CITY OF SOUTH BEND

COMMUNITY ELECTRIC VEHICLE (EV) INFRASTRUCTURE PLAN

November 2023

OFFICE OF SUSTAINABILITY
SOUTH BEND, INDIANA

ACKNOWLEDGEMENTS

This Community EV Charging Infrastructure Plan was developed in partnership with the City of South Bend and many community members. Special thanks to all who contributed to the development of this Community EV Charging Infrastructure Plan:

City of South Bend:

Aaron Perri, Executive Director, Venues Parks & Arts (Former)

Adam Cole, Director of Central Services, Central Services

Alexandro Bazán, Director, Office of Sustainability

Allie Dolz-Lane, Deputy Chief of Staff, Mayor's Office

Andrew Schreiber, Venues Parks & Arts

Angela Smith, Zoning Administrator, Department of Community Investment

Antonius Northern, Assistant Director of Growth and Opportunity, Department of Community Investment

Barbara Dale, Sustainability Project Manager, Department of Community Investment

Caleb Bauer, Executive Director, Department of Community Investment

Chris Dressel, Senior Planner, Department of Community Investment

David Finley, Director of Business Analytics, Department of Innovation and Technology

Denise Riedl, Chief Innovation Officer, Department of Innovation and Technology

Eric Horvath, Executive Director, Department of Public Works

Evelyn Bauman, Director, Office of Sustainability (Former)

Jordan Gathers, Interim Executive Director, Venues Parks & Arts

Kacey Gergely, Chief of Staff, Mayor's Office

Laura Althoff, Director of Finance, Administration and Finance

Leslie Biek, Assistant City Engineer, Department of Public Works

Madi Rogers, Director of Civic Innovation, Department of Innovation and Technology

Maricela Juarez, Director of Finance, Administration and Finance

Max Welch, Senior Business Analyst, Department of Innovation and Technology

Randy James, Building Commissioner, Department of Community Investment

Rosa Tomas, Director of Finance, Administration and Finance

Tim Corcoran, Director of Planning, Department of Community Investment

Zach Lute, Deputy Building Commissioner, Department of Community Investment

External Project Stakeholders:

Andrew Hsu, Local EV Driver

Cassie Majetic, Saint Mary's College

Grant Poole, Pokagon Band of Potawatomi

Jake Wagman, E4 Charging Solutions

Jeff Walker, The Beacon Resource Center

John Jessen, Bradley Company

Jorden Giger, Black Lives Matter South Bend

Kareemah Fowler, South Bend Community School Corporation

Katie Arnold, University of Notre Dame

Leah Thill, MACOG

Lori Hamann, South Bend Common Council

Mario Ellis, Elektron Motion

Mike Leda, IBEW Local 153

Mona Livingston, Indiana Michigan Power

Paul Kempf, University of Notre Dame

Rachel Tomas Morgan, South Bend Common Council

Ryan Lisek, Drive Clean Indiana

Sally Geislar, Saint Mary's College

Teagan Lawson, Kite Realty Group

Tyler Barron, Environmental Law and Policy Center

Focus Group Participants:

Annalise Steketee, Meijer, Inc.

David Nufer, Burton's Laundry Dry Cleaning

Debie Coble, Goodwill Industries of Michiana

Diania Franks, South Bend Farmer's Market

James Morrison, Hacienda Mexican Restaurant

Lindsey Spaulding, The Botany Shop

Shane Galloway, Beacon Health System

Project Consultants:

brendle GROUP

CONTENTS

City of South Bend

Community Electric Vehicle (EV) Infrastructure Plan

About this Plan

The City of South Bend has adopted a goal to reduce community-wide greenhouse gas (GHG) emissions by 100% by 2050. Since emissions associated with passenger vehicles make up approximately 20 percent of community emissions, electric vehicle (EV) adoption in the context of a shift to zero emissions electricity supply will play a critical role in meeting community goals. Convenient access to reliable and affordable charging infrastructure is foundational to enable increased EV adoption. The City developed this Community EV Infrastructure Plan to identify strategic needs and opportunities to improve equitable charging access and support progress towards South Bend's EV future.

Implementation of the strategies identified in this plan will prepare the City of South Bend for increased EV adoption. The City is poised to pursue and prioritize funding for EV charging stations, proactively address inequities in access to charging, and take steps to develop the skilled workforce needed to build out and maintain South Bend's EV charging network.

Vision

The City of South Bend supports sustainably expanding equitable access to public EV charging infrastructure citywide, by identifying opportunities to lead the community and partner with businesses and organizations to ensure convenient access to charging.

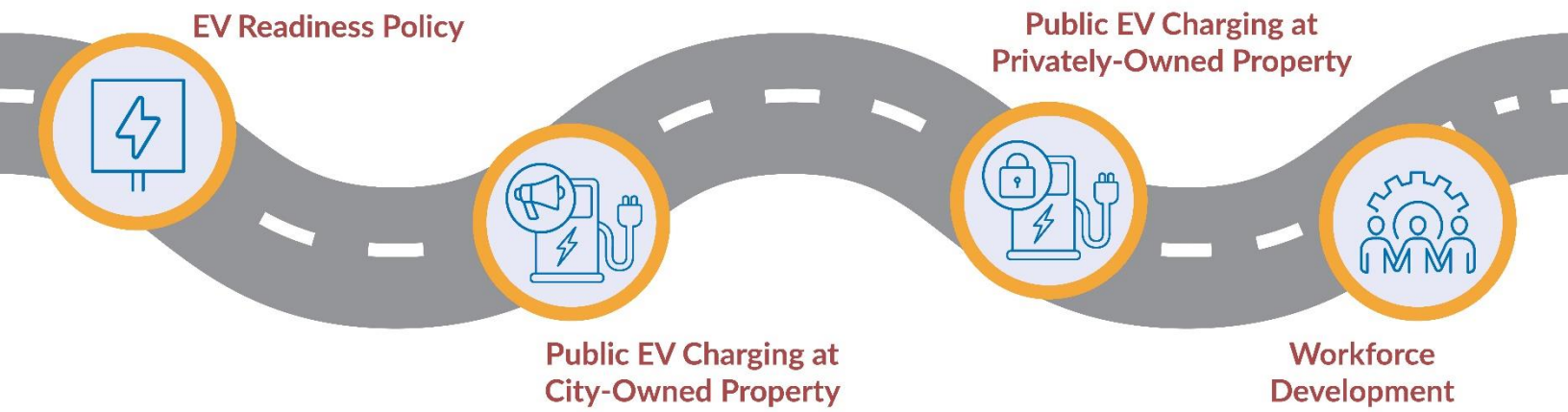
Goal

To equitably distribute and increase the number of public EV charging stations annually based on EV adoption projections, an installation prioritization framework, station usage data, and community input.

Guiding Principles

- Authentically Equitable
- Integrated Planning
- Community-Focused

Priority Areas



Strategy Summary

EV Readiness Policy

	Phase 1	Phase 2
RP-1: Create a Standalone EV Charging Permit	●	○
RP-2: Develop Voluntary EV-Ready Standards	●	○
RP-3: Incentivize Voluntary EV-Ready Standards	●	○
RP-4: Develop EV Charging Design Guidelines	●	○
RP-5: Explore Adopting EV-Ready Standards	○	●
RP-6: Adopt EV Charging Design Standards	○	●
RP-7: Explore Allowances for EV Charging Stations in the Public Right-of-Way	○	●

Public EV Charging at City-Owned Property

CO-1: Promote Existing Charging Stations	●	○
CO-2: Install Charging at Priority Locations with Available Funding	●	○
CO-3: Explore Opportunities for Curbside EV Charger Integration at Streetlights and Power Poles	●	○
CO-4: Use Priority Location Tools to Create Subsequent Build-out Priorities	○	●
CO-5: Develop Neighborhood EV Charging Hubs	○	●

Public EV Charging at Privately-Owned Property

PO-1: Promote Existing Charging Stations and Provide Resources about Charging Stations	●	○
PO-2: Develop or Collaborate on an EV Charging Incentive Program for the Private Sector	●	○
PO-3: Use Framework to Target Outreach	●	○
PO-4: Develop Industry Peer Group or Resources	○	●

Workforce Development

WF-1: Research and Promote Existing Workforce Development Programs	●	○
WF-2: Determine Gaps in EV Charging Workforce Development Training	●	○
WF-3: Partner with EV Industry to Fill Gaps	●	○
WF-4: Partner with Organizations to Offer Secondary Services	○	●
WF-5: Establish Hiring Targets for EV Projects	○	●

INTRODUCTION

The transportation sector is the second largest contributor to community greenhouse gases (GHGs) for South Bend at 32 percent, as shown in Figure 1. Of the transportation sector emissions, passenger vehicles account for almost two-thirds of those emissions (Figure 1).

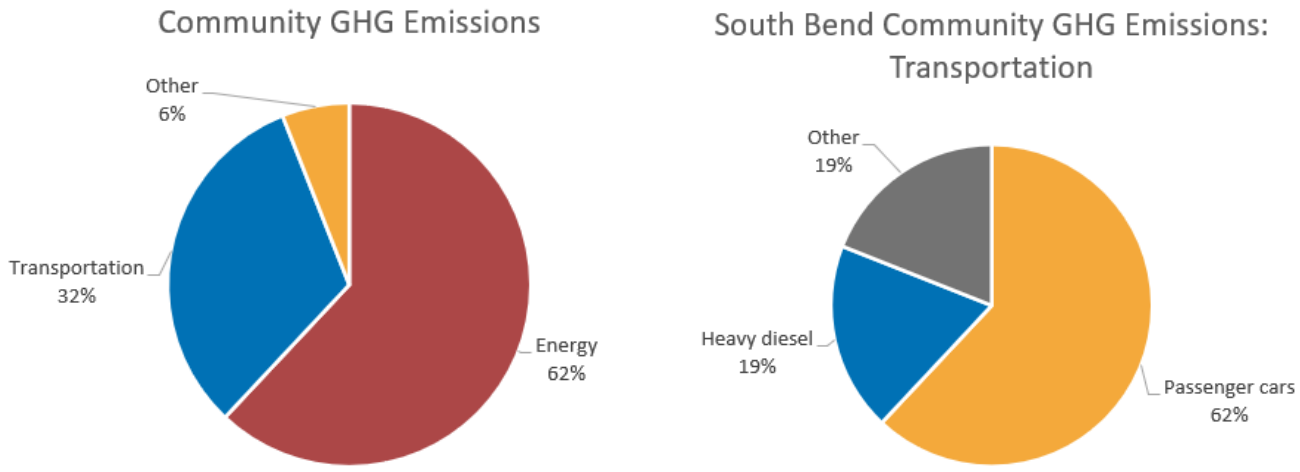


Figure 1. South Bend's community (left) and transportation (right) greenhouse gas emissions (City of South Bend, 2019).

Climate Impacts

The earth's climate is changing due to increased GHG emissions, and the impacts are already being felt across the globe, and here in Indiana. These changes have negative impacts for communities across the state, including for South Bend. Indiana's temperature has been rising about 0.1°F per decade since 1895 increasing the chance of extreme heat and reducing the chance of extreme cold. The number of extremely hots days, defined as days reaching 95°F or greater, is rising across the state (Widhalm, et al.,

2018). Rising temperatures increase chances for record-breaking heatwaves. This can be dangerous for vulnerable populations such as children and the elderly and those without air conditioning. It can also create more favorable conditions for pest insects such as mosquitoes and ticks, increasing potential exposure to pathogens and (Widhalm, et al., 2018).

Average annual precipitation is increasing with more rain falling in heavy downpours (Widhalm, et al., 2018). These changes negatively impact communities across the state such as South Bend. More severe weather events from increased heavy rainfall events (top 2 percent of rainfall rates in a year) can lead to more flooding as South Bend experienced in 2016 and 2018. Each event caused severe damage to the city and region. In February 2018, rains swelled rivers in the South Bend area to the highest levels ever recorded causing floods, damaging roads (Figure 2), homes and buildings, and displacing residents. Estimated costs from damage to City facilities such as the water filtration system's North Pumping Station and pedestrian trails was about $2.1 million (South Bend Tribune, 2019).

Figure 2. Flooding along Northside Boulevard and neighboring streets in February 2018 (South Bend Tribune Photo/Robert Franklin).

In addition to contributing a significant portion of GHGs, the transportation sector also produces pollutants such as particulate matter (PM), nitric oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOCs). Pollutants like NOx and VOCs contribute to ground-level ozone, which in addition to PMs and CO, are harmful to respiratory health especially for communities of color, the elderly, young children, and low-income households that often face higher exposure to pollutants and may be more vulnerable to associated health impacts (American Lung Association, 2023).

Why EVs and Why Now?

Transitioning to a cleaner transportation system will enable the City of South Bend (the City) to address climate change in alignment with South Bend's first Climate Action Plan (CAP), Carbon Neutral 2050, which identifies energy and transportation focused strategies to reduce community-wide greenhouse gas emissions to zero by 2050 and additionally improve air quality.

In 2021 and 2020 federal legislation passed providing significant commitments for federal investment in electric vehicle (EV) charging infrastructure throughout the country and incentives to purchase EVs. Furthermore, there are EV and EV charging opportunities from state and utility programs. Through the

creation of this Community EV Infrastructure Plan (Plan), South Bend will be prepared to take full advantage of the upcoming investment opportunities, especially as it relates to equitable deployment of EV charging.

Moreover, major auto manufacturers have made bold commitments to EVs. General Motors, for example, will only sell zero-emission vehicles by 2035 (The New York Times, 2021). By 2040 or earlier Audi, Honda, and Volvo aim to sell electric or zero emissions vehicles. More available models and manufacturing at scale will make EVs more accessible and affordable.

The City of South Bend has unique opportunities to support the development of a convenient, reliable charging network and accelerate EV adoption by removing barriers and leading the installation of EV charging stations across the city. This Plan will guide municipal implementation efforts around policy updates and equity focused charging deployment strategies within city-owned infrastructure, and by private sector developers and property owners.

ELECTRIC VEHICLE OVERVIEW

EV Basics

EVs use an electric motor for all or part of their power rather than relying on gasoline or diesel alone. This plan considered two types of EVs throughout this planning process, battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). Definitions and details about these EVs can be found in Appendix A. EV Glossary and Appendix B. EV 101.

Although currently most EV drivers do their charging at home (U.S. Department of Energy, n.d.), public and workplace charging is needed to increase convenience, enable longer-distance travel, and support a robust EV transportation system. Apartment and condo dwellers, renters, and those without dedicated home parking do not typically have the ability to install at-home charging and rely on publicly available charging infrastructure. Lack of access to charging infrastructure and range anxiety, or concern that a vehicle has insufficient range to reach its destination are two of the most significant barriers to widespread adoption of EVs (U.S. Department of Energy, 2014). Addressing these barriers for consumers is a major motivation for installing various levels of charging infrastructure throughout the city, region, and state.

Most public charging will likely be Level 2 or direct current (DC) fast charging. Given the different charging speeds, EV chargers should be located at appropriate locations considering the timeframe an EV driver is likely to charge. Table 1 provides the charging type, typical range added over time, and appropriate locations for those factors. To learn more about the levels of chargers, see Appendix B. EV 101.

Table 1. Charging Times and Appropriate Locations

	Level 2 Charger	DC Fast Charger
Range added	25 miles per hour	100-200+ miles per 30 minutes
Public locations	Destinations where vehicles are parked for several hours or more, such as near apartments, hotels, shopping centers and other businesses, museums, theaters, playing fields, etc.	Travel corridors, and shorter-term destinations such as grocery stores, home goods, etc.

EV Benefits

Communities benefit from transitioning to EVs including environmental, health, and economic benefits that work toward targets in this Plan (Table 2).

Table 2. EV Benefits

BENEFIT	DESCRIPTION
Economic development	Given the time required, even when using fast charging infrastructure, EV drivers may combine their refueling stops with other activities, including visits to local stores, restaurants, parks, and attractions in the vicinity. This creates an opportunity for communities to draw regional travelers to public chargers.
Improving air quality	Switching to EVs can reduce and even eliminate harmful tailpipe emissions, including carbon monoxide and particulate matter that are linked to asthma, lung cancer, and other detrimental health impacts.
Energy independence and resilience	Much of the electricity used for EVs is produced in the U.S. Furthermore, recycled EV batteries can be used for building energy storage to manage energy demand, keeping costs low and improving our resilience.
Reducing GHG emissions	While all vehicles produce emissions during production, EVs produce significantly lower emissions while driving. The total lifecycle emissions for EVs are expected to decrease even more as production technology improves and the electric grid becomes greener.
Less noise pollution	Urban areas have background noise, and the two largest sources of this environmental noise are transportation and industrial activity. According to the World Health Organization, traffic noise is second to air pollution in its impact on public health (Horrox, 2021). EVs can be virtually inaudible due to their low engine noise.

EVs are fueled by electricity instead of gasoline and diesel. Even with electricity generated with a high mix of coal and natural gas as is the case in Indiana currently, EVs produce fewer annual emissions than internal combustion engine vehicles (Figure 3).

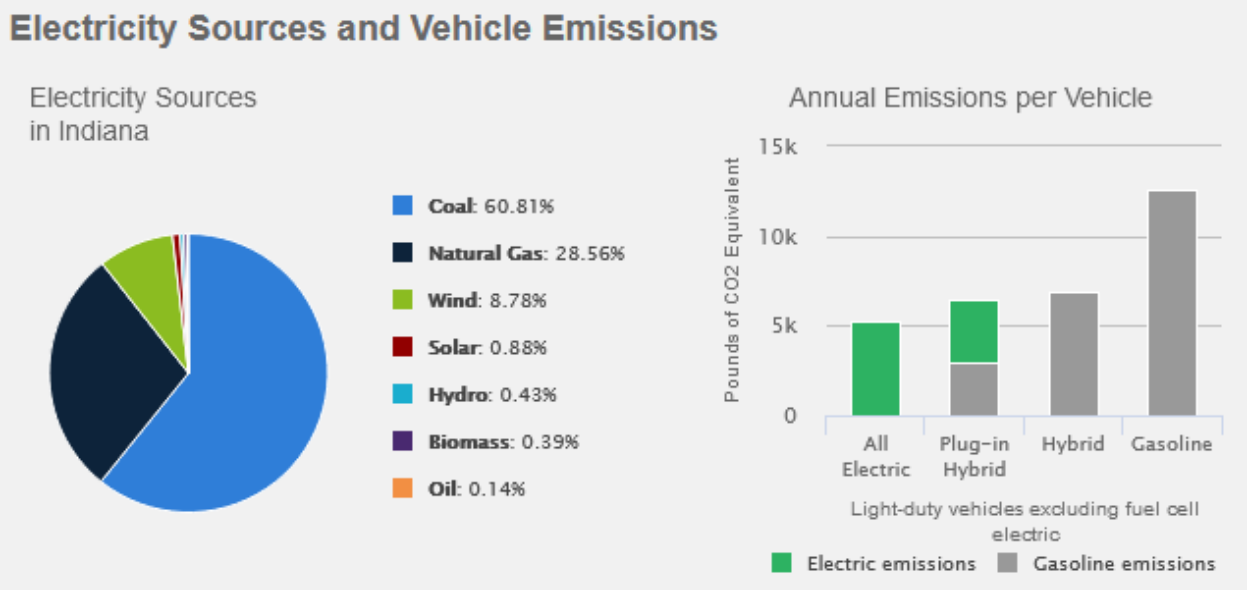


Figure 3. Electricity sources and vehicle emissions in Indiana (U.S. Department of Energy, n.d.).

In 2022, Indiana Michigan Power (I&M) generated more than 80 percent of its energy from carbon-free sources primarily nuclear, and also solar, wind, and hydro. With that fuel mix, EV emissions would be lower than the per vehicle emissions in Figure 3. Figure 4 shows plans to phase out coal and nuclear plants (Indiana Michigan Power, 2022). More wind and solar sources will be added, along with the addition of base and peak natural gas plants (Indiana Michigan Power, 2022). The addition of natural gas to the utility fuel mix will, in the energy sector, result in increases in GHG emissions and reduce air quality. Accelerating transportation electrification can perhaps help offset those increased emissions. There is potential opportunity for natural gas conversion to a cleaner option in hydrogen fuel later (Indiana Michigan Power, 2022). As the energy sources shift, further analysis will be needed to determine EV emissions from the fuel mix.

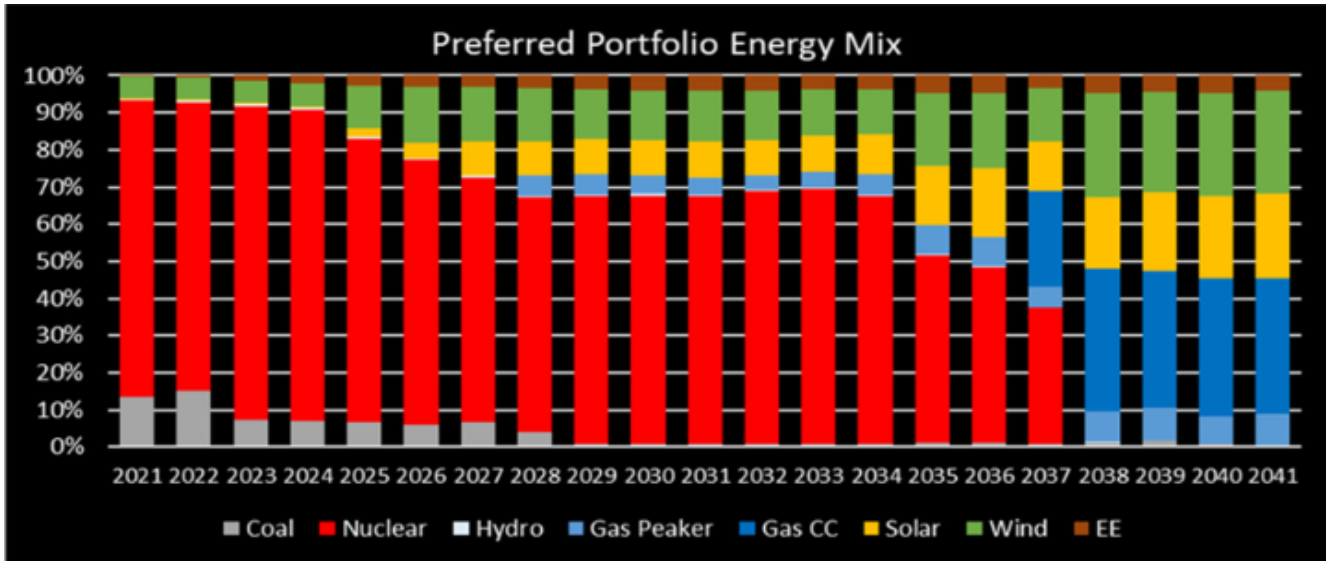


Figure 4. Indiana Michigan Power's forecasted energy mix by resource type (Indiana Michigan Power, 2022).

PLANNING PROCESS

Development of the South Bend Community EV Charging Infrastructure Plan was divided into three phases (Figure 5), driven by internal City staff and key external stakeholder engagement, focus group participation, and robust data analysis. The planning process resulted in a vision and goal for this plan, priority areas for advancing EV charging infrastructure, an equity driven prioritization framework to help target infrastructure siting and timing, and detailed strategies to drive outcomes in each priority area.

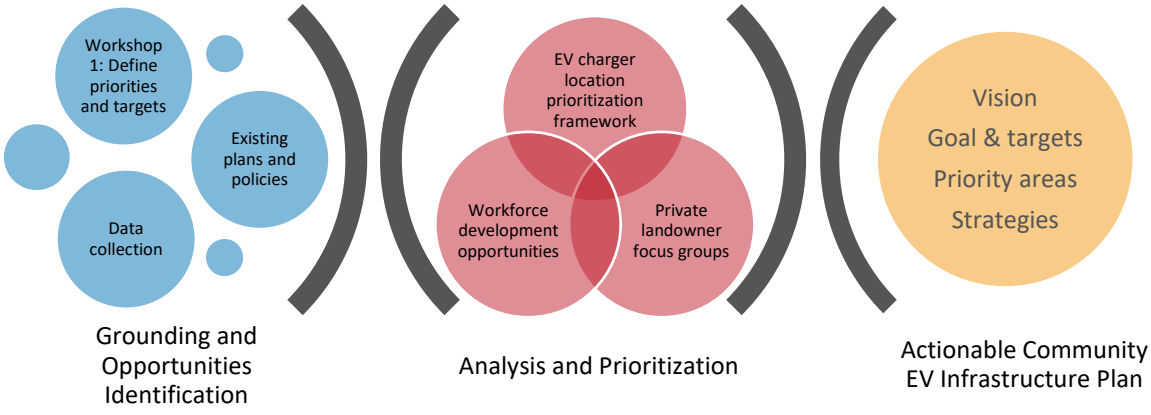


Figure 5. Planning Process.

Stakeholder Engagement and Focus Group Participation

The development of the plan included opportunities for input from key stakeholders.

- Stakeholders included City staff across many departments and community organizations identified by the City as key partners in realizing an EV future for South Bend (see Acknowledgements for a full list). Stakeholders were engaged early in the process through workshops and a survey to identify barriers and opportunities related to the priority areas for public EV charging infrastructure in South Bend. They were also engaged later in the process to prioritize strategies for charging infrastructure that would support EV adoption. For more details on stakeholder engagement see Appendix C. Summary of Stakeholder Engagement.
- In May 2023, local businesses and organizations were brought together in a focus group to identify barriers to and opportunities for increasing development of public charging stations on private property. For more details on stakeholder engagement see Appendix C. Summary of Stakeholder Engagement.

Plan Purpose and Integration with Other Efforts

Targeting government staff and EV stakeholders in the South Bend community, the objective of this plan is to identify key implementation steps needed to support the city and the community in an electrified mobility future. These efforts in community charging infrastructure will prepare the City of South Bend for the increase in EVs in the community, to pursue and prioritize funding for public EV charging stations, proactively address inequities in access to EV charging within the community and develop a skilled workforce growing a green collar industry while ensuring critical infrastructure for this electrified transportation is meeting demand and maintained.

The Plan supports South Bend's Carbon Neutral 2050, the 2019 CAP with the following transportation goals:

- Goal 1. Reduce both vehicle miles traveled and single occupancy vehicle trips.
- Goal 2: Transition to cleaner, more efficient vehicle fuels and technology in passenger and commercial vehicles.

The Community EV Charging Infrastructure Plan will focus on Goal 2. Specifically, it will guide the implementation efforts around Action T2.2, which encourages the City to plan and implement EV charging infrastructure throughout South Bend and expedite EV charging infrastructure by developers and property owners.

In addition, the Plan supports EV installations through the National Electric Vehicle Infrastructure (NEVI) formula program that is targeting funding for installing DC fast chargers along Indiana's federal-designated alternative fuel corridors, additional federal EV charging infrastructure funding through the Charging and Fueling Infrastructure grant, and EV installations for light-duty EV charging infrastructure funding from the Volkswagen Settlement with the U.S. Environmental Protection Agency.

This Plan also supports additional state and regional planning efforts such as the Regional Electric Vehicle (REV) Midwest Plan where Indiana joined Illinois, Michigan, Minnesota, and Wisconsin in signing a memorandum of understanding (MOU) to accelerate vehicle electrification, especially commercial medium- and heavy-duty vehicles in the Midwest. Commitments also include evaluating workforce development opportunities. Indiana is also part of the Lake Michigan Electric Vehicle (EV) Circuit MOU for creating an EV charging corridor along the Lake Michigan coastline and Indiana utilities have joined the National Electric Highway Coalition, committing to create a connected network of DC fast chargers along major highway systems from the Atlantic to Pacific Coast of the United States.

Guiding Principles

Throughout the planning process, three guiding principles were agreed upon and informed the prioritization of strategies in this plan and will help guide implementation.

Authentically Equitable

Negative transportation impacts often disproportionately impact lower-income populations and communities of color. Additionally, access to EVs and EV charging infrastructure has not been distributed equitably to date. EVs and EV charging have been out of reach for many due to cost or lack of ability to install charging infrastructure. In South Bend much of the current public EV charging infrastructure is focused in the downtown area and is not accessible to many. To support further EV adoption, South Bend will need to expand access to EV chargers across the community ensuring those who lack access to home charging are able to reliably and affordability access workplace and/or public charging. This plan focuses on increasing public charging infrastructure equitably bringing the entire community along. A prioritization selection method includes identifying gaps and criteria through mapping and discussion that focuses on investing EV charging infrastructure in neighborhoods and locations that have been underserved.

Integrated Planning

Local and regional planning processes, documents, and plan updates can be used by South Bend to support EV action. This Plan identifies places where planning for EVs and EV charging infrastructure can intersect with other policy and planning efforts. Utilizing strategies in this Plan, an EV charging network can be built appropriately and cost effectively.

Community-Focused

Each community and region present their own assets, challenges, opportunities, and weaknesses. Local systems, structures, processes, and organizations can enhance or deter implementation of strategies. While best practices and case studies for EV charging from around the world can be used, this plan prioritizes strategies that best fit the types of barriers and challenges uncovered from the planning process with local stakeholders, businesses, and government staff for South Bend.

LOCAL CONTEXT AND BASELINE

To better understand the opportunities for public EV charging infrastructure in South Bend, relevant EV market and projections and community characteristics are outlined below. Factors such as EV adoption, demographics, housing, and commuting help contextualize current and future opportunities for education, outreach, and partnerships.

Community Characteristics

South Bend is a 41.9 square mile city that is the county seat of St. Joseph County, Indiana. It is part of the South Bend–Mishawaka Metropolitan Statistical Area and is situated about 90 miles east of Chicago, and Mishawaka, Indiana is adjacent to the east of South Bend.

Population

South Bend is home to more than 103,000 residents in over 42,700 households. The median household income is $50,248, which is lower than the state median of $62,743; just over 21 percent of residents live below the poverty level (U.S. Census Bureau, 2022). Figure 6 shows the median household income by census tract in South Bend (U.S. Census Bureau, 2022).

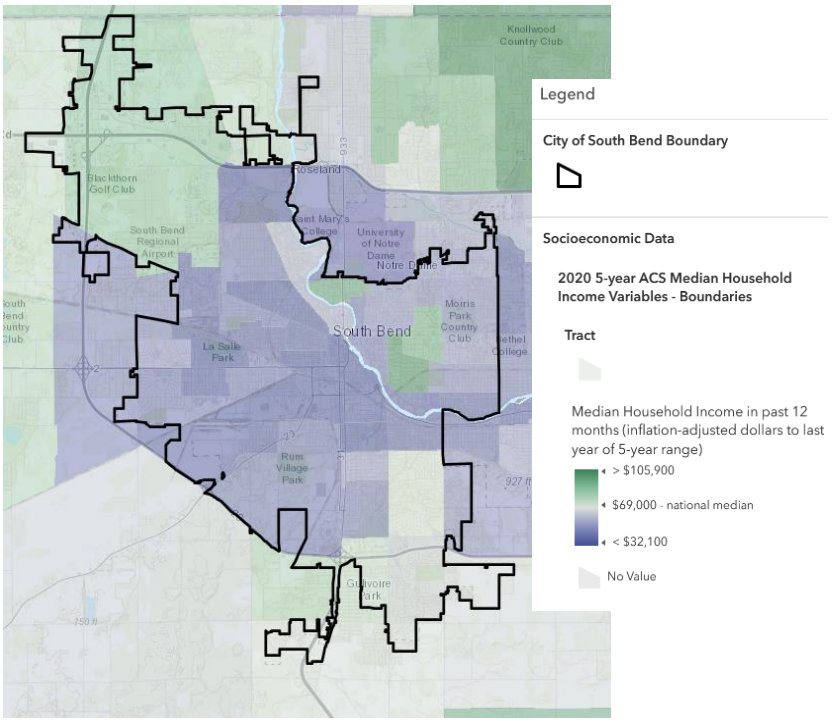


Figure 6. South Bend median household income.

Lower median household incomes mean that until more affordable and used EVs become available, the upfront cost of a new EV may be a barrier to adoption. Placement of public charging stations should balance demand and not exacerbate inequities in infrastructure investment in neighborhoods where EV adoption may be slower.

Housing

Two major housing factors that influence a resident's ability to convert their personal vehicle to an EV are home ownership and housing type. Homeowners are more able to install EV charging because they do not need to seek permission of the property owner to do so, and they are the direct recipient of any resulting increase in property value. Alternatively, renters may not have permission from the property owner to install charging infrastructure and may be reluctant to invest in improving property they do not own. Single-family residences are more likely to have a personal garage or carport where a charging station could be installed. Other housing types, like multifamily buildings, are more likely to rely on street parking or shared parking facilities. In South Bend, 61 percent of homes are owner-occupied, and 76 percent of homes are single-family. Older housing stock plays a role in the ability to charge an EV. Older homes may need electrical upgrades to safely charge an EV and in South Bend, 85 percent of homes are over 30 years old. Another key factor influencing EV adoption is vehicle ownership. Households with two or more vehicles may be more willing to electrify at least one vehicle. Many households in South Bend (39 percent) have one vehicle, followed by 36 percent with two vehicles, 14 percent with 3 or more vehicles, and 11 percent with no vehicles (U.S. Census Bureau, 2023).

Commuting

About 74 percent of South Bend residents drive alone to work and the mean travel time to work is about 21 minutes (US Census Bureau, 2023). EVs may be an attractive option to the high percentage of residents who drive to work, especially because all EVs currently on the market can easily accommodate this commute time (several EV models have ranges close to 400 miles).

Tourism

Over 5.2 million people visit South Bend annually with an additional 1.7 million pass-through travelers (Visit South Bend Mishawaka, 2022). With many of these visitors coming from neighboring states — Indiana, Michigan, Illinois, and Ohio — EV charging near amenities and attractions could boost economic development for the city.

EV Baseline

EV Market

There have been more than 2.9 million cumulative EV sales in the Unites States, and between April and June 2022 there were 230,000 EV sold which is 14 percent more than the prior quarter record making up seven percent of the light-duty market (Taylor & Gabriel, 2022). In Indiana and South Bend, total EV sales are also increasing (Figure 7).[1]

[1] The new Indiana Vehicle Fuel Dashboard provides public information about the types of vehicle fuels in the state and how it trends over time. It only provides all-electric vehicles and hybrids as a category that combines both plug-in electric hybrids and traditional gas hybrids. https://www.in.gov/oed/resources-and-information-center/vehicle-fuel-dashboard/

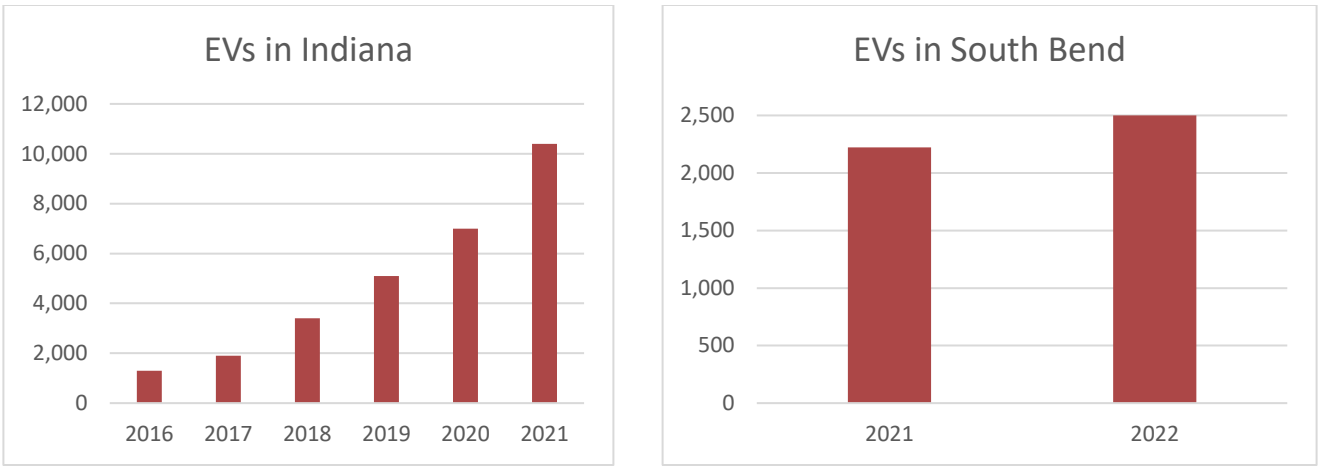


Figure 7. EVs on the road (U.S. Department of Energy, 2022) and (IN BMV, 2023).

Indiana and South Bend are in the early stage in the adoption for EVs and South Bend is a leader in the state for EV adoption as it has higher EVs per capita than at the state level (Figure 8).

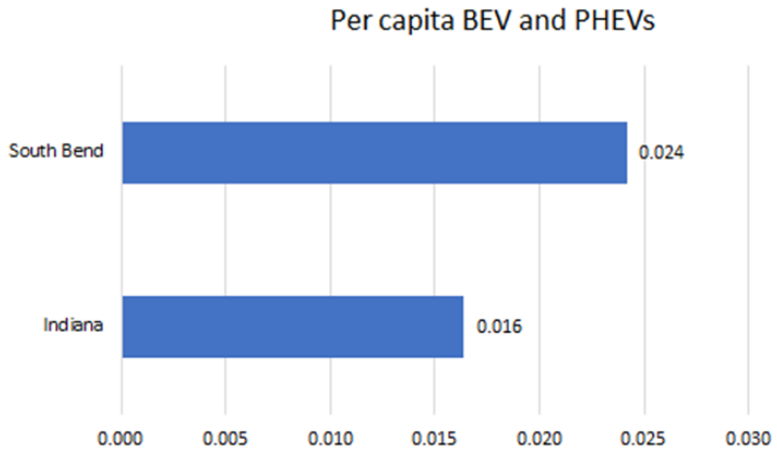


Figure 8. EVs per capita for South Bend and Indiana (U.S. Department of Energy, 2022) and (IN BMV, 2023).

The EV market in South Bend is still nascent and it is expected that in the short-term, the transition to EVs will largely consist of light-duty fleet and personal vehicles, with an EV boom on the horizon (World Resources Institute, 2021). After this initial surge in light-duty EV adoption, and as battery technology continues to improve and costs decrease, medium- and heavy-duty vehicles will follow and penetrate the EV market. CALSTART's Zero-Emission Technology Inventory Data Explorer indicates that the United States and Canada market has 57 different manufacturers offering more than 200 models in 2023 (CALSTART, 2023). As vehicle model availability increases, customers have more options to choose from and likely to fit their needs.

New technologies typically follow an adoption curve, and EVs align with this adoption model (Figure 9). With a community EV adoption rate of 2.5 percent, South Bend is currently in the "innovators" state of the adoption curve. To reach the GHG emissions reduction goal, South Bend must accelerate into the early majority and late majority segments of the curve quickly.

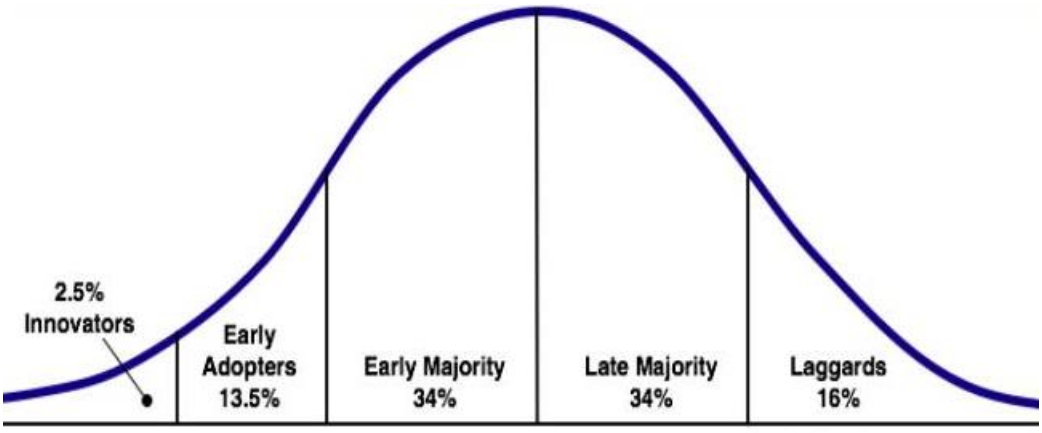


Figure 9. The adoption curve (Rogers, 1962).

Currently, South Bend has just over 100,000 registered vehicles. The federal government established an ambitious goal of 50 percent of new vehicles sales to be EV by 2030 (The White House, 2021). An analysis modeling a ramp up to the federal new vehicle sales goal, as well as a more moderate scenario from IHS Markit of reaching 35 percent of new vehicles sales by 2030 (CNBC, 2021), showed that by 2030, South Bend would have 16,000 to 22,000 EVs on the road or about 16-22 percent of registered vehicles would be EVs (Figure 10).

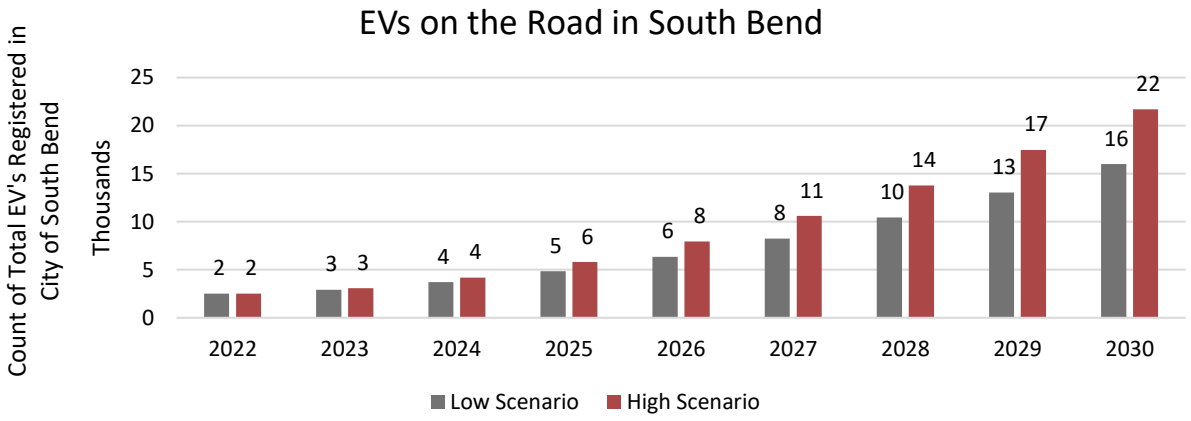


Figure 10. Modeling of 35 percent and 50 percent new vehicle sales shows the number of estimated EVs on the road by 2030. South Bend has just over 100,000 registered vehicles, meaning about 16,000 to 22,000 registered vehicles in South Bend would be EV.

Existing and Needed Public Charging

As of January 2023, there were 16 public EV charging stations with a total of 39 Level 2 ports in South Bend. Currently there are no DC fast chargers within the city, though there are DC fast chargers located east of the city and near Interstate 80. The City currently owns and operates 7 public Level 2 EV charging station locations with a total of 14 ports, primarily in the downtown area. Interstate 80 is a federally designated Alternative Fuel Corridor. Within the city limits, the EV corridor meets the requirements of this designation since it is within 50 miles of compliant DC fast chargers located to the west of South Bend (Figure 11). Federal designation is important because it is now tied to funding provisions under the Infrastructure Investment and Jobs Act (IIJA) which established the NEVI Formula Program and the Charging and Fueling Infrastructure Discretionary Grant Program, both of which provide eligibility based on Alternative Fuel Corridor designations.

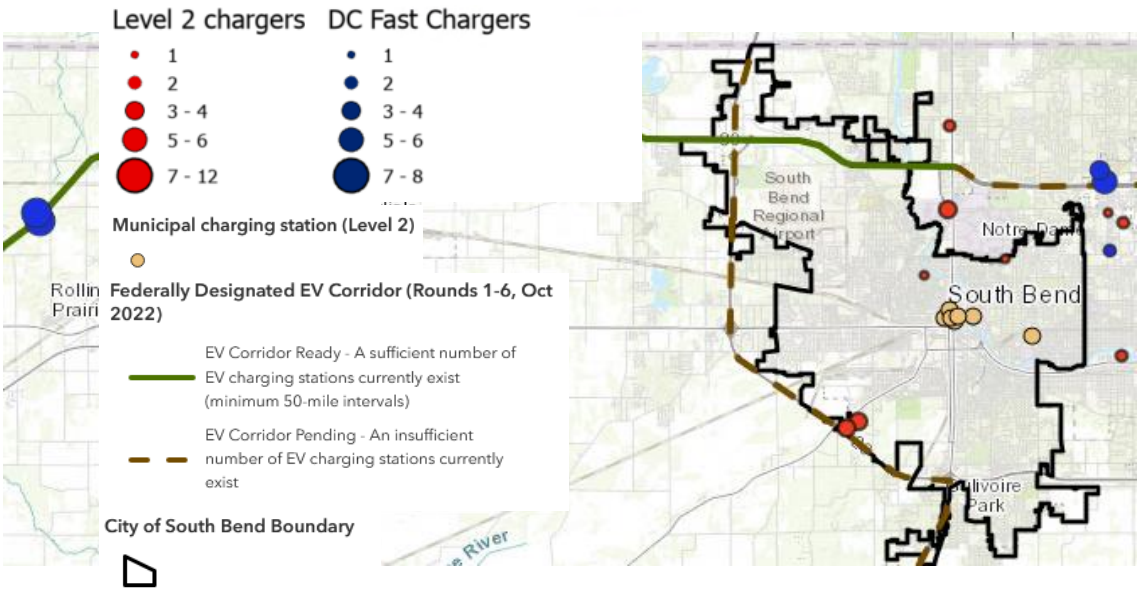


Figure 11. Current EV charging stations and designated EV corridors in South Bend.

Based upon the EV adoption projections for South Bend, an analysis was conducted to project the 2030 EV charging needs based on location and level of chargers. The low EV growth scenario (30 percent of new vehicle sales as EV) assumes that all EV drivers have access to home charging as earlier adoption will likely occur with populations with low barriers to charging access and the ability to install home charging. In the high EV growth scenario (50 percent of new vehicle sales are EV by 2030), 78 percent of EV drivers can charge at home as higher adoption will likely include population segments that may not have access to home charging and rely on a robust workplace and public charging network. Table 3 shows South Bend's 2030 workplace and public charging needs.

	Location of Charger	Number of Ports
Low Scenario EV growth, 100 percent access to home charging	Level 2 workplace	414
	Level 2 public	279
	Public DC fast	29
	Sum of Public	**308**
	Sum of Total	**722**
High Scenario EV growth, 78 percent access to home charging	Level 2 workplace	1,034
	Level 2 public	657
	Public DC fast	95
	Sum of Public	**752**
	Sum of Total	**1,786**

Table 3. South Bend 2030 EV charging projections based on two scenarios (adapted from EVI-Pro Lite).

Modeling was adapted from the Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite (U.S. Department of Energy, 2023) for the South Bend-Mishawaka Metropolitan Area which breaks down charging infrastructure needs by workplace charging, and public Level 2 and DC fast charging based upon the number of vehicles to support and the percent of home charging access.

Careful planning of public charging station placement can lessen the impact of EV charging on the electric grid. Potential charging sites need to be assessed to ensure required electrical capacity is available or determine the electrical upgrades that are necessary. EVs can be integrated into the grid to benefit the community and vehicle owners while improving grid reliability and resilience by reducing peak demand. A Massachusetts Institute of Technology study found strategies focused on placement of chargers and timing of charging can decrease grid impacts (Needell, Wei, & Trancik, 2023). An important strategy is using managed charging systems to estimate, balance, and control charging to delay during peak demand, yet charges the vehicle so it is fully charged before it is needed next. Another strategy deliberately places EV charging to encourage mid-day charging use when solar energy power is generated.

EV INFRASTRUCTURE PLAN VISION AND GOAL

Context

From the 2019 CAP, the City of South Bend has established a goal to reduce community GHGs 100 percent by 2050 with interim targets in 2025 and 2035 (Figure 12). Transportation is a key contributor to community GHG emissions accounting for 32 percent. In order to meet GHG emission reduction goals, the City is committed to supporting the transition of the transportation sector to cleaner, more efficient fuels by in part, developing a robust and equitable EV charging infrastructure network.

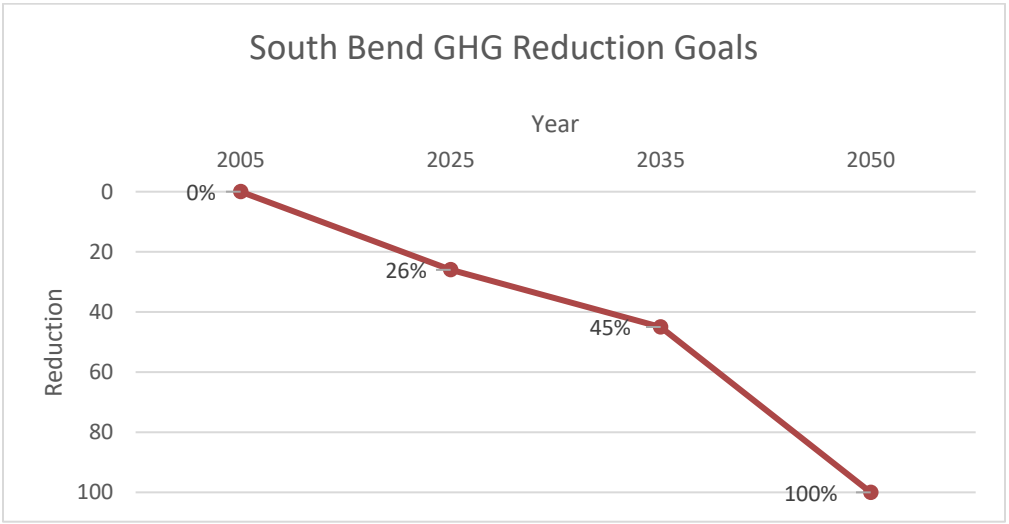


Figure 12. South Bend greenhouse gas reduction goal (City of South Bend, 2019).

Passenger vehicles account for 62 percent of the total transportation emissions. For a 100 percent GHG emissions reduction, passenger vehicles will need to be zero-emission. The average passenger vehicle age in South Bend is approximately 12 years. Given the typical turnover of old to new vehicles every 12

years, to meet the 2050 GHG goal, South Bend will need to follow the more aggressive EV adoption "High" Scenario (Figure 13). In fact, all new passenger vehicles registrations will need to be EVs by 2038. This "High" scenario requires accelerating the previous 50 percent of new vehicle sales by 2030 to double by 2038 to reach 100 percent of new vehicle sales.

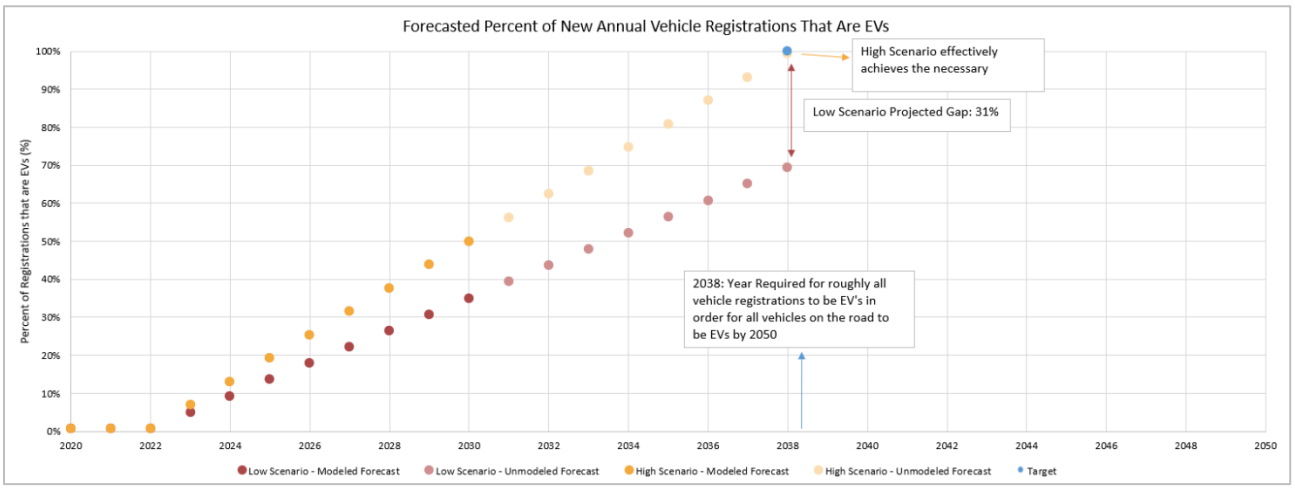


Figure 13. Forecasted percent of new annual vehicle registrations that are EVs.

This plan's focus is on EV infrastructure to support EV adoption and growth. It should be acknowledged that EVs are just one piece to the transportation puzzle. The South Bend CAP also includes a goal to reduce vehicle miles traveled by vehicle type. Shifts in modes of travel might include transit and micromobility (i.e., electric bike or scooter) reducing overall vehicle miles traveled and GHG emissions. The Federal Highway Administration and the U.S. Department of Transportation are helping cities manage micromobility deployment these alternative transportation strategies support GHG reductions (U.S. Federal Highway Administration, 2021).

Electric Scooters in South Bend

The company Bird launched electricity-assisted bicycles in South Bend in 2021. The Bird bicycles travel at a maximum speed of 18 mph and can travel 56 miles, unlike the Bird scooter which has a range of 30 miles. Bird has reported that 16,159 riders have taken 45,220 rides, the majority in the downtown, East Bank of Colfax and LaSalle Avenue, and the Eddy Street Commons (South Bend Tribune, 2023). According to Bird, the rides in South Bend have avoided carbon dioxide emissions of 12.73 metric tons (South Bend Tribune, 2023). Bird has extended its stay in South Bend until 2024.

Integrated Planning: Micromobility

More micromobility will support South Bend's reduction in GHG emissions from transportation. In addition to public EV charging infrastructure, planning for more robust micromobility infrastructure will encourage continual mode shifting away from personal vehicles. Infrastructure planning can include consideration of right-of-way width to accommodate different modes of mobility such as protected dedicated bike/scooter lanes. Providing or supporting parking facilities for micromobility supports users of these modes. Some considerations include:

- Earlier installation of infrastructure will help meet demands of future users, especially those who live in multifamily properties and are of lower income.
- Parking facilities need to have the correct electric infrastructure, secure access, and be conveniently located.

Electric Vehicle Infrastructure Plan Vision

To help guide the planning process and plan implementation, the City and stakeholders developed the following plan vision statement.

The City of South Bend supports sustainably expanding equitable access to public EV charging infrastructure citywide, by identifying opportunities to lead the community and partner with businesses and organizations to ensure convenient access to charging.

Electric Vehicle Infrastructure Goal

Working together, the City and stakeholders set a plan goal to measure progress.

To equitably distribute and increase the number of public EV charging stations annually based on EV adoption projections, an installation prioritization framework, station usage data (as it comes online), and community input.

The City will annually reevaluate EV charging infrastructure targets and priorities adjusting based on EV adoption growth, EV charger utilization, EV charging market trends and gaps, and community input.

PRIORITY AREAS

To achieve an equitable public EV charging infrastructure network, South Bend identified priority areas that will require a coordinated effort by City staff, key stakeholders, and private sector business to meet EV charging demand and to achieve the goals and targets in the Climate Action Plan to reduce GHG emissions. More detailed strategies have been developed across these four priority areas:

- **EV Readiness Policy**
- **Public EV Charging at City-Owned Property**
- **Public EV Charging at Privately-Owned Property**
- **Workforce Development**

Case Study: City of Contra Costa, CA
In 2019, the Contra Costa County Board of Supervisors adopted a streamlined permitting process for residential EV charging stations. The adopted ordinance allows for EV charging stations to be approved administratively, and not subject to discretionary approvals by third parties such as homeowners' associations. A simple checklist form allows for an expediated process.

EV Readiness Policy

Policies that remove barriers to and support the installation of EV charging infrastructure can enhance community EV readiness and access to charging. EV readiness policies can include rules, regulations, and guiding principles to accelerate public and private charging.

While developing this plan, the City of South Bend considered a range of potential policy options and identified short- and longer-term priorities. In the near-term, the City will focus on policies that enhance EV readiness by removing potential barriers and implementing voluntary standards, guidelines, and incentives in preparation for more assertive policies in the future.

City of South Bend land use policies and codes are currently light on requirements in general and silent with regards to EVs and EV charging. While this means that there are no known policy constraints on the installation of EV charging, it also creates opportunities for clarification and education to accelerate the build out of South Bend's charging network.

Authentically Equitable

EV-ready standards expand access to EVs. Residents who live in multi-unit dwellings face barriers to access to low-cost home charging as the cost to retrofit an existing building with charging stations can be cost-prohibitive for many people. These residents also may not be able to persuade an owner to make a long-term investment to a rental property. EV owners may also rely on workplace or public charging outside the home, so it's important that EV infrastructure standards be included in both residential and commercial buildings.

Integrated Planning

EV charging planning can be incorporated into neighborhood plans identifying opportunities for charging, redevelopment plans as part of the economic development and revitalization, housing and parking studies and plans, and when service updates are planned for City facilities. Continually incorporating EV charging into City planning reinforces the commitment to support EV adoption.

Community-Focused

The City can get support from developers for EV-ready standards involving them in a stakeholder engagement process where they are informed of the EV-ready standards and thoughtfully asked for input to finalize EV-ready standards. The City of Columbus, Ohio passed an EV ready parking ordinance after a stakeholder engagement process.

A summary of the strategies identified for each phase is shown in Table 4. Workplans for each Phase 1 strategy and overview of Phase 2 strategies can be found in Appendix E. Phase 1 (2024-2026) Strategy Workplans and Phase 2 (2027-2029) Overviews.

Table 4. EV Readiness Policy Strategies by Phase

EV Readiness Policy Strategies	Timeline
RP-1: Create a Standalone EV Charging Permit Clarify and streamline the EV charging permit application and tracking process through creation of a stand-alone permit and guidelines.	**Phase 1: 2024 – 2026**
RP-2: Develop Voluntary EV-Ready Standards Develop recommendations for the installation of EV charging infrastructure and stations during new construction.	**Phase 1: 2024 – 2026**
RP-3: Incentivize Voluntary EV-Ready Standards Incentivize voluntary EV-Ready standards at determined types of new developments.	**Phase 1: 2024 – 2026**
RP-4: Develop EV Charging Design Guidelines Develop guidelines for best-practice EV charging station parking signage, location, and accessibility.	**Phase 1: 2024 – 2026**
RP-5: Explore Adopting EV-Ready Standards Build on implementation of RP-2 to adopt EV-ready requirements for the installation of EV charging infrastructure and stations during new construction.	**Phase 2: 2027 – 2029**
RP-6: Adopt EV Charging Design Standards Build on implementation of RP-3 to adopt EV charging station design requirements for station hosts and installers.	**Phase 2: 2027 – 2029**
RP-7: Explore Allowances for EV Charging Stations in the Public Right-of-Way Consideration for allowing EV charging station vendors to install EV chargers in the public right-of-way.	**Phase 2: 2027 – 2029**

Public EV Charging at City-Owned Property

The City of South Bend will be prepared for and support community EV adoption. A key role for the City is in promoting, through policy, and programs, EV charging infrastructure throughout the community and by installing EV chargers at City facilities for public use. EV adoption, confidence, and growth is often a challenge for municipalities with regard to making investments in charging infrastructure. Municipalities should begin to seed and move the market providing a pathway that allows private sector development and business to take over where the market allows for it. Municipalities should also identify the gaps in the market and lead development either through incentives and programs or through direct investment, ensuring that access is available to residents across the city.

Based upon the adapted EVI-Pro Lite model for public charging infrastructure, the City of South Bend will need to consider 300-750 public charging ports by 2030 with an additional 414-1,034 ports available at work/private sector business. Many of these ports can be Level 2 charging stations and a small portion will be DC fast charging stations. While the City is not wholly responsible for installing all these chargers, the City can help install chargers on City-owned property, eliminate barriers, provide information and resources to other private property site hosts, and build partnerships to drive these installations. Charging stations installed by the City will ensure adaptability of connectors to charging stations over time to accommodate different existing and potentially future standards across vehicles, and the City will use best practices to monitor and address charger reliability. The City will also continue to provide guidance as EV charging station technology evolves. This is a significant growth of infrastructure and needs to be staged and budgeted for accordingly through available incentives and City investment. Clear roles and responsibilities within the City to support the needed EV charger network can be found in Appendix F. RACI Matrix for City Roles and Responsibilities.

To meet the public charging ports needed by 2030, the City should aim for 5 percent of public Level 2 charging ports and 5 percent of public DC fast charging ports to be on City-owned property. The City also included a more ambitious 10% needed charging target understanding potential need and any potential opportunity to apply for additional incentives. Based on the High scenario of EV adoption and projected ports needed shown in Table 3, the projected number of public Level 2 ports and public DC fast charging ports by 2030 are provided in Table 5. The City should reevaluate targets and priorities on an annual basis and adjust based on EV adoption growth, EV charger utilization, EV charging market trends and gaps, and community input.

Table 5. City-owned public EV charging ports. Five to ten percent of Level 2 charging ports and 5 percent of public DC fast charging ports should be installed on City-owned property.

	2023	2024	2025	2026	2027	2028	2029	2030
Level 2 public ports (5%)	6	10	14	17	21	25	29	33
Level 2 public ports (10%)	12	19	27	35	43	50	58	66
DC fast charging public ports	1	1	2	2	3	4	4	5

In approaching where to prioritize charging infrastructure, many factors come into play including locations of existing charging, expected demand, utility and facility electrical capacity, etc. In addition, the City is committed to ensuring equitable access to charging infrastructure across economic,

demographic, and those communities and populations less able to access or install charging elsewhere. As city-owned chargers are heavily located downtown, the city should not install more there, but prioritize locations across the City with an emphasis using the equity criteria (below) laid out in the screening tool.

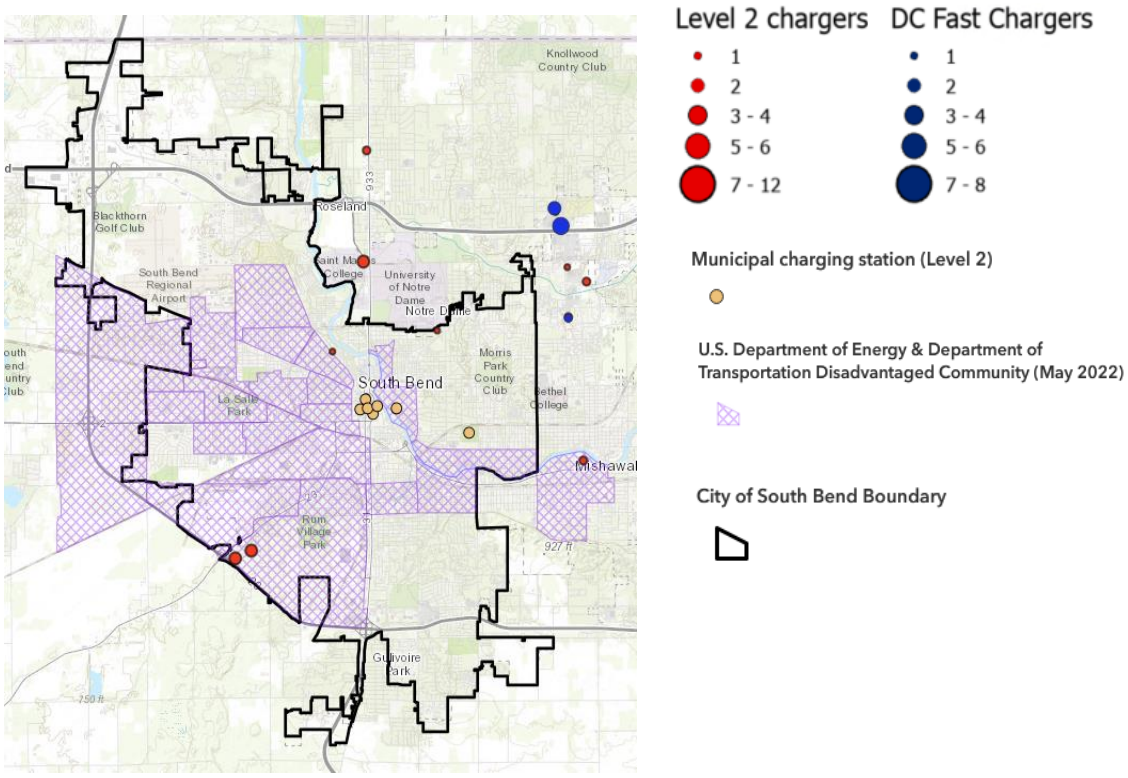


Figure 14. Current EV charging stations and federally designated disadvantaged communities.

Authentically Equitable

City installed charging stations will be prioritized in locations designed to support communities that may be less able to transition to EVs, such as renters or multifamily residents that have less ability to install home charging, or target areas where communities face disproportionate impacts from transportation pollution.

Through this planning process a simple screening method was developed to help the City prioritize potential locations for charging infrastructure installations. The tool screens potential locations on three key characteristics including geography priorities, equity, and specific site characteristics, and can be used to help evaluate specific projects.

Geographic Location

- Is it near multifamily housing?
- Is it near large employers?
- Is it in a destination area?

Equity Considerations

- Is it in a Federally designated Justice40 Initiative region?
- Has the area been identified as an Environmental Justice opportunity?
- Is it located in a census block group where the predominant population identifies as anything other than non-Hispanic White?
- Has there been a community request for charging?

Site Characteristics

- How long do people park here?
- Is the planned maintenance that will affect the parking lot or electrical service?
- Are there site services such as cameras, lighting, and wi-fi?
- Does this location serve multiple needs?
- Is there existing EV charging at this location? If so, is it highly utilized?
- Is this location being developed or redeveloped for other purposes?

The priority locations identified by this initial screening can then be examined in more detail to understand feasibility including engineering impact, constructability, potential planned maintenance, electrical service capacity, and other key site considerations. Also understanding how current chargers are utilized is important to support where EV charging infrastructure is needed. Of the current City-owned charging infrastructure, the Howard Park charger is utilized the most, has the shortest charging sessions, and the most turnover. City chargers in other locations such as Main and Colfax garage, Wayne Street garage, and Century Center have lower utilization overall and have more than double the charging periods. This discussion should be supplemented by community engagement to ensure inclusion of both outcomes and needs, as well as to help finalize opportunities to leverage grant funding to install EV charging stations.

Equity considerations are nuanced. For example, looking solely at federal designation of disadvantaged communities (Figure 14) results in a significant portion of the South Bend community. Additional layers and priorities including other standard designations or indexes such as environmental justice can be included. Local neighborhood needs and interests can and will be incorporated. During the planning process, stakeholders were surveyed where they would like to see charging at city-owned sites. Results can be found in the survey results in Appendix C. Summary of Stakeholder Engagement.

The result of this methodology is not to develop an exhaustive list of pre-planned locations for charging infrastructure but rather to help in evaluating opportunities and priorities as projects and locations emerge. For example, the City should add an electric vehicle appropriateness review to any new or in process construction, development, or redevelopment project. It is often easier and less expensive to incorporate charging (or make ready) infrastructure during these efforts versus planning retrofits after the fact.

Additionally, there is a significant amount of funding becoming available for charging infrastructure. These state and federal funding channels provide an excellent short-term opportunity to cost share or provide incremental funding.

Based on feedback during the outreach and engagement efforts of this plan, the City will take a two-phase approach to installing EV charging on City properties.

1. **Community Locations:** First, EV charging stations will be installed at community centered locations such as recreation centers and parks and are spread across the city increasing access to public EV chargers. These locations have been prioritized because there is interest and demand and will likely attract more EV drivers that will utilize the chargers.
2. **Public Engagement Driven:** The second phase of EV charging installations will be driven by public engagement. The City will ensure that the public understands that federal and state incentives are available to install EV charging and efforts are planned to gather feedback to prioritize locations. Based on preliminary outreach, it is envisioned that public charging at community hubs such as recreation centers, libraries, and other public use facilities will be a focus as well as workplace charging at City office buildings.

Integrated Planning

The installation of EV chargers requires electrical work that may include digging and trenching in the ground, which can be costly. The City will look for opportunities to time EV charging installations with scheduled maintenance or construction work to be cost effective

Community-Focused

Many factors influence the placement of EV chargers. The siting of public EV chargers will be driven in part by community engagement. As the public EV chargers will be used by residents, gathering feedback for prioritizing locations is important. This engagement can ensure charging infrastructure is conveniently located around the city and at places that community members frequent.

Beyond the scope of this Plan but looking further ahead for future consideration are resilience measures when siting EV chargers. Sites can be evaluated for future proofing for additional chargers by putting the basic infrastructure so a charger can be added as needed, as well as for the EV charging management software. Planning for the potential addition of battery storage and back up capacity can ensure operability during emergency events and adding EV charging stations as part of a community resilience hub, used as a primary resource during an incident such as hospitals, police stations, fire stations also can ensure the community has access to chargers that will be prioritized to be operational or restored quickly.

A summary of strategies for the City to identify and build out charging infrastructure on City-owned property is identified for short- and longer-term phases and is shown in Table 6. Workplans for each, Phase 1 strategy and Phase 2 Overviews strategy can be found in Appendix E. Phase 1 (2024-2026) Strategy Workplans and Phase 2 (2027-2029) Overviews.

Table 6: Public EV Charging at City-Owned Property Strategies by Phase

Public EV Charging at City-Owned Property Strategies	Timeline
CO-1: Promote Existing Charging Stations Share information on location of City-owned EV charging stations along with information on charging policies including cost to charge.	**Phase 1: 2024 – 2026**
CO-2: Install Charging at Priority Locations with Available Funding Leverage existing funding to install EV charging at community locations outside of the central business district.	**Phase 1: 2024 – 2026**
CO-3: Explore Opportunities for Curbside EV Charger Integration at Streetlights and Power Poles Explore lower-cost opportunities to add EV chargers to existing electrical infrastructure such as streetlights and power poles.	**Phase 1: 2024 – 2026**
CO-4: Use Priority Location Tools to Create Subsequent Build-out Priorities Identify opportunities for installation of future charging stations through targeted community engagement and prioritization based on location, equity, and specific site characteristics.	**Phase 2: 2027 – 2029**
CO-5: Develop Neighborhood EV Charging Hubs Review opportunities for creating neighborhood charging hubs with DC fast chargers to increase convenient EV charging access.	**Phase 2: 2027 – 2029**

Public EV Charging at Privately-Owned Property

As shown in Figure 11, there are 8 public charging stations in South Bend at private businesses or community institutions as of January 2023. To understand opportunities for privately owned public charging infrastructure in South Bend, three focus groups were held with local businesses. Some key takeaways from this engagement include:

1. Some local chains are starting to install EV charging at various locations and have installed or are considering opportunities to install charging in South Bend including Meijer, Hacienda Mexican Restaurant and Beacon Health System.
2. Many businesses that participated in the work sessions were just beginning to explore what EV charging might look like at their businesses. These businesses were looking for information from the city about EV charging such as:
    a. Clarify the different types of charging and how to determine which one is the best fit for our business.
    b. Benefits to the host business.
    c. Costs of installation and operation.
    d. Available funding.
    e. What to charge to use the EV charger?
    f. The process to install a charging station.
3. Upfront cost is the most common barrier to installation, but parking availability and customer turnover requirements were also noted.
4. Demand for EV charging is currently low in South Bend.

To meet the public charging ports needed by 2030, the City should support, partner with, and incentivize business and organizations to install public Level 2 charging ports and public DC fast charging ports. Based on the High scenario of EV adoption and projected ports needed by 2030 shown in Table 3, the number of public Level 2 ports and public DC fast charging ports are provided in Table 7. The City should collaborate with the private site hosts to reevaluate targets and priorities on an annual basis and adjust based on EV adoption growth, EV charger utilization, EV charging market trends and gaps, and community input.

Table 7. Public EV charging ports at privately-owned property.

	2023	2024	2025	2026	2027	2028	2029	2030
Level 2 public ports	20	199	272	346	419	493	566	624
DC fast charging public ports	1	24	35	47	58	70	82	90

Based on feedback and the EV charging ports targets, the strategies in this area focus on first providing information to local businesses to help them determine if EV charging is the right decision and then to create City policies and programs to support private sector growth.

A Public Charging Prioritization Tool will help determine the extent to which proposed public charging strategies and corresponding stations promote EV adoption with a focus on disproportionally impacted communities and communities with less access to EVs. To target outreach the tool mirrors the same three criteria in the City-Owned Property screening tool around geographic location, equity considerations, and site characteristics to guide the City's effort in the most equitable and impactful manner.

Geographic Location

- Is the proposed outreach effort or charging station location in a geographic region that may need more public charging such as areas with multifamily housing, single-family homes without off street parking, travel corridors with high traffic, or large employers?
- Are there social or economic factors that may cause the area or location in question to lag South Bend community EV charging typical infrastructure adoption rate such as low-income areas, areas with low home ownership rates, or areas with older buildings**?**

Equity Considerations

- Is the proposed outreach effort or charging station location in an area that has been identified as a priority location either through Justice40 designation or through identification by the environmental justice considerations?
- Is this an area or location where people have otherwise been disproportionally impacted by transportation pollution or cut off by transportation projects?
- Is this area served by convenient and reliable public transportation?

Site Characteristics

- Is the proposed outreach effort or charging station location in an area where people would feel secure leaving their car unattended for a couple hours or overnight?
- Does the location have adequate parking, that would allow a spot to be used for several hours without becoming a burden?
- Are there local amenities that would make this spot particularly suited (or not suited) for EV charging such as access to power or Wi-Fi?

Community-Focused: Are EV Charging Stations Profitable?

"Making the business case for charging stations is challenging and there is no standard formula to overcome the costs and achieve the utilization needed to make a profit for any site (Atlas Public Policy, 2019)."

A 2019 study of public charging stations in New York determined that key factors driving station profitability include:

1. Revenue share model
2. Typical session charging time
3. The number of charging sessions per day
4. Charging-use fees structure

It also concluded that the cost of electricity has a minimal influence on the profitability of the charging station.

Based on the results of this study, business owners should determine the desired EV charging customer behavior and design the fee structure appropriately to ensure expected charging fees cover cost to install and operate the EV charging station.

Authentically Equitable

Just as not all residents have the opportunity to install EV charging at their home either because they live in multifamily properties and the cost would be exorbitant or they rent and don't have decision making power, or they don't have dedicated parking, businesses and organizations will also face barriers. Additional considerations for businesses and organizations that don't own the property, do not have dedicated parking or have limited parking, or serve underserved populations will need creative solutions such as incentives for property owners, partnerships for customers to access EV chargers nearby, or enhanced incentives to install EV chargers.

A summary of the strategies identified for each phase is shown in Table 8 Table 6. Workplans for each Phase 1 strategy and overviews Phase 2 strategies can be found in Appendix E. Phase 1 (2024-2026) Strategy Workplans and Phase 2 (2027-2029) Overviews

Table 8: Public EV Charging at Privately-Owned Property Strategies by Phase

Public EV Charging at Privately-Owned Property Strategies	Timeline
PO-1: Promote Existing Charging Stations and Provide Resources about Charging Stations In coordination with Strategy CO-1: Promote Existing Charging Stations promote local EV charging stations and develop resources for businesses educating on available incentives and programs, the types of chargers available, the best fit by business type, and anticipated cost to install and operate chargers.	**Phase 1: 2024 – 2026**
PO-2: Develop or Collaborate on an EV Charging Incentive Program for the Private Sector Develop an EV charging incentive program that addresses new charging opportunities, complements, or stacks on top existing EV charging incentives from the federal government, state government, utility, and other entities such as Drive Clean Indiana.	**Phase 1: 2024 – 2026**
PO-3: Use Framework to Target Outreach Leverage the worksheets developed during this planning process through stakeholder input and mapping to identify neighborhood areas for targeted outreach to encourage businesses or institutions to install public EV charging.	**Phase 1: 2024 – 2026**
PO-4: Develop Industry Peer Group or Resources Develop resources for installing charging station by business type.	**Phase 2: 2027 – 2029**

Workforce Development

The City of South Bend understands the importance of developing a trained and skilled workforce to service and maintain charging infrastructure and it's critical for supporting the adoption and operation of EVs. The City wants to ensure that the opportunities that this industry brings are accessible and equitable.

A 2021 report by Energy and Environmental Research found that the Biden Administration's plan to have 500,000 fast chargers by 2030 would "generate workforce needs of around 28,950 job-years from 2021 to 2030." That report also found the greatest needs for light-duty EV charging infrastructure would be for electricians and electrical contractors, general contractors, and planning and design consultants (Energy and Environmental Research Associates, LLC, 2021).

By 2030 North American EV battery manufacturing capacity is projected to be nearly 20 times greater than in 2021 (Gohlke, Zhou, Wu, & Courtney, 2022). Indiana is already seeing this growth and in June of 2023, Indiana Governor Eric Holcomb announced that General Motors would build an EV battery complex with its partner Samsung SDI in New Carlisle, about 15 miles west of South Bend. The plant will employ more than 1,600 people when it is completed in about two years (Semmler, 2023).

Community Focused: Clean Energy Job Opportunities

The number of jobs in BEVs increased by 27 percent from 2021 to 2022, which was the fastest growth of any energy technology. (U.S. Department of Energy, 2023)

The City of South Bend has experience creating innovative workforce development programs such as Upskill SB, which provides pathways to achieve professional certifications and can be a pathway to expand EV jobs training.

The growing EV charging infrastructure offers an opportunity for local jobs to install, service, and maintain the equipment. Efforts can be focused to recruit disadvantaged workers, who often experience difficulty accessing workforce pipelines, and/or workers from local, under-resourced, and underemployed communities.

Authentically Equitable

To provide an equity-centered approach to growing workforce development, some considerations might include:

- Use an economic inclusion model when developing new or enhancing existing workforce development programs.
- Ensure new or expanded programs are accessible to traditionally disadvantaged workers, including supportive services and multilingual programs and materials that meet specific needs for access and retention.
- Focus on empowering community members to play a leading role in new or expanded programs, in some communities there is a lack of trust in government among residents.
- Be careful not to train more people than there are jobs available.

A summary of the strategies identified for each phase is shown in Table 9 Table 6. Workplans for each Phase 1 strategy and overviews Phase 2 strategies can be found in Appendix E. Phase 1 (2024-2026) Strategy Workplans and Phase 2 (2027-2029) Overviews.

Table 9. Workforce Development Strategies by Phase

Workforce Development Strategies	Timeline
WF-1: Research and Promote Existing Workforce Development Programs Identify, categorize, and promote the types of EV charging workforce development opportunities and programs that exist in the region.	**Phase 1: 2024 – 2026**
WF-2: Determine Gaps in EV Charging Workforce Development Training Collaborate with EV industry to catalogue gaps in workforce and gaps in workforce development training opportunities.	**Phase 1: 2024 – 2026**
WF-3: Partner with EV Industry to Fill Gaps Promote existing workforce development to fill the gaps or partner with EV industry to strength workforce development training opportunities.	**Phase 1: 2024 – 2026**
WF-4: Partner with Organizations to Offer Secondary Services Offer additional incentives or vouchers to subsidize or cover secondary service costs (i.e., transportation, childcare) that support workers so they can complete training and maintain jobs.	**Phase 2: 2027 – 2029**
WF-5: Establish Hiring Targets for EV Projects In accordance with City of South Bend Common Council Ordinance NO. 10693-19 and City inclusive procurement policies, City government aims to work with minority-, woman-, and disabled-owned businesses (M/W/DSBEs) on public EV contracts.	**Phase 2: 2027 – 2029**

SUPPLEMENTAL FUNDING RESOURCES

There is now unprecedented support for EVs and EV infrastructure. The Federal and State governments and local entities such as I&M (an AEP company), the electric utility serving South Bend and non-profit organization, Drive Clean Indiana, tasked to reduce petroleum consumption in the transportation sector all offer programs and funding to prepare for an increasing number of EVs and their associated charging infrastructure.

Federal

The Infrastructure Investment and Jobs Act and the Inflation Reduction Act are historic acts passed by the federal government that will invest hundreds of millions of dollars into the EV sector. They will accelerate the adoption of EVs and bolster U.S. manufacturing and supply chains by offering incentives and funding for vehicles, associated infrastructure, and workforce development for this transition.

In June 2023 the City of South Bend partnered with the Michiana Area Council of Governments and others in the region to submit an application for the Charging and Fueling Infrastructure grant from the Joint Office of Energy and Transportation (applicants will be notified in Fall 2023).

State

IDEM provides funding for EV charging stations through Indiana Volkswagen Environmental Mitigation Trust Fund which set aside the maximum allowance of 15 percent of the state's $40.9 million for light-duty EV infrastructure between 2018 and 2028.

The U.S. Department of Transportation's (DOT) NEVI Formula Program required INDOT to submit an annual EV Infrastructure Deployment Plan to the DOT and U.S. Department of Energy (DOE) Joint Office of Energy and Transportation (Joint Office) beginning August 1, 2022. This was to describe how the state intends to distribute NEVI funds for nearly $100 million for installing DC fast chargers along Indiana's

federal-designated alternative fuel corridors. Within South Bend there are two federally designated alternative fuel corridors, US-31 running north and south on the city's west side and I-80 traversing east and west on the northside of the city.

Local

Electric Utility

In addition to materials to educate residential and commercial customers about EVs and charging, I&M has incentives for charging at home and for small commercial businesses, commercial and industrial properties, multi-unit dwelling properties, and resources for fleets.

Drive Clean Indiana

Drive Clean Indiana is a non-profit organization that works across Indiana to reduce petroleum use in the transportation sector. While the organization employs a variety of strategies and fuels, included there are several EV programs and opportunities for partnerships and funding acquisition.

A list of available or anticipated federal, state, and local funding opportunities and programs with details can be found in Appendix G. List of EV Charging Funding Resources.

IMPLEMENTATION

Implementing the South Bend Community EV infrastructure Plan will require continued coordination. Through the planning process, key recommendations have emerged to support ongoing efforts and ensure continued tracking and investment in charging infrastructure outcomes.

City Working Group

While the City's Office of Sustainability staff will provide leadership in certain strategies and be responsible for reporting, plan implementation will be done by many stakeholders at the City as well as community input. The City should use the Appendix F. RACI Matrix for City Roles and Responsibilities for EV charging station development and the strategy tables for responsible departments. We recommend that the City Working Group be responsible for the ongoing implementation and tracking of City efforts.

For each phase the City Working Group can review progress and adjust for any material changes or updates in technology, policy, and the marketplace. They will then develop workplans for each strategy. These workplans detail specific steps required for strategy implementation, roles and responsibilities, timeline, staffing and cost estimates, and outside resources (see Appendix D. Strategy Workplan Template). Phase 1 strategy workplans and Phase 2 overviews are provided in Appendix E. Phase 1 (2024-2026) Strategy Workplans and Phase 2 (2027-2029) Overviews.

EV Task Force

Community input and feedback is important to this plan and will be implemented in the strategies for feedback and for prioritizing EV charger station locations. Many Phase 1 strategies begin to understand and create processes where feedback will greatly enhance the outcomes and build into Phase 2 strategies for more mature and developed processes. This EV Task Force should continue to meet regularly to provide a method for continued input and feedback about EV charging station locations, installations, and to maintain momentum.

Tracking Progress

On an annual basis, the status for the goal and targets (Table 10) will be reviewed and updated by the City Working Group as new data are available. This includes quantitative updates whenever possible, supported by qualitative narrative discussion about anticipated progress or results when numeric values are unavailable. The results of this tracking exercise will be presented to City leadership and could be shared publicly on the City's website.

Table 10. Goal tracking

	Baseline	Target	Data Sources	Tracking Responsibility
Plan Goal: To equitably distribute and increase the number of public EV charging stations annually based on projections, prioritization framework, usage data, and community input.	Level 2 Ports: **39** DCFC Ports: **0**	**2030:** • Public Level 2 Ports: **657** • Public DCFC Ports: **95** **Interim 2025:** • Public Level 2 Ports: **286** • Public DCFC Ports: **37**	Alternative Fueling Station Locator Mapping the distribution of EV chargers	Office of Sustainability
Public EV Charging at City-Owned Property	Level 2 Ports: **14** DCFC Ports: **0**	**2030:** • Public Level 2 Ports: **33** • Public DCFC Ports: **5** **Interim 2025:** • Public Level 2 Ports: **14** • Public DCFC Ports: **2**	City EV charger Asset Management document Alternative Fueling Station Locator Mapping the distribution of EV chargers	Office of Sustainability
Public EV Charging at Privately-Owned Property	Level 2 Ports: **26** DCFC Ports: **0**	**2030:** • Public Level 2 Ports: **624** • Public DCFC Ports: **90** **Interim 2025:** • Public Level 2 Ports: **272** • Public DCFC Ports: **35**	Alternative Fueling Station Locator Mapping the distribution of EV chargers	Office of Sustainability

Plan Updates

The Plan is intended to function as a living, dynamic document that evolves with technology and changing community needs and priorities. Every year, the City will evaluate outcomes in addition to reevaluating EV charging infrastructure targets and priorities. The City will also plan to complete a full review and update of the plan every three to five years, so it remains relevant and impactful. Future updates to the Plan might include a greater focus on resiliency planning for infrastructure installations and electrical power including vehicle-to-grid solutions, renewable energy connections, and battery backup.

Strategy Summary	Phase 1 (2024-2026)	Phase 2 (2027-2029)
EV Readiness Policy		
RP-1: Create a Standalone EV Charging Permit		
RP-2: Develop Voluntary EV-Ready Standards		
RP-3: Incentivize Voluntary EV-Ready Standards		
RP-4: Develop EV Charging Design Guidelines		
RP-5: Explore Adopting EV-Ready Standards		
RP-6: Adopt EV Charging Design Standards		
RP-7: Explore Allowances for EV Charging Stations in the Public Right-of-Way		
Public EV Charging at City-Owned Property		
CO-1: Promote Existing Charging Stations		
CO-2: Install Charging at Priority Locations with Available Funding		
CO-3: Explore Opportunities for Curbside EV Charger Integration at Streetlights and Power Poles		
CO-4: Use Priority Location Tools to Create Subsequent Build-out Priorities		
CO-5: Develop Neighborhood EV Charging Hubs		
Public EV Charging at Privately-Owned Property		
PO-1: Promote Existing Charging Stations and Provide Resources about Charging Stations		
PO-2: Develop or Collaborate on an EV Charging Incentive Program for the Private Sector		
PO-3: Use Framework to Target Outreach		
PO-4: Develop Industry Peer Group or Resources		
Workforce Development		
WF-1: Research and Promote Existing Workforce Development Programs		
WF-2: Determine Gaps in EV Charging Workforce Development Training		
WF-3: Partner with EV Industry to Fill Gaps		
WF-4: Partner with Organizations to Offer Secondary Services		
WF-5: Establish Hiring Targets for EV Projects		

APPENDIX A. EV GLOSSARY

Battery-Electric Vehicles (BEV): Also known as pure electric vehicles or all-electric vehicles, they contain batteries that can be charged externally, and store recovered braking energy. It uses an electric motor to power the vehicle. (Examples: Tesla Model 3, Chevrolet Bolt, Nissan Leaf).

Battery Management System: An electronic system within an EV that manages battery parameters such as state of charge, health of the battery, and maximum and minimum limits of energy. It also protects the battery by controlling energy flow to and from the battery.

Charging Point Operator (CPO): Operates physical charging infrastructure, which includes technical and IT maintenance, setting commercial terms for its use, payments for its electrical connection and managing the energy supply. The portfolio of a CPO might consist of its own charging stations and those of 3rd parties.

Electric Mobility Provider (EMP): Is oriented towards the EV users, providing them with a seamless access and billing experience on charging infrastructure owned and operated by multiple parties. Its main activities are negotiating and maintaining commercial contracts with CPOs to bring their infrastructure under an umbrella of its own value proposition towards an EV owner, and building an ecosystem of user friendly (access) charge cards, mobile app / web interface and billing system.

Electric Vehicles (EV): A broad category that includes vehicles powered, at least in part, by electricity – using a battery to store energy that powers the motor. Unless otherwise noted, EV refers to all plug-in vehicles, including PHEVs and BEVs.

Fully Electric: Cars that use only electricity, generally stored in batteries, to power their movement. This means that they also include a plug to charge, just like your laptop and cell phone. Most electric cars can charge using fast chargers, and all of them can charge using normal electricity outlets – with the right cord and plug, of course.

Internal Combustion Engine (ICE) Vehicles: Vehicles that have an engine powered by fossil fuels (gas or diesel) in which the combustion of a fuel occurs with an oxidizer in a combustion chamber. This type of vehicle is associated with tailpipe emissions.

Lithium-Ion Battery: Commonly used battery material used to power an EV.

Plug-in Hybrid Electric (PHEV): Vehicles with both an internal combustion engine and an electric motor that can be powered either by gas or electricity through a rechargeable battery. PHEVs may be zero-emission vehicles if they're operated entirely as EVs but are not true ZEVs because the hybrid model includes use of an internal combustion engine. (Examples: Chevrolet Volt, Chrysler Pacifica, Mitsubishi Outlander).

Range: The total distance an EV can travel on one full charge before the battery needs to be recharged.

Regenerative Braking: A method of braking used by an EV in which the energy that would have been lost as heat energy during braking is captured using a traction motor and stored in the battery.

Zero-Emission Vehicles (ZEV): Vehicles that produce no tailpipe emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas emissions from the onboard source of power, such as some plug-in hybrid electric vehicles (PHEV), battery-electric vehicles (BEV), and hydrogen fuel cell vehicles.

APPENDIX B. EV 101

Since electric vehicles (EVs) are an emerging technology that is rapidly changing, it is important to ensure that everyone has a common understanding of the terminology involved. This section explains the basics of currently available types of vehicles and charging stations and the associated uses, barriers, and benefits. Note, while electric options are available for medium- and heavy-duty vehicles, the descriptions provided in this section apply primarily to light-duty vehicles, which make up most of the EV market today.

Electric Vehicle Basics

The term electric vehicle (EV) describes any vehicle that requires an electric charge to function as opposed to internal combustion engine (ICE) vehicles, which rely on the combustion of gasoline, diesel, or other fuels. Two types of EVs were considered throughout this planning process:

- **Battery electric vehicles (BEVs):** Have a battery that is charged by plugging the vehicle in to charging equipment. These vehicles always operate in all-electric mode and have typical driving ranges from 150 to 400 miles (U.S. Department of Energy, n.d.).
  (e.g., Nissan LEAF, Tesla Model 3)

- **Plug-in hybrid electric vehicles (PHEVs):** PHEVs are powered by an ICE and an electric motor that uses energy stored in a battery. PHEVs can operate in all-electric (or charge-depleting) mode. To enable operation in all-electric mode, PHEVs require a larger battery, which can be plugged in to an electric power source to charge. To support a driver's typical daily travel needs, most PHEVs can travel between 20 and 40 miles on electricity alone, and then will operate solely on gasoline, similar to a conventional hybrid (U.S. Department of Energy, n.d.).
  (e.g., Chevy Volt)

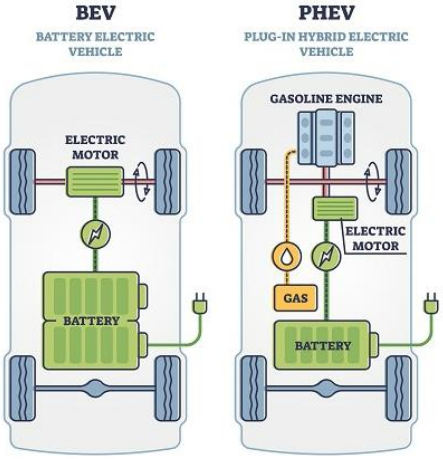


Figure 14. Types of EVs (Image source: VectorMine/stock.adobe.com).

Note, hybrids vehicles that contain both an electric motor and a gasoline engine but do not require any external battery charger (in other words, the vehicle does not plug-in) were not considered an EV as part of this Plan (e.g., Toyota Prius Hybrid).

Charging Stations

EV charging stations are separated into three categories based on the speed at which the vehicle is charged: Levels 1, 2, and DC fast charger (Figure 15). Below are descriptions of the categories.

Electric Vehicle Supply Equipment (EVSE): Refers to all of the equipment associated with transferring electric energy to a battery or other energy storage device in an electric vehicle. This includes hardware, including connectors, fixtures, devices, and other components. This is commonly called a charging station.

> **Level 1:** AC Level 1 EV charging (often referred to simply as Level 1) provides charging through a 120-volt (120V) single-phase AC plug (a typical wall outlet) at 12-16 amps. Level 1 EV chargers provide about 5 miles of range per hour of charging. This type of charging is usually done at home.

Level 2: AC Level 2 EV charging offers charging through 240V (typical in residential applications) or 208V (typical in commercial applications) single-phase electrical service (like a dryer plug) at 12-80 amps (typically 32 amps). Level 2 EV chargers provide about 25 miles of range per hour of charging.

Direct-current fast charging (DCFC): DCFC equipment (typically 208/480V AC three-phase input and less than 125 amps), enables rapid charging at a rate of at least 25 kW, with newer chargers rated up to 350 kW. Most commonly, DCFC can provide about 100 miles in 30 minutes.

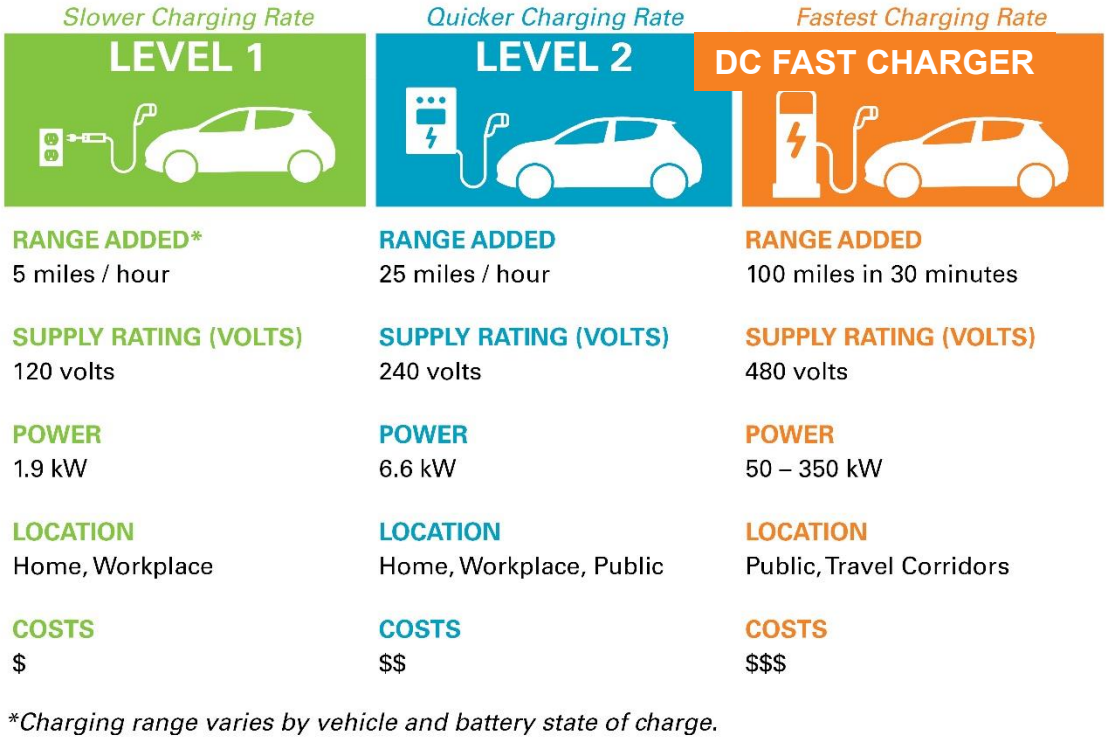


Figure 15. Types of EV charging.

EV charging typically occurs at three types of locations – home, workplace, and public. Below is more information about each location. They are listed in the order of where most charging typically occurs.

Home Charging: 80 percent of EV charging is done at home, via regular AC power outlets. Public chargers are meant to supplement this home charging and provide "range extension" to allow people to go further – or if they find themselves in need of a charge sometime during the day. Certain types of residences present challenges to home charging, but there are solutions.

Workplace/Employee Charging: In addition to home charging, the workplace is a favored charging location, since many people leave their vehicles parked there for several hours at a time. Some parking lots now include special wall box chargers designed for this purpose. Studies in the United States have found that even with low-range electric cars, 97–98 percent of charging is done at home or work when drivers have access to both options.

Public Charging: Any charging that is done at a public location, not at home or at a private workplace charging location. This doesn't mean that the charging station can be used for free or without a special access card, just that anybody can drive up to the station.

Below are additional terms related to charging.

Alternating Current (AC): The type of electricity that comes from the electricity grid. Most EVs have a small onboard charger that converts that AC electricity to a form of power (DC) that the battery can handle, but it comes in slowly and at low power. AC charging is what most regular home or workplace electricity outlets produce (3.5 to 22 kW). In general, it can fully charge a vehicle over 4–7 hours. Around 80 percent of EV owners charge their vehicles overnight at home using AC power.

Ampere (Amp): A unit used to measure how fast an electric current flows, usually used in the context of EV charging (i.e., a 50-amp EV charger).

Battery Assisted Fast Chargers: Fast/DC chargers with an auxiliary battery pack that allows them to draw energy slowly from the grid and store it locally until it is needed to charge a vehicle. By drawing energy slowly from the grid throughout the day, the vehicles put less stress on the grid and can help balance it later.

Bidirectional Charging: An EV charger that can flow charge to a battery and from battery to grid, to a vehicle, and to a home.

Combined Charging System (CCS): A DC fast charging standard supported by Volkswagen, General Motors, BMW, Daimler, Ford, FCA, Tesla, and Hyundai. As of 2017, this charging standard goes up to 350 kW.

CHAdeMO: A DC fast charging standard developed in Japan which goes up to 62.5 kW. 'CHAdeMO' is a play on the phrase 'CHArge de MOve', which means 'charge for moving'. It is supported by Nissan, Mitsubishi, and Fuji Heavy Industries (which manufactures Subaru vehicles). Toyota later supported the standard as well, and Tesla sells an adapter allowing its vehicles to use CHAdeMO chargers.

Connector: The component of a charging station that connects with the vehicle and provides electricity. Connector is sometimes used interchangeably with the terms charge point, port, or plug.

Direct Current (DC): Used for fast charging because the amount of power it can provide to a vehicle is up to 50 kW. DC fast chargers are charging stations or equipment that include an AC–DC converter and send already converted DC power directly to the vehicle's battery. DC fast chargers can power most EV batteries up to 85 percent in 30 minutes. They are commonly located in public places and on highways and major roads, but are more limited in number (and higher in cost) than AC charging stations.

Electric vehicle service provider (EVSP): An EVSP provides connectivity across a network of charging stations. Connecting to a central server, they manage the software, database, and communication interfaces that enable operation of the station.

Fast Charging: The common name for DC charging that provides an EV with at least 50 kW of power at a time.

Fleet Charging: EV charging infrastructure to accommodate a light-, medium- or heavy-duty fleet. Fleet charging infrastructure may consist of Level 2 and DC Fast Chargers based on the fleet operator's needs.

Kilowatt (kW): The basic measurement of an EVs power that is generated by its batteries. Kilowatts = 1,000 watts).

Kilowatt/hour (kWh): A unit of energy and is commonly used as a billing unit for energy delivered to consumers by electric utilities. A kWh is a measure of how much energy you're using. It doesn't mean the number of kilowatts you're using per hour. It is simply a unit of measurement that equals the amount of energy you would use if you kept a 1,000-watt appliance running for an hour. If you switched on a 100-watt light bulb, it would take 10 hours to rack up 1 kWh of energy. While a 50-watt item could stay on for 20 hours before it used 1 kWh.

North American Charging Standard (NACS): A charging connector interface standard for EVs that Tesla Inc. developed and has made available for use by other charging network operators and automakers in November 2022. Several vehicle manufacturers have announced adopting the NACS connector as early as 2025, which will allow non-Tesla EVs to charge at Tesla stations with the NACS connector.

Roaming: Most users belong to a home "network" at which they do most of their charging. They have an access card or code to allow them to charge in public and receive an invoice from their EMP. When they leave the network and charge at chargers in another network they are 'roaming'. This is very common.

Superfast/Ultrafast: A newer level of technology, superfast/ultrafast chargers can provide 100–350 kW of power. They usually include a series of charging stands connected to an auxiliary energy storage/battery pack. The battery pack draws energy slowly from the grid and stores it until it is necessary. Multiple vehicles can charge at the same time, and the smart technology in the charging stands communicates with the battery pack, allowing the energy to be distributed properly among the vehicles based on how much they can handle (some electric cars cannot use DC fast charging, and all cars have a limit to how much power they can take).

APPENDIX C. SUMMARY OF STAKEHOLDER ENGAGEMENT

The development of South Bend's Community EV Infrastructure Plan included opportunities for input from key city staff and external stakeholders. This appendix summarizes the results of the following:

- City Staff Internal Working Group Workshops
- Key External Stakeholder Workshop
- Private Landowner Focus Groups
- Stakeholder Survey

In order to gain an understanding of the priorities, strategies, barriers, and opportunities related to EV adoption and charging infrastructure in South Bend, the City of South Bend (City) identified key stakeholders throughout the process.

City Staff Internal Working Group Workshops

Two 2-hour internal working group workshops were held with representatives from many City departments and attendees are listed in the Acknowledgements.

The objective of the first virtual workshop was to provide stakeholders a current EV baseline, review the CAP goal, review a proposed equity framework and discuss the value or limitations and how it might be utilized in this effort, develop a set of shared EV charging infrastructure priorities and begin to discuss strategies. The workshop included a presentation with some introduction questions and talked about the community characteristics, the current EV market and existing EV infrastructure, and discussed the priority areas for the plan, then featured a 20-minute breakout session. During the breakout session, stakeholders were organized by priority area and asked to provide information about priorities, metrics, the equity approach, and potential collaboration partners. Notetakers in each breakout summarized the discussion.

The objective of the second virtual workshop was to gain more knowledge about EV adoption, review priority area developed recommendations and tools gathered from input, and to provide feedback to priority area materials. The workshop included a presentation with updates on EV projections, needs, and funding opportunities and then went through the recommendations and tools created for the priority areas. The workshop had a 40-minute breakout session by priority area discussing feedback on the materials related to priorities, right-sizing effort, metrics, equity considerations, and potential partners.

Key External Stakeholder Workshop

A 2-hour external stakeholder workshop was held with key stakeholders identified by the City and attendees are listed in the Acknowledgements.

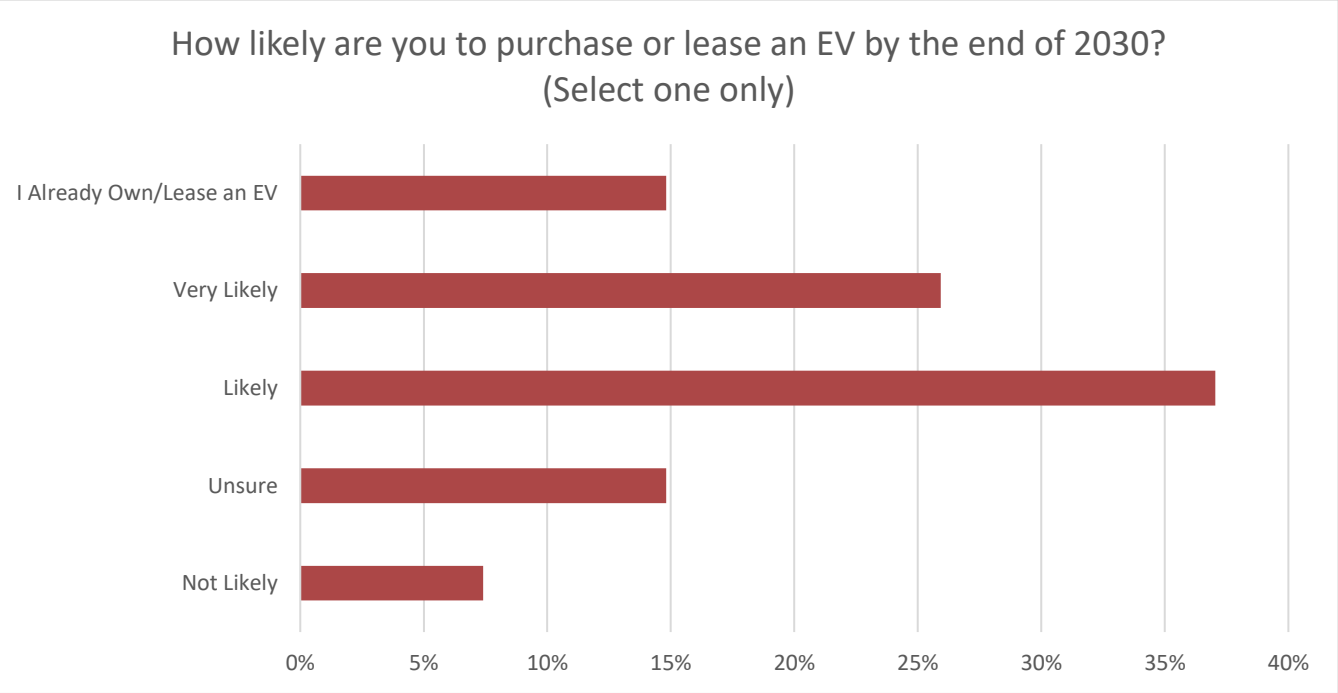
The objective of the virtual workshop was to provide stakeholders with an understanding of the planning process, review the EV baseline and projections and the equity framework. and develop a set of shared EV charging infrastructure priorities and begin to discuss strategies. The workshop included a presentation and talked about the community characteristics, the current EV market and existing EV infrastructure, and discussed the priority areas for the plan, interactions through polls helped gather feedback, and included a 25-minute breakout session. During the breakout session, stakeholders were organized by priority area and asked to provide information about priorities, equity considerations, and potential collaboration partners. Facilitators in each breakout summarized the discussion.

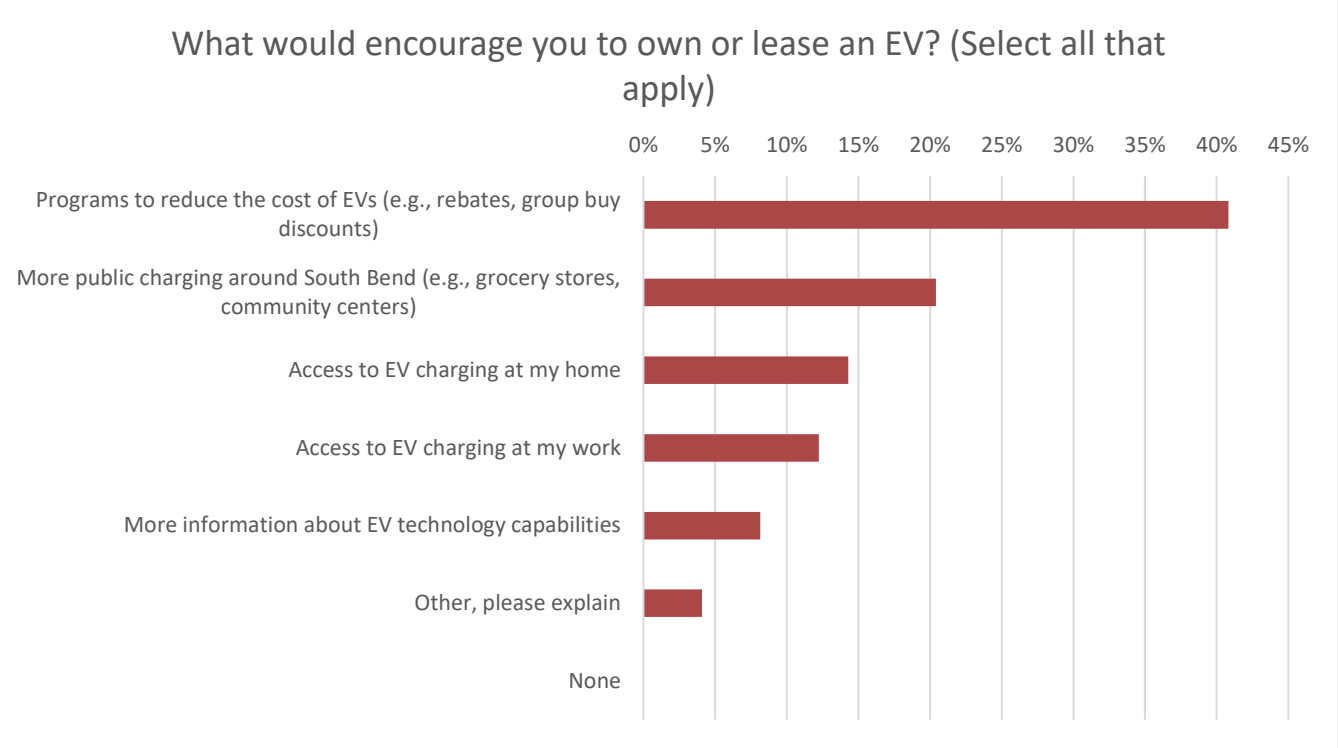
Stakeholder Survey

A survey was sent after the workshops - to collect additional feedback related to barriers and opportunities for EV charging infrastructure. The results are summarized below.

- Survey Dates: March 29-April 19
- 31 Responses
- Survey Question Topics
    - **EV adoption** - Do you own, what is your biggest barrier? What would encourage you?
    - **Public EV Charging –** What is the City's role? Where would you like to see charging stations (city-owned property and private property)? What would you like to see in equity prioritization for EV charging locations?
    - **EV readiness policy –** What could reduce barriers to install EV charging through land use, building codes and permitting, and parking ordinances?
    - **Workforce Development** - What is the City's role?

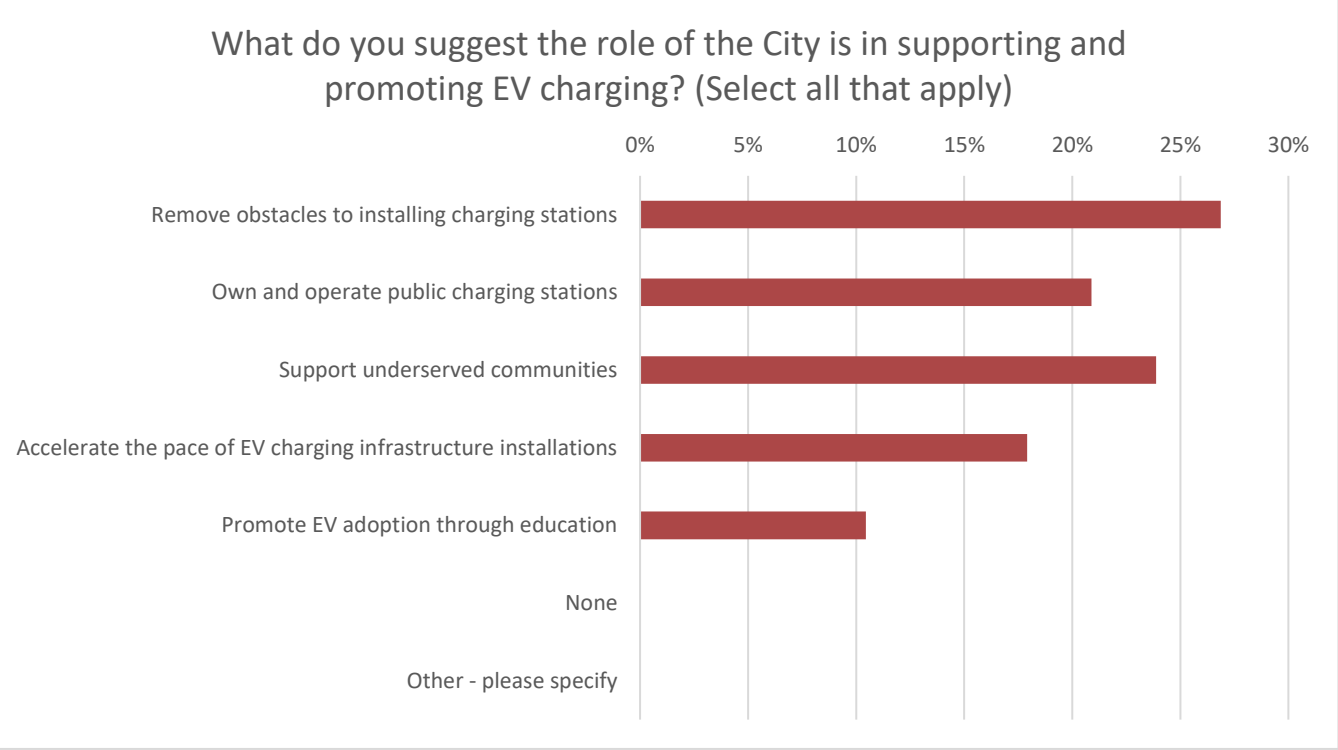
While all of the survey questions will help inform how South Bend implements its Community EV Infrastructure Plan, there were a few questions that directly informed strategy development. The responses to these questions are displayed below.

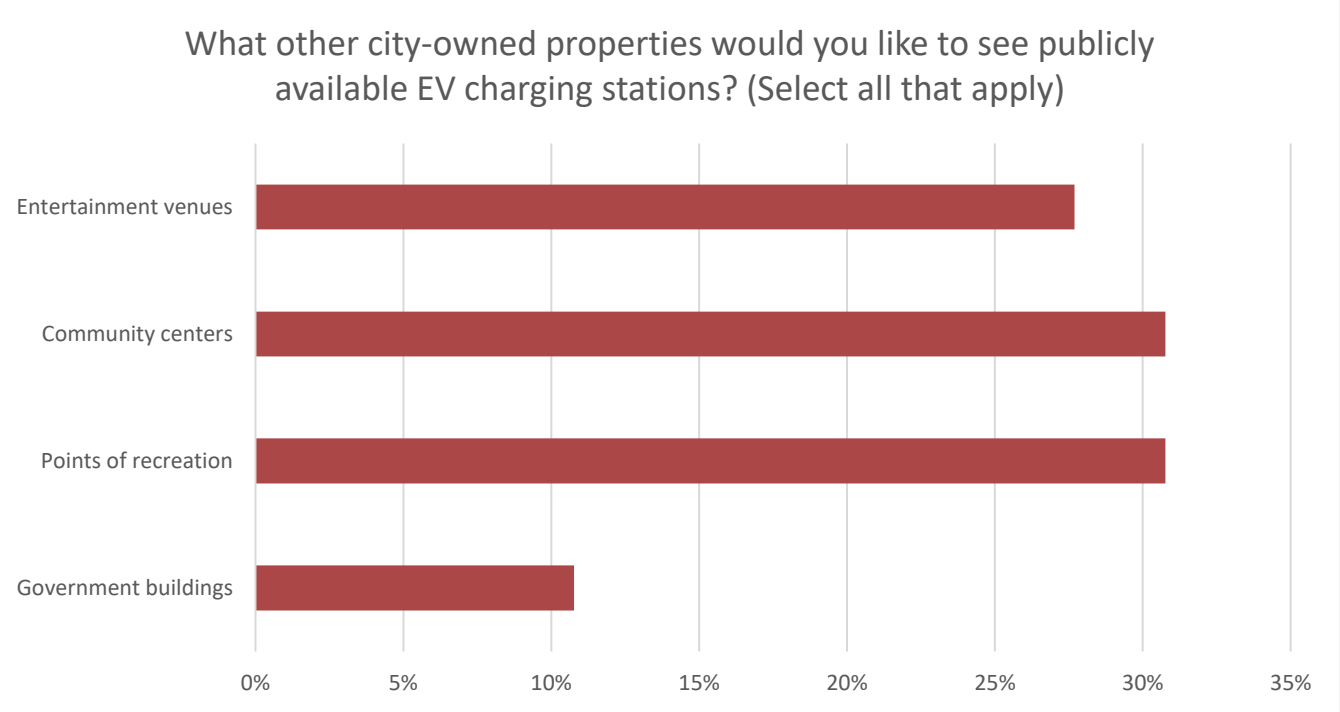




Other, please specify:

- Expanded driving range at an affordable price, more options/models/brands to choose from, more energy efficient options
- More public charging through the Midwest (I travel a lot)





Please enter specific City-owned locations you had in mind while answering the question above.

- All community centers
  - Every City managed community center
  - Charles Black Community Center
- All city parks' parking lots
  - Parks on the west and south sides
  - Pinhook Park, Along Riverside - Parks specifically
  - Parks that have the ability to host events (For example, Howard Park - already has EV chargers, Pinhook Park, etc.)
- Every City managed entertainment venue
- County-City building
- Any building where City employees are working out of
- School administration building
- All City managed parking lot/garage
  - Parking garages to create a sheltered bank of charging ports

Private Landowners/Local Businesses and Organizations Focus Groups

In order to engage private landowners and local businesses and organizations three focus groups were organized between May 22nd and 30th to accommodate schedules. Each hour-long focus group identified barriers to and opportunities for EV charging station installation and also functioned as an opportunity for peer learning.

Participants in the focus group are listed in the Acknowledgements.

Purpose: To better understand barriers to and opportunities for expanding EV infrastructure at private landowner properties including local businesses and organizations.

Key Takeaways:

- Some local chains are starting to install EV charging at various locations and have installed or are considering opportunities to install charging in South Bend including Meijer, Hacienda Mexican Restaurant and Beacon Health System.
- Many businesses that participated in the work sessions were just beginning to explore what EV charging might look like at their businesses. These businesses were looking for information from the city about EV charging such as:
    - Clarify the different types of charging and how to determine which one is the best fit for our business.
    - Benefits to the host business.
    - Costs of installation and operation.
    - Available funding.
    - What to charge to use the EV charger?
    - The process to install a charging station.
- Upfront cost is the most common barrier to installation, but parking availability and customer turnover requirements were also noted.
- Demand for EV charging is currently low in South Bend.

APPENDIX D. STRATEGY WORKPLAN TEMPLATE

This appendix includes a template workplan for the South Bend Community EV Charging Infrastructure Plan Phase 1 (2024-2026) strategies in each of the four priority areas. Workplans for Phase 2 (2027-2029) strategies will be developed in the year prior to each time frame. Each workplan includes:

Strategy #-#: Title

Strategy Description		
Description of strategy.		
Timeline		
Phase for strategy.		
Roles		
Who is responsible for this step (lead and support)? (e.g., tracking metrics, reporting, organizing the support team).		
Implementation Action		
Steps	**Estimated Staff time and Budget**	**Additional Resources**
List steps needed to implement the strategy.	How much staffing time will be required to implement the strategy? What are the costs associated with implementing the strategy?	Are there resources outside of the City (e.g. examples or guides) that can be leveraged?
Measured Impact		
• Tracking methods		

APPENDIX E. PHASE 1 (2024–2026) STRATEGY WORKPLANS AND PHASE 2 (2027–2029) OVERVIEWS

This appendix includes workplans for the South Bend Community EV Charging Infrastructure Plan Phase 1 (2024-2026) strategies in each of the four priority areas. Workplans for Phase 2 (2027-2029) strategies will be developed in the year prior to each time frame. Each workplan includes:

- An overall description of the strategy
- Action steps included in the scope of the strategy
- Identification of City departments, who will lead and support strategy implementation
- Expected timing of strategy by phase
- Estimated staff time required for implementation
    - 🧍 = The strategy requires a minimal amount of existing staff time and effort to implement and maintain.
    - 🧍🧍 = The strategy requires a moderate amount of existing staff time to implement and maintain.
    - 🧍🧍🧍 = The strategy requires new staff to be hired or contracted to implement and maintain.
- Estimated budget (hard costs) required for implementation
    - $ = The strategy can be fully funded through existing municipal funds or grants.
    - $$ = The strategy requires a moderate amount of new municipal funds, due to low- cost or external funding options like grants or private investment.
    - $$$ = The strategy requires significant new municipal funding resources.
- Additional reference resources available to support implementation

EV Readiness Policy

Phase 1 Strategies

Strategy RP-1: Create a Standalone EV Charging Permit

Strategy Description		
EV charging installation projects do not always require a construction permit or plan review. However, any residential or commercial project that requires upgrading of building electrical systems to accommodate Level 2 or DC fast charging will require an electrical permit. The existing City of South Bend electrical permit fee is low ($5 per circuit, with a $40 minimum) and the process is fairly streamlined. Applications for smaller projects that do not require a design release from the State are typically reviewed, processed, and issued within one week. Similarly, inspections are typically conducted within 24 hours of a request being received. This strategy involves clarifying and streamlining the permit application process through creation of a standalone EV Charging Permit and guidelines, similar to the Solar Permit and Solar Permit Application Guidelines already in place. In order to clarify the process, this standalone permit will also facilitate tracking of the number of EV charging stations installed in South Bend.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Building Department; Support: Office of Sustainability		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Review and document City of South Bend and best-practice EV charging permit requirements.	🧍 / $	
Create a standalone EV Charging Permit and Application Form.	🧍 / $	• Permitting template example • The Chicago Easy Permit Program
Create a "how to" guide for EV Charging Permit Applicants.	🧍 / $	• New Buildings Institute EV Charger Permitting and Inspection Guidelines
Create a "how to" guide for planning staff documenting EV charging policy interpretation and application review process.	🧍 / $	
Implement EV Charging Permit and track number of permits issued.	🧍 / $	
Measured Impact		
• Implementation of standalone EV charging permit application • Number of EV charging permits issued		

Strategy RP-2: Develop Voluntary EV-Ready Standards

Strategy Description		
Installing the electrical infrastructure to support future charging during construction or major renovation captures savings by avoiding costly future retrofits to install chargers. Retrofitting electric vehicle charging infrastructure can be up to 91 percent more expensive than installation during construction (Great Plains Institute, 2019). These EV-Ready Standards are important for multi-unit dwellings where there are significant barriers for a resident to install an EV charger. This strategy involves the development of voluntary EV-Ready Standards to encourage the installation of EV charging infrastructure during new construction and to inform the potential implementation of EV charging requirements in the future.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Zoning Department; Support: Building Department, Office of Sustainability		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Develop voluntary EV-Ready Standards, including definition of EV readiness requirements and recommendations for the proportion of EV ready parking spaces.	🧍 🧍 / $	• ICC Green Code • EV Charging for Residential and Commercial Energy Codes • Cincinnati City funded garage EV requirement
Engage developers in a stakeholder process to inform and gather input to help finalize EV-Ready Standards.	🧍 🧍 / $	• Columbus, Ohio equitable EV ready parking engagement
Communicate voluntary standards to developers during site review process, along with information about the benefits of charging and cost savings of installation during construction compared to retrofit.	🧍 / $	
Evaluate impact of voluntary standards and adjust as necessary to inform the development of EV-Ready requirements.	🧍 / $	
Develop and plan and timeline for transition to adopted EV-Ready Standards.	🧍 / $	
Measured Impact		
• Development of voluntary EV-Ready Standards • Track number of residential, commercial, and multifamily property EV charger installations via RP-1: Create a Standalone EV Charging Permit. • Number of charging stations installed during construction		

Strategy RP-3: Incentivize Voluntary EV-Ready Standards

Strategy Description		
Provide rebates, tax abatement, grants or other incentives to encourage new developments to meet the voluntary standards developed in Strategy RP-2: Develop Voluntary EV-Ready Standards. Incentivizing developers will bolster participation installing EV chargers during the very cost-effective time of initial construction. This strategy involves the development of incentives to encourage the installation of EV charging infrastructure during new construction and to inform the potential implementation of EV charging requirements in the future.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Planning Department; Support: Office of Sustainability,		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Research incentive tools used in other communities; explore creative incentive ideas (e.g., EV charging rebates, tax abatement, grants)	🧍 / $	• Federal Alternative Fuel Infrastructure Tax Credit • USGBC Green building incentive strategies
Identify what new development to target for this strategy, for example affordable housing and multifamily developments that are providing parking.	🧍 / $	
Determine which incentive tools would be most feasible for the City of South Bend. • Feasibility criteria could include available funding sources, likelihood that developers will utilize the incentive, ease of implementation and use, or the capacity of implementation partners.	🧍 / $	
Design and implement incentive program(s). • Conduct an engagement process with developers and EV charging providers to design the program. • Determine the required amounts of incentives and the potential sources of funding, including any budget and staffing resources that may need to request for allocation. • Secure funding and staffing resources.	🧍 🧍 🧍 / $$$	

• Develop a timeline for launching the program, including education and outreach.		
Promote incentive program to developers.	🧍 / $	
Evaluate impact of incentives on voluntary standards and use program to inform the development of EV-Ready requirements.	🧍 / $	
Measured Impact		
• Development of incentive program encouraging voluntary EV-Ready Standards • Track number of residential, commercial, and multifamily property EV charger installations via RP-1: Create a Standalone EV Charging Permit. • Number of charging stations installed during construction		

Strategy RP-4: Develop EV Charging Design Guidelines

Strategy Description		
Establishing EV charging station design standards can enhance the consistency and accessibility of EV charging. This strategy involves the creation of voluntary guidelines to encourage charging hosts and installers to incorporate certain features and considerations into charging station design, including: • EV parking signage • EV parking location • EV charging accessibility		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Planning Department; Support: Office of Sustainability		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Research best practices for EV charging station design.	🧍 / $	
Develop guidelines outlining best practices and recommendations for EV charging, including EV parking signage, EV parking location within the parking lot and accessibility features.	🧍 🧍 🧍 / $$	• Signage for EV Charging Stations • U.S. Access Board Accessible Charging Station Design Guidelines • Federal standards and requirements
Communicate EV charging station design guidelines to developers during site review and to potential EV charging site hosts and installers through EV Permit Application process.	🧍 / $	
Evaluate impact of voluntary guidelines to inform potential adoption of EV charging station design requirements.	🧍 / $	
Measured Impact		
• Implementation of voluntary EV charging station design guidelines		

Phase 2 Strategies

Strategy RP-5: Explore Adopting EV-Ready Standards

This strategy will involve the adoption of EV-Ready Standards in the City's Zoning Ordinance to require the installation of EV charging infrastructure and/or stations during new construction. The City of South Bend enforces the State of Indiana Building, Energy, and Electrical Codes. The City Building Department is permitted by the State of Indiana to adopt codes that are more stringent than the state codes through a process requiring fiscal analysis and review by the state. The City has been exploring the process of local Building and Fire code adoption and could consider integrating EV Make-Ready Standards. Standards will be informed by lessons learned through the implementation of voluntary standards during Phase 1. Possible next steps include:

- Revise EV-Ready Standards based on lessons learned, impact evaluated, feedback gathered during voluntary standards, incentives program, and demand.
- Conduct stakeholder outreach sharing revised standards with developers and/or residents for input.
- Continue incentives and or grants for certain developments (e.g., affordable housing) to advance EV charging equitable access.
- Adopt EV-Ready Standards in the City's Zoning Ordinance.
- Cities and states have developed EV ready requirements. A few examples include:
    - The City of Bloomington, Indiana sets EV charger requirements for parking areas with 50 or more parking spaces.
    - Ann Arbor (Michigan) requires all new buildings and existing building renovations to include EV Charging Infrastructure (February 2021). Rules include minimum EV parking percentages (10-100%) according to building type.
    - St. Louis, Missouri adopted EV-ready building regulations in 2021 that took effect in 2022 and require new construction and major renovations of multi-family and commercial buildings to be EV-ready. Major renovations of single-family units will fall under these policies starting in 2024.

Strategy RP-6: Adopt EV Charging Design Standards

This strategy builds on the development of voluntary charging station design guidelines during Phase 1 to adopt and implement EV charging design requirements. Possible next steps include:

- Revise EV Charging Design Standards based on lessons learned, impact evaluated, feedback gathered during voluntary standards, and current best practices related to EV parking signage, EV parking location, and EV charging accessibility.
- Conduct stakeholder outreach sharing revised standards with developers and/or residents for input.
- Adopt EV Charging Design Standards in the City's Zoning Ordinance.

Strategy RP-7: Explore Allowances for EV Charging Stations in the Public Right-of-Way

This strategy will consider allowing EV charging station vendors to install EV chargers in the public right-of-way. This allowance especially in residential neighborhoods and business corridors can encourage a higher rate of EV adoption by increasing convenient charging access at home and while engaging in commercial activities. Past programs where residents put in charging in the right of way was ultimately terminated as these essentially were private parking spots on the street Possible next steps include:

- Explore existing programs such as Washington, D.C.'s Electric Vehicle Curbside Charging Station Program.
- Determine a priority right-of-way location for EV charging to pilot.
- Identify partners for a public-private partnership to host, operate, and maintain EV charger.

- Develop a budget for pilot location.
- Engineering to develop process for implementing EV charger installation.

Public EV Charging at City-Owned Property

Phase 1 Strategies

Strategy CO-1: Promote Existing Charging Stations

Strategy Description		
Share information on location of City-owned EV charging stations, utilization at sites, along with information on charging policies including cost to charge.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
See Appendix F. RACI Matrix for City Roles and Responsibilities		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Report city EV charging stations on public sources such as Plug Share and the Alternative Fuels Data Center Station Locator.	🧍 / $	• Alternative Fueling Station Locator • PlugShare
Track EV charger usage data to determine how locations are utilized to inform priority locations.	🧍 / $	
Share station information on City website along with information on use policies.	🧍 /$	• Example page from Notre Dame: green.nd.edu/resources/ev-parking/
Measured Impact		
• 100 percent of city-owned charging stations are on public EV charging maps. • One city website with current EV charging information including locations and policy.		

Strategy CO-2: Install EV Charging at Priority Locations with Available Funding

Strategy Description		
Leverage existing federal, state, and local grant funding and direct payment from tax credits as well as new City budget requests to install EV charging at community visited locations such as recreation centers and parks outside the central business district. As pricing structure is determined for new charging stations consider providing free or reduced pricing for residents that qualify for other forms of low-income assistance.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
See Appendix F. RACI Matrix for City Roles and Responsibilities		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Review site characteristics at recreation centers and parks outside the central business district and that score high on the equity considerations to determine which locations would be good candidates for EV charging installations.	🧍 / $	• Location Prioritization Workbook • City Owned Charging Prioritization Worksheet
Determine ownership model (city-owned and operated vs. public/private partnership).	🧍 🧍 🧍 / $$$	
Install EV charging stations at priority location leveraging available federal and state incentives. • Review available funding opportunities for the best fit based on sites prioritized through this strategy. • Develop financial budget model. • Review partnership opportunities based on funding such as MACOG, state, or others. • Determine grant writer lead and support staff. • Pursue appropriate funding opportunities. • Review operations & maintenance and pricing resources	🧍 🧍 / $$$	• Charging and Fueling Infrastructure (CFI) Discretionary Grant Program • Carbon Reduction Program • Elective Pay and Transferability - EV Infrastructure • Indiana Volkswagen Environmental Mitigation Trust Program • Federal EV charging minimum standards final rule – pricing requirements • Operations and Maintenance • Costs Associated With Non-Residential Electric Vehicle Supply Equipment • EV Charging Financial Analysis Tool
Ensure new stations are included in communications in CO-1: Promote Existing Charging Stations.	🧍 / $	• As applicable, Sample procurement RFP for Public/Private partnership.
Measured Impact		
• City installs 17 new Level 2 EV charging ports at city facilities by the end of 2026		

Strategy CO-3: Explore Opportunities for Curbside EV Charger Integration at Streetlights and Power Poles

Strategy Description		
One lower cost option to increase EV charging access at the curbside and across communities is to use existing electrical infrastructure available through streetlights and power poles. With the streetlights in South Bend converted to energy efficient LEDs there is extra electrical capacity to serve an EV charging station. Streetlights can host Level 1 or possibly Level 2 EV charging stations depending on the electrical infrastructure and power supplied to the streetlight. Adding EV charging stations to streetlights and pole		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Engineering Department; Support: Planning Department, Indiana Michigan Power, Office of Sustainability		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Consult with Indiana Michigan Power about the feasibility of adding Level 1 or Level 2 EV chargers on streetlights and/or power poles.	🧍 / $	• Seattle City Light Curbside Level 2 EV Charging • Pole-mounted charger pilots across the county
If feasible, research potential EV charging station options accounting for the electrical capacity, accessibility of the EV charger, height preventing vandalism, impact from weather, etc.	🧍 / $	• Los Angeles streetlight EV charging stations • User-supplied cord or pole mount options
Site potential streetlights and/or power poles. Review map and site characteristics from the Location Prioritization Workbook and that score high on the equity considerations to determine which locations would be good candidates for installing EV charging stations.	🧍 / $	• Location Prioritization Workbook • City Owned Charging Prioritization Worksheet
Collect community feedback on the potential streetlight and/or power pole locations and amend locations as needed.	🧍 / $	
Pilot EV charger station installations at a few streetlight and/or power pole locations to gather data on usage and operations.	🧍 🧍 / $$$	
Measured Impact		
• City develops a lower-cost EV charging option. • Increase access to convenient charging especially for residents that don't have home charging.		

Phase 2 Strategies

Strategy CO-4: Use Priority Location Tools to Create Subsequent Build-out Priorities

This strategy will identify opportunities for installation of future charging stations through scoring using the prioritization tool and community engagement. Possible next steps include:

- Review site characteristics at city-owned locations not reviewed in Phase 1 ensuring equitable distribution at appropriate locations.
    - Locations to consider include:
        - Along key travel corridors
        - Office and facility workplace charging
        - Public facilities
        - Last mile transit
        - Continue on successes of right-of-way charging pilot for commercial and residential parking uses
- Use top scoring locations to guide public engagement to understand community need.
- Leverage site scoring and community feedback to discuss next priority sites using guiding questions.
- Ensure new stations are included in communications in CO-1.

Strategy CO-5: Develop Neighborhood EV Charging Hubs

This strategy will review opportunities for creating neighborhood charging hubs with DC fast chargers to increase convenient EV charging access especially for drivers without access to home charging. The City should partner with the electric utility I&M, MACOG, and charging station providers. Possible first steps include:

- Research existing charging hubs from other jurisdictions or EV charging station providers
    - Orlando Utilities Commission opened the Robinson Recharge Mobility Hub
    - Electrify America's The Charging Station of the Future, Today
    - Revel "Superhubs" in New York City
- Using the Prioritization Location Tool and community input site a few potential locations for neighborhood charging hubs focusing on neighborhoods or areas where home charging access is lacking either for multifamily residents or near older homes.
- Consult with I&M about electrical capacity or necessary upgrades.
- Partner with ride-hail fleets and delivery fleets so as they electrify there is charging available. They can become anchor fleets for the hub creating consistent demand.

Public EV Charging at Privately-Owned Property

Phase 1 Strategies

Strategy PO-1: Promote Existing Charging Stations & Provide Resources about Charging Stations

Strategy Description		
In coordination with Strategy CO-1: Promote Existing Charging Stations ensure that local EV charging stations are shown on EV charging mapping and show residents how to use these resources. And educate private or institutional partners about available incentives and programs, the types of chargers available, the best fit by business type, and anticipated cost to install and operate chargers.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
See Appendix F. RACI Matrix for City Roles and Responsibilities		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Direct site hosts to report public EV charging stations on public sources such as Plug Share and the Alternative Fuels Data Center Station Locator.	🧍 / $	• Alternative Fueling Station Locator • PlugShare
Research available programs and incentives, develop business case resources.	🧍 🧍 / $	• Alternative Fuels Data Center: Incentives
Share information on how to find EV charging stations at private businesses on the City's website along with information about the city's EV chargers. For example, create an EV chargers destination page highlighting businesses with EV charging stations.	🧍 / $	• Example of embedding station locator on website from New York • Destination Electric Northeast example
Add information to the City website about available incentives and programs, types of EV chargers, how to determine the best option for your business, and typical costs to install and operate.	🧍 / $	• Alternative Fuels Data Center: Infrastructure
Share the website with local businesses or institutions.	🧍 / $	
Measured Impact		
• One city website with links to current EV charging information. • Include EV charging station information on at least 2 city outreach channels.		

Strategy PO-2: Develop or Collaborate on an EV Charging Incentive Program for the Private Sector

Strategy Description		
This strategy will develop an EV charging incentive program for the private sector that addresses new charging opportunities, complements, or stacks on top existing EV charging incentives from the federal government, state government, utility, and other entities such as Drive Clean Indiana. The incentive program could be offered through South Bend's Energy Assistance and Solar Savings Initiative (EASSI).		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Growth and Opportunity; Support: Office of Sustainability		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Inventory existing incentive offerings (e.g., I&M's Charging at Work programs and Drive Clean Indiana's EMPOWER Workplace Charging program, federal tax credits) and identify organizations that may require more support (e.g., organizations that serve low/middle-income households.)	🧍 / $	• Alternative Fuels Data Center: Incentives
Research incentive tools used in other communities; explore creative incentive ideas to support organizations identified in Step 1.	🧍 / $	• Alternative Fuels Data Center: Infrastructure • (Commercial) Property Assessed Clean Energy (C/PACE) makes EV chargers eligible for financing.
Determine which incentive tools would be most feasible for South Bend. • Feasibility criteria could include available funding sources, likelihood that businesses will utilize the incentive, ease of implementation and use, capacity of implementation partners, or the incentive's ability to support the organizations identified from Step 1.	🧍 🧍 / $	
Design and implement incentive program(s). • Conduct a business engagement process to design the program. • Determine the required amounts of incentives and the potential sources of funding, including any budget and staffing resources that may be needed to request for allocation.	🧍 🧍 🧍 / $$$	

• Secure funding and staffing resources. • Develop a timeline for launching the program, including education and outreach.		
Coordinate with local organizations to promote the incentive program.	🧍 / $	• Drive Clean Indiana • South Bend Regional Chamber of Commerce • Trade Associations
Evaluate the program and adjust as needed.	🧍 / $	
Measured Impact		
• Target by 2025 to have supported the installation of 244 Level 2 ports to be on track for 591 Level 2 ports by 2030.		

Strategy PO-3: Use Framework to Target Outreach

Strategy Description		
Leverage the worksheets developed during this planning process through stakeholder input to identify areas for targeted outreach to encourage businesses or institutions to install public EV charging with an emphasis on businesses within Justice40 census tracts or an environmental justice area.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
See Appendix F. RACI Matrix for City Roles and Responsibilities		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Brainstorm potential outreach opportunities by geographical region or outreach channel.	🧍 🧍 / $	• Map of existing charging stations to identify gaps.
Screen each option using the Public Charging Prioritization tool and record in the Location Prioritization Workbook.	🧍 🧍 / $	• Public Charging Prioritization Tool • Location Prioritization Workbook
Review screened opportunities to identify the top priorities.	🧍 / $	• Location Prioritization Workbook
Develop targeted outreach to top priority channels. Customize message for the channel and audience in coordination with Strategy PO-4: Develop Industry Peer Group or Resources • Share resources such as utility resources and contacts, Drive Clean Indiana EMPOWER Workplace Charging program, which provides educational and technical assistance to entities looking to install electric vehicle charging stations	🧍 🧍 / $$	• Alternative Fuels Data Center • Indiana Michigan Power EV page • EMPOWER Workplace Charging
Measured Impact		
• At least 2 targeted outreach campaigns per year to a priority audience.		

Phase 2 Strategies

Strategy PO-4: Develop Industry Peer Group or Resources

This strategy will develop resources on installing charging stations by business type (e.g., restaurants, hotels, retail). Results will be sharing the created targeted case studies or messaging for priority business types identified in Strategy PO-3: Use Framework to Target Outreach.

- Develop targeted case studies or messaging for priority business types identified in Strategy PO-3: Use Framework to Target Outreach.
- Share case studies or targeted messaging with businesses through Strategy PO-3: Use Framework to Target Outreach.

Workforce Development

Phase 1 Strategies

Strategy WF-1: Research and Promote Existing Workforce Development Programs

Strategy Description		
Identify, categorize, and promote the types of EV charging workforce development opportunities and programs that exist in the region.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Workforce Development Department; Support: Communications		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Identify and promote any community colleges, trade schools, EV programs, and unions in the region and across the state that are already offering workforce training related to EVs.	🧍 / $	• IBEW
Identify ways to support other existing workforce development efforts by regional partners.	🧍 / $	• Electric Vehicle Infrastructure Training Program (EVITP)
Identify and reach out to other existing workforce development programs for opportunities to incorporate EV offerings. • Start with solar, weatherization, and other synergistic workforce development programs. • Partner with community colleges, school districts, regional workforce development offices.	🧍 / $	• Indiana Department of Workforce Development
Measured Impact		
• List of existing EV charging workforce development opportunities and programs • Established outreach channels to promote opportunities		

Strategy WF-2: Determine Gaps in EV Charging Workforce Development Training

Strategy Description		
Collaborate with EV industry to catalogue gaps in workforce and gaps in workforce development training opportunities.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Workforce Development Department; Support: Office of Sustainability		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
Meet with organizations in the EV industry to determine needs in the workforce and what is still lacking in workforce development training.	🧍 🧍 / $	• General Motors • Samsung SDI • EV charger providers
Develop lists of the two needs.	🧍 / $	
Measured Impact		
• List of workforce gaps and workforce development training opportunity gaps		

Strategy WF-3: Partner with EV Industry to Fill Gaps

Strategy Description		
Promote existing workforce development to fill the gaps or partner with EV industry to strength workforce development training opportunities.		
Timeline		
Phase 1: 2024 – 2026		
Roles		
Lead: Workforce Development Department; Support: Office of Sustainability; Communications		
Implementation Action		
Steps	**Estimated Staff Time and Budget**	**Additional Reference Resources**
If additional trainees/workers are needed, determine methods to conduct outreach to drive interested potential workers to those jobs and programs.	🧍 /$	
If additional new workforce development programs are needed, research EV workforce programs in other communities to determine best practices to inform the development of new programs in South Bend.	🧍🧍 /$	
Partner with organizations to develop programs based on research.	🧍🧍 /$	
Research available funding opportunities to partner with organizations and educational institutions to develop programs.	🧍🧍 / $$	• Low and No Emissions Bus Program • Grants for Buses and Bus Facilities Program • Both have dedicated funding for workforce development training • Clean Heavy-Duty Vehicle Program - funding for workforce development and training to support the maintenance of EV charging stations
Measured Impact		
• Partnerships for workforce development training opportunities established		

Phase 2 Strategies

Strategy WF-4: Partner with Organizations to Offer Secondary Services

Offer additional incentives or vouchers to subsidize or cover secondary service costs (i.e., transportation, childcare) that support workers so they can complete training and maintain jobs. Possible next steps include

- Research opportunities and gaps in secondary services.
- Partner with organizations and programs to promote available offerings.
- Collaborate with workforce development organizations and programs to develop offerings where there are gaps.

Strategy WF-5: Establish Hiring Targets for EV Projects

In accordance with City of South Bend Common Council Ordinance NO. 10693-19 and City inclusive procurement policies, City government aims to work with minority-, woman-, and disabled-owned businesses (M/W/DSBEs) on public EV contracts.

- Research municipalities that have targets for working with M/W/DSBEs such as the City of Philadelphia.
- Develop a City registry of M/W/DSBE-certified businesses.
- Determine a target either city-wide for all public contracts or target public EV contracts including installations or service and maintenance.
- Share initiative and the agreed upon target publicly.
- Develop registry list bring awareness and growing applicant pool to share public contracts.

APPENDIX F. RACI MATRIX FOR CITY ROLES AND RESPONSIBILITIES

City of South Bend's EV Charging Infrastructure RACI Matrix

Working with City staff, roles and responsibilities about the growing EV project needs and staffing were identified and resulted in the identification for cross department and office coordination by broad categories of tasks and key steps using a RACI matrix.

What follows is a high-level overview of the City's full detail RACI matrix.

A RACI matrix is a type of responsibility assignment matrix in project management. In this instance it uses a table that lists all stakeholders on a project and their level involvement in each task or deliverable and denotes it with the letters R, A, C, or I.

The acronym RACI stands for responsible, accountable, consulted, and informed. This is how each of the 4 components is defined:

- **Responsible**: a manager or team member who is directly responsible for successfully completing a project task.
- **Accountable**: the person with final authority over the successful completion of the specific task or deliverable.
- **Consulted**: someone with unique insights the team will consult.
- **Informed**: a client or executive who isn't directly involved, but you should keep up to speed.

	Responsible	Accountable	Consulted	Informed
Big Picture Planning & Priorities	Office of Sustainability, Department of Public Works, Division of Engineering		Mayor's Office, Department of Public Works, Department of Community Investment, Division of Engineering, Building, Planning & Community Resources, Venues Parks & Arts, external stakeholders	
Site Selection & Assessment	Office of Sustainability, Division of Engineering, Building, Planning & Community Resources	Legal, Division of Engineering, Board of Public Works, Owner of property	Division of Engineering, Planning & Community Resources, Electric Utility, Parking Department	Office of Sustainability,
Project Scope and Design	Department of Administration & Finance, Division of Engineering, Office of Sustainability	Division of Engineering, Legal, Board of Public Works	Electric Utility	Department of Public Works, Department of Community Investment
Budget and Funding	Office of Sustainability, Department of Administration & Finance	City Controller	Mayor's Office, Department of Community Investment, Division of Engineering, Electric Utility, Charging station provider	Department of Public Works, Department of Community Investment
Installation and Connection	Department of Administration & Finance, Division of Engineering, Office of Sustainability	Division of Engineering, City Controller	Electric Utility, Department of Public Works, Department of Community Investment	Office of Sustainability
Customer Service and Maintenance	Office of Sustainability, Division of Engineering		Charging station provider, Electrical contractors	
Communication	Communications,		Division of Engineering	Potential station users

	Office of Sustainability			
Ongoing Tracking & Reporting	Office of Sustainability, Division of Engineering, Department of Administration & Finance	Local partners	Communications, GIS, Innovation and Technology	Division of Engineering

APPENDIX G. LIST OF EV CHARGING FUNDING RESOURCES

Federal

Carbon Reduction Program: The program allocates a certain portion of funding to each state. To access the funding, each state must submit a Carbon Reduction Strategy, developed in consultation with a metropolitan planning organization in that state. The City of South Bend should partner with the state and the Michiana Area Council of Governments on projects. Eligible projects must ultimately reduce transportation-related emissions from on-road highway sources and can include EV acquisition and EV charging infrastructure installation.

Charging and Fueling Infrastructure (CFI) Discretionary Grant Program: A competitive grant program distributing $2.5 billion over five years to strategically deploy EV charging infrastructure and other alternative fueling infrastructure projects in urban and rural communities in publicly accessible locations, including downtown areas and local neighborhoods, particularly in underserved and disadvantaged communities.

EV Infrastructure Tax Credits: EV chargers are eligible for a tax credit of up to 30 percent of the cost, or 6 percent in the case of property subject to depreciation (not to exceed $100,000). Consumers who purchase qualified residential fueling equipment through December 31, 2023 may receive a tax credit of up to $1,000. Tax-exempt entities can receive a direct cash payment.

Rebuilding American Infrastructure with Sustainability and Equity (RAISE): To build and repair critical pieces of our freight and passenger road, rail, transit, and port transportation networks. Criteria for innovation include electric vehicles.

State

Indiana Volkswagen Environmental Mitigation Trust Program: As part of the Volkswagen Settlement with the U.S. Environmental Protection Agency, the Indiana Department of Environmental Management (IDEM) and the Volkswagen Committee agreed to set aside the maximum allowance of 15 percent of the state's $40.9 million for light-duty EV infrastructure between 2018 and 2028. More information available at Indiana Department of Environmental Management.

Indiana Electric Vehicle Infrastructure Deployment Plan: Through the National Electric Vehicle Infrastructure (NEVI) program created by passage of the 2021 Infrastructure Investment and Jobs Act, Indiana Department of Transportation (INDOT) developed a plan for investing nearly $100 million for installing DC fast chargers along Indiana's federal-designated alternative fuel corridors. More information available at Indiana Department of Transportation.

Local

Indiana Michigan Power

Small Commercial Business Incentives: Existing small-commercial customers who average less than 4,500 kWh per month of electricity are eligible for $500 incentive and a discounted off-peak

rate up to a 40 percent reduction from the standard rate. More information available at Charge at Work in Indiana.

Commercial and Industrial Properties and Multi Unit Dwellings (MUD) Incentives: Incentive program for Level 2 (240V) EV charging for employees, fleet and MUD residents. Under this program, I&M pays $250 per charging port if the customer can provide power to eligible Level 2 PEV chargers from behind their own electrical panels. If a customer needs new electrical service from I&M for Level 2 PEV charging, I&M still can pay the customer $250 per charging port if I&M's anticipated revenue from the charging meets I&M's state approved criteria for adding new service without customer investment. If I&M's anticipated revenue does not meet the standard state approved criteria, I&M can extend the timeline to 5-years in lieu of the $250 per port payment to avoid customer investment. More information available at Charge at Work in Indiana.

Electric Vehicles for Businesses: I&M offers support for a fleet transition including:

- Access to a full fleet assessment
- Connections to fleet providers & equipment vendors
- Charging infrastructure requirements & deadlines
- Connections to charging station installers

More information available at Electric Vehicles for your Business

Charge at Home in Indiana: Charge your EV during off-peak hours at a lower cost. I&M's incentive helps offset the cost to set up or retrofit your current charger configuration to measure off-peak PEV charging. PEV charging from 11:00 pm to 6:00 am daily will be discounted 30 percent from our standard residential per kWh rate. At the time of the report, I&M is offering a $500 rebate for joining the program. Those with net metering to account for solar rooftop generation are not able to receive the discounted rate. More information available at Charge at Home in Indiana.

Drive Clean Indiana

Drive Clean Indiana's mission is to reduce petroleum consumption in the transportation sector. They have a number of programs and offerings for electrification and charging stations. Through the national EMPOWER Workplace Charging Program workplaces receive educational and technical assistance for installing EV charging stations. More information available at https://drivecleanindiana.org.

APPENDIX H. WORKS CITED

AEP. (2023). *Our Clean Energy Mix*. Retrieved from Indiana Michican Power: https://www.indianamichiganpower.com/clean-energy/mix/

American Lung Association. (2023, April 17). *Disparities in the Impact of Air Pollution*. Retrieved from https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities

Atlas Public Policy. (2019). *Assessing the Business Case for Hosting Electric Vehicle Charging Stations in New York State.* Albany, NY: New York State Energy Research and Development Authority. Retrieved from https://www.atlasevhub.com/wp-content/uploads/2019/09/19-31-Business-Case-for-Hosting-Charging-Stations-for-publication-3.pdf

CALSTART. (2023, May). *Drive to Zero's Zero-Emission Technology Inventory Data Explorer. Version 1.0.* Retrieved from https://globaldrivetozero.org/zeti-data-explorer/

City of South Bend. (2019). *Carbon Neutral 2050: South Bend's Climate Action Plan.*

CNBC. (2021, August 5). *Biden pushes for electric vehicles to make up half of U.S. auto sales by 2030.* Retrieved from CNBC: https://www.cnbc.com/2021/08/05/biden-pushes-for-evs-to-make-up-40percent-or-more-of-us-auto-sales-by-2030.html

Energy and Environmental Research Associates, LLC. (2021). *Workforce Projections to Support Battery Electric Vehicle.*

Gohlke, D., Zhou, Y., Wu, X., & Courtney, a. C. (2022). *Assessment of Light-Duty Plug-in Electric.* Argonne National Laboratory.

Great Plains Institute. (2019, June). Summary of Best Practices in Electric Vehicle Ordinances.

Horrox, J. (2021). *Electric vehicles and the necessity of quiet: It's a public health thing.* Retrieved from Frontier Group: https://frontiergroup.org/articles/electric-vehicles-and-necessity-quiet-its-public-health-thing/

IN BMV. (2023).

Indiana Michigan Power. (2022). *Integrated Resource Planning Report.*

Needell, Z., Wei, W., & Trancik, J. (2023). Strategies for beneficial electric vehicle charging to reduce peak electricity demand and store solar energy. *Cell Reports Physical Science*. doi:https://doi.org/10.1016/j.xcrp.2023.101287

Office of Energy Efficiency & Renewable Energy. (2020). *Reducing Pollution with Electric Vehicles*. Retrieved from Electric Vehicles: https://www.energy.gov/eere/electricvehicles/reducing-pollution-electric-vehicles

Rogers, E. (1962). *Diffusion of Innovations.*

Semmler, E. (2023, June 13). Big fish: St. Joe County hauls in $3.5 billion GM/Samsung battery plant. *South Bend Tribune*.

South Bend Tribune. (2019, February 15). A year after historic South Bend area floods, damage remains, preventive measures planned. *South Bend Tribune*. Retrieved from A year after historic South Bend area floods, damage remains, preventive measures planned: https://www.southbendtribune.com/story/news/local/2019/02/15/a-year-after-historic-south-bend-area-floods-damage-remains-preventive-measures-planned/46355051/

South Bend Tribune. (2023, March 14). *South Bend renews contract through 2024 with Bird for electric scooters, bicycles*. Retrieved from South Bend Tribune: https://www.southbendtribune.com/story/news/local/2023/03/14/south-bend-renews-deal-with-shared-mobility-provider-bird/70007825007/

Taylor, T., & Gabriel, N. (2022). *The EV Transition: Key Market and Supply Chain Enablers*. Atlas Public Policy.

The New York Times. (2021, January). *G.M. Will Sell Only Zero-Emission Vehicles by 2035*. Retrieved from The New York Times: https://www.nytimes.com/2021/01/28/business/gm-zero-emission-vehicles.html

The White House. (2021, August 5). *FACT SHEET: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks*. Retrieved from The White House: https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/

U.S. Census Bureau. (2022). *American Community Survey*. Retrieved from https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/ACS_Median_Income_by_Race_and_Age_Selp_Emp_Boundaries/FeatureServer

U.S. Census Bureau. (2022). *South Bend city, Indiana*. Retrieved from https://data.census.gov/profile/South_Bend_city,_Indiana?g=160XX00US1871000

U.S. Census Bureau. (2023, July). *Table S2504: Physical Housing Characteristics for Occupied Housing Units*. Retrieved from https://data.census.gov/table?q=S2504+south+bend,+IN

U.S. Department of Energy. (2014, January). A Guide to the Lessons Learned from the Clean Cities Community Electric Vehicle Readiness Projects.

U.S. Department of Energy. (2022). *TransAtlas*. Retrieved from Alternative Fuels Data Center: https://afdc.energy.gov/transatlas/#/?state=IN&view=vehicle_count

U.S. Department of Energy. (2023). *2022 U.S. Energy and Employment Report*.

U.S. Department of Energy. (2023, January 12). Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite. Retrieved from https://afdc.energy.gov/evi-pro-lite

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

U.S. Department of Energy. (n.d.). *Indiana Transportation Data for Alternative Fuels and Vehicles*. Retrieved from Alternative Fuels Data Center: https://afdc.energy.gov/states/in

U.S. Department of Energy. (n.d.). *Charging Electric Vehicles at Home*. Retrieved from Alternative Fuels Data Center: https://afdc.energy.gov/fuels/electricity_charging_home.html

U.S. Federal Highway Administration. (2021). *Public Roads - Spring 2021*. Retrieved from U.S Federal Highway Administration: https://highways.dot.gov/public-roads/spring-2021/02

US Census Bureau. (2023, July). *Quick Facts: Mean travel time to work*. Retrieved from https://www.census.gov/quickfacts/fact/table/southbendcityindiana,US/LFE305221

Visit South Bend Mishawaka. (2022). *Economic Impact of the South Bend Mishawaka Area Tourism and Travel Insustry 2019-2021*.

Widhalm, M., Hamlet, A., Byun, K., Robeson, S., Baldwin, M., . . . Dukes, J. (2018). *Indiana's Past & Future Climate: A Report from the Indiana Climate Change Impacts Assessment*. West Lafayette: Purdue Climate Change Research Center, Purdue University.

World Resources Institute. (2021, September 16). *Are We on the Brink of an Electric Vehicle Boom? Only with More Action*. Retrieved from World Resources Institute: https://www.wri.org/insights/what-projected-growth-electric-vehicles-adoption