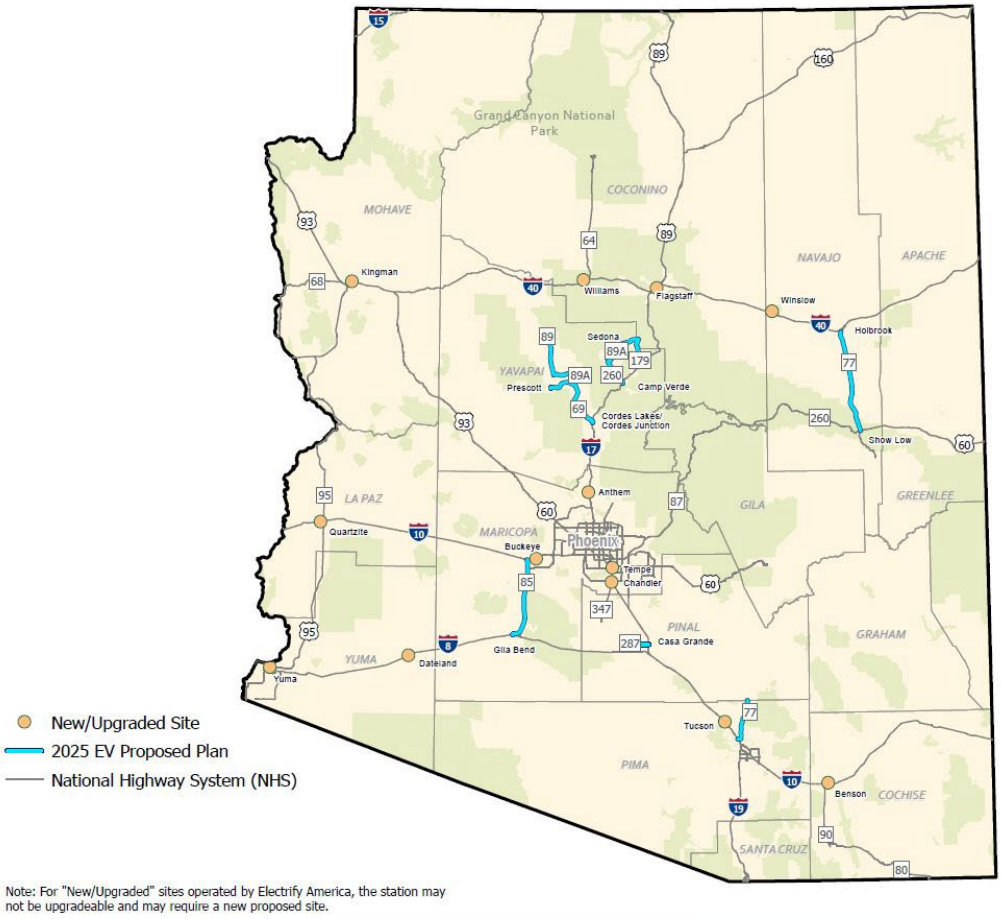


Figure 16: NEVI New/Upgrade Sites (TBC), Arizona, 2025



The evaluation of candidates for AFC nomination will be based upon the improvement to state and national EV connectivity, public input, funding availability, and other factors. Nominations of AFCs, along with their corresponding EVSE infrastructure deployment plans, will be included in future plan updates. Following plan approval, ADOT intends to deploy stations on the newly designated AFCs.

Deployment Criteria for 2025 to 2026

To prioritize and support an equitable, efficient, charging network, ADOT will assess potential locations based on the following criteria, as it did in preparing the 2022 and 2023 Plans:

- Traffic volume
- Availability of amenities
- Presence of infrastructure
- Justice40 designations
- Cost
- Proximity to other EVSE stations in Arizona and neighboring states

- Utility capacity
- Public and stakeholder feedback

Planning Towards a Fully Built Out Determination

Currently there are no stations under construction. Construction is expected to begin following contract execution. At this time, ADOT is not able to determine if full buildout is achievable due to the early status of the program. ADOT plans to re-investigate locations that did not receive proposals from private developers to understand whether it will be feasible to re-advertise at these locations. Additionally, ADOT is planning to re-investigate identified potential upgrade sites (TBC) on Interstate highways as part of the 2025 Plan. ADOT plans to advertise these stations in the 2026 solicitation. ADOT expects the NEVI funding amount will be sufficient to build out the identified and potential AFCs in this Plan. ADOT expects a small amount of money to remain, which will be used to support data monitoring and as a contingency to re-advertise sites if needed.

Other Considerations

Public transportation is a key consideration when addressing the mobility needs of DACs. The proposed charging sites will be accessible to electric rideshare vehicles and transit vans along the corridors.

FHWA has designated four Arizona highways (I-10, I-17, I-19, and I-40) as Primary Highway Freight System routes that are critical to the movement of freight. ADOT will evaluate EVSE needs for medium- and heavy-duty vehicles in periodic updates to its freight plan.

State, Regional, and Local Policy

ADOT plans to continue coordination and engagement with state, regional, and local policy related stakeholders. Table 30 summarizes the relevant Arizona policies and plans.

Table 30**: **Arizona EV Policies and Plans

EV Policy Breakdown		
Policy	**Entity**	**Description**
State		
Arizona Statewide Transportation Electrification Plan: Phase II	APS and TEP	In 2021, APS and TEP released the Arizona Statewide Transportation Electrification Plan: Phase II as a follow-up to the Phase I plan released in 2019. It put forth a comprehensive and actionable roadmap for transportation electrification in Arizona, including an analysis of promising EV opportunities and significant engagement with the state's TEP stakeholder community. Updates are anticipated every three years. A cost/benefit analysis of electrification opportunities and stakeholder engagement found that transportation electrification could generate net benefits of $28 billion for Arizona, $9 billion for drivers and fleet owners, and $12 billion for utility ratepayers, in present value.

EV Policy Breakdown		
Policy	Entity	Description
		Within this Phase II plan, APS and TEP propose statewide 2030 EV goals by vehicle segment and utility, with a proposed goal for electric light-duty vehicles at 450,000; 95,000; and 1,076,000 vehicles for APS, TEP, and State service areas, respectively.
EV Cost-Benefit Analysis	Southwest Energy Efficiency Project (SWEEP)	SWEEP released an EV Cost-Benefit Analysis for Arizona in December 2018 with a focus on passenger vehicles in two scenarios (moderate and high adoption rates). For the moderate scenario, it was estimated that a cumulative net benefit from plug-in electric vehicles (PEVs) use in Arizona will exceed $3.7 billion statewide by 2050, but this number could increase to exceed $31 billion under the high scenario. These savings would be derived from electric utility customers in the form of reduced electric bills, from drivers in the form of reduced annual vehicle operating costs, from owners of public charging infrastructure, from residents due to reduced costs of complying with future carbon reduction regulations, and from society at large based on the value of reduced nitrogen oxides emissions.
Regional		
Transportation Electrification Implementation Plan	TEP and UNSE	TEP and UNSE intend for the implementation plan to build off the Statewide Transportation Electrification Plan, to focus on the barriers best addressed by the electric utility. This includes public lack of awareness, insufficient charging infrastructure and network, costs of EV charging and grid impacts, and access for underserved and low- to moderate-income customers.
Regional Electrification Readiness Strategic Plan	MAG	The plan will prepare the MAG region for an increasingly electric future. The strategic plan will include a range of recommendations and strategies to enhance electrification readiness for MAG and its member agencies. The study aims to accomplish these three main objectives: Assess the current and future state of electrification and regional implications Define roles and responsibilities for applicable strategies Identify strategic funding opportunities and next steps for action
Local		
Transportation Electrification Plan	City of Phoenix	In June 2022, the City of Phoenix approved the Draft Transportation Electrification Action Plan, which summarizes the current state of the city's EV adoption and infrastructure, their target goals for the year 2030, and a list of goals with provided action items to achieve their target number of 280,000 EVs. The plan follows a 'Roadmap 2030,'

EV Policy Breakdown		
Policy	Entity	Description
		which includes five steps to prepare for the increased adoption. The plan notes issues related to charging infrastructure shortages, actual/perceived cost, limited model availability, range anxiety, lack of EV-ready building codes, and public knowledge and experience with EVs as a few of the factors still standing in the way of greater adoption rates. To overcome these issues, the plan sets three distinct goals/strategies: Prioritizing Equity, Accelerate Public Adoption of EVs, and Lead by Example. Currently, Phoenix has set adoption goals in line with the federal government's 2030 nationwide EV adoption.
Electric Vehicle Readiness Roadmap	City of Tucson	The City of Tucson EV Readiness Roadmap provides goals, strategies, and actions to promote EV adoption for public transit, city fleet, and community member vehicles. The transition to EV vehicles supports many Plan Tucson and Resolution 23222 goals that lead to economic, public health, environmental, and socioeconomic benefits. One key aspect of the Roadmap is ensuring that the City of Tucson facilitates access to EV charging to prepare for an influx of EVs; after the release of this Roadmap, new zoning regulations that require many new developments to include EV stations and require conduits that can support future added capacity to support future EV capacity went into effect in December 1, 2022.

Implementation

Implementation requirements and considerations are crucial to ensuring the feasibility of the Plan's recommendations, as well as the long-term sustainability and resiliency of charging stations. These considerations are expected to promote the efficient use of funds and support effective EVSE infrastructure deployment. They are also intended to meet broader equity goals (including Justice40), by supporting labor, safety, training, and installation standards, and by providing opportunities for small businesses. ADOT will incorporate the relevant requirements and monitoring provisions into the contracts to be established with EVSE owners.

The following implementation requirements and considerations align with the NEVI Standards and Requirements to develop a set of expectations related to operations and maintenance, data collection and sharing, resilience, and labor training for station owners using NEVI Formula Program funding.

Strategies for Electric Vehicle Supply Equipment Operations and Maintenance

EVSE are only an asset to EV owners if they remain in working order. The impact of the investment of public funds can be furthered by ensuring that station owners commit to complying with NEVI requirements for operations and maintenance.

Requirements

ADOT will ensure that station owners are maintaining EVSE infrastructure in good working order by using qualified technicians in compliance with all EVSE infrastructure manufacturer requirements and with all requirements issued by NEVI. Technician qualifications are more fully described in the Labor and Workforce Considerations section. Requirements and monitoring provisions will be set forth in the contract between ADOT and the station owner.

ADOT will require that owners of the EVSE infrastructure provide reasonable plans, to include funding considerations; and guarantees for maintaining the EVSE and related equipment in good working order. Those reliability standards are more fully described in the Program Evaluation - Metrics section. ADOT will review plans and guarantees for sufficiency prior to acceptance. ADOT will monitor compliance with maintenance plans and guarantees through reported data and periodic on-site inspection of charging locations, EVSE, and records.

ADOT will require that infrastructure be maintained at the same location for a period of no less than five years from the "service commencement date", which is the installation date with the consideration of service beyond the NEVI Formula Program funds. ADOT will request that prospective station owners identify their plans to operate and maintain the charging infrastructure during and after the five-year required maintenance period and may make this a consideration in the contract award.

Annually, information about the organizations operating, maintaining, or installing EVSE will be submitted. A use, reliability, and maintenance data submittal will occur quarterly. One of the primary categories of data collection will be maintenance and reliability data. Further details about this data submittal are described in the Program Evaluation—Reporting section.

ADOT will require that EVSE owners provide mechanisms for customers to report outages, malfunctions, and other issues with charging infrastructure. ADOT will require that site owners make these reporting

mechanisms accessible and equitable by complying with the ADA and by providing multilingual access as required by law.

If appropriate and cost effective, ADOT will consider requiring that the station owner purchase an EVSE equipment warranty.

When a charger is part of a network, the network provider may cover payment and maintenance costs. If selecting a networked charger for purchase, ADOT will encourage site owners to first consider the necessity of adequate cell service at the proposed site to ensure the station can communicate with its network and users can access applications for payment.

Strategies for Electric Vehicle Supply Equipment Data Collection and Sharing

ADOT recognizes that data collection and sharing can be used to update and improve the program over time, as well as provide users with the information needed to use the network. This Plan ensures compliance with NEVI Standards and Requirements relating to EVSE data collection and sharing. Any cybersecurity recommendations or requirements related to data sharing or network connectivity are addressed in the Cybersecurity section. The following strategies are based on the NEVI Standards and Requirements:

- To increase awareness of charging infrastructure and improve customer and station host satisfaction, ADOT will require its EVSE owners to share data describing EVSE location, type of equipment available, price, status, and other information—free of charge—via an application programming interface with public-facing directories, including the Alternative Fuel Data Center's Station Locator.
- Station owners will comply with the proposed interoperability requirements for charger-to-EV communication to ensure that chargers are capable of the communication necessary to perform smart charge management and Plug and Charge. Chargers will be required to be capable of using Open Charge Point Interface for interoperability and the ability to communicate through Open Charge Point Protocol in tandem with ISO 15118.
- To allow for secure remote monitoring, diagnostics, control, and updates, station owners will comply with network connectivity requirements for charger-to-charger network communication, charging network-to-charging network communication, and charging network-to-grid communication.
- Station owners will comply with the proposed requirement that payment options include contactless payment methods, that contactless payment be accepted by all major debit and credit cards, and that access and service are not restricted by membership or payment method type. ADOT will require that station owners do not limit or curtail power flow to vehicles on the basis of membership or payment method. ADOT will require that multilingual access and access for people with disabilities be provided when creating payment instructions. Provisions for payment options will be set forth in the contract. Station owners will also be required to provide an automated toll-free phone number or a SMS that provides the EV charging customer with the option to initiate charging sessions and submit payments.
- Charging station owners must display the price of charging prior to initiating a charging transaction and the price must be based on the price for electricity to charge in $/kWh.

- The price for charging displayed must not change during the charging session, and the price structure including any fees and the price of electricity must be clearly displayed and explained.

Strategies to Address Resilience, Emergency Evacuation, Snow Removal/Seasonal Needs

The following strategies are based on and ensure compliance with NEVI Standards and Requirements.

Emergency Evacuation, Snow Removal, and Seasonal Needs

EVSE infrastructure should be conveniently and safely located. If the EVSE cannot be safely accessed during snow events or emergency situations, they are not as strong an asset to the AFC. EVSE stations should provide convenient charging to allow vehicles to evacuate an area safely and quickly in an emergency.

Strategies

- ADOT will consider the potential impacts of extreme weather events, including the use of currently available USDOT tools and resources to assess the vulnerability and risk of planned and existing EVSE stations and the development, deployment, and monitoring of resilience solutions.
- ADOT will consider emergency and evacuation needs, including how they will support overall emergency evacuation plans along roadways. ADOT will consider the location and construction of EVSE infrastructure with respect to the Federal Flood Risk Management Standard, as well as how climate may affect the floodplain.[36] ADOT will consider the importance of ensuring access to EVSE during times of emergency, such as evacuations from natural disasters, and design requirements that address the risk associated with locating EVSE in floodplains. If an existing station that is proposed for an upgrade is identified to be in a floodplain, there must be proposed mitigation strategies if continuing with the selected station. For new station location selection, the owner would identify the station location but be responsible for environmental and floodplain considerations.
- In areas that experience annual snowfall, such as northern Arizona, ADOT will require that station owners commit to preventive actions, such as salting, and reactive actions, such as snow plowing, to address snow buildup that could block access to the station.
- In areas that experience intense sun and heat, such as central, southern, and western Arizona, ADOT will recommend that station owners consider ways to protect EVSE, such as shade structures, where feasible.

Resilience Considerations

The AFCs are only an asset if EVSE are functional when needed most—during extreme weather events, emergencies, outages, and evacuations. This requires consideration of resilience strategies such as identified below:

[36] U.S. Department of Homeland Security. (n.d.). Federal Flood Risk Management Standard. FEMA. Retrieved from https://www.fema.gov/floodplain-management/intergovernmental/federal-flood-risk-management-standard

Requirements and Strategies

- ADOT will consider the inclusion of distributed energy resources (DERs) (e.g., solar arrays, energy storage) and electrical distribution and switching equipment where practicable and necessary. DERs are small, localized energy production sites, like solar arrays, which allow for an electrical system to be self-sufficient by producing its own power in the event of a grid outage.
- ADOT will require that EV stations located in floodplains be upgraded to mitigate the impacts of flooding.
- ADOT will require station owners to identify and adopt a plan for snow removal where applicable.

Strategies to Promote Strong Labor, Safety, Training, and Installation Standards

Developing an EVSE network provides opportunities to create well-paying jobs to build a modern, sustainable infrastructure. Minimum skill, training, and certification standards for technicians ensure that the deployment of EVSE infrastructure will support stable career-track employment, creating more openings for workers to pursue training in the electrical trades—critical occupations for the clean energy transition. By requiring installation, maintenance, and operations to be performed by a well-qualified, highly skilled, certified, licensed, and trained workforce, the EVSE network's safety and reliability will be increased. The following strategies are based on NEVI Standards and Requirements.

- ADOT will require that designs meet all applicable fire protection and prevention standards and traffic safety requirements.
- ADOT will ensure that station owners consult local emergency management and public safety agencies, as appropriate.
- ADOT will ensure that station owners are operating and maintaining EV charging infrastructure with a focus on public safety. This includes the provision of adequate lighting, fire protection, and other traffic safety features.
- As discussed in the Labor and Workforce—Training Strategies section, requirements for training and hiring standards will be included in EVSE contracts.
- ADOT will encourage station owners to have trained staff on call in emergency situations.

Additional Strategies

The following recommendations will be provided to site owners as suggested best practices to help them enhance labor and workforce considerations at EVSE stations and the overall network. These recommendations will be provided to potential owners, along with other solicitation documents provided during the EVSE station owner selection process and discussed during pre-bid or similar meetings and in communications with selected owners.

- ADOT will make its site owners aware that several additional USDOT funding and finance programs are also available to support workforce training for innovative technologies.

Opportunities for the Participation of Small Businesses

When selecting charging station locations, ADOT will consider locations at or immediately adjacent to land uses with food retailers, convenience stores, small businesses with an ADA accessible pathway

between the EVSE infrastructure and the identified establishment's front door, and other comparable facilities.

ADOT will continue to engage the public and stakeholders that represent or provide services to small businesses, including the Arizona Small Business Association, the state and local chambers of commerce, and other chambers of commerce such as the Hispanic Chamber of Commerce, the Black Chamber of Commerce, and the Chinese Chamber of Commerce.

Installation Standards

Meeting current and anticipated market demands for EVSE infrastructure—including expected power levels and charging speed—and minimizing the time needed to charge vehicles is crucial for a successful EVSE network. Designing and managing facilities properly before installation can reduce upfront costs and, later, the operational costs associated with charging stations. The following strategies are based on NEVI Standards and Requirements:

- ADOT will only consider DCFC for NEVI Formula Program funding.
- ADOT will consider future proofing EVSE to accommodate expansions needed to support growing demand. Future-proofing considerations may include station size, power levels, and oversized conduit and pre-wiring new buildings for future EVSE stations.
- ADOT will submit one-time, annual, and quarterly data as required by NEVI Standards and Requirements, such as the submission of detailed EVSE acquisition and installation costs, and grid connection and upgrade costs paid by the charging station operator. Refer to the Program Evaluation—Reporting section for more detail.
- Station owners will be required to account for the cost of the minimum infrastructure needed to safely operate EVSE, such as protective bollards or curbs and gutters to support a curbside PEV charger installation. Station owners must consider installation of signage and pavement markings to designate EVSE locations, prevent non-EVs from parking, and direct EV drivers to station locations. This includes complying with existing requirements in the Manual on Uniform Traffic Control Devices for Streets and Highways found at 23 CFR Part 655 and the Highway Beautification regulation at 23 CFR Part 750 and any processing updates to those requirements.

Equity Considerations

ADOT is committed to complying with the Justice40 Initiative—a part of Executive Order 14008—when using NEVI Formula Program funds. This section outlines how the Plan identified and engaged with DACs throughout the Plan's development, as well as the actions taken to ensure that benefits to DACs are captured throughout this work.

Identification and Outreach to Disadvantaged Communities in the State

As part of the public involvement planning process, a review of statewide census data was conducted to identify the state's demographics. Data points reviewed included race/ethnicity, age, income level, and disability. Separately, vehicle accessibility/ownership was reviewed to assess the current status of EV market penetration. As part of planning for public meetings, additional reviews were conducted to identify specific areas within geographic regions for targeted outreach and notification of public meetings.

Tools to Engage Disadvantaged Communities

Tools utilized to ensure opportunity for meaningful participation by disadvantaged and traditionally underserved individuals and communities are listed below. These tools will continue to be utilized as outreach is conducted for further refinement of the Plan:

- Translation of public involvement materials, including notices and the project fact sheet, into Spanish and other languages, as identified through the LEP Four-Factor Analysis or by request.
- Spanish oral interpretation at all public meetings and Spanish translation of graphics on the project webpage. Additional language services were available by advance request. The Navajo Nation requested, and ADOT provided, oral interpretation in Diné (Navajo) at the virtual public meeting held July 10, 2024.
- Use of Google Translate on the ADOT project webpage, allowing the translation of information into approximately 100 languages.
- Outreach and engagement of local government partners and special interest groups to participate and share information with their constituents and members.
- Promotion of public meetings and other outreach efforts by posting flyers in English and Spanish at community gathering places.
- Utilization of community contacts, mailing lists, and other means to initiate and continue communication.
- Targeted public outreach to the identified low-income and minority communities within the project area via stakeholder partner channels.
- Display of Notice of Availability of Reasonable Accommodations on all project public-facing materials.
- Selection of meeting venues accessible by public transit.

Actions to Ensure Nondiscriminatory Practices

To ensure nondiscriminatory practices based on Title VI, ADOT has adhered to the following applicable actions and will continue to do so during outreach throughout Plan refinement.

- Provide ADOT nondiscrimination brochures in both English and Spanish to public meeting attendees.
- Display the ADOT Nondiscrimination Notice to the Public poster in English and Spanish at public meetings and encourage meeting participants to read the information.
- Include ADOT's Nondiscrimination Notice to the Public slide in English and Spanish in the meeting presentations and read the accompanying script in Spanish, as well as in Diné (Navajo).
- Provide the opportunity for in-person and virtual meeting attendees to complete the voluntary Title VI Self-Identification cards. Virtual meetings provide the Self-Identification Survey through a slide with a link and the link posted in the chat for attendee convenience. Hard-copy cards are provided to attendees at in-person meetings upon check in.

Actions to Ensure Accessibility

The following strategies have been utilized when appropriate for the outreach activity and will continue to be utilized throughout Plan development to comply with the ADA's statutory requirements.

- Ensure public meeting venues are ADA-compliant and accessible by ADA-compliant transportation options, and that information provided is accessible for persons with vision or hearing disabilities.
- Ensure that virtual public meetings and stakeholder workshops are ADA accessible, which includes instructing users how to turn on closed captioning services, having speakers turn on their cameras, providing minimum font sizes in presentations, and including a required auxiliary aids and services slide regarding how to request ADA accommodations.
- Ensure that materials posted to the website are accessible PDFs that are compatible with readers.
- If online resources are used to provide project information, provide guidance on how to use online resources. Resources will be ADA accessible, including assistance for those with visual impairment and information about alternative methods for participation.
- Provide the Notice of Availability of Reasonable Accommodations on all public-facing materials for the study. Reasonable accommodations are provided upon request (e.g., sign language interpreter, copies of materials in accessible formats, etc.).

Disadvantaged Communities Outreach Results

The virtual survey in the outreach conducted in fall 2022 received 1,423 responses, exceeding the combined total responses from the public survey (919) and its accompanying stakeholder survey (157) distributed earlier in 2022. While the ADOT team is also guided by factors such as cost and feasibility in decision-making, public input is a vital factor that helps to establish priorities and generate new ideas and perspectives. Considering the number of responses and the focused nature of the questions in the 2022 survey, the ADOT team identified public preferences, particularly:

- No single proposed criterion for prioritizing future AFCs was supported significantly more or less strongly than others.
- The potential future AFCs listed for preference indicated a clear hierarchy, with the top five locations picked by more than one in three respondents and five more picked by more than one in five.

- Respondents strongly preferred more traditional methods of payment, with credit and debit cards—whether chip-and-pin or tap-to-pay—scoring highly, and many asking about cash options.
- Preferences for information available online strongly favored being able to ensure that chargers are available and functional, though high ratings for all options suggested all information is welcome.

An online comment form distributed in July 2023 during development of the 2023 Plan update invited respondents to ask questions and make open-ended comments. Themes identified in the comments focused on connector types, the desire for shade structures at stations, and ADOT's approach to completing the state's charging network. Survey results are included in Appendix E.

Process to Identify, Quantify, and Measure Benefits to Disadvantaged Communities

Executive Order 14008 states that "40 percent of the overall benefits" of federal investments from covered programs should flow to DACs. The USDOT methodology for defining DACs includes data for 22 indicators collected at the census tract level and grouped into six categories of transportation disadvantages:

1. Transportation access disadvantage identifies communities and places that spend more, and take longer, to get where they need to go.
2. Health disadvantage identifies communities based on variables associated with adverse health outcomes, disability, and environmental exposures.
3. Environmental disadvantage identifies communities with disproportionately high levels of certain air pollutants and high potential presence of lead-based paint in housing units.
4. Economic disadvantage identifies areas and populations with high poverty, low wealth, lack of local jobs, low homeownership, low educational attainment, and high inequality.
5. Resilience disadvantage identifies communities vulnerable to hazards caused by climate change.
6. Social disadvantage identifies communities with a shared history of discrimination, racism, or other forms of disadvantage that warrant consideration along with each/any of the above measures.

To respond to the Justice40 directive, ADOT will adhere to and comply with all federal requirements.

ADOT's EV Infrastructure Deployment Plan intends to meet the Justice40 program requirements by monitoring program success in identifying, quantifying, and measuring benefits to DACs. Due to the nature of different communities possessing different needs, documentation of benefits to DACs will ensure ADOT's goal to meet NEVI equity requirements. These measures can include documentation of EV charging incentives and low-cost initiatives for DACs.

ADOT intends to monitor and report progress as required by NEVI Standards and Requirements. ADOT is soliciting feedback regarding DAC benefits and metrics through stakeholder and public engagement. ADOT will amend the Plan to reflect input from stakeholders and the public through the public outreach and involvement activities.

Benefits to Disadvantaged Communities through this Plan

ADOT plans to measure benefits to DACs associated with implementing the Plan by assessing impacts aligned with the USDOT categories and the interim Justice40 guidance (Table 31). These benefits and associated metrics reflect the positive impacts of expanding EVSE access to DACs and tribal communities, as well as avoiding the exacerbation of existing disparities, as defined by Justice40, through transportation planning that emphasizes equitable investments. These equitable investments will be important as Arizona's population continues to grow and impact the distribution of EV and EVSE access in DACs.

For example, in 2020, Arizona recorded the second fastest growing population in the nation, and approximately 45 percent of Arizonans identify as minorities.[37] Arizona is also home to one of the largest Native American populations in the nation, and approximately 28 percent of the state's land is owned by Native American Tribes.[38] Measuring benefits to DACs in a rapidly changing and growing environment will better inform decision-making around EVSE access throughout the duration of this program.

Metrics to Measure Impacts and Benefit to Disadvantaged Communities

Table 31**: **Metrics to Measure Impacts and Benefits to DACs

Benefits Category	Strategy for Tracking Benefits
Improve EV transportation and accessibility, reliability, and options	Metric: Number of total new EVSE chargers installed and the number installed in DAC- defined census tracts and tribal lands. • Frequency of Measurement: Annually • Data Source: Alternative Fuels Data Center, Justice40 Map
Reduction of exposure to harmful transportation-related emissions	Metric: Number of total new EV registrations in DAC- defined census tracts and tribal lands. • Frequency of Measurement: Annually • Data Source: ADOT Motor Vehicle Division
Increase the clean energy job pipeline, job training, and enterprise creation in DACs	Metric: Number of EVSE installation, operations and maintenance, network connectivity, and other support jobs held by residents in DAC-defined census tracts and tribal lands.

[37] Arizona Commerce Authority. (n.d.). Demographics (Census Bureau Data). Retrieved from https://www.azcommerce.com/oeo/population/demographics-census-data/

[38] U.S. Department of Agriculture. (n.d.). Managing Semi-Arid Watersheds: Watershed Basics - Public Land Management and Land Ownership in Arizona. Retrieved from https://www.fs.fed.us/rm/boise/AWAE/labs/awae_flagstaff/watersheds/basics/management.html

Benefits Category	Strategy for Tracking Benefits
	• Frequency of Measurement: Annually • Data Source: ADOT contracts to build, operate, and maintain ESVE, which includes regular reporting of employee zip codes

Labor and Workforce Considerations

ADOT has developed labor and workforce strategies to support and expand existing EVSE programs to build an equitable, diverse, and local EVSE workforce.

ADOT will require a minimum level of skill and training through certification (e.g., Electric Vehicle Infrastructure Training Program [EVITP] or another qualifying program). This ensures that the workforce installing and maintaining EVSE has the appropriate level of training, licenses, and certifications to ensure that the installation and maintenance of EVSE is performed safely by a qualified and increasingly diverse workforce.

In addition, ADOT will encourage EVSE owners to hire from existing certification, licensing, and apprenticeship programs to build a cohesive EVSE workforce pipeline that provides careers to personnel qualified to perform EVSE installation, maintenance, and operations.

Workforce and Training Strategies

The following strategies are based on the NEVI Standards and Requirements (23 CFR Part 680).

ADOT will require the following certification/training standards. These standards will be set forth in the contracts between ADOT and ESVE owners, and ADOT will monitor compliance through periodic review of station records and site visits.

Requirements:

- In compliance with 23 CFR 680.106(j) to ensure that the installation and maintenance of chargers is performed safely by a qualified and increasingly diverse workforce of licensed technicians and other laborers, all electricians installing, operating, or maintaining EVSE must receive certification from the EVITP or a registered apprenticeship program for electricians that includes charger-specific training developed as part of a national guideline standard approved by the Department of Labor in consultation with USDOT, if and when such programs are approved.
- For projects requiring more than one electrician, at least one electrician must meet the requirements above, and at least one electrician must be enrolled in an electrical registered apprenticeship program.
- Other on-site, non-electrical workers involved in the installation, operation, and maintenance of EVSE must have graduated from a registered apprenticeship program or have the appropriate licenses, certifications, and training as required by the state.

ADOT will consider additional strategies for recommendation to EVSE owners to help them enhance labor and workforce considerations at charging stations and the overall network.

Recommendations:

- ADOT will consider funding individual EVITP certifications as part of the contract for EVSE deployment.
- ADOT will inform site owners that several additional USDOT funding and finance programs are also available to support workforce training for innovative technologies.
- ADOT will also consider partnering with other government agencies who develop programs that increase women and minority participation, address workforce gaps, build skills supporting emerging transportation technologies, and attract new sources of job-creating investment.
- ADOT will aim to encourage EVSE owner participation with training providers, including existing pre-apprenticeship and apprenticeship programs, workforce boards, labor unions, community-based organizations, and nonprofits to support a diverse, local workforce for the EVSE network. ADOT plans to encourage EVSE owners to coordinate with and hire from the below list of existing electrician licensing, certification, and apprenticeship programs. ADOT will reevaluate opportunities at these and other programs annually.
- Existing electrician licensing and certification programs:
    - Arizona Department of Economic Security Apprenticeship Office: Arizona's Apprenticeship Program[39]
    - Pima Community program (certification and associate degrees)
    - Gateway Community College (certification and associate degrees)
    - Chandler-Gilbert Community College (certification)
    - Central Arizona College (certification and National Center for Construction Education and Research credential)
    - Western Arizona College (occupational certificates and degrees)
- Existing electrician apprenticeship programs:
    - Arizona Builders Alliance-Associated General Contractors Education Fund
    - IBEW-NECA Phoenix Electrical Apprenticeship Program
    - Independent Electrical Contractors of Southern Arizona
    - Independent Electrical Contractors Association
    - Tucson Electrical Joint Apprenticeship and Training Committee (JATC) Program
    - National Electrical Contractors Association Apprenticeship Program
    - Western Electrical Contractors Association
    - Globe-Miami Electrical Joint Apprenticeship and Training program Phoenix Electrical JATC

[39] Arizona Department of Economic Security. (n.d.) Arizona's Apprenticeship Program. Retrieved from https://des.az.gov/services/employment/apprenticeship

Physical Security and Cybersecurity

Owners of EVSE stations will be responsible for meeting the cybersecurity requirements defined within this section of the Plan, the cybersecurity specification attached as Appendix D, and other applicable state and federal regulations. The specification in Appendix D may require updates in future publications depending on future guidance. The cybersecurity requirements posed here will ultimately work to ensure the safety and security of planned EVSE infrastructure. Requirements will include considerations for secure system updates, event logging and intrusion detection, secure operation of EVSE during communication outages, ensuring appropriate encryption systems are in use, and identity and access management processes. The following are based on compliance with the NEVI Standards and Requirements (23 CFR Part 680).

Requirements

- Provide feasible plans and agreements to address how service will persist in the event of a communications outage. Required output from owners must properly define the minimum amount of information necessary to continue providing service to customers, and how that information will be securely stored on the EVSE and illustrate ways that the physical connection to the vehicle will be secured while operating in this mode.
- Enact appropriate physical security measures. These practices must include procedures pertaining to physical access allowed to EVSE by customers and service technicians in order to prevent physical tampering of equipment. Enact physical security strategies to address lighting, siting, driver and vehicle safety, fire prevention, tampering, charger locks, and illegal surveillance of payment devices. Additionally siting and station design to ensure visibility from onlookers, video surveillance, or emergency call boxes.
- Adhere to strict identity and access management procedures based on industry best practices to prevent administrative or technological access to equipment by unauthorized personnel.
- Adopt the most current and stable encryption mechanisms to secure any data stored and communicated as which is relevant for service provision to customers.
- Adhere to update and patch management procedures adherent to industry standards and best practices. This works to mitigate the possibility of malware installation and propagation throughout the EVSE network and its vehicular connections.
- Employ mechanisms to detect malware and intrusion attempts into the system. Documented proof is required to ensure the functional capabilities of these mechanisms, which ensure the ability to detect and respond to cybersecurity exposures and potential breaches and additionally to reduce the risk of malware installation and propagation throughout the charging network and vehicular connections.
- Employ event logging and reporting of auditable events, such as logins, failed logins, high-value transactions, warnings and error messages, input validation errors, etc. Documented proof is required to ensure accountability, visibility, incident alerting, and forensics.
- Demonstrate that appropriate cybersecurity assessments are conducted at least annually on deployments and equipment in accordance with the National Institute of Standards and Technology (NIST) Special Publication 800-115.

- Ensure the protection of collected, stored, and communicated customer payment information. Ensure that only the minimum required customer payment information is collected, stored, and communicated with appropriate payment services and administration centers as applicable.
- Provide feasible plans for how they will address future cybersecurity considerations as they pertain to the equipment and charging network. As new cybersecurity incidents occur and exposures are discovered, the cybersecurity posture of EVSE deployed must scale and adapt to meet the further growing security requirements and best practices.
- Cybersecurity requirements and guidance provided by the latest revisions of applicable standards and regulations shall be adhered to. These include, but are not limited to:
    - NEVI Standards and Requirements (23 CFR Part 680) Conformity to Architecture Reference for Cooperative and Intelligent Transportation (ARC)
    - NIST
        - SP 800-53
        - SP 800-115
        - IR 8473
    - Arizona Statewide Policy (8130) System Security Acquisition and Development
    - Payment Card Industry Data Security Standard
    - Health Insurance Portability and Accountability Act
    - North American Electric Reliability Corporation Critical Infrastructure Protection

Program Evaluation

ADOT's data-driven program evaluation plan will ensure accountability, evaluate performance toward meeting the state's vision and goals for the EV Plan, and meet NEVI Formula Program Guidance requirements by monitoring three key areas of success: data collection, equitable access, and network reliability. ADOT intends to monitor and report progress as required by the FHWA, in compliance with 23 CFR 680.112. This plan will be revisited and updated annually to address opportunities for improvement.

Metrics

ADOT will monitor and evaluate the program using the metrics in **Table 32**. A summary can be found in **Appendix B**. The performance goals in the following table refers to the goals set in the Plan Vision and Goals section.

Table 32**: **Program Evaluation Metrics

Performance Goal	Metric	Frequency of Measurement	Data Source
Develop a convenient public EVSE network along Arizona's AFCs (Plan Goals 1, 2, 4, 6)	Number of new EV charging stations developed	Annually	ADOT charging station location identifier for potential new EV charging stations
Provide access to program benefits (Plan Goals 1, 2, 3, 4, 5, 6)	EV adoption rates	Annually	ADOT Motor Vehicle Division, vehicle registration records
	Estimated number of EV charging stations installed	Annually	ADOT
	Percentage of minority, veteran, and/or woman-owned businesses that participate in the operation, maintenance, and installation of EV charging stations	Annually	Contract and reporting information from station owners
Achieve a resilient, equitable, accessible, and reliable EV charging network (Plan Goals 2, 5, 6)	Number of charging stations that meet the EV charging uptime (functioning) goal of 97 percent (calculated as required by program	Quarterly	Total hours of outage and total hours of outage for reasons outside the charging station operator's

Performance Goal	Metric	Frequency of Measurement	Data Source
	guidance) at the individual port level		control
	EV charging station utilization rates	Quarterly	EV charging stations utilization metrics including the number of charging sessions, energy (kWh) dispensed per session and successful session completion
	Installation costs per EV charging station	One time	Real property acquisition cost, charging connection, and upgrade cost on the utility side of the electric meter, equipment acquisition and installation cost, DER acquisition and installation cost, and grid connection and upgrade costs paid by the charging station operator
	Operating costs per EV charging station	Annually	Total maintenance and repair costs per charging station
	Number of EV charging stations with DERs	One time	DER installed capacity, in kW or kWh as appropriate, of asset by type (e.g., stationary battery, solar, etc.) per charging station
Maintain high stakeholder engagement in the	Number of engagement activities held	Annually	ADOT stakeholder engagement records

Performance Goal	Metric	Frequency of Measurement	Data Source
development of the EV charging network (Plan Goals 2, 3, 4, 6)	Number of engagement activities held among DACs and tribal communities	Annually	ADOT stakeholder engagement records
	Number of participants in engagement activities	Annually	ADOT stakeholder engagement records
Efficient use of federal funding measured by amount of charging leveraged per federal dollar	Quantity of funds distributed	Annually	ADOT FFY funding records
	Charging station utilization rate	Annually	Number of successful EV charging visits per month

Annual Plan Update

Before each FFY, ADOT will review and assess program performance using the metrics in the Program Evaluation Plan and other relevant data. Performance metrics will be made available to the public on at least an annual basis. Opportunities for improvement will be identified and addressed as necessary through the Plan's annual update.

Reporting

Reporting will occur through a one-time data submittal as well as additional quarterly and annual submittals. The method and format of reporting will be in accordance with that required by the Joint Office. ADOT will require each recipient to use the federal data reporting tool EV-ChART (EV Charging Analytics and Reporting Tool). Each recipient will submit the required data from the 23 CFR Part 680, NEVI Standards and Requirements for ADOT review, approval, and formal submission.

Quarterly Reporting

Data will be submitted quarterly on charging station use, including:

- Charging station location and port identifier
- Charging session start time, end time, and successful session completion (yes/no) by port
- Any error codes associated with unsuccessful charging sessions by port
- Energy (kWh) dispensed to EVs per session by port
- Peak session power (kW) by port
- Charging station port uptime, T_outage, and T_excluded calculated in accordance with the equation in § 680.116(b) for each of the previous three months
- Payment method associated with each charging session

Annual Reporting

- Information relating to the operation, installation, or maintenance of EVSE. These reports will contain:
    - For private entities, identification of and participation in any state or local business opportunity certification programs including but not limited to minority-owned businesses, veteran-owned businesses, woman-owned businesses, and businesses owned by economically disadvantaged individuals
    - Annual maintenance and repair cost per charging station
- Community Engagement Outcomes metrics will be included in the annual Infrastructure Deployment Plan. This section will address community engagement activities conducted in accordance with the approved EV Plan, including:
    - Community engagement type
    - Dates of community engagement activities
    - Numbers of attendees
    - Communities represented by attendees
    - How community engagement is included and reflected in the Plan

One-Time Data Submittal

- Charging station real property acquisition cost
- Charging equipment acquisition and installation cost
- DER acquisition and installation cost
- Grid connection and upgrade cost on the utility side of the electric meter
- DER installed capacity in kW or kWh, as appropriate, of asset by type (e.g., stationary battery, solar, etc.) per charging station
- The name, address, and type of private entity involved in the operation, maintenance, and installation of EVSE
- Aggregated grid connection and upgrade costs paid to the electric utility as part of the project separated into total distribution and system costs, and total service costs

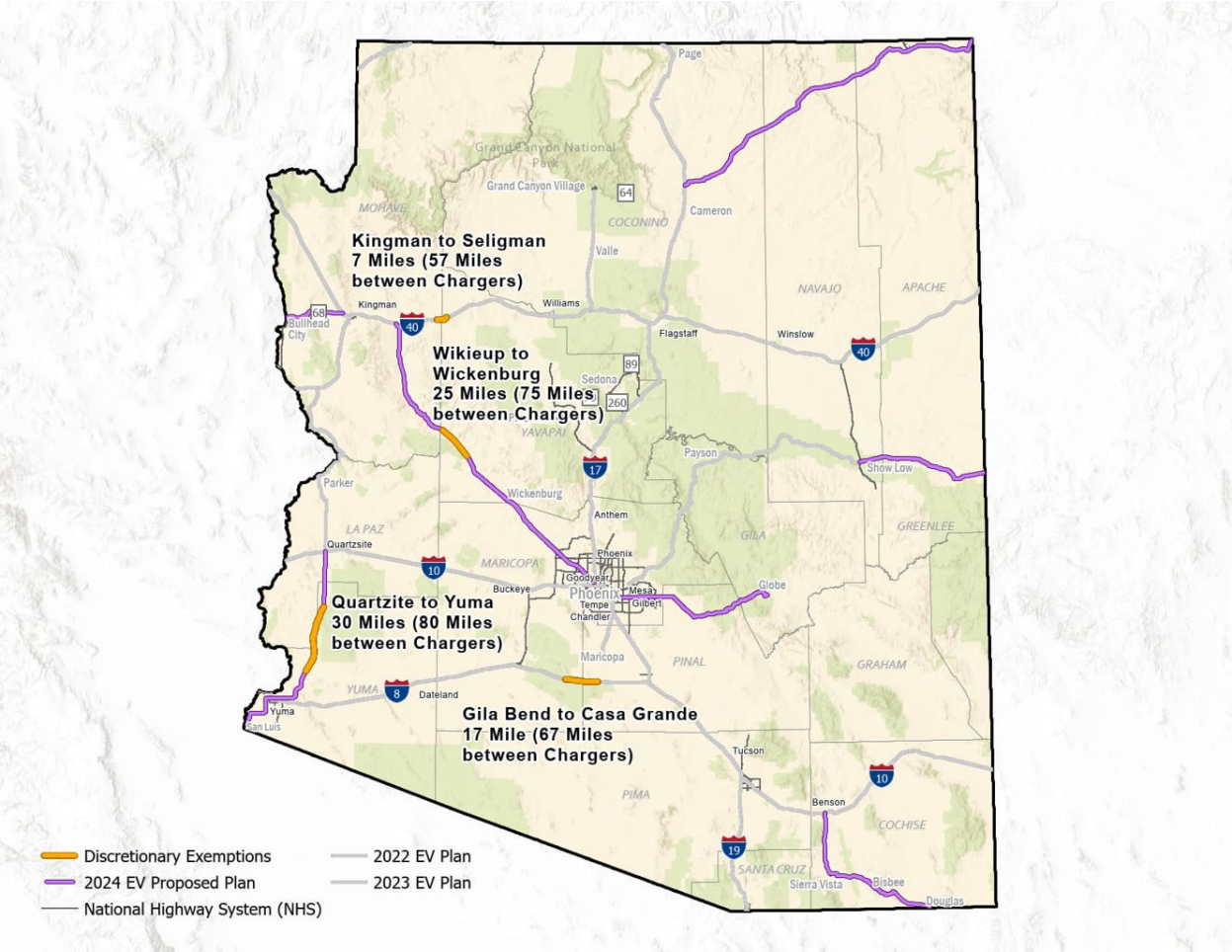
Appendix A Arizona Electric Vehicle Deployment Plan Exception Request

ADOT is requesting two continued discretionary exemptions from the requirement that charging infrastructure be installed every 50 miles along the State's AFCs that were approved for the 2022 Plan and two additional discretionary exemptions for the 2024 Plan. The proposed discretionary exemptions are described in Table A-1 and shown in Figure A-1.

Table A-1: Discretionary Exemption Requests

Exception #	Type	Distance of Deviation	Corresponding AFC	Reason for Exception Request
1 – Kingman to Seligman	☒ 50 miles apart □ 1 mile from exit	7 miles __ miles	I-40	☐ Grid Capacity ☐ Geography ☐ Equity ☐ Extraordinary Cost
2 – Gila Bend to Casa Grande/Eloy	☒ 50 miles apart □ 1 mile from exit	17 miles __ miles	I-8	☐ Grid Capacity ☐ Geography ☐ Equity ☐ Extraordinary Cost
3 – Wikieup to Wickenburg	☒ 50 miles apart □ 1 mile from exit	25 miles __ miles	US-93	☐ Grid Capacity ☐ Geography ☐ Equity ☐ Extraordinary Cost
4 – Quartzite to Yuma	☒ 50 miles apart □ 1 mile from exit	30 miles __ miles	US-95	☐ Grid Capacity ☐ Geography ☐ Equity ☐ Extraordinary Cost

Figure A-1*: *Map of Discretionary Exemption Requests



Justification for Exceptions

Kingman to Seligman

The 57-mile segment between Kingman and Seligman on I-40 is a rural area with no existing amenities within 1 mile of the corridor. ADOT limited the distance of this gap as much as possible in the new station proposal just east of Kingman. The proposed exemption is for a 7-mile gap as NEVI-compliant chargers will be sited 57-miles apart from each other.

Gila Bend to Casa Grande/Eloy

East of Gila Bend on I-8 is a rural area with no existing amenities within 1 mile of the corridor until reaching the interchange with I-10. ADOT proposed upgrading the Casa Grande existing stations and a new site in Eloy to ensure convenient charging options for both westbound and eastbound routes on I-10. The proposed exemption is for a 17-mile gap as NEVI-compliant chargers will be sited 67 miles apart from each other.

Wikieup to Wickenburg

The 25-mile segment of I-60 between Wikieup and Wickenburg is in a rural area with no existing amenities within 1 mile of the corridor. ADOT limited the distance of this gap as much as possible by proposing a new charging station just south of Wikieup. The proposed exemption is for a 25-mile gap, as NEVI-compliant chargers will be sited 75 miles apart from each other.

Quartzite to Yuma

South of Quartzite, I-95 is a rural area with no existing amenities within 1 mile of the corridor. The proposed exemption is for a 30-mile gap, as NEVI-compliant chargers will be sited 80 miles apart.

Appendix B Performance Metrics

Table B-1: Performance Evaluation Metrics Summary Table

Performance Goal	Metric	Frequency of Measurement	Data Source
Develop a convenient public EVSE network along Arizona's AFCs (Plan Goals 1, 2, 4, 6)	Number of new EV charging stations developed	Annually	ADOT charging station location identifier for potential new EV charging stations
Provide access to program benefits (Plan Goals 1, 2, 3, 4, 5, 6)	EV adoption rates	Annually	ADOT Motor Vehicle Division, vehicle registration records
	Estimated number of EV charging stations installed	Annually	ADOT
	Percentage of minority, veteran and/or woman-owned, and/or economically disadvantaged businesses, that participate in the operation, maintenance, and installation of EV charging stations	Annually	Contract and reporting information from station owners
Achieve a resilient, equitable, accessible, and reliable EV charging network (Plan Goals 2, 5, 6)	Number of charging stations that meet the EV charging uptime (functioning) goal of 97 percent (calculated as required by program guidance) at the individual port level	Quarterly	Total hours of outage and total hours of outage for reasons outside the charging station operator's control
	EV charging station utilization rates	Quarterly	EV charging stations utilization metrics including the number of charging sessions, energy (kWh) dispensed per session and successful session

Performance Goal	Metric	Frequency of Measurement	Data Source
			completion
	Installation costs per EV charging station	One time	Real property acquisition cost, charging connection, and upgrade cost on the utility side of the electric meter, equipment acquisition and installation cost, DER acquisition and installation cost, and grid connection and upgrade costs paid by the charging station operator
	Operating costs per EV charging station	Annually	Total maintenance and repair costs per charging station
	Number of EV charging stations with DERs	One time	DER installed capacity, in kW or kWh as appropriate, of asset by type (e.g., stationary battery, solar, etc.) per charging station
Maintain high stakeholder engagement in the development of the EV charging network (Plan Goals 2, 3, 4, 6)	Number of engagement activities held	Annually	ADOT stakeholder engagement records
	Number of engagement activities held among DACs and tribal communities	Annually	ADOT stakeholder engagement records
	Number of participants in engagement activities	Annually	ADOT stakeholder engagement records
Efficient use of federal funding measured by	Quantity of funds distributed	Annually	ADOT FFY funding records

Performance Goal	Metric	Frequency of Measurement	Data Source
amount of charging leveraged per federal dollar	Charging station utilization rate	Annually	Number of successful EV charging visits per month

Appendix C Utility Capacity

Determining the available capacity on electric distribution infrastructure for proposed EV charging station locations allows cities and community planners to understand whether grid upgrades will be needed. Such upgrades can include substation level upgrades to increase capacity or re-wiring of distribution lines. Grid upgrades are a complex undertaking and can often include significant costs. These costs, coupled with considerations such as long lead supply chain items that add to implementation schedules, can create delays and complexities in deployment. To better understand grid capacity and ensure that the local grid has sufficient capacity for planned deployments, surveys were sent to each utility serving proposed sites as part of the technical effort supporting the Plan. Charging locations marked with an asterisk (*) indicate buffer zones that include several potential exit locations, rather than at a specific exit number/street. Results are still ongoing and further utility responses are still awaiting from routes in the following Table C-1.

Table C-1: Utility Substation Survey

Charger Location (*) – proposed buffer zone	Route	Exit Number/ Street	Serving Utility	Three-Phase Service Available	600kW Capacity Available
2024					
Tonalea*	US 160	Between N21 and A98	Navopache Electric Coop	TBD	TBD
Mexican Water/Dennehotso*	US 160	Between Dennehotso Market/Dennehotso and Sinclair Gas Station/Mexican Water	TBD	TBD	TBD
Red Mesa/Teec Nos Pos*	US 160	Between Sinclar Gas Station/Red Mesa and N5028	TBD	TBD	TBD
Golden Valley*	SR 68	Between Kofa Rd and Milky Way Rd	Mohave Electric Coop	TBD	TBD
Goodyear*	US 60	Between AZ303 Loop and North 27th Ave	APS/Navopache Electric Coop	Possible, depending on specific site location	There could be limitations at the feeder level depending on the specific site

Charger Location (*) – proposed buffer zone	Route	Exit Number/ Street	Serving Utility	Three-Phase Service Available	600kW Capacity Available
					location.
Springerville*	US 60	Between Mountain Ave and E St	TBD	TBD	TBD
Superior*	US 60	Between Airport Rd. and Ray Rd.	APS	Possible depending on specific site location	No
Miami/Claypool/Globe*	US 60	Between Canyon Ave. and US 60	APS	Possible, depending on specific site location	There could be limitations at the feeder level depending on the specific site location
San Luis*	US 95	Between Count 22nd St and Urtuzuastegui St	APS	Possible, depending on specific site location	No
Sierra Vista*	SR 90	Between Industry Dr and Tree Top Ave	TBD	TBD	TBD
Bisbee/Douglas*	SR 80	Between AZ92 and 3rd St	APS	Possible, depending on specific site location	No
Moenkopi	US160	SR 264	APS	Yes	TBD
Kayenta	US160	US 163	TBD	TBD	TBD
Bullhead City	AZ 68	Laughlin Bridge	Mohave	TBD	TBD

Charger Location (*) – proposed buffer zone	Route	Exit Number/ Street	Serving Utility	Three-Phase Service Available	600kW Capacity Available
		Rd/Bullhead Pkwy	Electric Coop		
Wikiup	US 93	Chicken Springs Rd	Mohave Electric Coop	TBD	TBD
Wickenburg	US 93	US 60	TBD	Yes	Feeder in this area is owned by City of Wickenburg. Coordination would need to be done with city initially.
Vernon	US 160	SR 61	TBD	TBD	TBD
2023					
Page	US 89	Haul Road	TBD	TBD	TBD
The Gap	US 89	498 US 89, Cameron, AZ 86020	APS	TBD	TBD
Cameron	US 89	Cameron Bridge Bypass Road	APS	Likely, but dependent on specific site location	TBD
Fort McDowell	SR 87	Fort McDowell Road	TBD	TBD	TBD
Rye	SR 87	South Beeline Highway	APS	Likely, but dependent on specific site location	TBD
Forest Lakes Estates	SR 260	Highway Loop	APS	Likely, but dependent on specific site	TBD

Charger Location (*) – proposed buffer zone	Route	Exit Number/ Street	Serving Utility	Three-Phase Service Available	600kW Capacity Available
				location	
Overgaard	SR 260	Mogollon	TBD	Likely, but dependent on specific site location	No Capacity on Feeder, would require extensive upgrades
Maricopa	SR 347	West Smith Enke Road	TBD	TBD	TBD
Valle	SR 64	US 180	APS	Likely, but dependent on specific site location	TBD
Lake Havasu City	SR 95	McCulloch Boulevard North	TBD	TBD	TBD
Parker	SR 95	West Riverside Drive	APS	Likely, but dependent on specific site location	No Capacity at the platform substation transformer
Tusayan	SR 64	Long Jim Loop	APS	Yes, 3 phase within 2000ft of intersection	Yes
Willow Beach	US 93	CR 145	UniSource Energy Services	3 phase is on the east side from substation to this exit and crosses to west side	There is already a Tesla charging station at this location on the west side of 93 at

Charger Location (*) – proposed buffer zone	Route	Exit Number/ Street	Serving Utility	Three-Phase Service Available	600kW Capacity Available
				of 93 here. Does not extend further south.	the Pilot/Shell. This was installed in August of 2018.
2022					
Camp Verde1	I-17	287	APS	Yes	Capacity will be available in 2025
Casa Grande	I-17	194	APS	Yes	Yes
Cordes Lakes / Cordes Junction	I-17	262	APS	Yes	Yes
Eloy	I-10	200	APS	Yes	Yes
Gila Bend	I-8	115	APS	Yes	Yes
Green Valley	I-19	69	TEP/Trico	Yes	Yes
Holbrook	I-40	286	APS	Yes	Yes
Kingman	I-40	66	Mohave Electric Cooperative	Yes	Yes
Lake Havasu City	I-40	9	TBD	TBD	TBD
Munds Park	I-17	322	APS	Yes	Limited
Nogales	I-19	4	Unisource	Yes	Yes
Petrified Forest	I-40	311	APS	Yes	Yes
Salome	I-10	45	APS	Yes	Limited
San Simon	I-10	378	SSVEC	Yes	Yes
Sanders	I-40	339	Navopache Electric Cooperative	No Response	No Response

Charger Location (*) – proposed buffer zone	Route	Exit Number/ Street	Serving Utility	Three-Phase Service Available	600kW Capacity Available
Seligman	I-40	123	APS	Yes	Yes
Tacna	I-8	42	Welton – Mohawk Irrigation District	No Response	No Response
Tonopah	I-10	94	APS	Yes	Yes
Tucson	I-10	273	TEP	Yes	Yes
Twin Arrows2	I-40	219	APS & NTUA	Possible, depending on specific site location	APS would require grid upgrades
Willcox	I-10	340	SSVEC	Yes	Yes

DCFC typically require three-phase, 480-volt input service to operate. Four 150kW DCFC units, as specified by NEVI also require 600kW of power capacity available if all units are operational. It should be noted that some utilities did not respond to the survey provided. In these instances, further utility coordination would be needed for these sites.

As grid conditions consistently change, establishing early utility engagement to confirm grid capacity is important as well as continuous utility engagement throughout the entirety of planning and deployment. Early engagement also streamlines installation timelines and can help mitigate supply chain concerns of electrical components, such as transformers. The Plan details highway exits to site proposed chargers, additional best practices can be followed to reduce the number of electrical upgrades. Best practices include siting chargers near existing electric infrastructure to minimize conduit runs and siting chargers closer to substations for better available capacity. Additionally, DERs should be investigated as potential technologies to co-locate at charger sites to help supplement energy needs, reduce emissions from EV charging, and avoid costly peak demand charges.

ADOT Electric Vehicle Charging Infrastructure Cybersecurity Specification

Note: This Infrastructure Cybersecurity Specification has been updated as part of the 2024 Plan to adhere to the latest regulations on securing charger ecosystems.

CHAPTER 1. TERMINOLOGY AND ABBREVIATIONS

ACRONYMS

Abbreviation	Meaning
ADOT	Arizona Department of Transportation
ARC-IT	Architecture Reference for Cooperative and Intelligent Transportation
CSO	Charging Station Operator
CSMS	Charging Station Management System
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
ITS	Intelligent Transportation Systems
NEVI	National Electric Vehicle Infrastructure
NERC-CIP	North American Electric Reliability Corporation Critical Infrastructure Protection
NIST	National Institute of Standards and Technology
OCPP	Open Charge Point Protocol
PCI DSS	Payment Card Industry Data Security Standard
SCC	Security Standards Council
SP	Special Publication

TERMS

Term	Definition
Charging station	The physical system where electric vehicles can be charged.
Charging station operator	The mobility partner who operates the charging station infrastructure. For purposes of this specification this term will simultaneously refer to the charging station vendor since the vendor is fulfilling this same role.
Connector/plug	An independently operated and managed electrical outlet on a charging station which corresponds to a single physical connector.
Electric vehicle supply equipment	An independently operated and managed part of the charging station that can deliver energy to one EV at a time.

REQUIREMENTS TERMINOLOGY

The key words "MUST," "MUST NOT," "REQUIRED," "SHALL," "SHALL NOT," "SHOULD," SHOULD NOT," "RECOMMENDED," "MAY," and "OPTIONAL" in this document are to be interpreted as described in the Internet Engineering Task Force Requests for Comment 2110[40] and 2119,[41] which are defined in the below table.

Key Word	Definition
MUST	This word, or the terms "REQUIRED" or "SHALL," means that the definition is an absolute requirement of the specification.
MUST NOT	This phrase, or the phrase "SHALL NOT," means that the definition is an absolute prohibition of the specification.
SHOULD	This word, or the adjective "RECOMMENDED," means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
SHOULD NOT	This phrase, or the phrase "NOT RECOMMENDED" means that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood, and the case carefully weighed before implementing any behavior described in this label.
MAY	This word, or the adjective "OPTIONAL," means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation that does not include a particular option MUST be prepared to interoperate with another implementation that does include the option, though perhaps with reduced functionality. In the same vein an implementation which does not include a particular option MUST be prepared to interoperate with another implementation that does not include the option (except, of course, for the feature the option provides.)

CHAPTER 2. INTRODUCTION

PURPOSE

The purpose of this specification is to establish a statewide cybersecurity standard for the deployment of electric vehicle (EV) charging infrastructure along the state's National Electric Vehicle Infrastructure (NEVI) Formula Program funded EV charging installations by illustrating cybersecurity provisions derived from federal laws and regulations, and industry best standards to create cybersecurity requirements

[40] Internet Engineering Task Force, Network Working Group (March 1997). Request for Comments: 2110. Retrieved from https://datatracker.ietf.org/doc/html/rfc2110

[41] Internet Engineering Task Force, Network Working Group (March 1997). Request for Comments: 2119. Retrieved from https://datatracker.ietf.org/doc/html/rfc2119

that the charging station operator (CSO) MUST strictly and completely fulfill regarding the deploying and maintaining of EV charging infrastructure throughout the State of Arizona's EV charging installations.

Through strict adherence to the requirements in this document, the CSO can assure the Arizona Department of Transportation (ADOT) that the EV charging infrastructure met a baseline of substantial cybersecurity controls throughout ADOT's EV Infrastructure Deployment Plan.

SCOPE

- Requirements in this specification apply strictly to and are the responsibility of the CSO.
- Requirement items in this specification MUST be strictly and completely fulfilled by the CSO and submitted to ADOT for assessment.

CHAPTER 3. CYBERSECURITY RATIONALE

To establish the foundation of cybersecurity for the State of Arizona's EV charging installations, ADOT has constructed a set of requirements that correspond with both federal laws & regulations and industry best practice cybersecurity controls. These requirements are based primarily on cybersecurity provisions from the following federal laws:

- NEVI Formula Program Guidance and the National Electric Vehicle Infrastructure Standards and Requirements (23 CFR Part 680)xliv; and
- National Intelligent Transportation System Architecture and Standards (ARC-IT) conformity requirements from the Intelligent Transportation System Architecture and Standards (23 CFR Part 940).xlv

The narrative for requirement creation and steps are described herein.

Electric Vehicle Supply Equipment Security Requirements Narrative

Requirements defined within the Electric Vehicle Supply Equipment Security Requirements section of this document (Chapter 5) have references to applicable National Institute of Standards and Technology (NIST)Special Publication (SP) 800-53xlvi controls, which themselves were derived from analysis of standards and best practices encompassing relevant domains of the EV charger itself. This section describes the primary and supplemental (secondary) impetus behind these cybersecurity requirements.

PRIMARY

National Electric Vehicle Infrastructure

In order to address the cybersecurity provisions in 23 CFR Part 680, each provision was mapped to applicable cybersecurity controls defined in NIST SP 800-53r5 Security and Privacy Controls for Information Systems and Organizations. [42]

Intelligent Transportation System Architecture and Standards

Next, the cybersecurity requirements defined in ARC-IT's Device Class 5 Areas[43] (the security class applicable to ARC-IT's "Electric Charging Station" physical object) were mapped to applicable NIST SP 800-53 controls in much the same manner.

SECONDARY

Statewide Policy (8130): System Security Acquisition and Development

ADOT relied on its own System Security Acquisition and Development Statewide Policy (P8130),[44] which contains relevant third-party information system acquisition and deployment controls for the Payment

[42] Id.

[43] U.S. Department of Transportation. ARC-IT Device Class 5 Areas. Retrieved July 27, 2022, from https://www.arc-it.net/html/security/class5.html

[44] State of Arizona, Department of Administration (May 26, 2021). Statewide Policy (8130): System Security Acquisition and Development. Retrieved from

Card Industry Data Security Standard[45] (PCI DSS) and the Health Insurance Portability Act[46] in order to meet the customer and payment info cybersecurity considerations defined in 23 CFR Part 680. The PCI DSS and Health Insurance Portability and Accountability Act controls[47] contained within this statewide policy document were mapped to the applicable NIST SP 800-53 controls.

North American Electric Reliability Corporation Critical Infrastructure Protection

To address the cybersecurity consideration contained within 23 CFR Part 680 defining the security of Charging-Network-to-Grid Communication, North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP) standards were utilized (NERC CIP-011-2 "Information Protection" Requirements 1.1 & 1.2)[48] and mapped to NIST SP 800-53.

CONTROL BASELINE

An initial cybersecurity baseline was constructed in accordance with NIST SP 800-53Br5 Control Baselines for Information Systems and Organizations[49] tuned to the Security Control Baseline of "High," which was further modified with supplemental controls that were a product of the mapping crosswalk.

CREATION OF REQUIREMENTS

The below requirements is what ADOT requires in its own efforts to meet federal requirements, regulations, and laws, in addition to ensuring a strong cybersecurity posture of field-deployed equipment

Fulfillment of Electric Vehicle Supply Equipment Security Requirements

This requirement was created to meet cybersecurity provisions defined in 23 CFR Parts 680 & 940 by taking each particular cybersecurity provision therein and citing the cybersecurity baseline and component each provision should apply to. From there, the CSO MUST submit their plan to meet each

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https://aset.az.gov/sites/default/files/AZ_Policy_P8130_System_Security_Acquisition_And_Development_v3.0_May2021_signed.pdf

[45] Security Standards Council. Payment Card Industry Data Security Standard (PCI DSS) v4.0. Retrieved July 27, 2022, from https://docs-prv.pcisecuritystandards.org/PCI%20DSS/Standard/PCI-DSS-v4_0.pdf

[46] Health Insurance Portability and Accountability Act of 1996. Retrieved from https://www.congress.gov/104/plaws/publ191/PLAW-104publ191.pdf

[47] U.S. Department of Health and Human Services. Summary of the HIPAA Privacy Rule. Retrieved July, 27, 2022 from https://www.hhs.gov/hipaa/for-professionals/privacy/laws-regulations/index.html

[48] North American Electric Reliability Corporation. US Reliability Standards. Retrieved July 27, 2022, from https://www.nerc.com/pa/Stand/Pages/USRelStand.aspx

[49] U.S. Department of Commerce, National institute of Standards and Technology (October 2020). NIST SP 800-53Br5 Control Baselines for Information Systems and Organizations. Retrieved from https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-53B.pdf

requirement in the Electric Vehicle Supply Equipment (EVSE) Security Requirements table and submit to ADOT for assessment.

Security Testing and Assessment - NIST SP 800-115

This section elaborates on the expectations with respect to security testing and assessment, guided by NIST SP 800-115 Technical Guide to Information Security Testing and Assessment. lvii The goal of this guidance is to ensure that vendors and owners regularly conduct security testing and assessments to demonstrate the effectiveness of security controls established in equipment, software, and networks utilized by EV charging infrastructure components. The CSO shall ensure that the activities outlined in NIST SP 800-115 are conducted on a regular interval, which includes policy reviews, vulnerability assessments, penetration testing, and others, as well as creating and maintaining a plan which shall define the logistical and technical details required to execute these activities.

CHAPTER 4. Electric Vehicle Charging Infrastructure COMPONENTS

This section illustrates the multiple components which comprise EV charging infrastructure as defined in ARC-IT and Open Charge Point Protocol (OCPP) diagrams and documentation. For the purpose of this specification, the CSO MUST address requirements for each relevant component listed when filling out requirements (see Chapter 5. Cybersecurity Requirements for further details).

COMPONENT LIST

Below is a list of components owned by the CSO that facilitate the charging station's functionality.

Component	Description
EV Charging Station	Provides access to EV supply equipment that is used to charge hybrid and all-electric vehicles. For the purpose of this specification, this component will include the EVSE and connector(s). This component is provided, owned, and managed by the CSO.
Charging Station Management System (CSMS)	The system utilized by the CSO to manage charging stations. A majority of the CSMS core functions, including collection and management, overlap with that of the Traffic Information Center defined in ARC-IT. This system is owned and managed by the CSO.
PCI DSS-Compliant Vehicle Payment Service	Supports vehicle payments for charging of EVs. Charging stations may utilize various methods of payment, to include an interface on the charging station itself which accepts debit/credit payment, or contactless methods in which the operator engages with the charging station remotely via either a mobile phone application or other on-board equipment methods such as in-vehicle applications via the EV's In-Vehicle Infotainment Center. Payment service mechanisms are provided, owned, and managed by the CSO.
PCI DSS-Compliant Payment Administration Center	Provides general payment administration capabilities and supports the electronic transfer of funds from the customer to the CSO for charging services rendered. This system may be owned and managed by the CSO.

COMPONENT DIAGRAMS

Below are physical and interface diagrams of EV charging stations from ARC-IT and OCPP documentation. These are included as a resource for the CSO and others to describe the various components of EV charging infrastructure. [Note: "Electric Charging Station" as labeled by these ARC-IT diagrams is synonymous with "EV Charging Station" as utilized in this document.]

Intelligent Transportation System Architecture and Standards ST05: Electric Charging Stations Management[50] – Physical Diagram

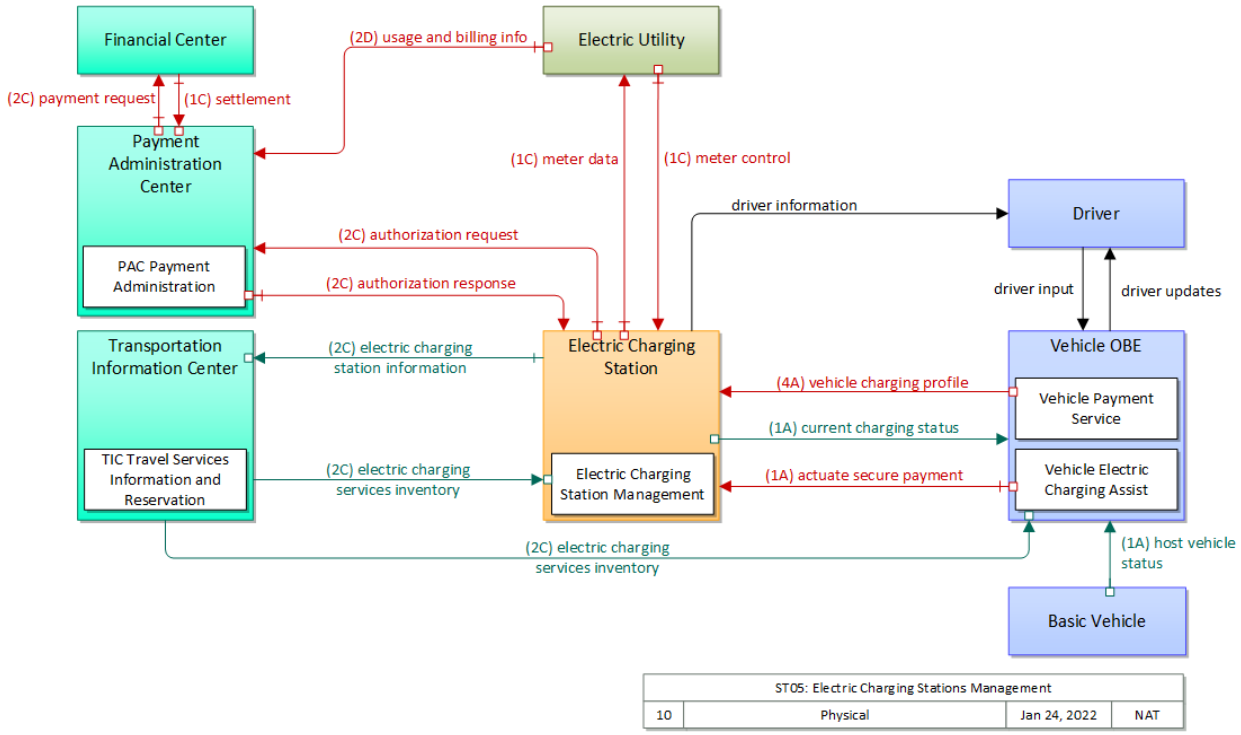

Figure E-4-1. ARC-IT Physical Diagram - ST05: Electric Charging Stations Management

[50] U.S. Department of Transportation. ARC-IT Service Package ST05: Electric Charging Stations Management. Retrieved July 27, 2022, from https://www.arc-it.net/html/servicepackages/sp22.html

Electric Charging Station – Interfaces Diagram

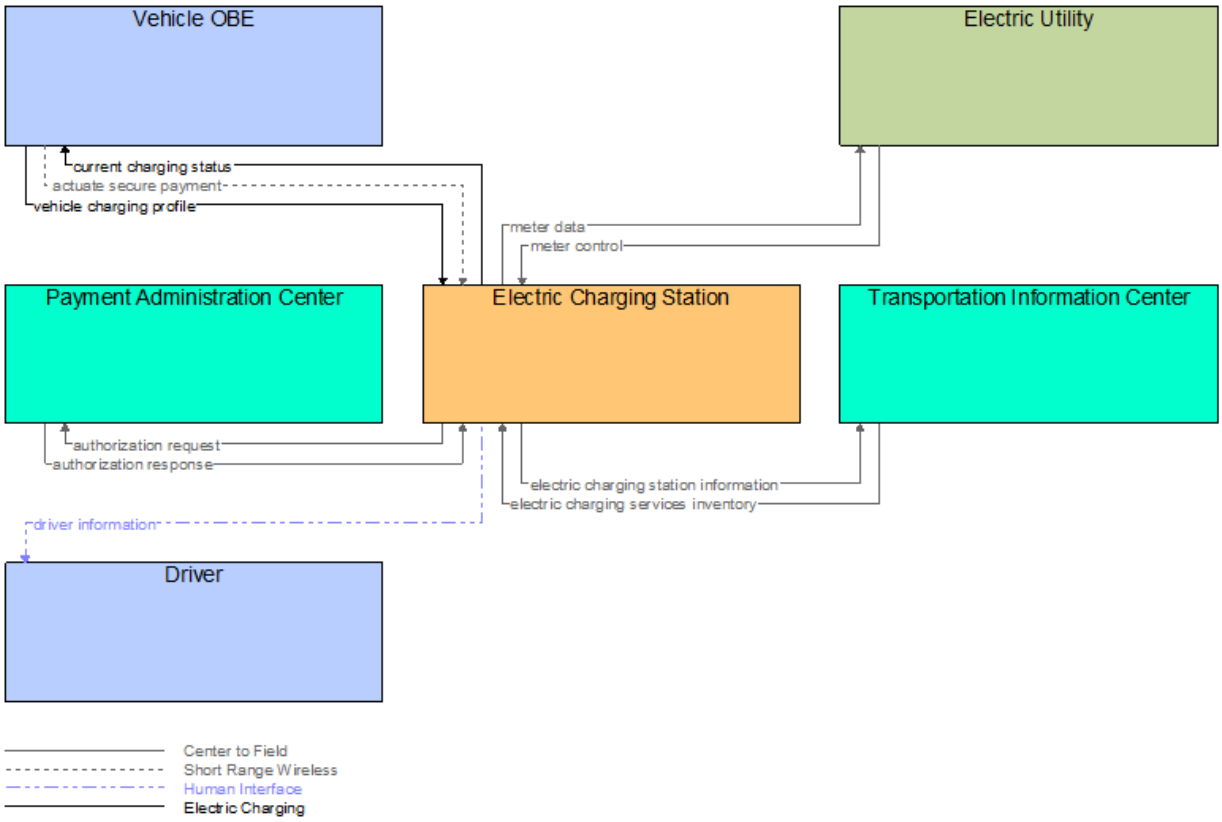

Figure E-4-2. ARC-IT Interfaces Diagram – Electric Charging Station

Open Charge Point Protocol

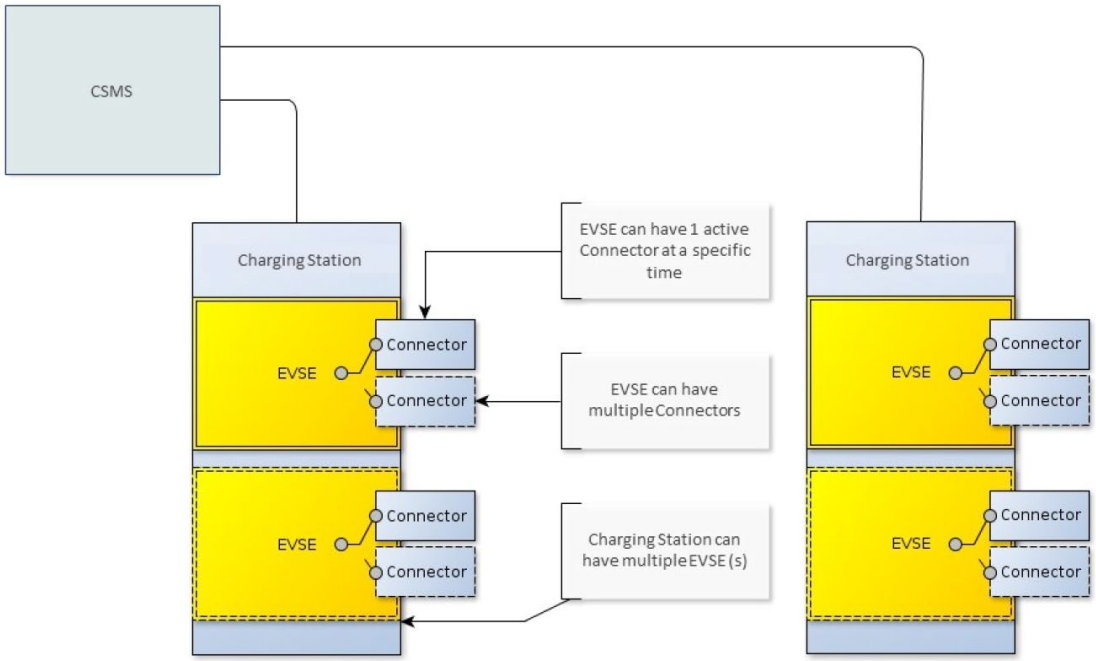

Figure E-4-3. Three-tier model as used in OCPP

CHAPTER 5. CYBERSECURITY REQUIREMENTS

This section contains mandatory cybersecurity requirements the CSO must fulfill. These requirements exist to fulfill the following cybersecurity provisions:

- Cybersecurity considerations present in the NEVI Formula Program and requirements defined the NEVI Formula Program Guidance and the National Electric Vehicle Infrastructure Standards and Requirements (23 CFR Part 680). View Appendix B for exact definitions.
- Device Class 5 Areas[51] (Security Controls) defined in the National ITS Architecture Reference/Architecture Reference for Cooperative and Intelligent Transportation for Electric Charging Station[52] and Vehicle Payment Service.[53] View Appendix B for exact definitions.

The mandatory cybersecurity requirements are detailed in section Requirement Submission Guidelines below. Steps include:

1. Fulfillment of Cybersecurity Compliance Controls Table
2. Security Testing and Assessment – NISP SP 800-115[54]

REQUIREMENT SUBMISSION GUIDELINES

Electric Vehicle Supply Equipment Security Requirements

Each requirement listed in the EVSE Security Requirements table must be addressed and filled out in full by the CSO. As of the time of this document's creation, there is no required submission document format. However, all submissions MUST address each requirement listed in this section. The EVSE Security Requirements table may also be extracted from this document and filled out separately if suitable to the submitter.

EVSE Security Requirements - Column/Field Descriptions

EVSE Security Requirements Columns	
Column	Description
#	Numeric identifier of each requirement.
Requirement	The stated cybersecurity requirement which MUST be met by the CSO.

[51] U.S. Department of Transportation. ARC-IT Device Class 5 Areas. Retrieved July 27, 2022, from https://www.arc-it.net/html/security/class5.html

[52] U.S. Department of Transportation. ARC-IT Physical Object: Electric Charging Station. Retrieved July 27, 2022, from https://www.arc-it.net/html/physobjects/physobj52.html

[53] U.S. Department of Transportation. ARC-IT Functional Object: Vehicle Payment Service. Retrieved July 27, 2022, from https://www.arc-it.net/html/functionalobjects/funobj84.html

[54] U.S. Department of Commerce, National institute of Standards and Technology (September 2008). NIST SP 800-115 Technical Guide to Information Security Testing and Assessment. Retrieved from https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-115.pdf

EVSE Security Requirements Columns	
Column	Description
Baseline Controls	The controls which fulfill the stated requirement.
Comp. Code	Component code for each component a requirement applies to. The codes are as follows: - CS: EV Charging Station - MS: CSMS - PS: Vehicle Payment Service - PA: Payment Administration Center - CT: Cloud/Third-Party Systems If one or more of the components listed above are deemed as non-applicable to the charging station deployment by the CSO, then the CSO must provide in detail which components meet non-applicable status and a detailed explanation as to why it is non-applicable. The CSO may also add listed component codes to this cell which were not previously listed by default and must provide a detailed explanation on that component's inclusion into the requirement. Requirements will apply to all newly added component(s).
Compliance Status	CSO must denote compliance status by inputting a bold and capitalized: - YES if the requirement is fully and strictly met for all listed component codes for the relevant requirement. - NO if requirements are not fully and strictly met for 1 or more of the listed component codes for the relevant requirement.
Compliance Description	This is where the CSO must describe: - Compliance status. - The Plan to address compliance for the relevant requirement item. - Any components that are deemed as non-applicable for the charging infrastructure deployment and a detailed explanation as to why. - Any added components outside of the default listed components that are deemed as applicable to the charging infrastructure deployment, and a detailed explanation as to why. Each cell contains default pre-filled text which may contain additional

EVSE Security Requirements Columns	
Column	Description
	information or description needs that the CSO must address in their entry.

EVSE Security Requirements

#	Requirement	Initial Baseline Control and Reference	Comp. Code	Compliance Status (YES/NO)	Compliance Description
1	Ensure contactless remote payment methods are secure.	23 § 680.106 (f); NIST SP 800-53 Control Numbers: AC-4; AC-8; AC 10-11; AC-25; CA-2; CA 7-8; PE-3; PL-8; PM-4; RA-3; RA-5; SA-3; SA 4-5; SA-8; SA 10-11; SA-15; SA-17; SC 2-3; SC-7; SI 2-3; SI 4-5; SI 12-14; SI 16-17; SR 2-10	CS; MS; PS; PA; CT		A detailed plan shall be provided that addresses how contactless payment methods are secured on the charging station. Include payment methods applicable to the charging station in explanation (i.e., mobile app, terminal payment, etc). This plan shall additionally incorporate and maintain compliance with all elements of the latest versions of PCI DSS and PCI Security Standards Council (SCC.).
2	Physical security strategies to address EV charging station tampering and unauthorized access.	23 § 680.106 (h)(1); NIST SP 800-53 Control Numbers: AC-22; PE 1-18	CS		A detailed plan shall be provided that addresses physical security strategies of the charging station.
3	Cybersecurity strategies to address user identity and	23 § 680.106 (h)(2); NIST SP 800-53 Control Numbers: AC 1-3; AC 5-8; AC 10-	CS; MS;		A detailed plan shall be provided which addresses user identity and access

#	Requirement	Initial Baseline Control and Reference	Comp. Code	Compliance Status (YES/NO)	Compliance Description
	access management, selection of appropriate encryption systems, intrusion and malware detection, event logging and reporting, management of software updates, and secure operation during communication outages.	12; AC-14; AC 17-22; AU 1-12; IA 1-8; IA 11-12; MA 1-6; SC 2-4; SC-39; SI 1-8; SI 10-12; SI-16; SI-18	PS; CT		management, selected encryption systems, intrusion and malware detection, event logging and reporting, management of software updates, and secure operation during communication outages. To address "…secure operation during communication outages" describe the plan in detail on how you plan to persist service under this circumstance.
4	Ensure secure collection, processing, and retention of only the personal information strictly necessary to provide charging service to the customer, to include information required to complete the charging transaction.	23 § 680.106 (l); NIST SP 800-53 Control Numbers: AC 1-3; AC 5-8; AC 10-12; AC-14; AC 17-22; AT 1-4; AU 1-12; CA 1-3; CA 5-9; IR-1-8; MP 1-7; PL 1-2; PL-4; PL-8; PL 10-11; PM-3; PM-5; PM 18-22; PM 24-27; PT 2-6; SA 1-5; SA 8-11; SA 15-17; SA 21-22; SC 2-4; SI 1-8; SI 10-12; SI-16; SI-18	CS; MS; PS; PA; CT		A detailed plan shall be provided that addresses how the charging station accounts for and enacts secure collection, processing, and retention of personal information strictly necessary to provide charging service.

#	Requirement	Initial Baseline Control and Reference	Comp. Code	Compliance Status (YES/NO)	Compliance Description
5	Ensure Charger-to-Charging-Network communications make use of a secure communication method. Utilize appropriate cybersecurity use cases & requirements in their communications with any charging network provider.	23 § 680.114 (a)(1); OCPP v2.0.1 Part 2 – A2; NIST SP 800-53 Control Numbers: AC-8; AC-11; SC 1-5; SC 7-8; SC-10; SC 12-13; SC-15; SC 17-18; SC 20-24; SC-28; SC-39; SI-11; SI-16	CS; MS; CT		A detailed plan shall be provided that addresses how the charging station secures communications to its charging network and which applicable use cases & requirements are fulfilled and how (OCPP v2.0.1 Part 2 – A2).
6	Ensure charging stations have the ability to receive and implement secure remote software updates, conduct real-time protocol translations, encryption and decryption, authentication, and authorization in their communications with charging networks.	23 § 680.114 (a)(2); NIST SP 800-53 Control Numbers: AC 1-14; AC 17-22; AU 1-12; IA 2-8; IA-11; IA-12; MA 1-6; SC 1-5; SC 7-8; SC 10-13; SC-15; SC 17-18; SC 20-24; SC 28-39; SI-1; SI 1-8; SI 10-12; SI-16; SI-18	CS; MS; CT		A detailed plan shall be provided that addresses how the charging station secures its remote software updates and implementation, conducts real-time protocol translations, handles encryption and decryption, enacts authentication and authorization in communications within their charging networks.
7	Ensure charging stations and charging networks securely	23 § 680.114 (a)(4); NIST SP 800-53 Control Numbers:	CS; MS;		A detailed plan shall be provided that addresses how the charging station securely

#	Requirement	Initial Baseline Control and Reference	Comp. Code	Compliance Status (YES/NO)	Compliance Description
	measure, communicate, store, and report energy and power dispensed, real-time charging-port status, real-time price to the customer, and historical charging-port uptime.	AC 1-8; AC 10-12; AC-14; AC 17-22; AU-5; AU 8-10; SC 1-5; SC 7-8; SC-10; SC 12-13; SC-15; SC 17-18; SC 20-24; SC-28; SC-39; SI-11; SI-16	CT		measures, stores, communicates, and reports required information within their charging networks.
8	Ensure charging stations are designed to securely switch charging network providers without any changes to hardware.	23 § 680.114 (a)(6); NIST SP 800-53 Control Numbers: AC-8; AC-11; SC 2-4; SC-39; SI-11; SI-16	CS; MS		A detailed plan shall be provided that addresses the design strategy for securely switching charging network providers without any changes to hardware.
9	Ensure the charging network must be capable of communicating with other charging networks to enable an EV operator to utilize a single credential to charge at charging stations that are a part of multiple charging networks.	23 § 680.114 (b); NIST SP 800-53 Control Numbers: AC-8; AC-11; SC 2-4; SC-39; SI-11; SI-16	CS; MS; PS; CT		A detailed plan shall be provided that addresses how the charging network enables utilization of a single credential for EV operators to charge at charging stations that are a member of multiple charging networks.
10	Ensure charging	23 § 680.114 (c); NIST	CS;		A detailed plan shall be

#	Requirement	Initial Baseline Control and Reference	Comp. Code	Compliance Status (YES/NO)	Compliance Description
	networks are capable of secure communication with electric utilities, other energy providers, or local energy management systems.	SP 800-53 Control Numbers: AC-8; AC-11; SC 2-4; SC-39; SI 1-8; SI 10-12; SI-16; SI-18; SR 1-3; SR 5-6; SR 8-12	MS		provided that addresses how the charging network secures its communication with electric utilities, energy providers, and local energy management systems.
11	Ensure implementation of Domain specific control subcategories of the domains "XFC/EVSE," "Cloud/Third-Party," and "Utility/Building Management Systems" as applicable; where domains are defined in section 1.2 of NIST IR 8473.	NIST IR 8473 Subcategories: ID.AM 1-6; ID.BE 1-5; ID.GV 1-4; ID.RA 1-6; ID.RM 1-3; ID.SC 1-5; PR.AC 1-7; PR.AT 1-5; PR.DS 1-8; PR.IP 1-12; PR.MA 1-2; PR.PT 1-5; DE.AE 1-5; DE.CM 1-8; DE.DP 1-5; RS.AN 1-5; RS.CO 1-5; RS.IM 1-2; RS.IM 1-3; RS.RP 1; RC.CO 1-3; RC.IM 1-2; RC.RP 1	CS; MS; PS; PA; CT		A detailed plan shall be provided that addresses how the CSO and charger meet the specific considerations (as applicable) within each relevant domain subcategory of NIST IR 8473.

Security Testing and Assessment - NIST SP 800-115

Active assessment and testing of security controls and policies from both procedural and technical standpoints are critical to verify proper security control implementation and procedure compliance, as well as to demonstrate their practical effectiveness against modern cyberattack methodologies. NIST SP 800-115 shall be utilized by the contractor system integrators, vendors and owners (CSO) of EV charging infrastructure as the guiding standard for security testing and assessment of their equipment and networks. For vendors, efforts shall include code reviews, periodic vulnerability analysis and security testing (white box and black box) of their equipment. For the CSO and system integrators, similar assessment efforts shall be conducted at the system level, with a primary focus on the network, interfaces, and site-specific configuration. Vulnerability scanning and penetration testing shall be

conducted at both the equipment level (by the vendor) and at the system/network level (internal and external) by a professionally certified tester (e.g., OffSec Certified Professional, Practical Network Penetration Tester, eCPPT, or similarly qualified with demonstrated hands-on experience) using modern techniques, frameworks, and tools.

The CSO shall both develop cybersecurity assessment plans in accordance with Section 6 of NIST SP 800-115. Assessment planning shall adhere to the following steps, which are quoted from Section 6.7 of this standard:

- Developing a security assessment policy. Organizations should develop an information security assessment policy to provide direction and guidance for their security assessments. This policy should identify security assessment requirements and hold accountable those individuals responsible for ensuring that assessments comply with the requirements. The approved policy should be disseminated to the appropriate staff, as well as third parties who are to conduct assessments for the organization. The policy should be reviewed at least annually and whenever there are new assessment-related requirements.
- Prioritizing and scheduling assessments. Organizations should decide which systems should undergo assessments and how often these assessments should be done. This prioritization is based on system categorization, expected benefits, scheduling requirements, applicable regulations where assessment is a requirement, and resource availability. Technical considerations can also help determine assessment frequency, such as waiting until known weaknesses are corrected or a planned upgrade to the system is performed before conducting testing.
- Selecting and customizing technical testing and examination techniques. There are many factors for organizations to consider when determining which techniques should be used for a particular assessment. Factors include the assessment objectives, the classes of techniques that can obtain information to support those objectives, and the appropriate techniques within each class. Some techniques also require the organization to determine the assessors' viewpoint (e.g., internal versus external) so that corresponding techniques can be selected.
- Determining the logistics of the assessment. This includes identifying all required resources, including the assessment team; selecting environments and locations from which to perform the assessment; and acquiring and configuring all necessary technical tools. - Developing the assessment plan. The assessment plan documents the activities planned for an assessment and other related information. A plan should be developed for every assessment to provide the rules and boundaries to which assessors must adhere. The plan should identify the systems and networks to be assessed, the type and level of testing permitted, logistical details of the assessment, data handling requirements, and guidance for incident handling. -
- Addressing any legal considerations. Organizations should evaluate potential legal concerns before commencing an assessment, particularly if the assessment involves intrusive tests (e.g., penetration testing) or if the assessment is to be performed by an external entity. Legal departments may review the assessment plan, address privacy concerns, and perform other functions in support of assessment planning.

The CSO SHALL, in concert with the requirement defined in section 3544 of the Federal Information Security Modernization Act of 2014,[55] conduct "periodic testing and evaluation of the effectiveness of information security policies, procedures, and practices, to be performed with a frequency depending on risk, but no less than annually." This is echoed in the recommendation provided by NIST SP 800-115, which also recommends conducting such reviews "whenever there are new assessment-related requirements." NIST SP 800-53 provides further recommendations regarding the frequency of conducting security assessments. Vulnerability scanning and penetration testing shall be part of the activities conducted at least annually.

Assessments for payment systems must additionally comply with all PCI-DSS requirements. A PCI SCC-certified Quality Security Assessor shall be utilized to determine the appropriate assessment frequency of EV charging payment systems, to verify that the latest PCI DSS requirements are being properly met, and to review/recommend changes to plans and controls as required for the payment system to maintain PCI DSS compliance. Payment software must additionally comply with PCI SSC Software Standards.

The CSO SHALL also actively monitor and react to threat intelligence (including new common Vulnerabilities and Exposures and Industrial Control Systems Cyber Emergency Response Team advisories related to elements of their systems) which may necessitate re-assessment of their equipment and/or networks and may require patching or re-configuration to mitigate risk from emerging threats. Vendors shall immediately inform owners of any such information that may adversely impact their systems and provide guidance for temporary and long-term mitigation of associated risks.

[55] Federal Information Security Modernization Act of 2014. Retrieved from https://www.congress.gov/bill/113th-congress/senate-bill/2521

CHAPTER 6. APPENDICES

APPENDIX A – CYBERSECURITY BASELINE

Table E-6A-1 contains a listing of identifiers for cybersecurity control families and their enhancements for environments with a High security control baseline in accordance with NIST SP 800-53B r5, which has been further modified to include additional controls to meet requirements of 23 CFR Part 680, 23 CFR Part 940, and the Statewide Policy (8130): System Security Acquisition and Development.

Table E-6A-1. Cybersecurity Control Baseline

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
Access Control		
AC-1	Policy and Procedures	AC-1
AC-2	Account Management	AC-2 (1) (2) (3) (4) (5) (11) (12) (13)
AC-3	Access Enforcement	AC-3
AC-4	Information Flow Enforcement	AC-4 (4)
AC-5	Separation of Duties	AC-5
AC-6	Least Privilege	AC-6 (1) (2) (3) (5) (7) (9) (10)
AC-7	Unsuccessful Log-on Attempts	AC-7
AC-8	System Use Notification	AC-8
AC-10	Concurrent Session Control	AC-10
AC-11	Device Lock	AC-11 (1)
AC-12	Session Termination	AC-12
AC-14	Permitted Actions Without Identification or Authentication	AC-14
AC-17	Remote Access	AC-17 (1) (2) (3) (4)
AC-18	Wireless Access	AC-18 (1) (3) (4) (5)
AC-19	Access Control for Mobile Devices	AC-19 (5)
AC-20	Use of External Systems	AC-20 (1) (2)

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
AC-21	Information Sharing	AC-21
AC-22	Publicly Accessible Content	AC-22
Awareness and Training		
AT-1	Policy and Procedures	AT-1
AT-2	Literacy Training and Awareness	AT-2 (2) (3)
AT-3	Role-based Training	AT-3
AT-4	Training Records	AT-4
Audit and Accountability		
AU-1	Policy and Procedures	AU-1
AU-2	Event Logging	AU-2
AU-3	Content of Audit Records	AU-3 (1)
AU-4	Audit Log Storage Capacity	AU-4
AU-5	Response to Audit Logging Process Failures	AU-5 (1) (2)
AU-6	Audit Record Review, Analysis, and Reporting	AU-6 (1) (3) (5) (6)
AU-7	Audit Record Reduction and Report Generation	AU-7 (1)
AU-8	Time Stamps	AU-8
AU-9	Protection of Audit Information	AU-9 (2) (3) (4)
AU-10	Non-repudiation	AU-10
AU-11	Audit Record Retention	AU-11
AU-12	Audit Record Generation	AU-12 (1) (3)
Assessment, Authorization, and Monitoring		
CA-1	Policy and Procedures	CA-1

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
CA-2	Control Assessments	CA-2
CA-3	Information Exchange	CA-3 (6)
CA-5	Plan of Action and Milestones	CA-5
CA-6	Authorization	CA-6
CA-7	Continuous Monitoring	CA-7 (1) (4)
CA-8	Penetration Testing	CA-8 (1)
CA-9	Internal System Connections	CA-9
Configuration Management		
CM-1	Policy and Procedures	CM-1
CM-2	Baseline Configuration	CM-2 (2) (3) (7)
CM-3	Configuration Change Control	CM-3 (1) (2) (4) (6)
CM-4	Impact Analyses	CM-4 (1) (2)
CM-5	Access Restrictions for Change	CM-5 (1)
CM-6	Configuration Settings	CM-6 (1) (2)
CM-7	Least Functionality	CM-7 (1) (2) (5)
CM-8	System Component Inventory	CM-8 (1) (2) (3) (4)
CM-9	Configuration Management Plan	CM-9
CM-10	Software Usage Restrictions	CM-10
CM-11	User-installed Software	CM-11
CM-12	Information Location	CM-12 (1)
Contingency Planning		
CP-1	Policy and Procedures	CP-1
CP-2	Contingency Plan	CP-2 (1) (2) (3) (5) (8)
CP-3	Contingency Training	CP-3 (1)

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
CP-4	Contingency Plan Testing	CP-4 (1) (2)
CP-6	Alternate Storage Site	CP-6 (1) (2) (3)
CP-7	Alternate Processing Site	CP-7 (1) (2) (3) (4)
CP-8	Telecommunications Services	CP-8 (1) (2) (3) (4)
CP-9	System Backup	CP-9 (1) (2) (3) (5) (8)
CP-10	System Recovery and Reconstitution	CP-10 (2) (4)
Identification and Authentication		
IA-1	Policy and Procedures	IA-1
IA-2	Identification and Authentication (organizational Users)	IA-2 (1) (2) (5) (8) (12)
IA-3	Device Identification and Authentication	IA-3
IA-4	Identifier Management	IA-4 (4)
IA-5	Authenticator Management	IA-5 (1) (2) (6)
IA-6	Authentication Feedback	IA-6
IA-7	Cryptographic Module Authentication	IA-7
IA-8	Identification and Authentication (non-organizational Users)	IA-8 (1) (2) (4)
IA-11	Re-authentication	IA-11
IA-12	Identity Proofing	IA-12 (3) (4) (5)
Incident Response		
IR-1	Policy and Procedures	IR-1
IR-2	Incident Response Training	IR-2 (1) (2)
IR-3	Incident Response Testing	IR-3 (2)
IR-4	Incident Handling	IR-4 (1) (4) (11)

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
IR-5	Incident Monitoring	IR-5 (1)
IR-6	Incident Reporting	IR-6 (1) (3)
IR-7	Incident Response Assistance	IR-7 (1)
IR-8	Incident Response Plan	IR-8
Maintenance		
MA-1	Policy and Procedures	MA-1
MA-2	Controlled Maintenance	MA-2 (2)
MA-3	Maintenance Tools	MA-3 (1) (2) (3)
MA-4	Nonlocal Maintenance	MA-4 (3)
MA-5	Maintenance Personnel	MA-5 (1)
MA-6	Timely Maintenance	MA-6
Media Protection		
MP-1	Policy and Procedures	MP-1
MP-2	Media Access	MP-2
MP-3	Media Marking	MP-3
MP-4	Media Storage	MP-4
MP-5	Media Transport	MP-5
MP-6	Media Sanitization	MP-6 (1) (2) (3) (7) (8)
MP-7	Media Use	MP-7
Physical and Environmental Protection		
PE-1	Policy and Procedures	PE-1
PE-2	Physical Access Authorizations	PE-2
PE-3	Physical Access Control	PE-3 (1)
PE-4	Access Control for Transmission	PE-4

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
PE-5	Access Control for Output Devices	PE-5
PE-6	Monitoring Physical Access	PE-6 (1) (4)
PE-8	Visitor Access Records	PE-8 (1)
PE-9	Power Equipment and Cabling	PE-9
PE-10	Emergency Shutoff	PE-10
PE-11	Emergency Power	PE-11 (1)
PE-12	Emergency Lighting	PE-12
PE-13	Fire Protection	PE-13 (1) (2)
PE-14	Environmental Controls	PE-14
PE-15	Water Damage Protection	PE-15 (1)
PE-16	Delivery and Removal	PE-16
PE-17	Alternate Work Site	PE-17
PE-18	Location of System Components	PE-18
Planning		
PL-1	Policy and Procedures	PL-1
PL-2	System Security and Privacy Plans	PL-2
PL-4	Rules of Behavior	PL-4
PL-8	Security and Privacy Architectures	PL-8
PL-10	Baseline Selection	PL-10
PL-11	Baseline Tailoring	PL-11
Program Management		
PM-3	Information Security and Privacy Resources	PM-3
PM-5	System Inventory	PM-5 (1)

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
PM-18	Privacy Program Plan	PM-18
PM-19	Privacy Program Leadership Role	PM-19
PM-20	Dissemination of Privacy Program Information	PM-20
PM-21	Accounting of Disclosures	PM-21
PM-22	Personally Identifiable Information Quality Management	PM-22
PM-24	Data Integrity Board	PM-24
PM-25	Minimization of Personally Identifiable Information Used in Testing, Training, and Research	PM-25
PM-26	Complaint Management	PM-26
PM-27	Privacy Reporting	PM-27
Personnel Security		
PS-1	Policy and Procedures	PS-1
PS-2	Position Risk Designation	PS-2
PS-3	Personnel Screening	PS-3
PS-4	Personnel Termination	PS-4 (2)
PS-5	Personnel Transfer	PS-5
PS-6	Access Agreements	PS-6
PS-7	External Personnel Security	PS-7
PS-8	Personnel Sanctions	PS-8
PS-9	Position Descriptions	PS-9
Personally Identifiable InformationProcessing and Transparency		
PT-2	Authority to Process Personally	PT-2

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
	Identifiable Information	
PT-3	Personally Identifiable Information Processing Purposes	PT-3
PT-4	Consent	PT-4
PT-5	Privacy Notice	PT-5 (1) (2)
PT-6	System of Records Notice	PT-6
Risk Assessment		
RA-1	Policy and Procedures	RA-1
RA-2	Security Categorization	RA-2
RA-3	Risk Assessment	RA-3
RA-5	Vulnerability Monitoring and Scanning	RA-5 (2) (4) (5) (11)
RA-7	Risk Response	RA-7
RA-8	Privacy Impact Assessments	RA-8
RA-9	Criticality Analysis	RA-9
System and Services Acquisition		
SA-1	Policy and Procedures	SA-1
SA-2	Allocation of Resources	SA-2
SA-3	System Development Life Cycle	SA-3
SA-4	Acquisition Process	SA-4
SA-5	System Documentation	SA-5
SA-8	Security and Privacy Engineering Principles	SA-8
SA-9	External System Services	SA-9
SA-10	Developer Configuration Management	SA-10

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
SA-11	Developer Testing and Evaluation	SA-11
SA-15	Development Process, Standards, and Tools	SA-15 (3)
SA-16	Developer-provided Training	SA-16
SA-17	Developer Security and Privacy Architecture and Design	SA-17
SA-21	Developer Screening	SA-21
SA-22	Unsupported System Components	SA-22
System and Communications Protection		
SC-1	Policy and Procedures	SC-1
SC-2	Separation of System and User Functionality	SC-2
SC-3	Security Function Isolation	SC-3
SC-4	Information in Shared System Resources	SC-4
SC-5	Denial-of-service Protection	SC-5
SC-7	Boundary Protection	SC-7 (3) (4) (5) (7) (18) (21)
SC-8	Transmission Confidentiality and Integrity	SC-8 (1)
SC-10	Network Disconnect	SC-10
SC-12	Cryptographic Key Establishment and Management	SC-12 (1)
SC-13	Cryptographic Protection	SC-13
SC-15	Collaborative Computing Devices and Applications	SC-15
SC-17	Public Key Infrastructure Certificates	SC-17

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
SC-18	Mobile Code	SC-18
SC-20	Secure Name/Address Resolution Service (authoritative Source)	SC-20
SC-21	Secure Name/Address Resolution Service (recursive or Caching Resolver)	SC-21
SC-22	Architecture and Provisioning for Name/Address Resolution Service	SC-22
SC-23	Session Authenticity	SC-23
SC-24	Fail in Known State	SC-24
SC-28	Protection of Information at Rest	SC-28 (1)
SC-39	Process Isolation	SC-39
System and Information Integrity		
SI-1	Policy and Procedures	SI-1
SI-2	Flaw Remediation	SI-2 (2)
SI-3	Malicious Code Protection	SI-3
SI-4	System Monitoring	SI-4 (2) (4) (5) (10) (12) (14) (20) (22)
SI-5	Security Alerts, Advisories, and Directives	SI-5 (1)
SI-6	Security and Privacy Function Verification	SI-6
SI-7	Software, Firmware, and Information Integrity	SI-7 (1) (2) (5) (7) (15)
SI-8	Spam Protection	SI-8 (2)
SI-10	Information Input Validation	SI-10
SI-11	Error Handling	SI-11

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
SI-12	Information Management and Retention	SI-12
SI-16	Memory Protection	SI-16
SI-18	Personally Identifiable Information Quality Operations	SI-18
Supply Chain Risk Management		
SR-1	Policy and Procedures	SR-1
SR-2	Supply Chain Risk Management Plan	SR-2 (1)
SR-3	Supply Chain Controls and Processes	SR-3
SR-5	Acquisition Strategies, Tools, and Methods	SR-5
SR-6	Supplier Assessments and Reviews	SR-6
SR-8	Notification Agreements	SR-8
SR-9	Tamper Resistance and Detection	SR-9 (1)
SR-10	Inspection of Systems or Components	SR-10
SR-11	Component Authenticity	SR-11 (1) (2)
SR-12	Component Disposal	SR-12

APPENDIX B. DEFINITIVE TEXT

The excerpts below are extracted from normative references in this document and MUST NOT be accepted by the CSO as applicable cybersecurity requirements for the CSO, but instead the text is meant specifically as a reference.

National Electric Vehicle Infrastructure Formula Program Guidance

Section III. STATE EV INFRASTRUCTURE DEPLOYMENT PLAN – B. Plan Format – Cybersecurity

This section of the Plan should discuss how the state will address cybersecurity. The Plan should identify considerations when software updates are made to ensure the station or vehicle is not compromised by malicious code, or that a vehicle infects other stations during future charges.

National Electric Vehicle Infrastructure Formula Program Guidance and the National Electric Vehicle Infrastructure Standards and Requirements - 23 C.F.R. Part 680

§ 680.106 - Installation, operation, and maintenance by qualified technicians of electric vehicle charging infrastructure.

(f) Payment methods.

> (1) Charging stations must provide for secure payment methods, accessible to persons with disabilities, which at a minimum shall include a contactless payment method that accepts major debit and credit cards, and Plug and Charge payment capabilities using the ISO 15118 standard (incorporated by reference, see § 680.120);

(h) Security. States must implement physical and cybersecurity strategies consistent with their respective State EV Infrastructure Deployment Plans to mitigate charging infrastructure, grid, and consumer vulnerability associated with the operation of charging stations.

> (1) Physical security strategies may address lighting, siting, driver and vehicle safety, fire prevention, tampering, charger locks, and illegal surveillance of payment devices.
>
> (2) Cybersecurity strategies may address user identity and access management, selection of appropriate encryption systems, intrusion and malware detection, event logging and reporting, management of software updates, and secure operation during communication outages.

(k) Customer service. States must ensure that EV charging customers have mechanisms to report outages, malfunctions, and other issues with charging infrastructure. States must comply with the American with Disabilities Act of 1990 requirements and multilingual access when creating reporting mechanisms.

(l) Customer data privacy. Charging Station Operators must collect, process, and retain only that personal information strictly necessary to provide the charging service to a consumer, including information to complete the charging transaction and to provide

the location of charging stations to the consumer. Charging Stations Operators must also take reasonable measures to safeguard consumer data.

§ 680.114 - Charging network connectivity of electric vehicle charging infrastructure.

(a) Charger-to-Charger-Network communication.

(1) Chargers must communicate with a charging network via a secure communication method.

(2) Chargers must have the ability to receive and implement secure, remote software updates and conduct real-time protocol translation, encryption and decryption, authentication, and authorization in their communication with charging networks.

(3) Chargers and charging networks must securely measure, communicate, store, and report energy and power dispensed, real-time charging-port status, real-time price to the customer, and historical charging-port uptime.

(4) Chargers must be capable of using Open Charge Point Protocol (OCPP) (incorporated by reference, see § 680.120) to communicate with any Charging Network Provider.

(5) Chargers must be designed to securely switch Charging Network Providers without any changes to hardware.

(b) Charging-Network-to-Charging-Network communication. A Charging Network must be capable of communicating with other Charging Networks to enable an EV driver to use a single credential to charge at Charging Stations that are a part of multiple Charging Networks.

(c) Charging-Network-to-grid communication. Charging Networks must be capable of secure communication with electric utilities, other energy providers, or local energy management systems.

Architecture Reference for Cooperative and Intelligent Transportation

Device Class 5 Areas

Device Class 5:

- Confidentiality: HIGH
- Integrity: HIGH
- Availability: HIGH

Devices of this class must meet controls from NIST 800-53 and ISO/IEC 15408 in the following areas:

- Access Control
- Audit and Accountability
- Configuration Management
- Contingency Planning
- Identification and Authentication
- Incident Response
- Media Protection
- Personal Privacy
- Risk Assessment
- System and Services Acquisition
- System and Communications Protection
- System and Information Integrity

In addition, organizations that develop, operate or maintain devices of this class must meet controls from NIST 800-53 and ISO/IEC 15408 the areas above and the following additional areas:

- Awareness and Training
- [Security] Assessment and Authorization
- Maintenance
- Physical and Environmental Protection
- Planning
- Personnel Security

Appendix E Supporting Materials

Online Comments Received from 2024 can be found at: azdot.gov/EVPlan

The documents are housed under public engagement materials.

Table E-1: Response to Comments

#	Question (s):	Answer(s):
1	What is NEVI?	The National Electric Vehicle Infrastructure (NEVI) Formula Program is a $5 billion program managed by the Federal Highway Administration (FHWA). The program funds a resilient, equitable, accessible, reliable national network of Level 3 EV fast-charging stations along the nation's highways.
2	What is the goal of the NEVI program?	NEVI aims to: • Build a resilient, equitable, accessible, reliable network and foster adoption of EVs. • Reduce 'range anxiety' by closing existing network gaps. This will be accomplished by: • Engaging stakeholders—including the public— in all phases of the program. • Utilizing efficient contracting and procurement processes. • Collecting data and applying metrics to ongoing planning for EV charging infrastructure.
3	What is the feasibility of building charging sites on Native American lands in Arizona?	We have several corridors that will pass through Native American land. In the 2023 plan, we addressed Highway 89 from Flagstaff to Page. This year's plan includes Highway 160 (US 160). Additionally, we have I-10 passing through the Gila River Indian Community (GREC). Thus, there are a few eligible corridors that traverse Native land, and they have the potential for stations.
4	Why is the State of AZ building EV charging stations?	The State of Arizona and ADOT are acting as facilitators for the federal NEVI funds. These funds will be allocated to private sector developers to establish stations along the alternative fuel corridors. The private sector developers will be responsible for developing, owning, operating, and maintaining the stations. Additionally, they will receive all proceeds from station operations. The state is merely facilitating this program.

#	Question (s):	Answer(s):
5	What is the plan to make sure all chargers considered "existing" are actually usable? What is the plan to make sure they are maintained; especially with the stress that the sun and heat have on these chargers?	Initially, we intended to count existing stations towards our NEVI program. However, we are revising our approach. We have received feedback that some existing stations are unreliable. Additionally, as we plan to include the North American Charging Standard (NACS) charging connector (the Tesla connector), along with the CCS connector in our future advertisements, we have more reasons to update our strategy. We will reassess the existing stations that were previously deemed creditable in our original plans. Specifically, there were 13 stations on the interstates and three in the 2023 plan. We will consider developing these stations in future advertisements. There are no credible existing stations in the 2024 plan. Currently, we do not anticipate credible stations in future plans, as these will be in more rural areas.
6	Most manufacturers are switching to NACS ports. Having this knowledge, what is the plan to install NACS ports instead of a Combined Charging System (CCS)?	We are required to install CCS by regulation, but we can also include both CCS and NACS at the same charger. It is possible to have two ports on the same charger, therefore, we plan to include this requirement in future advertisements. The industry is up-to-speed on these requirements and can integrate both connectors into charging stations. We intend to implement this plan.
7	Are there still opportunities to submit contracts from private EV businesses?	We will be issuing another advertisement this winter. Our plan for this advertisement is to cover the corridors in the 2023 plan, which includes seven corridors along with nine new corridors from the 2024 plan. We will combine these two sets of corridors as we anticipate that the 2024 plan will be approved by the Joint Office. There will be plenty of opportunities. Next year, we plan to review the remaining corridors and address any credible stations we have. Additionally, for some interstate locations where we did not receive proposals, we will evaluate each location to determine why proposals were not received. If we believe that we can effectively advertise these locations again, we will do so. This approach will be applied to any future advertisements where we did not receive proposals. The aim is to re-advertise those locations if feasible.
8	Can a non-profit be a contractor for a charging	I am not aware of any prohibition against that. They would need

#	Question (s):	Answer(s):
	station?	to follow the contracting process.
9	Where can we find the requirements for contract proposals?	When we issue our contracts, we will create a separate contract for each of our advertisements. These contract requirements will be posted on our website at AZEVplan.gov. You can visit the site to view our current contracting requirements, which will be updated with each new contract advertisement.
10	Why doesn't the EV Plan from Phoenix to Globe (US 60) extend onto the San Carlos Apache Agency; an added 18 miles?	US 60, from Phoenix to Globe, is part of the National Highway System. This designation ends just east of Globe. It does not extend north or east on Highway 70 (US 70). Therefore, it is not eligible to be an alternative fuel corridor. We cannot use NEVI funding unless a route is on the National Highway System and eligible to be an alternative fuel corridor.
11	I heard that 2022 EV site contracts will be awarded by the end of this summer. When do you think these stations from the 2022 EV plan will be available for EV use?	We expect the first station to be available by 2025. Installing the stations can take around 12 months. The main barrier is the utility hook-up. This is because nearly all these stations require new transformers and sometimes require new lines to the transformer poles. This process depends on the utilities, which often have a backlog. Additionally, there have been supply chain issues with transformers, causing significant delays. Building the stations themselves is relatively quick. We are working closely with utilities to resolve these issues as efficiently as possible and have coordinated with contractors applying for NEVI funds.
12	Does ADOT have a teaming portal for organizations looking to find P3 partners?	We do! This information will be available on our webpage at AZEVplan.gov.
13	I see a proposed station in Bullhead City. Can you share more specific information on where that station will be located?	Not yet, because we first identify a general area or zone and then advertise that zone. Contractors can then identify potential site locations within that zone to partner with. We could have multiple site locations available and several contractors applying, which means there could be numerous locations for a particular station.

#	Question (s):	Answer(s):
14	Why does it take so long to implement? Private companies are moving much faster.	Private companies do tend to move quickly. In the case of NEVI, the rules come with many strings attached. There are numerous requirements to meet. These include planning requirements, public involvement requirements, and complex contracting procedures, which can extend the timeline. At the outset of this program, ADOT thoroughly examined similar programs across the country to learn from their experiences. We found that some states with settlement funding for EV charging stations faced challenges; and thus many stations closed prematurely or proved unreliable. Consequently, we have been meticulous with our planning to ensure success. We are committed to doing the job correctly, which we believe is the best approach. We also recognize the demand for these stations and are striving to balance this need with the goal of completing the project as efficiently as possible; given all the necessary requirements.
15	Who will maintain performance and security for charging stations?	The site owner will be the primary party responsible for the security, maintenance, and operation of the stations. There are specific data reporting requirements that ADOT will have access to, allowing us to monitor the performance of the stations. If issues arise, we will be able to contact the site owner to address and resolve any problems.
16	Will the continued maintenance of EV stations also be covered by federal funding, or will that money come from elsewhere?	When we advertised our initial contract, we included up to five years of operations and maintenance funding. We plan to include similar provisions in future contracts as well.
17	Tucson, the second largest city in AZ, and the Nogales, Green Valley corridor, left out?	I believe they are included in the interstate corridors I-10 and I-19, as well as in our latest advertisement. We received submissions for those locations.

#	Question (s):	Answer(s):
18	Why provide only 150kW when Tesla is doing 250kW and Electrify America is at up to 350kW?	The regulation requires a minimum of 150kW, but most developers are now using much higher-powered chargers. Many chargers are typically 350 kW with two ports, each providing 175kW. We've also seen chargers that offer 400kW or even 600kW. While 150kW is the minimum requirement, the industry has advanced beyond this standard. Developers are future-proofing by installing higher-capacity chargers to keep up with evolving vehicle needs.
19	What efforts are made to see to the long-term viability of the charging stations? Do contracts stipulate a certain number of years of ownership and competent management to receive the full subsidies involved?	Yes, the station must be operational for at least five years. In our contracting process, we have asked whether station owners plan to extend beyond this minimum period, so we can consider that in our decision-making. However, five years is the minimum requirement for the NEVI program.
20	Are stations being located in rest stops?	No, they are not. There are prohibitions against locating stations at rest stops, and even without these restrictions, rest areas are not ideal options. They typically lack nearby electrical power, particularly the three-phase power required, making it extremely expensive to bring electricity to these locations. Additionally, most rest areas are not monitored full-time and— while they do provide some services— they usually do not offer sufficient amenities for a 20 to 30-minute break. Most travelers are looking for an opportunity to grab a bite to eat. Given these obstacles, we will not develop any stations at rest areas.
21	Will there be consideration for indoor areas where people can wait while their cars are charging?	Yes, we aim to place chargers in locations where users can conveniently access amenities such as food, snacks, ADA-accessible restrooms, and shopping opportunities. These types of locations will receive higher priority, and most of the submissions we have received are for such sites.
22	We are looking at 2024 plans, but have any of the 2022 chargers even been installed yet? What is the program status for 2022 and 2023?	Not yet. We plan to issue conditional awards later this summer. After that, we need to complete environmental clearance. Once that is done, vendors can begin installing the stations. As mentioned previously, the major delay is working with utilities and the lead times required to obtain transformers and three-phase power for the stations.
23	Are there chosen mile marker locations for EV stations on Highway 93 (US	We have identified locations that meet the requirements; with one exception where no infrastructure is present. These

#	Question (s):	Answer(s):
	93) between Wickenburg and I-40?	locations are mapped and available for viewing on our website.
24	Are there any non-highway and/or freeway plans for city or neighborhood charging?	ADOT is currently exploring a charging and fueling infrastructure grant to potentially install chargers at NBD stations. We applied for this grant last year but did not receive it. The grant application process involves the Joint Office and the FHWA determining the recipients. I believe we will be reapplying for this grant. Additionally, there are Charging and Fueling Infrastructure (CFI) grant opportunities available for local governments. We have spoken with local governments that have pursued these grants and have been successful. As a result, some local governments will be installing chargers in their communities.
25	How long will it take to charge a vehicle?	The expected charging time is 20 to 30 minutes. However, with these high-powered chargers, it could be slightly less, around 15 to 20 minutes.
26	What type of infrastructure will be included in the charging station locations? Will there be streetlights, shade, etc.?	The amenities will vary at each site and depend on the developer. Many locations will feature cameras, and some may have canopies, depending on the site's capacity. Amenities typically include restrooms, food, and sometimes pet relief areas. Since this is a competitive process, we will see a range of amenities at different sites, such as shade and other features. Each site will differ based on the proposals submitted by the private sector.
27	Do stations have to be right on the highway or can they be 500 yards off the highway?	The stations must be within one mile of the highway, with a requirement for placement every 50 miles along the highway.
28	Cable theft is on the rise. Europe has largely adopted a "bring your own cable" model. These are plugged into both the charger and EV. Is this under consideration?	This is the first time I'm hearing about this. I would love to learn more. We are certainly concerned and will keep an eye on it. Currently, our strategy focuses on locating sites with 24/7 security cameras whenever possible. Ideally, we also aim for locations with on-site staff available around the clock, well-lit areas, and nearby stores that operate around the clock. This helps ensure that someone is always monitoring the locations to prevent theft, as stolen cables can be very costly. We might consider adapting our model based on the European approach if needed.

#	Question (s):	Answer(s):
29	There are some rural roads that will be receiving increased travel due to significant development. They are not shown on your 2025 map. How do we submit those routes for consideration?	To be eligible, we must designate a corridor as an alternative fuel corridor. This involves nominating the corridor, submitting it to the federal government and the FHWA to obtain their approval. We will submit the nine corridors in this plan before the upcoming August 2 deadline, as the FHWA will review them over the following months. We do not anticipate any issues with this process. However, unless a corridor has been nominated as an alternative fuel corridor, it will not be eligible. Therefore, we will not be able to build out all rural roads in the state. Instead, we plan to focus on developing most of the National Highway System routes in the state that are actively used. We believe we will have sufficient funding to achieve this.
30	Will you please talk about how ADOT is working with local governments, businesses, NGOs, communities, utilities, and others to ensure success, including through coordination of available charging stations across the state?	First, we have conducted extensive public outreach, meeting with other state agencies, utilities, tribal entities, and local governments. We will continue these efforts as the stations progress, addressing permitting requirements and other issues to ensure the timely development of these stations. Outreach has been a key focus from the start, and we believe we have been very successful in our efforts so far.
31	What kind of feedback are you looking for from community groups and/or the public?	We conducted surveys and asked questions about amenities and the needs for station locations. For utilities, we sought feedback on the duration of the process and the best methods for coordination. We aimed to gather practical insights on the most effective ways to develop the stations.
32	Has there been any discussion about increasing the number of charging stalls at each location? Having only four stalls can fill up quickly, particularly if it services both CCS and NACS vehicles.	We advertise for a minimum of four stalls, but companies have the option to submit proposals for additional stalls if they can accommodate them. Companies can propose more than four stalls within a specified budget limit.

#	Question (s):	Answer(s):
33	Does the program pay for co-location of gas stations at these charging facilities? Or is this program for EVs only, excluding the 97% of other vehicles on the road?	Strictly for EVs only.
34	Will charging station platforms capable of reducing grid power consumption be given any priority ranking? If so, how so?	The requirement is to have a minimum of 600 kW capacity to support at least four stations, each with 150 kW. Regarding the impact on the grid, we do not expect the number of stations in the state to significantly affect it. Utilities need to support these stations, and so far, they have been able to accommodate the power requirements. In Arizona, most people will likely do their charging at home and at night, with these stations serving primarily for long-distance trips. For now, we anticipate that the grid can handle and meet the needs of these stations. There may be cases where demand or peak-hour charges are passed on to consumers, which will incentivize off-peak charging. However, we do not foresee any significant problems at this time.
35	Does ADOT share EV registrations data to help plan for EV charger planning?	We have EV registration data that is included in our plans. We do collect this data and can share high-level information about the number of registrations. However, we are limited in the detail we can provide. The data comes from our Motor Vehicles Division.
36	Has an engineering economic analysis been prepared for these stations? If so, where is the study available?	I am not aware of any centralized plan submissions. Each developer will submit their own plan, prepared by their own engineering firms.
37	US 70 extends from US 60 and is a National Highway System where US 70 crosses San Carlos Apache Tribe Agency and, technically, should be in the ADOT EV Plan. Why is it not included?	I do not believe that US 70 is a National Highway System route.

#	Question (s):	Answer(s):
38	Are there any plans for US 89 North on the Navajo Nation?	Yes, that will be included in our next advertisement for building out EV stations.
39	Are there any plans to add stations in Cochise County?	I believe this current plan includes SR 90 and SR 80, which are in Cochise County.
40	Are there any requirements for pull-through sites, for people that are hauling trailers, for example.	When we met with the industry, we discussed this extensively. We learned that requiring pull-through sites could deter many applicants, as such sites can be difficult to find and some existing sites cannot accommodate pull-through features. Our goal with this plan was to encourage as much competition as possible. This was a key lesson from our evaluation of the VW settlement funds. We want to ensure a broad range of proposals to have ample choices and secure the best deal. Therefore, while we will fund pull-through sites if they can be built, we did not make them a requirement.
41	Will there be bilingual signage to suggest EV charging etiquette?	I believe that the chargers at the station will be bilingual, but there will not be signage leading to the station in multiple languages.
42	Is there an ADOT plan to facilitate the installation of EV chargers outside of the NEVI program?	Except for the CFI grant application, there are no other plans at this time.
43	What has the pushback from auto dealers looked like thus far, and how are their concerns/issues being managed?	So far, we have not received any pushback from auto dealers.
44	Will NEVI funding be available after 2025? If not, how will these proposed stations get the federal subsidy?	The funding does not expire. We can use it to build out the system and continue advertising, if necessary, after 2025. Our goal is to complete the build-out by 2025, but we may need to assess whether further advertising is needed; should we not receive proposals for certain locations. If we find that advertising in those areas is not feasible, we will need to reevaluate those locations.
45	Do any of the proposed stations incorporate solar panels to help gather and use power?	We do fund solar panels. Developers can include them in their proposals if they wish. Typically, solar panels are associated with canopies. It will be up to each individual station developer to decide whether to incorporate solar panels into their station design.

#	Question (s):	Answer(s):
46	Can you talk about any minimal safety controls required like Master Power Shut- Down, fire suppression, etc.? Do fire departments near the station get an orientation about the installation before construction and after?	We are aware that some potential applicants notify the fire department and have training programs in place. Each company differs in what they offer, but most do have some form of fire safety and suppression requirements. The specifics will vary by company.
47	Will there be signage along the highways to indicate that there is EV charging at the next exit, as there is for gas stations?	I do believe that there will be, yes.
48	What are the accommodations being considered for low-income and minority individuals under Environmental Justice?	One of the factors we are considering is whether a location is in a disadvantaged area. Many of our locations are in rural and disadvantaged communities, which will benefit significantly from this program. In fact, one of the biggest advantages of this program is that it will place stations in areas where they might otherwise not be developed for many years due to a lack of EV traffic. The benefits are substantial: it can attract tourism, increase traffic, and improve accessibility for residents and workers. Additionally, there are environmental benefits, such as improved air quality and job creation. Overall, this program offers significant advantages to low-income and disadvantaged communities.
49	What will it take for ADOT to extend the EV Plan to the San Carlos Apache Agency?	If a route that traverses land is designated as a National Highway System route, it would be eligible to be an alternative fuel corridor. Without this designation, we cannot place a station on a regular highway. Currently, my understanding is that none of the routes passing through San Carlos are National Highway System routes.
50	How many additional sites do you plan on the next RFP?	It is likely to be around 25 or 30. Somewhere in that range.

#	Question (s):	Answer(s):
51	Is there any interest in sites being considered as hydrogen hubs for trucking as well?	NEVI does not cover hydrogen, but the CFI grants do. There are trucking companies interested in both hydrogen and electric, and we have met with some of these companies to encourage them to work with their local communities where they wish to establish these facilities. They can apply for CFI grants for those stations.
52	Is ADOT aware that some of Arizona's treasures (Havasupai Falls, Four Corners Monument) are virtually inaccessible to EVs due to the deficit of charging infrastructure along those (non-interstate) routes?	There are indeed some rural routes included. We have been making an effort to cover as many rural routes as possible. For instance, Highway 160 (US 160), which extends up to Four Corners, is included in the 2024 plan. We also have Route 64 going to the Grand Canyon. Considering tourist destinations is a top priority, in our alternative fuel corridor nominations, we are focusing on building out infrastructure wherever we have the capability.
53	With regards to the “red” and “purple” routes, it was said that bid will be accepted in the winter of 2024. Does this mean that bids (and contracts) will be awarded for the 2023 and 2024 NEVI plans at the same time? Or have the 2023 EV bids already been accepted?	We have not advertised the 2023 plan yet. Our plan is to advertise the corridors in the 2023 plan (indicated in red), alongside the corridors in the 2024 plan (which we are discussing tonight), this winter. We have not yet advertised these plans or begun the contracting process, which will start next year.
54	Are there any opportunities for small DBE/SBE businesses in this NEVI plan implementation?	Any business can apply. Many small businesses are partnering with larger EV companies to apply for stations. There are opportunities for smaller businesses to get involved in this program. Typically, the best approach is to partner with an experienced EV development company.
55	Does NEVI fund semi-truck charging?	Our focus, along with the NEVI program, is primarily on passenger vehicles. While NEVI funding could be used for freight depots, we anticipate that most of our funding will be allocated towards expanding infrastructure for passenger vehicles rather than for freight.
56	Are there any handicap accessibility requirements? Wheelchair ramp/access?	We require that each station meets American with Disabilities Act (ADA) requirements, including providing accessible space for at least one vehicle with an ADA-compliant path. Ideally, we also seek stations that offer ADA-accessible facilities, such as restrooms and access to stores for food or snacks.

#	Question (s):	Answer(s):
57	Who provides the land where the charges are to be located?	Typically, a site host—such as a store, restaurant, or gas station—partners with an EV company and leases the land to them. Sometimes, companies that both own and operate stores may run their own EV programs. Generally, it is the site host that owns the land.
58	Arizona is a very sunny state. Are there requirements to assure visibility to the screen(s)? Will those screens be durable in our hot sunny environment?	Yes, we are looking for screens that are shaded and reliable. We want chargers that have been tested in high heat, as we are aware that this can be an issue. Ideally, the screens should face away from the sun, and if a canopy is possible, that would be a plus. We are mindful of these considerations and aim to accommodate them where possible.
59	How are companies responding to the reliability requirements? This seems to always an issue.	It is a requirement that you must be 97% responsible. If a company cannot meet this requirement, they should not apply. Companies that apply typically indicate that they can meet this standard.
60	Is there an incentive for contractors to install more than the mandated minimum number of chargers?	Typically, we set a cap for the site, which has been quite generous. This approach allows developers to either install more chargers if desired or future-proof the site by incorporating larger conduits and extra stalls. This way, they can add more chargers in the future as needed.
61	Will the state of Arizona be specifying guidance or limits on costs that private companies can charge drivers for using the charging stations?	No, we won't be imposing limits on companies. We will monitor prices, but if we find any that seem unreasonable, we will discuss them with the companies. Pricing will be determined by the private sector, which considers various factors such as location, as rural areas often have higher costs due to initial construction and utility demand charges. Each company will account for these individual factors in setting their prices.
62	Will any of the new charging stations include CHAdeMO plugs?	Contractors are welcome to submit proposals that include additional connectors, such as CHAdeMO, alongside CCS. However, we do not require them to do so. For the next advertisement, we will mandate the inclusion of NACS connectors, but CHAdeMO will not be a requirement since it is less common.
63	Can a town government / municipality (i.e. Superior) be a contractor for a charging station?	I'm not aware of any prohibitions. I don't see any reason why they cannot apply for the contracts like anyone else.

#	Question (s):	Answer(s):
64	How are EV sites checked for keeping the chargers operable?	There are data reporting requirements in place, so we will receive feedback on the reliability and uptime of each station, along with other data and requirements. This will give us an overview of each station's performance, at least for the first five years. We will be able to address any issues if the stations do not meet their reliability requirements.
65	Out of the $76 million available in funding, how much of that is expected to be allocated by the end of 2024?	Approximately $15 million.
66	Can you elaborate on how additional segments for latest updates are selected?	We evaluated a range of metrics, including daily traffic, terrain, activity, and connectivity between towns and points of interest. We also considered the presence and extent of disadvantaged communities along the corridors. We worked with the Clean Cities Coalition to assess these factors and identify priority sites. Fortunately, we are confident that we can cover all the corridors initially mapped out in the 2022 plan, and these corridors are well represented across the state.
67	What will become of these facilities if the EV collapses? Is there money in the program to take these charging stations out? Will they become eyesores that the public has to pay to remove?	We have bonding requirements and other stipulations in the contracting process to address any issues that may arise with a station. If a problem occurs, ADOT will intervene to resolve the situation. If necessary, we will re-advertise the location and use allocated funding for this purpose. Additionally, we will implement operating systems that allow for the transfer of station management to another vendor if needed.
68	How do brightly lit facilities, opened 24/7, fit in with the Dark Skies Initiatives?	So far, we haven’t constructed stations in areas designated as Dark Sky zones. However, we anticipate potential projects in such areas, such as along Highway 179 (US 179) to Sedona. We may also encounter requirements in Flagstaff. In these cases, we will collaborate with local communities to develop strategies for managing the stations while adhering to Dark Sky regulations. Additionally, we expect developers to work with the communities to ensure compliance with any Dark Sky requirements, which will be addressed during the permitting process.

#	Question (s):	Answer(s):
69	How were the proposed station locations determined?	According to federal guidance, electric vehicle charging stations need to be spaced at least every 50 miles along highways that have been designated alternative fuel corridors (AFC), unless an exception has been granted. Arizona's AFC's are currently the Interstate highways, but other routes on the state highway system will be added and will become eligible for NEVI-funded charging stations. ADOT's 2022 EV Plan identified locations of existing EV charging stations along the Interstate highways to determine gaps based on federal requirements. Using technical analysis and input from the public and key stakeholders, including the EV industry, ADOT proposed general locations, such as particular interchanges; however, private sector contractors will conduct additional analysis to determine the specific charging station sites.
70	How many new stations will be built? How many existing ones will be upgraded?	The number of stations to be built and upgraded is being determined through the EV planning process. The inventory of existing stations and the number of new/upgraded stations will change as new highways become eligible for NEVI-funded stations and ADOT updates the EV plan.
71	Who is financially responsible for building the charging stations?	No state funding will be used to build the EV charging station network. The charging stations will be built with 80% federal funding and a 20% private match. ADOT will administer the contracting process.
72	Who will own and operate the charging stations?	Private companies under contract with ADOT will construct and own the stations and will provide the required 20% funding match.
73	Who determines the cost to charge an electric vehicle? Will it be the same at each station?	A charging fee will apply to use the EV charging stations. We do not know what the rates will be. These will be set by the providers.
74	How many chargers will be at each station?	The NEVI formula program requires each station to have a minimum of four chargers. These 150kW, direct-current, fast chargers are combined charging system (CCS) ports. The minimum charging capacity for the whole station will be 600kW and the station must be able to charge four electric vehicles simultaneously.
75	When do you anticipate the first charging station to be	We anticipate the first charging stations will be operational in 2025.

#	Question (s):	Answer(s):
	operational?	
76	Are there any existing charging stations along the state's Interstates?	Yes. ADOT's EV deployment plan is evaluating existing EV charging infrastructure along the Interstates and determining gaps. NEVI funding may be used to upgrade existing EV charging infrastructure and to build new fast-charging stations.
77	When will the new stations be built?	Stations are anticipated to be built in approximately 12 months.