



Illinois Electric Vehicle Infrastructure Deployment Plan

August 1, 2022



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Introduction

The Bipartisan Infrastructure Law, enacted as the Infrastructure Investment and Jobs Act (IIJA), Public Law 117-58 (Nov. 15, 2021), includes important new programs to address climate change by reducing carbon emissions. Among these programs is the National Electric Vehicle Infrastructure (NEVI) Formula Program that will provide funding to states to strategically deploy electric vehicle (EV) charging infrastructure and establish an interconnected network. These historic investments in EV charging infrastructure will put the United States on a path to a nationwide network of 500,000 EV chargers by 2030 and ensure a convenient, reliable, affordable, and equitable charging experience for all users.

The State of Illinois Electric Vehicle Infrastructure plan, developed by the Illinois Department of Transportation (IDOT), details the state’s approach to deploying public charging infrastructure that provides convenient, accessible, reliable, and equitable electric vehicle charging throughout the state. This plan is a critical component of achieving the state’s vision of becoming a leader in manufacturing and deploying electric vehicles, with 1 million electric passenger vehicles on the road in the state by 2030.

The Illinois National Electric Vehicle Infrastructure plan details the state’s proposed approach to implementing the NEVI formula program funding. It includes a summary of electric vehicle and charging infrastructure deployment in the state to date, initial analysis on potential charging station locations to meet program requirements, and strategies to address potential challenges and important implementation considerations.

Illinois envisions this plan as a critical first step in implementation of the NEVI program. This framework will give the backbone for the work to come in Illinois with other state agencies, stakeholders, and the public to achieve program goals. An important component of the plan is the identification of follow-up outreach approaches with communities and other governmental agencies and utilities to ensure the most equitable deployment of public EV charging infrastructure throughout the Prairie State.

Figure 1- Timeline of Illinois Electric Vehicle Infrastructure Plan Development and Implementation

Timeline of Illinois Electric Vehicle Infrastructure Plan Development and Implementation	
June 2019	The historic and bipartisan Rebuild Illinois capital plan, investing \$45 billion in statewide infrastructure, is signed and implemented. It provides Illinois its first capital plan in nearly a decade – and the most robust in state history including \$70 million for community electric vehicle charging infrastructure.
March 2021	<p>State of Illinois Electric Vehicle Interagency Working Group holds its first meeting for cross-agency coordination on electric vehicle deployment issues</p> <p>IDOT initiates EV adoption and infrastructure suitability study led by University of Illinois Urbana-Champaign (UIUC)</p>
September 2021	Governor Pritzker signs the Climate and Equitable Jobs Act (CEJA), which sets a goal of 1 million EVs on Illinois roads by 2030, establishes a state EV Coordinator position at the Illinois Environmental Protection Agency (IEPA), and an EV passenger vehicle rebate program
November 2021	President Biden signs the Infrastructure Investment and Jobs Act (IIJA), which includes the NEVI program
March 2022	IDOT and UIUC research team begins stakeholder outreach on EV adoption and infrastructure suitability study
July 2022	<p>FHWA approves IDOT’s designation of 3 additional Alternative Fuel Corridors for inclusion in NEVI plan</p> <p>IDOT holds outreach meeting introducing NEVI program and plan, initiating a phase of stakeholder engagement</p>
August 2022	IDOT submits NEVI Plan to the Joint Office
Fall 2022	<p>IDOT continues public and stakeholder outreach</p> <p>FHWA finalizes regulations setting minimum standards and requirements for projects funded under the NEVI Formula Program</p> <p>FHWA approves Illinois NEVI plan</p>
2023	<p>IDOT finalizes procurement method for program implementation</p> <p>IDOT conducts procurement for first round of program</p> <p>IDOT announces awards of first round of NEVI Implementation</p> <p>IDOT begins annual update of NEVI plan</p>

Plan Vision and Goals

Vision

The Illinois Department of Transportation envisions an innovative, sustainable, and multimodal transportation system that supports local goals and grows Illinois' economy. Facilitating the deployment of electric vehicles and electric vehicle charging infrastructure is an important component of this vision. The state of Illinois aims to be a leader in manufacturing and deploying electric vehicles, setting a goal of 1 million electric passenger vehicles on the road in the state by 2030.

This ambitious vision includes an equally ambitious and coordinated effort to deploy public charging infrastructure that provides convenient, accessible, reliable, and equitable EV charging throughout the state. In developing this plan and as the state moves toward implementation, IDOT is working closely with other state agencies and with a wide range of stakeholders, ensuring that the deployment of EV charging infrastructure supports local goals and is responsive to stakeholder needs.

Ultimately, this framework puts forth the goal of electrifying all the interstate miles in Illinois with NEVI compliant Direct Current Fast Chargers (DCFCs,) while future-proofing sites to prepare for changing conditions, and ensuring equitable access to low cost, and safe fast charging for all Illinoisans.

Goals

IDOT's Long Range Transportation Plan established 5 performance goals for the transportation system related to economy, livability, mobility, resiliency, and stewardship. These goals provide overarching guidance for the goals for implementing the NEVI program.

Figure 2- Illinois Department of Transportation Long Range Transportation Plan Goals



Economy- The State of Illinois and Department of Transportation intend for the buildout of a statewide network of electric vehicle charging infrastructure to have economic benefits for travelers, communities, and workers. In identifying locations for public charging infrastructure, in the contracting process, and in coordinating with other workforce and economic development activities underway in the state, IDOT will work to advance economic opportunity in the state.

Livability- The deployment of EVs and EV charging infrastructure in Illinois will improve quality of life across the state by reducing greenhouse gas emissions and air pollution. Furthermore, carefully planned outreach and considerations will be taken to ensure Illinois is investing in the most critical areas of the state. These communities and their ability to adopt EVs will be critical to achieving the state's goal of building a future transportation system that serves all its people. The state of Illinois will ensure this investment targets historically disadvantaged, rural, and underserved communities, including by achieving federal Justice40 requirements that 40% of the benefits of federal investments go to disadvantaged communities.

Mobility- The State of Illinois and Department of Transportation are committed to ensuring electric vehicle drivers have a safe and reliable statewide network of chargers no matter where they are traveling along the interstate system. To achieve this goal IDOT will contract to build DCFS stations every 50 miles along the already designated corridors with at least 3 ports delivering 150 kWh of power and one port delivering 350 kWh. IDOT is actively collaborating with all its border states to ensure seamless travel across state lines.

Resiliency – Electric vehicle technology is advancing at a blistering pace. Illinois intends to take full advantage of this historic investment by the federal government, by ensuring infrastructure built today is prepared to adapt to technological innovation and increased electric vehicle adoption. Additionally, the state has a goal of deploying infrastructure that can withstand and recover from both seasonal weather changes and extreme weather events caused by climate change.

Stewardship- The state of Illinois intends to be a wise steward of federal funds, both in establishing procurement policies that ensure effective use of resources, and by tracking progress towards the goals described above while providing stewardship of public funds and public goods.

Some of these goals are more easily quantifiable than others. For example, IDOT can track the number of chargers built and their usage as measures of mobility, and uptime statistics as a measure of resiliency. Other goals are multifaceted and will require more metrics to appropriately track progress. These metrics will be developed further through stakeholder engagement.

Stakeholder and Public Engagement

Stakeholder and public engagement is an ongoing and intensive process when planning a major investment like the NEVI program. Illinois is committed to involving a wide range of stakeholders to produce a charging network that will serve the current and future needs of EV drivers. During plan development IDOT has coordinated with governmental agencies in Illinois and neighboring states, leveraged already-ongoing work with academic partners and a diverse steering group of stakeholders, and begun broader public outreach through a website, survey tool, and public meeting. This engagement does not end with the submission of this plan. In fact, Illinois plans to intensify public and stakeholder engagement efforts after the submission of this plan, gathering critical feedback on important topics that include identifying and prioritizing charger locations, identifying and ensuring benefits of the NEVI program for disadvantaged communities, and evaluating the program’s effectiveness.

State Agency Coordination

The Illinois Electric Vehicle Interagency Working Group was formed in 2021 to coordinate on initiatives to advance the deployment of electric vehicles and charging infrastructure in the state. This group, which meets monthly, includes the following agencies:

- Illinois Department of Transportation (IDOT)
- Illinois Commerce Commission (ICC)
- Illinois Environmental Protection Agency (IEPA)
- Department of Commerce and Economic Opportunity (DCEO)
- Central Management Services (CMS)
- Illinois Finance Authority (IFA)
- Illinois Power Agency (IPA)
- Illinois Department of Natural Resources (IDNR)

Each of these agencies plays an important role in facilitating EV adoption in the state. IEPA is responsible for several state and federal programs related to both electric vehicles and charging infrastructure for light, medium, and heavy-duty vehicles, including the state’s Volkswagen Settlement funds, and the Illinois Electric Vehicle Rebate Program. The state’s new Electric Vehicle Coordinator was appointed by Governor Pritzker in July 2022. This position, created as a part of the [Climate and Equitable Jobs Act](#) (CEJA), serves as a point person for all EV-related and EV charging-related policies for the State.

ICC is responsible for regulatory issues related to electric utilities and initiated a beneficial electrification planning process in fall 2021. The beneficial electrification planning process, required by CEJA, solicited stakeholder input on the design of beneficial electrification programs that the state’s electric utilities, Ameren Illinois and ComEd, will offer. The workshops considered barriers, incentives, enabling rate structures, and other opportunities for bill reductions and environmental benefits. ComEd and Ameren filed Beneficial Electrification Plans with the ICC in summer 2022. Information about the beneficial electrification workshops is available on the [ICC website](#).

DCEO is the implementing agency for the 2021 [Reimagining Electric Vehicles in Illinois](#) (REV Illinois Act) designed to bolster Illinois electric vehicle manufacturing and grow the ecosystem to create new capacity for electric vehicles, batteries, and other component part production. This work is particularly important in the context of the NEVI plan and the state’s goals to maximize opportunities to utilize U.S.-made EV supply equipment. To learn more about REV Illinois implementation visit the [program website](#). DCEO also has a role in CEJA implementation, specifically to help Illinois residents prepare for and train

to capitalize on jobs in the clean energy industry, and to provide support to workers and communities facing power plant closures. These programs will prioritize participation from individuals in communities that have historically faced economic and environmental barriers, bolstering a diverse workforce in the clean energy industry.

The Electric Vehicle Interagency Working Group has been the primary venue for inter-agency coordination on the NEVI program, and IDOT has also had individual meetings with these state agencies to gather more specific feedback on their areas of expertise. In particular, IEPA, DCEO, and ICC provided input into sections of this plan.

Stakeholders Involved in Plan Development

In addition to the coordination with state agencies described above, IDOT conducted outreach to the following stakeholders:

- Metropolitan Planning Organizations and Regional Transportation Planning Organizations
- Counties and municipalities
- State departments of energy, including Clean Cities Coalitions
- Public transportation agencies
- State manufacturing extension partnerships
- Electric utilities and transmission and distribution owners and regulators
- Private sector EV charging station owners and network operators
- Investors in EV charging infrastructure
- Vehicle manufacturers
- Utilities
- Freight industry groups
- Environmental justice, equity, and other community advocacy organizations with an interest in EV charging
- EV industry organizations and advocacy groups
- Fuel station owners and operators

In summer of 2021, IDOT held approximately 38 meetings with stakeholders to gather vital information on the state of the EV infrastructure industry, the needs of larger urbanized areas and rural communities, and the role of utilities in supplying power to future stations. A number of stakeholders also submitted written comments to the department, which were incorporated into the drafting of this plan.

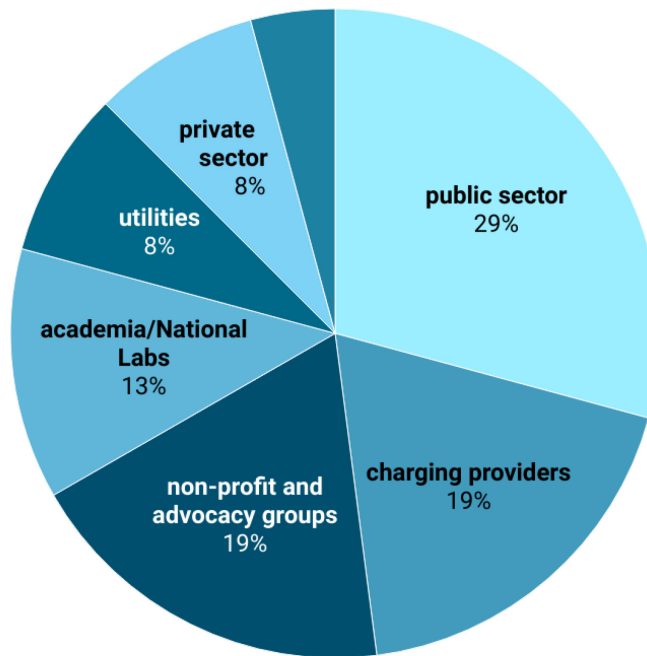
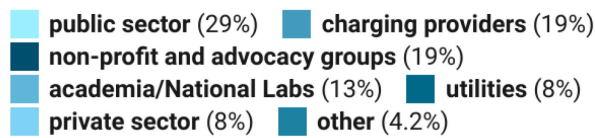
IDOT received particularly important feedback from our state's utilities. Both major investor-owned utilities (Commonwealth Edison and Ameren Illinois) and the Illinois Municipal Utilities Association engaged in the NEVI planning process at an early point and expect them to remain deeply engaged throughout planning and implementation. Both [ComEd](#) and [Ameren](#) have provided maps that show where along designated Alternative Fuel Corridors their utility could provide the necessary power to support charging infrastructure that meets NEVI requirements and where significant additional grid investments would be required.

In addition to meetings with Illinois stakeholders, IDOT staff has been an active participant in conversations between state DOTs, in the Midwest and around the country, about the NEVI planning process and other plans to expand access to EV charging. In September 2021 IDOT signed the [memorandum of understanding](#) of the Regional Electric Vehicle Coalition Midwest (REV Midwest) group, a coalition of midwestern states which aims to accelerate the expansion of medium and heavy-duty EV charging throughout the Midwest region by collaborating on upcoming discretionary funds. This

work opened the door for Illinois to start an early dialog with its many neighboring states on how to implement NEVI across the Midwest to maximize the federal funding. To date, IDOT has met at least twice with each border state or their consultants to ensure seamless charging access on corridors that cross state lines.

In addition, some stakeholder engagement for the NEVI plan has occurred through a project underway with the University of Illinois Urbana-Champaign to model future EV adoption and evaluate the number and location of chargers needed to reach the state’s EV goals, including meeting federal Justice40 requirements. Recommendations for approximate charger locations will be a work product of this study. The research team for this project held its first steering committee meeting on March 23rd, 2022, with 50 attendees representing a diverse range of stakeholders. A recording of the meeting can be found [here](#). Additional steering committee meetings are planned for late summer and fall 2022, and the outcome of this project is intended to inform broader public engagement about identifying and prioritizing charger locations.

Figure 3- First EV Steering Committee Participation by Sector



Public Outreach

In addition to targeted stakeholder outreach and coordination with state agencies, Illinois has begun outreach to the broader public. The outreach methods deployed include a website (<https://idot.click/drive-electric>) launched in July 2022 which contains information on the NEVI program, a form for collecting contact information and questions, and an interactive mapping tool to gather suggestions for locations of potential charging stations.

On July 28, 2022, IDOT held the first public meeting regarding the NEVI plan. The intent of this meeting was to share information about the program and underscore that the plan submitted to USDOT is a living document intended to be refined and expanded with additional public input.

Illinois anticipates significant additional public engagement as the state moves toward implementation of the NEVI program, both in the coming months and over the life of the program. In particular, IDOT will prioritize gathering public input in the following areas:

- Priority locations for charging infrastructure
- Identifying and quantifying benefits and challenges for disadvantaged communities
- Prioritization considerations for identifying locations, providers, and hosts.
- Program evaluation metrics and key performance indicators for the NEVI program
- Data collection
- Price transparency
- Other areas raised by stakeholders

In order for the NEVI program to be successful, the department will need to seek out input from a wide range of stakeholders throughout the implementation process. IDOT anticipates that some stakeholders, such as EV industry organizations, EV advocacy groups, and private sector EV charging station owners and network operators are likely to be aware of the NEVI program and have dedicated capacity to provide feedback as NEVI plan implementation moves ahead. These stakeholders provide important and valuable perspectives that IDOT welcomes. Other important stakeholders, such as potential site hosts, economic and workforce development organizations, and community-based organizations focused on equity and environmental justice are less likely to be aware of the NEVI program and the opportunities it presents. Stakeholders IDOT will particularly focus on reaching include (groups that address the goal of the Justice40 Initiative identified in Executive Order 14008 are in bold):

- **Environmental justice and equity organizations**
- Community-based organizations, small business associations, Chambers of Commerce focused on economic development
- **Labor organizations and workforce development entities**
- **Minority- and women-based organizations**
- **Other community and environmental advocacy organizations with an interest in EV charging**
- EV drivers and potential future EV drivers, including ridehailing and delivery drivers (ex: UberEats, Doordash, Grubhub)
- Potential site hosts, including fuel station and travel center operators and their industry associations

Successful outreach to these groups will involve coordination with other state agencies who work closely with these stakeholders, and partnerships with trusted community leaders and organizations. IDOT plans to learn from recent stakeholder engagement efforts conducted by other state agencies, such as the equity-

focused beneficial electrification workshops hosted by the ICC hosted in early 2022. IDOT will work with the DCEO’s regional economic development teams to ensure that local elected leaders, community organizations, and minority serving institutions are aware of and prepared for the NEVI Program. Additionally, in collaboration with the Regional Economic Development Team IDOT/DCEO will leverage the Community Navigator Network to make sure that we are doing outreach to all 102 counties. IDOT also plans to use its connections to communities of practice, such as AASHTO, to adapt and adopt best practices in outreach from other state DOTs.

Contracting

In order to achieve the goals and objectives for the Illinois NEVI program, IDOT is evaluating several contracting strategies. Among the approaches IDOT is considering is exploring contracting with a consultant to assist with implementation and deployment of the NEVI program. The consultant would provide some or all of a range of services, including development of procurement documents, oversight of progress for proposal review and selection, timelines for site selection, site design, and permitting, and overall management of quality control related to construction and installation of EV supply equipment (EVSE). The consultant would also support IDOT in data collection and quarterly performance reporting to the Federal Highway Administration (FHWA).

In addition, IDOT is exploring procurement options to identify EVSE providers and potential site hosts to install, operate and maintain EV charging infrastructure. IDOT aims to create a process that will encourage innovation and participation from communities, small businesses, and others as potential site hosts and ensure efficient use of federal funding under NEVI. IDOT will develop a framework for evaluating proposals submitted through competitive processes. This framework will be developed in coordination with stakeholder and community engagement for potential site identification and selection. Possible scoring metrics include:

- Location characteristics, including distance between stations, distance away from the interstate, and other factors as identified through public outreach
- Power requirements and ability of potential site hosts to meet the NEVI program guidance requirements and minimum standards
- Benefits for rural areas and disadvantaged communities
- Operation and maintenance planning, including plans to achieve minimum reliability measures
- Utilization of disadvantaged and small businesses
- Workforce development and local economic development benefits
- Plans to meet data sharing and reporting requirements
- Warranty requirements and handover clause or plan for operation and maintenance

The ultimate decision on contracting strategy will be made in consultation with IDOT procurement staff and based on program goals and factors developed through stakeholder outreach. Regardless of contracting strategy, IDOT will ensure private contractors are selected through a competitive request for proposal process and comply with NEVI Formula Program requirements, as well as any applicable requirements under Title 23, U.S.C and relevant state laws.

IDOT will ensure that proposals include a scope of work, project timeline and schedule, and budget details. Proposals could involve specific site locations or specific segments with multiple sites. Selected contractors will be required to communicate progress and any project delays or issues to the oversight consultant (if established) and IDOT, as well as a plan to mitigate project delays. Proposals will also be required to include methods for ensuring program communications and maintaining daily customer services for the EVSE. Contracts will comply with all relevant Illinois laws and regulations including the Illinois Procurement Code and the Illinois Works Jobs Program Act

Existing and Future Conditions Analysis

State Geography and Terrain

The State of Illinois is in the Midwest region of the United States bordered by Wisconsin to the north, Iowa and Missouri to the west, Kentucky to the east and south, and Indiana to the east. The state borders Lake Michigan in the northeast, the Mississippi River to the west, Wabash River to the east and the Ohio River to the east and south. Illinois lies midway between the Continental Divide and the Atlantic Ocean, and the state's southern tip is 500 miles north of the Gulf of Mexico. Illinois' total population is 12.67 million.

The state's largest city is Chicago, located in the northeast corner of the state. With a population of just over 2.7 million in 2020, Chicago is the largest city in the Midwest and fifth largest in the country. Chicago's metropolitan area is made up of Cook, DuPage, Kane, Kendall, Lake, McHenry, Will and parts of DeKalb and Grundy counties in Illinois, and extends into neighboring states of Wisconsin and Indiana. This area boasts a diverse population of nearly 9.5 million people in pockets of densely urbanized areas focusing primarily on industry and commercial services to make up its economy.

Other population centers in northern Illinois include the Rockford Metropolitan Area on the Rock River near the Wisconsin border and the bi-state Quad Cities Metropolitan Area, located on both sides of the Mississippi River separating Illinois from Iowa. The Illinois portion of the Quad Cities includes Henry, Mercer, and Rock Island counties.

Central Illinois is an area of mostly flat prairie except for areas along the Illinois and Mississippi rivers that are steeped in hills and bluffs. Agriculture, particularly corn and soybeans, figures prominently. Major cities include Bloomington-Normal, Champaign-Urbana, Peoria, and Springfield (the state capital).

Southern Illinois, comprises the area south of U.S. Route 50 to the juncture of the Mississippi River and Ohio River. This region can be distinguished from the other two by its warmer climate, different mix of crops (including cotton farming in the past), more rugged unglaciated topography, as well as small-scale oil deposits and coal mining. The southernmost portion of this area is sometimes referred to as "Little Egypt," due in part to its fertile soil.

The population in southern Illinois is concentrated in the Metro-East area. Metro-East is the Illinois portion of the St. Louis Metropolitan Statistical Area, and includes Jersey, Madison, St. Clair, Macoupin, Bond, Calhoun, and Clinton County. An Additional population center is the Carbondale-Marion urbanized area.

Climate and Climate Change

Illinois' climate is typically temperate with cold winters, warm summers, and frequent fluctuations in temperature, humidity, cloudiness, and wind direction. The climate varies across the state, with average growing seasons nearly a month shorter in the northern portion of the state compared to the southern third of the state. In the winter, the northern portion of the state experiences significantly lower temperatures and significantly higher snowfall totals than the southern portion of the state. The Chicago area can see up to 3 feet of snow annually.

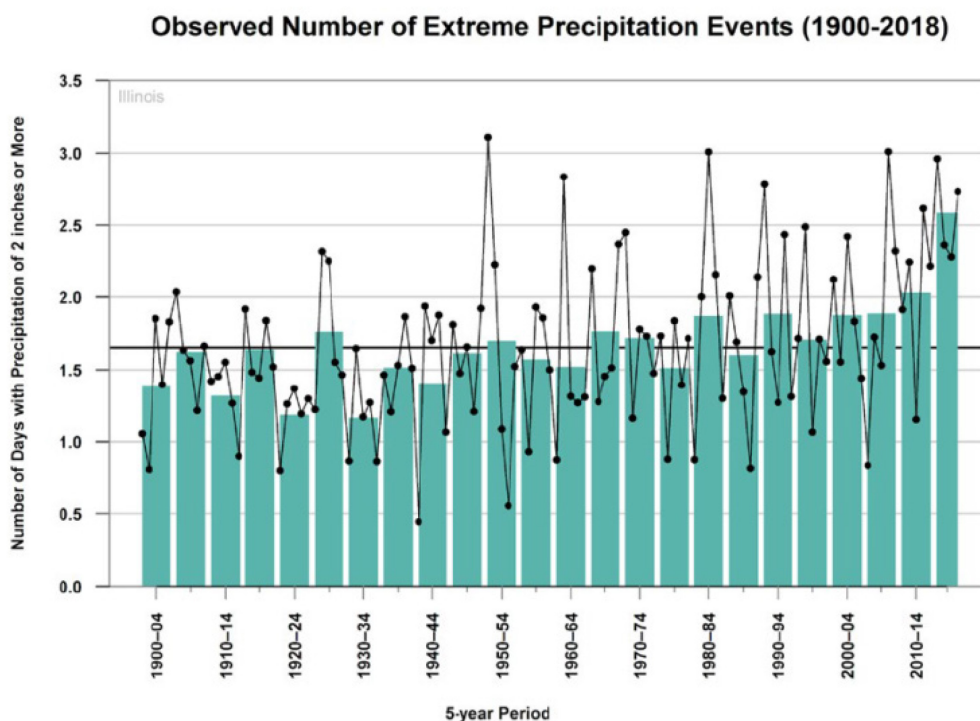
According to the State Climatologist and the Prairie Research Institute, Illinois' climate has gotten warmer and wetter since the start of the 20th Century. According to high quality climate monitoring data from the NOAA Centers for Environmental Information, over the past 120 years, average daily

temperature has increased by 1 to 2 degrees Fahrenheit. Overnight minimum temperatures have increased more than daytime maximum temperatures. Temperature increases have been particularly pronounced in winter and spring.

Illinois is expected to continue to see increasing air temperatures and increasing precipitation throughout the 21st century. By the end of the 21st century, average daily temperatures are projected to increase between 4- and 9-degrees Fahrenheit under a lower emissions scenario and between 8 and 14 degrees under a higher emissions scenario¹. These increases are expected to coincide with increased risk of extreme high temperatures in Illinois, and reduced risk of extreme cold temperatures. Illinois is expected to see an overall increase in precipitation, but projections show a change in the distribution and seasonality of precipitation with increases in both heavy rain and length of dry spells. Projected increases in summer temperatures are expected to increase the severity frequency of droughts in Illinois

Flooding is the single most damaging weather hazard in Illinois, and is being exacerbated by climate change. Ever-increasing heavy precipitation since the 1940s has led to increased flood peaks on Illinois rivers. Flood losses in Illinois, totaling \$257 million annually since 1983, are the third highest in the nation. Within Illinois and the Midwest, flood losses have been increasing at a greater rate than elsewhere in the nation. Over a 45-year period (1955-1999), Illinois had \$5.195 billion in flood losses; 74% of these losses have occurred since 1985.

Figure 4- Observed Number of Extreme Precipitation Events (1900-2018)



The number of days with precipitation of 2 inches or greater in Illinois between 1900 and 2018, averaged over 5-year periods. Dots show annual values, and the horizontal black line shows the long-term annual average of approximately 1.7 events per station between 1900 and 2018. Source: taken from Wuebbles et al. (2021).

¹ <https://stateclimatologist.web.illinois.edu/climate-change-in-illinois/>

Major businesses in Illinois are highly climate sensitive. Crop yields are dependent upon climate conditions. Illinois also serves as the nation’s center for air and surface transportation. With both the nation’s busiest airport (O’Hare) and the rail hub of the nation at Chicago, Illinois also is the heart of the nation’s trucking industry, which are all disrupted by severe weather events. Each form of transportation is influenced weather and climate extremes and resulting delays in shipments are also a major problem for manufacturers in Illinois.

Extreme weather events are currently having effects on human health and safety, and these threats will continue to mount with climate change. Annually, 74 deaths are attributed to heat, 18 deaths are attributed to cold, and 20 to 30 deaths in Illinois are attributed to floods, winter storms, tornadoes, and lightning. Prolonged heat waves are particularly deadly. Illinois experienced two of its most deadly heat waves during the 1990s. The 1995 heat wave, the deadliest on record, led to 753 Illinois deaths and major power outages in the Chicago metropolitan area.

Air pollution is a factor in heat-related illness and deaths. Ground-level ozone, which inflames and damages people’s airways and aggravates lung conditions such as asthma, emphysema, and chronic bronchitis, forms with the combination of nitrogen oxides (NOx) and volatile organic material (VOM) in the presence of heat and sunlight. As a result, elevated concentrations of ozone are more common in the summer months and especially on days of extreme high temperatures. Long-term exposure to ozone may lead to increased school absences, medication use, visits to doctors and emergency visits, and hospital admissions. Ozone nonattainment areas are most common in areas of higher population density due to greater emissions of ozone precursor pollutants in those areas from more concentrated commercial activity, industry, and vehicle traffic. These urban areas also commonly overlap with areas of environmental justice concern, as is the case in Illinois.

Two areas in Illinois are currently designated as nonattainment for the 2015 Ozone National Ambient Air Quality Standard (NAAQS). These areas are the Chicago non-attainment area (NAA) and the Metro-East St. Louis NAA. The Chicago NAA consists of Cook, DuPage, Kane, Lake, McHenry, and Will Counties, plus the townships of Goose Lake, Aux Sable, and Oswego. The Metro-East St. Louis NAA consists of Madison, Monroe, and St. Clair Counties. It is anticipated that climate change will result in more of days per year with elevated ozone concentrations. These elevated ozone concentrations are likely to occur in the ozone nonattainment areas where the majority of citizens in Illinois residing in areas of EJ concern are located.

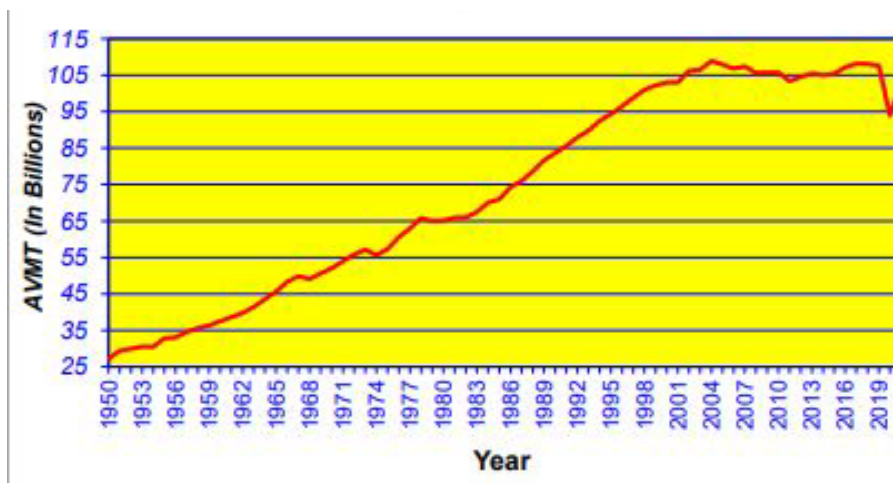
State Travel Patterns, Public Transportation Needs, Freight and Other Supply Chain Needs

Illinois’ connection to two major watersheds (the Mississippi River and the Great Lakes), 13 primary interstate highways, and the convergence of 7 Class I railroads situates the state at the center of the nation’s transportation network, particularly when it comes to intermodal freight and logistics.

Annual vehicle travel in Illinois amounts to more than 107 billion miles, and the vehicles on Illinois roads consume more than 6 billion gallons of fuel. As in the rest of the country, vehicle travel dropped dramatically in 2020 due to the COVID-19 pandemic, but is returning to pre-pandemic levels.²

² <https://idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/OP&P/Travel-Stats/2021-travel-stats/Travel%20History.pdf>

Figure 5- Illinois Statewide Annual Vehicle Miles of Travel (AVMT) 1950-2021



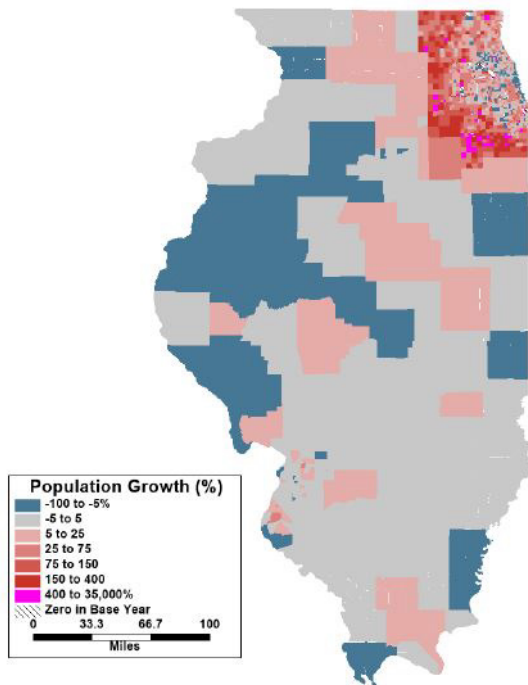
Illinois faces long-term challenges in ensuring that transportation funding keeps up with needs for system investment. While Rebuild Illinois and the Infrastructure Investment and Jobs Act are providing critical opportunities to invest in the maintenance and enhancement of the state’s transportation system, construction costs are increasing faster than inflation, vehicle miles of travel are exhibiting flat growth, and vehicles are becoming more fuel efficient. As the number of electric vehicles in the state increase, IDOT will continue to need to maintain nearly 16,000 centerline miles of roadway and more than 7,800 bridges under state jurisdiction. The state is embarking on a study to better understand the impacts of electric vehicle adoption on transportation revenue in the state and identify strategies to ensure sufficient funding to maintain and enhance the state’s transportation network.

IDOT anticipates that population and employment growth in the state through mid-century will be largely concentrated in suburban and exurban portions of the Chicago metropolitan region (see figures 6 and 7). Current land use patterns in these areas are auto-oriented, with limited access to high frequency public transit. Without interventions to reduce greenhouse gas emissions from transportation, including rapid adoption of electric vehicles and land use and transportation policies and investments that reduce travel demand and shift travel to biking, walking, and transit, Illinois will not be on track to meet the state’s climate goals. Rebuild Illinois included an additional \$50m/year for bike/pedestrian facilities, transit’s first ever pay-go revenue source, and funding to improve the State’s public ports to encourage freight movement via waterways which emits 90% less grams of CO2 per ton mile than trucks and 27% less grams of CO2 per ton mile than rail.³

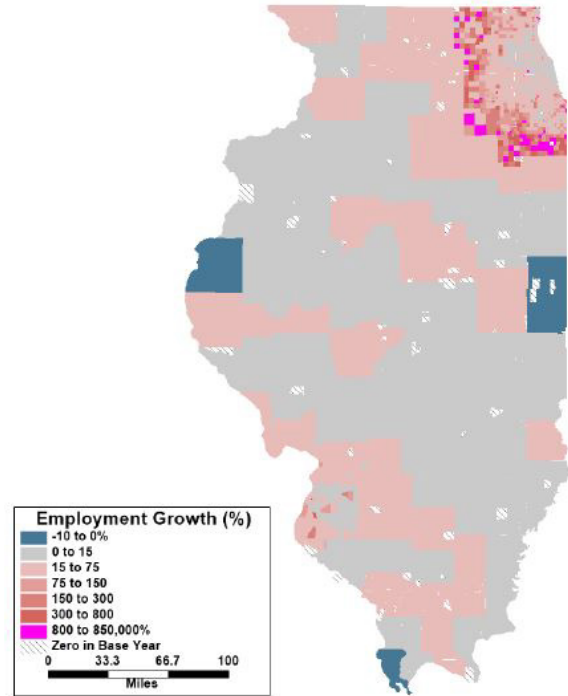
³ https://idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/OP&P/Marine/2021/IMTS_Plan_2_History_and_System_Overview_Final.pdf

Figure 6- Illinois Projected Population Growth (2017-2045)

Figure 7- Illinois Projected Employment Growth (2017-2045)



Source: RSG



Source: RSG

Electric vehicle adoption in Illinois is still in a relatively early phase. As of June 2022, there were 44,658 electric vehicles registered in the state, out of a total of more than 7 million passenger vehicles. Similarly, public EV charging infrastructure is in relatively early stages of development. Currently, Illinois has 93 publicly accessible Direct Current Fast Chargers (DCFC) and Level 2 stations, equaling 184 ports.

Freight Needs

Freight transportation is integral to the Illinois economy. Originally, because of its waterways and central location, and then because industry and other modal transportation networks developed on similar patterns, Illinois is a national freight crossroads, transporting goods from all directions. Illinois is the third largest state in terms of freight movement by tonnage and value. Today, over 1.2 billion tons of freight, valued at nearly \$3 trillion, are moved to, from or within Illinois.⁴

Illinois is also a burgeoning hub for medium- and heavy-duty EV manufacturing, with a Lion Electric manufacturing facility in Joliet and Rivian’s manufacturing facility in Normal, Illinois. The 2021 Reimagining Electric Vehicles in Illinois is designed to bolster Illinois EV manufacturing and to grow the ecosystem to create new capacity for EV vehicle and component parts production. These existing conditions point to the importance of heavy-duty charging infrastructure in the state. While the NEVI program is focused on passenger vehicle charging, the state will look for opportunities for synergies with other programs, such as the state’s VW settlement funding and utility beneficial electrification plans.

⁴ [Illinois State Freight Plan.](#)

Public Transportation Needs

Illinois has the fourth-highest public transit commute mode share of U.S. states. Transit systems operate in 96 of the 102 counties in Illinois, with 452 million transit trips taken annually. Public transit systems nationwide saw significant ridership decline due to the COVID-19 pandemic, with these declines unevenly distributed by mode and rider demographics. In Illinois, as in the rest of the United States, bus transit systems saw smaller ridership declines than rail systems, and lower-income riders were more likely to continue to rely on public transit for commuting and to access other needed destinations.

Transit agencies throughout the state are making commitments to electrifying their fleets, including MetroLINK in the Quad Cities, Pace and CTA in the Chicago region, CityLink in Peoria, Connect Transit in Bloomington-Normal and the Decatur Public Transit System. IDOT has committed more than \$32 million in Rebuild Illinois funding for electric and hybrid-electric buses to help spur this effort. In addition to the transit agencies that have already begun making the transition to electric fleets, many of the urban transit agencies are installing chargers at their bus storage facilities and along key high frequency routes in preparation for the transition.

As with medium- and heavy-duty vehicles used in goods movement, Illinois will look for opportunities to coordinate NEVI investments with other programs to support future transit electrification.

Alternative Fuel Corridor Networks and existing charging infrastructure

Starting in 2016, IDOT began designating Alternative Fuel Corridors per Federal Highway Administration guidance. Over the past six years, Illinois has designated almost all its interstates for either propane, compressed natural gas, liquid natural gas, or hydrogen. The largest of these corridor networks in Illinois is electric. Illinois has 558 EV corridor-ready miles and 1,019 EV corridor-pending miles, including 596 miles added in the recent Round 6 Alternative Fuel Corridors (AFC) nomination process. These corridors include:

Figure 8- Table of Alternative Fuel Corridors, Ready and Pending

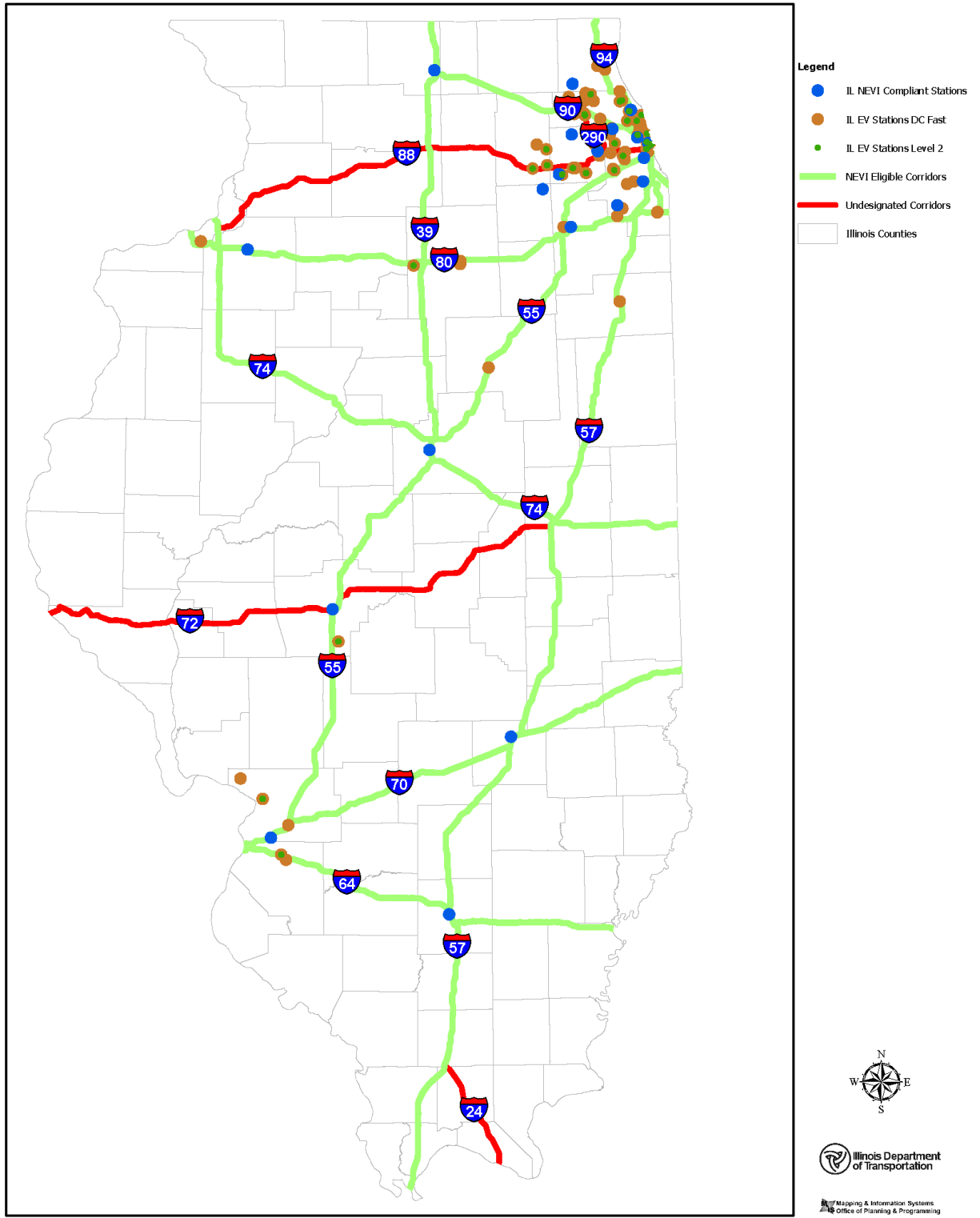
Electric Vehicle Ready Corridors	Electric Vehicle Pending Corridors
<ul style="list-style-type: none"> – I-39 From Rockford IL to Sun Prairie WI – I-55 From Chicago IL to Bolingbrook, IL – I-74 From IL/IA border to IL/IN border – I-80 From IL/IN border to Joliet IL – I-90 From IL/IN border to Sun Prairie WI; and, from La Crosse WI to Sparta WI – I-94 From Sun Prairie WI to IL/IN border 	<ul style="list-style-type: none"> – I-39 From Normal IL to Rockford IL – I-55 From Normal IL St. Louis – I-80 From Joliet IL to IL/IA border – I-70 From St. Louis to Indiana border – I-55 From Joliet IL to Normal IL (newly designated in Round 6) – I-57 From Chicago to Missouri border (Newly designated in Round 6) – I-64 From St. Louis to Indiana border (Newly designated in Round 6)

Illinois currently has 1,005 publicly accessible EV charging stations with 2,505 ports according to the Department of Energy’s Alternative Fuel Data Center, but only 96 of those stations are combined charging system (CCS) plug type (shown in figure 10 below). Of the 96 CCS charging stations, only 21 stations currently meet the NEVI power level, and distance requirements (shown in figures 9 and 11 below). IDOT is focusing on building out EV charging on the interstate system. The state has taken a balanced approach to designating new Alternative Fuel Corridors on the interstate system, ensuring travel routes across the state, and connecting with designated corridors in neighboring states while keeping the overall pending corridor mileage manageable.

Figure 9- Table of Current NEVI-Compliant Stations on Designated AFCs

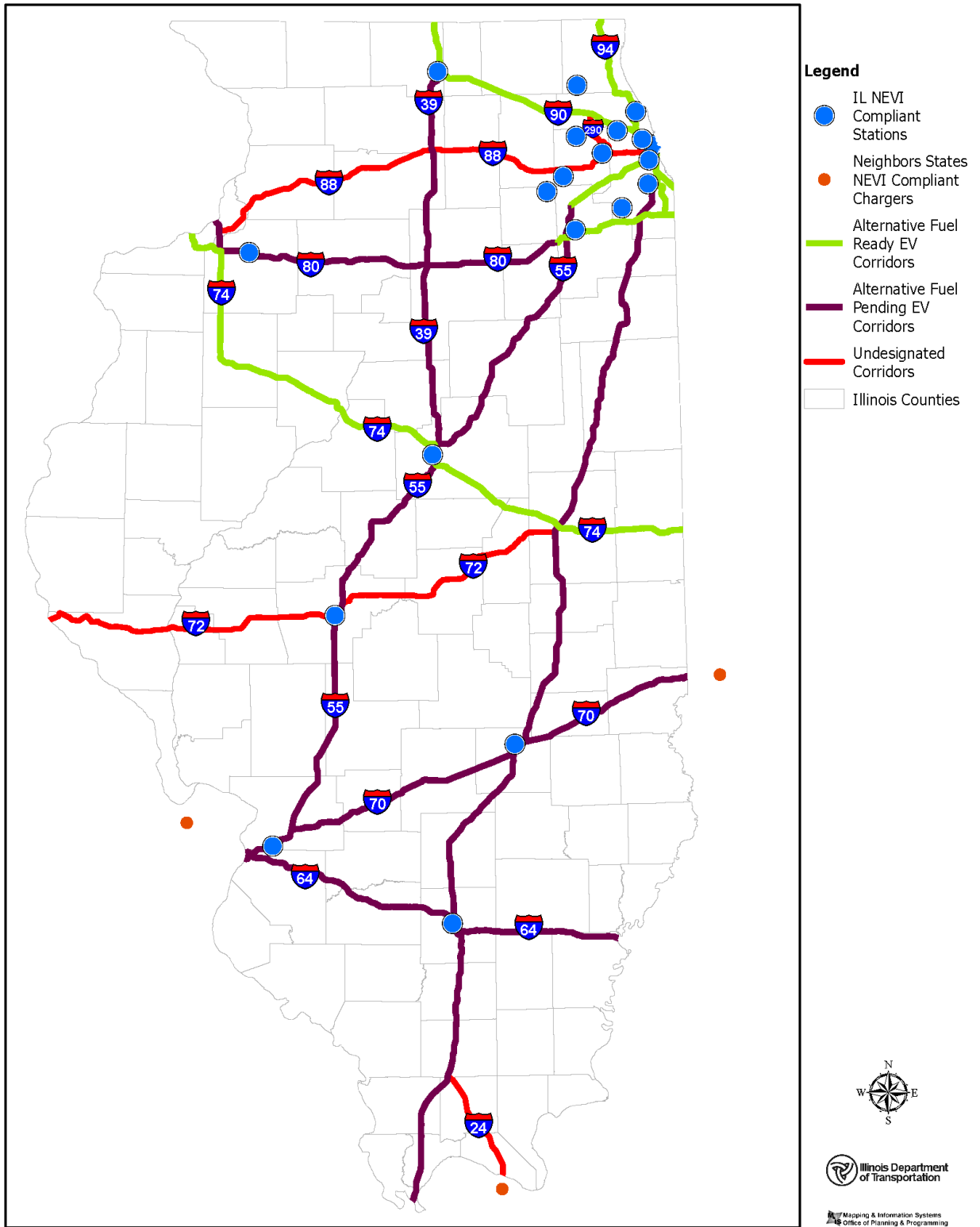
ID	Charger Level	Route	Latitude	Longitude	EV DC Fast Count	EV Network
121736	DCFC	80	41.432661	-90.157087	4	Electrify America
191563	DCFC	90	41.932401	-87.711333	4	Electrify America
149766	DCFC	90	41.904207	-87.643521	6	Electrify America
199185	DCFC	94	42.061726	-87.74697	6	Electrify America
121725	DCFC	39,90	42.26657	-88.978293	4	Electrify America
164397	DCFC	64,57	38.31026	-88.958064	4	Electrify America
121778	DCFC	70,55	38.675746	-90.017584	4	Electrify America
170363	DCFC	70,57	39.138388	-88.571312	4	Electrify America
121753	DCFC	74,39,55	40.48811	-89.041251	4	Electrify America
121735	DCFC	80,55	41.520613	-88.141106	4	Electrify America
220398	DCFC	90	42.0234333	-87.9409862	4	EVgo Network
201004	DCFC	55	41.835546	-87.673176	4	Electrify America
121761	DCFC	55	39.745748	-89.640856	4	Electrify America
190382	DCFC	90	41.975448	-87.865791	6	Electrify America

Figure 10- Map of Illinois EV Alternative Fuel Corridors and Existing Charging Stations



Date: 6/30/2022

Figure 11-Map of EV Alternative Fuel Corridors, Corridor Status and NEVI-Compliant Charging Stations



Date: 7/27/2022

Known Risks and Challenges

IDOT is working to further understand a broad array of risks related to implementation and management of the NEVI program which will inform the state’s approach to contracting and program administration. Below are some risks that have been identified.

Figure 12- Selected Potential Risks and Challenges

Risk Name	Risk Description
Insufficient Authority to Operate or Deploy Stations	Sufficient legal authority will need to be demonstrated to operate revenue-generating stations, or contract with a construction/installation delivery partner. Demonstrated legal authority will affect project delivery approach
Insufficient IDOT Managerial resources	Insufficient IDOT resources to implement and manage contractors could cause project delays and jeopardize future funding rounds.
Delay in Environmental Permits	If Environmental permits and/or categorical exclusions are not obtained on time, the risk of costly delays increases
Change in Standards	If there is a change in design standards or requirements during construction, there could be project delay and an increase in cost.
Inability to negotiate host site agreements	Inability to negotiate host site agreements could affect EV station spacing/network connectivity and impact program goals
Prequalification of Proposers	If shortlisted Proposers are not able to obtain IDOT-required prequalification prior to Proposal submittal, this may result in delay or lack of interest. This may delay the project and increase costs.
Poor site design leads to operational issues (e.g., puddling)	Poor site design could delay the project and delivery costs may increase.
Unanticipated escalation of construction materials	If cost of construction materials is higher than budgeted, the economic feasibility of the site host is affected
Increase in Utility Cost or Schedule	If utility upgrades or relocation is more costly or time consuming than expected, there could be an increase in project cost.
Material scarcity	Materials price increase due to scarcity caused by supply chain issues.
Low EV charging utilization	If EV charging utilization is low, the risk of operating at a loss increases
Bankruptcy or Financial Deterioration of Developer/Contractor/EVSE provider	If Developer/Contractor experiences financial difficulties during the construction and operation of site hosts, future funding will be jeopardized and EV network connectivity affected
Underutilized EVSE is viewed as "waste" of financial resources	If EVSE is underutilized, there could be a negative impact on IDOT's reputation as a responsible steward of transportation funds

Expected revenues not materialized	If EVSE provider/developer does not generate expected revenues, operating performance and site economics may deteriorate
"Reasonable profit" is not met	If the EVSE operator fails to achieve the target rate of return on charging stations (individually or collectively), they may seek to abandon the underperforming stations.
High demand for charging station installation	Competition for charging equipment with other states could increase costs and reduce the number of stations the state can install with NEVI program funding.
Data collection & reporting responsibilities are not met	If data gathering and EV reporting fails, future federal funding is at risk for lack of compliance with FHWA requirements.
Buy America requirements not achievable	If Buy America goal of 100% cannot be met, goods and products cannot be purchased with NEVI funds
"Unattractive" EV charging locations	If demand and EVSE utilization is projected to be low, it will be difficult to attract EVSE providers/operators
Workforce	The federal NEVI program has set targets for apprenticeship and workforce development and state policy also sets apprenticeship participation goals on certain public works projects. Given the current low unemployment rate, shortage of skilled workers in many engineering fields and the unique type of work in and emerging field (EV charging), there is a possibility that it may be difficult achieve the targets set at the federal and state levels.
Providing (or protecting) data sharing with 3rd parties	The desire of researchers and, potentially, private firms to acquire data from the operation of EVSE could conflict with consumer expectations and state/federal privacy protection provisions if the data is shared.
Labor unions	In addition to any workforce requirements set in Illinois law or the federal NEVI program, specific labor unions/bargaining units may have terms in their agreements that may affect procurement or deployment strategies.

A particular challenge in developing this plan and implementing the NEVI program is associated with the timeline of the Proposed Rule Making (NPRM) on proposed minimum standards and requirements for projects funded under the NEVI Program, published in the Federal Register on June 22nd. It has been difficult to prepare this plan with so many important details yet to be finalized, while also working to prepare detailed comments on the NPRM. In particular, IDOT is working to understand the implications of data collection and reporting requirements may have on the number of EVSE providers who will be able to meet NEVI standards, and the impact of these requirements on currently installed NEVI-compliant charging stations.

An additional concern is the availability of vendors that meet all NEVI program requirements, including compliance with Buy America. IDOT will adhere to Buy America requirements issued for NEVI. IDOT understands that FHWA has continued to interpret and apply Buy America requirements quite restrictively, while other agencies under USDOT have more flexible definitions of Buy America compliance. While IDOT hopes for a more flexible definition than what FHWA has implemented to date, or for reasonable allowance of waivers, the agency is prepared to adhere to whatever requirements FHWA issues, both in the initial April 2022 guidance and beyond. It should be noted, however, that the stricter the requirements are, the greater the risk to prompt deployment due to limited equipment availability and/or supply chain concerns.

Illinois may run into challenges related to sufficient electric grid capacity, particularly in rural areas of the state. Acceptable locations for charging stations may be limited or may require additional make-ready investments either by site hosts or utilities. This could increase the cost of these stations or delay the timeline for implementation.

Finally, IDOT anticipates needing to carefully balance requirements for statewide connectivity and geographic coverage with ensuring benefits for disadvantaged communities. While the state is employing strategies to ensure that EVs are affordable and accessible in communities throughout Illinois, current adoption is skewed toward higher-income individuals. IDOT welcomes further guidance from the federal government and input from stakeholders to ensure implementation of the NEVI program achieves all program goals.

EV Charging Infrastructure Deployment

IDOT intends to utilize NEVI funds to fully build out public EV charging, at minimum, every 50 miles along designated EV corridors in the state per program guidance. These will be minimum standards with future proofing and redundancies where modeling and data suggest increase demand exists or will exist in the future.

It should be emphasized that the locations for infrastructure deployment discussed in this section are preliminary and approximate. Final locations and specific sites will be determined through public engagement, justice40 analysis, and contracting processes as described in other sections of the plan.

Funding Sources

IDOT anticipates that funding recipients will own and have the ability to receive revenue from charging infrastructure. As such, we expect that proposals will include a cost-share that will cover the 20% non-federal match requirements, but in some instances with high projected utilization, potentially more. This cost share may include private funding and/or incentives from utilities or local government programs. However, IDOT understands there may be limited circumstances where there is a need to incentivize the submission of proposals that are likely to be initially underutilized. IDOT is considering options to address this situation, which could involve requiring proposals for stations with high expected early utilization to also include stations with less initial use.

FFY2022 and FFY2023 Infrastructure Deployments/Upgrades

IDOT is conducting three technical analysis projects to inform future EV charging station siting decision-making and public engagement planned for fall 2022. The site locations outlined below follow all known guidance issued by the Joint Office and the subsequent Notice of Proposed Rulemaking issued on June 22, 2022. The first is the ongoing work with the University of Illinois Urbana-Champaign, which is under contract with IDOT to study specific aspects of EV adoption and charging needs in Illinois. The second is an internal to IDOT effort to identify preliminary locations along Illinois' Alternative Fuel Corridors needed to meet minimum distance requirements outlined in the NEVI program. The third is working with a consultant to identify and develop criteria to evaluate procurement options that support the goals of the program while also identifying and managing risks to development and deployment of the program.

University of Illinois Urbana-Champaign EV Modeling Analysis

In 2021 IDOT initiated a study with the University of Illinois Urbana-Champaign focused on the following goals:

- **Project the level of EV adoption needed to meet 2035 emission reduction targets**
The study aims to determine IL EV adoption needs under several battery size and charging level scenarios that will meet 2035 greenhouse emission reduction goals, as outlined by the U.S. Climate Alliance and the State of Illinois. The process involves establishing a range of electrification and vehicle technology transition scenarios and their varying parameters; conducting data review on the U.S. Climate Alliance greenhouse gas emission goals and determine transportation emission reduction targets; and evaluating potential pathways to meet these targets, based on extrapolation of existing data on Illinois EV demand and EV ownership models such as MA3T and ADOPT.
- **Identify suitable sites for EV charging infrastructure investment based on demographic and economic parameters**
The study is developing a dynamic programming optimization model that will determine the level of charging infrastructure investment necessary to meet the identified electrification target. The study will also provide preliminary information about appropriate charging infrastructure station locations, accounting for various constraints and criteria impacting charging stations placement (e.g., electrical upgrades, parking spaces availability, EV ready corridor designations).
- **Assess benefits and costs of EV transition**
The study will conduct a cost/benefit analysis of EV transition, including station capital and electricity costs as well as greenhouse gas, petroleum, and gasoline saving benefits. An optimization model will identify opportunities to minimize generalized costs of EV adoption and emission reduction targets.
- **Coordinate a statewide EV infrastructure steering committee**
As part of the study, IDOT and the University of Illinois are coordinating a statewide EV infrastructure steering committee to provide stakeholder input into the above goals.

While this work is ongoing it will inform the NEVI compliant charging infrastructure placement. Attached in appendix A is a draft research brief outlining the site suitability analysis completed thus far.

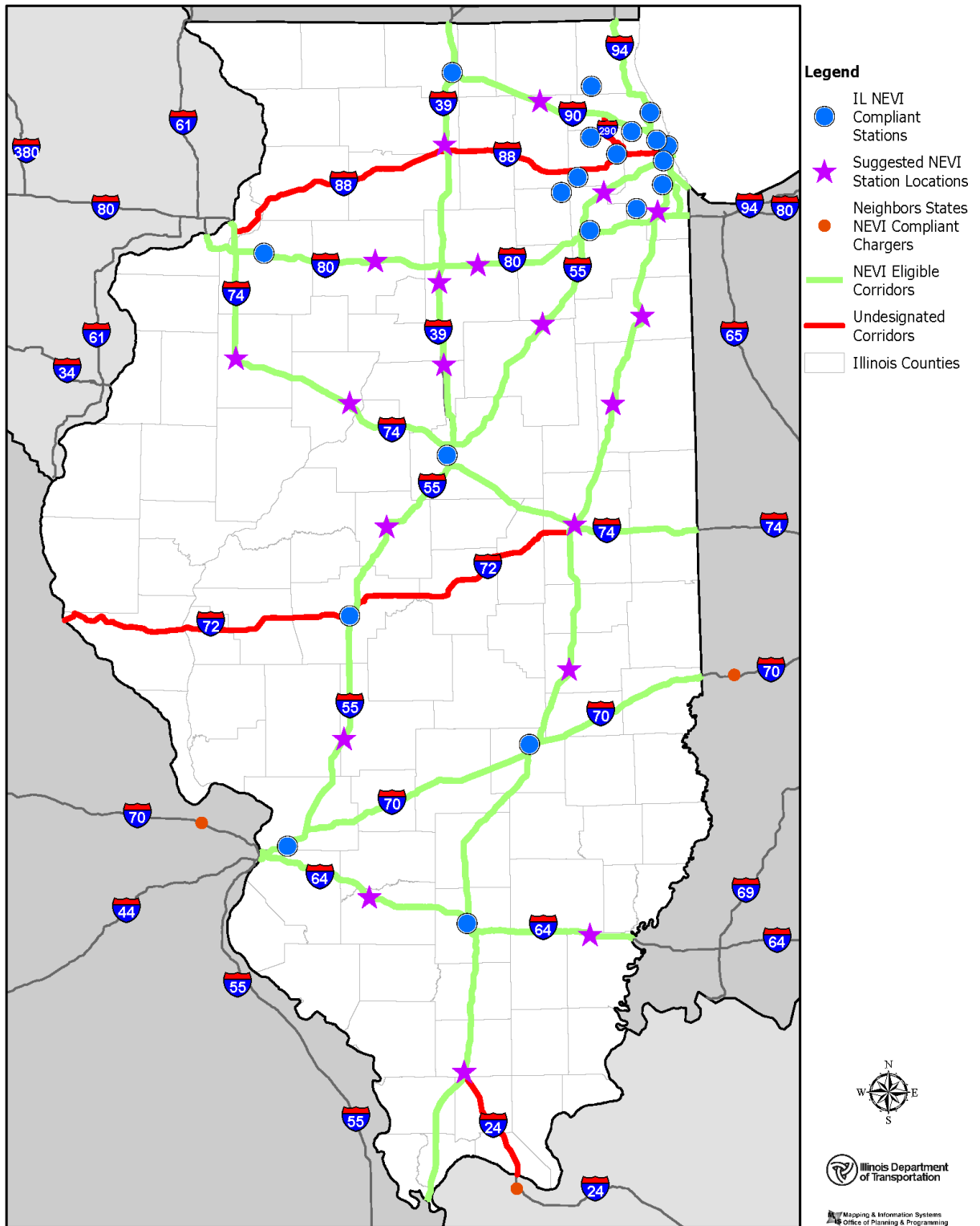
Illinois Simple Siting Exercise

Utilizing ArcGIS Online, IDOT staff conducted a simple buffer analysis of current NEVI-compliant stations and identify approximate locations for new stations along existing Alternative Fuel Corridors to meet minimum NEVI requirements of a station every 50 miles. These locations demonstrate the minimum Illinois would need to add to comply with the current federal guidance and should not be considered a final identification of station locations. Extensive outreach and incorporation of the University of Illinois modeling will inform the final version of this map and table of approximate station locations below.

Figure 13- Table of Potential EV Charging Station Locations to Meet Minimum NEVI Requirements (IDOT Simple Siting Exercise)

State EV Charging Location Unique ID*	Route	Location	Utility Territories
ILNEVI001	74	Galesburg, IL	Ameren Illinois
ILNEVI002	74	Peoria, IL	Ameren Illinois
ILNEVI003	74	Champaign, IL	Ameren Illinois
ILNEVI004	39	Rochelle, IL	Commonwealth Edison Co.
ILNEVI005	39	Oglesby, IL	Ameren Illinois
ILNEVI006	39	Minonk, IL	Ameren Illinois
ILNEVI007	90	Huntley, IL	Commonwealth Edison Co.
ILNEVI008	57	Tinley Park, IL	Commonwealth Edison Co.
ILNEVI009	57	Kankakee, IL	Commonwealth Edison Co.
ILNEVI010	57	Onarga, IL	Ameren Illinois
ILNEVI011	57	Mattoon, IL	Ameren Illinois
ILNEVI012	57	Goreville, IL	Ameren Illinois
ILNEVI013	64	Okawville, IL	Ameren Illinois
ILNEVI014	64	Burnt Prairie, IL	Ameren Illinois
ILNEVI015	55	Litchfield, IL	Ameren Illinois
ILNEVI016	55	Lincoln, IL	Ameren Illinois
ILNEVI017	55	Dwight, IL	Ameren Illinois
ILNEVI018	55	Bolingbrook, IL	Commonwealth Edison Co.
ILNEVI019	80	Princeton, IL	Ameren Illinois
ILNEVI020	80	Ottawa, IL	Ameren Illinois

Figure 14- Map of Potential EV Charging Station Locations to Meet Minimum NEVI Requirements (IDOT Simple Siting Exercise)



Procurement Option Analysis

IDOT is working with an innovative project delivery consultant to evaluate different procurement options for delivering the NEVI program. The consultant is working on identifying metrics to evaluate potential procurement options against to ensure the best use of NEVI funds in terms of procurement methods.

Upgrades of Corridor Pending Designations to Corridor Ready Designations

In identifying priority locations for charging station installation in the first years of the NEVI program, IDOT will consider opportunities to complete pending corridors and move them to corridor-ready roadways. In nominating additional corridors for Round 6, IDOT balanced identifying corridors throughout the state and connecting to neighboring states, while also keeping the total mileage manageable to fully build out during the first few years of the NEVI program.

Increases of Capacity/Redundancy along Existing AFC

Futureproofing is a major focal point of the Illinois plan. IDOT intends to require that sites have the capability of supporting double the number of required chargers without future concrete work or utility adjustments, even if initially only providing the minimum number of chargers. These provisions will ensure the ability for future addition with use of larger conduit than needed for the current load. The state will also consider adding more than the minimum number of ports at locations with greater projected demand and focus efforts to add station redundancies on corridors with current or projected heavier vehicle traffic.

Electric Vehicle Freight Considerations

While the primary focus of the NEVI program is on passenger vehicle electrification, Illinois intends to take advantage of the opportunity to prepare to support future medium- and heavy-duty electrification. In addition to requiring all new station locations accessing NEVI funds to have the minimum 4 ports at 150 kWh, Illinois intends to require that one of those 4 ports be able to charge at 350 kWh for medium and heavy-duty utilization. Furthermore, the department sees benefits in making all NEVI compliant stations pull through sites with the ability to have at least one class 8 truck charge without blocking access to the other 3 ports.

Public Transportation Considerations

In addition to serving freight vehicles, pull-through sites with 350 kWh will have benefits for public transit vehicles, particularly for longer-distance and rural routes. Having access to pull-through Chargers will help to reduce the individual infrastructure costs for projects like Pace's On-The-Shoulder Bus Rapid Transit line, and InterCity bus providers like Rides Mass Transit, Greyhound, and Peoria Charter. The Department's commitment to equitably deploy chargers along designated corridors coupled with IPI-Transits efforts to launch a statewide fleet electrification program increases the likelihood of a successful statewide rural transit transition to electrification.

FFY24-26 Infrastructure Deployments

Illinois expects to significantly enhance its understanding of EV charging issues, challenges, and priorities during the first two years of NEVI program implementation. In future fiscal years, the state intends to revise its plan based on lessons learned from the first years and continue to prioritize building out charging along designated corridors to ensure a resilient charging network across the state.

State, Regional, and Local Policy

IDOT anticipates that site hosts and EVSE providers will manage compliance with local permitting and zoning. As the NEVI program is implemented, IDOT will monitor for issues that arise related to local policy, and work with municipal and regional stakeholders to address them and streamline the process for EV charging installation.

Implementation

A number of items regarding implementation will be handled through the procurement and contracting method which is still to be determined.

Strategies for EVSE Operations & Maintenance

Operations and maintenance are integral to this program's success. It is an important factor and should be considered during initial procurement phases. The NEVI program funds are eligible for operations and maintenance and that will be attractive to potential bidders to implement the program.

Strategies for Identifying Electric Vehicle Charger Service Providers and Station Owners

The goals and requirements of the program will identify how prioritization should occur in identifying electric vehicle charger service providers and station owners. There are many considerations as outlined in the goals and contracting sections of this document. These will be refined as stakeholder and public outreach continue.

Strategies for EVSE Data Collection & Sharing

The data collection and sharing requirements are extensive as proposed in the current notice of proposed rulemaking. Once those are finalized, IDOT will work to develop procedures for meeting those requirements and aligning with IDOT's program goals and performance evaluation process. This will either include development of a technology solution or transferring this task to the vendors providing the charging infrastructure. In either case, IDOT will seek feedback from stakeholders, particularly with respect to data needed to demonstrate compliance with Justice40 requirements.

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

When developing the procurement documents, IDOT will evaluate potential strategies related to the resiliency of future EV charging infrastructure, particularly in relation to the biggest environmental hazards in the state as described in the Climate and Climate Change section of the Existing and Future Conditions Analysis. As the state develops its procurement strategy, we will work to incorporate these considerations into site selection and contracting requirements. In particular, IDOT will prioritize design and operation considerations for snow removal and other seasonal needs to ensure charging stations meet minimum required uptimes, and design and operation considerations to ensure stations can withstand storms and ensure user safety during extreme weather events. The state may also consider opportunities for complementary renewable energy alternatives and energy storage capacity to provide backup options such as solar power, generator hookups, and battery storage and recycling.

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

IDOT will ensure that DBEs, WBEs, and MBEs are participating in the development and deployment of EV charging infrastructure in the state by defining clear requirements in procurement documents, including level of DBE/WBE/MBE participation as a selection criterion in the RFP evaluation process, and close monitoring of DBE participation as part of program evaluation.

The Highway Construction Careers Training Program (HCCTP) boosts participation of diverse individuals in the industry and on IDOT’s highway construction projects. Ten Illinois community college partners offer training in industry trade and life skills. Employment is not guaranteed; however, participants do receive job placement assistance. HCCTP will serve as a workforce development pipeline for diversifying the workforce on NEVI Projects. IDOT currently works with 10 Community Colleges across the state, and the program is rapidly expanding. IDOT will work with DCEO and other stakeholders to develop EV curriculum that aligns with federal NEVI program guidance and produces workers that will not only be able to work on projects, but also qualify as Disadvantaged Business Enterprises. IDOT’s HCCTP program offers several advantages for those pursuing careers in EV Infrastructure:

- Improve opportunities for entry-level construction jobs
- Become eligible for trade unions and apprenticeships
- Partner with IDOT contractors seeking diverse talent
- Position themselves for future pursuit of a Disadvantaged Business Enterprise (DBE) certification with IDOT
- Participate for free and receive an hourly stipend

Additionally, IDOT will establish a “Launch Program” through Supportive Services aimed at cultivating diverse workers into DBE’s by tailoring a curriculum and targeting Journeyman in key under-represented industries.

Civil Rights

IDOT, through the procurement process, will require all qualified vendors comply with the following federal legislation to ensure full compliance.

- The American with Disabilities Act of 1990 (ADA)
- Title VI of the Civil Rights Act of 1964
- Title VIII of the Civil Rights Act of 1968

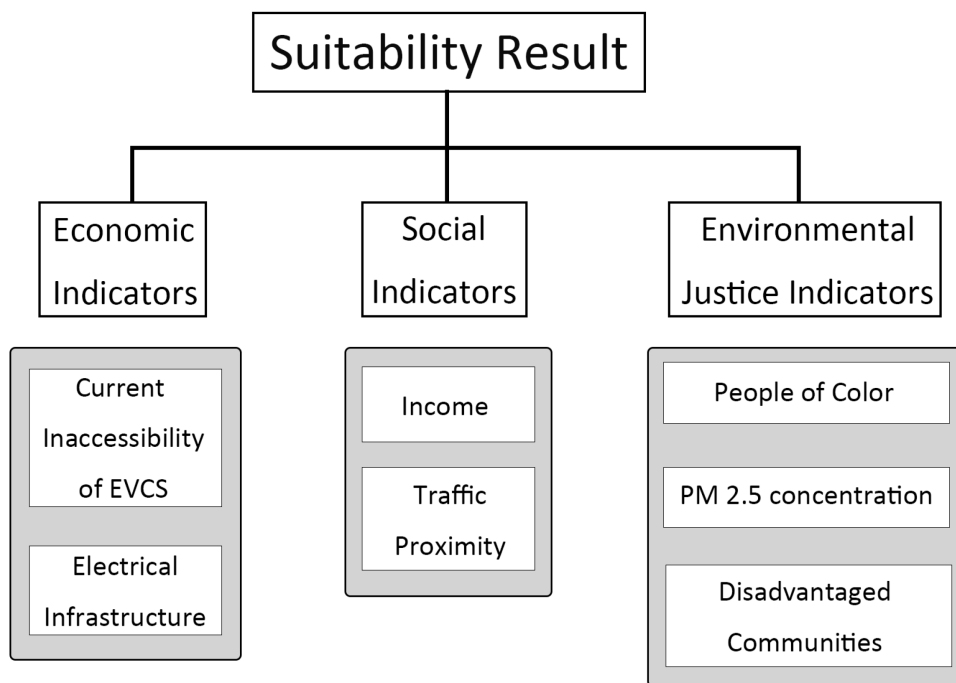
As part of ensuring stations are accessible for people with disabilities and meet the standards of the ADA, Illinois will follow the guidance of the Access Board, once that guidance is available. The Office of Civil Rights at IDOT will ensure all prime contractors, sub-contractors, and workers understand all the provisions of The American with Disabilities Act of 1990 (ADA), Title VI of the Civil Rights Act of 1964, Title VII of the Civil Rights Act of 1964 by conducting workshops and trainings across the state to ensure compliance with NEVI Projects that are federally funded.

Equity Considerations

To address racial equity and the climate crisis, the Justice40 Initiative sets the goal of delivering 40 percent of overall federal investment benefits in climate and clean energy, including sustainable transportation, to disadvantaged communities. Illinois is committed to realizing equity benefits as part of the NEVI program through technical analysis and targeted stakeholder engagement.

One way that IDOT is incorporating equity considerations in the NEVI plan is through the technical work being conducted by the University of Illinois Urbana-Champaign. The research team is incorporating several environmental justice indicators as part of the EV charging station suitability analysis, including PM 2.5 concentration, concentrations of racial minorities, and transportation disadvantaged census tracts as defined by the Department of Transportation and the Department of Energy. These measures, along with others including grid capacity, traffic proximity, and current charging infrastructure coverage, will be used to identify preliminary potential EV charging locations. This analysis will inform stakeholder engagement conducted during plan implementation, as described in the “2022 Infrastructure Deployments” and “Stakeholder and Public Engagement” sections of this plan.

Figure 15- EV Charging Site Suitability Analysis Approach (draft, in progress) as part of University of Illinois Urbana Champaign Study



Identification and Outreach to Disadvantaged Communities (DACs) in the State

In addition to the transportation disadvantaged communities identified by the US Departments of Transportation and Energy and the draft Climate and Economic Justice Screening Tool developed by the Council on Environmental Quality, the state of Illinois is implementing several programs that define disadvantaged communities.

IDOT is coordinating with its partner agencies while the state updates its maps for identifying environmental justice communities per the Climate and Equitable Jobs Act provisions. Currently there are two State of Illinois programs that prioritize funding for specifically-identified disadvantaged communities. The Restore, Reinvest, and Renew program, managed by the Illinois Criminal Justice Information Authority, provides funding to support community organizations that serve neighborhoods most impacted by economic disinvestment, violence, and the war on drugs. The neighborhoods eligible for R3 funding can be found in a [web map](#) on the program website. The Illinois Power Agency administers the Solar for All Project, which helps make solar installations more affordable for income-eligible households and organizations through state incentives. Twenty-five percent of the funding from the Solar for All program is allocated to environmental justice communities, as identified in a [web map](#) on the program website. The Department of Commerce and Economic Opportunity is creating a new map based on the communities identified by these two programs for the purposes of prioritizing state investments in clean energy.

Geospatial analyses are critical for identifying disadvantaged communities, but meaningful outreach to and engagement is essential for ensuring the NEVI program achieves equitable outcomes. The “Public

Outreach” section above details IDOT’s planned approach to outreach specifically focused on reaching populations representing disadvantaged communities. IDOT plans to utilize best practices from other Illinois state agencies and other state transportation agencies, including holding evening meetings, exploring co-hosted meetings with trusted community organizations, and appropriately valuing the time and expertise community partners contribute to informing plan implementation.

Process to Identify, Quantify, and Measure Benefits to DACs

One key area in which engagement with disadvantaged communities will be crucial is in identifying, prioritizing, and quantifying potential benefits of the NEVI program and EV charging infrastructure for disadvantaged communities. There are a wide range of potential equity benefits, which may include:

- Improving clean transportation access through the location of charging stations
- Decreasing the transportation energy cost burden by enabling reliable access to affordable charging
- Reducing environmental exposures to transportation emissions
- Increasing parity in clean energy technology access and adoption
- Increasing access to low-cost capital to increase equitable adoption of more costly, clean energy technologies like EV charging
- Increasing the clean energy job pipeline, job training, and enterprise creation in disadvantaged communities
- Increasing energy resilience
- Providing charging infrastructure that can serve transit and shared-ride vehicles
- Increasing equitable access to the electric grid
- Minimizing gentrification-induced displacement result from new EV charging infrastructure

Additional potential benefits are likely to emerge through stakeholder engagement. One challenge of quantifying benefits to demonstrate compliance with Justice40 is that different communities are likely to identify different benefits as priorities. It will be difficult to add up disparate benefits, particularly ones that are less easy to quantify, such as minimizing gentrification. Illinois expects the process of evaluating equity benefits to be iterative, involving engagement with stakeholders, guidance from the US Department of Transportation, and learning from best practices of other states.

One often-overlooked component of equity analysis is that calculating the distribution of benefits to disadvantaged communities involves more than just understanding the impact of the NEVI program on marginalized communities. To ensure that 40% of the benefits accrue to disadvantaged communities, IDOT will need to assess total benefits in those same categories for the state as a whole as part of broader program evaluation.

Labor and Workforce Considerations

For Illinois to be a leader in clean energy, the State needs a workforce that is ready to support the growth of Illinois' clean energy economy. To achieve this vision, CEJA directed DCEO to develop multiple clean energy workforce training programs throughout the State, all of which take an equity-centric approach and prioritize participation for individuals and businesses from areas that have known economic and environmental barriers.

Illinois is currently developing these programs. One of the more expansive programs, the Clean Jobs Workforce Program, will create 13 workforce hubs around the State that will train individuals for clean energy jobs. The training curriculum will be developed with broad community and industry input, and will consider the required skills, certifications and core competency areas required to fulfill the job needs of Illinois' growing clean energy economy, which can include programs to train for electric vehicles and EVSE.

Individuals participating in the Clean Jobs Workforce Program and other CEJA workforce programs will be supported by two programs that will focus on recruiting participants and connecting them with jobs and will provide wrap-around support services such as childcare, financial services, and transportation assistance to ensure these individuals can successfully complete the training programs.

The Illinois Department of Transportation's Office of Business and Workforce Diversity in collaboration with the Illinois Department of Commerce's Offices for Minority Economic Empowerment, Regional Economic Development, and Entrepreneurship Innovation and Technology teams will work collaboratively to ensure access, equity, and inclusion in the NEVI Program. These diverse state agency teams will achieve this through marketing, outreach, and technical assistance across the State of Illinois' 10 economic development regions and IDOT's 9 Districts.

IDOT's annual "Today's Challenge, Tomorrow's Reward" (TCTR) conference provides opportunities for networking, skill-building, and knowledge sharing among our vendor networks. All firms doing business with the department, including primes and subcontractors, consultants, suppliers, and our various partners are welcome. IDOT will have workshops tailored to EV Infrastructure and workforce initiatives to ensure industry is aware of this new emerging industry and opportunity.

IDOT will leverage its resource centers in Districts 1-9 as well to ensure that across all parts of the state NEVI partners, DBEs, and workers can host events, trainings, and workshops for networking and supportive services. Specifically, IDOT will leverage its Supportive Services Consultants to provide the following services for Minority and Disadvantaged Enterprises that will work on EV Infrastructure projects below:

- Estimation and Bidding Assistance
- DBE Certification
- Website Development and Membership Fee Reimbursement
- Business Plans
- Access to Capital Support

Qualifying DBEs can receive firm-specific guidance to propel their growth in the transportation industry through IDOT's DBE Business Development Program. The program provides full business evaluation and analysis, tailored training that may be eligible for reimbursement, and personalized recommendations to maintain competitiveness

DCEO’s Entrepreneurship, Innovation, and Technology Office will leverage its Small Business Development Center Network (40 Statewide), and Procurement Technical Assistance Centers to ensure that disadvantaged business enterprises and communities can receive technical assistance, and support around NEVI Projects. DCEO’s Office for Minority Economic Empowerment will leverage their webinars, technical assistance sessions, and business collectives to ensure that all minority communities are connected to the resources above.

As part of the procurement process IDOT will require vendors to prove full compliance with the NEVI program requirements as defined in the final rulemaking. This includes that all electricians installing, operating, or maintaining NEVI compliant stations has appropriate licenses, certification and training to ensure that the installation and maintenance of NEVI complaint stations are performed safely by a qualified and increasingly diverse workforce of licensed technicians and other laborers.

This means these electricians must meet one or both of the following requirements:

- Certification from the Electric Vehicle Infrastructure Training Program (EVITP).
- Graduation from a Registered Apprenticeship Program for electricians that includes EVSE-specific training and is developed as a part of a national guideline standard approved by the Department of Labor in consultation with the Department of Transportation.

For projects requiring more than one electrician, at least one electrician must meet the requirements above, and at least one electrician must be enrolled in an electrical registered apprenticeship program.

All other onsite, non-electrical workers directly involved in the installation, operation, and maintenance of NEVI compliant stations must have graduated from a registered apprenticeship program or have appropriate licenses, certifications, and training as required by IDOT and the finalized NEVI program minimum standards and requirements.

Cybersecurity

To be a successful candidate for the Illinois NEVI program a vendor must demonstrate at a minimum how they will address user identity and access management, selection of appropriate encryption systems, intrusion and malware detection, event logging and reporting, management of software updates, and secure operation during communication outages.

Program Evaluation

IDOT will use the many data requirements required under the EV Charging Infrastructure Deployment section of this plan to evaluate implementation of the state’s NEVI plan against the identified vision and goals for the program. Program evaluation measures will continue to be refined as the final guidance is issued as well as with input from stakeholders and the public. The required annual plan updates will be used as an opportunity to report on the state’s progress in obligating federal funds, building charging infrastructure, and achieving environmental, economic, and equity goals.

Discretionary Exceptions

As Illinois works to identify gaps in the current EV charging infrastructure and prepare for the initial solicitation, there may be segments where exceptions are needed. While the process for requesting exceptions is still under development, Illinois requests that the process allow for exceptions to be requested at any time throughout the NEVI program. The need to request an exception could occur at any point in a project. Flexibility in requesting exceptions will be especially important in the rural areas of the state.

Appendix A: Research Brief: Electric Vehicle Charging Infrastructure Suitability Mapping

Illinois Electric Vehicle Charging Infrastructure Suitability Mapping

Research brief prepared by Dr. Eleftheria Kontou and graduate student Jiewen Luo
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Purpose

This analysis aims to develop a suitability map for electric vehicle charging stations siting based on economic, societal, and environmental justice indicators. By using the analytic hierarchy process (AHP), which is commonly applied in multi-criteria decision-making for geographic information system applications (e.g., [1-3]), we provide information for the state-wide deployment of electric vehicle charging stations in Illinois.

Methods

AHP is used to meet the objective of identifying suitable regions for charging station placement. The process involves comparisons of the relative importance of each feature considered in the decision-making process to the rest in a judgment matrix; the comparison scores should be generally obtained through expert elicitation. The schematic presenting the indicators that comprise the suitability metric and the data features used to estimate them are shown in Figure 1; they are aligned with existing literature. We compare the mean and standard deviation of the features in Table 1. The criteria maps are displayed in Figure 2.

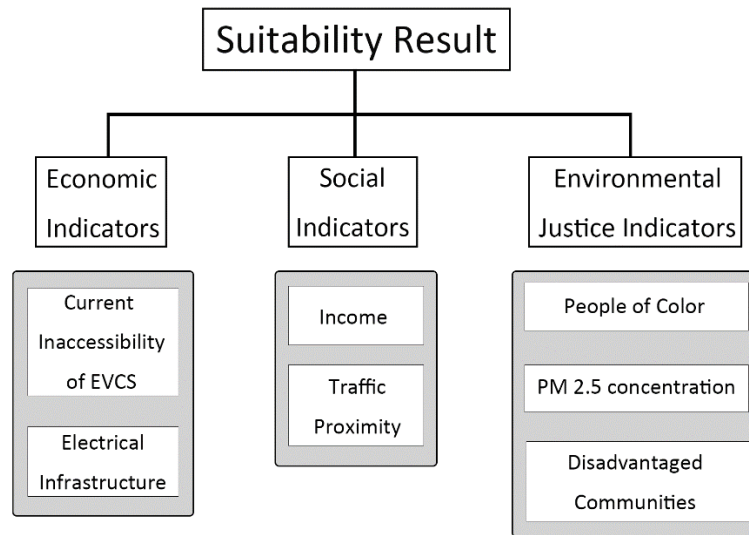


Figure 1: Indicators and features used in the Illinois electric vehicle charging stations suitability map

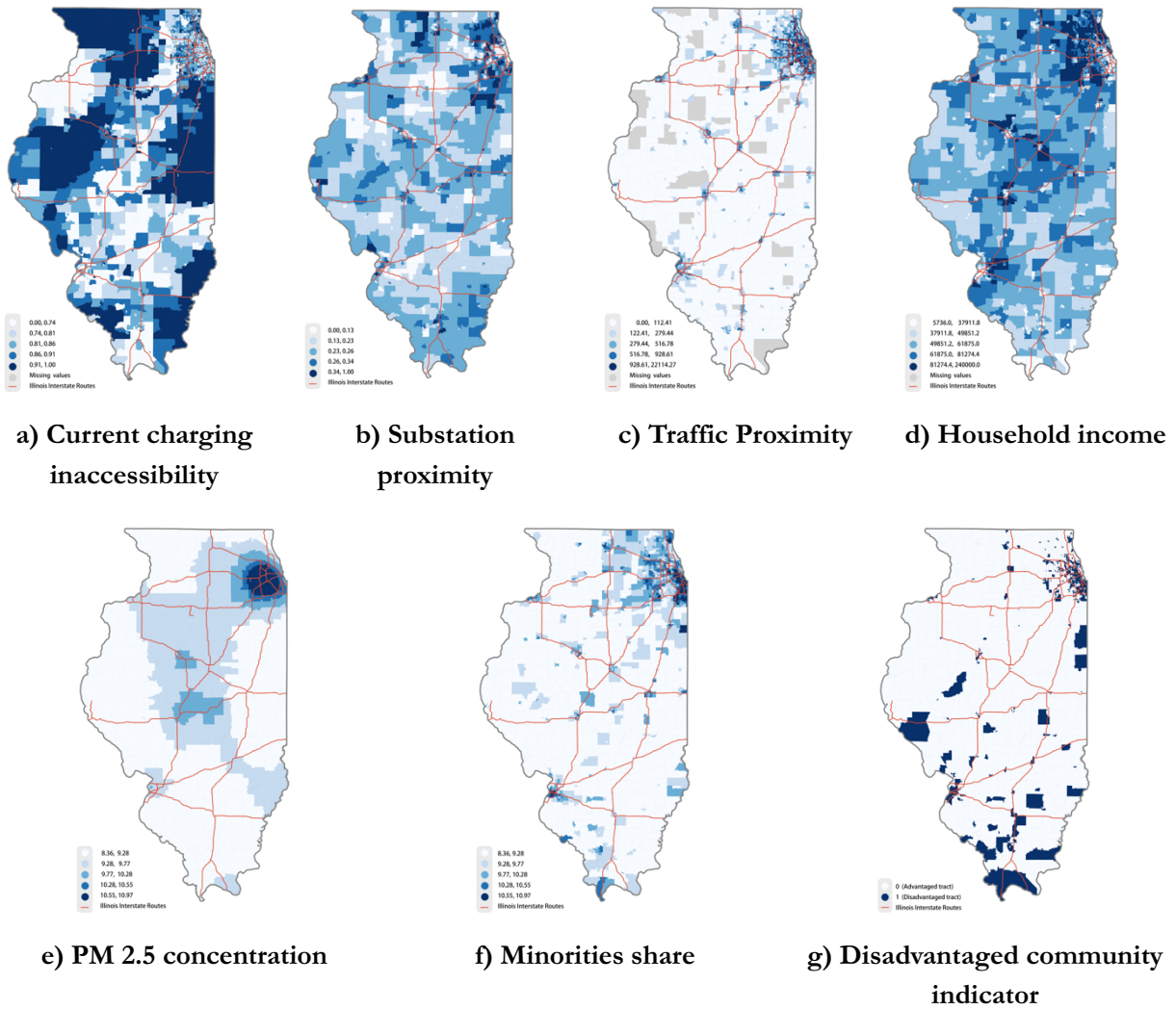


Figure 2: Feature maps used in the charging station suitability mapping for the State of Illinois

Table 1: Descriptive statistics of features that compose the suitability indicators

Variables	Mean	Standard deviation	Min	Max
Inaccessibility of EVCS (%)	0.82	0.12	0	1
Substation Proximity (%)	0.26	0.13	0	1
Traffic Proximity (number of vehicles)	818.32	1601.54	0	22114.27
Household Income (US \$)	61178.49	29750.90	5736.00	240000
PM 2.5 concentration (ug/m^3)	9.94	0.63	8.36	10.97
Minorities share (%)	0.40	0.32	0	1
Disadvantaged community indicator (binary)	0.37	0.48	0	1

Preliminary Results

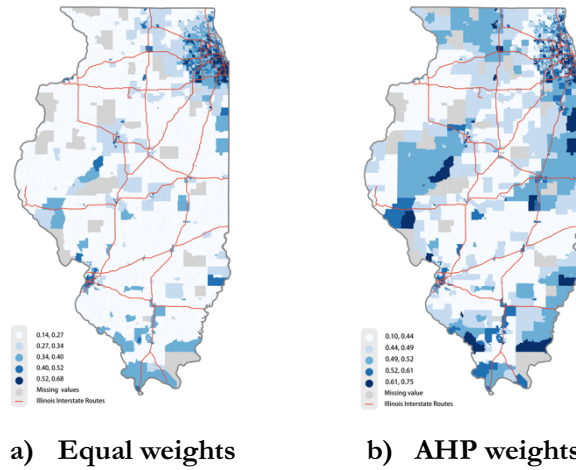


Figure 3: Suitability map of the state of Illinois

Preliminary insights into the suitability maps for electric vehicle charging stations are presented in Figure 3 with equal and AHP weights (weights of indicators using AHP as shown in Table 2). The southwest region of Chicago is highlighted for chargers deployment based on the equal weights suitability map, especially community areas and neighborhoods like West Elsdon, West Lawn, Ashburn, and Chicago Lawn. Highly suitable regions can also be found in the north and southeast corners of Chicago (e.g., Forest Glen O'Hare, Eastside, and Hegewisch). The AHP weights map suggests fewer highly suitable regions in the southwest corner of Chicago, like West lawn, McKinley Park, Burnside, Pullman, and East side. Additionally, it identifies more highly suitable regions in the rest of the state of Illinois than the equal weights map. Regions at the intersections of major interstates and south, east, and central west Illinois census tracts are highly suitable for charging station placement.

Table 2: AHP weighting results

Indicators	Inaccessibility of EVCS	Substation Proximity	Traffic Proximity	Household Income	PM 2.5 concentration	Minorities share	Disadvantaged community indicator
Weight	0.433	0.164	0.077	0.089	0.040	0.044	0.153

Discussion

Our analysis considers the economic and social indicators expected to affect electric vehicle charging station siting but also evaluates Illinois census tract locations against quantitative environmental justice metrics, addressing environmental externalities concerns of disadvantaged communities in our state. The results highlight the southwest side of Chicago, which poses high suitability for future charging station placement. Multiple factors contribute to this outcome, including the high traffic

proximity, substation proximity, high minorities share, high PM 2.5 concentration, and disadvantaged communities. Note that changing the weights of this process will result in different suitability outcomes. The weights provided are indicative, while expert elicitation is expected to be performed by University of Illinois researchers. This should result in more accurate maps and insights into the priorities of decision-makers and stakeholders invested in passenger vehicle electrification. While our analysis demonstrated the criteria and applied algorithms to guide future electric vehicle charging station placement, the results should be interpreted with an understanding of the limitations of the data and the need for continuous updates of the data inputs that change annually or even monthly. A range of programs (federal, state, and local) are underway to promote electric vehicle adoption and use. At the same time, investments in transportation electrification are expected to affect demand and priorities for electric vehicle charging station placement.

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