State of Arizona

Electric Vehicle

State Plan/State Plan Update for Electric Vehicle (EV) Infrastructure Deployment Plan

September 27, 2023

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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 F: Phase 2 Public Engagement Summary added
Version 4	8/1/2023	2023 Plan Update
Version 5	9/27/2023	2023 Plan Update with FHWA Feedback

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Introduction

Adopting electric vehicles (EVs) improves air quality and contributes to meeting state and federal carbon-reduction goals. Because 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 EV drivers. The Arizona Department of Transportation (ADOT), as tasked by 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 increase the long-range mobility of EV drivers by reducing gaps in electric vehicle supply equipment infrastructure (EVSE; i.e., an EV charging station) and contributing to an equitable, reliable, resilient, and accessible national EVSE network.

Funding to support this work was secured in March 2022, and the development of the 2022 Deployment Plan (2022 Plan) commenced in May 2022. This updated 2023 Deployment Plan (2023 Plan) is based on finalized NEVI Formula Program Guidance and the National Electric Vehicle Infrastructure Standards and Requirements (23 CFR 680) released in February 2023.

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 within their states to become Alternative Fuel Corridors (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% of the vehicle miles traveled (VMT) on Arizona roads.[2]

In 2023 ADOT nominated seven additional highways for AFC status. These routes are the focus of this 2023 Plan update.

Plan Development

The 2022 Plan and the 2023 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, 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, and Arizona Residential Utility Consumer 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.
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. Completed and submitted the 2022 Plan.
2. 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:

1. Began the solicitation process for new/upgraded EVSE stations.
2. Nominated new AFCs through the federal process.
3. Updated the EV Infrastructure Deployment Plan to include the newly nominated AFCs.

The following goals are anticipated:

2024 Goals

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 Plan, with available funding.

2025 – 2026 Goals

1. Nominate new AFCs through the federal process.
2. Prepare the 2025 and 2026 Plan updates.

3. Solicit and award remaining funding for EVSE construction.
4. Install EVSE.
5. Evaluate the performance of NEVI Formula Program implementation.

Updates from Prior Plan

The following changes and updates have been made in the 2023 Plan:

- Overall
  - Plan update set in calendar years, rather than federal fiscal years (October 1 – September 1)
  - Financial information remains in federal fiscal years
  - Some technical information is based on the Arizona state fiscal year (July 1 – June 30)
- Agency Coordination
  - Meetings were held with state, federal, and tribal leaders on July 7 and July 12, 2023.
- Public Engagement

  - Information and updates from engagement events held from August 2022 to July 2023 has been added, including details on:
  - A statewide series of open-house format in-person public meetings in late 2022.
  - A public survey and associated public responses which accompanied the open house meetings in late 2022.
  - A statewide virtual public meeting held on July 18, 2023, to present the 2023 plan update.

- Plan Vision and Goals

The following goals listed in the 2022 Plan have been completed:

  - Completed and submitted the 2022 Plan.
  - Began the solicitation process for new/upgraded EVSE stations.
  - Solicited public and stakeholder input on potential new AFCs to be considered for nomination.
  - Nominated new AFCs through the federal process.
  - Updated the EV Infrastructure Deployment Plan to include the new AFCs.

- Contracting

  - ADOT has released a request for information (RFI) in June 2023 to gather perspectives from industry members in to inform development of the anticipated request for proposals (RFP).
  - ADOT intends to release an RFP through single-step procurement at the end of 2023. The RFP will solicit contractors who will construct and potentially upgrade charging stations.

- Civil Rights

  - Per finalized NEVI guidance, ADOT has added that an automated toll-free phone number and short messaging service (SMS) will be included as payment options for chargers to enhance accessibility.

- Existing and Future Conditions Analysis

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

- Infrastructure Deployment

  - Two stations, at Payson and Show Low, were added to the list of NEVI creditable stations. Both are owned by Electrify America.
  - Seven new AFCs were added.
  - Eleven new proposed stations and two new candidates for station upgrades were added.
  - New funding sources, including the Electric Vehicle Charging Station Rebate, the Electric Vehicle Charging Station Pilot Program, and the Charging and Fueling Infrastructure Discretionary Grant Program, were added to this section.
  - Flexibility was added to the siting of new stations so that more than one interchange considered for deployment.
  - All updates necessary to comply with final NEVI guidance were included.

- Implementation

  - Per finalized NEVI guidance ADOT will require that chargers are capable of using Open Charge Point Interface (OCPI) for interoperability.

- Equity

  - Updates have been made to the frequency and content of equity metrics in order to streamline processes and comply with finalized NEVI guidance.

- Labor and Workforce Development

  - These policies were reviewed to ensure compliance with finalized NEVI guidance.

- Cyber and Physical Security

  - All necessary updates were made to ensure compliance with updated NEVI guidance.
  - ADOT will require site owners to enact physical security strategies to address lighting, siting, driver and vehicle safety, fire prevention, tampering, charger locks, and illegal surveillance of payment devices, as well as siting and station design to ensure visibility from onlookers, video surveillance, or emergency call boxes.

- Program Evaluation

    o The Program Evaluation section was revised to reflect the updated metrics and disclosure requirements from the NEVI guidance, as well as the updated timelines for disclosure and data collection.

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 tribal organizations 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.

Table 1: Invitees to Agency Coordination Meetings, 2023 Plan

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
Navajo Nation	Tribal
Inter Tribal Council of Arizona	Tribal
Hopi Tribe	Tribal
San Juan Southern Paiute Tribe	Tribal
Fort McDowell Yavapai Nation	Tribal

Entity	Government Entity Type
Colorado River Indian Community	Tribal
Ak-Chin Indian Community	Tribal
Tonto Apache Tribe	Tribal
Gila River Indian Community	Tribal
Salt River Pima-Maricopa Indian Community	Tribal
Hualapai Tribe	Tribal
Fort Mohave Tribe	Tribal
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 ADOT's EV plan. To achieve these goals, a Public Involvement Plan was developed as part of the 2022 Deployment Plan to identify public involvement goals, 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 2023 Plan 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.

- Raise awareness of ADOT's efforts to secure federal funding to improve infrastructure and transportation resiliency.

- 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.

- 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 2022 and July 2023. Initial results, based on activities conducted through July 2022 were previously reported in the revised 2022 Plan, dated February 9, 2023.

Table 2: Stakeholder and Public Involvement Activities

Activity	Status
In-person public meetings in an open-house format, held in Tucson, Yuma, Kingman, Flagstaff, and Phoenix.	Completed November 2022
Second online public survey in English and Spanish to seek input on the Plan recommendations and implementation.	Completed November 2022
State agency coordination meetings with federal, state, and tribal entities.	Completed July 7 and 12, 2023
Statewide virtual public meeting to discuss the 2023 Updated Plan. Meeting presentation and recording posted to website for those unable to attend.	Completed July 18, 2023
Coordination meeting with utilities across the state for collaboration on both the planning and deployment stages of the Plan.	Completed July 20, 2023
Public comment period on 2023 plan update.	July 11- July 25, 2023

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/Council of Governments in Arizona

- Governor's office

- Various state agencies

- The tribal communities with land along the AFCs

- EV industry representatives (including EVSE operators, EV automobile manufacturers, other EV suppliers, and EV advocacy organizations)

- Utility companies

- Chambers of commerce

- Other business or commerce organizations

- Large employers

- Others with interests in the Plan's development

Roadway users, including current EV users, are also stakeholders in the Plan.

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 Metropolitan Planning Organization - Lake Havasu Metropolitan Planning Organization - Maricopa Association of Governments - MetroPlan Metropolitan Planning Organization for Greater Flagstaff - Northern Arizona Council of Governments - Pima Association of Governments - Sierra Vista Metropolitan Planning Organization - Southeastern Arizona Governments Organization - Sun Corridor Metropolitan Planning Organization - Western Arizona Council of Governments - Yuma Metropolitan Planning Organization
Counties and cities	- Apache County - Coconino County - Gila County - Graham County - La Paz County - Maricopa County - Mohave County - Navajo County - Pima County - Pinal County - Santa Cruz County - Yavapai County

Organization Category	Organizations Targeted for Engagement
	- Yuma County - Avondale - Benson - Black Canyon City - Buckeye - Bowie - Camp Verde - Casa Grande - Chambers - Chandler - Cochise - 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 - Welton - Willcox - Williams - Winslow - Yuma
State Department of Energy	- Arizona Department of Administration - Arizona Governor's Office

Organization Category	Organizations Targeted for Engagement
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 Department
Public transportation agencies	- City of Phoenix Public Transit - Arizona Transit Authority - Mountain Line
Tribal governments	*Ak-Chin Indian Community* *Cocopah Indian Tribe* *Colorado River Indian Tribes* *Fort McDowell Yavapai Nation* *Fort Mohave 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 Indian 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

Organization Category	Organizations Targeted for Engagement
	- 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 - Sierra Southwest Cooperative - Southwestern Power Group - Sulphur Springs Valley Electric Cooperative - Trico Electric Cooperative - Tucson Electric Power (TEP) and UniSource Energy Services
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

Organization Category	Organizations Targeted for Engagement
Vehicle manufacturers	• Atlis Motor Vehicles • Audi • BMW • Cruise • DeMenna (representing Avis) • FCA Group • General Motors • Goodyear • Lucid Motors • Nikola Motor / Nikola Defense • Toyota • Proterra • Tesla • Waymo
Minority- and women-based organizations	• *Arizona Minority Contractors Association* • *Chicanos Por La Causa* • *Greater Phoenix Urban League* • *NAACP Maricopa County Branch*
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 (TEVA) • Zero EV
Gas station owners and operators	• Circle K • Flying J • Love's

Organization Category	Organizations Targeted for Engagement
	• 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 and 2023 are summarized below:

- ADOT EV website with information about the plan and how to participate and provide comments.

- Notification to the public via multiple methods, including news releases, mass email alerts to the EV subscriber list (more than 3,000 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.

- Collaboration with stakeholders to reach their constituents and audiences.

- Earned news media coverage of the Plan and public engagement activities, including outlets such as 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.

Late 2022 Public Involvement Outcomes

As an addendum to initial engagements captured in the 2022 Plan, five in-person open house meetings were held throughout the state from late October 2022 through early November 2022. These meetings were supplemented by informational materials posted on the project website and a public survey that was available both in person and online from mid-October through the end of November.

Engagement included five in-person open house events geographically distributed across the state. These engagements provided an opportunity to learn about the EV Plan, in many instances for the first time. It also provided an opportunity for members of the public who were unaware of or unable to participate in the July 2022 Virtual Public Meeting to participate in engagement efforts conducted as a part of this work, while also updating those who had attended prior meetings with new information about the EV Plan.

Meetings were held in Tucson, Yuma, Kingsman, Flagstaff, and Phoenix; venues were chosen to ensure optimal convenience, accessibility, and ease of parking and navigation. These meetings were attended by a total of 178 people.

The public survey received 1,423 responses. The survey was also accompanied by an additional, optional, one-question Self-ID survey to allow respondents to indicate their racial/ethnic identity; results are shown in Table 4 and Table 5. This aids ADOT in evaluating the effectiveness of public

outreach activities in reaching all communities in the state. 1,011 (73%) of respondents to the main survey also completed this additional survey.

Table 4: Online Survey Self-ID Results

Options	White	African American/ Black	American Indian/ Alaskan Native	Native Hawaiian/ Pacific Islander	Asian	Hispanic/ Latino
Responses	883 (87.3%)	36 (3.6%)	39 (3.9%)	14 (1.4%)	44 (4.4%)	96 (9.5%)

Table 5: In-Person Survey Self-ID Results

City	White	African American/ Black	American Indian/ Alaskan Native	Native Hawaiian/ Pacific Islander	Asian	Hispanic/ Latino
Tucson	3 (60.0%)	1 (20%)		1 (20%)	1 (20%)	
Yuma	4 (66.7%)	1 (16.7%)				1 (16.7%)
Kingman	9 (81.8%)	1 (9.1%)				1 (9.1%)
Flagstaff	12 (100%)					1 (8.3%)
Phoenix	23 (85.2%)	1 (3.7%)				3 (11.1%)
Total	51 (85.0%)	4 (6.7%)	0 (0%)	1 (1.7%)	1 (1.7%)	7 (11.7%)

The survey asked respondents to describe themselves using a provided list of descriptors (presented in Table 6). For this question, 1,421 respondents (99.9%) indicated that at least one descriptor applied, and 744 (52.3%) selected multiple options.

Table 6: Descriptor Question Responses

Descriptor	Responses
Arizona resident (full- or part-time)	1,349 (94.8%)
Non-Arizona resident	50 (3.5%)
Live in urban/suburban area	436 (30.6%)
Live in rural area	294 (20.7%)
Electric vehicle industry representative	22 (1.5%)
Construction contractor, subcontractor, or supplier	25 (1.8%)

Local municipality, regional, state, or federal agency	49 (3.4%)
Tribal member	17 (1.2%)
Other (please specify)	88 (6.2%)

The first question discussed the criteria that should be used for prioritizing the nomination of non-Interstate roadways as AFCs, qualifying them for NEVI-funded EV charging stations. Respondents were asked to score the importance of seven different criteria on a scale of 1 to 5, with 1 being 'least important' and 5 being 'most important.' There was little deviation in the average scores among the seven criteria, suggesting the public believes each of these criteria are of equal importance in prioritizing future AFCs.

Table 7: Prioritization Criteria Question Responses

Proposed Criteria	Average Rating
Providing connectivity between Arizona and other states	3.56
Availability of existing services (convenience stores, restaurants, etc.) on route	3.55
Accessing major parks and tourist attractions/destinations	3.51
Connecting the Phoenix and Tucson metro regions with other AZ communities	3.47
Amount of vehicle traffic currently using the roadway	3.43
How feasible and cost-effective implementation would be	3.41
Connecting rural and tribal areas	3.16

Respondents were also able to suggest additional criteria for determining which additional highways should be added to the electric vehicle charging network. Written answers were received for this question totaling to 462 received responses, though some responses reiterated the listed criteria or discussed matters unrelated to the question. Common suggestions included:

- Connecting to communities projected for significant future growth

- Routes that can maintain station access during detours and constructions

- Heat, topography, and other factors that impact vehicle power consumption

- Presence of, or feasibility for, future green energy infrastructure

- Current and projected EV ownership concentration and infill opportunities between busy stations

- Spurring new tourism and economic growth

- Placing charging infrastructure near communities without fast charging options for local use, particularly in underserved areas and areas with high percentages of rental housing

The third question asked respondents to identify the payment methods they believed should be provided at EV charging stations. Respondents were asked to rate the importance of five different

payment methods on a scale of 1 to 5, with 1 being 'least important' and 5 being 'most important.' Table 8 displays the average ratings, showing a preference for traditional, widely adopted payment methods.

Table 8: Payment Methods Question Responses

Proposed Payment Method	Average Rating
Chip-and-pin credit and debit cards	3.93
Contactless payment (tap-to-pay cards)	3.63
Phone-based payment like Apple Pay or Samsung Wallet	3.23
App-based payment method through charger network operator	2.98
Vehicle-based payment	2.93

The final topical question addressed which information about the stations and chargers should be available online. Respondents were asked to rate the importance of five different pieces of information on a scale of 1 to 5, with 1 being 'least important' and 5 being 'most important.' While the average ratings do show a stronger preference for some options, all five scored relatively high on the scale, suggesting that any information that can be provided is helpful as shown in Table 9.

Table 9: Online Information Question Responses

Proposed Online Information	Average Rating
Availability and hours of operation at location	4.23
Number/type of chargers currently available	4.23
Number/type of chargers currently installed at location	4.07
Charging pricing	3.72
Availability of services near the location	3.56

Respondents were presented with a list and a map of 23 roadways in the state and were asked to select five that they would most like to see added to the electric vehicle charging network. Table 10 lists these roadways by number of responses.

Table 10: Potential New Additions to the Charging Network

Roadway	Selections	Selection Rate
SR 64: I-40 to Grand Canyon National Park	409	40.0%
SR 87: Phoenix to Payson	382	37.3%
SR 69: I-17 to Prescott	373	36.5%
SR 179: I-17 to Sedona	365	35.7%
US 89: Flagstaff to Utah	353	34.5%
US 60: Phoenix to Wickenburg	275	26.9%

Roadway	Selections	Selection Rate
US 60: Phoenix to Globe	248	24.2%
US 93: Wickenburg to I-40	245	23.9%
US 93: Kingman to Hoover Dam	241	23.6%
SR 260: Payson to Show Low	238	23.3%
SR 85: I-8 to I-10	195	19.1%
US 160: US 89 to Four Corners	193	18.9%
SR 89/89A: SR 69/169 to north end of route	164	16.0%
SR 77: Tucson to Pinal County	161	15.7%
US 60: Show Low to New Mexico	160	15.6%
SR 260: Camp Verde to Sedona	154	15.1%
SR 90: I-10 to Bisbee	149	14.6%
SR 347: Maricopa to I-10	137	13.4%
SR 287: Casa Grande to I-10	115	11.2%
SR 68: US 93 to Bullhead City	99	9.7%
US 95/SR 95: San Luis to Bullhead City	96	9.4%
SR 77: SR 260 to I-40	89	8.7%
SR 80: Bisbee to Douglas	71	6.9%

2023 Public Engagement

Following ADOT's identification of recommended future EV corridors, ADOT conducted additional public engagement in summer 2023. The focus of the 2023 EV Plan update public engagement was to:

- Inform the public and key stakeholders of the additional state highway corridors on the National Highway System identified as alternative fuel corridors as part of the next phase of ADOT EV plan implementation, following the interstate corridors identified in the 2022 Plan.

- Provide an opportunity to comment on the draft 2023 Plan for the study team's consideration prior to submission.

This engagement focused on the following activities:

- Conducting a statewide virtual public meeting.

- Meeting with state agencies, MPOs/COGs and tribal communities located along the additional alternative fuel corridors identified, 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 2023 Plan, ADOT hosted a statewide virtual public meeting on July 18, 2023, from 6:00 p.m. to 7:30 p.m. The meeting was held via the Zoom online meeting platform and attended by 366 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 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 2023 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 2023 plan, as well as routes to be potentially added in future updates identified using 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 217 questions and comments into the Q&A feature, and two questions were asked by telephone. Questions on similar topics were aggregated and verbally presented to 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 150kW; 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 - Routes and station locations in the northern and western parts of the state, particularly near tribal lands; 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 attendees complete a self-identification survey for Title VI reporting purposes, which asks participants to list their race/ethnicity. The results are shown below. A total of 130 people completed the self-ID survey. Of the 130 self-identification survey responses, 110 identified as White, 14 participants identified as Hispanic/Latino, nine identified as African American/Black, six identified as Asian, three identified as American Indian/Alaskan Native and two as Native Hawaiian/Other Pacific Islander.

ADOT also offered the opportunity to provide comments via a one-question online comment form, email, phone, or mail with the comment period open through July 25, 2023. Final public comments will be added prior to final approval of the 2023 Plan update.

Public Meeting Notification
The July 18 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 and 2023 plan update along with meeting presentations and recordings. A link to an online survey/comment form was also included through July 25, 2023.

GovDelivery Emails
Information on how to participate in the virtual public meeting and provide comments on the 2023 Plan update were distributed by ADOT on June 27, July 5, July 17, July 20, and July 24, 2023, to the EV subscriber list in GovDelivery. Each notice included over 3,000 contacts and on average had a 53% open rate. Copies of the GovDelivery notices can be found in the Appendices.

Print Ads
The virtual public meeting and comment period were advertised in the publications listed in Table 11.

Table 11: Advertising Publications, 2023

Publication(s)	Run Date(s)	Includes Spanish Placement	Coverage Includes Tribal Communities
Arizona Daily Star	July 5, 9, 12, 16	✓	✓
Arizona Republic	July 3, 7, 9, 12, 14, 16		✓
AZ Daily Sun	July 11, 13, 15		✓
Kingman Daily Miner	July 12, 16		✓
La Voz Arizona	July 14	✓	
Navajo Hopi Observer & Williams Grand Canyon News	July 12		✓
Navajo Times	July 13		✓
O'odham Action News	July 6		✓
Payson Roundup	July 7, 14	✓	✓
The Tribune	July 5, 12		✓

Copies of the ads can be found in the Appendices.

News Release

ADOT Public Information staff distributed a news release to media outlets on July 12, 2023. The news release can be found in the Appendices.

Social Media

ADOT Digital Communications staff posted to ADOT's Facebook, Twitter, and NextDoor accounts multiple times, providing information about the public meeting and commenting opportunities. Social media posts can be found in the Appendices.

Tribal Engagement

Tribes potentially impacted by the 2023 Plan update, 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 alternative fuel corridors, and station locations.

The following entities were invited to the tribal coordination meeting:

- Colorado River Indian Tribe

- Hopi Tribe

- Ak-Chin Indian Community

- Fort Mohave Indian Community

- Fort McDowell Indian Community

- Gila River Indian Community

- Hualapai Tribe

- Tonto Apache Tribe

- Navajo Department of Transportation

- Salt River Pima 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 Partnership meeting in Window Rock on June 15, 2023. This presentation informed attendees of the newly identified alternative fuel corridors and the upcoming events related to the 2023 Plan.

As previously mentioned, ADOT targeted advertising about the July 18, 2023, statewide virtual public meeting to tribes potentially impacted by the 2023 Plan update.

Utility Engagement

Utility coordination and engagement is vital to developing an effective charging infrastructure network. To support the implementation of the 2022 Plan and the 2023 Plan update, 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 impact on the electric grid

- Whether 600 kilowatts 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 following utilities:

Table 12: 2022 Plan Service Area by Utility

Utility	Service Area
APS	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 also conducted to understand grid capacity at the planned deployments, utilities included:

Table 13: 2023 Plan Service Area by Utility

Utility	Service Area
Unisource Energy Services	Mohave and Santa Cruz Counties
Arizona Public Service (APS)	Flagstaff, Prescott, Phoenix, Yuma
Electrical District No. 3	Maricopa and Stanfield
Salt River Project (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

2023 Plan Update Coordination Meeting

On July 20, 2023, ADOT held a coordination meeting with all utilities listed above. The Department presented an overview of the 2023 Plan update and requested input from attendees regarding grid capacity and coordination with potential contractors.

Metropolitan Planning Organization / Council of Government Engagement

ADOT presented an overview of the draft 2023 Plan update to an Arizona's metropolitan planning organizations (MPOs) and councils of governments (COGs, i.e., rural planning organizations) to a statewide planners' meeting on June 9, 2023. The following MPOs and COGs were invited to the meeting:

- Central Arizona Governments

- Central Yavapai Metropolitan Planning Organization

- Lake Havasu Metropolitan Planning Organization

- Maricopa Association of Governments

- MetroPlan Metropolitan Planning Organization for Greater Flagstaff

- Northern Arizona Council of Governments

- Pima Association of Governments

- Sierra Vista Metropolitan Planning Organization

- Southeastern Arizona Governments Organization

- Sun Corridor Metropolitan Planning Organization

- Western Arizona Council of Governments

- Yuma Metropolitan Planning Organization

Site-Specific Public Engagement

ADOT is developing an RFP for the implementation of charging stations along the Interstate highways, per the 2022 Plan. The RFP and the awarded contracts will contain requirements for public engagement during the implementation of charging stations.

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. ADOT's Plan and associated commitments will:

1. Reduce range anxiety by closing gaps in the EVSE network along Arizona's AFCs.
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. This will: maximize the amount of infrastructure that can be built, consider future needs, and reduce 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 five-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.
- Updated the EV Infrastructure Deployment Plan to include the newly nominated AFCs.

The following goals are anticipated:

2024 Goals

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

2025 – 2026 Goals

- Nominate new AFCs through the federal process.
- Prepare the 2025 and 2026 Plan updates.
- Solicit and award remaining funding for EVSE construction.
- Install EVSE.
- Evaluate the performance of NEVI Formula Program implementation.

Five-Year Goal

The five-year program culminates in the following five-year goal:
- Use NEVI funds to complete the charging network on Arizona's AFCs.

The Plan will be updated annually 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 (P3) contracting process to support this work and developing a single request for proposals (RFP) to select a contractor 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% match, with the remaining 80% 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. ADOT received written responses that were due by July 28, 2023 and will meet one-on-one with prospective proposers on August 8-9, 2023. The following timeline is a preliminary schedule for the remainder of the contracting process.

Table 14: Contracting Timeline

Milestone	Anticipated Timeline
Public hearing for P3 procurement	4th quarter of 2023
Release RFP	4th quarter of 2023
RFP responses due	1st quarter of 2024 (anticipated 90-day response period)
Selection of preferred proposers	1st quarter of 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 Section 200 et seq. and 2 CFR Section 1200 et seq.

Awarded Contracts

ADOT has not awarded any contracts as of the submittal of this plan.

Scoring Methodologies Utilized

ADOT will issue a single RFP in 2023 to select a contractor to design, build, own, operate, and maintain the charging stations (may include upgrades) identified in the 2022 Plan. The Department is developing the scoring methodology it will use to evaluate proposals, but this has not been finalized to date.

The methodology will be based on a range of factors that may include:

- Compliance with the issuance of the NEVI Standards and Requirements

- Eligibility

- Ability to further program goals

- Experience and expertise in EVSE station installation, ownership, operation, and maintenance

- Demonstrated record of providing reliable and safe EV charging services meeting industry standards

- Security, cybersecurity, emergency, and resilience plans

- Operations and maintenance plans

- Technical, managerial, and financial capacity

- Community engagement plan

- Budget/independent cost estimate

To identify information that that may inform the development of the RFP, ADOT requested suggestions from industry respondents in the RFI released in 2023.

Strategies Leading to Efficient and Effective Deployment Against Plan Goals

ADOT will consider using 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

NEVI Standards and Requirements state that contractors who will implement the 2022 plan must engage with the community where EVSE infrastructure will be installed to help 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. ADOT will require that potential contractors describe their community engagement strategies as part of their proposal to ADOT, and the strength of their strategies will be considered during the selection process. 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 procurement requirements. They will be advertised and made available to potential awardees 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., CFR 680; or FHWA Special Experimental Project No. 14; and all applicable requirements under 2 CFR 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 (Transportation Public-Private Partnerships), 2 CFR 200 et seq. and 2 CFR 1200 et seq.

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 for use. 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 is required by A.R.S. Section 28-7704(I) to hold a public hearing on charging station usage costs.

Environmental Compliance

Projects that require federal approval and are funded by FHWA must meet the requirements of the National Environmental Policy Act (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 FHWA and ADOT on January 3, 2018. 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 field work 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 ADA of 1990, Section 504 of the Rehabilitation Act of 1973, Executive Order 12898 on Environmental Justice, and Executive Order 13166 on Limited English Proficient (LEP) Persons.

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 Limited English Proficiency requires recipients of Federal financial assistance to take reasonable steps to provide Limited English Proficient 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 EJ 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 EJ, 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's 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 2023 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	150-300 miles[4]
Efficiency	The mileage of an EV per unit capacity of the battery	3.46 mi/kilowatt hour (kWh)[5]
Battery Size	The battery capacity of an EV	54-108 kWh[6]
Battery Pack Cost	The cost of an EV battery per unit capacity	$153/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 2-5 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.

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 10-30 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 North American Charging Standard (NACS) connectors that have been used in Tesla charging stations and are expected to be increasingly used by other auto manufacturers.

Table 16: Common EV Connector Types

EV Connector Type	Charger Description
J1772	The primary connector type used for Level 1 and Level 2 charging.
J1772	A CCS is a J1772 connector with additional ports to enable DCFC.
CHAdeMO	Used on some US cars for DCFC only. Vehicles with CHAdeMO will have a second inlet (usually J1772) for Level 1 and Level 2 charging.
Tesla Combo	Used by Tesla (for Level 1, Level 2, and DCFC) but are becoming the standard for numerous other manufacturers.

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. Factors such as high installation costs or the complexities associated with rental units and multi-family dwellings can make it challenging. 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 United States, it is necessary to establish an EVSE network along major highway corridors. The USDOT has collaborated with states to develop the Alternative Fuel Corridors (AFC) program, which aims to identify roads on the National Highway System 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 United States and shares borders with California, Nevada, Utah, Colorado, and New Mexico. To the south, it borders Mexico. 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. As you move north and east, the elevation increases, leading to more mountainous regions characterized by the Mogollon Rim, which diagonally cuts 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°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% of the land is privately owned. The federal government owns 42% (30.3 million acres out of 72.9 million acres) of land in Arizona, primarily allocated among the Forest Service, National Park Service, Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation, and the Department of Defense. The State of Arizona itself possesses an additional 13% of land (9.6 million acres) through the state trust, resulting in just over 51% of Arizona's land being under government control.

Moreover, Arizona encompasses extensive tribal lands, with the largest being the Navajo Nation, spanning 17.28 million acres across northeastern Arizona, Utah, and New Mexico. Overall, 27% of the land in Arizona (equivalent to 20.1 million acres) is occupied by 22 different 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 National Highway System, the road system important to the nation's economy, defense, and mobility, in Arizona is shown in Figure 1. Arizona's entire roadway network (including local roads) had 74,606 centerline miles.[8]

Figure 1: Arizona National Highway System
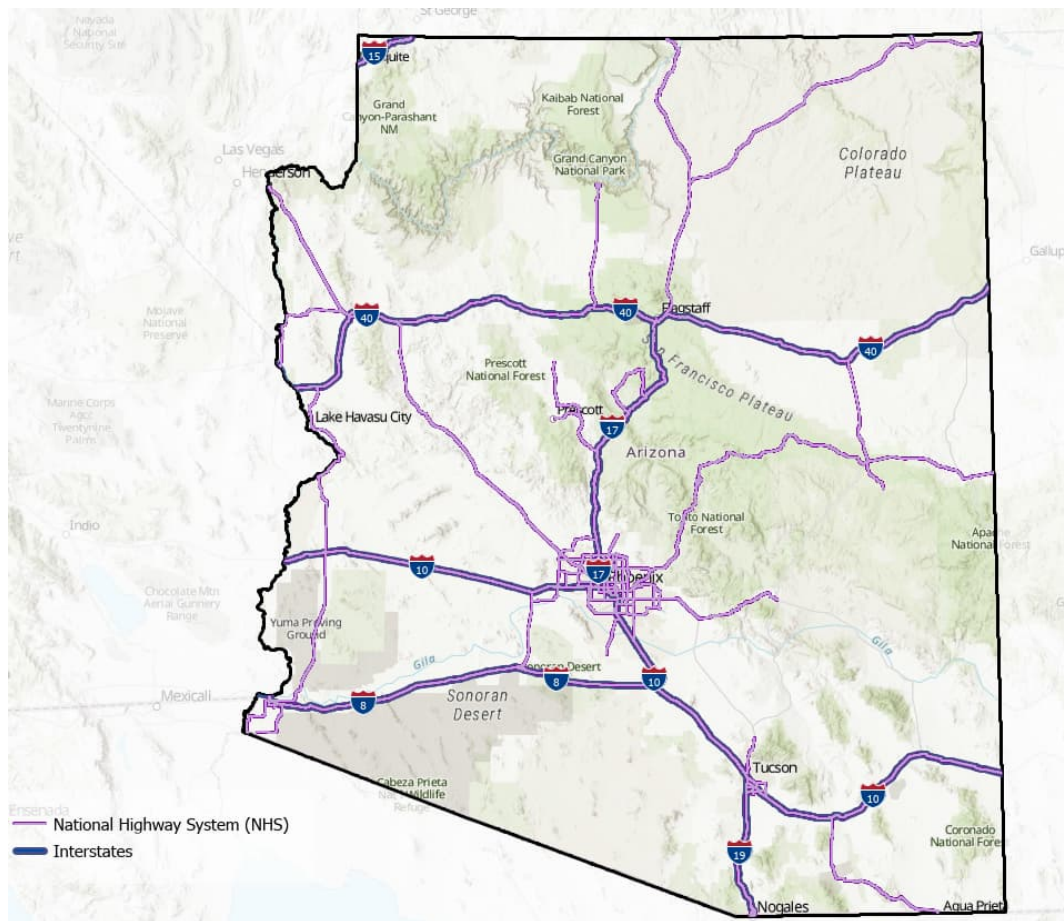
As EVs are increasingly adopted for private use, they are also increasingly being adopted by public transit agencies and fleet operators. Many public transit agencies across the state have already begun to plan for electrification of their fleets or are already in implementation phases. The Cities of 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% 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 vehicle miles traveled (VMT) along each of the NHS routes that have been identified as AFCs.[14] Approximately 17% 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 one mile).

Table 17: 2021 AFCs VMT Data

Corridors	VMT per Day (million miles)
I-8	1.9
I-10	19.4
I-15	0.6
I-17	7.5
I-19	1.8
I-40	6.5
US 93	2.9
SR 95	2.1
SR 347	0.7
US 89	1.4
SR 87	3.0
SR 260	2.4
SR 64	0.6
Total	50.9

EV 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 internal combustion engine 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.

EV Ownership

ADOT reports the number of vehicles registered within Arizona, as shown in Table 18, for the previous three fiscal years (FY20-FY23). There were 71,512 EVs registered in Arizona as of May 16, 2023, which accounts for 0.92% of all registered vehicles.

Alternative fuel vehicles include those that run on electricity or other sources of energy. Arizona Revised Statute §1-215.4 defines an alternative fuel as one of the following:

- Electric

- Natural gas/CNG or liquified petroleum gas

- Hydrogen

- Blend of 70% alternative fuels with 30% gasoline (unavailable in Arizona)

- Solar[15]

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	TBD
o Alternative Fuel Vehicles Registered	37,477	63,147	102,793	TBD
▪ Electric Vehicles Registered	34,898	40,964	58,219	71,512[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.[17] Barriers to the aggressive adoption of EVs are likely attributed to:

- Initial capital costs: While studies show that operations and maintenance costs throughout the lifecycle 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.

- 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.

EV 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 as shown in Figure 2. For each future year modeled, the adoption forecast is recalculated based on projected changes in the EV market of preceding years.

Figure 2: EV Adoption Forecast Methodology Flow Diagram
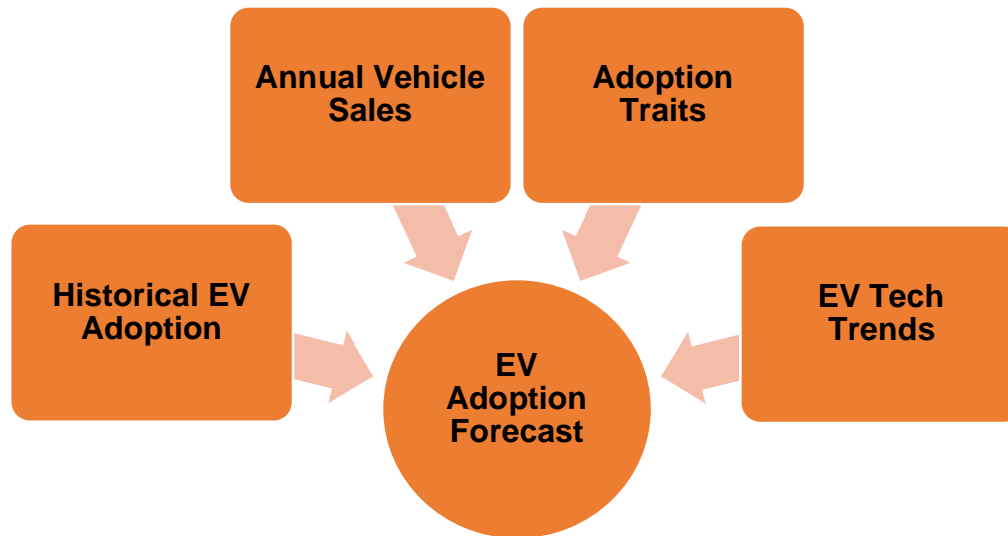
EV Adoption Forecast Factors

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.

EV Tech Trends – Industry Trends

Battery technology improvements reduced upfront 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.

EV 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 3 displays the model availability projections for some of the major vehicle manufacturers.

Figure 3: EV Model Availability Forecast
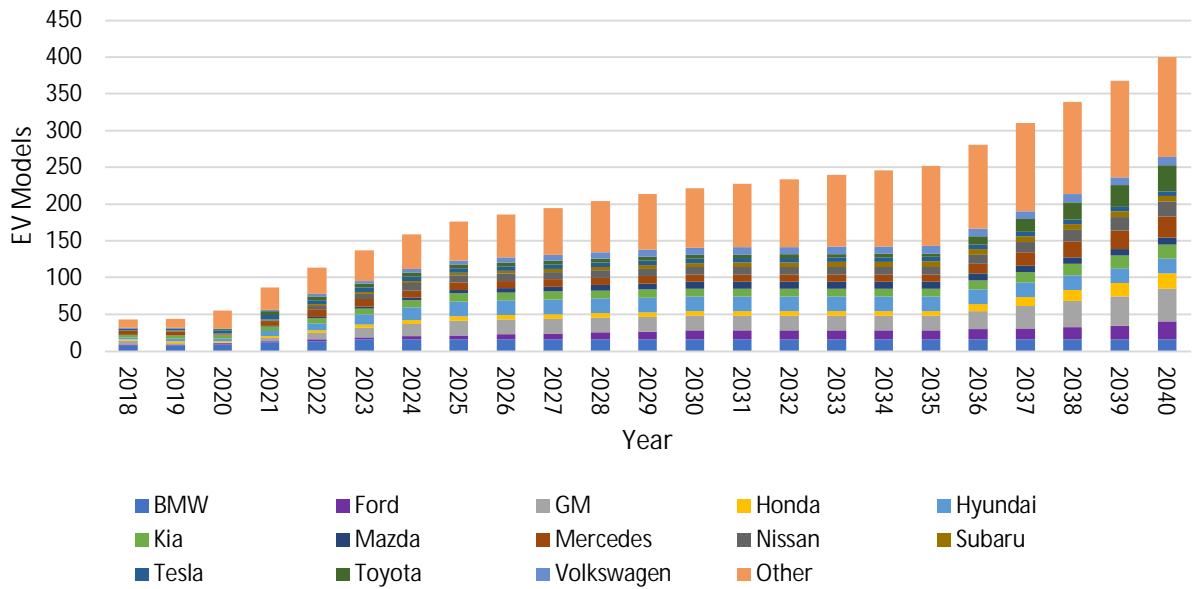
EV Tech Trends – Costs

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 June 2023 the average price to purchase a new EV was $53,438, compared to a new ICE vehicle at an average of $48,808. 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.[18] These factors can vary geographically, thus they were assessed on a localized level to yield the EV adoption outputs for Arizona.

In Arizona, the average gallon of gasoline costs $3.76 as of July 24, 2023 (higher than the national average of $3.60).[19] 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 US Census
Environmental Concern	Election results	49% 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 US Census
Homeowner Percentage	Percentage of single unit detached households in Arizona	65.3%	2020 US 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
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	19%	American Council for an Energy-Efficient Economy

State Characteristic	Factor Measurement	Arizona Value	Source
	to other states as detailed in the source.		
Annual Vehicle Sales	Arizona share of new vehicle registrations in the United States	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: 71,512	ADOT

EV 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).[20] 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.

- 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.[21]

EV Adoption Scenarios

Three scenarios were analyzed to identify the potential magnitude of growth in EV adoption due to economic and policy trends. The scenarios are defined in 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% 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% 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.[22]

Findings

The model generated estimates for Arizona's EV adoption based on the three growth scenarios (as shown in Figure 4. EV adoption estimates for 2030 range between 6%–14% of the total Arizona passenger vehicle market being electric, with 11%–25% of new sales being EVs. For comparison, forecasts predict 9% of the country's fleet will be electric in the same time period, with 36% of new sales being EVs; this is driven by recent federal government targets of 50% of all vehicle sales to be EVs by 2030.[23, 24]

Figure 4: Expected EV Adoption in Arizona, 2020-2040 Total Registrations
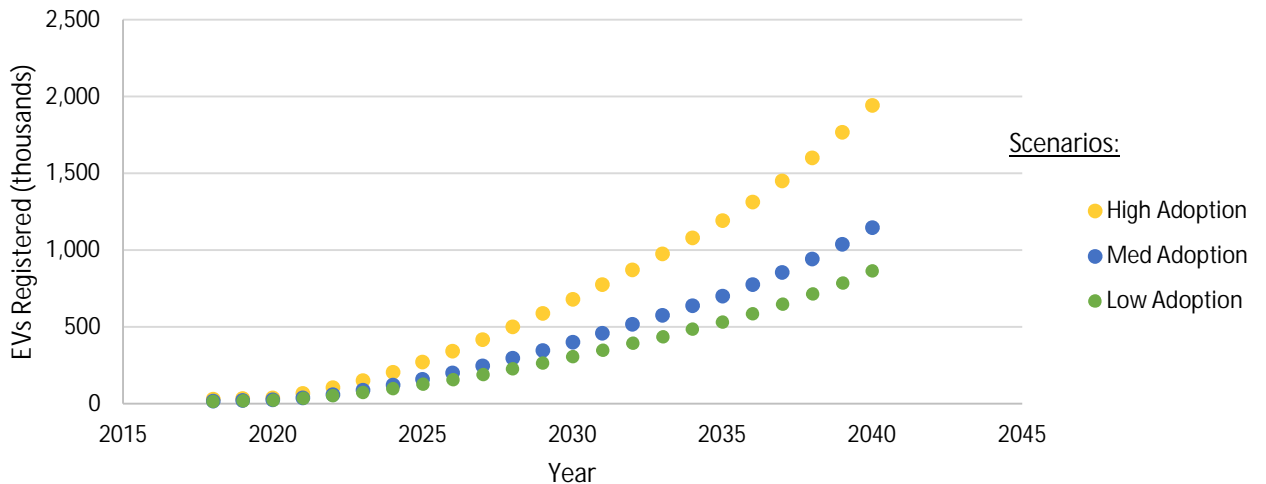
Figure 5: Expected EV Adoption in Arizona, 2020-2040 by New Sales
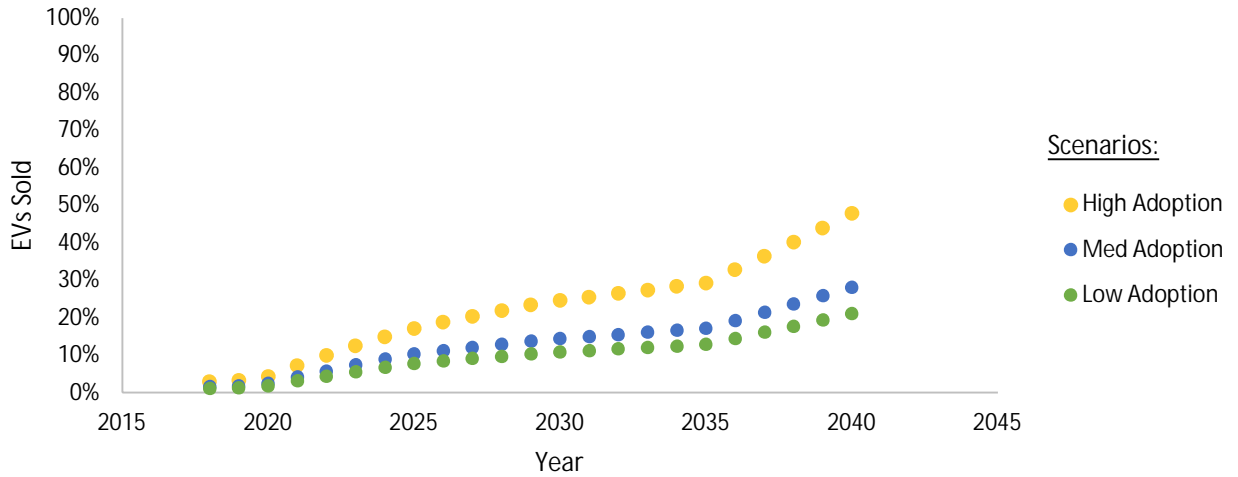
Table 21: Expected In-State EV Adoption

Growth Scenario	EV Estimate 2030		EV Estimate 2040	
	EVs Registered	In-state EV Market %	EVs Registered	In-state EV Market %
Low	307,897	6.4%	864,991	18.0%
Medium	402,293	8.3%	1,145,084	23.8%
High	678,920	14.1%	1,944,045	40.3%

Understanding of factors driving EV adoption are key when comparing the different growth scenarios.

- EV models are directly correlated with the number of EVs registered. The low-growth scenario assumes a 25% 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 ten 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%) 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, taking into account 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).

EV Traffic and Mileage

ADOT records daily passenger vehicular traffic and mileage data for each highway corridor, as shown in Table 22. Daily VMT were calculated by multiplying the corridor segments' length (in miles) by the AADT. To account for increases in traffic resulting from population and economic growth, a 2.1% average annual growth rate was assigned to both the AADT and VMT.[25]

Table 22: AADT of EVs in Arizona, 2021

Corridor	Length of Corridor (miles)	2021 AADT (miles)	Forecast 2040 AADT (miles)
I-8	178.3	11,130	16,950
I-10	391.2	49,730	75,740
I-15	29.4	23,270	35,450
I-17	146.5	51,710	78,760
I-19	63.1	29,020	44,210
I-40	359.6	18,190	27,700
US 93	199.4	14,760	21,906
SR 95	116.5	18,101	26,865
SR 347	28.7	25,455	37,779
US 89	136.5	10,445	15,503
SR 87	272.7	11,177	16,589
SR 260	217.8	10,919	16,206
SR 64	108.3	5,143	7,633

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.

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.[26] 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 6 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 6: Forecast of EV Battery Energy Consumption
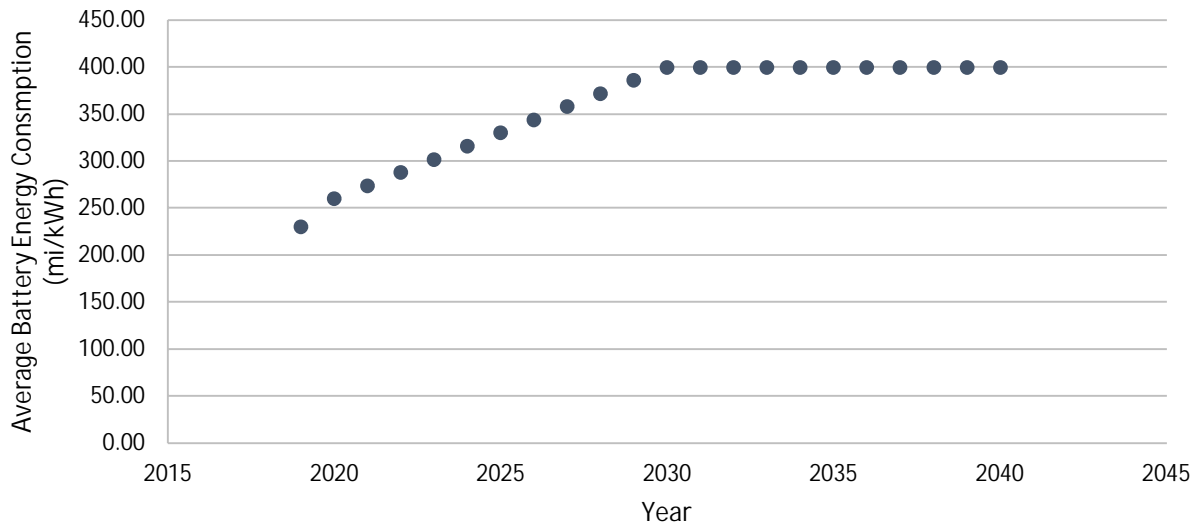
Localized Weather Impacts

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% reduction in driving range, while a temperature of 95° F results in a 17% reduction (both results compared to testing at 75° F).[27] 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.

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 7. 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 7: Forecasted EV Energy Consumption
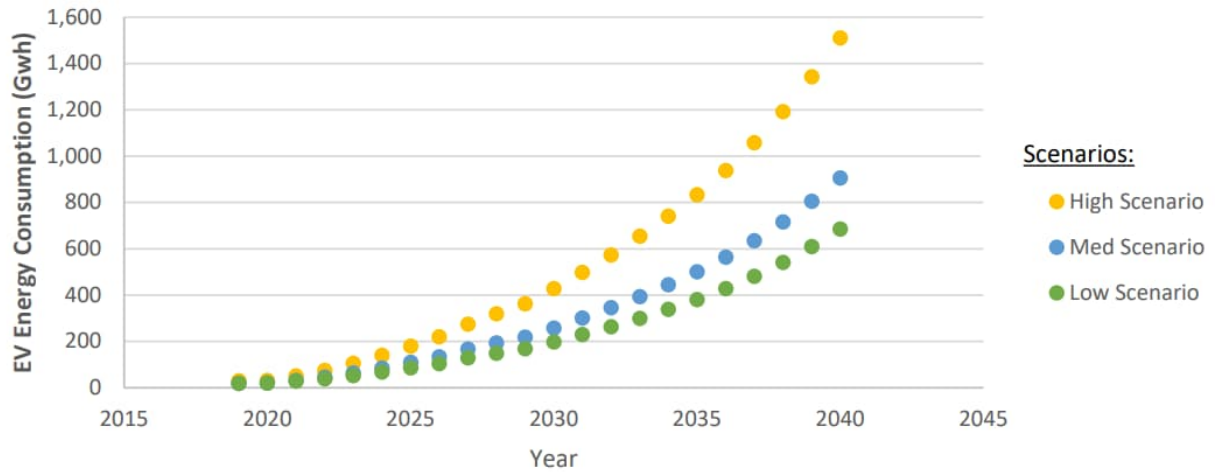
Electric Grid Capacity

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 in July 2022 and 2023 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. Additionally, a meeting was held on July 20, 2023, to coordinate with utilities. 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	Continue to develop a contracting mechanism that enables effective implementation of the Plan with existing staff.

Risk/Challenge	Description	Mitigation
	new staff positions and ADOT is unlikely to have the resources to create new positions specifically for this program.	
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 Permitting	Some proposed infrastructure locations might be space-constrained and/or on private/leased property.	Prepare permits and agreements in clear language and streamline permitting processes. Consider space constraints during the

Risk/Challenge	Description	Mitigation
		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 short messaging service (SMS), 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	Consider software at charging stations to allow for variable pricing. This would help to manage peak demand and

Risk/Challenge	Description	Mitigation
	standard electricity prices to compensate for the increased delivery costs.	minimize 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 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.[28,29] Similarly, Arizona Revised Statute 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.[30] 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.[31]

A financial incentive is also currently provided. Alternative fuel vehicles purchased in 2022 or earlier have a reduced annual vehicle license tax assessment based on a percent of the suggested retail price.[32]

Private Incentives

Utility providers within Arizona offer various incentives and rebates to encourage development of the charging infrastructure network. APS operates the Take Charge AZ pilot program which offers free EV infrastructure and services.[33] APS does not pay for the energy used, but does help businesses, fleets, and multi-family complexes access EV charging infrastructure by installing charging stations and cables, establishing services, educating staff, and conducting check-ups on equipment.

Salt River Project 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 (11pm to 5am, year-round) and additional off-peak hours (non-peak hours that vary by season) on weekends, holidays, and some weekday hours. A separate smart submeter is required for EV charger usage and is provided by SRP.[34] 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.[35]

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 $1,500 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 $15,000 per DCFC port for businesses and $20,000 per DCFC port for government, non-profits 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.

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.[36] At the time of writing of this Plan, Navajo Tribal Utility Authority (NTUA) and Page Utility had yet to offer electric vehicle-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 § 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, 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 alternative fuel vehicle (AFV) travel. Arizona's AFCs are presented in list format in Table 24 and in map format in Figure 8.

Table 24: Arizona AFC

Status	Corridor Name	Location
2023: Nominated but not yet approved by FHWA		
Corridor Pending	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 FHWA		

Status	Corridor Name	Location
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; and 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; and 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
	I-17	Phoenix to Flagstaff

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

Figure 8: Arizona Alternative Fuel Corridors
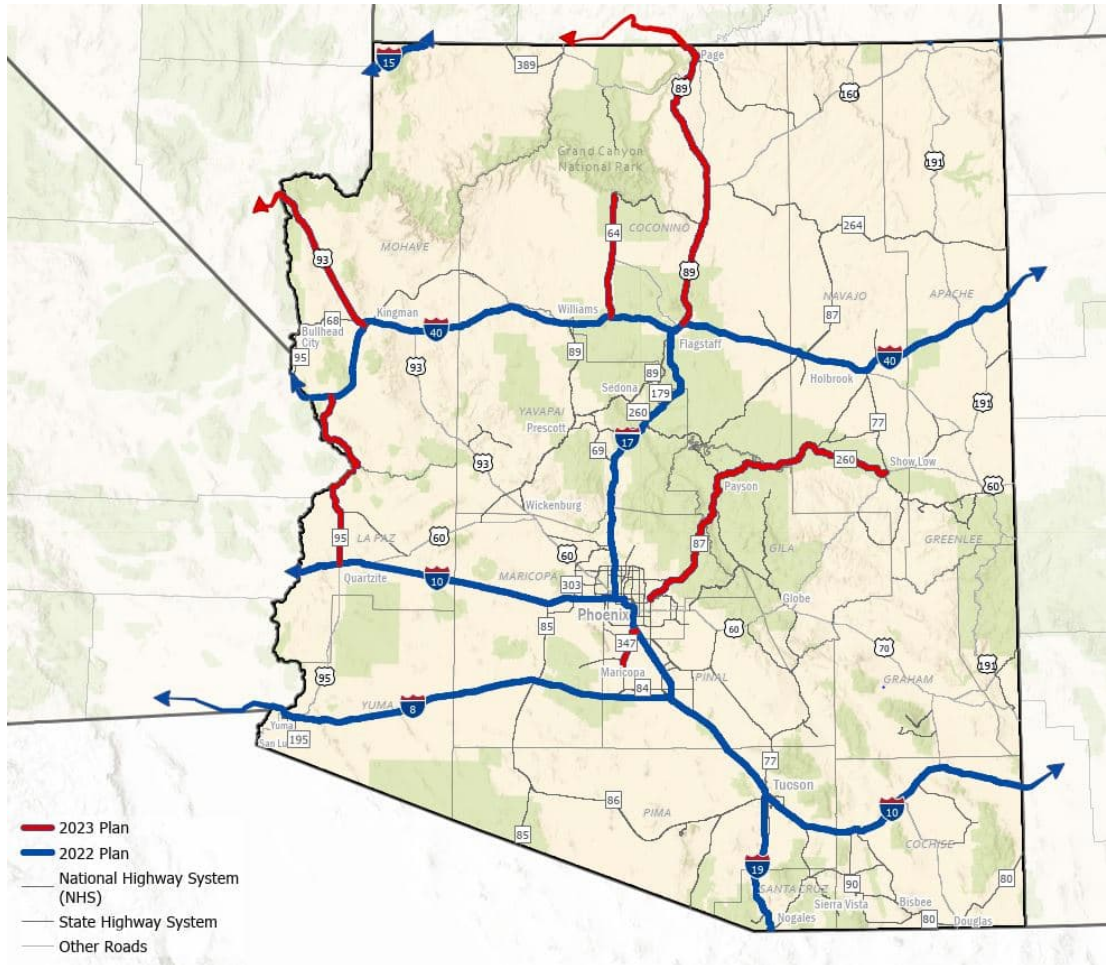
Existing Charging Stations

Table 25 presents the existing locations of Level 2 and DCFC (Level 3) charging infrastructure along the AFCs as of June 29, 2023. Figure 9 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 6/29/2023)

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
Existing Stations Identified Along 2023 AFCs							
612	L2	US 89	Flagstaff	2	ChargePoint Network	TBD	No
173230	L2	US 89	Flagstaff	2	ChargePoint Network	TBD	No
212778	L2	US 89	Flagstaff	4	Non-Networked	TBD	No
254406	DCFC	US 89	Flagstaff	24	Tesla	TBD	Yes
103563	L2	SR 64	Grand Canyon National Park	2	Non-Networked	TBD	No
103565	L2	SR 64	Grand Canyon National Park	2	Non-Networked	TBD	No
150677	L2	SR 64	Grand Canyon National Park	6	Tesla Destination	TBD	No
190528	L2	SR 64	Grand Canyon National Park	2	Non-Networked	TBD	No
194725	L2	SR 64	Grand Canyon National Park	2	SemaCharge Network	TBD	No
227697	L2	SR 64	Grand Canyon National Park	2	Non-Networked	TBD	No
187213	L2	US 93	White Hills	2	Blink Network	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
39855	L2	SR 95	Parker	1	Non-Networked	TBD	No
112778	L2	SR 95	Parker	3	Tesla Destination	TBD	No
189253	L2	SR 95	Parker	2	ChargePoint Network	TBD	No
112779	L2	SR 260	Payson	1	Tesla Destination	TBD	No
117722	DCFC	SR 260	Payson	12	Tesla	TBD	Yes
237677	L2	SR 260	Show Low	1	CHARGELAB	TBD	No
Existing Stations Identified Along 2022 AFCs							
39853	Level 2	I-10	Avondale	1	Non-Networked	TBD	No
39861	Both	I-10/I-17	Phoenix	2 each (4 total)	Non-Networked	TBD	No
39863	Both	I-10	Tempe	1 each (2 total)	Non-Networked	TBD	No
61294	Level 2	I-10	Chandler	2	ChargePoint Network	TBD	No
61295	Level 2	I-10	Chandler	2	ChargePoint Network	TBD	No
66290	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
66794	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
76160	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
76161	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
76907	Level 2	I-40	Flagstaff	2	AmpUp	TBD	No
79956	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
80014	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
85633	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
95292	Level 2	I-10	Phoenix	4	Blink Network	TBD	No
95412	Level 2	I-10	Phoenix	1	Blink Network	TBD	No
95568	Level 2	I-17	Phoenix	2	Blink Network	TBD	No
95706	Level 2	I-10	Phoenix	7	Blink Network	TBD	No
95707	Level 2	I-10	Phoenix	2	Blink Network	TBD	No
95738	Level 2	I-10	Phoenix	1	Blink Network	TBD	No
95880	Level 2	I-10	Tucson	1	Blink Network	TBD	No
95964	Level 2	I-10	Phoenix	2	Blink Network	TBD	No
96019	Level 2	I-10	Phoenix	4	Blink Network	TBD	No
96059	Level 2	I-10	Phoenix	2	Blink Network	TBD	No
96060	Level 2	I-17	Phoenix	1	Blink Network	TBD	No
96100	Level 2	I-17	Phoenix	2	Blink Network	TBD	No
96383	Level 2	I-10	Tempe	1	Blink Network	TBD	No
101980	DCFC	I-10	Buckeye	8	Tesla	TBD	No
101981	DCFC	I-10	Casa Grande	6	Tesla	TBD	No
101982	DCFC	I-40	Flagstaff	12	Tesla	TBD	No
101984	DCFC	I-40	Holbrook	12	Tesla	TBD	No
101985	DCFC	I-40	Kingman	10	Tesla	TBD	No
101986	DCFC	I-17	Mayer	8	Tesla	TBD	No
101989	DCFC	I-17	Phoenix	16	Tesla	TBD	No
101990	DCFC	I-10	Quartzsite	36	Tesla	TBD	No
101994	DCFC	I-10	Tucson	10	Tesla	TBD	No
101996	DCFC	I-10	Willcox	8	Tesla	TBD	No
101997	DCFC	I-8	Yuma	8	Tesla	TBD	No
104200	Level 2	I-17	Phoenix	1	ChargePoint Network	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
112761	Level 2	I-40	Flagstaff	3	Tesla Destination	TBD	No
112762	Level 2	I-40	Flagstaff	1	Tesla Destination	TBD	No
112763	Level 2	I-40	Flagstaff	1	Tesla Destination	TBD	No
112764	Level 2	I-40	Flagstaff	3	Tesla Destination	TBD	No
112765	Level 2	I-40	Flagstaff	2	Tesla Destination	TBD	No
112770	Level 2	I-40	Kingman	2	Tesla Destination	TBD	No
112783	Level 2	I-10	Phoenix	2	Tesla Destination	TBD	No
112831	Level 2	I-10	Tucson	3	Tesla Destination	TBD	No
112832	Level 2	I-40	Winslow	1	Tesla Destination	TBD	No
114851	Level 2	I-15	Mesquite	3	Tesla Destination	TBD	No
118886	DCFC	I-40	Flagstaff	1	ChargePoint Network	TBD	No
121828	DCFC	I-10	Buckeye	4	Electrify America	TBD	Yes
121833	DCFC	I-8	Yuma	4	Electrify America	TBD	No
122218	Level 2	I-40	Petrified Forest	2	ChargePoint Network	TBD	No
122249	DCFC	I-8	Gila Bend	8	Tesla	TBD	No
122359	Level 2	I-10	Phoenix	6	Tesla Destination	TBD	No
123009	DCFC	I-40	Williams	1	Non-Networked	TBD	No
123483	DCFC	I-10	Benson	4	Electrify America	TBD	Yes
124348	DCFC	I-17	Anthem	4	Electrify America	TBD	Yes
127934	DCFC	I-40	Flagstaff	4	Electrify America	TBD	Yes
135874	DCFC	I-40	Winslow	4	Electrify America	TBD	Yes
145281	Level 2	I-10	Phoenix	2	Volta	TBD	No
145653	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
145749	DCFC	I-10	Tucson	10	Electrify America	TBD	Yes

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
146891	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
146892	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
147040	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
147041	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
147083	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
147118	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
147121	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
147458	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
149194	DCFC	I-10	Tempe	8	Electrify America	TBD	Yes
150334	Both	I-10	Phoenix	2 each (4 total)	Blink Network	TBD	No
151953	DCFC	I-17	New River	10	Tesla	TBD	No
153411	DCFC	I-10	Ehrenberg	8	Tesla	TBD	No
154797	DCFC	I-8	Tacna	8	Tesla	TBD	No
156367	Level 2	I-10	Goodyear	2	ChargePoint Network	TBD	No
164142	Level 2	I-10	Chandler	2	SemaConnect Network	TBD	No
164254	Level 2	I-10	Phoenix	3	Blink Network	TBD	No
164351	Level 2	I-40	Williams	2	SemaConnect Network	TBD	No
164414	Level 2	I-10	Tucson	4	SemaConnect Network	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
164787	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
165214	Level 2	I-10	Buckeye	2	ChargePoint Network	TBD	No
166787	Level 2	I-10	Goodyear	2	ChargePoint Network	TBD	No
167342	Level 2	I-40	Flagstaff	2	ChargePoint Network	TBD	No
167343	Level 2	I-40	Flagstaff	2	ChargePoint Network	TBD	No
168622	Level 2	I-40	Kingman	2	Tesla Destination	TBD	No
168689	Level 2	I-10	Phoenix	4	Tesla Destination	TBD	No
168691	Level 2	I-40	Flagstaff	2	Tesla Destination	TBD	No
168702	Level 2	I-10	Chandler	2	Tesla Destination	TBD	No
168741	Level 2	I-8	Gila Bend	4	Tesla Destination	TBD	No
168852	Level 2	I-40	Williams	5	Tesla Destination	TBD	No
169028	Level 2	I-10	Phoenix	1	Tesla Destination	TBD	No
169228	Level 2	I-10	Phoenix	4	Tesla Destination	TBD	No
169240	Level 2	I-10	Phoenix	3	Tesla Destination	TBD	No
169411	DCFC	I-8	Dateland	4	Electrify America	TBD	Yes
170168	Level 2	I-10	Phoenix	3	Blink Network	TBD	No
171760	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
171771	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
171772	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
171839	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
171845	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
171846	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
171928	Level 2	I-10	Phoenix	1	ChargePoint Network	TBD	No
173956	DCFC	I-10	Chandler	1	ChargePoint Network	TBD	No
174635	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
175685	Level 2	I-10	Goodyear	2	ChargePoint Network	TBD	No
182918	Level 2	I-10	Tucson	1	ChargePoint Network	TBD	No
182919	Level 2	I-10	Tucson	1	ChargePoint Network	TBD	No
182920	Level 2	I-10	Tucson	1	ChargePoint Network	TBD	No
182921	Level 2	I-10	Tucson	1	ChargePoint Network	TBD	No
184916	DCFC	I-40	Williams	4	Electrify America	TBD	Yes
185095	Level 2	I-40	Flagstaff	2	Non-Networked	TBD	No
185098	DCFC	I-17	Phoenix	1	Non-Networked	TBD	No
186033	Level 2	I-17	Phoenix	2	ChargePoint Network	TBD	No
186034	Level 2	I-17	Phoenix	2	ChargePoint Network	TBD	No
186193	Level 2	I-10	Goodyear	1	Non-Networked	TBD	No
186198	Level 2	I-17	Phoenix	2	Non-Networked	TBD	No
186348	Level 2	I-10	Phoenix	3	Non-Networked	TBD	No
186349	Level 2	I-10	Tempe	1	Non-Networked	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
186350	Level 2	I-10	Chandler	2	Non-Networked	TBD	No
186351	Level 2	I-10	Chandler	1	Non-Networked	TBD	No
187569	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
187879	DCFC	I-40	Kingman	4	Electrify America	TBD	Yes
187884	Level 2	I-10	Phoenix	4	Blink Network	TBD	No
187948	DCFC	I-10	Quartzsite	4	Electrify America	TBD	Yes
189037	Level 2	I-10	Tucson	2	Blink Network	TBD	No
189311	Level 2	I-8	Yuma	2	Blink Network	TBD	No
189658	Both	I-10	Phoenix	1 each (2 total)	Blink Network	TBD	No
189685	DCFC	I-10	Tucson	4	Non-Networked	TBD	No
190647	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
191561	DCFC	I-10	Chandler	4	Electrify America	TBD	Yes
193276	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
193277	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
193278	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
193279	Level 2	I-10	Phoenix	2	ChargePoint Network	TBD	No
195717	Level 2	I-10	Phoenix	2	Blink Network	TBD	No
195718	Level 2	I-17	Phoenix	4	Blink Network	TBD	No
195719	Level 2	I-17	Phoenix	2	Blink Network	TBD	No
195724	Level 2	I-10	Phoenix	2	Blink Network	TBD	No
195733	Level 2	I-10	Tucson	2	ChargePoint Network	TBD	No

| State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
195734	Level 2	I-10	Tucson	2	ChargePoint Network	TBD	No
196011	Level 2	I-40	Flagstaff	2	ChargePoint Network	TBD	No
196012	Level 2	I-40	Flagstaff	2	ChargePoint Network	TBD	No
198039	Level 2	I-10	Tucson	2	SemaConnect Network	TBD	No
198261	DCFC	I-10	Tempe	1	EVgo Network	TBD	Yes
198884	DCFC	I-10	Casa Grande	1	EVgo Network	TBD	Yes
201449	Level 2	I-40	Flagstaff	2	ChargePoint Network	TBD	No
201450	Level 2	I-40	Flagstaff	2	ChargePoint Network	TBD	No
201865	Level 2	I-40	Holbrook	2	Blink Network	TBD	No
202355	Level 2	I-8	Yuma	4	Non-Networked	TBD	No
202359	Level 2	I-10	Phoenix	4	Non-Networked	TBD	No
202365	Level 2	I-40	Flagstaff	4	Non-Networked	TBD	No
202369	Level 2	I-40	Holbrook	4	Non-Networked	TBD	No
202371	Level 2	I-10	Goodyear	4	Non-Networked	TBD	No
202372	Level 2	I-17	Phoenix	4	Non-Networked	TBD	No
202374	Level 2	I-17	Phoenix	4	Non-Networked	TBD	No
202383	Level 2	I-10	Phoenix	4	Non-Networked	TBD	No
202395	Level 2	I-10	Casa Grande	2	Volta	TBD	No
205051	Level 2	I-10	Avondale	2	ChargePoint Network	TBD	No
205372	DCFC	I-19	Green Valley	1	ChargePoint Network	TBD	No
205566	DCFC	I-40	Kingman	14	Tesla	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
205762	Level 2	I-10	Avondale	2	ChargePoint Network	TBD	No
206318	Level 2	I-8	Yuma	2	ChargePoint Network	TBD	No
206319	Level 2	I-8	Yuma	2	ChargePoint Network	TBD	No
206479	Level 2	I-10	Tucson	2	ChargePoint Network	TBD	No
206610	DCFC	I-10	Tucson	16	Tesla	TBD	No
207198	DCFC	I-10	Avondale	1	ChargePoint Network	TBD	No
207199	DCFC	I-10	Avondale	1	ChargePoint Network	TBD	No
207804	Level 2	I-10	Tempe	1	ChargePoint Network	TBD	No
207805	Level 2	I-10	Tempe	1	ChargePoint Network	TBD	No
207806	Level 2	I-10	Tempe	1	ChargePoint Network	TBD	No
207807	Level 2	I-10	Tempe	1	ChargePoint Network	TBD	No
211831	Level 2	I-19	Green Valley	1	ChargePoint Network	TBD	No
211832	DCFC	I-19	Green Valley	1	ChargePoint Network	TBD	No
212779	Level 2	I-40	Winslow	4	Non-Networked	TBD	No
212782	Level 2	I-10	Goodyear	4	Non-Networked	TBD	No
213154	Level 2	I-17	Phoenix	8	Non-Networked	TBD	No
217183	Level 2	I-40	Flagstaff	2	ChargePoint Network	TBD	No

State EV Charging Location Unique ID	Charger Level (DCFC, L2)	Route	Location	Number of EV Connectors	EV Network	Meets all relevant requirements in 23 CFR 680?	Intent to count towards Fully Built Out determination?
217184	Level 2	I-40	Flagstaff	2	ChargePoint 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 9: Existing Charging Stations on Alternative Fuel Corridors in Arizona
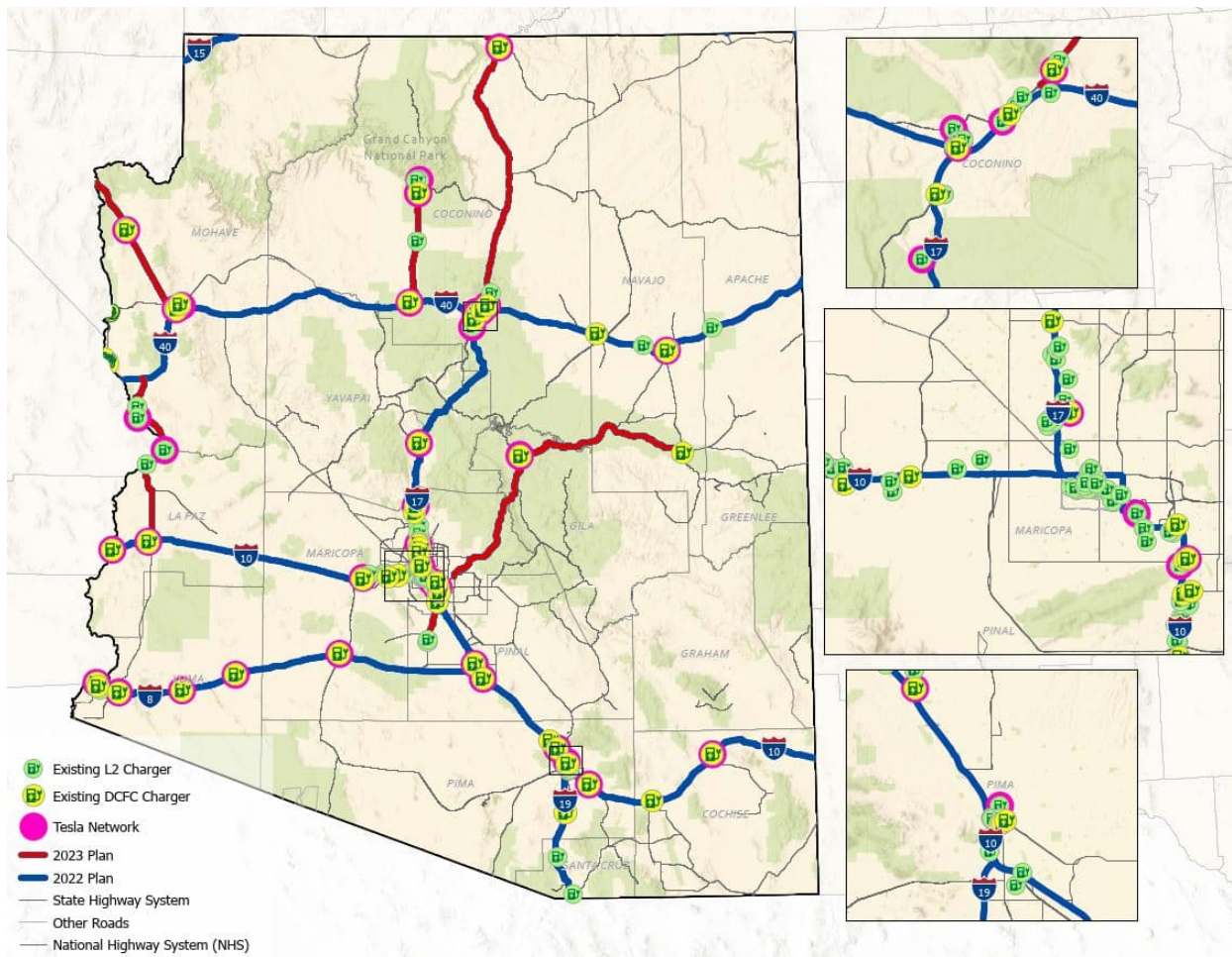
EV Charging Infrastructure Deployment

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. Discretionary exceptions may be granted.

- EVSE must be less than one driving mile from a highway exit.

- Site power capability must be at least 600 kW, to support at least 150 kW 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 2023 Plan accounts for progress made in EV charging infrastructure deployment since the approval of the 2022 Plan. The 2023 Plan identifies the locations of new and upgraded EVSE stations along newly proposed AFCs. All of the proposed corridors are pending AFC designation by the USDOT. They are:

- US 93, Kingman to Nevada

- 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

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
Electric Vehicle Charging Station Rebate	Rebate for installing networked Level 2 chargers at commercial, workplace, or multi-family sites.	Rebate	SRP	$1,500 per port

Name	Program Description	Type of Funding	Administering Organization(s)	Amount
Electric Vehicle Charging Station Rebate	Rebate to cover installation of Level 2 and Level 3 chargers for residential and commercial customers.	Rebate	Mohave Electric Cooperative	$1,000 per Level 2 charger, $2,750 per Level 3 charger
Electric Vehicle Charging Station Rebate	Rebate to cover installation of Level 2 charger at residential sites.	Rebate	APS	$250 per Level 2 charger
Electric Vehicle Charging Station Pilot Program	Free EV charging stations, installation, maintenance, and educational services to its workplace, fleet, and multi-unit dwelling customers.	Program	APS	Varies
Electric Vehicle 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
Commercial Electric Vehicle Charging Station Rebate	Rebate for technical assistance and installation of Level 2 or 3 stations. Higher rebates are available for low-income residents.	Rebate	TEP	Between $4,500 and $40,000, depending on charger type and income level
Commercial Electrification Rebates	Rebate to install, among other technologies, Level 2 charging stations at commercial sites.	Rebate	SRP	$1,500 per port
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 five years
Non-Federal Share (Match)	Private entity investment in EVSE and EVSE operations every 50 miles within one mile of AFCs.	Private investment	EVSE Station Owners	$19,120,994
Charging and Fueling Infrastructure	Funding to deploy EVSE along AFCs and in communities.	Grant	FHWA	$2.5 billion nationally

Name	Program Description	Type of Funding	Administering Organization(s)	Amount
Discretionary Grant Program				

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-FFY 2023: $27,600,000

  o FFY 2022: $11,300,000 (rolled over to FFY 2023)
  o FFY 2023: $16,300,000

- FFY 2024: $16,300,000

- FFY 2025: $16,300,000

- FFY 2026: $16,283,976

The deployment strategy for 2023 is described below. Each subsequent year, the Plan will be updated with funding allocation amounts for the upcoming year.

2023 EVSE Deployment Strategy

ADOT proposes an EVSE deployment strategy, aligning with the 2022 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

NEVI Creditable EVSE Stations
The 2022 Plan identified 13 EVSE stations on the Interstate highways that were creditable, i.e., met NEVI Standards and Requirements. The 2023 Plan adds two stations, at Show Low and Payson, identified along the new pending AFCs. All creditable stations are listed in Table 27. The map in Figure 10 shows the distance in miles between each existing creditable station, as well as the closest DCFC charging stations in neighboring states. While these chargers may need to be upgraded to develop a cohesive interstate network, charging stations in neighboring states are excluded from the purview of this Plan.

Table 27: NEVI Creditable* EVSE Stations, 2022 - 2023

State EVSE Location Unique ID	Route	Locations	Address	Exit Number	EVSE Network	Utility Territories	Station Ownership
2023							
207916	SR 260	Show Low	180 N. 9th St Show Low, AZ 86046	Manzanita Dr.	Electrify America	TBD	Existing
238674	SR 260	Payson	400 E. Highway 260 Payson, AZ 86322	N. 9th St.	Electrify America	TBD	Existing
2022							
187879	I-40	Kingman	3490 Stockton Hill Rd. Kingman, AZ 86409	51	Electrify America	TBD	Existing
184916	I-40	Williams	1100 W. Cataract Lake Rd. Williams, AZ 86046	163	Electrify America	TBD	Existing
127934	I-40	Flagstaff	2601 E. Huntington Rd. Flagstaff, AZ 86004	198	Electrify America	TBD	Existing
135874	I-40	Winslow	700 Mikes Pike St. Winslow, AZ 86047	253	Electrify America	TBD	Existing
187948	I-10	Quartzsite	760 S. Quartzsite Blvd. Quartzsite, AZ 85346	17	Electrify America	TBD	Existing
121828	I-10	BuBEckeye	1060 S. Watson Buckeye, AZ 85326	117	Electrify America	TBD	Existing

State EVSE Location Unique ID	Route	Locations	Address	Exit Number	EVSE Network	Utility Territories	Station Ownership
149194	I-10	Tempe	5000 S. Arizona Mills Circle Tempe, AZ 85282	155	Electrify America	TBD	Existing
191561	I-10	Chandler	4976 Premium Outlets Way Chandler, AZ 85226	162	Electrify America	TBD	Existing
198884	I-8	Yuma	1450 S. Yuma Palms Parkway Yuma, AZ 85365	2	EVgo Network	TBD	Existing
169411	I-8	Dateland	1734 Ave. 64 E. Dateland, AZ 85333	67	Electrify America	TBD	Existing
145749	I-10/I-19	Tucson	6401 W. Marana Center Blvd. Tucson, AZ 85742	244	Electrify America	TBD	Existing
123483	I-10	Benson	201 S. Prickly Pear Ave. Benson, AZ 85602	303	Electrify America	TBD	Existing
124348	I-17	Anthem	4435 W. Anthem Way Anthem, AZ 85086	229	Electrify America	TBD	Existing

Pending verification by the Joint Office of Energy and Transportation.

Figure 10: NEVI Creditable EVSE Stations, Arizona, 2022 - 2023
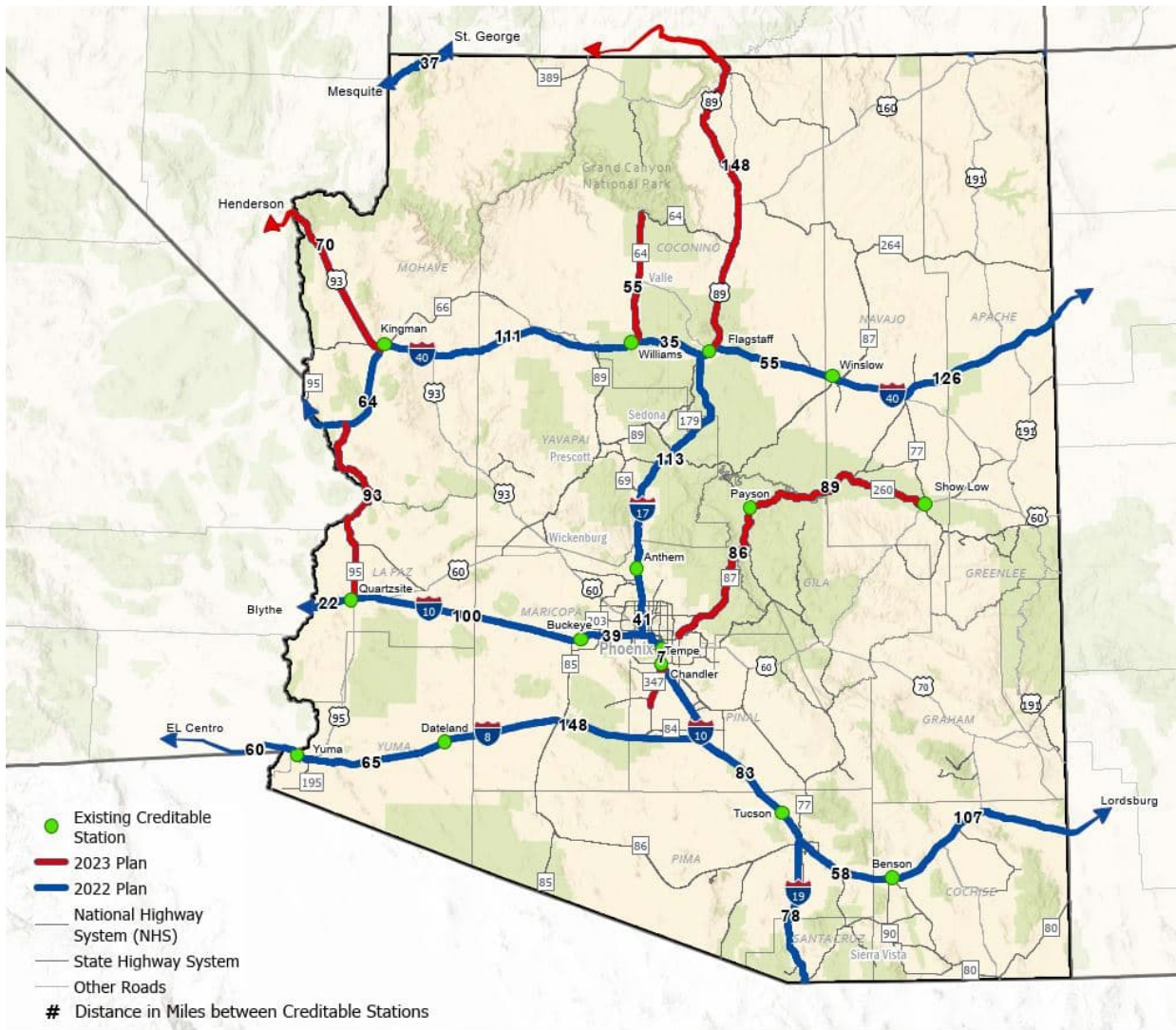
Discretionary Exemptions

ADOT is requesting two continued discretionary exemptions from the requirement that charging infrastructure be installed every 50 miles along the state's AFCs. These exemptions were approved for the 2022 Plan. The proposed discretionary exemptions are described below and illustrated in Figure 11. 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 one 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.

East of Gila Bend, I-8 is a rural area with no existing amenities within one 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.

Figure 11: Discretionary Exemption Requests, 2022-2023
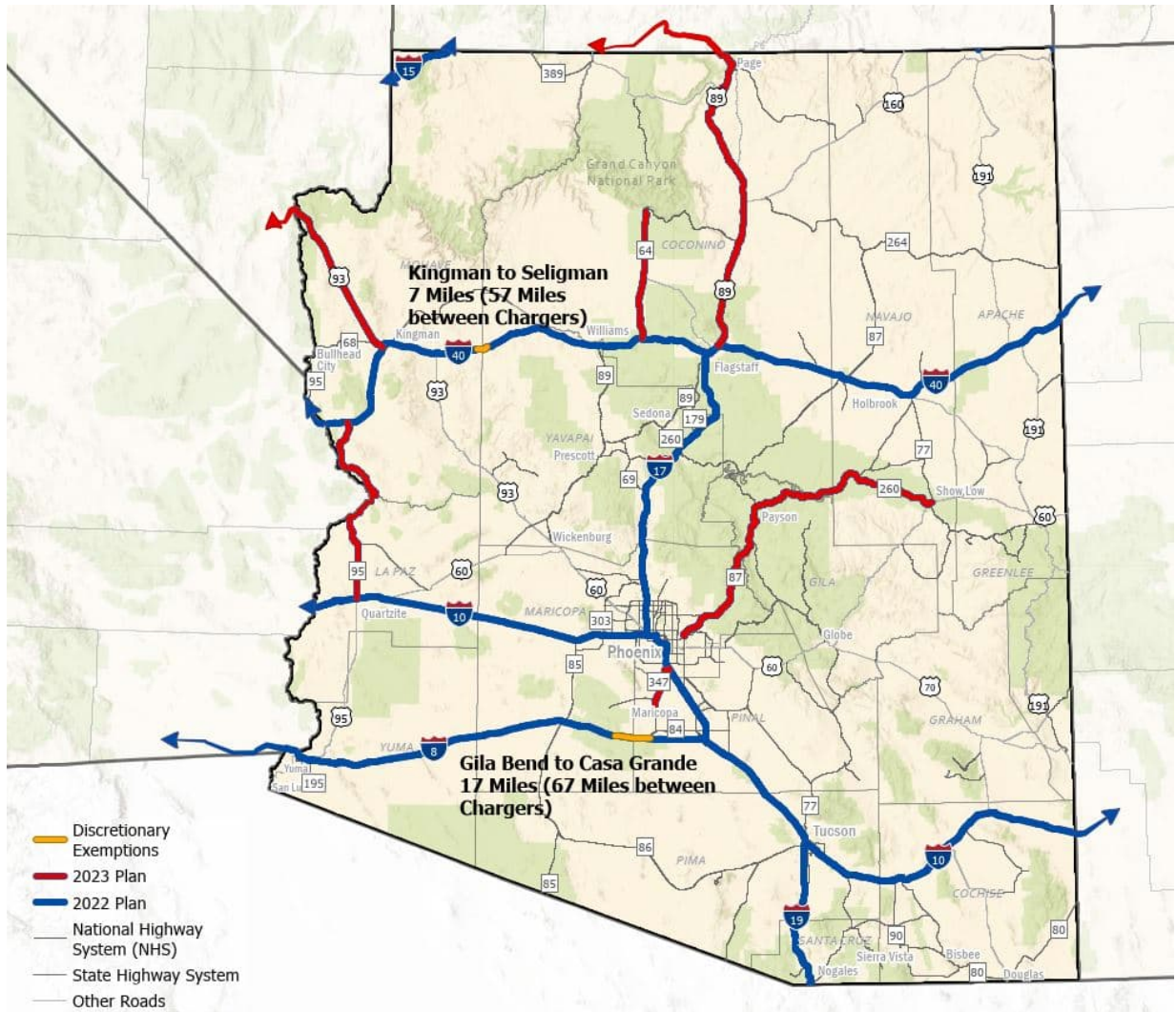
Closing Gaps in the Existing Network with New and Upgraded Stations

The 2022 Plan identified eight existing stations with the potential to be upgraded to meet NEVI requirements, as well as locations for the construction of new stations, along the Interstate highways.

The 2023 Plan calls for the upgrade of two stations, at Tusayan and Willow Beach, identified along the new pending AFCs, and for the construction of 13 new stations along those AFCs. These stations 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. New stations will be placed at these locations if upgrades are not proposed and selected through the contracting process.

Locations identified in this plan for new construction are not specific. The selected contractor will work with property owners and ADOT to establish exact locations. The contract may specify the areas surrounding certain interchanges within which actual construction sites may be located. At certain locations more than one interchange may be eligible as sites for station construction. 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 12 show the existing stations identified for potential upgrade and the locations identified for new stations in the 2022 and 2023 Plans.

Table 28: Potential Upgrades and New EVSE Station Locations, 2022 – 2023

Stations to be potentially upgraded indicated in bold.

State EVSE Location Unique ID	Route	Location	Exit Number	Anticipated EVSE Network	Utility Territories	Anticipated Station Ownership	NEVI Funding Sources	Number of Ports	Estimated Year Operational	Estimated Cost
2023										
TBD	US 89	Page	Haul Rd.	Unknown at time of Plan submittal	Page Utility Enterprises	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	US 89	The Gap	498 US 89, Cameron,	Unknown at time of Plan submittal	NTUA	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	US 89	Cameron	Cameron Bridge Bypass Rd.	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	SR 87	Fort McDowell	Fort McDowell Rd.	Unknown at time of Plan submittal	SRP	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	SR 87	Rye	S. Beeline Hwy	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	SR 260	Forest Lakes Estates	Highway Lp.	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD

| State EVSE Location Unique ID	Route	Location	Exit Number	Anticipated EVSE Network	Utility Territories	Anticipated Station Ownership	NEVI Funding Sources	Number of Ports	Estimated Year Operational	Estimated Cost
TBD	SR 260	Overgaard	Mogollon	Unknown at time of Plan submittal	Navopache Electric Co-op	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	SR 347	Maricopa	W. Smith Enke Rd.	Unknown at time of Plan submittal	Electrical District No. 3	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	SR 64	Valle	US 180	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	SR 95	Lake Havasu City	McCulloch Blvd N.	Unknown at time of Plan submittal	Unisource	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
TBD	SR 95	Parker	W. Riverside Dr.	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 24	4	TBD	TBD
153422	SR 64	Tusayan	Long Jim Loop	Tesla	APS	Existing	FFY 24	12	N/A	TBD
TBD	US 93	Willow Beach	CR145	Tesla	UNS Electric	Existing	FFY 24	8	N/A	TBD

State EVSE Location Unique ID	Route	Location	Exit Number	Anticipated EVSE Network	Utility Territories	Anticipated Station Ownership	NEVI Funding Sources	Number of Ports	Estimated Year Operational	Estimated Cost
2022										
TBD	I-40	Lake Havasu City	9	Unknown at time of Plan submittal	UNS Electric	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-40	Seligman	123	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-40	Kingman	66	Unknown at time of Plan submittal	Mohave Electric Cooperative	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-40	Twin Arrows	219	Unknown at time of Plan submittal	APS & NTUA	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-40	Petrified Forest	311	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-40	Sanders	339	Unknown at time of Plan submittal	Navopache Electric Cooperative	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD

State EVSE Location Unique ID	Route	Location	Exit Number	Anticipated EVSE Network	Utility Territories	Anticipated Station Ownership	NEVI Funding Sources	Number of Ports	Estimated Year Operational	Estimated Cost
TBD	I-17	Munds Park	322	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-17	Camp Verde	287	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-10	Salome	45	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-10	Tonopah	94	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-10	San Simon	378	Unknown at time of Plan submittal	Sulphur Springs Valley Electric Cooperative	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-19	Nogales	4	Unknown at time of Plan submittal	Unisource	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD
TBD	I-10	Eloy	200	Unknown at time of Plan submittal	APS	Unknown at time of Plan submittal	FFY 22/23	4	TBD	TBD

State EVSE Location Unique ID	Route	Location	Exit Number	Anticipated EVSE Network	Utility Territories	Anticipated Station Ownership	NEVI Funding Sources	Number of Ports	Estimated Year Operational	Estimated Cost
101984	I-40	Holbrook	286	Tesla	APS	Existing	FFY 22/23	12	N/A	TBD
101986	I-17	Cordes Lakes / Cordes Junction	262	Tesla	APS	Existing	FFY 22/23	8	N/A	TBD
101981 or 198884	I-17	Casa Grande	194	Tesla or EVgo	APS	Existing	FFY 22/23	6 or 4	N/A	TBD
101994	I-10	Tucson	273	Tesla	TEP	Existing	FFY 22/23	10	N/A	TBD
154797	I-8	Tacna	42	Tesla	Wellton-Mohawk Irrigation District	Existing	FFY 22/23	8	N/A	TBD
122249	I-8	Gila Bend	115	Tesla	APS	Existing	FFY 22/23	16	N/A	TBD
101996	I-10	Willcox	340	Tesla	Sulphur Springs Valley Electric Cooperative	Existing	FFY 22/23	8	N/A	TBD

State EVSE Location Unique ID	Route	Location	Exit Number	Anticipated EVSE Network	Utility Territories	Anticipated Station Ownership	NEVI Funding Sources	Number of Ports	Estimated Year Operational	Estimated Cost
205372, 211832	I-19	Green Valley	69	ChargePoint	TEP/Trico	Existing	FFY 22/23	4	N/A	TBD

Figure 12: Proposed Charging Network, 2022 -2023
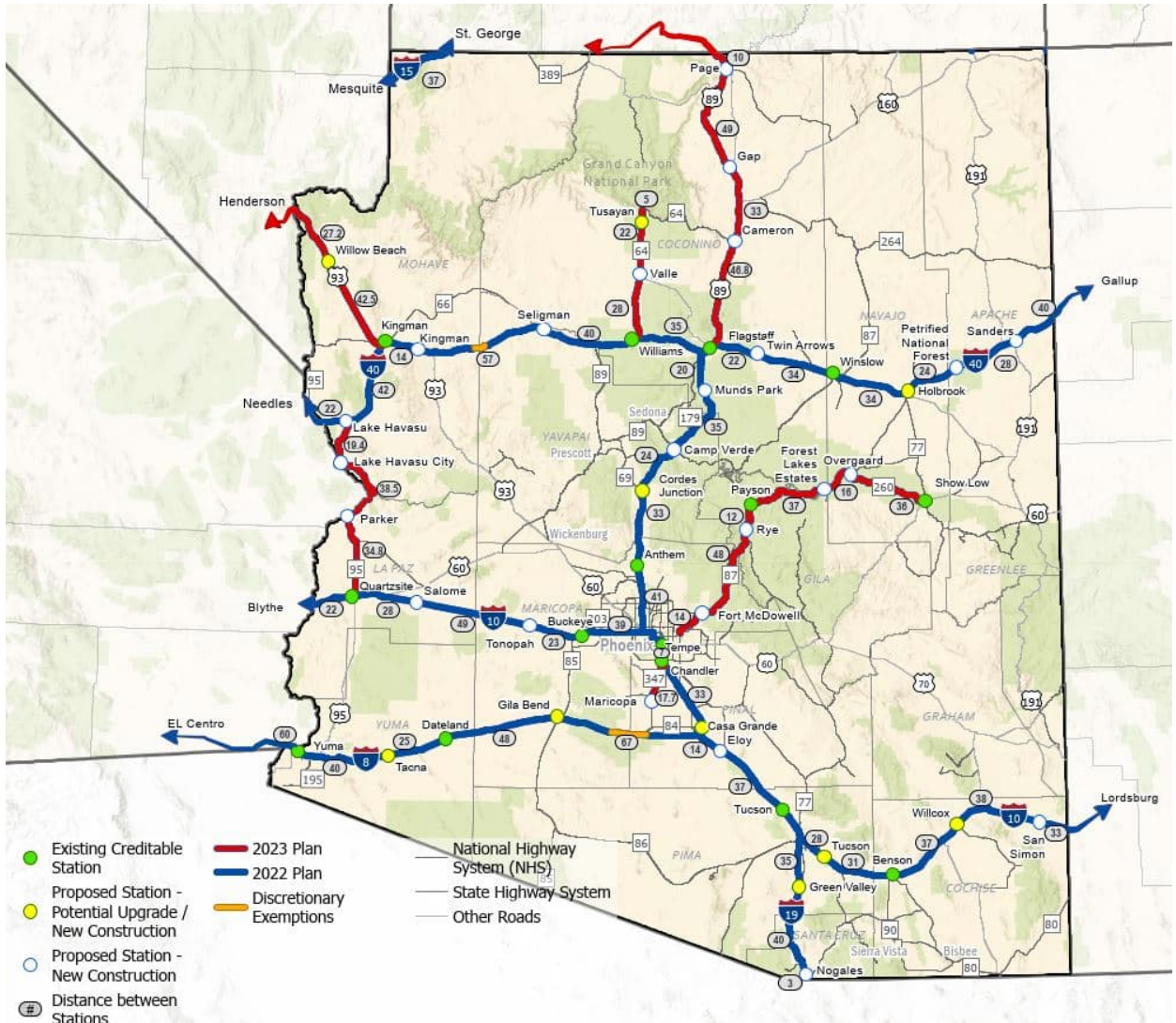
2023 EVSE Deployment Strategy Summary

As described previously, ADOT's 2023 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.

2024 - 2025 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 National Highway System (NHS) are eligible for nomination as AFCs. Based on feedback from the solicitation, the proposed AFC nominations for 2024 and 2025 are found in Table 29 and Figure 13.

Table 29: Preliminary List of Proposed New AFC Candidates, 2024-2025

Corridor Name	Location
US 60	Phoenix to Wickenburg; Phoenix to Globe; Show Low to New Mexico border
US 93	Wickenburg to I-40
US 95/State Route (SR) 95	San Luis to Quartzsite; I-40 to Bullhead City
SR 68	US 93 to Bullhead City
SR 69	I-17 to Prescott
SR 77	SR 260 to I-40
SR 85	I-8 to I-10
SR 90	I-10 to Bisbee
US 160	US 89 to Four Corners
SR 260	Camp Verde to Sedona
SR 80	Bisbee to Douglas
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 13: Proposed New AFC Candidates, 2024-2025
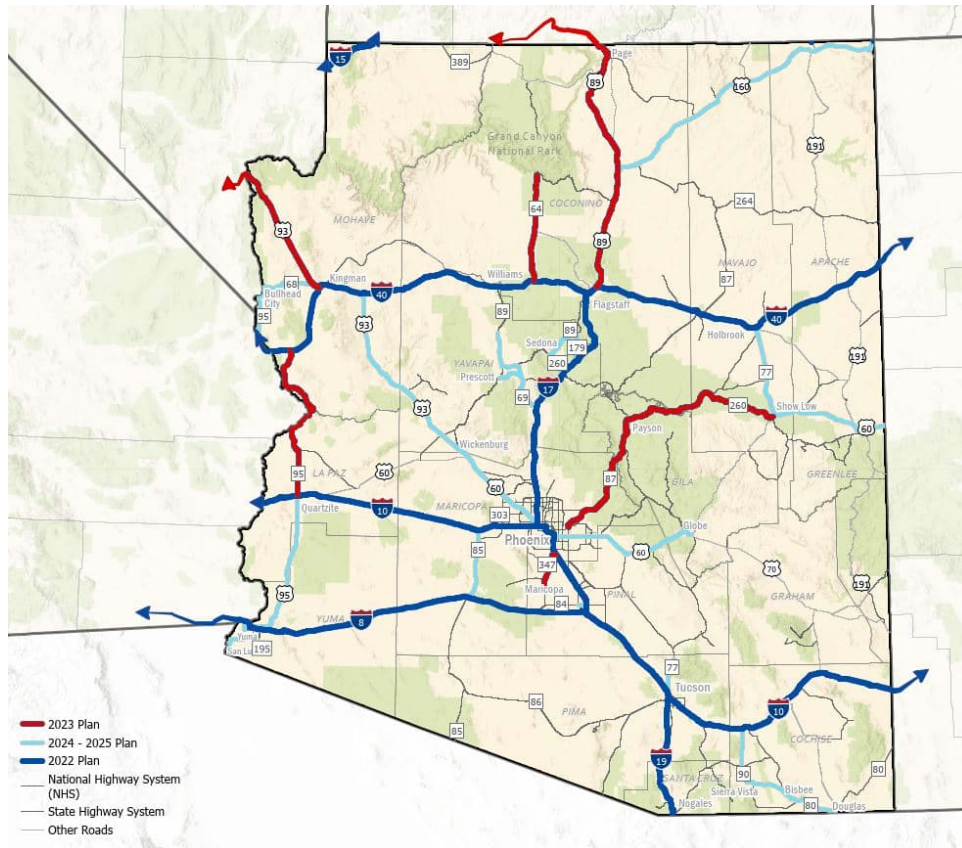
The evaluation of candidates for AFC nomination will be based upon the improvement to State and national EV connectivity, public input, funding availability, and other factors. Nominations of AFCs, along with their corresponding EVSE infrastructure deployment plans, will be included in future plan updates. Following plan approval, ADOT intends to deploy stations on the newly designated AFCs.

Deployment Criteria for 2024 - 2025

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

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 has identified plans, policies, and studies relating to transportation electrification. This Plan can help advance the goals of those plans and policies. EVSE locations may utilize utility or other incentives contemplated by these plans and policies for the installation of EVSE infrastructure. 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. 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.

EV Policy Breakdown		
Policy	Entity	Description
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	Maricopa Association of Governments (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		
Draft 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,' 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

EV Policy Breakdown		
Policy	Entity	Description
		Example. Currently, Phoenix has set adoption goals in line with the federal government's 2030 nationwide EV adoption.

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 EVSE Operations and Maintenance

EVSE are only an asset to EV owners if they remain in working order. The investment of public funds should be protected by ensuring that operations and maintenance best practices are implemented by station owners. ADOT intends to comply with NEVI requirements for EVSE 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 onsite 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 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 American Disabilities Act of 1990 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 EVSE 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 (OCPI) 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 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.[37] ADOT will consider to 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 ensure its station owners take 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:

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 for workers, 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 DOT 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, and 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. Futureproofing 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´ at the virtual public meeting held July 18, 2023.

- 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.

- Provide the opportunity for in-person and virtual meeting attendees to complete the voluntary Title VI Self-Identification cards. Virtual meetings provide the Self-ID 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 and 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.).

DAC 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 alternative fuel corridors was supported significantly more or less strongly than others.

- The potential future alternative fuel corridors 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 was 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 DACs

Executive Order 14008 states that "40 percent of the overall benefits" of Federal investments from covered programs should flow to disadvantaged communities (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, as well as 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 DACs 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. 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% of Arizonans identify as minorities.[38] Arizona is also home to one of the largest Native American populations in the nation, and approximately 27% of the State's land is owned by Native American Tribes.[39] 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 DACs

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 disadvantaged communities	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. • Frequency of Measurement: Annually • Data Source: ADOT contracts to build, operate, and maintain ESVE which include 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 the NEVI Standards and Requirements (23 CFR 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:

- ADOT will require that, apart from apprentices, all electricians installing and maintaining EVSE must be certified through EVITP or be a graduate of a Registered Electrical Apprenticeship Program that includes EVSE-specific training and is developed as part of a national guideline standard approved by the Department of Labor in consultation with the Department of Transportation.

- 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 onsite, 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. To build a diverse, local EVSE workforce, 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:

        - AZ Department of Economic Security Apprenticeship Office: Arizona's Apprenticeship Program[40]

        - Pima Community program (certification and associate degrees)

        - Gateway Community College (certification and associate degrees)

        - Chandler-Gilbert Community College (certification)

    - Existing electrician apprenticeship programs:

        - ABA-AGC Education Fund

        - 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 Jt. Apprenticeship and Training program Phoenix Electrical JATC

Physical Security & 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 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, 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 Special Publication (SP) 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:

  o NEVI Standards and Requirements (23 CFR 680)

  o Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT)

  o National Institute of Standards and Technology (NIST)

      o SP 800-53

      o SP 800-115

  o Arizona Statewide Policy (8130) System Security Acquisition and Development

  o Payment Card Industry Data Security Standard (PCI DSS)

  o Health Insurance Portability and Accountability Act (HIPAA)

  o North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP)

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 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 bullets refer 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, and 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

Performance Goal	Metric	Frequency of Measurement	Data Source
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% (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 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

Performance Goal	Metric	Frequency of Measurement	Data Source
	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.

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 3 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 EV 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. The proposed discretionary exemptions are described in Table A-1 and shown in Figure A-1.

Table A-1: Discretionary Exemption Requests

Exception Number	Type	Distance of Deviation	Included in Round 6 AFC Nomination	Reason for Exception Request
1 – Kingman to Seligman (I-40)	☒ 50 miles apart ☐ 1 mile from exit	7 miles __ miles	☐ Yes ☒ No	☒ Grid Capacity ☒ Geography ☐ Equity ☐ Extraordinary Cost
2 – Gila Bend to Casa Grande/Eloy (I-8)	☒ 50 miles apart ☐ 1 mile from exit	17 miles __ miles	☐ Yes ☒ No	☒ Grid Capacity ☒ Geography ☐ Equity ☐ Extraordinary Cost

Figure A-1: Map of Discretionary Exemption Requests
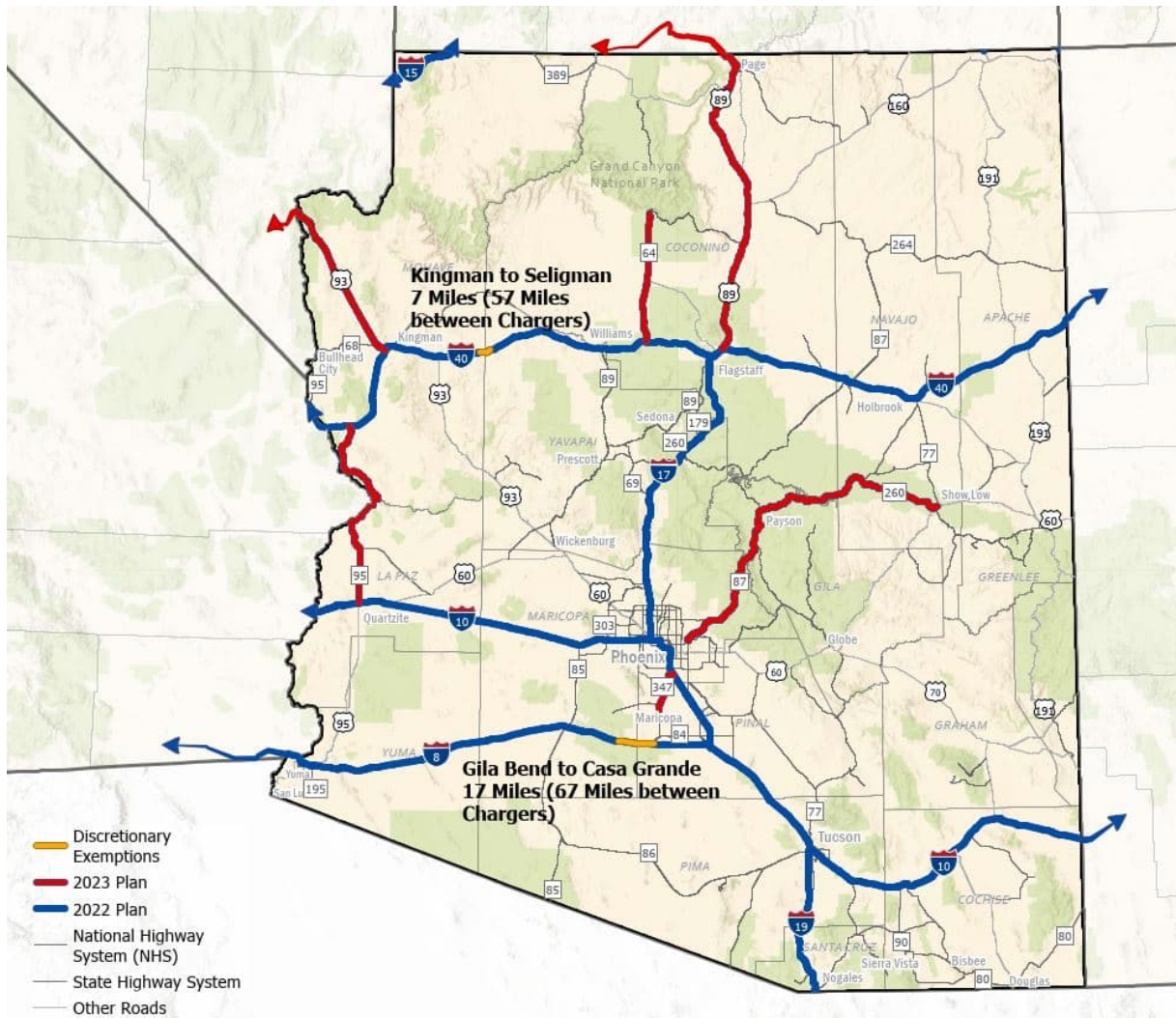
Justification for Exceptions

Kingman to Seligman

The 57-mile segment between Kingman and Seligman on I-40 is a rural area with no existing amenities within one 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 one 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.

Appendix B   Supporting Materials

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 businesses, 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% (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 completion

Performance Goal	Metric	Frequency of Measurement	Data Source
	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 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

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. This 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. 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	Route	Exit Number/ Street	Serving Utility	3 Phase Service Available	600kW Capacity Available
2023					
Page	US 89	Haul Rd.	TBD	TBD	TBD
The Gap	US 89	498 US 89, Cameron, AZ 86020	APS	No	Yes
Cameron	US 89	Cameron Bridge Bypass Rd.	APS		Yes
Fort McDowell	SR 87	Fort McDowell Rd.	TBD	TBD	TBD
Rye	SR 87	S. Beeline Hwy	APS	Yes	Yes
Forest Lakes Estates	SR 260	Highway Lp.	APS	Yes	Yes
Overgaard	SR 260	Mogollon	TBD	TBD	TBD
Maricopa	SR 347	W. Smith Enke Rd.	TBD	TBD	TBD
Valle	SR 64	US 180	APS	Yes	Yes
Lake Havasu City	SR 95	McCulloch Blvd N.	TBD	TBD	TBD
Parker	SR 95	W. Riverside Dr.	APS	Yes	Yes
Tuseyan	SR 64	Long Jim Loop	APS	Yes, 3 phase within 2000ft of intersection	Yes
Willow Beach	US 93	CR 145	TBD	TBD	TBD
2022					
Camp Verde[1]	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
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 Arrows[2]	I-40	219	APS & NTUA	APS does not have 3 phase service	APS would require grid upgrades
Willcox	I-10	340	SSVEC	Yes	Yes

DCFC typically require three phase, 480 V input service to operate. Four 150 kW DCFC units, as specified by NEVI also require 600 kW of power capacity available if all units are operational. Based on the survey, sixteen of the twenty proposed sites of locations identified in the Plan have capacity and service conditions available to support DCFC charging stations. Hence, no major grid infrastructure upgrades would be required for these sites based upon current conditions. 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 amount of electrical upgrades. Best practices include siting chargers near existing electric infrastructure to minimize conduit runs and closer to substations so as to be more likely to have available capacity. Additionally, distributed energy resources (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 EV Charging Infrastructure Cybersecurity Specification

CHAPTER 1. TERMINOLOGY AND ABBREVIATIONS

ACRONYMS

Abbreviation	Meaning
ADOT	Arizona Department of Transportation
ARC-IT	Architecture Reference for Cooperative and Intelligent Transportation
CISA	Cybersecurity and Infrastructure Security Agency
CSO	Charging Station Operator
CSMS	Charging Station Management System
CVE	Common Vulnerabilities and Exposures
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
ICS-CERT	Industrial Control Systems Cyber Emergency Response Team
ITS	Intelligent Transportation Systems
IVI	In-Vehicle Infotainment Center
NEVI	National Electric Vehicle Infrastructure
NERC-CIP	North American Electric Reliability Corporation Critical Infrastructure Protection
NIST	National Institute of Standards and Technology
OBE	On-Board Equipment
OCPP	Open Charge Point Protocol
PCI DSS	Payment Card Industry Data Security Standard

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[41] and 2119,[42] which are defined in the below table.

Key Word	Definition
MUST	This word, or the terms "REQUIRED" or "SHALL," mean that the definition is an absolute requirement of the specification.
MUST NOT	This phrase, or the phrase "SHALL NOT," mean that the definition is an absolute prohibition of the specification.
SHOULD	This word, or the adjective "RECOMMENDED," mean 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" mean that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but when 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," mean 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 which does not include a particular option MUST be prepared to interoperate with another implementation which 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 which 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 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 which 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 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 which correspond with both federal laws & regulations and industry best practice cybersecurity controls. These requirements are based primarily on cybersecurity provisions from the *NEVI Formula Program Guidance and the National Electric Vehicle Infrastructure Standards and Requirements (Title 23 CFR Part 680)*[43] and the *National ITS Architecture and Standards (ARC-IT)* conformity requirements from the *Intelligent Transportation System Architecture and Standards (Title 23 CFR Part 940).*[44] The narrative for requirement creation and steps are described herein.

CONTROL MAPPING

A crosswalk mapping all relevant cybersecurity provisions present in the various requirement sources and NIST SP 800-53[45] was created. Primary and secondary requirement sources utilized in this mapping are described below.

PRIMARY

NEVI

In order to address the cybersecurity provisions in *Title 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.*[46]

ARC-IT

Next, the cybersecurity requirements defined in ARC-IT's *Device Class 5 Areas*[47] (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),*[48] which contains relevant third-party information system acquisition and deployment controls for the Payment Card Industry Data Security Standard[49] (PCI DSS) and the Health Insurance Portability Act[50] in order to meet the customer and payment info cybersecurity considerations defined in *Title 23 CFR Part 680.* The PCI DSS and HIPAA controls[51] contained within this statewide policy document were mapped to the applicable NIST SP 800-53 controls.

North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP)

To address the cybersecurity consideration contained within *Title 23 CFR Part 680* defining the security of *Charging-Network-to-Grid Communication*, NERC CIP standards were utilized (*NERC CIP-011-2* "Information Protection" Requirements 1.1 & 1.2)[52] 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*[53] tuned to the *Security Control Baseline* of "High", which was further modified with supplemental controls which were a product of the mapping crosswalk.

CREATION OF REQUIREMENTS

Submission of NIST SP 800-53A Assessment

Title 23 CFR Part 940 pertains to additions of modifications to ITS systems which are funded partly or in whole by the Highway Trust Fund.[54] This requirement was created to fulfill the conformity provisions present in *Title 23 CFR Part 940* as it pertains to ITS conformity requirements with *The National ITS Architecture and Standards* (ARC-IT), of which therein defines "Securing ITS" as a core architectural directive. Fulfillment of the current cybersecurity baseline (Appendix A) covers the physical components with the security class of ARC-*IT's Device Class 5 Areas*.[55]

Fulfillment of Cybersecurity Compliance Controls Table

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

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.*[56] 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. EV CHARGING INFRASTRUCTURE COMPONENTS

This section illustrates the multiple components which comprise electric vehicle charging infrastructure as defined in ARC-IT and 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 which facilitate the charging station's functionality.

Component	Description
Electric Vehicle Charging Station	Provides access to electric vehicle 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.
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 OBE methods such as in-vehicle applications via the EV's IVI. 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.]

ARC-IT

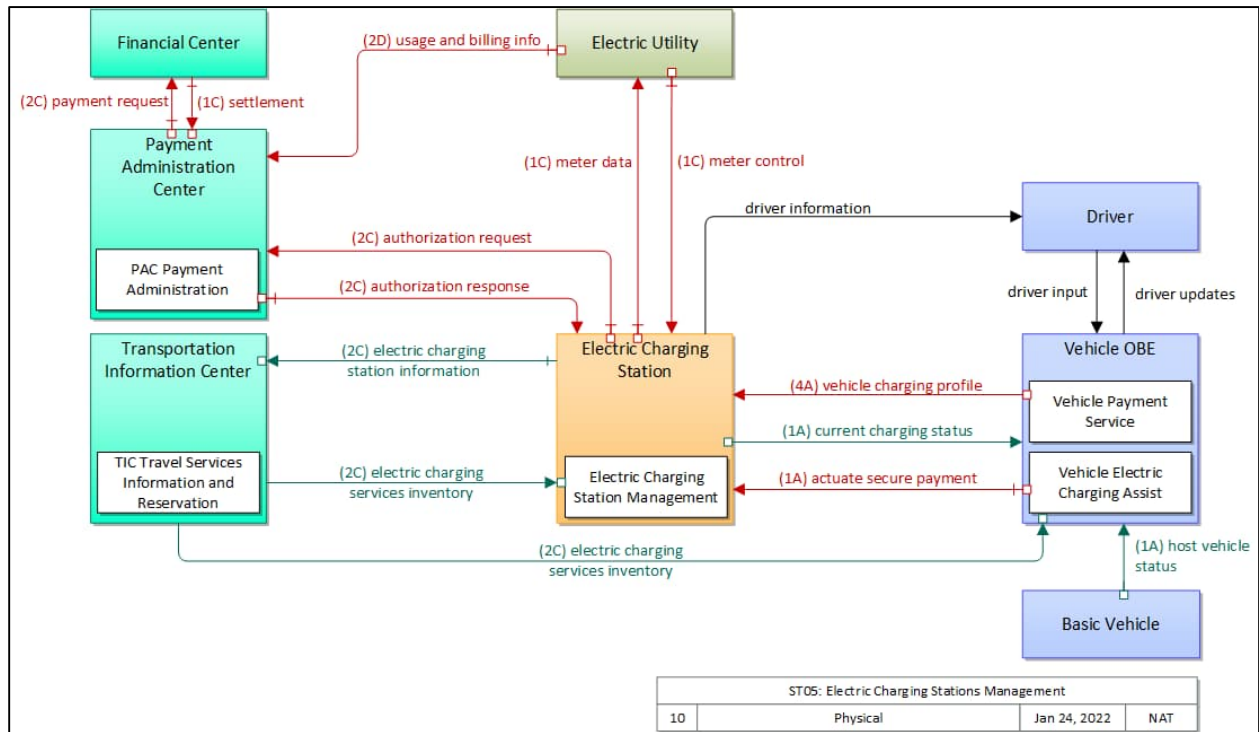*ST05: Electric Charging Stations Management57 – Physical Diagram*

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

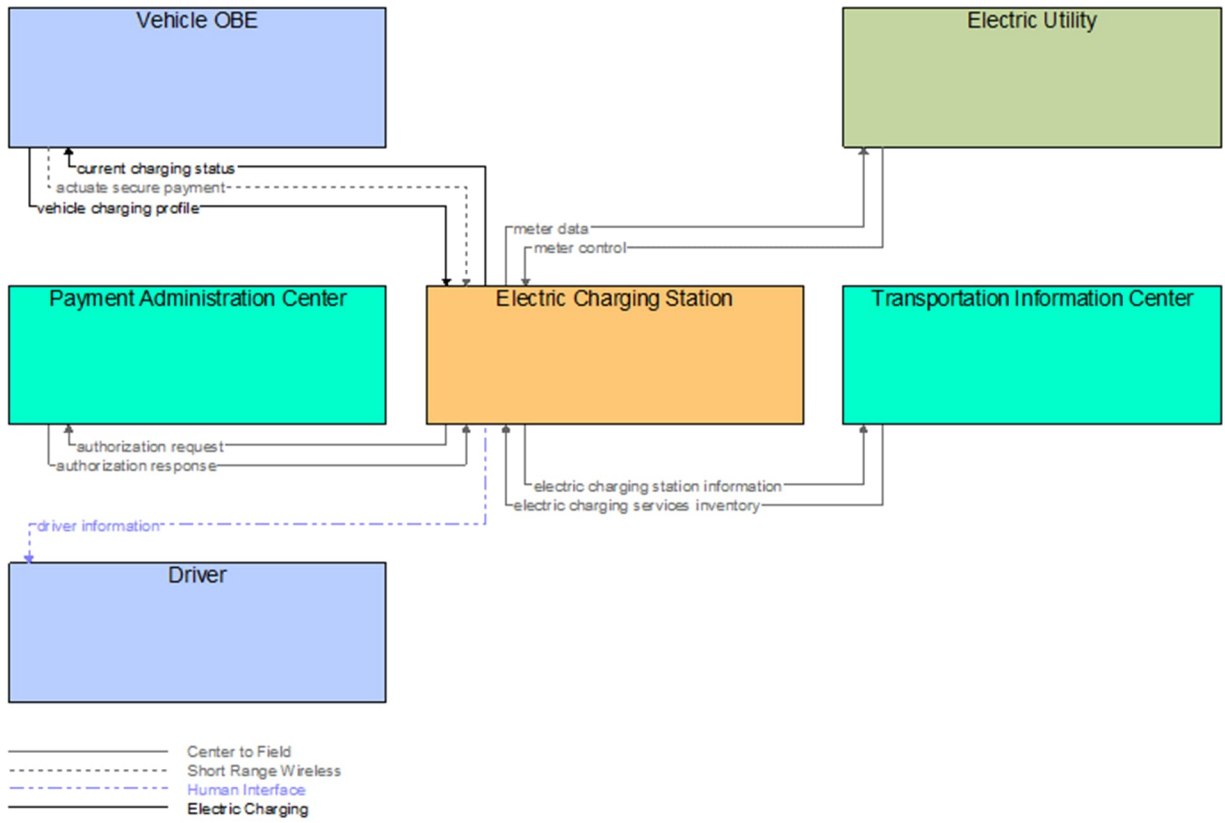*Electric Charging Station – Interfaces Diagram*

Figure E-4-2. ARC-IT Interfaces Diagram – Electric Charging Station
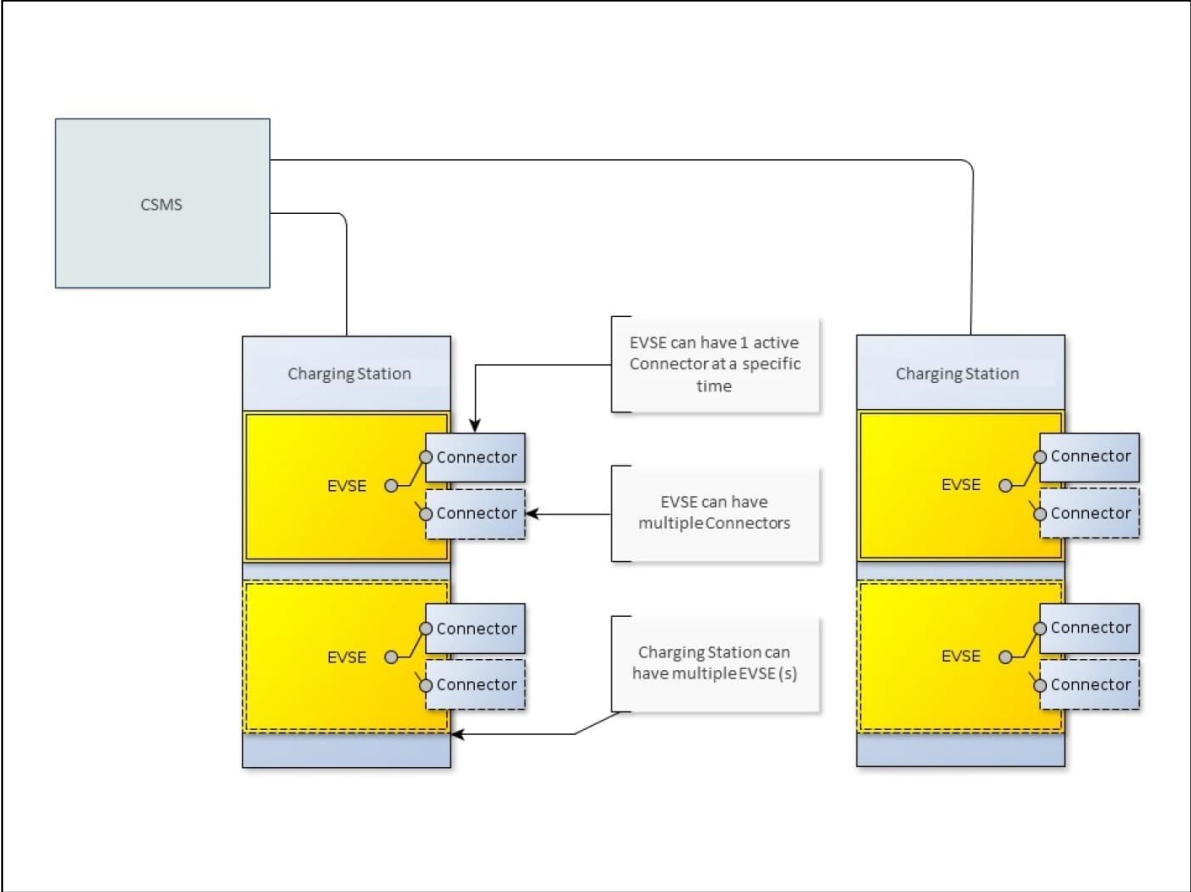
Open Charge Point Protocol

Figure E-4-3. 3-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 (Title 23 CFR 680)*. View *Appendix B* for exact definitions.
- Device Class 5 Areas[58] (security Controls) defined in the *National ITS Architecture Reference/Architecture Reference for Cooperative and Intelligent Transportation* (ARC-IT) for *Electric Charging Station*[59] and *Vehicle Payment Service*.[60] View *Appendix B* for exact definitions.
-

The mandatory cybersecurity requirements are detailed in section *REQUIREMENT SUBMISSION GUIDELINES* below, and steps include:

7. Submission of NIST SP 800-53A Assessment[61]
8. Fulfillment of Cybersecurity Compliance Controls Table
9. Security Testing and Assessment – NISP SP 800-115[62]

- Though these requirements may be addressed in any order, it is RECOMMENDED that the CSO address each requirement in numerical order. By completing step 1 *Submission of NIST SP 800-53A Assessment* first, this significantly expedites step 2 *Fulfillment of Cybersecurity Compliance Controls Table*.
-

REQUIREMENT SUBMISSION GUIDELINES

Submission of NIST SP 800-53A Assessment

The CSO is required to submit the attached *NIST SP 800-53A* assessment spreadsheet, fulfilling each control listed in *Table E-6A-1. Cybersecurity Control Baseline* in Appendix A. Fulfillment of each control must be met for each component as applicable. If a control is deemed as non-applicable for one or more components, then CSO must provide further detail in *Column I – "EXPLANATION & COMMENTS"* of the assessment document. For certain requirements with no present control, the CSO must provide a detailed explanation as to how exactly they are meeting the requirement for each component. While this baseline has been designed to incorporate PCI-DSS required controls outlined in ADOT P8130, the CSO shall be responsible for putting further controls in place as required by the latest version of the PCI DSS for payment systems.

While assessing each control, the CSO MUST annotate in *Column I – "EXPLANATION & COMMENTS"* how each control is applying to each component.

Cybersecurity Compliance Controls Table

Each requirement listed in the Cybersecurity Compliance Controls Table must be addressed and filled out in full by the CSO.

Column/Field Descriptions & Requirements

Cybersecurity Compliance Controls Table Columns	
Column	Description
#	Numeric identifier of each requirement.
Requirement	The stated cybersecurity requirement which must be met by the CSO.
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 If one of 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's non-applicable. This explanation must be provided in the column titled "Compliance Description" on how they are to meet said requirement. The CSO may also add listed component codes to this cell which weren't 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 X in the sub-column: - 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. - Plan to address compliance for the relevant requirement item.

- Any components which 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 which 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 information or description needs which the CSO must address in their entry.

Cybersecurity Compliance Controls Table

#	Requirement	Initial Control Baseline	Comp. Code	Compliance Status Yes No	Compliance Description
1	Ensure contactless remote payment methods are secure.	NIST SP 800-53 Control Numbers: AC-4;AC-10;AC-25;CA-2;CA-7;CA-8;PE-3;PL-8;PM-4;RA-3;RA-5;SA-3;SA-4SA-5;SA-8;SA-10;SA-11;SA-15;SA-17;SC-7;SI-2;SI-3:SI-4;SI-5;SI-12; SI-13; SI-14; SI-16; SI-17;SR-2;SR-3;SR-4;SR-5:SR-6;SR-7;SR-8;SR-9;SR-10	CS; MS; PS; PA		A detailed plan shall be provided that addresses how contactless payment methods will be 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 SCC.
2	Physical security strategies to address EV charging station tampering and unauthorized access.	NIST SP 800-53 Control Numbers: PE-1;PE-2;PE-3;PE-4;PE-5;PE-6;PE-8;PE-9;PE-10;PE-11;PE-12;PE-13;PE-14;PE-15;PE-16;PE-17;PE-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 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. | NIST SP 800-53 Control Numbers:

AC-1;AC-2;AC-3;AC-5;AC-6;AC-7;AC-8;AC-10;AC-11;AC-12;AC-14;AC-17;AC-18;AC-19;AC-20;AC-21;AC-22;AU-1;AU-2;AU-3;AU-4;AU-5;AU-6;AU-7;AU-8;AU-9;AU-10;AU-11;AU-12;IA-1;IA-2;IA-3;IA-4;IA-5;IA-6;IA-7;IA-8;IA-11;IA-12;MA-1;MA-2;MA-3;MA-4;MA-5;MA-6;SI-1;SI-2;SI-3;SI-4;SI-5;SI-6;SI-7;SI-8;SI-10;SI-11;SI-12;SI-16;SI-18 | CS;

MS;

PS | A detailed plan shall be provided that addresses user identity and access 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 will 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. | NIST SP 800-53 Control Numbers:

AC-1;AC-2;AC-3;AC-5;AC-6;AC-7;AC-8;AC-10;AC-11;AC-12;AC-14;AC-17;AC-18;AC-19;AC-20;AC-21;AC- | CS;

MS;

PS;

PA | A detailed plan shall be provided that addresses how the charging station will account for and enact secure collection, processing, and retention of personal information strictly necessary to provide charging service. |

22;AT-1;AT-
2;AT-3;AT-
4;AU-1;AU-
2;AU-3;AU-
4;AU-5;AU-
6;AU-7;AU-
8;AU-9;AU-
10;AU-11;AU-
12;CA-1;CA-
2;CA-3;CA-
5;CA-6;CA-
7;CA-8;CA-
9;IR-1;IR-2;IR-
3;IR-4;IR-5;IR-
6;IR-7;IR-
8;MP-1;MP-
2;MP-3;MP-
4;MP-5;MP-
6;MP-7;PL-
1;PL-2;PL-
4;PL-8;PL-
10;PL-11;PM-
3;PM-5;PM-
18;PM-19;PM-
20;PM-21;PM-
22;PM-24;PM-
25;PM-26;PM-
27;PT-2;PT-
3;PT-4;PT-
5;PT-6;SA-
1;SA-2;SA-
3;SA-4;SA-
5;SA-8;SA-
9;SA-10;SA-
11;SA-15;SA-
16;SA-17;SA-
21;SA-22;SI-
1;SI-2;SI-3;SI-
4;SI-5;SI-6;SI-
7;SI-8;SI-10;SI-

		11;SI-12;SI-16;SI-18		
5	Enact *Charger-to-Charger-Network* communications using a secure communication method.	NIST SP 800-53 Control Numbers: SC-1;SC-2;SC-3;SC-4;SC-5;SC-7;SC-8;SC-10;SC-12;SC-13;SC-15;SC-17;SC-18;SC-20;SC-21;SC-22;SC-23;SC-24;SC-28;SC-39	CS; MS	A detailed plan shall be provided that addresses how the charging station will secure communications to its charging network.
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.	NIST SP 800-53 Control Numbers: AC-1;AC-2;AC-3;AC-5;AC-6;AC-7;AC-8;AC-10;AC-11;AC-12;AC-14;AC-17;AC-18;AC-19;AC-20;AC-21;AC-22;AU-1;AU-2;AU-3;AU-4;AU-5;AU-6;AU-7;AU-8;AU-9;AU-10;AU-11;AU-12;IA-2;IA-3;IA-4;IA-5;IA-6;IA-7;IA-8;IA-11;IA-12;MA-1;MA-2;MA-3;MA-4;MA-5;MA-6;SC-	CS; MS	A detailed plan shall be provided that addresses how the charging station will secure remote software update receipt and implementation, conducts real-time protocol translations, handles encryption and decryption, enacts authentication and authorization in communications within their charging networks.

		1;SC-2;SC-3;SC-4;SC-5;SC-7;SC-8;SC-10;SC-12;SC-13;SC-15;SC-17;SC-18;SC-20;SC-21;SC-22;SC-23;SC-24;SC-28;SC-39;SI-1;SI-2;SI-3;SI-4;SI-5;SI-6;SI-7;SI-8;SI-10;SI-11;SI-12;SI-16;SI-18		
7	Ensure charging stations and charging networks 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.	NIST SP 800-53 Control Numbers: AC-1;AC-2;AC-3;AC-5;AC-6;AC-7;AC-8;AC-10;AC-11;AC-12;AC-14;AC-17;AC-18;AC-19;AC-20;AC-21;AC-22;SC-1;SC-2;SC-3;SC-4;SC-5;SC-7;SC-8;SC-10;SC-12;SC-13;SC-15;SC-17;SC-18;SC-20;SC-21;SC-22;SC-23;SC-24;SC-28;SC-39	CS; MS	A detailed plan shall be provided that addresses how the charging station securely measures, stores, communicates, and reports required information within their charging networks.
8	Ensure charging stations utilize appropriate cybersecurity use cases	OCPP v2.0.1 Part 2 – Section A2	CS	List and provide detail here regarding which applicable use cases and

	and requirements in their communications with any charging network provider.	"*Use cases & Requirements*"		requirements are fulfilled and how. Additionally, list and provide detail regarding which use cases and requirements are deemed non-applicable to your charging station system.
9	Ensure charging stations are designed to securely switch charging network providers without any changes to hardware.	N/A	CS; MS	A detailed plan shall be provided that addresses the design strategy for securely switching charging network providers without any changes to hardware.
10	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.	N/A	CS; MS; PS	A detailed plan shall be provided that addresses how the charging network will enable utilization of a single credential for EV operators to charge at charging stations that are a member of multiple charging networks.
11	Ensure charging networks are capable of secure communication with electric utilities, other energy providers, or local energy management systems.	NIST SP 800-53 Control Numbers: SI-1; SI-2;SI-3;SI-4;SI-5;SI-6;SI-7;SI-8;SI-10;SI-11;SI-12;SI-16;SI-18;SR-1;SR-2;SR-3;SR-5;SR-6;SR-8;SR-9;SR-10;SR-11;SR-12	CS; MS	A detailed plan shall be provided that addresses how the charging network will secure its communication with electric utilities, energy providers, and local energy management systems.

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 cyber-attack methodologies. NIST SP 800-115 shall be utilized by 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., OSCP, PNPT, 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*,[63] 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 Security Standards Council (SCC) certified Quality Security Assessor (QSA) 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.

CSO SHALL also actively monitor and react to threat intelligence (including new CVEs and ICS-CERT 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.

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 *Title 23 CFR Part 680*, *Title 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 Logon 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)

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
AC-20	Use of External Systems	AC-20 (1) (2)
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		

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
CA-1	Policy and Procedures	CA-1
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)

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
CP-3	Contingency Training	CP-3 (1)
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
PII Processing and Transparency		
PT-2	Authority to Process Personally Identifiable Information	PT-2

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
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
SA-11	Developer Testing and Evaluation	SA-11

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
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
SC-18	Mobile Code	SC-18
SC-20	Secure Name/address Resolution Service (authoritative Source)	SC-20

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
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
SI-12	Information Management and Retention	SI-12
SI-16	Memory Protection	SI-16
SI-18	Personally Identifiable Information Quality Operations	SI-18

CYBERSECURITY CONTROL BASELINE		
Control Number	Control Name	Initial Control Baselines
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.

The National Electric Vehicle Infrastructure (NEVI) 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 (NEVI) Formula Program – NEVI Formula Program Guidance and the National Electric Vehicle Infrastructure Standards and Requirements - 23 C.F.R. § 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 (ARC-IT)

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

Note: Some comments have been edited to remove identifiable information.

Table E – 1: Online Comments Received from 2023 Form

#	Timestamp	Comment(s):	ZIP Code
1	2023/07/12 10:54:47 PM MDT	How will EV drivers be taxed so that the drivers of these vehicle only are held responsible for the addition financial burden to the states citizens and not the rest of us who cannot afford one of these luxury vehicle ?	85297
2	2023/07/13 10:21:17 AM MDT	Please create this corridor as a hybrid owner the only reason I don't have fully electric vehicles is because of the lack of chargers in az highways	85225
3	2023/07/13 8:52:01 PM MDT	The plan is excellent. thank you	85212
4	2023/07/14 10:32:48 AM MDT	I think this is great as we transition to EV's and away from fossil fuels the more chargers that are available the better for everyone.	85143
5	2023/07/14 3:04:37 PM MDT	As someone who, at one time, was very reluctant to accept electric vehicles as a viable transportation option, I can say this is an important investment in what the people want. Whether it is for environmental responsibility (however dubious that may be) or for the myriad of benefits electric vehicles offer, more and more people are adopting electric vehicles. The well travelled corridors are already populated with chargers, so I am glad to see these lesser served corridors receiving these infrastructure upgrades.	85086
6	2023/07/15 2:41:27 PM MDT	Don't waste the $$$. EV's are a complete waste of money, time and the environment.	86301
7	2023/07/17 9:45:38 AM MDT	I am totally against spending ANY state money on the "EV Charging Infrastructure Deployment Plan". Gas stations were built with private funding, and allowing public funding for EV charging is not fair, and goes against our free-market system. I oppose spending any of my state tax dollars on this project. I can't do anything about the federal expenditure, because the current regime in Washington is determined to tip the scales in favor of ridiculous EVs. But I do oppose using any state highway right-of-way for such a purpose.	86305
8	2023/07/17 1:15:38 PM MDT	Is the team aware that Ford, GM, Volvo, Rivian, and Mercedes Benz have announced that they are leaving the CCS standard in favor of NACS?	85021
9	2023/07/17 1:24:57 PM MDT	Hello, as you consider the new EV stations to be installed throughout the Arizona highway system please also consider designing and installing an awning or stable covering over these EV charging stations. As a current user of EV charging stations, I've noticed that none have a covering. With the sweltering Arizona heat there is no relief or protection from the sun. This would be much appreciated. Thank you!	85298
10	2023/07/17 1:33:44 PM MDT	The rural communities are still missing critical EV charging infrastructure. The cities and transportation corridors are well covered with charging stations, especially since EV makers are adopting the NACS standard.	85282

		Rural locations we need charging infrastructure: 1) Kayenta 2) Chinle 3) Jacobs Lake 4) Show Low 5) Globe 6) Sierra Vista 7) St. Johns 8) Bisbee	
11	2023/07/17 2:14:20 PM MDT	Yes, build them! But take special care to ensure they are specced for extreme thermal management -- planning the user interface around the angles of the sun, so the screen doesn't fry in the first summer, for example.	85004
12	2023/07/17 3:11:06 PM MDT	You don't need to waste our money on this! You can't maintain rest stop restrooms! Let the gas stations handle the a refueling s a . Electric vehicles are not going to succeed!	85396
13	2023/07/17 4:55:22 PM MDT	I believe that AZ 77 should be included in the 2023 or 2024 plan as well all the way from Tucson to Show Low. Parts of that highway already are included. I drive that route a few times each year and there is always traffic on the road.	85715
14	2023/07/17 5:01:01 PM MDT	You don't need to waste our money on this! You can't maintain rest stop restrooms! Let the gas stations handle the refueling . Electric vehicles are not going to succeed!	85396
15	2023/07/17 6:16:15 PM MDT	We own two EVs and frequently travel through and to Arizona. Please make sure contracts with companies obtaining public funds for charging infrastructure contain both a mandatory completion date and specific requirements for maintaining the equipment. We see dozens of "coming soon" chargers, particularly Francis Energy in New Mexico, that have been coming soon for two years. Between that and chargers that are broken frequently or for weeks at a time EV travel is a challenge.	81147
16	2023/07/17 7:58:02 PM MDT	Please ensure any charging solution adopted uses the NACS standard, as most of the major automotive manufacturers have now adopted this standard. Any other solution would be a waste of taxpayer funds.	85254
17	2023/07/18 12:55:08 PM MDT	We need a charger in Ajo, Az. Ajo is on the route to Rocky Point and hundreds of vehicles drive by each day. Please consider adding Ajo to current plan. Ajo also has many electrical vehicles owned by businesses and residents.	85321
18	2023/07/18 3:10:48 PM MDT	The thing is in adding so many stations so close, is it could really wreck the wild feel of the state. It would be horrible of every station suddenly is circle k, starbucks and McDonalds. Each charging station should be as blended in the natural surroundings as possible. Should be no eye sores and no litter. In fact how about helping our state do a better job about litter. over the past 15 years Az has been terrible about making sure litter is not a problem. Also concerned about the land footprint of each station. So many want to just pave over our state with wall to wall city. These stations have high probability of making tons of development to spring up near them. This needs to be ban, and	85029

		the charging footprint should be as minimal as possible. With tons of native and natural vegetation added to ensure they look blended into their surroundings.	
19	2023/07/18 7:40:14 PM MDT	I believe US-160 should be moved to the 2023 EV plan.	86005
20	2023/07/18 7:42:42 PM MDT	Is funding available to government entities	85365
21	2023/07/18 7:45:35 PM MDT	Was any part of the 22/early 23 plans approved? Or were they withdrawn for this current 2023 plan?	85747
22	2023/07/18 8:33:45 PM MDT	[Name] here with [Organization]. I want to thank ADOT for opportunities to provide input on the NEVI plans. Our volunteer force of veterans and military families attended many of the in person events. What will ADOT do to make sure there's a transparent process and in the public interest for the public-private partnerships associated with this plan?	85003
23	2023/07/18 8:33:46 PM MDT	Was any part of the 22/early 23 plans approved? Or were they withdrawn/not sent for this current 2023 plan? Has ADOT actually received any RFPs from EV Charing Providers yet?	85747
24	2023/07/18 8:39:50 PM MDT	Will the EVSE be designed and made of materials that prevent rodent/ wildlife damage? Can EVSE be placed at Casinos? Can the EVSE screens be designed to be easy to see the instructions in our bright AZ sun and made of glass/ substrate that will prevent graffiti damage where the instructions cannot be read?	85648
25	2023/07/19 10:52:18 AM MDT	I own an electric vehicle and I am in favor of adding electric vehicle charging stations throughout Arizona. However, I live in SaddleBrooke, Arizona and there are no electric charging stations on my route to visit my sister in Pinetop, Arizona. There isn't even one in Show Low, Arizona. Arizona is a long way off from other states providing electric vehicle charging stations so I am disappointed in this plan to only add charging stations primarily on major freeways in the state.	85739
26	2023/07/19 7:02:44 PM MDT	Fast charging in Arizona needs to focus on rural highways and a focus on all charging sites having a pull through for trailers. Sunrise ski resort, lake Powell, lake Havasu and more need to have a focused effort to place fast chargers there.	85212
27	2023/07/20 12:31:42 AM MDT	I don't think any ev stations are the answer and are a waste of tax payer money there are not enough driver to even off set the spending of this. In all honesty there should be more farm lands or more trees near our interstates. If you look at the bread basket of our country when corn or any crop it produces a ton of o2 and eats up carbon. Even with this ev station you are not off setting and global climate you are still producing green house gases with ev station it is a load of crap that yall are spinning it is still coming from the same place every one gets their power from so it isn't self sustaining so it is doing nothing to save the planet. Also these batteries of these cars are more pollutant than our gas power vehicles. Your agenda is flawed and no one wants your stations and people don't want to pay for them. How about fix the damn roads first that's a novel idea and plant dome trees. Thanks for agenda and wasting our money. Way to not listen to the majority	85041

		of the people in your state. You are all not think about tue people but your stupid agenda that no one wants. And who the is this mayor or governor that no one has ever heard of and never had a clue of what to do. This is how we show how we are as a state. It is pretty sad. How about use yalls common sense for once get what we need fixed then maybe consider these ev stations when the time has come for them. Now is not the time. I would like to know where there is a petition or way to voice and help strike down this awful idea and blast whose it was. You are not helping out with anything with these things just making it worse and you don't care. That's the issue. Fix what needs fixed before you go on to do something else that's gonna be a failure. There been one installed by my area and it has no one using it everytime i drive by and im on the road all day. What a waste money, and time and breath we have to deal with this garbage. When can we finally get a person with some sense to get done around here yall have been nothing but a joke. It is sad that everything is politicized and not to help out the people but you make things worse. Grow the up and get some common sense. Your green push is and no one wants it unless there is a good plan but there isnt one. You cant fix what the issues are now infront of you so stop the and handle what you fail to promise from before. Main thing is fix the roads you pompous before you spend our money on anything else	
28	2023/07/20 12:00:30 PM MDT	Hello, Thank you for the recent presentation. Can you clarify how the funding will be deployed? It sounded like there will only be one or a limited amount of people awarded for 50+ sites. Does this mean 1 or 2 companies have to own/build all of the AZ DOT sites? I have plans submitted to develop 2.5 acres on I-40 & 95 that will include multiple DCFC and will be using my own contractor that has extensive experience with EV Charging installation. What is the best way for me to qualify for funding to assist with this build-out?	92705
29	2023/07/20 12:06:44 PM MDT	Can you be a resource to where the new fast chargers are located, and if they are Testla fast chargers or the other chargers. Also how many of each type are installed. Thank you	85020
30	2023/07/20 12:09:27 PM MDT	I assume ADOT will require the NACS plug?	85262
31	2023/07/20 12:12:56 PM MDT	PLEASE install (fast) charging stations on I-17 between Phoenix and Flagstaff!!!!	85259
32	2023/07/20 12:25:05 PM MDT	Of critical IMPORTANCE as you develop Charging Facilities around Arizona should be the Knowledge that Right Now GM, FORD, Mercedes and others Have already agreed univerally to ALL Use the TESLA re-charge Connector as the National Standard. Also surprisingly there are NO existing Public Quick Charge facilities located ANYWHERE in Prescott or Prescott Valley, THE Geographic Center of the State with an AREA Metro Population exceeding 250,000 + FYI I own and drive an EV and have to fast charge at home due to NO PUBLIC Charging available period. Tourist and Travel Promoters CLAIM there are over 150 EV charger locations around Prescott. FACT is they are ALL ONLY End Destination, SLOW Chargers On Site for the exclusive use of their Hotel Guests ONLY to SLOW Charge OVER-Night. Please Feel free to Contact me	86303

		anytime if can assist as an EV owner, entrepanuer, retired Fire Inspector or other info resource. Thanks for keeping Arizona Moving Forward	
33	2023/07/20 12:34:17 PM MDT	With most manufactures changing to the NACS from CCS, will AZ also pivot to ensure that funds are not going to a outdated standard?	85045
34	2023/07/20 12:57:00 PM MDT	Please don't limit stations to 150 kw. Some need to be 350 kw.	85142
35	2023/07/20 1:27:51 PM MDT	During the RFP process, please include expansion options. Every site will eventually need to be expanded for new and more chargers as technology progresses. Please keep in mind those that are excited to be towing in an EV. For this we need pull-through charging as you would expect to see at a traditional fueling center. Finally, please try to include accommodations, restrooms with a/c security lighting and cameras, etc.	85041
36	2023/07/20 1:43:07 PM MDT	Implementing fast (level 3) charging accessible by all charging protocols (NAS vs CCS) along the interstate highways and high-traffic sections of the 101 and 202 loops will significantly improve the charging infrastructure for the valley. The main need for fast charging for my personal use would be to enable more convenient road trips from Phoenix to Tucson, California, and northern Arizona. At the moment, the non-Tesla charging options have poor reliability making it difficult to plan a road trip. The Electrify America fast chargers add a long of range anxiety since they often have issues.	85225
37	2023/07/20 2:13:17 PM MDT	This is goverment overreach in forcing others whom KNOW this is a Technology with a limited future ,using our Taxpayer monies to finance for the few elite this program. These " E " vehicles are more costly to the enviroment than the tried and true technology of internal combustion vehicles. This is just another solution looking for a problem . This is an instance where the private sector should be deciding upon , not by mandate of the Federal and State governments.Doesn't seem the Private sector is beating down the doors to get into the business of building Charging Stations does it ? Neither should the Taxpayer funded Department of Transportation.. The cost to us taxpayer is beyond the pale and it is time these sort of actions by the Federal Government STOP ! The search for these Rare Earth minerals which are required for this tecnology is actually more destructive upon the earths environment than the footprint for the Petroluem industry it attempts to replace , again by government mandate. I liken it to the issue of strip mining in the United States 50 years past. But of course the ELITIST of America have no problem with the extreme damage it does enviromentally as it is done outta sight out of mind in other countries .. I for one am tired of Government spending my tax dollars on such foolishness driven by a mere small minority < 0.05 % of the populous. You folks at the National D.O.T. as well as the States D.O.T's . are just one more example of Bloated , Bullying , Goverment agencies	86442

		which need to be Defunded and replaced with an agency which works for , rather than against the TAXPAYERs of these UNITED STATES . This issue which these Electric Vehicles are aimed at Curbing is a "non-issue". At least to those of us whom Worship GOD our Creator and know our Bible. Human Caused Global Climate Change is a Fallacy. The Climate changes yes, as it is a dynamic, never static force of GOD ! It is called WEATHER . Man is so filled with his own perverted VANITY to even think he can control GOD's Creation. We are given to Delusion. I say get out of the business of mandating THIS Technology... If it is so great , well then allow the private sector to build out these charging stations and get my taxpayer funds out of it.	
38	2023/07/20 4:00:10 PM MDT	Are you working with Tesla directly to coordinate their plans of adding Tesla Chargers in AZ?	85338
39	2023/07/20 5:22:55 PM MDT	I think each EV charging station should be required to display the current generation source of the electric energy being provided; ie.: Wind, Solar, Coal, Diesel, Nuclear, Hydro, etc.	86326
40	2023/07/20 5:39:10 PM MDT	Please STOP this nonsense! NO taxpayer funds should ever be spent on Electric Vehicle Charging or any other special needs of any kind. If someone wants an electric vehicle they need to deal with all that it involves. I want to know what is wrong with ADOT to even consider using taxpayer funds for such a small group of users.	86404
41	2023/07/20 6:13:40 PM MDT	How has the recent adoption of NACS by GM and Ford to go along with the massive number of Teslas on the road impacted the plans for charger rollout? Will the new sites include both NACS and CCS DCFC plugs?	85249
42	2023/07/20 6:23:24 PM MDT	Move Highway 60 that goes through Globe up to the 2023 EV Plan. This highway and Globe are a major east-west corridor and requires ev charging stations.	85501
43	2023/07/20 6:27:08 PM MDT	Highway 60 going through Globe has to be moved up into the 2023 EV Plan. The highway and Globe are major travel ways through Arizona and require ev charging stations.	85502
44	2023/07/20 6:38:34 PM MDT	The City of Globe and Highway 60 going through Globe should be in the 2023 EV Plan. This is a major corridor and requires ev charging stations.	85501
45	2023/07/20 6:44:36 PM MDT	Put Highway 60 and the City of Globe into the 2023 EV Plan. This corridor requires ev charging stations.	85501
46	2023/07/20 8:34:48 PM MDT	Since deploying these sites is costly and we are not at the point where we can have 20 plus charging plugs for DC fast charging at each location, at least outside of the Tesla charging network, wouldn't it be a good idea to ask charging providers to opt for smarter power distribution at their sites like how Kempower does it in Europe? It's a little frustrating as an EV driver to have to worry about what charging stall I'm plugging into. Not everyone is educated on the difference between 400V to 800V cars, and 150kw and 350kw charging stalls. This is a challenge as I've ran into drivers who misuse the charging stalls not knowing any better, or some just plug into whatever is available out of convenience. I would hope that by deploying balanced charging points, this would	85301

		move the headache from the driver to some machine on site that decides how to allocate power as it is needed. Also, this may have been touched on already, but any plans for NACS support when it becomes an SAE standard at these new and existing charging sites as part of this deployment?	
47	2023/07/21 7:44:40 AM MDT	I think service stations should be paying for this. Not the government.	86432
48	2023/07/21 9:39:42 AM MDT	ADOT needs to charge Electric Vehicle owners road tax before NOW. Stop using taxpayer money for this ridiculous plan. ADOT needs to repair the bad roads before anything else.	86404
49	2023/07/21 10:05:58 AM MDT	I'm wondering what the plan is to make charging stations available to apartment and condo dwellers many of whom don't have the luxury of having a personal garage in which to install EV charging equipment? I feel that apartment and condo dwellers are getting left behind in this absolutely essential effort to move our country away from the burning of the planet killing fossil fuels that threaten the survival of humanity.	85255
50	2023/07/21 11:56:10 AM MDT	With the NACS standard becoming the dominant standard and other states have started creating a requirement for it, will AZ follow suit?	85233
51	2023/07/22 8:58:49 AM MDT	The 2023 update looks great, thanks ADOT! My only suggestion would be to prioritize charging on Highway 93 between Kingman and Wickenburg. That stretch has limited cell service and I personally have had several close calls on whether I would make it to a charger. Lastly, I appreciate that ADOT is being cognizant of the NACS transition that the EV industry is currently undergoing. It appears as though CCS might be phased out by most (if not all) auto manufacturers by 2025, so having the foresight to 'future proof' these chargers is admirable.	85050
52	2023/07/23 11:10:29 AM MDT	I am pleased to see the plans including some smaller highways in the '24 and '25 implementation, but I'd love to see expansion of those plans on the east side of the state to ease transportation between Tucson, Cochise, and the northeastern cities like Chinle and Alpine	85719
53	2023/07/23 4:03:21 PM MDT	I just read my updated terms of use for Electrify America and I noticed you have to be 18 to accept. Wouldnt that preclude them from being a provider for Arizonas program since many drivers may be 16 or 17?	85382
54	2023/07/24 9:22:28 AM MDT	I'd love to see more NACS charging ports along highways and in more rural areas now that the majority of the auto industry is moving toward that connector.	85305
55	2023/07/24 9:23:56 AM MDT	In the interest of fairness and equity we ask that you mandate a set-aside for minority and woman owned business participation in the deployment, installation, construction and on-going maintenance of these projects. Please require either WBENC or WOSB certification for participation by women owned businesses.	75254
56	2023/07/24 9:26:55 AM MDT	Can you add SR-95 between the Needle Bridge and SR-68? There is a lot of traffic that goes between the State Line and Bullhead City.	86426
57	2023/07/24 9:27:00 AM MDT	sufficient, accessible EV charging needs to be available off major highways such as I-10, I-19 & I-17. It would be great to have EV	85718

		charging available midway between Tucson and Phoenix	
58	2023/07/24 9:28:35 AM MDT	We need to get on this ASAP. The trip between PHX and California is terrible with backed up or unworkable chargers. Flag to California is also terrible. The EA station in flag is too small and poorly designed. The situation is unacceptable now, in a year it will be ridiculous, need to speed this up, other states are already allocating funds.	85257
59	2023/07/24 9:28:54 AM MDT	The addition of the Hwy 87 and 260 corridors is fantastic because there are very few charging options along those routes.	85048
60	2023/07/24 9:29:20 AM MDT	I am in favor of the proposed ev charging station plan.	85339
61	2023/07/24 9:29:48 AM MDT	I would suggest the standardization of NACS due to automakers announcing the commitment to switch instead of CCS, or a hybrid of the two to accommodate new and existing cars. Thank you!	85262
62	2023/07/24 9:30:14 AM MDT	Plan looks adequate. I support it and timing rollout.	85749
63	2023/07/24 9:31:03 AM MDT	Will there be more chargers (that aren't Tesla) provided along the I-10, I-17, SR 51 etc. at certain intervals? I see I-10 was 2023-2024, I haven't seen much being done, when will this actually begin?	85338
64	2023/07/24 9:32:36 AM MDT	Add chargers at Kayenta. These would serve highway 163 North to Monteceillo and highway 160 North/East to Cortez. Note: We have a Tesla due to lack of charging @/near Kayenta; we drive from Kingman to Gallup & then north to Cortez - approximately 50 miles longer.	86401
65	2023/07/24 9:32:50 AM MDT	The current plan is supporting the needs of EV road trips.	85044
66	2023/07/24 9:34:34 AM MDT	There should be additional consideration on the timing of placing EV charging stations on Highway 95 running through Bullhead City AZ. This is an important roadway with broad-based state/regional tourism and other economic implications. It is also important to note, currently, there are no charging stations along this route. Tourist frequently travel the route to enjoy the river and other outdoor activities in the area. Adding additional charging stations is an opportunity to further capitalize on out of state tourism revenue, will adding to the tax base for Arizona. This route should be moved up in the instillation planning with a focus on 2023/2024 funding.	86442
67	2023/07/24 9:39:00 AM MDT	U.S. 93 between Phoenix and Kingman should be prioritized before SR 87 / SR 260 from Phoenix to Show Low because there is already an Electrify America fast charger operating in Payson however there is not yet any fast charging for non-Teslas between Phoenix and Kingman.	85338
68	2023/07/24 9:39:06 AM MDT	I truly believe that the corridor for SR 93 from Phoenix to Kingman needs a higher priority than some of the other routes. Efficiency it updating the shortest distance between 2 points first that is well underserved, then fill in the gaps on routes that already have coverage. By my estimates standard non-tesla chargers on this route have a gap of approximately 185 miles as it stands today. All other routes have coverage between every 80-90 miles. Seems like	85044

		SR 93 between Phoenix and Kingman should have been addressed first for those travelers going between Phoenix and Las Vegas.	
69	2023/07/24 9:39:07 AM MDT	The plan update should address the NACS connector because it is becoming widely adopted by the auto OEMs. Because NACS is not an official standard issued by a recognized standards development organization (SDO) such as SAE, NACS should not be mandated today. However, stations not having NACS in the near future will be functionally obsolete with respect to NACS-equipped vehicles. Therefore, NEVI funding recipients should be required to have NACS connectors on any new installations no later than 12 months after SAE adopts the NACS standard and UL has a certification process in place.	89451
70	2023/07/24 9:40:06 AM MDT	Please add a charger between Phoenix and Kingman	85224
71	2023/07/24 9:42:04 AM MDT	The plan is on the correct path. More CCS chargers at each location is key. Presently most charging stations only have four terminals, which causes back ups, and long delays. On a recent trip to California, I had to wait three hours to complete my charge in Quartzsite at the Electrify America charging station.	85746
72	2023/07/24 9:43:14 AM MDT	Please put more EV charging stations for people traveling out of Tucson!	85748
73	2023/07/24 9:43:16 AM MDT	I don't think the government and my tax money should be involved in creating businesses or in providing ev charging stations. If this is to be a viable alternative mode of transportation free enterprise will rise to provide those services. Already established gas stations could add a charging station to shore up what will be lagging income one day. Don't force this down our throats. The struggling workers Can't afford to replace their autos with ev. The others don't need the government's help.	86004
74	2023/07/24 9:44:42 AM MDT	Please consider adding highway 87 from Payson to Winslow	86047
75	2023/07/24 9:46:02 AM MDT	I support the plan as shown. I have owned two EV's the last six years and could never take it anywhere but along the interstate system, and even then it was iffy. This past weekend I drove to my cabin in Pinetop and with chargers now in Payson and Show Low made this trip possible. Each time I stopped at those locations, multiple vehicles were there. Thank you!	85044
76	2023/07/24 9:47:15 AM MDT	See no survey at all	86004
77	2023/07/24 9:48:41 AM MDT	I'm glad you are addressing US 93 from Wickenburg to Kingman	85308
78	2023/07/24 9:51:54 AM MDT	As an ev driver, I look forward to connectable, serviceable, available fast charging stations to ultimately be at every or most highway intersections and most smaller towns. Where you would expect gas stations today. The goal of at least every 50 - 75 miles is reasonable. I would hope that the 2024 proposals can make the 2023 implementation - the sooner I can hit the road in my newest car. Thank you	85365

79	2023/07/24 9:57:32 AM MDT	Most important is to provide shade, right up there with reliability.	85396
80	2023/07/24 9:57:45 AM MDT	This is very good for our environments and for us all. I will suggest all homes/living areas be given the opportunity to add EV charging stations with lower cost or no cost. This will encourage involvement and a good conversation in communities.	85142
81	2023/07/24 9:57:49 AM MDT	Quartzsite needs a lot more CCS DCFC. The 4 chargers there are woefully inadequate for current and future volume of traffic. Tesla by contrast has 30+ chargers there.	85383
82	2023/07/24 10:01:10 AM MDT	We love the additional highways you Re adding. Also is there anyway you could get one of the new DCFC UNITS installed at a ADOT office or otger public location so drivers can try it and see how it works forbilling and the many different cars?	85225
83	2023/07/24 10:06:17 AM MDT	I own approximately 4 acres at Interstate 40 and Hwy 95 in Lake Havasu City, Arizona and would like to build an electric truck charging station for Class 8 vehicles. Not certain if this type of charging station is involved in the Electric vehicle charging infrastructure deployment plan. This would be a MegaWatt charging station, with 24 hour truck parking.	86406
84	2023/07/24 10:09:03 AM MDT	You are ignoring the entire US 60 Corridor.	85539
85	2023/07/24 10:11:12 AM MDT	This is a 100% complete waste of taxpayer money. The only reason AZ is doing this is that the federal government is providing the funding and AZ doesn't want to turn down "free money". Get a life!!!	86336
86	2023/07/24 10:13:51 AM MDT	Are all devices DC Fast Chargers?	89011
87	2023/07/24 10:14:08 AM MDT	looks like good coverage. perhaps another station in Phx - area (so populated there).. aound Glendale? and perhaps another in the S. Tucson - by Airport area or the Kino parkway I-19 area?	85737
88	2023/07/24 10:15:24 AM MDT	A lot of great information was shared, and I'm appreciative this online presentation was available to the public. I look forward to future presentations discussing renewable energy's implementation at specific DCFC sites.	85388
89	2023/07/24 10:15:58 AM MDT	Why are you wasting our tax dollars? Our systems can barely handle the homes and businesses we power. I am sick of the brown outs destroying my appliances, so goody lets make it worse by adding in charging stations. Stop the insanity, EV are not sustainable and there is no such thing as green energy!	85142
90	2023/07/24 10:16:09 AM MDT	Would like to see a greater focus on equity, per the overall goals of NEVI and the state.	86001
91	2023/07/24 10:16:22 AM MDT	I would like to see as many super-ultra-fast chargers as possible along your proposed routes. When traveling, it would be nice to be able to charge up in 20 minutes rather than 1 hour (level 3) or 7 hours (level 2). The fastest chargers I have seen from Electrify America are the "Hyper Fast 350kW". I'm sure each company has a different name for their different charger levels, but I will only use these when traveling, so would like to charge as quickly as possible. Thank you.	87577
92	2023/07/24 10:16:29 AM MDT	I just want to say thank you for the transparency on the state's NEVI program plan and i'm excited about what's on the horizon. I wish other states of personal interest were at the level of	85338

		engagement and transparency ADOT is at. Looking forward to seeing the first round of chargers by end of next year! I can't wait to take my family roadtripping across the state and country in our EV!	
93	2023/07/24 10:16:52 AM MDT	I'm working on getting a solar farm going along Highway 160 [Specific Location] in Mexican Water, AZ and would like a charging station installed to.	86514
94	2023/07/24 10:17:26 AM MDT	Only electric vehicle owners should be paying for the construction and maintenance of charging stations.	85715
95	2023/07/24 10:17:58 AM MDT	Why are we still not including the highway between Payson and Holbrook to I-40? This would be 260 to 277 to 377 into Holbrook.	85284
96	2023/07/24 10:18:03 AM MDT	It is baffling to me that the speaker of this plan have never driven or plugged in an EV. I challenge all of you to do so	85086
97	2023/07/24 10:24:33 AM MDT	I fully understand that this was a specific survey, funded by the Federal government, and specific to electric vehicle charging station locations. HOWEVER, it fails to deal with other BETTER (or potentially better) technologies for reducing CO2. Are these same locations going to be available for Green Hydrogen powered vehicles? A brand new electric vehicle, for example a Tesla Model 3, starts out with a CO2 deficit - that is it requires MORE CO2 to produce than a typical gasoline powered vehicle due the the production of batteries and motors with exotic metals; according to Bjorn Lomborg, a climate researcher, a Tesla Model 3 will not produce a net CO2 improvement over an equivalent gasoline vehicle until it is in use for more than eleven (11) years!! Compare that to a Green Hydrogen vehicle, which starts out with NO CO2 deficit and immediately benefit the climate/environment. Why is ADOT helping the Federal government to chose one technology over another? If you want to reduce CO2, tax it, and let the market decide how to resolve the issue (i.e. which technologies are best) -- this is another Bjorn Lomborg idea.	85212
98	2023/07/24 10:32:02 AM MDT	I have been attending the ADOT zoom meetings and following the program's progress. I would like to see the program succeed; however it appears ADOT may be missing or downplaying a couple significant aspects of the program. The user interface to the charging infrastructure is as important, if not more important, than the actual installation of the charging stations. It appears ADOT is approaching the user interface as an afterthought. Whereas it should have its requirements defined, and probably high-level design, to be included in the RFP. Without a common interface across all vendor's stations, users will not be happy. Fixing the problem after the fact would be challenging. The need for the EV driver is to be able to plan their long-distance trip knowing where charge stations are located, but also near real time information as to number of chargers available at each station. If users need to check multiple vendor apps to glean this information, there will be a lot of complaining. At a minimum there needs to be one app showing all charging stations, total number of chargers at each location and the number currently available. The application should be available on both Apple and Android phones and allow vehicle manufacturers to integrate it	85928

		into their vehicle software. Tesla's current app is a good example of what is needed. The companies bidding on the charging station RFP need to understand this requirement is detail and explain how they will address it. This can significantly effect their cost/price. As to who would build the application, it should be at a national level, but at a minimum the state level and coordinate with other states. A significant challenge for the application developer is to bring competing companies together onto the single platform. The best approach is to establish the interfacing requirements up front, in the RFP, requiring the bidders to address in their solution. As a point of reference to validate my above comment ... I have been driving EVs (tesla and other) for 10 years. I have also run software development programs from small projects of a million dollars to tens of millions of dollars, including bringing competing companies together onto one project. I would be happy to talk to the appropriate person with suggestions as to how to address. A second concern, which I do not hear much about being addressed is the lack of standardization with the location of the charge ports on EVs, and how charging stations will address. Although ICE vehicles are not standard on the location of the fuel door, there is no issue since gas pumps are pull through from either direction. Currently, nearly all EV fast chargers are parking spaces perpendicular to the charging cord (few pull throughs). This is an issue. For example, all Tesla vehicles have their charge port on the left rear corner of the car. Tesla DC charging stations are designed specifically for Tesla's charge port location with a short cord. Tesla charge stations are designed to back the car into the parking spot and use the charger next to the left rear. This is a problem for other manufacturers vehicles which place the charge port in another location. For example, the Ford F150 Lightning must parallel park across 2-3 charge stations to use a tesla charger. Other vehicles must park in one spot but use the charging cord from the adjacent parking spot. The RFP needs present the situation and require the bidders to address. One solution is to have some rather long cables, but this presents other concerns and costs. I see some other challenges which I am not hearing addressed, but these are the big two.	
99	2023/07/24 10:34:21 AM MDT	Too long. Accelerate deployment to complete by end of 2024.	85750
100	2023/07/24 10:35:35 AM MDT	I don't want to see more of my tax dollars wasted on EV infrastructure.	85086
101	2023/07/24 10:35:59 AM MDT	Thank you for this opportunity. I've been an EV owner now going on 7 years. I would like to address the issues of quality control and maintenance of DCFC. I'm retired and travel 30k per year. It's come to my attention in the last 18 months not just Arizona but all the western states a horrible issue with maintenance and repairs. In my time at chargers I have talked to repair technicians and	86413

		manufacturers of chargers at the site. They all agree the manufacturer has a greater understanding of troubleshooting an issue. Getting parts can take up to a month at some locations. This is were I would like to make a suggestion. AZDOT has the ability to Store replacement parts closer to the charger unit than does the operator or manufacturer. Instead of master warehouse in Phoenix there could be 6 areas where parts are located nearer the chargers. Meaning the repair could be hours instead of days. Uptime is critical for these chargers as demand increases. Thank you for your time. Sincerely [Name]	
102	2023/07/24 10:39:38 AM MDT	If gasoline tax pays for roads if we do not use gaoline who pays for roads	85658
103	2023/07/24 10:48:19 AM MDT	I hope you'd consider route 66 tourist traffic between Flagstaff and Kingman. If a charger was in Peach Springs and Seligman that would also cater to Supai and Indigenous peoples of AZ and include the many tourists who travel this area.	86401
104	2023/07/24 10:56:09 AM MDT	I would really like to see highway segments 60 to 93 to the Az. Nv. border completed sooner than currenty scheduled. I travel this route frequenty, and there is usually a lot of traffic.	85735
105	2023/07/24 10:58:36 AM MDT	I think the car companies should pay for charging stations since the gas companies was started by the car manufacturer.	85390
106	2023/07/24 11:01:14 AM MDT	I was unable to attend the ADOT video conference on July 18th. Here in Tucson that evening at a public meeting, I was attempting to tell our mayor and city council that the purchase of methane (CNG) buses was ill advised. Unfortunately, they chose these polluting antiques over modern electric buses. As for state public EV charging infrastructure, it seems to be moving along quite well. Just about everything proposed here to be added, though, looks to be infill in the northern part of the state. Please keep me on your list for the next round of proposals, which will hopefully address the southern part of the state. So much has changed in the way of plug choice since mid 2022. Who would have guessed that Ford and GM would have chosen the Tesla NACS (now SAE J3400) over CCS-1? I think Arizona should follow the industry trend, such as Texas and Washington State have already done, and insist that this plug specification now be part of any federally funded installation. By the time these terminals are built and operational, it will be J3400 on just about every new EV sold in the US. That said, I drive an "antique" EV: a 2012 Mitsubishi i-MiEV with a CHAdeMO DC charging port. Last year, I lobbied for the inclusion of at least 2 CHAdeMO installation along I-10, since I'm sure almost all cars in Arizona so equipped (the Nissan Leaf being the most well-known one) are located in the Phoenix and Tucson metro areas. Us early EV adopters never got truly reliable charging infrastructure for our cars along the 100 mile stretch between Arizona's 2 largest cities. If not, every ADOT installation should	85719

		include at least 1 J-1772 AC terminal. The specification for these is up to 70A, but most J1772 public terminals in metro areas rarely are this robust. With a higher amperage J1772 available, though, older EVs such as mine can at least functionally travel out of town on occasion.	
107	2023/07/24 11:01:14 AM MDT	Provide as many EV charging stations as possible without endangering wildlife corridors.	85032
108	2023/07/24 11:02:21 AM MDT	My taxes had better NOT go up because of this. I never own an electric car.	85387
109	2023/07/24 11:02:47 AM MDT	This seems to be well thought out	85742
110	2023/07/24 11:04:18 AM MDT	As an owner of an Audi EV, I look forward to the implementation of this plan. I was unable to drive my EV from Tucson to St George, Utah, a couple months ago because of a lack of CCS charging stations along my planned route. That route is now included in the 2023 plan!	85711
111	2023/07/24 11:06:10 AM MDT	Please design an awning or some sort of cover over these EV charging stations. As a current user of these EV charging stations, none of them have a covering and it is extremely hot during the summer months. Please design them with a covering to protect us from the sun. Thank you!	85298
112	2023/07/24 11:09:13 AM MDT	Unrelated to EV charging infrastructure location discussions, I note that Governor Hobbs has recently expressed an interest in finding a way to include EVs as part of the revenue stream for funding road repairs. I have such a proposal, which is in the form of a 5 page PDF. Could someone please email me, so I can submit this to whoever at ADOT might be interested in reviewing it? Thanks in advance.	85719
113	2023/07/24 11:10:47 AM MDT	I have been looking at putting a charging station on my property in Holbrook, Az. Any consideration from ADOT in helping this become a realty?	86025
114	2023/07/24 11:15:19 AM MDT	Charging near or in Yuma would be great	85374
115	2023/07/24 11:23:59 AM MDT	Looks better for northern AZ. Would appreciate adding more coverage around Tucson, eg route 77.	85658
116	2023/07/24 11:24:42 AM MDT	The plan for the most looks pretty good. We do need in the next round to provide charging in STH 70-191 corridor; e.g. Globe to Safford as well as the STH 82 Tombstone-Patagonia corridor.	85749
117	2023/07/24 11:26:09 AM MDT	I think what you're doing is great and long overdue. We need to encourage the use of alternative fuels and stay ahead of the market as much as possible.	85745
118	2023/07/24 11:30:37 AM MDT	Stop wasting tax payers money on something that only benefits 2 percent of the population	86303
119	2023/07/24 11:30:43 AM MDT	Since the State of AZ is drinking the kool-aid and pushing EVs, what are the plans to assess/collect road taxes from all these proposed electronic charging station since right now, they don't contribute a single penny to help maintain our seriously deteriorating highways and interstates, not to mention local streets?	86315
120	2023/07/24 11:35:55 AM MDT	Installing a couple of DC Fast charging stations on 89 north from Flagstaff to Page and Jacob Lake would make a huge difference to the viability of EVs in Arizona.	86004
121	2023/07/24 11:36:05	1. PLEASE consider Tesla as a prioritized contractor, their chargers	85021

		are significantly more reliable, easier to use, and less expensive than Electrify America. Tesla's newest chargers have CCS capability in the US so they would be NEVI compliant. 2. In the later phase plans, please consider Kayenta as a site. Even though it is a low traffic route, Kayenta is a critical bridge to SW Colorado from Phoenix (Telluride, Durango) that currently is a complete charging desert, this is the type of application that public funding is meant for (weak business case but significant public benefit).	
122	2023/07/24 11:41:52 AM MDT	I oppose public funds being used for electric car charging stations. Not only are they a burden on our environment, but public funds should not be used to accommodate the choice a few make. It is not the government's place to spend funds on this.	85254
123	2023/07/24 11:42:16 AM MDT	Please include the installation and maintenance of rubbish bins, windshield squeegies/water, and shade areas wherever possible. Currently the Tesla chargers in AZ lack all of these "amenities".	85224
124	2023/07/24 12:05:15 PM MDT	Where is the survey?	85045
125	2023/07/24 12:10:03 PM MDT	EV support on 347 is critical. There is a big gap between I10 and Maricopa, Running out of power on 347 is dangerous.	85138
126	2023/07/24 12:25:35 PM MDT	Those who use this service should pay for it, not those who do not use it. Require a credit card to purchase electricity at the charger.	86301
127	2023/07/24 12:27:50 PM MDT	ADOT should look for placing EV chargers in locations 50 - 80 miles away from existing commercial EV stations in order to help cover the state and be profitable.	85749
128	2023/07/24 12:35:11 PM MDT	I think it would be wonderful to have more charging options when traveling	85901
129	2023/07/24 12:48:42 PM MDT	Big waste of our money. Why does our State have to provide EV stations? Let private companies that build the vehicles put them in.	85933
130	2023/07/24 1:03:35 PM MDT	I am admittedly biased. But there is a reason why many EV car manufacturers have been adopting the NASC charging standard (formerly Tesla charger) - it is simply better than the CCS standard. And the CCS consortium is also working to make NASC an official standard. Looking to the future, it seems prudent that the majority of new charging stations should be using the NASC charging standard. Beyond the charging standard, I would also recommend covered charging stations. Just as most every gas station has overhead canopies to protect from rain or sun, so should the election charging stations. And, since they are electric, it would make sense to have those canopies by solar panels. Maybe even mandate solar panel canopies for electric charging stations that receive federal funding. Are there any other mandates for things like bathrooms that gas stations have? Or that there are bathrooms within X feet? Anyways, those are my thoughts.	85298
131	2023/07/24 1:06:46 PM MDT	I want to see Level 2 charging available at every station on the highway system as well as more Level 2 stations in the Phoenix Metro area as well as Tucson.	85354
132	2023/07/24 1:11:35	I feel govt and ADOT has assumed there is a consensus about	85254

	PM MDT	electric vehicles. I understand the Federal Govt has incentivized the auto manufacturers to build EV's, but I am not in favor of spending all this money and resources on the building of the vehicles nor the charging infrastructure.	
133	2023/07/24 1:14:47 PM MDT	EV chargers should be placed in easy on/off locations from major traffic corridors near shopping, entertainment & sports venues in highway rest stops at certain gas stations along major routes add EV chargers in small towns & smaller cities (e.g. there's no public EV charger in Cottonwood AZ. Clarkdale AZ has collaborated with APS to install 4 EV chargers in this small town In re: taxing EV drivers for using AZ highways/roads.add a tax at the charging station similar to gas tax. Tax the electricity not car mileage Bring back the big discounts on registration fees for EVs.	86324
134	2023/07/24 1:17:40 PM MDT	Please consider including overhead covering for the chargers. I've seen too many instances of burned out video displays on chargers in my extensive road trip experience. Also, I see you have pushed back the US-93 corridor down in priority. Serious consideration needs to be taken to routes without alternative charging. This route is known as a difficult leg for EVs due to no chargers between Kingman and the Phoenix area. Why were other routes that already had existing chargers rated above this charger-less route? Currently this route is not an option for me as I would be worried about running out of charge.	85207
135	2023/07/24 1:33:44 PM MDT	Please stop wasting money on this left wing political crap and fix our roads. That's what we pay taxes for.	86303
136	2023/07/24 1:35:26 PM MDT	I recommend adding all State and National Parks/Monuments in Arizona as locations for EV chargers in the first rollout. Some of these locations (like Chiricahua National Monument) are very remote and are not served well by chargers on interstate highways. I also highly recommend adding chargers with the NACS connector. The CCS1 connector will not be used as the dominant interface by most EV manufacturers in the US long term.	85641
137	2023/07/24 1:35:34 PM MDT	Need more chargers for the Las Vegas trip from the Valley. HWY 60/95.	85388
138	2023/07/24 1:39:55 PM MDT	Safford, Alpine, and Jacob Lake could really use DCFC in the 24-25 plan.	88005
139	2023/07/24 1:46:10 PM MDT	The more the better! Installation should expand to points where people gather for extended periods of time; Costco, Sams, stadiums, ball parks, theaters, etc.	85087
140	2023/07/24 2:00:59 PM MDT	I hope that the cost of providing EV chargers and the cost of electricity can be recouped fro m the users and not be a burden to others who don't use them.	86001
141	2023/07/24 2:09:27 PM MDT	Please install a DC charger in Kayenta. There are few charging opportunities on the reservation	86336
142	2023/07/24 2:10:27 PM MDT	I think it would be great to have a charger every 50-75 miles from particular stages of major freeways. And for non-major freeways perhaps a charger every 75 to 100 mile range.	85305

		Also it would be great to have chargers equipped with multi plug connection that accounts for regular vehicles versus Tesla. Most work with the typical J1772. Also some network Wi-fi connection that keeps folks aware of availability and accessibility of the chargers - working status and super charging options.	
143	2023/07/24 2:11:15 PM MDT	ADOT should gather metrics and set minimum requirements for charger availability. The current federal standards are insuffcient and do not indicate if a user is able to actually charge their car or charge at a reasonable speed for long trips. ADOT should validate chargers are consistently working and delivering reasonable charging speeds.	85283
144	2023/07/24 2:21:29 PM MDT	NO	85901
145	2023/07/24 2:32:27 PM MDT	I have a Kia EV. Will be happy to have more fast charging stations from Tucson to Phx and in Tucson itself that can accommodate Kias.	85718
146	2023/07/24 2:39:52 PM MDT	We need more information before installing these EV stations. The EV vehicles haven't been proven as reliable means if transportation. The state shouldn't invest large sums of money for EV charging stations. I recommend waiting another year. The whole EV's need more refinements to make them a reliablr vehicle for driving everyday. Arizona isn't ready for them, one reason the extreme tempeture we have!	85225
147	2023/07/24 2:47:06 PM MDT	[Company] believes existing sites and new construction sites should be considered at all targeted exits. Of course upgrading sites is often less expensive, and if cost is the only distinction between a new construction and an existing site at a targeted exit the less expensive project should be awarded. However, [Company] knows that some existing sites are plagued by downtime, no driver support line for charging help, inadequate electric service, lack of parking, poor site design, and a other issues that lead to a poor driver experience and a lack of public interest in transitioning to EVs. For proposed exits, [Company] suggests ADOT consider new construction and existing upgrades at the exit to make sure any NEVI money spent goes to a company/site with an excellent plan, strong track record, and reasonable budget to make EV Charging as easy and accessible as pumping gas.	97405
148	2023/07/24 2:49:42 PM MDT	The East Valley is sorely short on EV charging infrastructure. The first Tesla Supercharger station finally went up at the 101/Ray Road in Chandler, but more are needed. It would be nice to see EV charges placed at some rest stops on the major state highways, such as the 87, 74 and 79.	85248
149	2023/07/24 2:55:48 PM MDT	YES IF NEEDED, Ekectric Vehicles won't work In AZ Summers! Power Grid don't need it at all!	86426
150	2023/07/24 2:59:21 PM MDT	My only comment is that the highways you have slated for 2024 and 2025 should be completed by the end of 2024. These are critical for people traveling to Eastern Arizona.	85308
151	2023/07/24 3:01:02 PM MDT	I like the EV charging that is being proposed. Keep it up and add more.	86336
152	2023/07/24 3:03:55	There needs to be some kind of reservation system and time limit,	85044

		from an experienced existing EV owner. Some people park and leave for hours tying up a charger. And take payment for a reservation, and if a no show they are charged a penalty, maybe with a few freebies a year to avoid frequent cancellations. Thanks for doing this and moving us forward with cleaner quieter vehicle options.	
	PM MDT		
153	2023/07/24 3:21:37 PM MDT	Recommend a minimum reliability standard be required for chargers. I just completed a 5600 mile trip in my EV and found an unsuitable number of chargers down or operating at very low levels (38 - 45 kw/h)	86404
154	2023/07/24 3:23:02 PM MDT	What is the state process for requiring hardware to allow all types of vehicles especially those with the Tesla connectors, and those who would like to be compatible with the Tesla connectors to have access to charging stations throughout the state? I just bought an EV that does not have a Tesla connector And I'm wondering if there is any requirement that there be interconnect ability between the various types of chargers?	85748
155	2023/07/24 3:29:10 PM MDT	Are there going to be charging stations on 83 to Sonoita?	85637
156	2023/07/24 3:30:23 PM MDT	Seems like if there are vending machines at our rest areas, that there should be the possibility of power vendors as well. The eastern stretches of a I-10 in our state are heavily underserved for EV charging. If you're trying to drive from Tucson to Las Cruces or Deming or Silver City, there is one level two charger in Lordsburg, which is probably the only one available for a 2 Hour Dr. along I-10. It seems only reasonable that the state would address that disparity for EV charging on a long lonely stretch of interstate highway. The state of New Mexico does not have plans to install chargers in Lordsburg. And this is certainly a concern of mine as an EV owner in Arizona.	85748
157	2023/07/24 3:34:51 PM MDT	We need fast charging in Prescott Valley / Prescott area. Also on something between Aguila and Quartzite.	86314
158	2023/07/24 3:38:49 PM MDT	There is no point in installing anything but fast chargers. Users will not leave their car overnight.	85383
159	2023/07/24 3:41:15 PM MDT	I notice that there is not much coverage of the north eastern quadrant of the state in particular on the Navajo reservation which attract a lot of tourists	85008
160	2023/07/24 3:43:39 PM MDT	ADOT needs to really consider their AFC's off the normal Interstate freeways and use their AZ highways for consideration of the EV charging station locations. Typically those highways such as AZ 260, 277 and 77 leading from both Payson & Show Low to the I-40 corridor. In addition, US 60 from Globe going North and East would be a AFC that should be considered as these routes are tremendous cut off's from the I-17 to I-40 Corridors.	85338
161	2023/07/24 3:55:32 PM MDT	Could it more simple and save money, while expedite the EVSE installation if you only require the growing popular NACS (One type plug per EVSE) assuming a low cost (at cost) adapter is made to anyone that needs them. NACS plug are smaller and easier to handle more robust plug and simpler than CCS and Chademo. Most non Tesla EV made before 2024 will only need a NACS to J1772 adapter rated to the max amperage used/ compatible with the DCFC. (Many Like me and non Tesla owner	85648

		already carry a NACS to 1772 adapter which was rated for use on a Tesla Destination charger (not Supercharger) this adaptation is (safe) possible there may not be the need for the new Magic Dock at new Tesla Superchargers ? (I am not an electrical engineer or know the Tesla platform) .	
162	2023/07/24 4:00:11 PM MDT	I do not agree with all the EV plans. Our current grid does not have the ability to keep up with all these additions. We are always worried about conserving electricity and yet we want to add tons of EV's and charging stations?? It makes absolutely no sense! These plans that are trying to move forward to force everyone to have an EV is not even possible with the state of our current grid system. We need to put money and focus on updating our grid system to allow it to even supply all that is drawing from it already! I OPPOSE this plan!	85541
163	2023/07/24 4:04:12 PM MDT	I am a knowledgeable EV owner/driver I own 2 vehicles; both are all electric, and I have been driving EVs for the past 2 years I have read the 2022 plan and the 2023 update and agree with the vision, goals and the comments submitted. I submit the following: Distance between stations and consideration of vehicle charge ranges, was of concern, but 50 miles between should satisfy everyone Want to see improvements to the electric infrastructure (both by utility companies and service providers) to actually provide fast charging, and also more standardized charging speeds. Station speed provided is not even close to 150 kW. In a recent trip of approximately 3,000 miles, I charged 39 times at stations in AZ, CA, OR and WA. The average charge speed in AZ was 76 kW while the average speed of all chargers was 85 kW. This is a great plan, and completion of the project will be of great benefit to the public. A future plan with additional resources and financial participation should include more stations at future tourism sites (national, state and local). A map showing connections between tourism sites should have been included in the reporting. The RFP process should include consideration of station providers that have contracts with auto manufacturers that give owners free charging. Currently several of the EV manufacturers provide various amounts (1 to 3 years) of free charges using three brands of stations: Electrify America (EA), EVGO, and ChargePoint. Two of these also have extensive networks and I believe would be more reliable for a project of this magnitude. CVW is missing from the list of auto manufacturers. A clear summary of the number of built stations should be included, and how many were completed since the 2022 plan, if any.	85050
164	2023/07/24 4:30:44 PM MDT	I think EV is a dangerous proposal. With snow and fires and floods, terrible if evacuation needed. Batteries China controlled. Gas much more reliable. Waste of tax dollars.	86305
165	2023/07/24 5:11:03 PM MDT	I feel that transportation money be spent on roads, bridges and the like. Not on EV stations. If anyone truly cares about damage to the environment they can find information, facts, that electric car	85132

		batteries are far more damaging to mine, produce and dispose of than any gas car related fuels. I do not want to see my tax dollars spent on EV anything.	
166	2023/07/24 5:16:31 PM MDT	We need to have EV infrastructure in place so people feel comfortable buying an electric vehicle. This is the investment we need for our future. The extreme heat we are experiencing now in Arizona is the prime example of why we need to work away from fossil fuels and toward sustainables.	85705
167	2023/07/24 5:18:57 PM MDT	As an EV owner my biggest issue has been the unreliability of the charger network. It does no good to install chargers that end up not working - the vendor needs to be held accountable for a working network. Also, all chargers in AZ should have a shade structure for both the user and the life of the unit. It is almost impossible to read the screen in the bright AZ sunshine.	85255
168	2023/07/24 5:31:49 PM MDT	The City of Bullhead City is grateful for the opportunity to provide comment to ADOT about its Arizona Electric Vehicle Program. Based on the ADOT EV Program update given on 7/18/2023, we understand that State Highway 95, through Bullhead City, is included in the 2024 & 2025 EV Plan. This is exciting news for us! We encourage ADOT to further explore the benefits of deploying a charging station in our community as soon as possible. We are conveniently located, and our location allows for infrastructure development to build onto the NEVI and AZEV Plan vehicle to grid infrastructure (AFC's). The City is prepared to provide further evidence and welcomes robust discussions as to why our location is optimal for a station, sooner rather than later.	86442
169	2023/07/24 5:35:18 PM MDT	The more the better in my opinion. Especially in rural areas in case folks leave town without fully charging and can charge up in the middle of no where.	85305
170	2023/07/24 5:35:42 PM MDT	I'm not interested in electric cars until they improve the Exploding batteries. Also, I drive across country in rural areas. Barely enough gas stations sometimes let alone somewhere to charge, and I don't have time to sit and wait for it to charge.	85650
171	2023/07/24 5:39:45 PM MDT	Please provide for competition with these charging station. Just one provider leads to high costs for the service	85250
172	2023/07/24 6:16:21 PM MDT	I want to thank and applaud ADOT for their comprehensive and consumer-friendly NEVI process. The outreach and educational materials have been fantastic, like you actually want to hear from Arizonans. From what I understand, Arizona is outperforming other states and will likely get chargers in the ground quicker than others. I hope that is the case because we desperately need to get this money out the door. Great to see Highway 93 on the update connecting to Nevada. Keep up the great work!	85004
173	2023/07/24 6:28:42 PM MDT	I believe they need to go back to the drawing board on electric vehicles and will never own one. The fires are too hard to put out and the used batteries are not environmentally sound.	85383
174	2023/07/24 7:20:11 PM MDT	Thank you for the presentation. I look forward to seeing universal fast chargers throughout our state. I am waiting to see more of these and them I'm ready to buy an EV!	85308
175	2023/07/24 8:39:59 PM MDT	The EV Charging Stations are a joke, all it means is more money being spent and the taxpayers footing the bill, even for the people who don't have and won't have a EV. Having the EV Charging	86401

		stations means that when the summer heat comes our electric power can become outage prone more than usual or the government saying to not use power (a/c) our power grid cannot handle the EV's need to charged every 200-350 miles.	
176	2023/07/24 9:21:42 PM MDT	So needed with the number of people converting to EVs to give more freedom and confidence to be able to drive distances to enjoy other parts of Arizona without worry of being stuck.	85085
177	2023/07/24 9:35:33 PM MDT	I'd like to see Rt 93 be a priority upgrade. From Phoenix to Kingman is a nowhere land for non-Tesla EV owners like myself. I'm not going to trust that the one viable location in Kingman will be available when I drive to Vegas. I end up driving my ICE vehicle instead of my EV. I'm sure I'm not alone here. Thanks for your time.	85383
178	2023/07/24 10:07:56 PM MDT	The 2022 plan looks good, but I was totally unclear as to when it all would be in place.	86301
179	2023/07/24 10:39:05 PM MDT	Not sure what this means	86351
180	2023/07/24 10:41:43 PM MDT	I just want to say I hope the electric charging stations on the Interstates are completed before the secondary highways are started. I 40 is in desperate need of additional stations.	86351
181	2023/07/25 6:48:26 AM MDT	Tesla Superchargers are designed with limited cable length to just reach the NACS plug on Teslas. All Tesla models plugs are rear driver Should the magic-dock cable be slightly longer given the varied position of the CCS plugs on non Tesla vehicles?	85648
182	2023/07/25 8:17:25 AM MDT	We have a ton of places to charge EVs where I live and i have yet to see anyone use them. Five billion dollars seems ridiculous for something so useless.	85123
183	2023/07/25 8:46:12 AM MDT	Are you going to switch from CCS to NACS, now that many of the major EV manufacturers have agreed to switch to NACS	85749
184	2023/07/25 9:33:10 AM MDT	This is my own perspective and not endorsed by the broader organization, though it is well aligned with administrative and board policies surrounding vehicle electrification in Pima County: Partnering with Counties to Electrify Highways Opportunity: There is an opportunity for the state DOT to partner with counties to electrify highways. Counties can help identify scenic and cultural destinations that would be attractive to electric vehicle (EV) drivers, and they often have lots with electrical service that could be used for charging stations. This would make it easier for EV drivers to reach these destinations and enjoy the benefits of electric transportation, such as reduced emissions and noise pollution. Benefits: Partnering with counties to electrify highways would have a number of benefits, including: Counties can help to identify the best locations for charging stations, based on factors such as traffic volume, proximity to tourist destinations, and availability of electrical service. Counties can help to obtain the necessary permits and approvals for the installation of charging stations. Counties can help to raise awareness of the charging network and encourage EV drivers to use it.	85710

		Win-win: This partnership would be a win-win for both the state DOT and the counties. The state DOT would be able to expand the reach of the charging network, while the counties would be able to promote economic development and tourism. Conclusion: I believe that partnering with counties to electrify highways is a great idea. It would have a number of benefits for both the state DOT and the counties, and it would help to promote the use of electric vehicles. I hope that this partnership will be explored further. Additional thoughts: In addition to the benefits mentioned above, partnering with counties to electrify highways could also help to reduce congestion and promote healthy outdoor activities. This partnership could be a model for other states and counties that are looking to expand the reach of their charging networks. I am excited to see how this partnership develops in the future.	
185	2023/07/25 9:44:04 AM MDT	This is a waste of my taxpayer money. Only benefits the minority of people with EV's. Also, even if these charging stations are built, I can only see the scenario when someone pulls in to charge and there are 10+ cars ahead of you also waiting! So, a person is supposed to wait hours to charge ! Also, what happens when there are power outages and the stations don't even work! Also, we then have to pay to maintain these stations....for the minority. Government overreach!	85045
186	2023/07/25 10:08:41 AM MDT	The alternative fuel corridors are phenomenal!! Please make sure that we (the state of Arizona) stay with international standards and leverage the CCS connector (supported by all electric vehicles) as opposed to Tesla's NACS, which is still locked down. Obviously, It's no issue if Tesla establishes supercharges on the route (in fact, it's welcome). But I feel that taxpayer dollars should support the connector types that most new elective vehicles leverage.	85225
187	2023/07/25 10:26:21 AM MDT	We definitely need more charging stations in AZ. Also, we have attempted to used charging stations found in shopping centers only to find gas powered vehicles parked in them! PLEASE construct and secure them so ONLY EVs have use of them! Thanks.	85383
188	2023/07/25 11:03:55 AM MDT	This doesn't affect me because I don't have an electric car. I don't like the idea of them. The batteries are very expensive and I don't think they can be recycled like normal batteries. Why not just make a solar car? There's too much to go wrong with technology like this. I'd prefer to have a car pre computer. If ever there's a day when a war breaks out, where it affects the computers in the cars and makes them stop in their tracks, I'll still be driving along, waving as I go by.	85653
189	2023/07/25 11:39:34 AM MDT	As Charge stations are built, please consider class 8 semi trucks charging, with space around and access.	85233
190	2023/07/25 12:02:15 PM MDT	Arizona should consider the emergence of automotive manufacturers adopting the North American Connector Standard (NACS) in their plan. ChargePoint is committed to delivering	95008

charging for all EV drivers regardless of make or model of vehicle and have announced intentions to integrate NACS connectors on our respective networks and/or within our product lines. We are concerned, however that a mandate to include NACS connectors in the early rounds of NEVI funding will delay deployments of chargers at a time when more, not fewer, chargers are quickly needed.

There is currently a significant need to grow the number of installed fast chargers to serve CCS vehicles on the road today. This need will continue to grow as auto manufacturers stated that they will adopt the NACS inlet in model year 2025. As such we caution against taking any action that could further delay the deployment of fast chargers along Arizona highways.

Industry needs time to develop and secure a Build America Buy America NACS supply chain sufficient to meet industry demand and to test and certify chargers with the NACS connector. First, the supply chain for NACS connectors and cables is not yet developed. Commercial adoption can only occur with a diversified supplier base, which will take time. Notably, cable suppliers and manufacturers may wait until the NACS connector is standardized before scaling up manufacturing operations.

Second, the NACS connector and cable are not currently individually certified to the UL safety standards, like CCS cables tend to be. We expect cable manufacturers and suppliers to emerge that will obtain certification to UL standards for NACS cables and connectors. However, in the meantime, charging manufacturers will need to re-certify their chargers with the NACS cable and connector in order to meet the Federal Highway Administrations (FHWA) minimum standards. This certification process can take a number of months.

Further, many charging manufacturers and network operators conduct additional performance, reliability, and safety engineering and testing on new cable and connector suppliers that go above and beyond UL standardization. Examples could include: (1) extending the cable length from its current size, so it can reach charging inlets at any location on any EV; (2) ensuring the locking mechanism between NACS and CCS is compatible and safe to use; and (3) testing and engineering NACS connectors and cables to meet certain technical parameters (e.g. thermal, volts, amps) to comply with the NEVI minimum standard and provide ultra-fast charging speeds. These additional efforts can prolong the timeline for when NACS connectors may be broadly available on non-Tesla chargers.

Third, the industry is just beginning work to standardize the NACS connector. Both CharIN2 and SAE3 have announced plans to standardize the safety, security, and interoperability of the NACS connector and we expect these processes will take time. The outcome of this effort may impact the design and engineering of

		non-Tesla chargers that integrate NACS connectors. We caution Arizona against requiring NACS cables and connectors before CharIN and SAE have concluded these processes and the charging industry has had time to implement the resulting standards.	
191	2023/07/25 12:11:15 PM MDT	Looking forward it makes sense to ensure that NACS IS A MAJOR PART OF ANY CHARGING BUILD OUT	86017
192	2023/07/25 12:15:41 PM MDT	Please send an alert as each public charging station becomes active. Also provide an map of the current active charging stations throughout AZ. If an alert went out to notify is a charging station is down or not active would be helpful.	85086
193	2023/07/25 1:08:29 PM MDT	Excited that routs to the NE part of the state are in the works	85018
194	2023/07/25 2:37:21 PM MDT	You will have a line up waiting to "charge" at every station. Think of the weekend traffic coming back from the high country on a Sunday afternoon- its stop and go. Who wants to wait their turn to charge? I resent my tax dollars going to this short sighted system. There is no way I will ever be able to afford an electric car at $50K and up. Just another way to separate the elite from the average.	85381
195	2023/07/25 6:09:36 PM MDT	It's encouraging to see that US 60 from Phoenix to Globe is included in the 2024-2025 EV Charging Infrastructure plan. Graham and Greenlee County strongly encourage ADOT to include US 70 from Globe to Safford in the 2025-2026 deployment plan followed by US 191 to Morenci and I-10 in 2027 & 2028. This will improve tourism, support public transit and increase commerce for Graham and Greenlee County.	85546
196	2023/07/25 6:09:58 PM MDT	Lake Havasu City would like to give input into the project and is available to work with any developer who receives the contract. Given that many of our businesses are closed late at night, we recommend the charging station be located at Pima Wash (an open area) along with a shade structure and a bathroom. This location will give EV drivers access to many amenities during the day and a safe neighborhood at night.	86403
197	2023/07/25 10:07:44 PM MDT	Generally, the plan seems reasonable and workable, with a high likelihood of success. The public communication process is not as transparent as it could be, and the staff seemed hesitant to respond to the more probing inquiry while eagerly responding to the softball inquiries, like the nature of the connectors at the charging stations. The public utility and value of this type of update are questionable. There was not enough discussion of the following topics: contracting opportunities; contracting in general; MBE contracting opportunities; Operations and Management; coordination/integration of this project's networking requirements with offer state network and agency projects, I am concerned that contracts will be awarded in a manner that does not optimize or maximize the positive and practical benefits to the state and its citizens in favor of (potentially) excess profit to contract awardees. The EV project is yet another excellent opportunity for Arizona to show leadership in technology, innovation, and competent execution of major initiatives. My wish is to see "AZ on Top." Thank you for the opportunity to provide feedback.	85306

| 198 | 2023/07/26 8:31:20 AM MDT | none | | 85546 |

Note: Some comments have been edited to remove identifiable information.

Table E - 2: E-mail Comments Received from 2023 Form

#	Date	Comments/Questions
1	7/12/2023	Your update shows you plan an EV charging station between Payson and Show Low on AZ-260. While I think any charging stations you put in will be great, I believe there is a greater need on 260 closer to Eager. There are currently no charging stations in that area and we could sure use one!
2	7/13/2023	Please send me a link to join the meeting on EV Charging stations. Thank you
3	7/16/2023	Dear Sir, I would like to sign up to be invited to attend your EVPLAN Webinar to be held at 6PM on July 18th. My Name is [Name] and Email Address is [Email]. Thank you for the opportunity to view this Webinar. A note of interest, I am a retired ADOT Maintenance Engineer from the [Location and Time] and formally the [County Name] County Engineer from [Time Range] and always had a close working relationship with ADOT staff on Local Government projects with. Thanks, [Name]
4	7/17/2023	I tried to sign up to attend the virtual meeting about EV cars, but the website led me to three different menus. I didn't find a way to sign up after going to: AZDOT.gov/EVPlan Could you either sign me up or give me the exact site to go to? Thanks, [Name]
5	7/15/2023	This has to be the most dishonest and irredeemable act of a politician I've ever seen in my 73 years. Force the public to buy cars they cannot afford! Buy energy to power the vehicle for which they neither can afford. Nor can they afford the time inconvenience to wait to fill up, even for moderate range. Force us to pay for energy supply infrastructure that the government can't afford, and we sure as hell can't afford, to produce waste and environmental gouging that we neither have nor can we afford, eitheidiots hat the hell is wrong with you idiots???!!!! Oh did I mention, your grand plan doesn't even provide coverage for the main North South artery of Phoenix, RT 17. My God, how can so many people be so utterly stupid????
6	7/15/2023	Stop pushing electric vehicles that only the very rich can afford and waisting tax dollars.
7	7/13/2023	why should we spend any money on this? a typical tesla battery weighs 1,000 lbs a typical full tank of gas weighs 80 lbs. encouraging ev's which this plan would do is wrong. they pose a risk to firefighters if there is a car fire they don't work as efficiently in cold temp.,i.e. flagstaff they are much dirtier to make, many of the mines that produce materials for the car batteries use child labor, especially in africa, china owns many of these mines

E-25

		when the battery's life is over, they are almost impossible to recycle if someone thinks they're making the world a better place by buying an e.v., they need to read the above points. why should adot spend any money on this , when many of our state highways are not in good shape? thank you, [Name]
8	7/15/2023	I feel that it is wrong for Pinal County to get involved with EV though the government offers them money. The expenses are still being paid by all the consumers. Disappointed that Pinal County is thinking about offering stations on our highways. This was never offered to people who choose to us gas. In addition, at this time, how are the EV consumers paying towards the upkeep of our highways? Disappointed again that this was never thought about in the first place. People who are driving gas cars shouldn't be paying for it. [Name]
9	7/17/2023	There are a lot of seasonal drivers who commute from Tucson and Phoenix to Show Low and Pinetop, especially during the summer. We're interested in purchasing an EV vehicle for the drive between Phoenix and Pinetop, but we need non-Tesla charging stations in Globe, Payson, Heber, Show Low and Pinetop for that to be an option. Are there any plans to add charging stations along these routes? Thanks, [Name]
10	7/17/2023	There are far fewer fast charges than needed between Phx and LA and often lines to use what few there are. It would be very beneficial to have some placed in Quartzite along the I-10 corridor. Thank you! [Name]
11	7/14/2023	I hope this email finds you well. I have continued tracking the AZ NEVI process, but I had a question regarding the target vehicle type for infrastructure deployments from the state's plan. To my understanding, NEVI infrastructure deployments in Arizona are slated for light-duty, passenger vehicles, correct? Some states are entertaining light-duty and medium- heavy-duty infrastructure deployments to accommodate both passenger vehicles and goods movement vehicles like tractors, so I wanted to reach out to see if there were any plans for this. I may be preemptively asking this as the ADOT Electric Vehicle Charging Infrastructure Implementation RFI is currently open for comment and may inform this question, but any information you are able to share is appreciated.
12	7/15/2023	You may be aware of the critical need for increased DCFC capability at Quartzsite. The low number of DCFC chargers, poor reliability of EA, and increased EV adoption are creating an untenable bottleneck for drivers traveling between Phoenix and southern CA. Is ADOT planning for DCFC expansion in Quartzsite? The new EVgo chargers on Litchfield Rd in Goodyear are getting good reviews for speed and reliability. Could you please consider awarding EVgo a contract at Quartzsite?

		Thank you in advance for your consideration.
		[Name]
13	7/15/2023	I applaud the state's initiatives on making a better EV network as a Tesla owner. But I do want to make a few comments. We need to get EV charging stations installed at TUS as Tucson Airport has no charging stations. This needs to change and I wouldn't mind seeing a bank of 120 plug-in chargers in the TUS parking garage similar to what PHX has outside. We really need EV charging at TUS as that is currently nonexistent.
14	7/14/2023	With more and more mainstream automakers adopting the NACS connector standard, I am writing to encourage ADOT to adopt/include the NACS for all EV charging stations. Thank you. [Name]
15	7/14/2023	I am interested in hearing what effect the changes announced by Ford and GM (to switch to Tesla charging configurations) will have on this project. Will the statins being put in be useable by all?? [Name]
16	7/17/2023	You need to share also all of the written comments you may have received with the public, at the seminar as well as on your web site. Arizona public has the RIGHT to know, who is saying what, especially from the real transportation professional individuals. It is the PUBLIC, who is paying for all of this !!! Seriously, [Name] [Name and Titles]
17	7/17/2023	What are the plans to address the data storage, cybersecurity, and reporting component of the NEVI program? Does the agency plan on opening an RFI/RFP process? Is the Agency open to idea or suggestions to address this key component? Thank you, [Name]
18	7/18/2023	I mean, it is the public. Good job.
19	7/19/2023	To whom it may concern, It has been brought to my attention from one of my associates who attended the planning meeting on July 18th that AZ DOT hasn't reviewed any of the studies that have been done on the necessity of shading EV chargers. I've attached a comprehensive study that has been conducted for your review. I hope this information is useful in determining the need to shade the EV chargers for the reasons outlined in the study. 1. Prolonged life of the equipment 2. Comfort to those sitting in the sun while charging 3. The increased efficiency in charging when in shade. https://financialpost.com/commodities/energy/electric-vehicles/heat-wave-cook-ev-battery

		Best Regards, [Name, Title, Company]
20	7/18/2023	I say let the free market carry this one. That way if it is not cost-effective, it doesn't drag everybody down. It takes a lot of resources, and at this point slave labor, to build those batteries. Batteries store electricity, they do not produce it. Charging batteries takes fossil fuels. So much for Green energy.
21	7/18/2023	Thank you for your reply. Whether state or federal funding, taxpayers are paying for it. Why aren't EV owners paying for our highways expenses? This whole thing is totally wrong and I wish that AZ would not get involved with it.
22	7/19/2023	Hello, I was unable to attend the webinar yesterday. Was it recorded by chance?
23	7/17/2023	Thank you for your prompt reply.. I am not impressed with your comments stating that the state has no liability. Rather, you point out, your responsibility will be to manage and administer funding derived from Federal Funds (80%) and private funds (20%). When ever I hear Federal Funds used, I begin to have nightmares. Of course, with the Feds running a deficit of some 30 trillion dollars, doesn't it scare you, that we're all of us on the hook for everyone of those dollars!
24	7/18/2023	Looking at the proposed routes to add EV chargers, I do not see any for southern Arizona. Southern Arizona has been neglected as far as EV chargers. There are no Tesla Superchargers, for instance, south of I-10 in Arizona. We need to add chargers along the north-south routes south of I-10, specifically we need chargers: Along I-19: in Green Valley, Tubac, and Nogales Along Hwy 90 from I-10 to Sierra Vista: Chargers are needed in Sierra Vista and Hereford Along Hwy 80 from I-10 to Bisbee: Chargers are needed in Tombstone and Bisbee Along Hwy 83 and 82 from I-10 to Sonoita and Patagonia: Chargers needed in both these locations. South Hwy 191 from I-10 to McNeal: these rural routes are used to get to backcountry/mountain areas and lack of chargers make it difficult for EV drivers to enjoy these areas. In addition, North Hwy 191 from I-10 north to Safford: Safford is also lacking a Tesla Supercharger. As someone who has embraced driving a Tesla but who is also an avid bird watcher, hiker, and camper, I have found it frustrating that it is difficult to go and camp with my Tesla in our National Forests as there are just not enough places to charge. Look at the White Mountains, for instance, around Greer. Nothing there. Thank you for your consideration,
25	7/18/2023	t's 180 miles from Tucson to Show Low and there is only one small fast charger on that route, in Globe. AZ 77 is the only route from Tucson to the White Mountains and it is a very important route for Tucsonan's recreation and other tourism. A station between Tucson and Globe and one between Globe and Show Low would make the trip a lot less stressful. Thank you [Name]
26	7/19/2023	Thank you for your presentation this evening. It was a great help in understanding how ADOT's rollout of EV charging stations will be implemented in phases over the coming years. One of the team's stated goals is to reduce range anxiety for existing and potential EV owners. As an EV owner who has traveled between

		Phoenix and southern California, the paucity of available CCS chargers between the valley and the greater LA area is a contributor to range anxiety. Dianne stated correctly that the Electrify America (EA) charger in Quartzsite is NEVI compliant in that it has four CCS chargers. However, it is well known in the EV community that east/west travelers are underserved in Quartzsite with the existing EA chargers which are too few in number and too poor in reliability. Waiting for turns on a charger will only slow EV adoption, and long waits are common at this location on high traffic weekends. For context, please view the link below for photos and comments about this station, posted by EV owners: https://www.vwidtalk.com/threads/charging-line-18-cars-at-quartzite-az-ea-on-11-26-22.11131/ I hope the ADOT team will consider the amount of traffic through Quartzsite and its critical location and identify the need for increased carrying capacity of charging there. Thank you for all you are doing to speed EV adoption in Arizona. Are there volunteer opportunities for your program? If so, I would be interested in applying. I have been an EV owner for 3 years and 55,000 miles and have used DCFC with my 2017 Chevy Bolt to travel to CA, NV, UT, and CO. I would be happy to share my experience and give of my time toward the cause of speeding EV adoption. Sincerely,
27	7/18/2023	I was not aware State Routes were eligible to receive EV chargers, not being part of the National Highway system. However, I see SR 64 and SR 95 are both on the 2023 plan. If you can tell me how these state routes were selected to be part of the plan and other state routes were not, I would appreciate it - perhaps a matrix showing the ranking of the various NEVI criteria for each State Route. I'm lobbying for an EV charging location along SR 66 in Peach Springs, an historically over-looked and underserved town on the Hualapai Reservation which was bypassed by I-40 in 1978. And yes, Mohave Electric Cooperative has a 14.4 KV, 3-phase power line serving our local market, hotel and the historic Osterman Gas Station, with the latter being designated one the 11 Most Endangered Places in America and has garnered a significant amount of press (https://www.azfamily.com/2023/07/14/new-effort-restore-iconic-gas-station-northern-arizona/ and attached press release). I look forward to your response [Title]
28	7/19/2023	I wasn't able to attend the virtual meeting on the 18th. Will it be available as a recording somewhere?
29	7/19/2023	I own property at Interstate 40 and Hwy 95 at exit #9. I want to build a truck parking facility and Electric truck charging station on approximately 4 acres. [Company], we've been in Trucking business for 30 years. How can we obtain information please?

| 30 | 7/18/2023 | Please reply to this message with an explanation of the best method for the Tribe to engage on this issue, including the State's availability to set a time for a direct conversation with Hopi by Webex or Zoom. As I was finally able to indicate by phone before the session ended, as the State has repeatedly acknowledged, the federal funds for this program require prioritization of underserved communities and Hopi disagrees that it has received the outreach the State described in this session, especially considering the Hopi I-40 travel site east of Holbrook I noted in my Q&A entry (which was ignored in the session and has been ignored by the State at earlier discussion opportunities) but referenced as a priority site category by one presenter tonight.

I look forward to your prompt follow up, thank you for your assistance. |
|---|---|---|
| 31 | 7/20/2023 | Hi, my name is [Name] and I missed the recent call about electric vehicles. I downloaded the app about traffic but I would like to know if you show where all of your electric charger stations are on the major highways I do not see that on the map and if so, how can we get it on the map? |
| 32 | 7/20/2023 | Hello. I am a reporter with the [Media Outlet] in Prescott. I listened to the Zoom discussion about NEVI on Tuesday night, and I have a few questions:

- Could I get the number of people who tuned in to the meeting?
- Also, how many questions did you get from the public?
- Just to clarify, when will the Prescott-area Highway 69 corridor be added to the plan, and when might those charging stations be under construction?
- When is the next public meeting about NEVI?

Thanks so much for any help you can give me on these questions. |
| 33 | 7/20/2023 | I own a corner lot in the Marana Twin Peaks and I-10 interchange shopping center. This lot is on the main road in the center of the development. It will accommodate charging stations. I want to offer this site as a potential candidate. Please contact me for more details if of interest. Thank you. |
| 34 | 7/24/2023 | We were not able to respond to your entire RFI but wanted to provide some brief comments on a couple topics related to your NEVI Plan. Please let us know if you have any questions or would like to talk further on this. Thanks again— we appreciate the opportunity to provide feedback.

EVgo recommends ADOT avoid "bundling" all sites in its solicitation process.

ADOT notes that one approach being considered is to select a single Developer to install EVSE at all 21 NEVI sites. EVgo strongly recommends ADOT avoid grouping or "bundling" sites in its solicitation process. Instead, we recommend ADOT allow applicants to apply on a site-by-site basis. By bundling sites, ADOT risks vendors refraining from bidding on the bundle due to obstacles that arise for one or more of the sites in a bundle, such as difficulties securing site hosts, funding, or permitting. The New Hampshire Department of Environmental Services experienced this in 2019 when it tried to release its VW "Dieselgate" funding and received no qualified bids due to the overly specific requirements and statewide scope of the RFP. Creating an open solicitation for individual stations will likely increase competition overall because a greater number of vendors are likely to be well-positioned to apply for individual locations as opposed to a large set of locations. Furthermore, multiple networks operating within a state or corridor provide other advantages for drivers. They create redundancy during the construction and operational phases, so a state isn't dependent on one network to build out a corridor. |

Another option would be to allow applicants to propose a bundle or group of sites, but not require bundles of sites.

EVgo recommends state DOTs avoid including NACS requirements in phase one of their programs, and instead monitor industry trends and solicit stakeholder feedback to inform requirements in phase two.

As ADOT considers program requirements for connector types, we would like to provide comment on the potential requirement of the North American Charging Standard (NACS) within the NEVI program. EVgo has a history of delivering charging for all EV drivers, and recently announced we intend to integrate NACS connectors on the EVgo network in future deployments. While we look forward to continuing to serve all EV drivers – regardless of make or model – after NACS makes its way through standards bodies for reliability and safety, the reality is that any requirement to include NACS in the first round of NEVI funding is premature.

Specifically, a NACS requirement is likely to delay NEVI deployments. No NACS cable and connectors have received UL certification, and as manufacturers develop new offerings with NACS connectors they will need to re-certify for safety. Further, before manufacturers can develop their own NACS products, there are still several critical details not fully outlined in the NACS designs released to date that will need to be understood. Finally, until NACS is published by a standards body, a process just now getting underway, the NACS specifications are governed by a single company without standardization that suppliers can rely on to ensure safety, security, and interoperability of this connector.

Following certification by UL and a standards body, it will be necessary for electric vehicle service providers (EVSPs) like EVgo to conduct our own qualification process, which includes a number of tests for safety, reliability, durability, and interoperability as governed by UL, SAE, the Federal Communications Commission, and Open Charge Alliance. As any NACS connector deployed will need to undergo vetting by both standards bodies and subsequently, EVSPs' own internal processes for safety and reliability, as well as vehicle interoperability once non-Tesla NACS vehicles come to market beginning in 2025. Altogether, the process to ensure safety and reliability both through codes and standards bodies and EVSPs' own internal tests – combined with necessary testing for vehicle interoperability once non-Tesla NACS vehicles come to market – will be extensive. As such, prematurely requiring NACS in the first phase of NEVI would significantly delay deployments.

NACS connectors are not necessary at this stage to provide charging access to vehicles equipped with a NACS inlet, which until 2025 are limited to Tesla EVs only, and thereby serve all EVs. Adapters are already available for Tesla vehicles to enable them to plug into CCS chargers—for example, Tesla vehicles already charge on CCS connectors with a CCS1 adapter, and General Motors has announced it will make adapters available for NACS vehicles when they come to market in 2025. However, there are currently no adapters available to enable CCS vehicles to utilize NACS chargers. As a result, while implementation details are still being worked out for NACS – including the safety and reliability testing mentioned above - it would not lead to a stranded asset risk if state agencies continue to support the development of CCS chargers, as CCS chargers cater to a wider range of vehicles compared to NACS connectors, and will continue to do so as adapters are expected to become ubiquitous for NACS drivers in 2025 and beyond.

I will also attach a letter our coalition of EV charging companies recently provided to KY on this same topic.

		Again, please let me know if you'd like to talk further. Thanks so much,
35	7/24/2023	I could not get comments in via the link provided, so I am emailing. The whole nation is not ready for EV. We are rushing into this without taking into consideration the supporting materials needed and other factors. For example, mining and related endeavors will increase greatly to develop EV batteries. Not doing a whole lot for preserving Planet Earth. I don't believe that a good number of AZ drivers are that eager to purchase these vehicles. EVs cost is steep There are electric car safety concerns; if on fire, they require thousands and thousands of gallons of water to put said fire out (great use scarce resource). EV have long charging times. People will be standing in line quite a bit for a limited range of travel (miles) even with more charging stations. One thing that came to light recently, probably not applicable to AZ most of the time is the fact that electric vehicles struggle to perform when weather turns cold. We would do better in investing in a combo of nuclear power and fossils to improve overall efficiency of energy consumption and the environment instead of pushing these EV plans without having an alternate source of energy for the whole nation. Thank you for your attention.
36	7/22/2023	Thank you for contacting the Arizona Department of Transportation (ADOT). Your comments are important to us and have been shared with the appropriate members of our team.
37	7/22/2023	I appreciate the planned proposals for the Alternative fuel corridors . I have two questions, 1) Where is the energy coming from to feed these charging stations? Will another nuclear plant like Palo Verde be considered that can produce 32 million KW of carbon free power? 2) Most important to AZ drivers is this question, will the I40 and I10 corridor roads be repaired in this budget as well? The roads are destroying cars that use them especially through the Flagstaff to Kingman corridor.
38	7/25/2023	Charge Ahead Partnership ("CAP") is a coalition of businesses, associations, and individuals that share the common goal of efficiently and effectively developing a charging network for electric vehicles ("EVs") across the United States, CAP respectfully submits the following comments in response to the Arizona Department of Transportation's ("ADOT") request for input as you update your Electric Vehicle Infrastructure Deployment Plan ("Plan"). CAP looks forward to working with Arizona policymakers to create a robust marketplace for EV charging so that Arizona's system of charging locations is positioned to meet drivers' expectations of quality service, safety, and affordable, competitive pricing. CAP aims to empower the consumer and ensure that they have the confidence to transition to EVs knowing that they will be able to conveniently recharge no matter where they go in the country Drivers of gasoline-powered vehicles will only transition to EVs when they are confident that the

fast charging experience will be as safe, convenient and reliable as their current refueling experience. These comments are intended to guide Arizona's EV infrastructure deployment in a manner that will help realize this objective as promptly and efficiently as possible.

Many of CAP's members own the real estate that is best suited for direct-current fast charging
infrastructure. CAP members operate hundreds of store locations in Arizona, most of which are located
along highway corridors, and all of them offer the amenities that drivers will demand while refueling.1

CAP applauds Arizona for its intention to issue competitive contracts to private entities to either
upgrade existing stations or to install new stations using NEVI funds. We encourage ADOT to clarify that
"private entities" in this instance does not include quasi-governmental entities such as electric utilities thatcan pass their cost share to the ratepayer. This distinction is critical. Private enterprise must put their own money on the line, meaning they are incentivized to ensure their investments – and consequently NEVI funds – are spent on a refueling experience for which consumers will want to pay. Arizona should prioritize grant applications that specifically involve a company placing their own capital at risk to own and operate charging stations.

Having "skin in the game" is essential to a consumer-focused EV charging network. Charging station operators with their own investments on the line will be motivated to offer consumers more attractive pricing and better amenities. Meanwhile, if electric utilities are permitted to supplement NEVI grant dollars with ratepayer money in a risk-free, guaranteed rate of return environment, it will discourage private
investment and engender a faulty market structure. EV drivers will face more challenges and prospective EV purchasers will be less inclined to buy an EV.

A primary concern for our membership under Arizona's deployment plan is a potential preference
for awarding funds to a single entity to implement the program or divide up corridors of the state and solicit one entity for each region, and then tasking those grantees with identifying real estate to install chargers.

Arizona should avoid the outsourcing of siting authority to entities whose priorities are misaligned with the best interest of drivers. Moreover, a single entity that enters into several site host agreements across the entire state may be forced to settle for siting locations without the amenities or convenience that drivers are used to, which would degrade the customer experience and disincentivize EV adoption.

The inevitable outcome of this approach will be that EV drivers' recharging experience will be short-changed. Rather than having convenient, fast and reliable access to state-of-the-art EV chargers, EV drivers in Arizona will
continue to confront a less reliable network of chargers.

CAP is aware that ADOT is considering the implications of several automakers announcing that
they are moving to the Tesla, North American Charging Standard ("NACS") connector. CAP's members
are eager to provide any charging technology that EV drivers desire; however, CAP discourages ADOT
from requiring the NACS connector for the pending request for proposal ("RFP").

Requiring NEVI applicants to deploy stations with NACS connectors is premature and will increase costs unnecessarily for this first phase of NEVI. More time is needed to properly standardize, test, and certify the safety and

		interoperability of the NACS connectors across the industry. While the direction is clear that NACS will
		be needed to meet future charging demands, additional time is needed in order to standardize NACS. Efforts have been announced by CharIN and SAE to standardize the safety, security, and interoperability of this previously proprietary connector.
		It is important to note that currently adapters are easily available for NACS vehicles to charge on
		CCS connectors, but adapters are not yet widely available for CCS vehicles to charge on NACS connectors.
		The lack of any standard for adapters may pose a significant risk to reliability and safety in the short term; and will require further time to certify and test quality control. As a result, NACS connectors exclude a
		significant number of CCS vehicles on the market in a way that CCS connectors do not. Congress designed the NEVI program to catalyze private investment in an EV charging network
		on which drivers can rely. As customers utilize EV charging stations, they will expect a seamless and
		predictable experience not unlike their current refueling experience. The market dynamics that govern
		today's liquid retail fuel sector should be replicated to facilitate greater EV charging investment. CAP
		encourages ADOT to prioritize policies and applications that promote competitive market dynamics for EV charging. Thank you for consideration of these comments. CAP is happy to be a resource for ADOT and participate in any future stakeholder engagement opportunities.
39	7/25/2023	ADOT EVSE Planning Staff – In response to your EVSE deployment RFI, I am submitting the information below and attached regarding a related interstate planning project for medium and heavy-duty accessible alternative fuel infrastructure development.
		Under our West Coast Collaborative (WCC) public-private diesel emissions reduction partnership program, U.S. EPA has facilitated this project since 2016. While the data gathering portion of the project concluded last year, we continue to convene our partners to discuss related topics and follow up actions. Please let me know if ADOT would be interested in participating in the WCC AFICC Steering Team moving forward; our next virtual meeting is currently targeted for late-September 2023.
		Additionally, while I may not be available to regularly participate in ADOT's EVSE planning proceeding, I would be happy to speak with relevant ADOT staff at an appointed time to share findings from the WCC AFICC project, and answer related questions. Please let me know if that is desired.
		West Coast Collaborative Alternative Fuel Infrastructure Corridor Coalition (WCC AFICC)
		Phase 1: CALSTART Strategic Development Plan for initial MHD alternative fuel infrastructure projects in California, Oregon, and Washington. Main Page - https://westcoastcollaborative.org/workgroup/wkgrp-fuels.htm#plan Plan Document (published 3/13/2020) - https://westcoastcollaborative.org/files/sector-fuels/wcc-aficc-mhd-infrastructure-development-plan-2020-03-12.pdf Executive Summary - https://westcoastcollaborative.org/files/sector-fuels/wcc-aficc-mhd-plan-exec-summary-2020-03-12.pdf Highlights Fact Sheet - https://westcoastcollaborative.org/files/sector-fuels/wcc-aficc-mhd-plan-highlights-2020-05-19.pdf

		Phase 2: ERG MHD alternative fuel infrastructure survey for EPA Regions 9 and 10. Sought information on potential MHD alternative fuel infrastructure projects in western North America (including Arizona). i. Project Page – https://westcoastcollaborative.org/workgroup/wkgrp-fuels.htm#recommend Phase 2 survey closed on 9/30/2021 i. See project summary materials attached (.pdf and .pptx). Survey Data and Readiness Evaluation Method i. See attached survey data obtained by the WCC AFICC from 2018-2021 regarding investment needs for MHD-accessible alternative fuel station development (see .xlsx, Tabs 2-3 for Arizona data). ii. See attached Phase 2 survey form and project readiness evaluation methodology (.docx). iii. Note - We received a very robust submission from the Hydrogen Fuel Cell Partnership for Class 8-accessible H2 stations. Most of these proposed sites are existing truck stops and freight gateways/hubs, so additional alternative fuels could be located there as well (e.g., EVSE). I hope that you find this information useful for informing your ongoing work to support ZEV infrastructure deployment throughout Arizona. Again, please let me know if you have additional questions, would like to schedule a ADOT staff briefing on the WCC AFICC project, and/or if ADOT staff would like to participate in the WCC AFICC Steering Team moving forward.
40	7/22/2023	So who pays for this? Does it come out of the funds that are charged via the gasoline tax? It seems to me the people that benefit (I.e.) electric vehicle owners) then they should bear the burden of the cos to create this power grid, not the people driving traditional gasoline powered vehicles. - Also who is buying the power to sell to these ev owners? Will it be the companies that will be receiving revenue from the electric charging stations, or is the state going to be the supplier and seller? Why should tax payers fund the infrastructure for the income for these companies? Will there be a tax on the electricity similar to the gas tax? The use the same roads, causing wear and tear just like the petrol vehicles. And what is the state going to do about the disposal of the hazardous material in the batteries when they have to be disposed of? Will there be a tax on that as well? How about who provides the fire fighting services when one of these cars catching fire while charging? Will the local agencies receive any financial support from the state for that?

Table E - 2: E-mail Comments Received from 2023 Form

Note: Some comments have been edited to remove identifiable information.

#	Date	Time	Area Code	Message
1	6/27/2023	4:35:22 PM	425	Hello, my name is [Name]. I'm calling from [Company]. We're an electric vehicle charging infrastructure provider in Seattle, Washington. We have some customers in Arizona, so we are wondering about whether there is an RFP out for Arizona's NEVI program yet and if so what are the upcoming deadlines to apply for NEVI funding in Arizona. I'm referring to the National Electric Vehicle Infrastructure program. We are very curious what the upcoming deadlines are. So, please, do let me know. Again, this is [Name] with [Company] and I can be reached at [Phone Number], that's [Phone Number]. Thank you and have a great day. Bye.
2	7/18/2023	2:45:09 PM	425	Hello, this is [Name] with [Company]. I am wondering if a recording of tonight's meeting will be available for those who were invited but cannot attend. Please let me know if the recording will be available and, if yes, how I can access it. Feel free to give me a call back here anytime. Again, I'm [Name] with [Company]. My number is [Phone Number] or please do feel free to follow up over email. I'm at [Email]. Thank you, and have a great day. Bye.
3	7/20/2023	3:59:57 PM	480	Wow, this is kinda hard to get through, but hey! I'd like to know more about the EV charging program you guys are working on. I got an email like two hours before the program and I'm trying to get caught up so I could not attend the online program, if it was on Zoom, because there's like two hours ahead of time. I didn't check my email. Anyhow, my name is [Name], [Email] - I'd sure like to know what's going on and I'm trying to find out. Please call me if you can help me. Thank you. Bye.
4	7/24/2023	6:19:07 PM	928	Hi my name is [Name], I'm calling from Lake Havasu City City Managers Department. We have some questions about this proposal that's coming out from ADOT and phase 2. If you could, please call me back. My phone number is [Phone Number]. Thank you.
5	7/25/2023	11:03:41 AM	928	Hey, good morning. I just read the article in the Daily Courier up here in Preston about charging stations. There's nothing in the article that says how much it's gonna cost these folks to charge their vehicle. I hope it's not free. Once again it's a case of the haves versus the have-nots. If you can afford a $70,000 car, hey, great, but why should you get to drive it for free? They don't pay road taxes, either. Anyway, that's my concern. I'm getting nickeled and dimed by everybody. See you later, bye.

Note: No comments were received by postal mail.

Endnotes

1 Alternative Fuel Corridors (AFCs) is an FHWA designation that support to deployment alternative fueling infrastructure along highways.

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