

# Charging and Fueling Infrastructure Grant

Grant: Community Grant Application  
Funding Opportunity # 693JJ323NF00004  
Location: Mesa, AZ  
Project Applicant: City of Mesa  
UEI Number: E2Y8LRS18AU3  
Grant Requested: \$11,898,571  
Matching Funds: \$2,974,644 (20%)  
Total Project Cost: \$14,873,215



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# Executive Summary

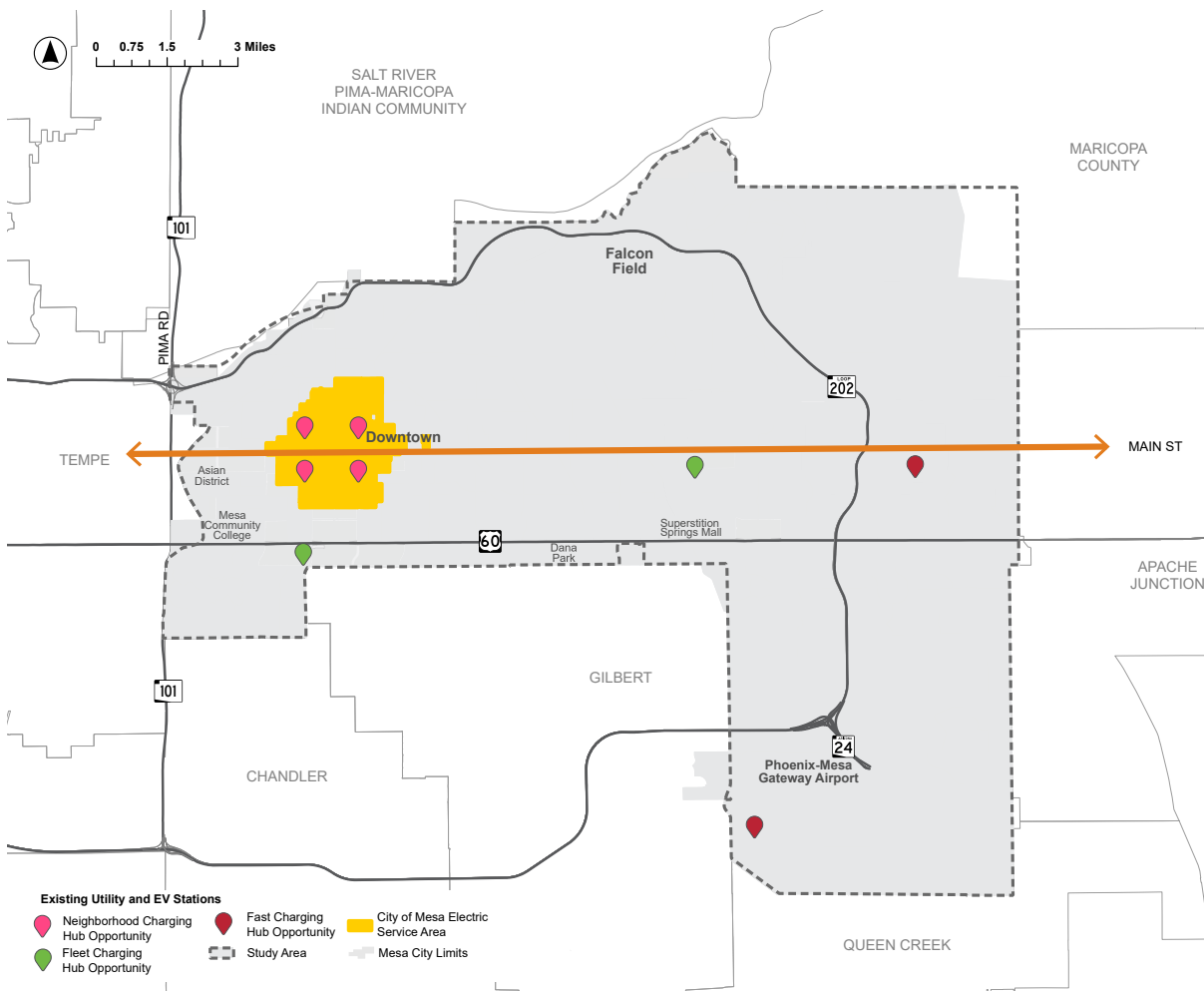
With award of this grant application, the City of Mesa will be able to support its goals for a decarbonized and accessible multimodal transportation system. It will expand local and regional access to Electric Vehicle (EV) charging, as well as advance the national vision for a future where everyone can ride and drive electric.

Today, there are 49 public EV charging stations with 118 ports in the City of Mesa. Funding this grant application will increase the number of public EV stations by 16%, increase the number of stations in Justice40 block groups by 167%, and increase the number of public EV charging ports by 41%.

The project includes EV chargers for cars and trucks as well as charging docks for e-bikes and e-scooters and electricity generation augmented by solar canopies. In addition to advancing the goals for EV access and adoption, this project will also support multimodal electrification and the transition to clean energy.

The total estimated cost for this project is \$14,873,215. The City is requesting \$11,898,571 in CFI grant funds and will provide a 20% project match of \$2,974,644.

*Figure 1. Proposed Public EV Charging Hubs*




# I. Project Narrative


## A. Project Location


### 1. City of Mesa


The City of Mesa (City or Mesa), located in the heart of the Phoenix metropolitan area’s East Valley, is the third-largest city in Arizona, the [37th largest city in the United States](#) (U.S.), and has a [2022 population](#) of 513,977. The City is larger by population than Miami, Minneapolis, Atlanta, and St. Louis, featuring [138 square miles](#). Within a [30-minute drive of Downtown Mesa](#), there are 923,224 households, making up a population of 2,352,513 people.


**Comparison**


Mesa: 138mi<sup>2</sup>,  513,977

Miami: 55mi<sup>2</sup>,  449,635

Minneapolis: 57.5mi<sup>2</sup>,  429,292

Atlanta: 136mi<sup>2</sup>,  502,665

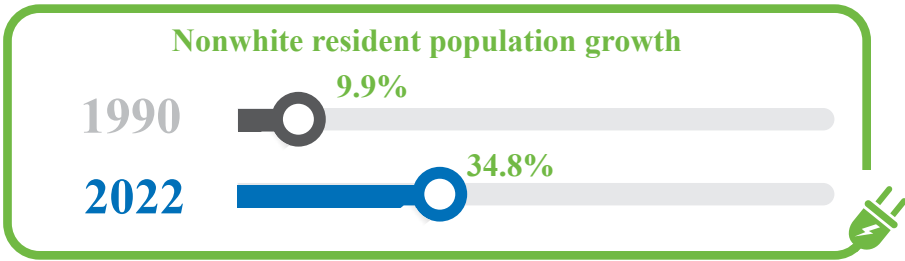
St. Louis: 66mi<sup>2</sup>,  296,958



### Community Fabric

Modernization in Mesa drove the economy from an agricultural focus to a technological, tourism, and service industry focus. Mesa evolved into a *destination* for visitors nationwide. [Mesa’s 2040 General Plan](#) (GP) is built on the foundation of “creating a city of choice(s)”. Rapid population growth over the last 30 years led Mesa to develop as a “sprawling bedroom community,” but the GP set the stage for revitalizing the community’s sense of place and pride.

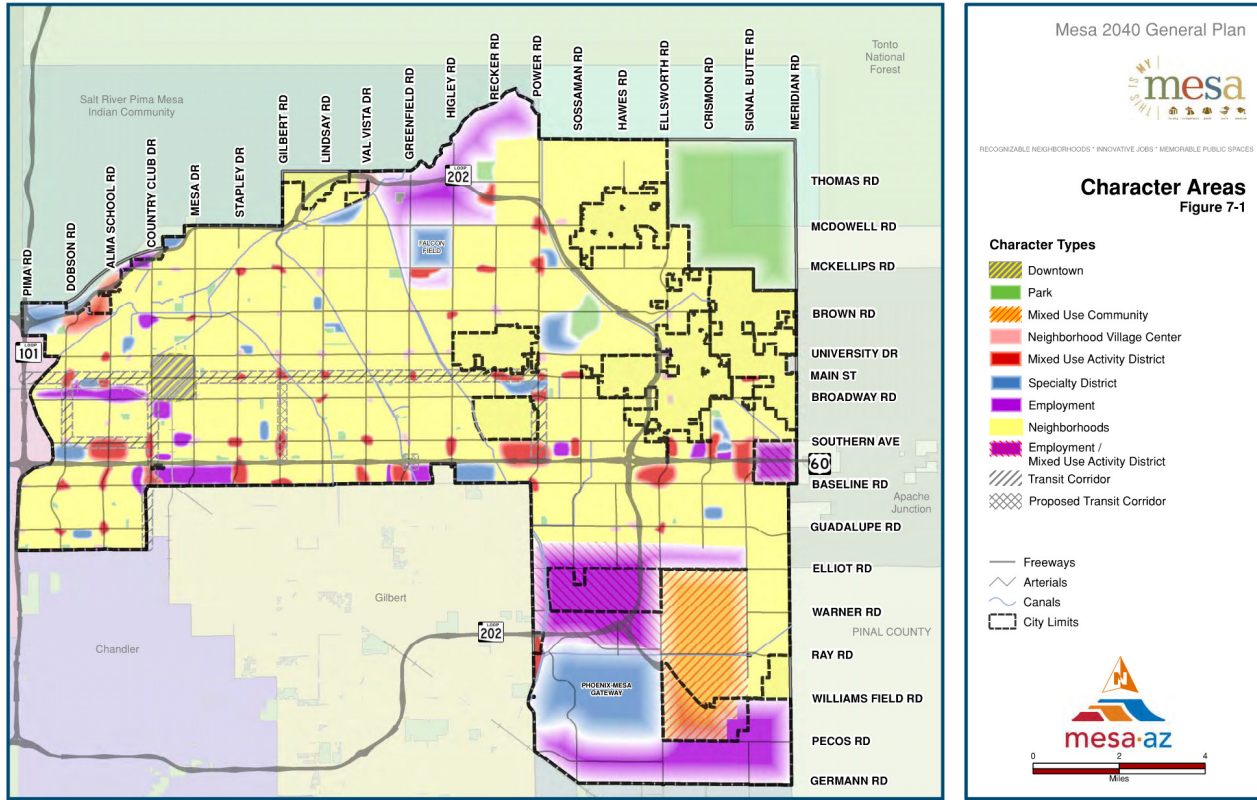
The City’s population is youthful, with 70.8% being under 54, and growing in diversity. From 1990 to 2022, nonwhite residents have increased in number from 9.9% to 34.8%. These residents, as recounted in the GP, seek an active, urban lifestyle but are faced with climate extremes and limited resources in Arizona’s gorgeous but unforgiving desert environment. Data over time demonstrates rising temperatures in Mesa, especially in urban areas due to heat island effects.



In all they do, the City seeks to increase connectivity and access between places. In establishing character areas to guide future development, the City identified Mixed Use Activity Districts and Employment Districts that occur along or at the intersection of major arterials, in addition to concentrated areas of Employment around areas poised for economic development. The community fabric and changes over time are key in performing analysis on community charging infrastructure needs and planning for the future.



Figure 2. Community Character Map



### Climate Action Plan

The City of Mesa is committed to proactively addressing climate change and has adopted a Climate Action Plan (June 2022) intended to lower climate impact, guide sustainable growth, and build a resilient community. The City recognizes their goals as “ambitious” and “community-focused.” Three of their primary target areas are illustrated in Figure 2, all of which play a direct role in the proposed Project.

One of the outcomes of the Climate Action Plan is City's investment in planning for its EV future. It has developed a fleet transition plan and is currently developing a Community Charging EV Plan.

Figure 3. Climate Action Plan Focus Areas





## Transportation Network

### Mesa's Transportation Vision

- Shorter Trips
- Sustainable Mode Choices
- High Quality of Life
- Economic Development
- Creation of High-Quality Jobs



The [Mesa 2040 Transportation Master Plan](#) (TMP) envisions the future of the transportation network in Mesa as “one of ubiquitous and convenient interconnectivity, for all modes, and all users.” The TMP describes this network as focused around activity centers that support the transfer between modes and will become public gathering spaces. In the GP, the City highlights the importance of a community’s transportation system providing “dependable, efficient, safe, aesthetic, and economical choices of routes and modes of travel for residents and visitors to reach

destinations.” The City’s rapid suburban development led to a reliance on personal automobiles to reach destinations, though the City and its residents seek to change this through increasing multimodal connectivity and walkability. Mesa envisions a transportation and transit system that provides for the movement of goods and people, “whether it is around the corner or around the world.”

## Existing Electric Vehicle Charging Infrastructure

Equitable access to charging is limited across the City. 3 of the 49 EV charging stations are located in Justice40 designated block groups. At the 49 existing public EV charging stations, there are 18 DCFC ports and 100 Level 2 ports.

Geographically, the existing infrastructure is spread across the jurisdiction, but key transportation corridors and activity centers lack charging infrastructure. Further, residents of neighboring urban and rural areas, such as Apache Junction and unincorporated Pinal County, do not benefit from the spread of infrastructure in the community. Such residents must travel well out of their way to reach charging infrastructure.

*Despite Mesa's proximity to major roadways in the Phoenix Metro Area, including U.S. Route 60, State Road 202, and State Road 24, Mesa does not have a designated Alternative Fuel Corridor (AFC), disqualifying the community from Federal and State EV grant opportunities focused on AFCs.*

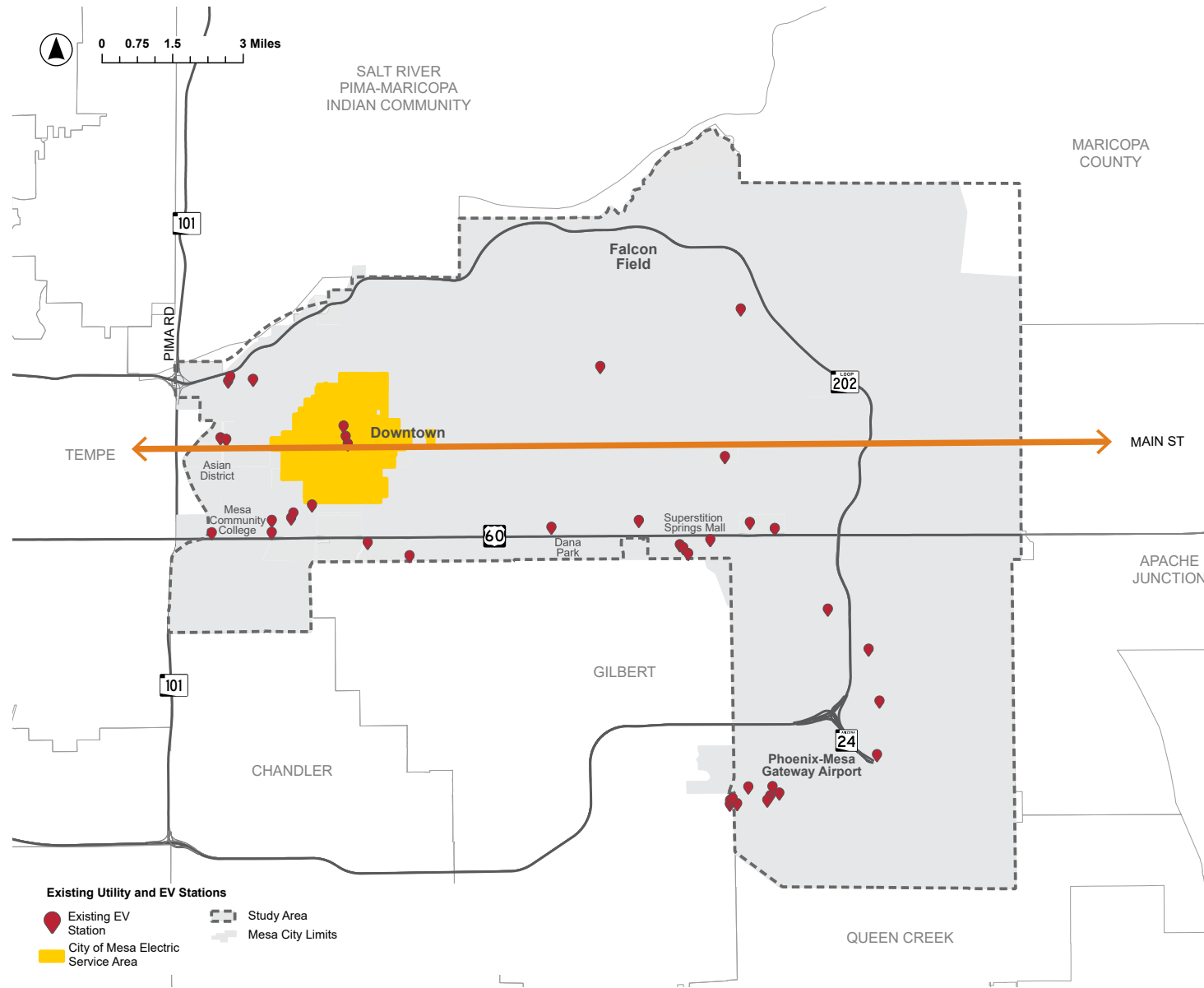


Given Mesa's importance to regional connectivity and densely populated areas, the City has determined additional charging infrastructure is critical here to create a strong nationwide charging network that also benefits disadvantaged communities. In reviewing the available charging infrastructure, Geographic Information System (GIS) analysis showed gaps in Mesa meeting demand. This funding request to the Charging and Fueling Infrastructure Community Program aims to close these gaps and provide better access to disadvantaged and rural communities in and around Mesa.





Figure 4. Existing EV Charging Infrastructure



## 2. Project Sites

Mesa has not at this time identified exact sites for the proposed charging infrastructure, however, the City has outlined a plan and identified block groups where the charging hubs should be located. GIS analysis was used to determine the most suitable areas to support increasing access and benefit disadvantaged communities. The proposed block groups for siting charging infrastructure are identified in Section I.B.

### *Types of Proposed EV Charging Hubs*

**Neighborhood Charging Hubs.** They are intended to be located along major streets such as W Broadway Road, S Mesa Drive, and W University Drive. The hubs are all close to Main Street and Mesa's Light Rail Stations. Charging infrastructure installed in this area will be in Downtown Mesa, meaning easy access to many local businesses or residences, as well as important connections to transportation infrastructure that will support not only electric vehicles but also multimodal transportation choices that may include a first mile/last mile trip to the charging hub and the remainder of a trip using public transit.

**Fast-Charging Hubs.** The NEVI-compliant Fast-Charging Hubs are located just south of the US 60 Superstition Freeway, a major thoroughfare, and S Recker Road, which traverses from E Broadway Road up to the northern edge of the City. These hubs will be served by a well-developed transportation network that promotes connectivity across regions.

**Public Fleet Charging Hubs.** They are intended to be located near E Apache Trail / Main Street, just east of State Road 202, as well as in the southernmost portion of Mesa where the Phoenix-Mesa Gateway Airport is. Again, these hubs are located within a well-developed transportation network that promotes connectivity across regions.

### *Traffic Safety Considerations (Vehicle Ingress/Egress)*

The City of Mesa recognizes the importance of safe access to charging infrastructure, for which reason, during site design, the City will prioritize safe ingress to and egress from the charging hubs, as well as providing ample space for vehicles at the charging stations and people maneuvering around vehicles to operate the charging equipment. Further, the City recently won a USDOT Safe Streets and Roads for All (SS4A) Planning Grant to develop a critical Comprehensive Safety Action Plan to guide the future of its transportation system development, particularly as the City works toward its 2050 targeted buildout. The goal of this plan is to reduce serious injury and fatal crashes by designing and operating roadways in a manner that anticipates human error and accommodates human injury tolerances. This fits with the City's focus on ensuring transportation safety and equity for this fast growing, rapidly diversifying community. The City will have the opportunity to ensure all aspects of the transportation network, including electric vehicles and their charging infrastructure, fit into the overall vision of safety for the community.



### 3. Safety Risks Introduced by the Project

The project is not generally anticipated to produce risks beyond the standard risks created by EV charging infrastructure, which can be mitigated through proper installation and regular inspection.

*Table 1. Safety Risks and Mitigations in the Project*

Risk	Mitigation
Electrical Shock or Ground Fault	Properly protected insulation to prevent the intrusion of dust or moisture along the circuit
Damaged Charger	Regular inspection of charging equipment



### 4. Overall Safety of the Traveling Public

The overall safety of the traveling public will not be negatively impacted since these charging hubs will be well planned and designed sites, whether standalone or on already developed sites, suited to their intended use. Similar to any other development in a community, the installation of charging hubs throughout Mesa will not negatively impact the traveling public.

## 5. National Roadway Safety Strategy / Safe System Approach

The National Roadway Safety Strategy (NRSS) is organized around five objectives: Safer People, Safer Roads, Safer Vehicles, Safer Speeds, and Post-Crash Care. This project will further Safer People and Safer Vehicles.

### Safer People

The City of Mesa will ensure site design where public EV charging infrastructure is installed encourages safe, responsible behavior. Infrastructure will be placed in a manner intended to reduce conflicts between vehicles and vulnerable road users.

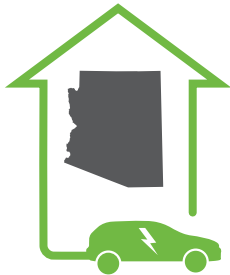
The City of Mesa will also promote user safety during educational and community engagement activities, which will include teaching the public best practices in using the charging infrastructure and navigating sites that offer charging infrastructure.

### Safer Vehicles

The expansion of EV charging infrastructure throughout the City, especially in areas lacking sufficient charging access, will encourage the adoption of EVs over time. In 2016, there were approximately [280,300 EVs](#) registered in the U.S. In 2021, this number reached 1,454,400, showing the growth of EVs as infrastructure has become more readily available. In Arizona alone, there was a 766% increase in registered EVs from 2016 to 2021. This increasing adoption of EVs is important given that newer vehicles have better built-in safety features than older models. While there are a substantial number of factors that contribute to crashes, the U.S. General Services Administration Office of Motor Vehicle Management has cited human error as causing [98% of crashes](#). This is further supported by several studies done by [universities](#) and the National Highway Transportation Safety Administration (NHTSA), all of which indicate at least [90% of crashes](#) are caused by human error. Common driver errors include speeding, reckless driving, distracted driving, chemical impairment, and fatigued driving. Human error can be mitigated through [advanced driver assistance systems](#), such as adaptive cruise control, active parking assistance, automated emergency braking, blind spot monitors, driver attention monitors, forward collision warnings, lane departure warnings, lane keeping assistance, parking sensors, pedestrian detection, traffic sign recognition, and even night vision. These advanced features are becoming more common in the industry, including in EVs. Increased accessibility to EV charging infrastructure will encourage the adoption of EVs and increase their affordability as demand rises.

[One study](#) compared the electric and conventional versions of nine models of vehicles ranging in years between 2011 and 2019, examining collision, property damage liability, and injury claims. The results of the study demonstrated that driver and passenger injury claims were 40% lower in EVs than their identical conventional models. This is in part due to [vehicle design](#) – EV cars are often designed with their batteries along the bottom of the vehicle, producing a lower center of gravity that increases the stability of the car and lowers the prospect the car will roll over.

**766%**  
 Increase in registered  
 EVs in Arizona from  
 2016 to 2021



## 6. Compliance with Americans with Disabilities Act of 1990

The City understands the importance of ensuring any facilities designed, built, or altered with federal funds are accessible, per the Architectural Barriers Act (ABA). Both the ABA and Americans with Disabilities Act (ADA) contain key requirements relating to access to sites, facilities, buildings, and elements, which will be followed when designing these EV charging sites. This includes continuing accessibility through to user interfaces and payment systems, as is required of all information and communication technologies (ICT) provided by the Federal government under Section 508 of the Rehabilitation Act.

*Source: [access-board.gov/tad/ev/#definitions](https://access-board.gov/tad/ev/#definitions)*



The EV charging infrastructure installed with these grant funds will be connected to an accessible route and designed to be easily accessed by users of all abilities. This includes having clear ground spaces meeting ADA requirements related to sizing, firmness, stability, slip resistance, and slope so all customers are safe from balance-impairing hazards while using the EV charging sites. Stations will feature unobstructed side reach, and operable parts will be placed no higher than 48 inches above the ground space. The EV charging connectors, also known as plugs, will be operable with one hand and require a force no greater than 5 pounds to activate, per the requirements defined in [ADA Standard 309](#). Site design will ensure

*Source: [access-board.gov/tad/ev/#definitions](https://access-board.gov/tad/ev/#definitions)*



placement of the charging cables, whether stored or connected to vehicles, will not obstruct accessibility.

To ensure quick and efficient service to all users, the information provided by the EV Charger User Interface will be conveyed or requested by each station in more than one way, e.g. audibly and visually. Accessible customer service, whether using two-way voice communication or signs with phone numbers that include a Teletypewriter (TTY) feature or text message support, will be provided.

Any websites or mobile applications provided as part of this Project that will be employed by users to locate charging stations, pay for electricity, start or stop charging, and send



notifications will meet industry standards for digital accessibility. Measures will be taken to ensure customers are provided full accessibility through every facet of their user experience, from the routes to the EV charging sites to the entrances of on-site buildings.

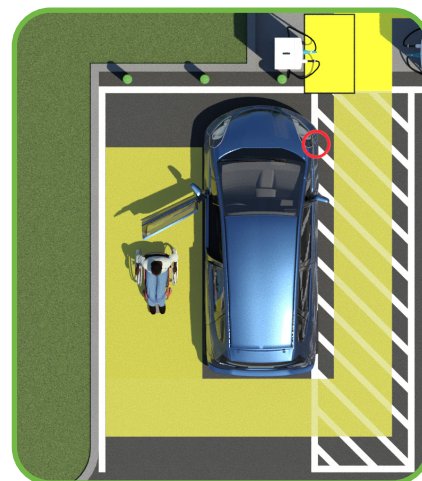
Charging infrastructure placed on existing sites will comply with the ADA

and ABA requirements for alterations and additions, including providing an accessible route and a reasonable number of chargers in compliance with operable parts requirements and clear ground space requirements.

The [Access Board](#) has also identified optional accessibility features that they recommend are considered in site design and charging infrastructure placement. Mesa, in deploying this EV infrastructure, will strive to incorporate the following features into site design and infrastructure placement:

- Charging spaces that provide ample length and width, as well as an access aisle that allows all users to maneuver comfortably around their vehicle to the charger.
- Variety of access aisle locations and charger configurations for sites that serve multiple types of EV's with various vehicle charging inlet locations.
- Install chargers level with the ground rather than on a curb.
- Straps or loops being incorporated into the connector to support carrying it.
- Contactless payment system with tactile discernability.
- Providing pictures of accessible EV charging stations online or via an app to support users planning their trips and understanding the accessibility environment on the site.
- Creating accessible routes from the charging stations to nearby amenities.
- Identifying accessible stations with signage promoting a "Use Last" model that suggests to the public these stations should be left available for people with disabilities.

*Source: [access-board.gov/tad/ev/#definitions](https://www.access-board.gov/tad/ev/#definitions)*



## B. Meeting Community Needs

### 1. Charging Infrastructure Local Analysis

To ensure the Project will expand community-based infrastructure and fill gaps in access by equitably expanding the deployment of publicly available EV charging infrastructure, a suitability analysis was done using GIS. The City developed criteria to compare and rank Census Block Groups according to the EV infrastructure needs of the community, seeking to serve concentrations of multi-family residences, fill gaps in the fast-charging network, and serve small business commercial fleets as well as general public charging. The City identified a desire to provide charging hubs in their community in the following categories: Neighborhood Charging Hubs, Public Fleet Charging Hubs, and Fast Charging Hubs.

Neighborhood Charging Hubs are intended primarily to meet the needs of citizens and visitors in and around the Downtown Mesa area and provide an equitable expansion of infrastructure by serving disadvantaged communities. Public Fleet Charging Hubs are intended to meet the needs of a wider array of vehicle types and the faster charger needs associated with local small business commercial fleet vehicles while still providing public access. Fast Charging Hubs are intended to expand community access to shorter charging times, as well as increasing accessibility near rural, industrial, or tribal areas.

#### *Prioritization Criteria*

Table 2 details the criteria and scoring assigned to measure community need. Criteria included population density, multifamily unit density, location of Justice40 designated block groups, trip volume, proximity to major roadways, job density, industrial land use density, and existing public charging. Each type of hub identified above featured slightly different prioritization criteria based on the needs it would need.

#### *Results*

Figure 4 demonstrates a concentrated, consistent need in Downtown Mesa, located on the western side of the City. Infrastructure needs continue down Main Street to the eastern end of the municipal boundary. Fast charging and small business fleet analysis additionally showed need near commercial and industrial lands on the northern and southern ends of the City, including near the Phoenix-Mesa Gateway Airport.





Table 2. Prioritization Criteria

What We're Measuring	How We're Measuring	Scoring Criteria
<b>Neighborhood Charging Hub</b>		
Where People Live	Population density per square mile by block group	Low - 1 point - lower third of population density in Mesa Medium - 2 points - middle third of population density in Mesa High - 3 points - top third of population density in Mesa
Density of Multifamily Households	Total number of multifamily households within a block group	Low - 1 point - Lower third of number of multi-family units Medium - 2 points - middle third of total number of multi-family units High - 3 points - top third highest number of multi-family units
Equity	Justice40 designated block groups	Yes - 3 points No - 0 points
Existing Public Charging Access	Ports per 1k population	Low - 3 point - lower third of port density Medium - 2 points - middle third of port density High - 1 points - top third port density
City of Mesa Utility Service Area	Within the utility service area	Yes - 3 points No - 0 points
<b>Fast-Charging Hub</b>		
Equity	Justice40 designated block groups	Yes - 3 points No - 0 points
Proximity to Interstates/ Limited Access Freeways	Proximity to AZ 202, US 60, and AZ 87	Within 1 mile - 3 point Within 5 miles - 2 points More than 5 miles - 1 points
Existing Public Fast Charging Access	DCFC ports per 1k population	Low - 3 point - lower third of port density Medium - 2 points - middle third of port density High - 1 points - top third port density
Trip Volume	Volume of daily trips that end in the block group	Low - 1 point - lower third of daily trip volume Medium - 2 points - middle third of daily trip volume High - 3 points - top daily trip volume





What We're Measuring	How We're Measuring	Scoring Criteria
<b>Public Fleet Charging Hub</b>		
Where People Work	Job density per square mile	Low - 1 point - lower third of job density in Mesa Medium - 2 points - middle third of job density in Mesa High - 3 points - top third of job density in Mesa
Industrial Activity	Share of land dedicated to industrial land uses	Low - 1 point - lower third of share of industrial land in Mesa Medium - 2 points - middle third of share of industrial land in Mesa High - 3 points - top third of share of industrial land in Mesa
City of Mesa Fleet location	City fleet locations located within a block group	Yes - 3 points No - 0 points
Equity	Justice40 designated block groups	Yes - 3 points No - 0 points
Existing Public Charging Access	Ports per 1k of jobs	Low - 3 point - lower third of port density Medium - 2 points - middle third of port density High - 1 points - top third port density
Proximity to Major Freight Corridors	Proximity to National Highway Freight Network	Within 1 mile - 3 point Within 5 miles - 2 points More than 5 miles - 1 points



Figure 5. Neighborhood Charging Hub Suitability Analysis Map

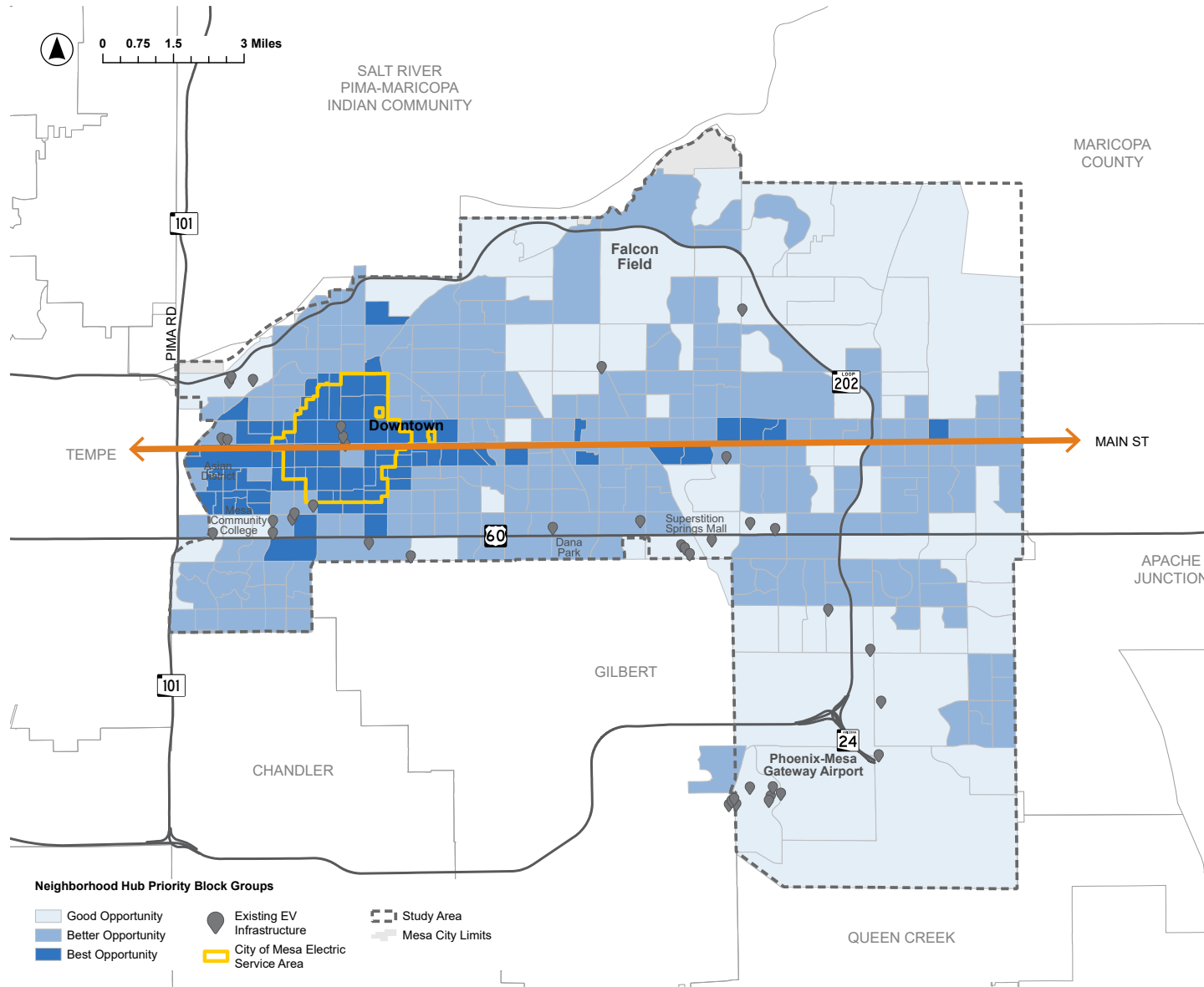




Figure 6. Fast-Charging Hub Suitability Analysis Map

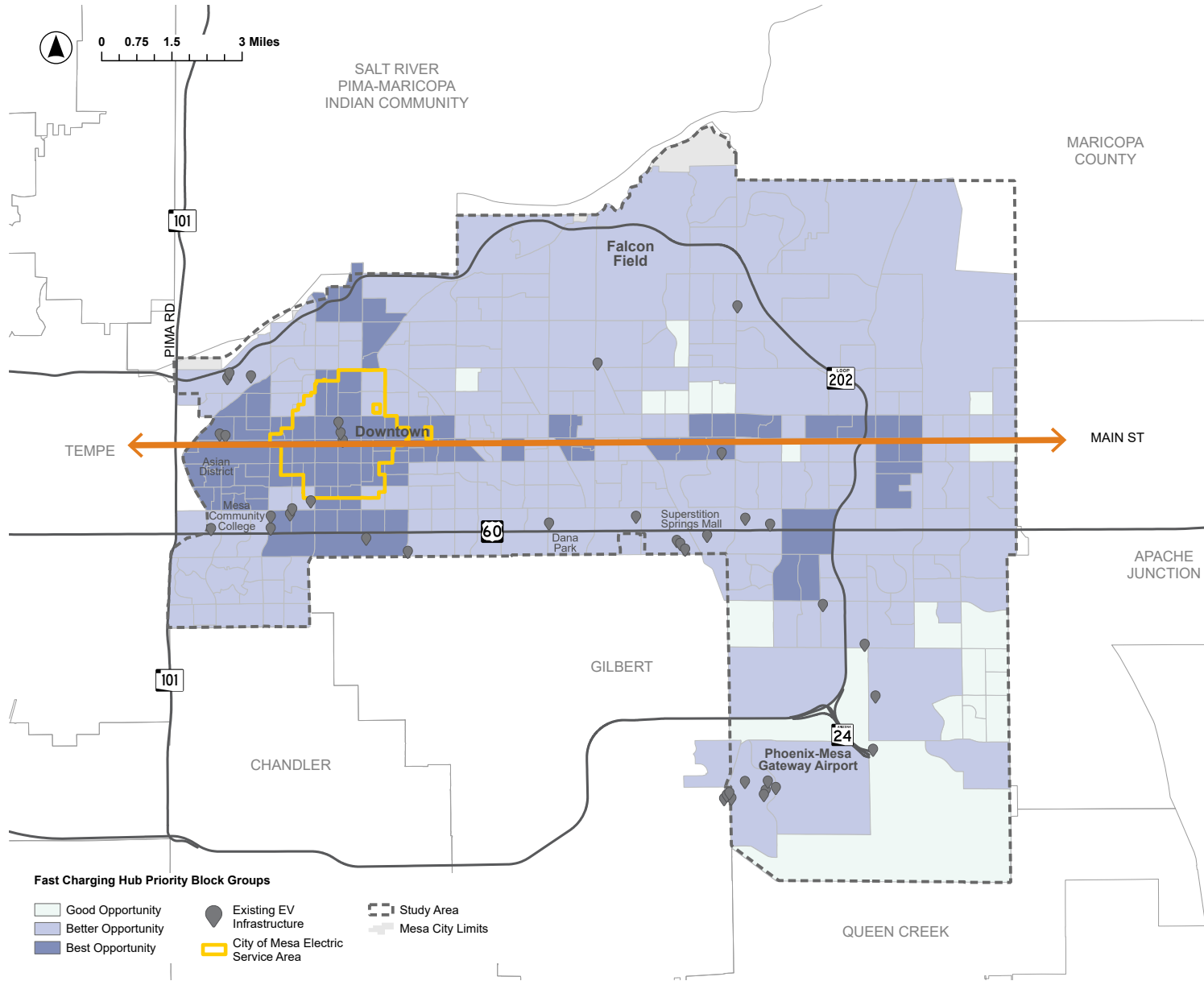
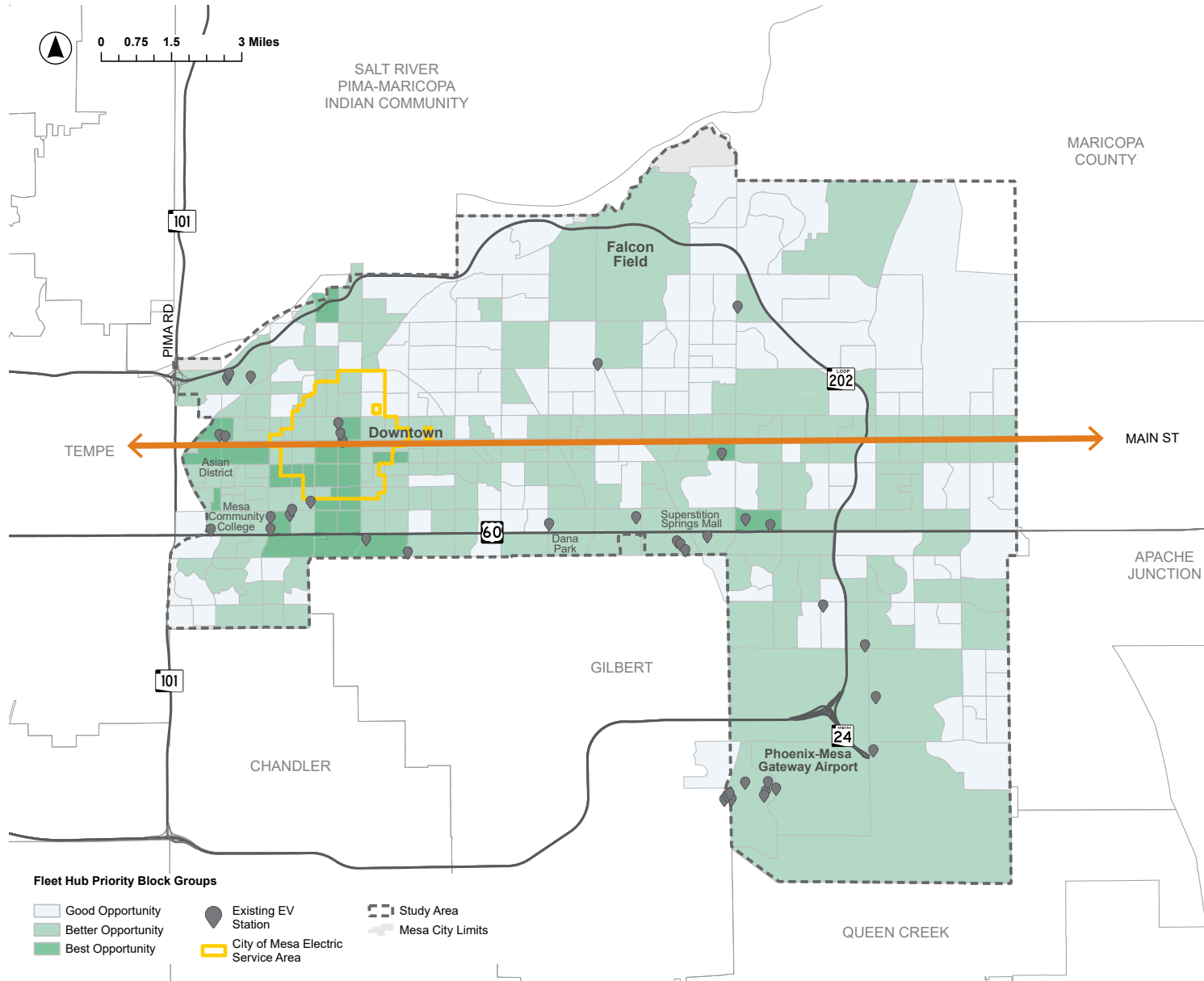




Figure 7. Public Fleet Charging Hub Suitability Analysis Map



## 2. Identified Priority Areas

Based on the suitability analysis results, the City seeks to focus the expansion of community-based charging infrastructure in these locations. The City will perform site analysis in these areas to determine the final recommended location for each hub. Hubs will be located on public roads or in other publicly accessible locations. An estimated five of the eight new hubs will be provided in disadvantaged block groups.

*Table 3. Planned Charging Hubs*

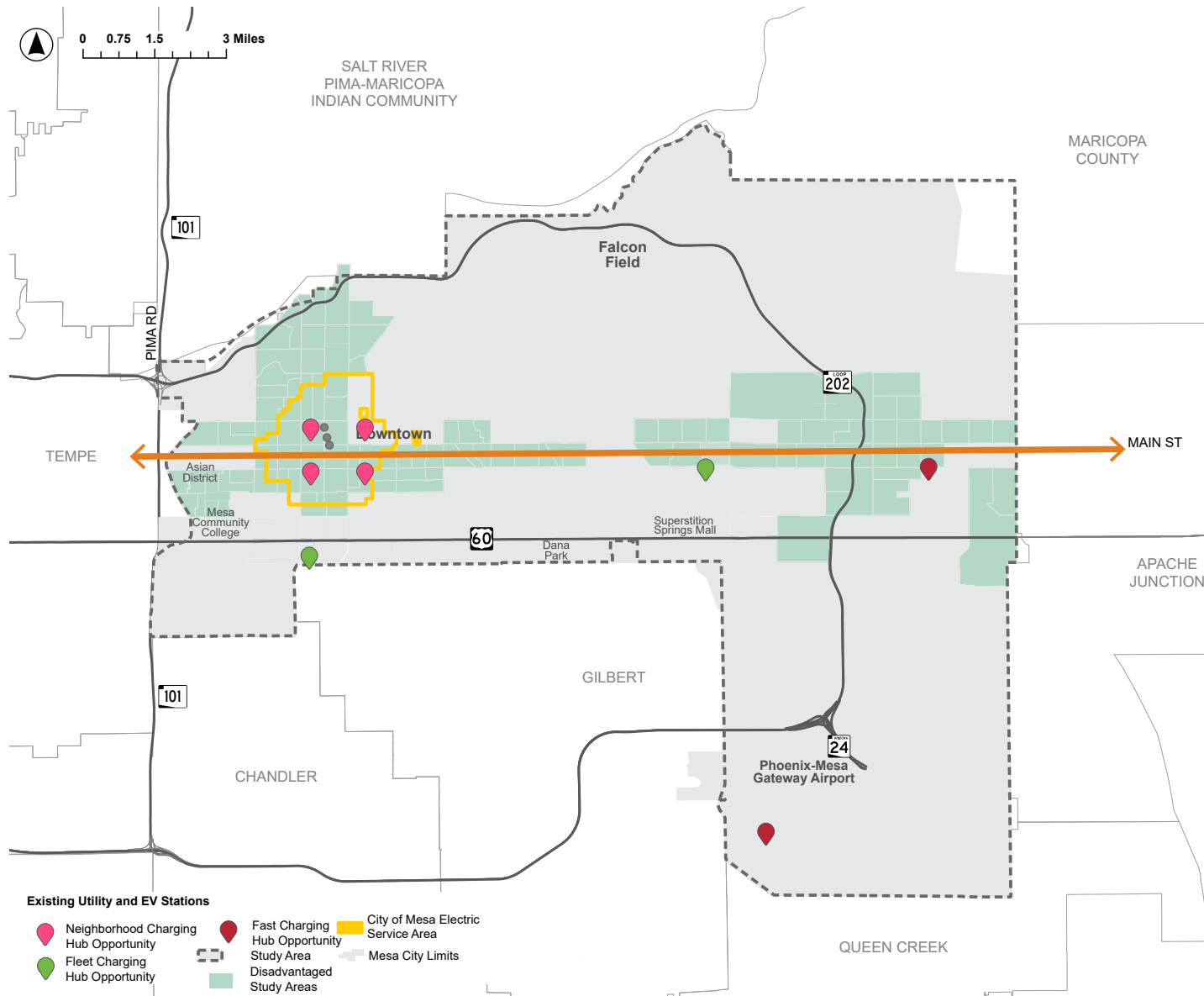
Charging Hub Type	Potential Block Groups	Number of Charging Ports	Maximum kW Per Hour Power Capacity
Neighborhood Charging Hub	040134213021 (D) 040134211022 (D) 040134214001 (D) 040134210021 (D) 040134209022 040134215022 040134214002 (D) 040134215011 (D) 040134219024 (D) 040134220011 (D) 0134221062 (D) 040134221063 (D) 040134213022 (D)	24	784
Public Fleet Charging Hub	040134226282 (D) 040135228021	16	1920
Fast Charging Hub	040134222033 040134226252 (D)	8	1440

(D) = Disadvantaged per the Electric Vehicle Charging Justice40 Map, USDOT, 2023





Figure 8. Proposed Project Areas



### C. Budget Summary

The City of Mesa requests \$11,898,571 in Charging and Fueling Infrastructure (CFI) funding. The City will match this with \$2,974,644, for a total project cost of \$14,873,215. Table 4 provides a simplified budget table that demonstrates most of the budget goes toward Electric Vehicle Charging Stations (EVCS), Electrical Construction, and the Solar Canopies. All budget considerations below are related to construction or reconstruction of real property and associated development phase activities. 4% of the total budget is allocated to Educational Campaign Development for which the City will work with local partners to develop and implement educational programs to support the use of zero emissions vehicles and associated infrastructure. A breakdown of budget by charging hub type is available in the Section II. Budget Information.

*Approximately 60% of funds will be spent in disadvantaged areas.*



Table 4. Simplified Budget Table

Activity	Funding Categories		Activity Total	% of Total
	CFI	Non-Federal		
Design Service	\$560,000	\$140,000	\$700,000	5%
Utility Connection	\$752,000	\$188,000	\$940,000	6%
EVCS <sup>1</sup>	\$1,760,000	\$440,000	\$2,200,000	15%
Electrical Construction	\$1,673,856	\$418,464	\$2,092,320	14%
Solar Canopy	\$3,200,000	\$800,000	\$4,000,000	27%
Limited Site Work	\$226,240	\$56,560	\$282,800	2%
Contingencies	\$3,268,838	\$817,210	\$4,086,048	27%
Educational Campaign Development	\$457,637	\$114,410	\$572,047	4%
<b>Total</b>	<b>\$11,898,571</b>	<b>\$2,974,644</b>	<b>\$14,873,215</b>	
<b>%</b>	<b>80%</b>	<b>20%</b>	<b>100%</b>	

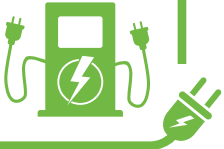
1. Electric Vehicle Charging Station

**D. Additional Project Narrative Information**

**1. Focus Area: Urban/Suburban Area Charging and Fueling Solutions**

This Project focuses on providing convenient, affordable access to charging infrastructure in urban and suburban areas. The proposed Neighborhood Charging Hubs are focused in the area immediately in and surrounding Mesa’s Downtown, which features a high concentration of multi-

**5/8**  
 charging hubs proposed  
 in disadvantaged areas



family residences. These hubs are suitable to serve both urban need as well as inner-ring suburban needs. The City intends to provide a variety of charging power levels to users, which will suit the needs of many in the area as well as the traveling public. The City will work with the future networks these charging hubs are on

to address innovative challenges such as reservation/convenient availability of chargers, reliability, and the management of limited spaces. Five of the eight charging hubs are additionally proposed to be in disadvantaged areas, improving access in low-income areas that have limited ability to install at-home charging, particularly when they reside in multi-family units.

Each Neighborhood Charging Hub will also feature five ebikes dock stations, allowing for the charging of electric bicycles in Mesa, adding convenience for residents taking short trips around the Downtown area.

**5**  
 ebike dock stations at each  
 Neighborhood hub



*Table 5. Estimated Time to Charge*

# of Ports	Estimated Time to Charge
16	4 – 10 hours
32	20 minutes – 1 hour







## 2. Focus Area: Rural Area Charging and Fueling Solutions

This Project also intends to expand access to charging infrastructure to rural communities. While the entirety of Mesa is considered urban, areas east and southeast of Mesa are considered Rural. Areas north and south of the City are considered Tribal lands. With the proposed placement of the Fast Charging Hubs and the Public Fleet Charging Hubs, the City intends to maximize accessibility for Rural and Tribal communities by providing two Public Fleet Charging Hubs with a variety of power levels at each hub. One of these hubs is located along US Route 60, allowing neighboring cities and Tribal and Rural communities to easily reach the hub. Additionally, the City seeks to provide Fast Charging Hubs near the eastern edge of town, as well as near the Phoenix-Mesa Gateway Airport. The first, near the eastern edge of town, will make it more convenient for travelers coming from the east who may live in Apache Junction or farther to reach accessible, fast charging. Public charging provided near the airport will also be more accessible to Tribal lands and the Rural areas beyond them, especially if located near State Road 87.



### 3. Focus Area: Fleet Vehicles that Serve and Operate in Communities

As evidenced in Figure 1, Mesa has concentrations of employment and mixed-use activity centers spread out across the City. The City understands that as EV infrastructure is more widely adopted, more vehicle types will need to use the charging stations. To accommodate this, serve local small business commercial fleets, as well as the general public, the City is proposing hubs designed especially for such a wide variety of uses. At the Public Fleet Charging Hubs, the sites will be designed in a manner to accommodate pull-through charging for vehicles, including: trucks with trailers, medium- and heavy-duty vehicles, future municipal vehicles, delivery trucks, and long-haul vehicles.

These proposed hubs are located near employment centers and along Main Street.



## II. Budget Information: Grant Funds, Sources and Uses of All Project Funding

Figure 9. Project Activity Share of Total Budget

The City of Mesa’s total project cost is \$14,873,215. The City requests 80% of that in CFI Funding, specifically \$11,898,571, and they will match 20%, equaling \$2,974,644. The City is ready and willing to match these funds directly for the Project, but the City intends to explore through their procurement and project planning process the best path forward, which may include a private sector partnership, who would then pay the match. Table 6 demonstrates the project costs by type of Charging Hub: Neighborhood, DC Fast, and Public Fleet. A detailed Opinion of Probable Cost (OPCC) is available in Appendix B for each hub type. These OPCCs represent the cost of one hub per hub type, and therefore must be multiplied accordingly to reach the project budget.

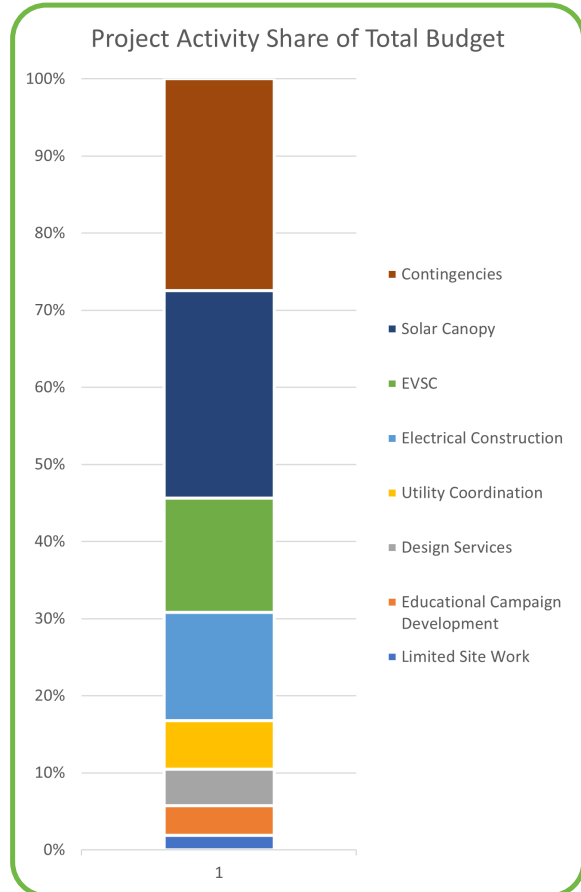


Figure 10. Share of Project Budget for Each Hub Type

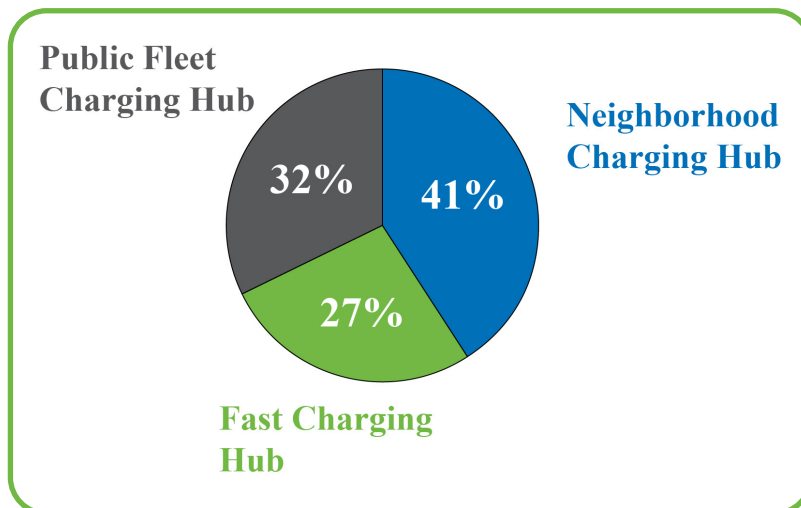


Table 6. Project Costs by Hub Type, Source, and Activity

Activity	Funding Categories		Activity Total	% of Total
	CFI	Non-Federal		
<b>Neighborhood Charging Hub</b>				
Design Service	\$320,000	\$80,000	\$400,000	3%
Utility Connection	\$200,000	\$50,000	\$250,000	2%
EVCS	\$368,000	\$92,000	\$460,000	3%
Electrical Construction	\$725,520	\$181,380	\$906,900	6%
Solar Canopy	\$1,600,000	\$400,000	\$2,000,000	13%
Limited Site Work	\$112,320	\$28,080	\$140,400	1%
Contingencies	\$1,330,336	\$332,584	\$1,662,920	11%
Educational Campaign Development	\$186,247	\$46,562	\$232,809	1.6%
<b>Subtotal</b>	<b>\$4,842,423</b>	<b>\$1,210,606</b>	<b>\$6,053,029</b>	<b>41%</b>
<b>Fast-Charging Hub</b>				
Design Service	\$120,000	\$30,000	\$150,000	1%
Utility Connection	\$276,000	\$69,000	\$345,000	2%
EVCS	\$576,000	\$144,000	\$720,000	5%
Electrical Construction	\$424,568	\$106,142	\$530,710	4%
Solar Canopy	\$800,000	\$200,000	\$1,000,000	7%
Limited Site Work	\$43,040	\$10,760	\$53,800	0.4%
Contingencies	\$895,843	\$223,961	\$1,119,804	8%
Educational Campaign Development	\$125,418	\$31,355	\$156,773	1.1%
<b>Subtotal</b>	<b>\$3,260,869</b>	<b>\$815,218</b>	<b>\$4,076,087</b>	<b>27%</b>
<b>Public Fleet Charging Hub</b>				
Design Service	\$120,000	\$30,000	\$150,000	1%
Utility Connection	\$276,000	\$69,000	\$345,000	2%
EVCS	\$816,000	\$204,000	\$1,020,000	7%
Electrical Construction	\$523,768	\$130,942	\$654,710	4%
Solar Canopy	\$800,000	\$200,000	\$1,000,000	7%
Limited Site Work	\$70,880	\$17,720	\$88,600	1%
Contingencies	\$1,042,659	\$260,665	\$1,303,324	9%
Educational Campaign Development	\$145,972	\$36,493	\$182,465	1.2%
<b>Subtotal</b>	<b>\$3,795,279</b>	<b>\$948,820</b>	<b>\$4,744,099</b>	<b>32%</b>
<b>Project Totals</b>				
<b>Project Total</b>	<b>\$11,898,571</b>	<b>\$2,974,644</b>	<b>\$14,873,215</b>	<b>100%</b>
%	80%	20%	100%	



### III. Project Merit Criteria

#### A. Criterion #1 Safety

Table 7. Criterion #1 Safety Summary

<b>Provide positive safety benefits for all users</b>
This Project will provide positive safety benefits to all users through (1) safe access to and egress from charging infrastructure, (2) encouraging adoption of EVs which are likely to come with the latest and most robust safety features, (3) including solar canopies to improve air quality with cleanly generated energy and prevent skin cancer or heat exhaustion by providing shade, and (4) considering Crime Prevention Through Design techniques when designing hub sites to ensure the safety of all users.
<b>Does not negatively impact safety for all users</b>
This Project does not negatively impact safety for any users due to careful design and planning that will include community engagement throughout to respond to community concerns. The City will use appropriately trained and licensed consultants or individuals to develop site plans, perform the site work, and install the charging infrastructure as well as solar canopies.
<b>Promote safety through design</b>
This Project will promote safety through design with a user-centric approach to the design, consideration of Crime Prevention Through Environmental Design principles, and development of the charging hub sites that will be bolstered by community engagement during the site selection and site design process.

The City’s proposed charging hubs will provide positive safety benefits to all users in a variety of forms. The proliferation of EV charging infrastructure will further the adoption of EVs. EV sales have already been climbing substantially year over year. Improving the public EV charging network will enable the adoption of EVs to continue to increase, and as new EVs come to market, they are coming with ample safety benefits discussed previously in Section I.A.5., which highlights how this EV charging infrastructure is supporting Safer Vehicles. Safer Vehicles are a key component in the National Roadway Safety Strategy’s Safe System Approach.

The City is aware that site analysis completed during the planning phase of this Project may result in site selection of vacant lots, parking lots, or developed commercial/multi-family sites. Regardless of site type, the City will ensure the overall site plan includes safe ingress and egress from major roadways as well as safe access to and egress from charging infrastructure for users of all ages and abilities. As indicated in Section I.A.6., the City intends to meet or exceed the accessibility requirements established by the Access Board relating to EV charging infrastructure.

The City also seeks to provide further safety benefits through the inclusion of solar canopies at each charging hub. These solar canopies will provide shade to users while they charge their vehicles, as well as provide clean electricity to augment the power to the charging stations. The solar canopies will also reduce the risk of sun damage and skin cancer and protect users during hot Arizona summers, which can average a high of 105 degrees Fahrenheit. The shade provided by the solar canopies will reduce the risk of heat-related illnesses impacting users.

In all parts of this Project, the City will use appropriately trained and licensed professionals to design and install all improvements, which will ensure all necessary safety codes and procedures are followed at every point in installation.

Additionally, a [2022 Consumer Reports Survey](#) identified consumers having concerns with their own safety while charging at public charging stations. Of the respondents who expressed concern, the majority were women. [Anecdotally](#), women report concerns with charging infrastructure in rural areas with very little surrounding the site, a lack of lighting on-site, and the safety of the actual charger location (e.g., behind versus in front of a big box store). The City acknowledges the importance of these concerns for all users. The proposed charging hubs in the Project will be well lit and will consider principles in Crime Prevention Through Environmental Design during the site design process to ensure users are able to maintain awareness of their surroundings and are visible to the passing public. Public engagement held during the planning and design process will ensure the safety concerns of the public are thoroughly considered and addressed in final site design plans. To further the goal of safety, the City will include safety discussions for all users during educational campaign development to highlight consumer safety attributes on site and provide recommendations for staying safe while using the charging infrastructure.



**B. Criterion #2 Climate Change, Resilience, and Sustainability**

*Table 8. Criterion #2 Climate Change, Resilience, and Sustainability Summary*

<p><b>Significantly reduce greenhouse gas emissions in the transportation sector</b></p> <p>This project will significantly reduce greenhouse gas emissions in the transportation sector by equitably increasing access to charging infrastructure and promoting the adoption of EVs by more households, as well as augmenting the EV charging infrastructure power supply with solar canopies, further reducing emissions that may be related to electricity generation</p>
<p><b>Incorporate evidence-based climate resilience measures or features</b></p> <p>Mesa is at low risk for flood hazards according to FEMA’s National Risk Index but will incorporate resilience measures appropriate to their climate. Mesa is at risk for extreme heat and the City will work with infrastructure providers to incorporate heat mitigation measures into their charging hubs, including but not limited to solar canopies.</p>
<p><b>Consider climate change, resilience, and environmental justice in project planning and delivery; AND</b></p> <p>As part of this Project, the City will be finalizing planning, completing design, and deploying new EV charging infrastructure. Throughout project planning and delivery, the City will regularly consider through consultations with experts and community engagement the most appropriate climate change, resilience, and environmental justice features to incorporate.</p>
<p><b>Address the extent to which the project avoids adverse environmental as well as address disproportionate negative impacts on disadvantaged communities</b></p> <p>The Project will avoid adverse environmental impacts and address disproportionate negative impacts on disadvantaged communities through careful site selection and substantial community engagement throughout project planning.</p>

According to the EPA’s Environmental Justice Screening and Mapping Tool ([EJScreen](#)), Mesa faces higher levels of diesel particulate matter, ozone pollution, and air toxins. The City is also located in a designated non-attainment area, meaning the air quality does not meet national Ambient Air Quality Standards.

Over the lifetime of an EV, its greenhouse gas emissions are lower than that of an average gasoline powered vehicle, which will improve air quality for the community. EVs produce no tailpipe emissions, so the greenhouse gas emissions associated with EVs may arise from their manufacturing or charging. The City seeks to construct eight charging hubs within its municipal boundaries that will increase charging infrastructure access and will further reduce greenhouse gas emissions in the transportation sector through higher adoption of EVs and the use of clean energy provided by solar canopies to augment the electricity for the charging stations.

The addition of 48 new charging ports in the City of Mesa will reduce range anxiety for travelers and increase the local accessibility of public charging infrastructure, supporting the continued adoption of EVs as a mode of transport. Going from a gas-powered vehicle to an EV can reduce [your carbon emissions by an estimated 11,570lbs](#). The charging infrastructure in this Project is additionally proposed to have their power augmented by solar canopies, further reducing emissions caused by the transportation





**The City will further its aspiration goals of achieving carbon neutrality & implementing 100% renewable energy by 2050**



sector. The City will further its aspirational goals of achieving carbon neutrality by 2050 and implementing 100% renewable energy by 2050.

To ensure long-term success of this Project, the City will seek EV charging infrastructure with built-in resilience measures, such as remotely accessible software should a station

need to be taken offline during a natural disaster. According to [FEMA's National Risk Index](#), Mesa has a relatively low to very low average risk index for natural hazards examined, which include avalanche, coastal flooding, cold wave, drought, earthquake, hail, heat wave, hurricane, ice storm, landslide, lightning, riverine flooding, strong wind, tornado, tsunami, volcanic activity, wildfire, and winter weather. The only natural hazard that exceeds low to very low is a heat wave, for which Mesa generally has a relatively high risk index.

The extreme heat common to Arizona can impact both EVs and their associated charging infrastructure. Charging station design can mitigate such extreme heat. EV batteries heat up while charging, which can be worsened by environmental heat. Providing solar canopies under which the charging infrastructure will be located will alleviate the extreme heat impacting the infrastructure or vehicles. In addition to canopies, as the details of site development are further cemented, the City will also consider other solutions that will mitigate the extreme heat, such as permeable, cool pavements and landscaping with trees and other vegetation.

The proposed Project includes finalization of planning, design, and deployment of EV charging infrastructure, which will allow the City substantial time to engage the community, experts, and key stakeholders in the project planning and delivery phase. The City will also work closely during this time with consultants and the community to determine the most appropriate climate change, resilience, and environmental justice features to incorporate in the proposed charging hubs.

In working with experts, key stakeholders, and the community during project planning and delivery, the City will seek to avoid adverse environmental impacts to air or water quality, wetlands, and endangered species. This will in part be done through the final site selection process, which will include criteria that encourage sites to be located away from wetlands or endangered species or in a place they could disturb water quality. No adverse environmental impacts are foreseen at this time. The input from the identified groups will further support the City in addressing disproportionate negative impacts to disadvantaged communities. During project planning, potential negative impacts may be identified and resolved prior to deployment of the equipment.



### C. Criterion #3 Equity, Community Engagement, and Justice40

Table 9. Criterion #3 Equity, Community Engagement, and Justice40 Summary

<p><b>Include an equity analysis</b></p> <p>The City directly recognizes the importance of equitable access to public charging infrastructure, for which reason Justice40-identified census tracts were given a higher score than non-disadvantaged census tracts when performing the suitability analysis for all three charging hub types. Approximately 60% of funds will be directed toward underserved communities.</p>
<p><b>Include meaningful public engagement throughout a project’s life cycle</b></p> <p>The City will maintain meaningful public engagement throughout the project’s life cycle by providing information in both English and Spanish, outreach via multiple types of engagement, virtual and in-person options, and meetings held in a variety of locations around the community. The City will direct advertising toward underserved communities to ensure engagement. Engagement will be maintained throughout project delivery through updates provided online.</p>
<p><b>Connect Americans to good-paying jobs, fight climate change, and improve quality of life</b></p> <p>This project will provide good-paying jobs through the deployment of EV charging infrastructure, approximated to be one year’s worth of work in a variety of roles; it will reduce emissions in the area and improve air quality. This improvement in air quality and increased access to charging infrastructure will improve community quality of life.</p>
<p><b>Enable all people within the multimodal transportation networks to reach their desired destination safely, affordably, and with a comparable level of efficiency and ease</b></p> <p>The Neighborhood Charging Hubs are located in densely populated, urban areas. These hubs will be located near community amenities and provide easy access to alternative modes of transportation such as the light rail.</p>
<p><b>Address, as applicable, the unique challenges rural and Tribal communities face related to mobility and economic development</b></p> <p>The City of Mesa is urban and non-Tribal. Recognizing the importance of access to charging infrastructure for rural communities, the City’s two Fast Charging Hubs are intended to be deployed near edges of the City that will make them more accessible to rural residents and Tribal communities in surrounding areas.</p>
<p><b>Support integrated land use, economic development and transportation planning to improve the movement of people and goods; facilitate greater public and private investments</b></p> <p>The City already aims to integrate land use, economic development, and transportation planning in their General Plan and will use these as guiding factors in making final site decisions as part of their Project planning process. The public investment provided by this grant seeks to spur greater private investment in Mesa.</p>

The City of Mesa performed a suitability and equity analysis to guide the deployment of additional public charging infrastructure in Mesa. This analysis is described in depth in Section I.B. The suitability analysis considered population density, multifamily unit density, location of Justice40 designated block groups, trip volume, proximity to major roadways, job density,

industrial land use density, and existing public charging. **Justice40 identified census tracts, according to the EV Charging Justice40 Map, were highly prioritized in consideration of all hub types.** Notably, there is a concentration of disadvantage and a lack of access to public charging in and around Mesa’s downtown, where there are many multifamily residences. The Neighborhood Charging Hub is designed to increase equitable access to public charging for these residents, especially those who may not be able to charge at home. Approximately 60% of project funds are anticipated to be spent in disadvantaged areas.

**Public Engagement Methods**



- Social media
- Project website
- City-run community events
- Community-hosted meetings
- City-hosted public meetings



The City is also invested in ensuring meaningful public engagement throughout the project’s lifecycle. This public engagement may be carried out in the following forms: social media, a project website, City-run community events, community-hosted meetings, and City-hosted public meetings. In all public

engagement efforts, the City will seek broad representation for the community and perform targeted outreach for traditionally underserved communities, as well as ensure meaningful access for Spanish speakers through the provision of Spanish materials. Table 10 demonstrates equity considerations the City will strive to build into their community outreach efforts to ensure meaningful public engagement. The City will also seek public feedback on engagement activities to determine their effectiveness. This may include asking the community questions in the beginning to gauge their knowledge on the subject and asking the same questions at the end to understand how their knowledge increased.

*Table 10. Equity Considerations for Public Engagement*

Engagement Type	Equity Considerations
Social Media	<ul style="list-style-type: none"> <li>■ Sponsored posts can increase reach</li> <li>■ Alt Text (text used to describe a visual element) conveys information to people with visual disabilities</li> <li>■ Posts in English and Spanish to meet community need</li> </ul>
Project Website	<ul style="list-style-type: none"> <li>■ Offer survey materials in English and Spanish</li> <li>■ Offer Publications in English and Spanish</li> </ul>
City-run Community Events	<ul style="list-style-type: none"> <li>■ Held at a wider variety of locations</li> <li>■ Include materials in English and Spanish</li> <li>■ Provide postage-paid comment cards</li> </ul>
Community Hosted Meetings	<ul style="list-style-type: none"> <li>■ Work with the organization to make a presentation appropriate to the target audience</li> <li>■ Include materials in English and Spanish</li> <li>■ Meets the community where they are</li> </ul>
Public Meetings	<ul style="list-style-type: none"> <li>■ Prioritize advertising outreach toward underserved communities through local medias</li> <li>■ Include materials in English and Spanish</li> <li>■ Offer in-person and virtual meeting options</li> </ul>

To ensure public engagement opportunities are provided equitably, the City will seek to offer both in-person and online engagement as appropriate throughout project planning and design. During project delivery, the City will keep the community updated on the project through social media or website updates. The City intends to incorporate its EV Planning efforts into its [City of Mesa General Plan 2050 site](#), which allows users to complete surveys, access publications in English and Spanish, and an interactive mapping feature. Further, after the Charging Hubs have been successfully deployed for approximately one year, the City plans to reach out to the public again, in follow up, to gather community input as to how well the hubs are operating and meeting their needs.

This Project will connect Americans to good-paying jobs, fight climate change, and improve quality of life for people in Mesa while ensuring people within multimodal transportation networks can reach their destinations safely, affordably, and with a level of efficiency and ease. Workforce projections provide ways to quantify the number of person-days by role being created through the deployment of EV charging infrastructure, and this project will generate approximately one year's worth of work for a wide variety of job roles, all of which is explained more in-depth in Criterion #4. Criterion #2 demonstrated how the Project will fight climate change, by reducing emissions in Mesa and improving air quality. Increased access to charging infrastructure, access to jobs, improvement in air quality, and equitable engagement in the community throughout the project planning and delivery phases will improve quality of life. Additionally, the Neighborhood Charging Hubs are located in densely populated, urban areas, providing easy access to alternative modes of transportation, including the light rail, which would be within walking distance to some or all of the charging stations.



While the City of Mesa is not rural, it is surrounded by rural areas. The City recognizes that charging infrastructure may not be deployed in these areas as widely as it is in urban areas, but it is equally critical to rural residents. As part of this Project, the City intends to construct two Fast Charging Hubs – one near the eastern edge of the City and one near the southern edge of the City. This will increase access for rural users who otherwise may be isolated from charging stations and face a higher transportation cost burden due to the added cost of reaching a station.

Mesa's General Plan, which is undergoing an update as mentioned above, incorporates a focus on integrating land use, economic development, and transportation planning. Ideally, this Project's publicly funded investment in the community, provided through this grant request, will be met with more private investment and innovative development ideas that will lead to greater economic development. The City will consider land use and economic development opportunity, as well as existing transportation infrastructure in its final site determinations and will explore potential partnerships in the community as appropriate. The integration of these considerations into project planning will improve the movement of people and goods, as well as support the local economy in Mesa.

## Criterion #4 Workforce Development, Job Quality, and Wealth Creation

*Table 11. Criterion #4 Workforce Development, Job Quality, and Wealth Creation Summary*

<b>Create good-paying jobs with free and fair choice to join a union and expand strong labor standards including, but not limited to the use of project labor agreements</b>
This Project will provide approximately one year’s worth of work for a variety of job roles from planning to construction, and the City of Mesa will engage consultants in this Project that offer choice and exemplify strong labor standards.
<b>Promote investments in high-quality workforce development programs</b>
The City will include scoring criteria in any Request for Proposals released related to this Project that incorporate higher points being earned by firms with workforce development programs, especially those that benefit disadvantaged communities.
<b>Utilize hiring policies and provide a workplace culture to promote the entry and retention of underrepresented populations; AND</b>
The City will include scoring criteria in any Request for Proposals released related to this Project that incorporate higher points being earned by firms who demonstrate hiring policies and workplace cultures that promote the entry and retention of underrepresented populations.
<b>Promote local inclusive economic development and entrepreneurship such as the utilization of Disadvantaged Business Enterprises, Minority-owned Businesses, Women-owned Businesses, or 8(a) firms.</b>
The City will include scoring criteria in any Request for Proposals released related to this Project that incorporate higher points being earned by firms that are or work with Disadvantaged Business Enterprises, Minority-owned Businesses, Women-owned Businesses, and 8(a) firms.

The City of Mesa is confident this Project will create good-paying jobs which feature choice and strong labor standards. The [Energy and Environmental Research Associates, LLC](#) provides calculations by which the City can estimate the effort in person-days for a variety of job roles related to planning, design, and deployment of EV charging infrastructure.

*Table 12. Job-Role Workforce Projections*

Job Role	Level 2	DC Fast
Planning and Design	1.08 x #Chargers <sup>2</sup>	1.16 x #Chargers <sup>2</sup>
General Contracting	2.31 x #Chargers*	2.98 x #Chargers
Utility Linework	0.75 x #Chargers*	0.75 x #Chargers*
Electrical Contracting	1.68 x #Chargers	1.02 x #Chargers + 37.88 if co-located w. renewables
Electrician	2.31 x #Chargers + 10.37 if new build	3.86 x #Chargers
Admin	0.91 x #Chargers	1.04 x #Chargers*
Legal	0.17 x #Chargers*	0.50 x #Chargers*
Other	0.67 x #Chargers*	0.92 x #Chargers*
* Small sample size/summary statistics		

Their calculations are summarized in Table 12. Job-Role Workforce Projections. These numbers were used to calculate the approximate number of person-days generated through the deployment of the charging infrastructure proposed in this grant request. With the deployment of approximately 16 Level 2/3 Chargers and 12 DC Fast Chargers, it will result in the creation of approximately 353 person-days.

The City of Mesa will incorporate the following into the scoring criteria of any Requests for Proposal (RFP) released for this Project:

- Supports local hiring
- Promotes inclusive economic development, such as through Disadvantaged Business Enterprises (DBE), Minority-owned Businesses, Women-owned Businesses, and 8(a) firms
- Presence of workforce development programs
- Hiring policies and workplace culture that promote entry and retention of underrepresented population

Responding firms that meet these criteria will score higher during the review of all RFP responses related to this Project.



## E. Criterion #5 CFI Program Vision

Table 13. Criterion #5 CFI Program Vision Summary

### Equitably expand the deployment of public EV charging infrastructure

The City will expand public EV charging infrastructure available at publicly accessible locations through this Project.

In addition, the application demonstrates that the project will address one or more of the focus areas:

- (1) connect or promote multi-modal hubs and shared-use fleets and services;
- (2) provide convenient, affordable access to charging and alternative fuel infrastructure to offer urban/suburban area charging and fueling solutions;
- (3) support multi-purpose use to offer rural charging and fueling solutions; OR
- (4) enable electrification or alternative fuel use for fleet vehicles that serve and operate in the community.

This Project will (1) provide convenient, affordable access to charging infrastructure in urban and suburban areas; (2) support rural area charging and fueling solutions; and (3) provide fleet vehicles that serve and operate in the community access to infrastructure.

The City seeks to satisfy the CFI vision by equitably expanding public EV charging infrastructure in publicly accessible locations that satisfies three CFI focus areas, as detailed throughout this application.



## IV. Project Readiness and Environmental Risk

### A. Detailed Statement of Work

Charging stations will be constructed at eight different sites to meet a variety of consumer needs. This Project will deploy the following charging infrastructure:

- Four Neighborhood Charging Hubs featuring Level 2/3 chargers, of which 16 ports will provide 19kW and 8 ports will provide 50-60kW. The Neighborhood Charging Hubs will additionally feature 5 dock stations for electric bicycles.
- Two Public Fleet Charging Hubs featuring 8 DC Fast charging ports with 150-180kW and 8 Level 2/3 charging ports featuring 50-60kW divided evenly between the two sites.
- Two Fast Charging Hubs featuring 8 DC Fast charging ports with 150-180kW, divided evenly between the two sites.

During initial planning stages of this Project, additional site analysis will be completed to determine the final site locations of each Charging Hub. A site assessment will be conducted to determine the electrical capacity of the site, the location of distribution of service lines and required power supply for the type and quantity of charging stations, as well as aiding in the determination of best location for installation. A utility analysis will also have to be performed to assess grid capacity and load management dependent on existing infrastructure. Installation of the EV charging stations will entail various ground-disturbances including the excavation for structural footings, underground electrical conduit, and junction boxes.

### B. Energy Source and Storage Needs

**Level 2 Electric Vehicle Supply Equipment (EVSE):** The AC power output must supply an average power output of 6.6 kW to 19.2 kW.

**DC Fast Charging EVSE:** DC power output must supply an average power output greater than 22 kW.

The City of Mesa provides electric utility service in approximately 5.5 square miles in and around downtown Mesa. It currently procures the majority of its electrical energy through long-term contractual resources and receives over 19% of its annual energy from renewable hydro-electric and solar generation. Mesa's remaining supplies come from contracts with mixed generation resources and ad-hoc market purchases. Mesa currently has a 38-megawatt (MW) capacity based on the total supply resources available from existing long-term and short term purchase power agreements.

The four Neighborhood Charging Hubs will be located within the City's electric service area. The remaining Charging Hubs will be located in Salt River Projects' (SRP) electric service area. The City has already had initial meetings internally with their own electric as well as with SRP to discuss the proposed project and is confident energy needs will be met.

### *C. Property or Right-of-Way Acquisition*

ROW/property acquisition is not anticipated at this time. Depending on the vendor selected and review of potential sites, the City may work with private property owners to secure a site for a charging hub.

### *D. Planning Documents*

The City of Mesa with support from the community adopted a Climate Action Plan with a key aspirational goal of carbon neutrality by the year 2050. Electrifying transportation and adopting electric vehicles is an important strategy to achieve this goal. The City is currently developing an Electric Vehicle Fleet Charging Master Plan that will be used to guide the deployment of the City's fleet vehicles and charging stations. The Fleet Charging Master Plan will assess city-owned sites with fleet parking to identify electric infrastructure needed for fleet charging. Mesa is also developing a Community Electric Vehicle Adoption Plan. This plan will help guide decisions on policy and infrastructure investments that will accelerate interest in and adoption of electric vehicles in the community and will be further supported by deployment of additional charging infrastructure through this grant program. The forthcoming 2050 General Plan will endorse the recommendations from the Community Electric Vehicle Adoption Plan.

This Project is not presently in the Transportation Improvement Plan (TIP) or State Transportation Improvement Plan (STIP), but can be added to these documents upon notification of award if needed. This Project is in alignment with the Arizona Department of Transportation's (ADOT) goals established in the EV Infrastructure Deployment Plan to achieve their charging infrastructure network vision, including but not limited to reducing range anxiety by closing gaps; providing resilient, equitable, accessible, and reliable infrastructure; and engaging stakeholders and the public.

### *E. Project Approvals*

This Project is in the early stages of planning, for which reason no project approvals have been obtained to date. Necessary project approvals will be obtained prior to the beginning of construction. These may include but are not limited to: building and/or electrical permits, utility approvals, NEPA requirements, et cetera. As the planning portion of the Project nears its end, there will be a clear understanding of what permits are required.







## F. Risk Mitigation

The City will be proactive in identifying risks associated with the project.

Table 14. Risk Mitigation

Risk	Mitigation
Market conditions for labor, materials, et cetera, increasing over time	The City will monitor market conditions and has considered this concern in the creation of the OPCC, which includes contingencies for market changes.
Permits not being acquired in a timely manner	The City and their consultant(s) will manage the project schedule and seeks ways to reduce project delays as needed while ensure all materials, such as permit applications, are submitted on time per the schedule.

## G. Public Engagement

The City has recently undertaken general public engagement around electric vehicles in the community, including with the launch of a community EV website but at this time has not initiated public engagement specific to this Project. The City is also presently undergoing public engagement efforts for updates to their General Plan and Transportation Plan, both of which have features overlapping with this project. Public engagement from these efforts will inform this Project. Additionally, public engagement opportunities will be provided virtually and in-person during project planning, as discussed in Section III.C.

## H. Disadvantaged Business Enterprise

The City will include scoring criteria in any Request for Proposals released related to this Project that incorporate higher points being earned by firms that are or work with Disadvantaged Business Enterprises.

## I. Equity and Accessibility

The City’s Complete Streets initiative is in alignment with the National Complete Streets Coalition, and the City’s Transportation Plan has implemented principles of the Complete Streets initiative, including transportation equity. The recommendations from the Mesa Community Electric Vehicle Adoption Plan will reflect the commitments to equity stated in the Mesa Transportation Plan.

Additionally, the City intends to meet or exceed accessibility requirements established by the Access Board, as detailed in Section I.A.6. Equity and accessibility will be guiding factors in site selection and design. Further, the City is meeting equity requirements by ensuring equitable distribution of charging infrastructure, especially in disadvantaged communities, as discussed in previous sections covering the suitability and equity analysis completed as part of Mesa’s deployment plan.



## J. Project Timeline

The following schedule illustrates the project timeline.

Table 15. Project Schedule

Task	2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Preliminary Design	█											
Site Selection		█										
Public Engagement		█										
RFP/Procurement			█									
Environmental Review				█								
ROW/Property Acquisition				█								
Final Design				█								
Utility Coordination								█				
Permit Approvals								█				
Construction								█				
Charging Open to Public											█	

This schedule demonstrates that:

- Funds will be obligated in advance of the September 2025 required date.
- The Project will be complete well in advance of the September 2030 required date.

## K. Information about how 23 CFR Part 680 requirements, published on February 28, 2023 will be included

The City intends to adhere to all National Electric Vehicle Infrastructure (NEVI) Standards and Requirements.

## L. Environmental Impacts

The expected environmental impacts of the project are low. The City intends to develop these charging hubs on developed or undeveloped lands within their municipal boundary and does not intend to disturb any environmentally sensitive areas. The City expects to receive a Categorical Exclusion at the time of NEPA review.

The City anticipates obtaining necessary approvals for the project by Quarte 1, 2026.



## V. DOT Statutory Selection Priorities

DOT seeks to prioritize projects that expand access to charging infrastructure in rural areas, low- and moderate-income neighborhoods, and communities with a high ratio of multiunit dwellings to single family homes. *The City of Mesa meets all three of these criteria.* It is providing charging infrastructure intended to meet the needs of rural neighboring areas, low- and moderate-income neighborhoods, and is a community with a high ratio of multiunit dwellings, especially in its downtown and surrounding urbanized area.



## VI. Appendices

- A. Letters of Support
- B. Detailed Cost Estimates

# A. Letters of Support





Delivering water and power™

Burrell Kilmer, Manager  
EV Strategy | PAB 352  
P.O. Box 52025  
Phoenix, AZ 85072-2025

Secretary Pete Buttigieg  
U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

May 12, 2023

RE: Charging and Fueling Infrastructure (CFI) Community Program Letter of Support

Dear Secretary Buttigieg:

Salt River Project (SRP) is a community-based, not-for-profit water and energy company that provides reliable, sustainability, and affordable water and power to more than two million people living in central Arizona. SRP has provided these essential resources for more than a century to meet the needs of customers and help the region grow.

As the primary electric utility serving the City of Mesa and its residents, SRP and the City of Mesa share a common vision for a greener future, and we are pleased to express our support for the City of Mesa's application for the Charging and Fueling Infrastructure (CFI) Community Program grant. The proposed expansion of electric vehicle charging infrastructure aligns with SRP's commitment to promoting clean energy and environmental sustainability. As part of SRP's 2035 Sustainability Goals, we are committed to supporting the enablement of electric vehicles (EVs) in our service territory, and we are ramping up efforts to assist in the transformation of the transportation sector in order to seize the benefits it can provide to our customers and communities.

SRP recognizes the value of collaboration and partnership with the City of Mesa. SRP and the City of Mesa are founding members of the [Transportation Electrification \(TE\) Activator](#), a coalition of key regional stakeholders working together to bring about electrification of the transportation sector for the benefit of all Arizonans. This CFI Community Program embodies the spirit of cooperation and shared goals that the TE Activator embraces, and which will help ensure the success of this important initiative. SRP is eager to explore opportunities for cooperation, sharing of expertise, and leveraging of resources, all while maintaining a spirit of collaboration and shared goals.

We understand that the successful deployment of electric vehicle charging infrastructure requires input and engagement from various stakeholders, including utilities and other community organizations. By working together and aligning our efforts, we can accelerate the transition to cleaner transportation options and contribute to the broader objectives of the City of Mesa's Climate Action Plan.

In addition, as part of SRP's support for our customers' EV journey, SRP offers electric vehicle charging equipment rebates which would be available to support the City of Mesa's community charging initiative. As a government entity, the City of Mesa would be eligible for an SRP contribution of up to \$4,000 per port for Level 2 EV charging stations, and \$20,000 per Direct Current Fast Charging (DCFC) charging station (see [Business electric vehicle \(EV\) charger rebate](#) for program requirements, limits and details). SRP also supports the focus on ensuring equity in Transportation Electrification and provides additional incremental incentives of \$1,000 per Level 2 station and \$5,000 per DCFC station for Disadvantaged Communities as defined by the Federal Government's Justice40 initiative.

SRP commends the City of Mesa for its dedication to environmental sustainability and its efforts to expand electric vehicle charging infrastructure. We look forward to engaging in a collaborative partnership with the City of Mesa to help make the most of the opportunities presented by the CFI grant and to work towards a more sustainable future for our community.

Sincerely,

A handwritten signature in cursive script that reads "Burrell J. Kilmer". The signature is written in black ink and includes a stylized flourish at the end.

Burrell Kilmer  
Manager, EV Strategy

**GREG STANTON**  
ARIZONA'S 9TH DISTRICT

**COMMITTEE ON THE JUDICIARY**  
SUBCOMMITTEE ON COURTS, INTELLECTUAL PROPERTY  
AND THE INTERNET

**COMMITTEE ON TRANSPORTATION  
AND INFRASTRUCTURE**  
SUBCOMMITTEE ON AVIATION  
SUBCOMMITTEE ON HIGHWAYS AND TRANSIT  
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT



**WASHINGTON OFFICE**  
207 CANNON BUILDING  
WASHINGTON, D.C. 20515  
(202) 225-9888

**DISTRICT OFFICE**  
2944 N. 44TH ST., STE. 150  
PHOENIX, AZ 85018  
(602) 956-2285

STANTON.HOUSE.GOV

**Congress of the United States**  
**House of Representatives**

May 12, 2023

The Honorable Pete Buttigieg  
Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Dear Secretary Buttigieg,

I enthusiastically support the City of Mesa's application for the Charging and Fueling Infrastructure (CFI) Community Program grant and commend Mesa's commitment to promoting clean energy and sustainable growth. As we work to combat climate change, especially in our desert state, the adoption of electric vehicles (EVs) is crucial, and the CFI grant program provides a unique opportunity to accelerate the necessary infrastructure to support them.

As the 36<sup>th</sup> largest city in the United States and the third largest in Arizona, Mesa is poised to play a key role in the transition to clean energy. Mesa's recently adopted Climate Action Plan includes a clear focus on reducing carbon emissions and promoting sustainable growth. The CFI grant is an essential step towards achieving these objectives and ensuring Mesa has the infrastructure necessary to support EV adoption.

Mesa has developed a thoughtful and comprehensive plan to utilize the CFI grant, including the development of neighborhood charging centers in underserved areas, a NEVI-compliant charging hub along a major regional highway, and a public fleet charging center in the employment/industrial zone. These initiatives will ensure that EV charging is accessible to all residents, regardless of their location or employment.

I wholeheartedly support Mesa's efforts and urge you to give the application full and fair consideration consistent with all applicable rules and regulations.

Sincerely,

A handwritten signature in blue ink that reads "Greg Stanton".

Greg Stanton  
Member of Congress



Secretary Pete Buttigieg  
U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

RE: Charging and Fueling Infrastructure Community Program Grant Letter of Support

Dear Secretary Buttigieg,

I am writing on behalf of A New Leaf, a non-profit organization dedicated to empowering and supporting underserved communities in Mesa, to express our strong support for the City of Mesa's application for the Charging and Fueling Infrastructure (CFI) Community Program grant. We believe that the expansion of electric vehicle charging infrastructure, as outlined in the City of Mesa's proposal, will greatly benefit the communities we serve and align with our mission to promote a brighter future for our families.

At A New Leaf, we recognize that for any initiative to see its greatest success, community education and outreach play a critical role. If the City of Mesa is awarded the CFI grant, our organization is eager to assist in educating our clients and community members about the value of electric vehicles and the opportunities provided by the new charging infrastructure. We will work with the City of Mesa to disseminate educational materials and provide other outreach to raise awareness about the benefits of electric vehicles and how to access public charging facilities.

Additionally, A New Leaf is happy to act as a bridge between the City of Mesa and the communities we serve by collecting any feedback from our clients we receive regarding their experiences with the new charging infrastructure. We will facilitate open lines of communication and provide a platform for the voices of underserved populations, ensuring that their perspectives and needs are taken into consideration as the City of Mesa continues to expand and refine its electric vehicle charging infrastructure.

We believe that the City of Mesa's ambitious proposal, coupled with the education and outreach strength of A New Leaf, will create a powerful synergy that leads to increased adoption of electric vehicles and contributes to the city's broader Climate Action Plan goals. As such, we wholeheartedly support the City of Mesa's application for the CFI grant and look forward to collaborating on this essential initiative.

Sincerely,



Michael T. Hughes  
Chief Executive Officer  
A New Leaf

May 17, 2023

Secretary Pete Buttigieg  
U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

RE: Charging and Fueling Infrastructure Community Program Grant Letter of Support

Dear Secretary Buttigieg:

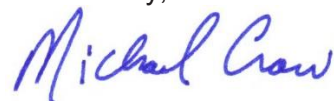
As a leader in innovation and sustainability, Arizona State University (ASU) is dedicated to fostering a sustainable and equitable future for our students, faculty, and the broader community. In this spirit, we are pleased to express our support for the City of Mesa's application for the Charging and Fueling Infrastructure (CFI) Community Program grant. The proposed expansion of electric vehicle charging infrastructure aligns with our commitment to promoting clean energy and environmental sustainability, both on our campuses and within the broader communities we serve, including Mesa.

Our recently established Media and Immersive eXperience (MIX) Center, located in the heart of Mesa's Innovation District, serves as a thriving hub for students, faculty, and the public, fostering creativity, collaboration, and cutting-edge media production. With the City of Mesa's intent to install community neighborhood charging centers, through the use of CFI funding, in close proximity to the MIX Center, we believe that our students, faculty, and visitors will greatly benefit from convenient access to electric vehicle charging infrastructure.

ASU has a proud history of collaborating with the City of Mesa and we will strive to educate our students and faculty about the benefits of electric vehicles and the availability of additional charging facilities enabled through CFI funding. We envision a partnership that leverages our shared values and objectives, and we are eager to explore opportunities for engagement and cooperation in support of the CFI grant initiative.

We commend the City of Mesa for its dedication to environmental sustainability and its efforts to expand electric vehicle charging infrastructure. ASU looks forward to fostering a collaborative relationship with the City of Mesa on this initiative to contribute to the broader objectives of the City's Climate Action Plan and promote a more sustainable future for our community.

Sincerely,



Michael M. Crow  
President



**Renee' Parker M.Ed**

Director Of Community Partnerships  
(480) 472-7288  
erparker@mpsaz.org  
63 East Main Street, Mesa Az 85201-7422

Secretary Pete Buttigieg  
U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

RE: Charging and Fueling Infrastructure Community Program Grant Letter of Support

Dear Secretary Buttigieg,

As the largest school district in Arizona, Mesa Public Schools is deeply committed to the well-being and prosperity of our students, their families, and the broader Mesa community. In this spirit, I write to express our support for the City of Mesa's application for the Charging and Fueling Infrastructure (CFI) grant.

Mesa Public Schools recognizes that for this initiative to be successful, community education and outreach will play a critical role. We are eager to explore ways in which we can contribute to the success of this initiative, such as by disseminating important information on electric vehicles and new charging opportunities to our students and families.

Through our various communication channels, including newsletters, social media, and school events, we have the ability to reach thousands of families and help spread awareness about the benefits of electric vehicles and the new charging infrastructure provided by the CFI grant. We believe that this information sharing can contribute to the broader conversation on sustainability and positively impact our community's gradual transition towards cleaner transportation options.

We understand that the City of Mesa's efforts to expand electric vehicle charging infrastructure are an important step towards achieving the goals set forth in their Climate Action Plan. We commend the city for its dedication to environmental sustainability, and we look forward to fostering a spirit of collaboration and cooperation in support of this initiative.

Sincerely,

*Renee' Parker*

United States Senate  
WASHINGTON, DC 20510

May 12, 2023

The Honorable Pete Buttigieg  
Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, S.E.  
Washington, D.C. 20590

Dear Secretary Buttigieg:

We write regarding the City of Mesa's application for the Charging and Fueling Infrastructure (CFI) Community Program grant. The funding will be used to create diverse electric vehicle charging options in Mesa. This includes neighborhood charging centers in underserved and multi-family dense areas of the city's core, a National Electric Vehicle Infrastructure (NEVI) compliant charging hub along a key regional highway, and a public fleet charging center in the city's employment and industrial zone. These charging options will provide convenient opportunities for Mesa commuters and neighboring municipalities while also bringing charging closer to residents' workplaces.

As the 36th largest city in the United States and the third largest in Arizona, it is important that Mesa establishes a robust alternative fuel infrastructure within its borders. Mesa has not been included in designated alternative fuel corridors, which has limited its access to other federal vehicle electrification funding, such as the NEVI program. Accordingly, the CFI funding will serve as a vital instrument to bridge these gaps.

Mesa's recently adopted Climate Action Plan demonstrates a commitment to reducing the city's environmental impact, lowering carbon emissions, and fostering sustainable growth. The CFI grant presents an opportunity for Mesa to achieve their objectives outlined in the plan by encouraging and facilitating vehicle electrification.

The City of Mesa is committed to utilizing CFI funding to meet their Climate Action Plan goals and accomplish lasting environmental results. In accordance with all existing agency rules, regulations, and ethical guidelines, we respectfully ask that you give this proposal full and fair consideration as you make this important funding decision. Thank you for your consideration.

Sincerely,



Kyrsten Sinema  
United States Senator



Mark Kelly  
United States Senator

# B. Detailed Cost Estimates





### Figure 11. Public Fleet Charging Hub Per Site Opinion of Probable Cost

#### PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS

Project: Mesa Fleet Hub Solution  
4 ports ~150-180kW and 4 ports ~50-60kW

Job Number: 241072001

Client: City of Mesa

Date: 5/8/2023

DESCRIPTION	QUANTITY	UNIT	COST / UNIT	TOTAL COST
<b>Design Service</b>				
Engineering Design	1		\$ 50,000.00	\$ 50,000.00
Permitting Services	1		\$ 15,000.00	\$ 15,000.00
Construction Phase Services	1		\$ 10,000.00	\$ 10,000.00
			<b>Subtotal</b>	<b>\$ 75,000.00</b>
<b>Utility Connection</b>				
Primary Splice - 15kV 3-phase cable	1	EA	\$ 500.00	\$ 500.00
Primary Cable - 3-Phase Main Feeder	200	LF	\$ 25.00	\$ 5,000.00
6" Service PVC Conduit	200	LF	\$ 60.00	\$ 12,000.00
1500 kVa three-phase Transformer - including concrete pad	1	EA	\$ 150,000.00	\$ 150,000.00
Meter Cabinet	1	EA	\$ 5,000.00	\$ 5,000.00
			<b>Subtotal</b>	<b>\$ 172,500.00</b>
<b>EVCS</b>				
100-120kW Dual Port Charger (~50-60kW/port when charging simultaneously)	2	EA	\$ 75,000.00	\$ 150,000.00
150-180kW Single Port Chargers	4	EA	\$ 90,000.00	\$ 360,000.00
			<b>Subtotal</b>	<b>\$ 510,000.00</b>
<b>Electrical Construction</b>				
1500 Amp Panel	1	EA	\$ 15,000.00	\$ 15,000.00
1500 Amp Main Breaker	1	EA	\$ 10,000.00	\$ 10,000.00
300amp/3-phase Breakers	4	EA	\$ 4,600.00	\$ 18,400.00
200amp/3-phase Breakers	2	EA	\$ 4,200.00	\$ 8,400.00
4-wire 350 KCMIL CU THWN-2 (Transformer to Panel; Qty assumes 5 sets per run)	1,000	LF	\$ 80.00	\$ 80,000.00
3" PVC Conduit (Transformer to Panel; Qty assumes 5 conduits per run)	1,000	LF	\$ 28.00	\$ 28,000.00
<b>Branch Feeder (Panel to 180kW Charger)</b>				
3-wire 350 KCMIL CU THWN-2 (Panel to Charger; Qty assumes 1 set per run x # of chargers)	800	LF	\$ 60.00	\$ 48,000.00
#4 AWG Ground (Panel to Charger)	800	LF	\$ 3.10	\$ 2,480.00
3" PVC Conduit (Panel to Charger; Qty assumes 1 conduit per run x # of chargers)	800	LF	\$ 28.00	\$ 22,400.00
<b>Branch Feeder (Panel to 120kW Charger)</b>				
3-wire #3/0 AWG CU (Panel to Charger; Qty assumes 1 set per run x # of chargers)	400	LF	\$ 30.00	\$ 12,000.00
#6 AWG Ground (Panel to Charger)	400	LF	\$ 2.00	\$ 800.00
2" PVC Conduit (Panel to Charger; Qty assumes 1 conduit per run x # of chargers)	400	LF	\$ 15.00	\$ 6,000.00
Manholes/handholes/junction box (size TBD)	5	E.A.	\$ 2,500.00	\$ 12,500.00
Trench Excavation and Backfill	1,200	L.F.	\$ 8.00	\$ 9,600.00
Boring Mobilization	1	EA	\$ 5,975.00	\$ 5,975.00
Conduit Case Boring	400	L.F.	\$ 119.50	\$ 47,800.00
			<b>Subtotal</b>	<b>\$ 327,355.00</b>
<b>Solar Canopy</b>				
Canopy Structure and Installation	1	L.S.	\$ 300,000.00	\$ 300,000.00
Interconnection Components	1	L.S.	\$ 150,000.00	\$ 150,000.00
Foundation System	1	L.S.	\$ 50,000.00	\$ 50,000.00
			<b>Subtotal</b>	<b>\$ 500,000.00</b>
<b>Limited Site Work</b>				
Asphalt Placement - 2" Surface, 4" Binder, 6" Stone Base)	2,000	SQ. FT.	\$ 5.00	\$ 10,000.00
Landscaping Allowance (assume \$2000 per port)	8	EA	\$ 2,000.00	\$ 16,000.00
Light Poles Steel with Concrete base (assume 0.5 per port)	4	E.A.	\$ 2,700.00	\$ 10,800.00
Parking Lot Signage	1	L.S.	\$ 5,000.00	\$ 5,000.00
Pavement Striping	1	L.S.	\$ 2,500.00	\$ 2,500.00
			<b>Subtotal</b>	<b>\$ 44,300.00</b>
<b>DESCRIPTION</b>				<b>TOTAL COST</b>
Design Service				\$ 75,000.00
Utility Connection				\$ 172,500.00
EVCS				\$ 510,000.00
Electrical Construction				\$ 327,355.00
Solar Canopy				\$ 500,000.00
Limited Civil Work				\$ 44,300.00
RSMMeans Location Index Adjustment - (No Adjustment Assumed for this Location)				
Contingencies (Assume 40% of Constr. Costs)				\$ 651,662.00
<b>Fleet Hub Solution Total</b>				<b>\$ 2,280,817.00</b>
<b>Assumptions:</b>				
1. This Opinion of Probable Construction Cost (OPCC) is based on current industry pricing (RSMMeans, contractor information and pricing, publicly available data, etc.) that we have readily available and does not guarantee pricing.				
2. This OPCC is not intended to serve as a comprehensive and complete analysis of development and construction costs.				
3. Any items not specifically noted in this OPCC shall be added by the Client.				
4. This OPCC assumes a balanced site that no rock or similar material will be encountered during construction.				
5. This OPCC assumes a new service is required.				
6. This OPCC assumes that the meter is placed on or adjacent to the transformer				
7. This OPCC assumes a maximum of 200 feet spacing for each of the following: primary splice to transformer, transformer to panel, and panel to charger.				
These OPC's are not intended for basing financial decisions, or securing funding.				
Since Kimley-Horn & Associates, Inc. has no control over the cost of labor, materials, equipment, or services furnished by others, or over methods of determining price, or over competitive bidding or market conditions, any and all opinions as to the cost herein, including but not limited to opinions as to the costs of construction materials, shall be made on the basis of experience and best available data. Kimley-Horn & Associates, Inc. cannot and does not guarantee that proposals, bids, or actual costs will not vary from the opinions on costs shown herein. The total costs and other numbers in this Opinion of Probable Cost have not been rounded. This practice of not rounding is not intended to reflect or imply a level of certainty with respect to accuracy of the amount.				



Figure 12. Neighborhood Charging Hub Per Site Opinion of Probable Cost

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS

Project: Mesa Neighborhood-Oriented Solution  
2 ports -50-60kW and 4 ports -19kW

Job Number: 241072001

Client: City of Mesa

Date: 5/24/2023

DESCRIPTION	QUANTITY	UNIT	COST / UNIT	TOTAL COST
<b>Design Service</b>				
Engineering Design	1		\$ 50,000.00	\$ 50,000.00
Solar Canopy Design	1		\$ 25,000.00	\$ 25,000.00
Permitting Services	1		\$ 15,000.00	\$ 15,000.00
Construction Phase Services	1		\$ 10,000.00	\$ 10,000.00
			<b>Subtotal</b>	<b>\$ 100,000.00</b>
<b>Utility Connection</b>				
Primary Splice - 15kV 3-phase cable	1	EA	\$ 500.00	\$ 500.00
Primary Cable - 3-Phase Main Feeder	200	LF	\$ 25.00	\$ 5,000.00
6" Service PVC Conduit	200	LF	\$ 60.00	\$ 12,000.00
500 kVa three-phase Transformer - including concrete pad	1	EA	\$ 40,000.00	\$ 40,000.00
Meter Cabinet	1	EA	\$ 5,000.00	\$ 5,000.00
			<b>Subtotal</b>	<b>\$ 62,500.00</b>
<b>EVCS</b>				
100-120kW Dual Port Charger (~50-60kW/port when charging simultaneously)	1	EA	\$ 75,000.00	\$ 75,000.00
19kW Single Port Chargers	4	EA	\$ 10,000.00	\$ 40,000.00
E-Bike System (5 Dock Stations)	1	EA	\$ 30,000.00	\$ 30,000.00
			<b>Subtotal</b>	<b>\$ 115,000.00</b>
<b>Electrical Construction</b>				
400 Amp 480V Panel	1	EA	\$ 4,900.00	\$ 4,900.00
400 Amp Main Breaker	1	EA	\$ 4,900.00	\$ 4,900.00
200amp/3-phase Breakers	2	EA	\$ 4,200.00	\$ 8,400.00
4-wire #3/0 AWG CU (Panel to Stepdown Transformer)	200	LF	\$ 44.00	\$ 8,800.00
150 kVa Stepdown Transformer	1	EA	\$ 20,000.00	\$ 20,000.00
4-wire #3/0 AWG CU (Stepdown Transformer to Sub-Panel; Qty assumes 2 sets per run)	400	LF	\$ 44.00	\$ 17,600.00
400 Amp 208V Sub-Panel	1	EA	\$ 4,900.00	\$ 4,900.00
400 Amp Sub-Panel Main Breaker	1	EA	\$ 4,900.00	\$ 4,900.00
4-wire #3/0 AWG CU (Utility Transformer to Panel; Qty assumes 2 sets per run)	400	LF	\$ 44.00	\$ 17,600.00
2" PVC Conduit (Utility Transformer to Panel; Qty assumes 3 conduits per run)	600	LF	\$ 15.00	\$ 9,000.00
<b>Branch Feeder (Panel to 120kW Charger)</b>				
3-wire #3/0 AWG CU (Panel to Charger; Qty assumes 1 set per run x # of chargers)	200	LF	\$ 30.00	\$ 6,000.00
#6 AWG Ground (Panel to Charger)	200	LF	\$ 2.00	\$ 400.00
2" PVC Conduit (Panel to Charger; Qty assumes 1 conduit per run x # of chargers)	200	LF	\$ 15.00	\$ 3,000.00
<b>Branch Feeder (Sub-Panel to 19kW Charger)</b>				
2-wire #2 AWG CU (Panel to Charger; Qty assumes 1 set per run x # of chargers)	800	LF	\$ 10.00	\$ 8,000.00
#8 AWG Ground (Panel to Charger)	800	LF	\$ 1.50	\$ 1,200.00
1" PVC Conduit (Panel to Charger; Qty assumes 1 conduit per run x # of chargers)	800	LF	\$ 11.00	\$ 8,800.00
<b>Branch Feeder (Sub-Panel to E-Bike System)</b>				
3-wire #12 AWG CU (Panel to E-Bike System)	200	LF	\$ 1.50	\$ 300.00
1" PVC Conduit (Panel to E-Bike System)	200	LF	\$ 11.00	\$ 2,200.00
3-wire #12 AWG (E-Bike System to Station)	100	LF	\$ 1.50	\$ 150.00
Manholes/handholes/junction box (size TBD)	4	E.A.	\$ 2,500.00	\$ 10,000.00
Trench Excavation and Backfill	1,000	L.F.	\$ 8.00	\$ 8,000.00
Boring Mobilization	1	EA	\$ 5,975.00	\$ 5,975.00
Conduit Case Boring	600	L.F.	\$ 119.50	\$ 71,700.00
			<b>Subtotal</b>	<b>\$ 226,725.00</b>
<b>Solar Canopy</b>				
Canopy Structure and Installation	1	L.S.	\$ 300,000.00	\$ 300,000.00
Interconnection Components	1	L.S.	\$ 150,000.00	\$ 150,000.00
Foundation System	1	L.S.	\$ 50,000.00	\$ 50,000.00
			<b>Subtotal</b>	<b>\$ 500,000.00</b>
<b>Limited Site Work</b>				
Asphalt Placement - 2" Surface, 4" Binder, 6" Stone Base)	1,500	SQ. FT.	\$ 5.00	\$ 7,500.00
Landscaping Allowance (assume \$2000 per port)	6	EA	\$ 2,000.00	\$ 12,000.00
Light Poles Steel with Concrete base (assume 0.5 per port)	3	E.A.	\$ 2,700.00	\$ 8,100.00
Parking Lot Signage	1	L.S.	\$ 5,000.00	\$ 5,000.00
Pavement Striping	1	L.S.	\$ 2,500.00	\$ 2,500.00
			<b>Subtotal</b>	<b>\$ 35,100.00</b>
<b>DESCRIPTION</b>				<b>TOTAL COST</b>
Design Service				\$ 100,000.00
Utility Connection				\$ 62,500.00
EVCS				\$ 115,000.00
Electrical Construction				\$ 226,725.00
Solar Canopy				\$ 500,000.00
Limited Civil Work				\$ 35,100.00
RSMMeans Location Index Adjustment - (No Adjustment Assumed for this Location)				
Contingencies (Assume 40% of Constr. Costs)				\$ 415,730.00
<b>Neighborhood-Oriented Solution Total</b>				<b>\$ 1,455,055.00</b>
<b>Assumptions:</b>				
1. This Opinion of Probable Construction Cost (OPCC) is based on current industry pricing (RSMMeans, contractor information and pricing, publicly available data, etc.) that we have readily available and does not guarantee pricing.				
2. This OPCC is not intended to serve as a comprehensive and complete analysis of development and construction costs.				
3. Any items not specifically noted in this OPCC shall be added by the Client.				
4. This OPCC assumes a balanced site that no rock or similar material will be encountered during construction.				
5. This OPCC assumes a new service is required.				
6. This OPCC assumes that the meter is placed on or adjacent to the transformer				
7. This OPCC assumes a maximum of 200 feet spacing for each of the following: primary splice to transformer, transformer to panel, and panel to charger.				
<p>These OPC's are not intended for basing financial decisions, or securing funding. Since Kimley-Horn &amp; Associates, Inc. has no control over the cost of labor, materials, equipment, or services furnished by others, or over methods of determining price, or over competitive bidding or market conditions, any and all opinions as to the cost herein, including but not limited to opinions as to the costs of construction materials, shall be made on the basis of experience and best available data. Kimley-Horn &amp; Associates, Inc. cannot and does not guarantee that proposals, bids, or actual costs will not vary from the opinions on costs shown herein. The total costs and other numbers in this Opinion of Probable Cost have not been rounded. This practice of not rounding is not intended to reflect or imply a level of certainty with respect to accuracy of the amount.</p>				



Figure 13. Fast-Charging Hub Per Site Opinion of Probable Cost

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS

Project: Mesa DCFC Solution  
 4 ports ~150-180kW

Job Number: 241072001

Client: City of Mesa

Date: 5/8/2023

DESCRIPTION	QUANTITY	UNIT	COST / UNIT	TOTAL COST
<b>Design Service</b>				
Engineering Design	1		\$ 50,000.00	\$ 50,000.00
Permitting Services	1		\$ 15,000.00	\$ 15,000.00
Construction Phase Services	1		\$ 10,000.00	\$ 10,000.00
			<b>Subtotal</b>	<b>\$ 75,000.00</b>
<b>Utility Connection</b>				
Primary Splice - 15kV 3-phase cable	1	EA	\$ 500.00	\$ 500.00
Primary Cable - 3-Phase Main Feeder	200	LF	\$ 25.00	\$ 5,000.00
6" Service PVC Conduit	200	LF	\$ 60.00	\$ 12,000.00
1500 kVa three-phase Transformer - including concrete pad	1	EA	\$ 150,000.00	\$ 150,000.00
Meter Cabinet	1	EA	\$ 5,000.00	\$ 5,000.00
			<b>Subtotal</b>	<b>\$ 172,500.00</b>
<b>EVCS</b>				
150-180kW Single Port Chargers	4	EA	\$ 90,000.00	\$ 360,000.00
			<b>Subtotal</b>	<b>\$ 360,000.00</b>
<b>Electrical Construction</b>				
1200 Amp Panel	1	EA	\$ 12,000.00	\$ 12,000.00
1200 Amp Main Breaker	1	EA	\$ 8,000.00	\$ 8,000.00
300amp/3-phase Breakers	4	EA	\$ 4,600.00	\$ 18,400.00
4-wire 350 KCMIL CU THWN-2 (Transformer to Panel; Qty assumes 4 sets per run)	800	LF	\$ 80.00	\$ 64,000.00
3" PVC Conduit (Transformer to Panel; Qty assumes 4 conduits per run)	800	LF	\$ 28.00	\$ 22,400.00
<b>Branch Feeder (Panel to 180kW Charger)</b>				
3-wire 350 KCMIL CU THWN-2 (Panel to Charger; Qty assumes 1 set per run x # of chargers)	800	LF	\$ 60.00	\$ 48,000.00
#4 AWG Ground (Panel to Charger)	800	LF	\$ 3.10	\$ 2,480.00
3" PVC Conduit (Panel to Charger; Qty assumes 1 conduit per run x # of chargers)	800	LF	\$ 28.00	\$ 22,400.00
Manholes/handholes/junction box (size TBD)	3	E.A.	\$ 2,500.00	\$ 7,500.00
Trench Excavation and Backfill	800	L.F.	\$ 8.00	\$ 6,400.00
Boring Mobilization	1	EA	\$ 5,975.00	\$ 5,975.00
Conduit Case Boring	400	L.F.	\$ 119.50	\$ 47,800.00
			<b>Subtotal</b>	<b>\$ 265,355.00</b>
<b>Solar Canopy</b>				
Canopy Structure and Installation	1	L.S.	\$ 300,000.00	\$ 300,000.00
Interconnection Components	1	L.S.	\$ 150,000.00	\$ 150,000.00
Foundation System	1	L.S.	\$ 50,000.00	\$ 50,000.00
			<b>Subtotal</b>	<b>\$ 500,000.00</b>
<b>Limited Site Work</b>				
Asphalt Placement - 2" Surface, 4" Binder, 6" Stone Base)	1,200	SQ. FT.	\$ 5.00	\$ 6,000.00
Landscaping Allowance (assume \$2000 per port)	4	EA	\$ 2,000.00	\$ 8,000.00
Light Poles Steel with Concrete base (assume 0.5 per port)	2	E.A.	\$ 2,700.00	\$ 5,400.00
Parking Lot Signage	1	L.S.	\$ 5,000.00	\$ 5,000.00
Pavement Striping	1	L.S.	\$ 2,500.00	\$ 2,500.00
			<b>Subtotal</b>	<b>\$ 26,900.00</b>
<b>DESCRIPTION</b>				<b>TOTAL COST</b>
Design Service				\$ 75,000.00
Utility Connection				\$ 172,500.00
EVCS				\$ 360,000.00
Electrical Construction				\$ 265,355.00
Solar Canopy				\$ 500,000.00
Limited Civil Work				\$ 26,900.00
RSMMeans Location Index Adjustment - (No Adjustment Assumed for this Location)				
Contingencies (Assume 40% of Constr. Costs)				\$ 559,902.00
<b>DCFC Solution Total</b>				<b>\$ 1,959,657.00</b>
<b>Assumptions:</b>				
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