CHARGE UP CHICAGO!

Chicago Community Resources and Charging Infrastructure Implementation

Charging and Fueling Infrastructure Discretionary Grant Application 2023

CDOT
Chicago Department of Transportation

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I. Project Narrative

Introduction

The Charge Up Chicago! *Chicago Community Resources and Charging Infrastructure Implementation* (CUC) project will bring unique community benefits to Chicago by enabling equitable access to electric vehicles and E-mobility options in the City. It will do so by first conducting community engagement, outreach, technical assistance, strategic transportation decarbonization planning, and workforce training with underserved communities. CUC will then invest in community developed and owned charging station projects in addition to City of Chicago owned public charging stations. Leveraging the geographic diversity and equitable access mission of the Chicago Public Libraries, City-owned stations will be deployed at libraries to fill gaps in existing charging infrastructure, support high density multifamily housing communities, and create shared-use charging access to expand the City's EV municipal fleet in addition to ride hail, taxi and rental EV fleets serving Midway Airport.

Our project brings together a team across City government and community partners - the Chicago Department of Transportation; Office of Climate and Environmental Equity; Department of Assets, Information, and Services; Department of Aviation; Chicago Public Libraries; 15 community-based organizations (CBOs); the Center for Neighborhood Technology (CNT); Illinois Alliance for Clean Transportation (IACT, our local USDOE designated Clean Cities coalition); Forth; OAI, Inc. Working collaboratively, we will create new EV charging access, build CBO capacity, engage community members, co-develop community strategic plans, and conduct workforce training to support more equitable transportation decarbonization in underserved and predominantly multifamily housing communities where the private sector is not currently investing in EV charging infrastructure.

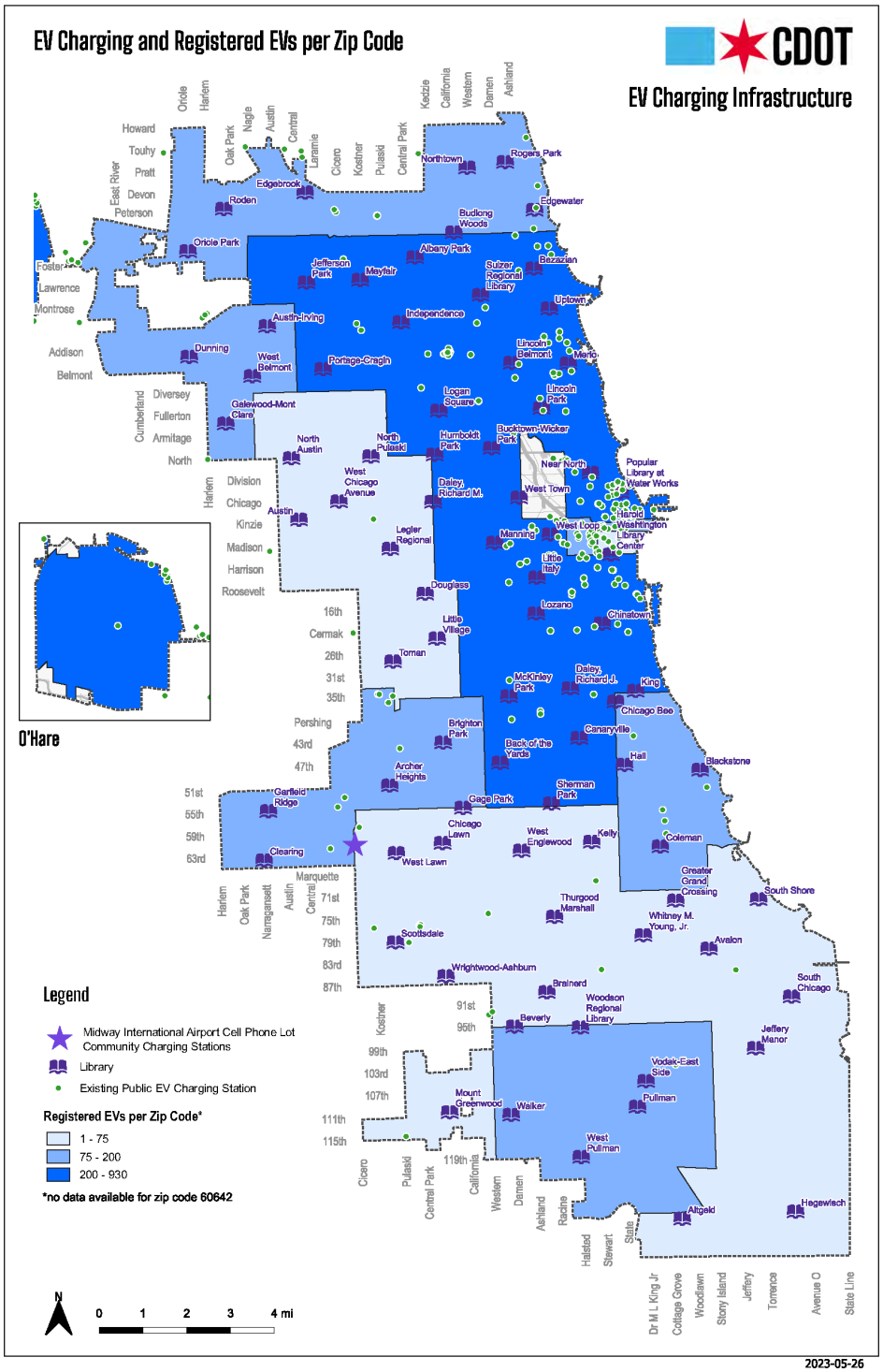
The transportation sector is the second highest source of GHG emissions in Chicago and is a major contributor to poor air quality in our region. CDOT and the City more broadly are focused on lowering emissions from the transportation sector while improving air quality, increasing residents' mobility and job access, lowering household transportation costs, and improving public health. Specifically, the City has a goal of supporting 100% equitable electrification of ride hail and taxi fleets by 2030, to transition the City's fleet and private delivery fleets to 100% electric by 2035, and to transition the Chicago Transit Authority's bus fleet to 100% electric by 2040.

Currently, there are 720 publicly available EV passenger vehicle chargers in Chicago. Every community has registered EVs, but 70% of all public charging stations are concentrated in just three Community Areas. Of the 77 total Community Areas in Chicago, 47 do not have **any** public charging stations. The South and West Side zip codes of Chicago have few public locations for Level 2 charging and virtually no access to DC fast charging (See Figure 1). Many of the CBOs in our project serve communities with little or no access to publicly available charging stations.

The City has previously completed: a roadmap for transportation and mobility, an equity analysis of the existing public EV charging station locations, an Air Quality and Health Report, a Chicago Department of Transportation (CDOT) Strategic Plan, the 2022 Climate Action Plan and the new City comprehensive plan, We Will Chicago, which includes a transportation pillar. These documents create a visionary approach for the future of transportation electrification and e-mobility in Chicago. The CUC project enables us to begin implementing a comprehensive and equitable vision for e-mobility centered on principles CDOT established for EV and EV infrastructure planning:

- Support the transportation principles of safety, the promotion of transit, biking and accessible shared modes;

Figure 1. EV Charging and Registered EV's per Zip Code



- Prioritize equity in charging infrastructure distribution, EV adoption, charging rates, workforce development, and contracting;
- Seek input from a diverse group of stakeholders;
- Ensure safe use of the public way and management of EVs and EV chargers;
- Generate economic development opportunities; and
- Strategically use data to drive investments and analysis.

The CBO capacity-building training scope of CUC builds on the partners' co-developed application responding to U.S. Department of Energy Funding (DOE) Opportunity Announcement DE-EE-0002611 (AOI 8) in 2022. On May 19, 2023, DOE announced that the project proposal titled Supporting Transportation Electrification – Leadership, Learned, Assistance, and Resources (STELLAR) was selected for an award. The CUC project enhances the investments made in STELLAR by enabling participating CBOs to move forward with deploying infrastructure projects after they've developed strategic plans. CUC provides CBOs with confidence that their planning efforts will be supported and actualized. CUC also allows for 2 additional CBOs to participate in the same resourcing curriculum and technical assistance the initial STELLAR CBOs receive. There is also an opportunity to nearly double the workforce development training events developed through STELLAR.

Estimated Project Results:

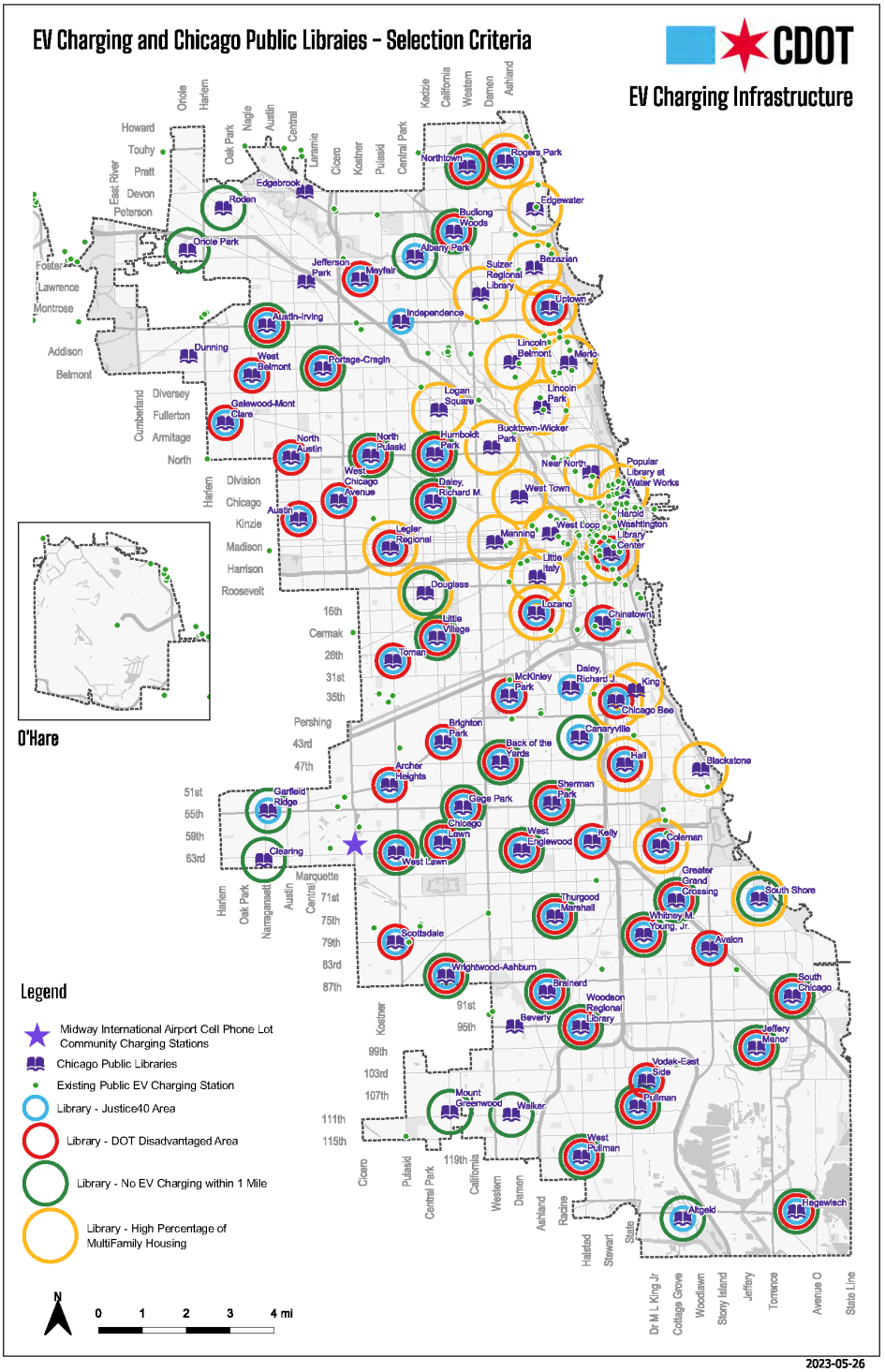
- *2 participating Community Based Organizations resourced via the project who represent an underserved community*
- *2 community strategic plans created*
- *2 CBO-led outreach events*
- *500 people reached through CBO-led outreach events*
- *10 fleets that receive technical assistance*
- *10 training events for people who work or live in underserved communities*
- *10 CBO-led charging stations10*
- *40 CBO-led charging station DCFC ports*
- *40 CBO-led charging station Level 2 ports*
- *10 CPL station community engagement events*
- *20 Chicago Public Library charging station sites*
- *80 CPL charging station DCFC ports*
- *80 CPL charging station Level 2 ports*
- *20 CPL station community engagement events*
- *128 CPL education workshops*
- *1500 people reached through CPL educational workshops*
- *20 City of Chicago municipal shared-use EVs added to fleet leveraging CPL stations*
- *32 Midway Airport DCFC ports*
- *3 Midway Airport station community engagement events*

Project Location

The CUC project will help address the access gap to EV charging, EVs and e-mobility information in Chicago. Chicago Public Libraries (CPL) is an ideal charging station site host due to their mission to provide equal access to information, ideas and knowledge through books, programs and other resources. CPL currently has 81 locations distributed throughout the city, many with free, accessible public parking. The City can leverage CPL sites to efficiently develop a charging station network that serves communities underserved by the existing privately-owned EV charging network (See Figure 2). These sites are already under the City's ownership and control.

The Chicago Department of Aviation (CDA) will develop a public charging station location consisting of 16 DC fast chargers at the Chicago Midway International Airport cell phone lot. The cell phone lot is free to access, conveniently located, and accessible to the public. Utilizing the cell phone lot ultimately results in less roadway traffic and congestion, less air pollution, and increased auto fuel savings. The cell phone lot is already under the City's ownership and control.

Figure 2. EV Charging and Chicago Public Libraries – Selection Criteria

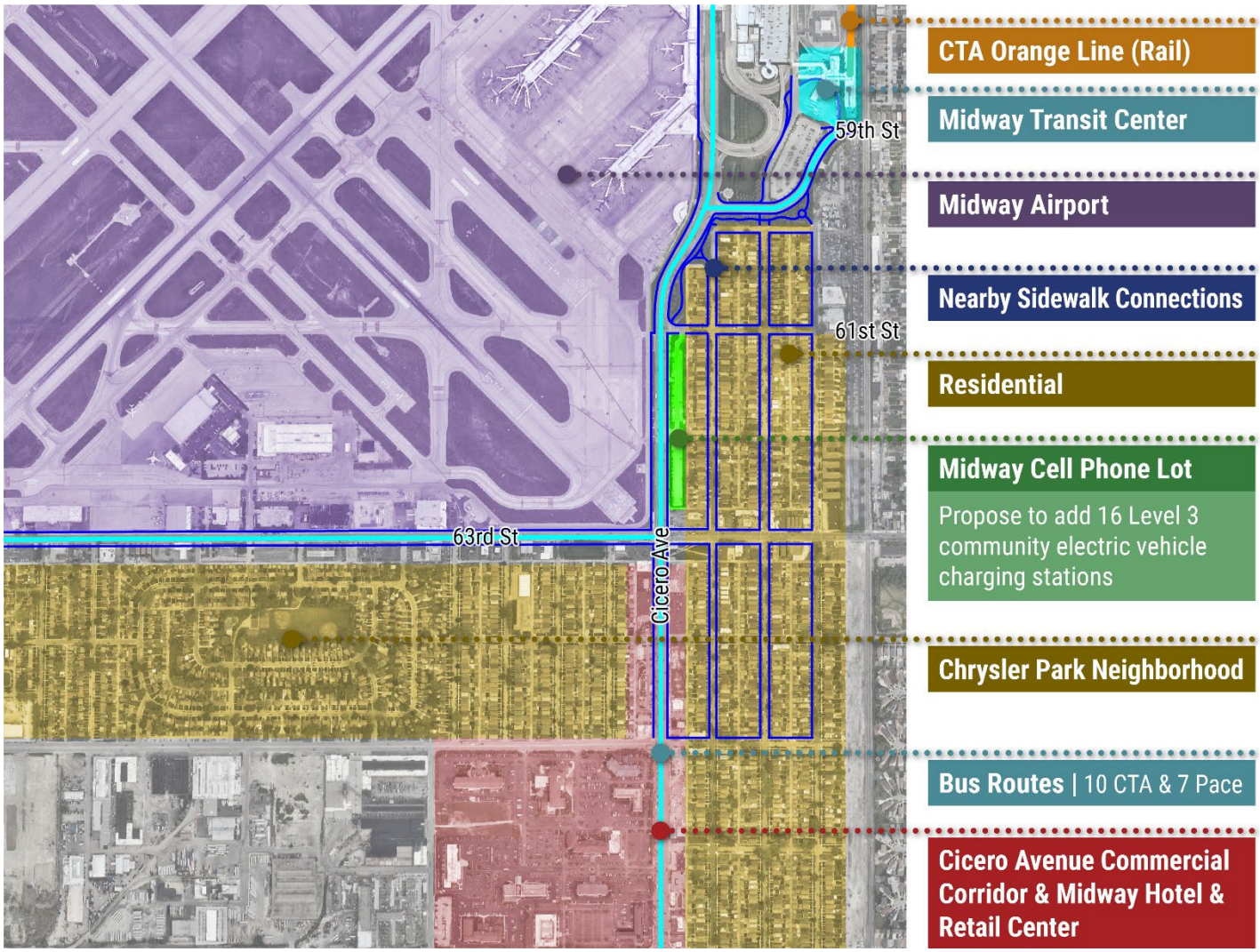


The Midway cell phone lot is located in the Clearing Community Area. Clearing is majority Hispanic/Latino with median incomes significantly lower than the City of Chicago or Cook County. The

cell phone lot is pedestrian-friendly with sidewalk connections to the Chrysler Village residential neighborhood and Cicero Avenue commercial corridor.

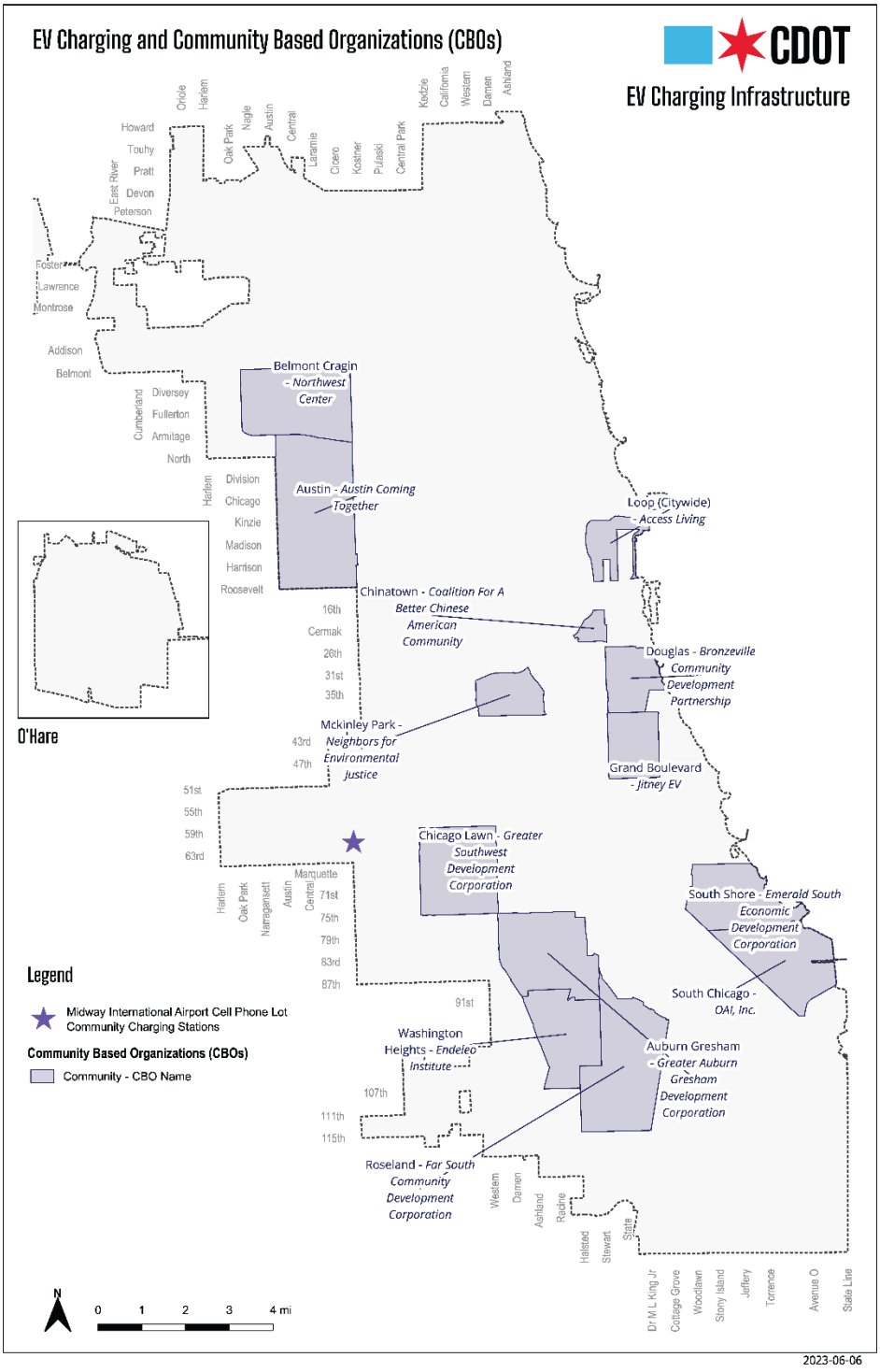
For those who need charging for a shared or rented EV, the cell phone lot is also easily accessible from mass transit. The nearby CTA Midway station is a multi-modal transportation hub that serves as the terminus for the Orange Line as well as a hub for CTA, Pace Suburban Bus and regional buses. Both the cell phone lot and Midway station are ADA accessible (See Figure 3).

Figure 3. Proposed Midway Airport EV Charging Stations and Connectivity Map



Thirteen CBOs developing strategic plans through the STELLAR program will be able to implement their plans (See Figure 4). Two CBOs will participate in a technical assistance training series on transportation electrification and decarbonization. Among the 15 total CBOs participating in CUC and STELLAR, the vast majority are based in federally-identified Disadvantaged Communities. Of those, we anticipate ten CBOs will choose to continue forward in implementing public charging station infrastructure projects in their communities.

Figure 4.EV Charging and Community Based Organizations (CBOs)

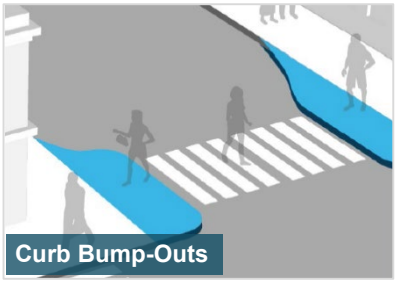


Traffic Safety Considerations

CDOT will develop traffic safety recommendations based on departmental best practices from its Complete Streets and Vision Zero efforts using a Safe Systems Approach to ensure a safe experience not only for persons using EV charging stations but also for all road users in the immediate vicinity. Proven safety measures that would be evaluated for each site include the following:

- Consolidated and narrowed curb cuts and driveways – The greater the total number and width of intrusions into the sidewalk, the greater the potential for collisions with vulnerable roadway users. By closing extraneous curb cuts and limiting remaining ones to a standard maximum width, CDOT will limit the amount of exposure people on the sidewalk have to vehicles accessing the parking lots where EV stations reside.

- Vertical deflection – Greater vehicle speeds increase the likelihood and severity of crashes. Safety infrastructure such as rubber speed bumps, asphalt speed humps, and raised crosswalks serve to slow motor vehicles. CDOT would study the appropriateness of each intervention at locations within the parking lots, at points of egress to the parking lot, and at nearby intersections.
- Pedestrian refuge islands – At locations where drivers will be accessing an EV charging station via a major collector or arterial street, CDOT will study the potential need and effectiveness of refuge islands. These improvements provide people crossing wide two-way streets on foot with a concrete curb-protected space between opposing travel lanes to safely wait for a gap in traffic.
- Curb bump-outs – By extending the curb at street corners, we provide additional protected space for people walking, slow approaching traffic, and tighten turning radii of vehicles, which reduces the risk of crash exposure for people in the crosswalk. CDOT will evaluate the potential for bump-outs at intersections near EV charging stations.
- Stop signs – CDOT will explore installing stop signs to better control the outflow of vehicles exiting parking lots with EV charging stations. When drivers stop as directed, they have more time to check for approaching vehicles and other road users, thus reducing the risk of collisions.
- Refreshed pavement markings – Clear pavement markings, such as crosswalks, stop bars, painted center medians, and parking space lines, give drivers clearer direction on how and where to drive. However, they do fade over time. CDOT will evaluate the need for refreshed pavement markings both within parking lots with EV charging stations and on nearby streets.
- Encouraging multi-modal use – While EV charging stations mitigate the impact of motor vehicles on the natural environment, people who use alternative modes of transportation such as public transit, bicycling, and walking are less of a safety risk to other road users. CDOT will explore opportunities to encourage these alternative modes in a variety of ways, including:
    - Providing secure bicycle parking either in adjacent facilities or in parking lots where EV charging stations are located;
    - Coordinating with the Chicago Transit Authority to ensure that bus stops near the facility are safe and accessible; and
    - Studying the potential to locate Divvy bicycle share stations within the parking lots or on nearby sidewalks or streets.

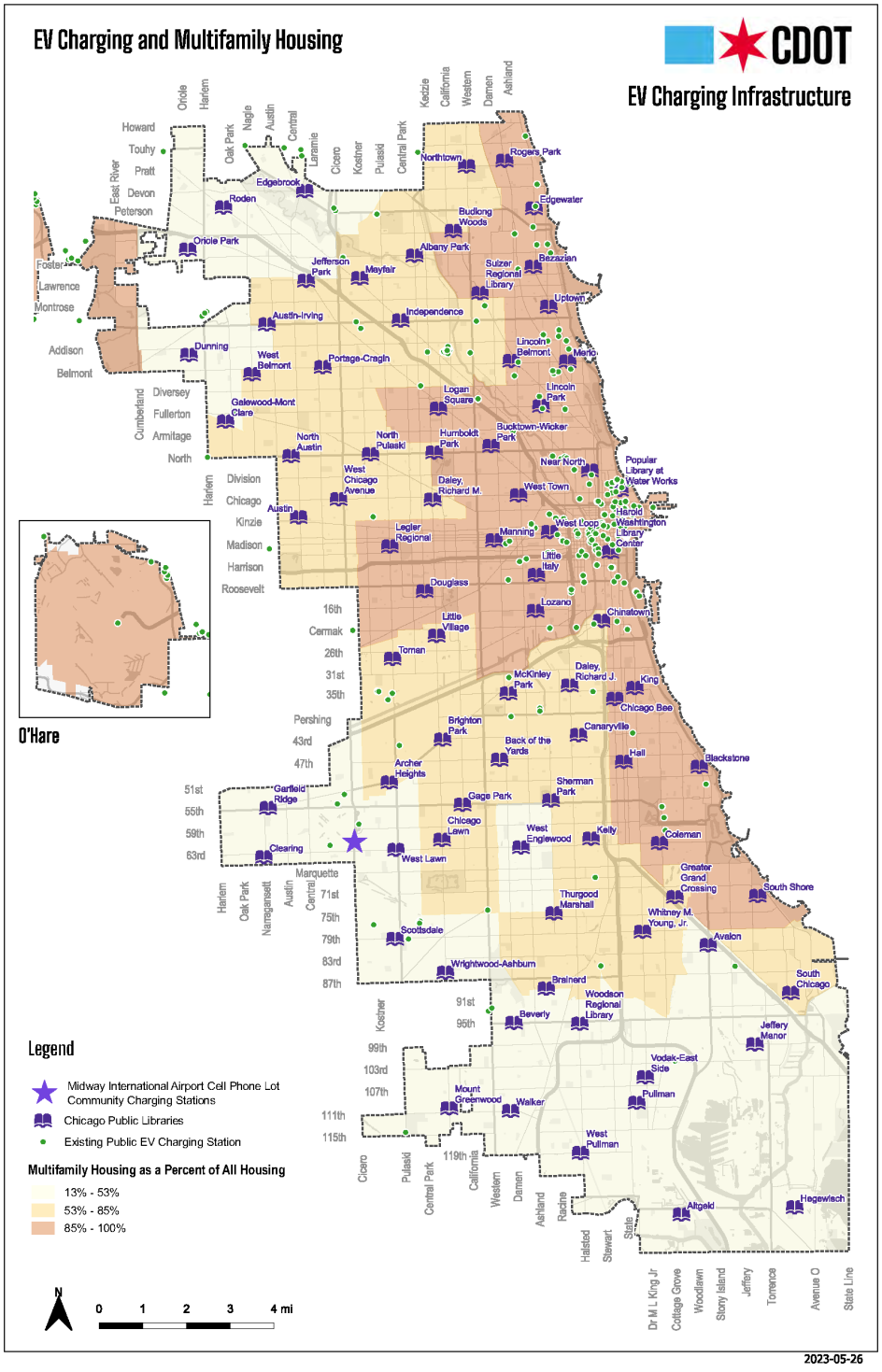


Equitable Expansion and Distribution

The equitable expansion and distribution of EV charging stations will enable more residents to benefit from EV use regardless of where they live in Chicago. Chicago currently has 720 publicly available EV passenger vehicle chargers and will need 2,743 public chargers by 2030 to support the projected number of EVs. The current EV public charging network in Chicago is the result of market forces driving EV

infrastructure investment decisions. The CUC project will supplement this existing network, not supplant it. Nearly 70% of Chicago residents live in multifamily housing and have barriers to charging at home (See Figure 5). Living in a community not currently served by any public charging stations makes it exceedingly difficult for those residents to utilize an EV. Our project will work to counteract market forces to enhance public charging access so that one day all drivers and communities can benefit from EVs.

Figure 5. EV Charging and Multifamily Housing



CDOT's Strategic Plan for Transportation, developed alongside our community partners, sets out our vision, goals, and benchmarks and provides the tools for Chicagoans to hold us accountable. Launched in July 2021, the plan is centered on:

- Making equitable decisions and investments;
- Expanding community participation in the planning, development and prioritization of transportation projects; and
- Delivering mobility, economic and environmental justice.

With these principles in mind, the CUC project will build community capacity to engage in transportation decarbonization and represent their communities. CBOs will receive technical assistance to strengthen their technical knowledge, conduct outreach and educational activities, develop strategic plans, and host workforce trainings. The technical assistance and outreach in each community will feed into the development of unique strategic plans for participating CBOs that will lead to infrastructure implementation solving for local priorities for each

CBO's community. Resourcing CBOs to engage the communities they serve will lead to infrastructure developments that suit the community's needs and are valued, utilized amenities.

The CUC project will leverage the existing CPL network to site charging stations that align with the City's equity goals, providing access to public EV charging to more Chicago communities. City-owned stations will be prioritized in locations that:

- have no public EV charging stations within 1 mile;
- serve a designated USDOT Disadvantaged Area and/or a Justice40 Area; and
- have a high percentage of Multifamily Housing.

The Climate Action Plan established a goal to support equitable electrification of ride-hail and taxi fleets by 2030. Both Uber and Lyft have committed to transition to zero-emission fleets by 2030. DCFCs at Chicago's airports is an essential component to realizing this goal. Today there are no publicly accessible DCFCs within 7 miles of Midway Airport. CDA's proposed Midway cell phone lot charging station is a convenient infrastructure solution to provide access to these high-utilization fleets enabling drivers to reduce operating costs and improve air quality across the city, while also providing charging access to residents living in nearby neighborhoods.

Through engagement with the 15 CBOs partnering on this project and its own direct community engagement, the City will gain a deeper understanding of the EV knowledge, attitudes and beliefs of residents, community organizations and fleets (stakeholders). Stakeholders will share what their preferences and needs are for infrastructure, informing CDOT's infrastructure planning, resulting in greater utilization of stations. In this way, we can avoid station investments where there is no community desire or demand.

Additional Project Information

Multi-modal Hubs and Shared-use Fleets and Services

EVs are commonly discussed in a way that presents them as the one transportation solution that will solve climate change & air quality issues in terms of energy policy and climate goals. While EVs are a promising mobility option that aligns with some of the City's key transportation priorities, such as emitting fewer emissions, having operational savings via lower maintenance & fuel costs, and increasing mobility options in communities where car ownership is a necessity, transportation modes such as transit, walking & biking are often the most affordable & climate-friendly options. EVs are still "Vs" (vehicles) and on their own do not increase safety for vulnerable road users nor reduce congestion on our streets. While CUC predominately works to address inequity in e-mobility access, information and benefits in Chicago, project partners are teaming to support the transportation principles of safety, the promotion of transit, biking and accessible shared modes.

CDOT will explore opportunities to encourage multi-modal uses at City-owned stations sites by:

- Providing secure bicycle parking either in adjacent facilities or in parking lots where EV charging stations are located;

- Coordinating with the Chicago Transit Authority to ensure that bus stops near the facility are safe and accessible; and

- Studying the potential to locate Divvy bicycle share stations within the parking lots or on nearby sidewalks or streets.

The Midway cell phone lot already mitigates congestion by providing a free location for drivers to wait to pick passengers instead of circling near the airport. The nearby CTA Midway station is a multi-modal transportation hub that serves as the terminus for the orange line as well as a hub for CTA, Pace Suburban Bus and regional buses. Both the cell phone lot and Midway station are ADA accessible.

This location will create shared-use charging access to expand access to charging for the EVs in the City, in addition to ride hail, taxi and rental EV fleets serving Midway Airport. Ride hail drivers use their cars 3-5 times as much as an average driver, amplifying the benefits of this charging location.

Currently, rental car agencies serving Midway are planning to roll out electric vehicles as part of their rental fleets. The Midway station helps support these efforts by providing convenient, shared, fast charging access. For those who need charging for a shared or rented electric vehicle, the cell phone lot is also easily accessible from mass transit.

When developing the City's Strategic Plan for Transportation, the Transportation Equity Network posed an equity challenge to the City stating that communities they represent want a transportation system in Chicago which does not require car ownership. The technical assistance and capacity building training CBOs participate in will holistically address transportation decarbonization, including training topics on micromobility and electric car-sharing and ridesharing. This broader approach to technical training empowers communities to identify and shape e-mobility options that best suit the needs of their residents. The CBO's charging station infrastructure projects will reflect community priorities that may include shared-use and multi-modal transportation options.

Urban / Suburban Charging and Fueling Solutions

Currently in Chicago, every community area has registered EVs. The Chicago Metropolitan Agency for Planning (CMAP) cites that over 90% of trips originating in Chicago are 40 miles or less, well within standard range of most current and older EV models. However, 70% of all public charging stations are concentrated in just three (3) of the 77 Community Areas. Additionally, 47 of the 77 community areas do not have any public charging stations. The South and West Sides of Chicago have few public locations for Level 2 charging and virtually no access to DC fast charging.

Increased access to public charging is needed throughout the City more so than many other communities in Illinois and in the U.S. Over 70% of Chicago residents live in multifamily dwellings, many without dedicated resident parking spaces. This presents an additional barrier for residents who desire to own an EV in Chicago.

In order to provide a potential solution to this, some cities are piloting public right of way charging or curbside charging. Curbside stations can be much more expensive to install than in parking lots/garages as there are additional permitting and approval processes for uses in the public way, in addition to scrutiny if stations take away parking and usage is low. The City will study the opportunity to leverage the public right of way for EV charging by conducting the Design Engineering Phase of our EV and EV Infrastructure Framework via the CUC project. A major component of the Design Engineering Phase is developing a robust curbside charging pilot centered on equity.

The City of Chicago proposes a community-informed model to provide accessible charging stations along designated Chicago Public Library parking locations. As a trusted, community-centric institution focused on free access to books, knowledge, public resources, and accessible programming, CPL is a natural partner in this project. Having public facilities with an accessible delivery mix of direct current fast chargers (DCFC) and Level 2 charging infrastructure for EVs at designated library locations across the city will go a long way to ensuring that residents and motorists in any community area would have accessible charging infrastructure nearby.

Fleet Vehicles That Serve and Operate in Communities

The City of Chicago maintains a fleet of 11,246 light, medium and heavy-duty vehicles that City employees use in the provision of City services, including waste management and recycling, emergency services, and both external and internal operational services.

In April 2022, the City launched Chicago Electric, a new initiative in line with goals laid out in the City of Chicago's 2022 Climate Action Plan (CAP) to transition 100% of the City's municipal fleet to electric vehicles or zero-emission alternatives by 2035

Implementation of Chicago Electric is already underway, as the City plans to install over 190 charging stations citywide at municipal facilities. Additionally, the City will reach a significant milestone in the first year of the program by procuring 182 electric vehicles that will make up approximately 25% of the non-emergency light duty fleet. To date, a total of 176 electric vehicles have been leased or purchased with the bulk of those to be delivered in Summer 2023. The City, where possible, will allow the sharing of charging stations with the public at City fleet charging locations that are accessible to the public.

The City anticipates leveraging Chicago Public Library chargers to expand parking locations and electrify many more municipal fleet vehicles. The current "FlexFleet" citywide carpooling program operates 42 vehicles at 14 locations, 3 of which are libraries. Vehicles are shared by hundreds of City employees, working for dozens of City departments, and are reserved online through an automated system. Placing an electric administrative vehicle at each library that is equipped with a charging station as part CUC would more than double our location count, thereby significantly increasing the number of electric vehicles available for use by City employees in the performance of their duties. As a result, fossil fuel consumption would be reduced by over 10,000 gallons annually, with an accompanying reduction in air pollution.

Distributing the FlexFleet at more libraries throughout the city will also reduce transportation energy use by providing shared City vehicles closer to where more City employees live. City employees will not have to drive or spend time taking another means of transportation traveling to a limited number of locations to pick up vehicles. Library employees will also have closer access to City vehicles when they need them.

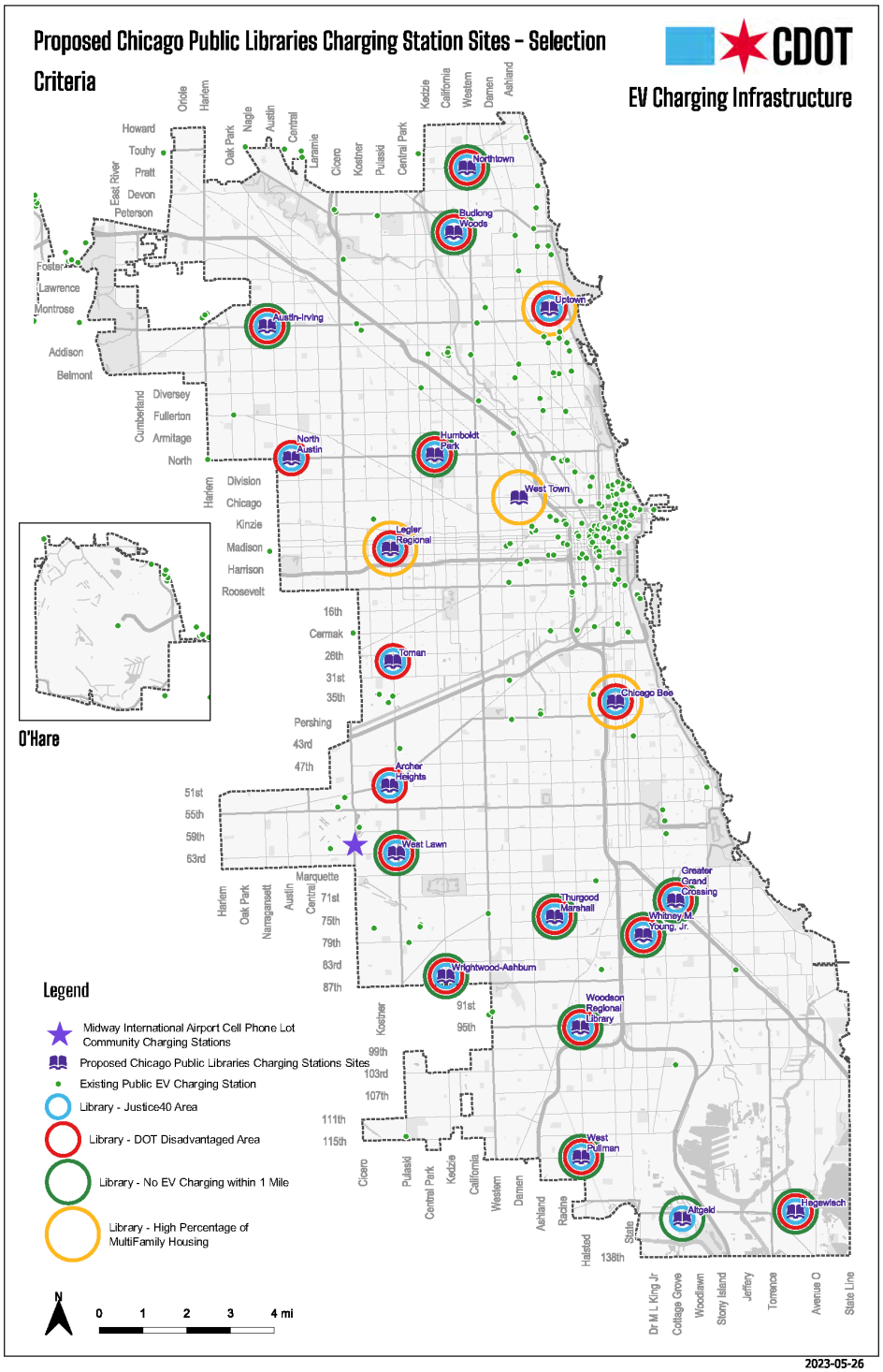
Benefit for Underserved Communities

The CUC project is centered on ensuring project benefits reach underserved and hard to reach communities not invested in by the private market. Building on the STELLAR project, CUC will continue to invest in participating CBOs' ability to engage and represent their communities. The project

is deliberately structured to result in technical assistance and capacity building to CBOs, allowing them to create community-driven strategic plans that reflect their priorities. These plans will guide future transportation-related activities by the CBOs, including the ability to access CUC funding to lead their own community-based charging infrastructure projects. In addition, the community relationships strengthened through project engagement and the resulting strategic plans will be valuable resources to ensure future local, state, or federally supported transportation programs meet the true needs and desires of each community.

Two CBOs will participate in a technical assistance training series on transportation electrification and decarbonization. Among the 15 total CBOs participating in CUC and STELLAR, the vast majority are based in federally-identified Disadvantaged Communities and/or Justice40 communities. Of those, we anticipate ten CBOs will choose to continue forward in implementing public charging station infrastructure projects in their communities, many of which don't have access to public charging currently. Leveraging the geographic diversity and equitable access mission of the Chicago Public Libraries, the City is able to provide more public charging access to more Chicago communities where market-forces have not invested. Of the 77 total Community Areas in Chicago, 47 do not have any public charging stations. The current EV public charging network in Chicago is the result of market forces driving EV infrastructure investment decisions. Inequitable distribution of EV charging infrastructure will lead to inequitable distribution of EVs unless the City and others intervene. Of the library station locations, 19 of the 20

Figure 6. Proposed Chicago Public Libraries Charging Station Sites – Selection Criteria



sites are located in Justice40 and/or DOT disadvantaged communities and the vast majority do not have a public charger within one mile of the site (See Figure 6).

Innovative Payment Approaches and Accessibility to Diverse Populations

The City of Chicago and its Department of Transportation have deep-seated commitments to mobility justice and equitable transportation. We have applied these principles to our Divvy bike share system and our shared e-scooter program with strategies that allow individuals with barriers including underbanked and unbanked individuals and those without smartphones and/or data plans to access these sustainable transportation systems. The approaches that we've deployed include:

- Cash-based payments
  - Payment integration with Pay Near Me available at participating retail locations
  - Ability to add cash to accounts at vendors' offices
- Low-tech access
  - Contactless key fobs available
  - Dedicated customer service to start sessions remotely via call or text
- Potential for bundling with transit and other programs
  - Dollar amount credit with monthly pass purchase

The City of Chicago would apply these strategies and other innovative approaches to any charging infrastructure funded by the CFI Community Program. Any sub recipients and contractors selected via requests for proposals or other procurements and agreements/contracts executed as a result of those processes would include the above requirements where applicable.

II. Budget Information

Description of Funds

Project Planning and Development

Supplementing DOE's investment in the Chicago-based STELLAR project, CUC will support two additional CBOs in the city of Chicago to receive training, technical assistance, and produce community-driven strategic plans for transportation decarbonization. Leaders of CBOs often "outlast" elected officials in their communities, and thereby can provide support for plans or policies that transcend administrations. However, CBOs often have limited capacity and other obstacles to realizing the community's transportation vision. Depending on the community, these constraints may include funding, capacity, technical expertise, or the opportunities to engage with their constituencies in focused conversations and planning processes.

This project will work to overcome past planning shortcomings by ensuring CBOs are funded and positioned as leaders in the identification of local needs, with technical advisors to support them. CNT acts as the convener and facilitator of the Transportation Equity Network, a coalition of CBOs who will be the primary beneficiaries of this project. CNT's role on this project is to convene the participating CBOs, including maintaining direct and personal connections with each of them to ensure they see the value in participating and continually look for opportunities to improve our engagement process.

CNT, Forth, and IACT will convene the 2 CBO partners for the training series, spanning approximately 9 months. The technical assistance and capacity building training will start with building a foundation on electric mobility to allow participants to have the same baseline of knowledge on transportation decarbonization. Learnings will build on each other throughout the course of training. After a foundation is established, Forth and partners will work with the CBOs to identify which topics require deeper focus and are the most relevant for the communities they serve. Examples of potential technical assistance training topics are:

1. Equitable Transportation Decarbonization
2. Electric Mobility Options Overview
3. Charging Infrastructure Overview
4. Medium- and Heavy-Duty Electrification
5. Micromobility
6. Electric Carsharing and Ridesharing
7. Engaging Communities on Electric Mobility
8. Fair Financing for Electric Vehicles
9. Utilities' Roles in Electrification and Advocacy Opportunities
10. Workforce Development in Electric Mobility
11. Electric Mobility and Community Development
12. Federal and State Policy Landscape

CBOs will develop priorities for outreach events and strategic plans as part of the curriculum. Near the end of the training series, the CUC CBO and the STELLAR CBO project partners interested in moving forward with infrastructure development will be identified and begin additional work in the second year. Forth and IACT will assist CBOs as needed during the planning and implementation phases of their infrastructure projects. CBOs will receive funding for the engineering and design work for their sites.

Workforce training led by OAI is a separate curriculum occurring in the same communities but is not path-dependent with completion of the strategic plans. OAI will lead workforce training in partnership with the other CBOs. The proposed OAI, Inc. Clean Energy Training Partnership (CETP) will provide a comprehensive job training and placement program for careers in environmental remediation, EV charging station installation, and related fields and will address environmental clean-up and electrification deserts in BIPOC communities.

In July 2022, CDOT issued a Task Order Request seeking a consultant from our prequalified master consulting agreement list to assist in developing our Electric Vehicle and Infrastructure Framework (EV Framework) centered on equity that will guide future investments and policies to support transportation electrification in Chicago over the next decade. The Preliminary Engineering Phase of the Framework is launching in June 2023. The Preliminary Engineering Phase's scope includes:

- Stakeholder Engagement
- Defining the Landscape of Parking and Public EV Charging in Chicago
- Recommending Policy Interventions to Ensure Equity
- Identifying Criteria for Future Deployment of EV Chargers

This City-funded, 12-month scope of work will inform the City's detailed approach to owning, operating, and enabling more charging station access in Chicago. The Preliminary Engineering Phase's deliverables will support the City's timely implementation of the CUC project, establishing a roadmap for station design, standards for community engagement, procurement processes and how charging infrastructure projects can be centered on equity.

The City is seeking USDOT funding for the Preliminary Engineering Phase of the EV Framework to perform the next phase of engagement to gain understanding, feedback, and more specific EV charging station location input from Chicago residents, community organizations, fleets, and stakeholders. This phase will also develop a public right-of-way charging pilot program design. Based on work from the Preliminary Engineering Phase and information from Preliminary Engineering Phase engagement, the Consultant team will design a public right-of-way charging pilot program with the size, scope, and program requirements that will best allow the City to evaluate the viability of right- of-way charging programs to:

- address charging needs in neighborhoods without sufficient off-street parking;
- be able to scale to a future in which the majority of vehicles are electric; and
- not conflict with other City goals by promoting overall automobile ownership.

For the Midway, CPL, and CBO station locations, early community engagement will help project partners gain a deeper understanding of the EV knowledge, attitudes and beliefs of residents, community organizations and fleets. Engagement materials, such as a project-specific web page, an FAQ document addressing common questions and social media content supporting engagement and CUC project milestones will provide transparency on the project. The CBOs may choose to manage their own community engagement or leverage the City's competitively selected contractor.

The CBOs may also choose to leverage the City's contractor for station design and engineering or select their own. Cost estimates are based on recent projects and quotes by firms.

Table 1. Project Planning and Development — Description of Funds

Project Planning and Development	Responsibility Entity	Purpose	Cost
Training & Planning	Bronzeville Community Development Partnership (CBO)	Receive transportation decarbonization training and planning assistance	$15,000
Training & Planning	Equiticity (CBO)	Receive transportation decarbonization training and planning assistance	$15,000
Training & Planning	OAI (workforce development partner)	Deliver workforce training curriculum	$200,000

Training & Planning	CNT	Training and planning assistance scope convener	$99,596
Training & Planning	Forth	Develop and deliver training curriculum for capacity building within CBOs	$9,000
Training & Planning	IACT	Develop and deliver training curriculum for capacity building within CBOs	$9,000
Implementation Assistance	Forth	Support CBOs with infrastructure planning, implementation and operation, as needed (national partner)	$140,000
Implementation Assistance	IACT	Support CBOs with infrastructure planning, implementation and operation, as needed (local partner)	$140,000
Planning	City of Chicago's contractor (already competitively selected)	Design Engineering Phase of City's EV and Infrastructure Framework scope of work	$500,000
Planning	City of Chicago's contractor	Midway Airport station public engagement	$18,000
Planning	City of Chicago's contractor	CPL stations (20) public engagement	$600,000
Planning	CNT's contractor	CBO stations (10) public engagement	$200,000
Planning & Development	City of Chicago contractor	Midway station engineering and design	$20,000
Planning & Development	City of Chicago contractor	CPL stations (20) engineering and design	$300,000
Planning & Development	CBOs' selected contractors	CBOs' stations (10) engineering and design	$150,000

Right-of-Way (R.O.W.) Acquisition

The City will leverage existing City-owned public parking facilities for the placement of charging stations. Property acquisition costs may be eligible for the CBO station infrastructure project. These acquisition costs will be identified towards the end of year 2 of the project scope of work.

Table 2. R.O.W. Acquisition

R.O.W. Acquisition	Responsible Entity	Purpose	Cost
R.O.W Acquisition	CBOs (5 estimated)	Estimated funding needs for CBOs' projects that might require R.O.W acquisition	$250,000

Installation Costs

The STELLAR project and CUC project CBOs who complete strategic plans will be eligible to receive charging station funding through CUC. Funding is reserved in the CUC budget to award approximately 10 community-led, community-owned charging infrastructure projects. We anticipate these stations will have a mix of DCFCs and Level 2 chargers. For budgeting purposes, we assumed two DCFC of at least 150kW and two Level 2 chargers of at least 6kW per station.

CPL station locations may provide an ability to standardize site designs resulting in efficient installations and reduced project costs. Installing 2+ DCFC chargers with multiple ports per station will create positive redundancies. Grouping chargers at a single site can result in lower incremental costs per charger because fixed costs including site preparation and utility interconnection can be spread across more chargers. Stations will be designed and manufactured for longevity, ongoing use and continued reliability for customers.

The Midway Airport cell phone lot station will be the largest station with 16 150kW or higher DCFCs with dual ports. The station will be able to simultaneously charge up to 32 EVs at once. The size of this station is informed by the high utilization of the Tesla Supercharger station at the O'Hare Chicago Travel Plaza. This Tesla Supercharger station is located on airport property, serving ride hail drivers, rental car companies, and travelers. The fourteen 150 kW chargers are frequently all occupied throughout the day. To meet current and anticipated demand of the Midway station, the site is sized up to provide over double the charging availability compared to the Tesla station already in operation at O'Hare.

Charger costs are based on quotes received from equipment providers. Installation costs are based on recent station installation costs incurred by the City. Stations will be installed only by qualified technicians. The Electric Vehicle Infrastructure Training Program (EVITP) started here in the Chicago area with the first Train the Trainer program taking place in April 2011. The Illinois Commerce Commission ever since has required anyone that installs, maintains, or repairs EV chargers in Illinois be certified. EVITP is one path to certification. Due to this statewide requirement, a well-developed network of certified & well-trained contractors is available and growing.

Table 3. Installation Costs

Installation Costs	Responsible Entity	Purpose	Cost
DC Fast Chargers	City of Chicago	Midway station chargers procurement	$1,408,000
DC Fast Chargers	City of Chicago	CPL stations chargers procurement	$3,640,000
DC Fast Chargers	CBOs	CBOs stations chargers procurement	$1,820,000
Level 2 Chargers	City of Chicago	CPL stations chargers procurement	$440,000
Level 2 Chargers	CBOs	CBOs stations chargers procurement	$220,000
Installation Costs	City of Chicago's contractor	Midway station estimated site construction costs	$900,000
Installation Costs	City of Chicago's contractor	CPL stations estimated site construction costs	$3,047,679
Installation Costs	CBOs' contractors	CBO stations estimated site construction costs	$1,600,000

Operations Costs

For nearly 30 years, the City of Chicago has administered clean vehicle infrastructure funding programs of similar size and complexity as CUC. This experience helps us recognize the value a project management consultant can add to the program. Additional project management support will mitigate potential implementation delays, ensure timely reporting and project transparency, and expedient invoicing and payment to contractors and subawardees. Participating CBOs implementing station projects will also receive funds for project management resources.

In order to comply with the USDOT's CFI program requirements, provide a satisfying customer experience, and gather data to aid in future station investments, stations will be networked not only through the project but their useful life. Typically, the first year of network fees are built into the initial cost of the chargers. The estimated costs below are based on quotes obtained from charger providers and reflect only the network fees for the period of performance of the CUC project award.

Table 4. Operational Costs

Operational Costs	Responsible Entity	Purpose	Cost

Project Management	10 CBOs implementing infrastructure projects	Resource CBOs with funding for in-house project management	$80,000
Project Management	City of Chicago contractor	Project management assistance of USDOT grant, subawards and City projects	$750,000
Data and Network	City of Chicago	Midway station's network fees for all DCFC and L2 chargers	$46,080
Data and Network	City of Chicago	20 CPL stations' network fees for all DCFC and L2 chargers	$58,400
Data and Network	CBOs	10 CBOs stations' network fees for all DCFC and L2 chargers	$29,200

Maintenance Costs

The City does not intend to seek a private turnkey charging station solution provider at this time. The City does intend to leverage the services of well-trained contractors to perform station maintenance. Maintenance costs are based on the Rocky Mountain Institute's "Reducing EV Charging Infrastructure" report and adjusted for inflation. Five years of maintenance costs are built into the CUC project to ensure long-term station stewardship and reliable station access.

Table 5. Maintenance Costs

Maintenance Costs	Responsible Entity	Purpose	Cost
Station Maintenance	City of Chicago	Midway station's maintenance costs for 5 years	$48,000
Station Maintenance	City of Chicago	20 CPL stations' maintenance costs for 5 years	$192,000
Station Maintenance	CBOs	10 CBOs stations' maintenance costs for 5 years	$69,600

Education Activity Costs

Of the two CBOs, we anticipate both will choose to continue forward with outreach and educational activities that will inform the creation of their strategic plans. With support from an outreach firm, CBOs participating in the second phase will hold outreach events to educate residents about EVs and charging, building on existing community events when possible. CBOs will also participate in additional events, including some hosted by other CBOs and regional events such as IACT's annual Green Drives Conference. Each CBO will connect businesses in their communities with project partners for EV

education, trainings, or other technical assistance. Forth and IACT will provide assistance to help expand the use of cleaner vehicles in the fleets identified by the CBOs. The outreach and educational activities will demonstrate the CBO's ability to be a resource for these issues to their respective constituencies, build relationships and provide support for their local businesses.

CNT will help facilitate the education and outreach task for the CBOs, competitively selecting and contracting with an outreach firm to support the CBO's events. The City will also competitively select and contract with an outreach firm, potentially a shared contractor with CNT, to develop and deliver transportation decarbonization education events at the libraries. The City anticipates hosting 1-2 workshops per year at the libraries with charging hubs once the station is completed.

Table 6. Education Costs

Education Costs	Responsible Entity	Purpose	Cost
Conduct Outreach	Bronzeville Community Development Partnership & Equiticity (CBOs)	Conduct community outreach and make connections to fleets in the communities	$80,000
Conduct Outreach	CNT's subcontractor	Competitively procure services of outreach firm supporting educational events in CBOs' communities	$24,000
Conduct Outreach	CNT	CBO community outreach scope convener	$79,726
Conduct Outreach	CNT	Technical assistance and fleet outreach scope convener	$19,919
Conduct Outreach	Forth	Support CBO's with fleet engagement and advisement to selected fleets	$12,000
Conduct Outreach	IACT	Support CBO's with fleet engagement and advisement to selected fleets	$12,000
Conduct Outreach	City of Chicago subcontractor	Competitively procure services of outreach firm to develop and deliver transportation decarbonization educational events at selected Chicago Public Library branches	$256,000

Travel expenses have been reserved in the budget to allow for City representatives to participate in any project briefings or presentations to the funding agency or interested stakeholders. Sharing project details and best practices will help inform others interested in replicating a project like CUC. While we anticipate providing reports and participating in webinars at the request of USDOT, in-person events are also highly valued co-learning opportunities.

Table 7. Travel Expenses

Purpose of Travel	Location	Responsibility	Item	Cost
Training and Peer Learning at Forth's Roadmap Conference	Portland	City of Chicago	Lodging, Airfare, Ground Transportation, and per Diem for 2 staff, 2 trips	$5400
Participation in USDOT Meetings or Events, if necessary	Washington D.C.	City of Chicago	Lodging, Airfare, Ground Transportation, and per Diem for 1 staff, 4 trips	$5600

CDOT's 2023 all operating divisions approved indirect cost rate is 22.56%. In order to maximize the amount of grant funding for project implementation, the City proposes a flat $600,000 indirect cost amount.

Table 8. Other Costs

Other Costs	Responsible Entity	Purpose	Cost
Forth Roadmap Registration Fee	City of Chicago	Registration costs to attend Forth's annual Roadmap conference, 2 staff, 2 trips	$2800
Indirect Costs	City of Chicago	Proposing flat indirect cost amount due to size of project	$600,000

III. Project Merit Criteria

Safety

CDOT will develop traffic safety recommendations based on departmental best practices from its Complete Streets and Vision Zero efforts using a Safe Systems Approach to ensure a safe experience not

only for persons using EV charging stations but also for all road users in the immediate vicinity. Proven safety measures that would be evaluated for each site include the following:

- Consolidated and narrowed curb cuts and driveways – The greater the total number and width of intrusions into the sidewalk, the greater the potential for collisions with vulnerable roadway users. By closing extraneous curb cuts and limiting remaining ones to a standard maximum width, CDOT can help limit the amount of exposure people on the sidewalk have to vehicles accessing the parking lots where EV stations reside.
- Vertical deflection – Greater vehicle speeds increase the likelihood and severity of crashes. Safety infrastructure such as rubber speed bumps, asphalt speed humps, and raised crosswalks serve to slow motor vehicles. CDOT would study the appropriateness of each intervention at locations within the parking lots, at points of egress to the parking lot, and at nearby intersections.
- Pedestrian refuge islands – At locations where drivers will be accessing an EV charging station via a major collector or arterial street, CDOT will study the potential need and effectiveness of refuge islands. These improvements provide people crossing wide two-way streets by on foot with a concrete curb-protected space between opposing travel lanes to safely wait for a gap in traffic.
- Curb bump-outs – By extending the curb at street corners, we provide additional protected space for people walking, slow approaching traffic, and tighten turning radii of vehicles, which reduces the risk of crash exposure for people in the crosswalk. CDOT will evaluate the potential for bump-outs at intersections near EV charging stations.
- Stop signs – CDOT will explore installing stop signs to better control the outflow of vehicles exiting parking lots with EV charging stations. When drivers stop as directed, they have more time to check for approaching vehicles and other road users, thus reducing the risk of collisions.
- Refreshed pavement markings – Clear pavement markings, such as crosswalks, stop bars, painted center medians, and parking space lines, give drivers clearer direction on how and where to drive. However, they do fade over time. CDOT will evaluate the need for refreshed pavement markings both within parking lots with EV charging stations and on nearby streets.
- Encouraging multi-modal use – While EV charging stations mitigate the impact of motor vehicles on the natural environment, people who use alternative modes of transportation such as public transit, bicycling, and walking are less of a safety risk to other road users. CDOT will explore opportunities to encourage these alternative modes in a variety of ways, including:
    - Providing secure bicycle parking either in adjacent facilities or in parking lots where EV charging stations are located;
    - Coordinating with the Chicago Transit Authority to ensure that bus stops near the facility are safe and accessible; and
    - Studying the potential to locate Divvy bicycle share stations within the parking lots or on nearby sidewalks or streets.

Climate Change, Resilience, and Sustainability

CDOT is deeply committed to designing and developing projects that consider climate change impacts. Last year, the City of Chicago released the 2022 Chicago Climate Action Plan (CAP). The CAP provides a strategic framework to "reduce Chicago's contribution to global climate change, prepare our communities for the effects of a changing climate, and support a just transition to a thriving green

economy." One CAP strategy is to enable 2,500 new public passenger electric vehicle charging stations by 2035, reducing air pollution related to motor vehicle greenhouse gas emissions.

The City and CBOs will utilize available ENERGY STAR certified EV chargers yielding energy savings. The City and CBOs will evaluate opportunities to encourage off-peak charger usage. Reducing charger use during peak electrical usage periods promotes a sustainable environment by limiting the consumption of non-renewable fuels and thus the release of carbon emissions. Additionally, impacts to local electrical transmission and distribution infrastructure can be minimized as well as the need for more generation. In August 2022, the City signed an agreement with an energy supplier committing to purchasing renewable energy for all City facilities and operations by 2025. This commitment will supply all CPL and Midway charging stations with 100% renewable electricity.

EVs are still "Vs" (vehicles.) While they are a promising mobility option that aligns with some of the City's key transportation priorities, transportation modes such as transit, walking & biking are often the most affordable & climate-friendly options. EVs are one of the cleaner mobility options the City supports for residents and businesses. The City's role in transportation electrification is to ensure that all drivers and communities can benefit from EVs.

The City used Argonne National Laboratory's Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool 2020 version to estimate the GHG and other vehicle related emissions reductions anticipated from the use of CUC project charging stations. AFLEET does not estimate emissions reductions from outreach and educational activities. The table below summarizes the anticipated GHG emissions from the project.

Table 9. Anticipated Charge Up Chicago Project Emissions Reduction

Task	GHG Reductions Annual Short Tons
CPL charging stations (20)	503.4
CPL L2 charging ports dedicated to shared-use FlexFleet vehicles (20)	36.7
CBO charging stations (10)	265.5
Midway charging station (1)	293.4
TOTAL PROJECT ANNUAL GHG EMISSIONS REDUCTIONS	**1,099**

Equity, Community Engagement, and Justice

This project is designed to provide direct, immediate benefit to underserved communities. Among the 15 CBOs, the vast majority are based in federally-identified Disadvantaged Communities. The communities will benefit from the strengthened capabilities of the CBOs, the technical assistance and outreach events, the workforce development program and the charging hubs implemented by the project.

Historically, community-based organizations (CBOs) have not often been meaningfully engaged in the development of transportation plans and projects that impact their communities. This is despite CBOs having unique insights and perspectives that would result in transportation projects better able to meet the needs of community members. CBOs have a mission to serve people and places that are underrepresented or "invisible" in planning and policymaking. They have community trust and deep knowledge of local assets, challenges, and past plans, allowing them to identify opportunities that would be unknown to outside planners. They have often personally experienced the benefits but also unintended consequences of past plans and investments.

The CUC project is based on the realization that involving locally-trusted CBOs is a critical, but often missing, ingredient to increase EV penetration in marginalized neighborhoods. This project will work to overcome past planning shortcomings by ensuring CBOs are highly funded and positioned as leaders in the identification of local needs, with technical advisors for
support. CBOs will receive technical assistance to strengthen their technical knowledge, conduct outreach and educational activities, develop strategic plans, and host workforce training.

Sites considered for charging stations will undergo an equity assessment. The assessment will include equity-based criteria such as:

- Information on historical disinvestment;
- Low mobility access;
- Transportation energy burden;
- Lack of transit or shared mobility travel options;
- Socio-economic indicators;
- Public health indicators, such as air quality; and
- Geographic distribution.

Of the 20 CPL station sites initially identified, all but one is located in a Justice40 or USDOT Disadvantage Community.

While EVs will not solve our significant transportation issues, they can offer operation savings & will reduce local emissions compared to gasoline vehicles. A recent study by Argonne National Lab shows that EVs cost on average around 40% less to maintain compared to gas vehicles. The study takes into account the initial purchase price and depreciation, fuel, insurance, taxes as well as maintenance and repair. Per USDOE's eGallon tool EVs provide a 60% savings in fuel costs compared to average gasoline costs in Illinois. The current EV public charging network in Chicago is the result of market forces driving EV infrastructure investment decisions. Inequitable distribution of EV charging infrastructure will lead to inequitable distribution of EVs unless the City and others intervene.

Workforce Development, Job Quality, and Wealth Creation

In the past, to further enhance local project benefits, the City of Chicago has used local hiring agreements when permitted by the funding agency. We have also required contractors to maximize use of U.S. Department of Labor-registered apprenticeship programs and have negotiated labor agreements that work to ensure that graduates of Chicago Public Schools (CPS) and City Colleges of Chicago have

access to apprenticeships for these good-paying jobs. This apprenticeship program benefits low-income students of color. Twenty-one percent of CPS students are bilingual and nearly 70 percent qualified for free or reduced lunch in the 2021-2022 school year. At the City Colleges, nearly 70 percent of students identify as students of color.

OAI will lead workforce training in partnership with the other CBOs. The focus and details of the workforce training will be informed by the first year of our project. The proposed OAI, Inc. Clean Energy Training Partnership (CETP) will provide a comprehensive job training and placement program for careers in environmental remediation, electric vehicle charging station installation, and related fields and will address environmental clean-up and electrification deserts in BIPOC communities. The proposed CETP furthers environmental justice by ensuring residents living in communities historically affected by economic disinvestment, health disparities, electrification deserts and environmental contamination, including majority minorities, veterans, those experiencing low incomes, and individuals negatively impacted by the criminal legal system, have an opportunity to reap the benefits of revitalization, infrastructure investment and environmental cleanup by targeting these communities and populations for training and placement. For 20 individuals trained, OAI expects there will be 18 in-depth training events.

We expect this project to have specific and measurable impacts on local workforce readiness related to EVs. To assess the regional labor market to identify the needs of employers for the project described here, OAI collected labor market data from the Careers in Electric Vehicles Report from the U.S. Bureau of Labor Statistics issued in 2021-2022 by Energy Policy Institute (EPI), the 2020 WIOA Local Plan-Illinois LWIA 7, Cook County's Consolidated Plan and Comprehensive Economic Development Strategy, and other workforce-related plans in the region, along with information from employers. Per Energy Policy Institute (Sep 22, 2021), if battery EVs rise to 50 percent of domestic auto sales by 2030, 150,000 jobs in the auto industry could be created with policy measures to shore up U.S. market share and domestic content in EV production. Minority workers and workers with less than a bachelor's degree likely have the most to gain from policy action to boost U.S. competitiveness in EV production. Per EPI's report in Nov 2021 on the economic output and employment implications of a two-pronged strategy for rebuilding the economy around high-wage jobs and U.S. manufacturing, expanding public investments in infrastructure, clean energy, and energy efficiency would support large numbers of high-wage jobs with excellent benefits, especially for non-college educated workers, in durable goods industries. This includes substantial growth in motor vehicles and parts (188,800 jobs), aerospace products (127,600 jobs), and the steel industry (69,900 new jobs). Many of the occupations involved in manufacturing EVs are also involved in the manufacturing of vehicle charging stations. The increasing occupations in EV manufacturing include electrical and electronic equipment assemblers, electromechanical equipment assemblers, engine and other machine assemblers, team assemblers, computer-controlled machine tool operators, and machinists. Increasing occupations in charging station operations include: electrical power-line installers and repairers and electricians.

Table 10. Projected Job Creation

Occupations	Projected annual job openings (2020-30) in U.S.	Projected annual job openings (2018-28) in IL	Median Hourly Wage in the U.S., 2021	Median Hourly Wage in IL, 2021
EV Charging Station Installation track				
Electrical power-line installers	10,200	**300**	$37.65	**$47.62**
Electricians	84,700	**2,940**	$28.87	**$42.74**
EV Auto Technician Certificate Track				
Automotive Service Technicians and Mechanics	69,000	**2,910**	$22.54	**$22.79**

A recent report prepared by research group BW Research Partnership shows the new workforce needed in the electric vehicle supply chain will increase by 9,500 positions within or less than the next three years. In short, our workforce training program is designed to fill a need for skilled workers in rapidly growing sectors with those who would benefit most from the jobs - people living in Disadvantaged Communities. Following the successful demonstration of this workforce training, we expect the program will continue forward with possible state and private funding for workforce development that will sustain the efforts well beyond the project.

Charging and Fueling Infrastructure Program Vision

The CUC project will help address the access gap to EV charging, EVs and e-mobility information in Chicago. Chicago Public Libraries (CPL) is an ideal charging station site host due to their mission to provide equal access to information, ideas and knowledge through books, programs and other resources. CPL currently has 81 locations distributed throughout the city, many with free, accessible public parking. The City can leverage CPL sites to efficiently develop a charging station network that serves communities underserved by the existing privately-owned public EV charging network (See Figure 6). These sites are already under the City's ownership and control.

The Chicago Department of Aviation (CDA) will develop a public charging station location consisting of 16 DC fast chargers at the Chicago Midway International Airport cell phone lot. The cell phone lot is free to access, convenient, and readily accessible to the public. Utilizing the cell phone lot ultimately results in less roadway traffic and congestion, less air pollution and increased auto fuel savings. The cell phone lot is already under the City's ownership and control.

The Midway cell phone lot is located in the Clearing Community Area. Clearing is majority Hispanic/Latino with median incomes significantly lower than the City of Chicago or Cook County. The cell phone lot is pedestrian-friendly with sidewalk connections to the Chrysler Village residential neighborhood and Cicero Avenue commercial corridor.

For those who need charging for a shared or rented EV, the cell phone lot is also easily accessible from mass transit. The nearby CTA Midway station is a multi-modal transportation hub that serves as the terminus for the Orange Line as well as a hub for CTA, Pace Suburban Bus and regional buses. Both the cell phone lot and Midway station are ADA accessible.

Two CBOs will participate in a technical assistance training series on transportation electrification and decarbonization. Among the 15 total CBOs participating in CUC and STELLAR, the vast majority are based in federally-identified Disadvantaged Communities. Of those, we anticipate ten CBOs will choose to continue forward in implementing public charging station infrastructure projects in their communities.

IV. Project Readiness and Environmental Risk

Detailed Statement of Engineering and Technical Work

The CUC project will comply with all applicable federal terms and conditions including the National Electric Vehicle Infrastructure minimum standards and requirements identified in 23 CFR 680. EV charging stations deployed will have at least 4 network-connected (either DCFC or AC Level 2 or a combination of DCFC and AC Level 2 or a combination of DCFC and AC Level 2) charging ports and be capable of simultaneously charging at least 4 EVs. We anticipate each station will have both DCFC and Level 2 availability except for the Midway cell phone lot where only DCFCs will be provided due to the dwell time of vehicles in that lot. All charging connectors will meet applicable industry standards.

Each DCFC will have output voltages from 250 volts DC to 920 volts DC. Each DCFC charging port will be capable of charging any CCS-compliant vehicle and each DCFC charging port will have at least one permanently attached Combined Charging System (CCS) Type 1 connector. Any permanently attached CHAdeMO connectors will utilize only FY2022 NEVI Funds.

Level 2 chargers will have a continuous power delivery rating of at least 6 kW simultaneously across all AC ports unless the EV charging customer consents to accepting a lower power level due to power sharing and/or participating in a smart charge management program. Each AC Level 2 charging port will have a permanently attached J1772 connector and charge any J1772-compliant vehicle.

Sites selected for the project will undergo a technical feasibility assessment. The assessment will include criteria such as:

- Level of utility power availability and readiness;
- Physical space requirements;
- Safety and security requirements;
- Accessibility requirements;

- EV charging need/demand and better use of latent parking;
- Capacity in parking lots, overnight and off-peak times.

Energy Source and Storage Needs

City-owned charging stations will be located at existing facilities with established electric utility service. At this time, energy storage needs have not been identified. In August 2022, the City signed an agreement with an energy supplier committing to purchasing renewable energy for all City facilities and operations beginning in 2025. This commitment will supply all CPL and Midway charging stations with 100% renewable electricity through a newly constructed utility-scale solar plant being constructed in central Illinois.

R.O.W. Acquisition Mode

The City will leverage existing City-owned public parking facilities for the placement of our charging stations. The CBO-led charging stations may require property acquisition. Property acquisition costs may be eligible for the CBO infrastructure awards. These acquisition costs will be identified towards the end of year 2 of the project scope of work.

Local, State, and Regional Plans

The Charge Up Chicago! *Chicago Community Resources and Charging Infrastructure Implementation* (CUC) project will help bring equitable access to electric vehicles and e-mobility options in Chicago. The Chicago Department of Transportation's (CDOT) 2021 Strategic Plan, the City of Chicago's 2022 Climate Action Plan, the City's EV framework plan (currently underway) and the City's new comprehensive plan, We Will Chicago, all recommend the strategies and approaches that we are utilizing for the CUC proposal. In addition to Chicago city plans, the Chicago Metropolitan Agency for Planning (CMAP) On to 2050 regional plan recommends identifying public investments that can catalyze emerging technologies, including equitable vehicle electrification, under its primary goal of harnessing technology to improve travel and anticipate future impacts. These documents together create a visionary approach for the future of transportation electrification and e-mobility in Chicago. CUC is an integral part of delivering on this vision.

Project Approvals

The CUC project partners are committed to the vision and success of the project. Letters of commitment were obtained from leadership at the Chicago Department of Transportation; Office of Climate and Environmental Equity; Department of Assets, Information, and Services; Department of Aviation; Chicago Public Libraries; 15 community-based organizations (CBOs); the Center for Neighborhood Technology (CNT); Illinois Alliance for Clean Transportation (our local USDOE designated Clean Cities coalition); Forth; and OAI, Inc.

Just prior to the City's CUC project application submission, we learned that DOE selected the STELLAR project for an award. DOE's investment in STELLAR greatly benefits the CUC project as it accelerates the training and outreach activities for the vast majority of participating CBOs and establishes a close working relationship amongst project team members. The two CBOs who will participate in CUC's training already have specific community-developed e-mobility projects developed. We envision these two CBO community-led infrastructure projects moving quickly to implementation.

Known Risks

Project known risks include:

- Supply chain disruptions
    - Approximately two years wait time for new transformers
- Electric utility response times for new load requests
- Availability of Buy America, Build America compliant chargers
- Lengthy municipal procurement process
- CBOs raising 20% cost share for their community-led charging stations

Ongoing Public Engagement and Future Coordination

In summer 2023, CDOT is developing our Electric Vehicle and Infrastructure Framework (EV Framework) centered on equity that will guide future investments and policies to support transportation electrification in Chicago. CDOT's consultant team will assist in public and community stakeholder engagement to gain a deeper understanding of the EV knowledge, attitudes and beliefs of residents, community organizations and fleets. Our multi-faceted, data-driven stakeholder engagement plan includes:

- Utilizing CDOT's diverse stakeholder list that reflects priority communities and stakeholders.
- Issuing a public questionnaire hosted on CDOT's website to obtain robust, quantifiable data about EV knowledge and attitudes. The questionnaire will be distributed digitally and in-person at engagement events.
- Engaging with stakeholders through the following:
    - Kick-off EV Framework meetings to explain the project and distribute the questionnaire.
    - Follow-up meetings to share the draft framework and inform stakeholders of next steps.

The Transportation Equity Network (TEN) is a coalition of community groups, equitable transportation advocates, civic organizations, and other stakeholders in Chicago who work with decision-makers to embed racial equity and mobility justice into transportation via community driven decisions and investments. This coalition was the inspiration for the STELLAR program, which seeks to build CBO capacity to be meaningfully engaged in transportation electrification and decarbonization efforts. TEN was formed in 2020, and since then, has successfully participated in numerous public sector planning efforts led by the City of Chicago, Cook County, Chicago Transit Authority, Regional Transit Authority, and Chicago Metropolitan Agency for Planning, giving this coalition the unique ability to bring a CBO

perspective to transportation initiatives. TEN partnered with the City to ensure that the Strategic Plan for Transportation and was centered around the lived experience of Chicagoans and addressed long-standing issues related to equity in the transportation system.

The 15 participating CBOs are members of TEN, giving them recent experience in working with their peers on similar projects. The participating CBOs are the meaningful beneficiaries of this project, as they will gain knowledge and capacity through the training curriculum, the owners of the strategic plans developed in the project's second year, and leaders on community-owned charging infrastructure in year 3.

Intentions for DBE Participation

The City will be contracting out a number of services in order to complete the CUC project. These services include: 1) project management assistance; 2) engineering & construction; 3) charging equipment procurement; and 4) public engagement & outreach support. Our goal will be to designate up to 30% of the work under the CUC project to DBE vendors. However, the actual DBE spend may vary depending on the means of contracting (multiple vendors vs. single lead vendor with subcontractors) as some of the work categories above may not have sufficient qualified vendors to meet the 30% standard if subcontracted individually.

Equity and Accessibility Requirements

Both the cell phone lot and Midway stations at the Midway Airport are ADA accessible. Two CBOs will participate in a technical assistance training series on transportation electrification and decarbonization. Among the 15 CBOs, the vast majority are based in federally identified Disadvantaged Communities. We intend to provide funding awards to CBOs to implement public charging station infrastructure projects in those community areas. CBOs were selected based on their historically demonstrated commitment to equity and accessibility within their work.

The City will provide charging access for at least one ADA parking space at CPL locations if accessible parking is already provided. These City-owned charging stations will be installed at various CPL locations spanning the geographic area of the city to ensure that residents and motorists who drive EVs—whether on the north, south, or west sides have access to publicly-available, ADA-accommodating, reliable, and convenient charging stations with a diverse power delivery mix.

The City of Chicago would apply various aforementioned innovative approaches to any charging infrastructure funded by the CFI Community Program for City-owned stations. Additionally, any sub recipients and contractors selected via requests for proposals (RFP) or other procurements and agreements/contracts executed as a result of those processes would need to demonstrate their commitment to equity and accessibility in addition to providing payment options as applicable.

Anticipated Project Timeline

The CUC project is prepared to begin in Q4 of 2023, as it is a priority for Chicago. CDOT is committed to obligating CFI funds and putting money to work with urgency and priority. Project milestones are shown on the schedule presented in Table 10.

Table 11. Project Schedule

Milestone	Anticipated Start Date
Design Engineering Phase of City's EV and Infrastructure Framework	Q4 2023
Procurement and Acquisition	Q1 2024
Training for CBOs and workforce development	Q2 2024
Educational Outreach Events	Q4 2024
Installation of Midway and Chicago Public Library Stations	Q3 2025
Installation of CBO Stations	Q2 2026

Expected Environmental Impacts and NEPA Approvals

All federal, state, and local approvals related to NEPA are expected to be received within 1 year. Environmental permitting will begin with the Preliminary Engineering Phase. The Charge Up Chicago project is anticipated to qualify for a Categorical Exclusion under 23 CFR 77.1.117 C.