2024

Harbor Transit
Fleet Transition Plan

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Harbor Transit could have a 100% zero-emission fleet as early as 2031, with the right support and resources.

Fleet Overview

Harbor Transit Multi-Modal Transportation System operating in Grand Haven, Michigan started more than 45 years ago as a small Dial-A-Ride service with just two vans and a 10-square-mile service area. As community members started using their service, Harbor Transit gained popularity and was able to expand. In 2012, Harbor Transit has shifted from the old DART service and established Harbor Transit Multi-Modal Transit System. Today, they serve a 55-square-mile area with a fleet of 29 accessible buses and **transport more than 250,000 riders a year** in the expanded service area of 55 square miles including the City of Ferrysburg, City of Grand Haven, Grand Haven Township, Village of Spring Lake, and Spring Lake Township. They are proud to say that one of the values that helped Harbor Transit grow is their dedication to exceptional service. That is a value Harbor Transit has always strived to maintain, and it's one of the reasons Harbor Transit continues to provide an on-demand, curb-to-curb transit system today.

Harbor Transit recognizes they need to have a plan in place to support the transition to zero-emission transit and values the benefits of better user experiences for both the driver and passengers which include a quieter ride and improved air quality. Harbor Transit has evaluated its current fossil fueled fleet of 29 revenue vehicles. Through an evaluation of the current retirement plan for these vehicles, this fleet transition plan provides insight to transitioning the entire fleet to zero-emission and assess the infrastructure and the amount of energy required based on current operational needs, and current and projected ridership.

Transition Approach

The transition to a zero-emission fleet by Harbor Transit will be accomplished using a phased approach. This approach will allow for incremental procurement and installation of charging stations and/or fueling depots, based on funding opportunities which help to offset the total cost of deployment.

Vehicle Replacement Plan

The following vehicle replacement plan has been developed to bring Harbor Transit to a 100% zero-emission fleet by 2031. This plan is based on current and near future projected operations (3-5 years out) and starts with the first vehicle to be replaced through the last:

REPLACEMENT YEAR	CALENDAR YEAR	NUMBER OF VEHICLES
1	2025	4 Revenue
2	2026	3 Revenue
3	2027	6 Revenue
4	2028	1 Revenue
5	2029	2 Revenue
6	2030	9 Revenue
7	2031	4 Revenue
	TOTAL VEHICLES	**29**

Today, there are zero-emission, battery-electric vehicles (BEV's) available on the market that meet the needs of the fleet and the choices are expected to significantly grow overtime. The chart below provides the details on each of the vehicles in the 29-vehicle fleet by vehicle number, make, model, vehicle classification, model year, current fuel type, replacement cycle, average daily mileage, and dwell times. This chart, shaded by replacement year, also reflects the proposed phased approach in order of vehicle replacement.

VEHICLE NO.	MAKE	MODEL	CLASS	MODEL YEAR	FUEL TYPE	REPLACEMENT CYCLE (EOL YEAR)	AVERAGE DAILY MILES	DWELL TIMES
9	ARBOC	GM 4500	4	2013	Gas	Jul-25	73	1800-0530
17	ARBOC	GM 4500	4	2013	Gas	Jul-25	34	1800-0530
20	ELDORADO	Dodge Van	2	2013	Gas	Jul-25	50	1800-0530
21	ELDORADO	Dodge Van	2	2013	Gas	Jul-25	0	1800-0530
15	ARBOC	GM LPG 4500	4	2014	Propane	Feb-26	42	1800-0530
16	ARBOC	GM LPG 4500	4	2014	Propane	Feb-26	32	1800-0530
3	ARBOC	GM LPG 4500	4	2014	Propane	Feb-26	110	1800-0530
5	ARBOC	GM LPG 4500	4	2016	Propane	Jan-27	34	1800-0530
6	ARBOC	GM LPG 4500	4	2016	Propane	Apr-27	34	1800-0530
23	ARBOC	CHEVROLET 4500	4	2017	Gas	Jul-27	70	1800-0530
25	ARBOC	CHEVROLET 4500	4	2017	Gas	Jul-27	64	1800-0530
22	ARBOC	CHEVROLET 4500	4	2017	Gas	Dec-27	74	1800-0530
24	ARBOC	CHEVROLET 4500	4	2017	Gas	Dec-27	75	1800-0530
26	GOSHEN	FORD E450	4	2019	Gas	Oct-28	79	1800-0530
28	GOSHEN	FORD F550	5	2019	Propane	Oct-29	64	1800-0530
27	GOSHEN	FORD F550	5	2019	Propane	Oct-29	34	1800-0530
4	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-30	54	1800-0530
7	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-30	90	1800-0530
11	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-30	65	1800-0530
12	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-30	86	1800-0530
2	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-30	98	1800-0530
8	ARBOC	GM CHEV G33803	4	2020	Gas	Apr-30	94	1800-0530
14	ARBOC	GM CHEV G33803	4	2020	Gas	Apr-30	86	1800-0530
34	FREIGHTLINER	VILLAGER	5	2021	Propane	Oct-30	224	1800-1200
33	FREIGHTLINER	VILLAGER	5	2021	Propane	Dec-30	224	1800-1200
1	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-31	78	1800-0530
10	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-31	48	1800-0530
18	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-31	85	1800-0530
19	ARBOC	GM CHEV G33803	4	2020	Gas	Feb-31	76	1800-0530

Infrastructure Deployment Plan

The fleet's charging infrastructure plan is based on the estimated electricity needs of Harbor Transit's current operations and their vehicle replacement plan, while also leveraging available funding opportunities to help offset the costs. In total, the operations will require at a minimum 35 charging stations; 33 Level 2 (under 20kW), and 2 Level 3 (20kw up to 400kW) chargers.

INSTALLATION YEAR	CALENDAR YEAR	NUMBER OF LEVEL 2	NUMBER OF LEVEL 3
1	2025	5	0
2	2026	4	0
3	2027	7	0
4	2028	2	0
5	2029	3	0
6	2030	8	1
7	2031	4	1
	TOTALS	**33 (33 ports)**	**2 (4 ports)**

This infrastructure plan was developed considering the vehicle replacement year, individual vehicle-based charger level needs (kWh), dwell times, and daily mileage range requirements by each of the 29 vehicles. An additional six (4 Level 2 and 1 Level 3) chargers have been added for increased resiliency in operations For vehicles with an energy demand of less than 20 kWh across the ten hours of off-peak overnight charging, a Level 2 charger has been selected. Those requiring greater than 20kWh across the ten hours of off-peak overnight charging, a Level 3 charger has been selected.

Proposed Vehicle Charging Plan

For purposes of this project, a daily operation and charging analysis based on Harbor Transit's entire fleet of 29 vehicles was completed. Once replaced with BEV's, all 29 revenue vehicles are expected to operate on a planned daily schedule 7 days a week (Monday Sunday) or 359 days a year. Overnight charging at the depot during the 1800-0530 dwell times between shifts should be sufficient to support Harbor Transit's needs for full-service operations and current duty cycles for most vehicles. There are 2 vehicles in Harbor transit's current fleet that will require opportunity charging during daily operations and those vehicles are: 33 and 34.

> **Opportunity Charging:** As standard practice until battery range increases beyond 120 miles, BEVs whose daily mileage exceeds 110 miles daily should take advantage of direct current fast charge (DCFC) Level 3 opportunity charging during a scheduled lunch or daily break period.
>
> **Overnight Charging:** All BEVs should charge overnight as part of standard practice to ensure vehicles have a full charge at the start of operations the next day. Overnight charging also allows for slower charge rates that assist in extending battery life. This approach also allows for operators to precondition their vehicle for the right ambient temperature at the start of a shift while the vehicle is still on the charger, which reduces the draw from the vehicle battery for this purpose.

At the end of daily operations, all revenue vehicles return to the depot, at which time all cleaning and scheduled maintenance occurs. Once complete, the buses can be parked at their assigned parking space and placed on a charger for overnight charging. To ensure the most efficient energy use and lowest cost to Harbor Transits for the electricity needed for charging, a managed charging schedule should be

followed where Harbor Transit will take advantage of Consumer Energy's off-peak demand schedule during that dwell time. In addition, to mitigate any electricity demand load issues, it is recommended that Harbor Transit stagger charge start times by at least 10 minutes. They also will take advantage of managed charging solutions offered by the EVSE supplier to schedule their charging around the lowest cost opportunity.

Facility Requirements

Facility Overview

The current maintenance facility for Harbor Transit is located at 440 N Ferry Street, Grand Haven.

Estimated Electricity Demand

Transitioning from fossil fuel to electricity means increased electricity usage across operations. Based on the transition of 29 vehicles and current operations, the total overall energy demand is estimated to be 1,982.7kWh or 1.9827MWh per day. The following chart lays out the increased energy demands that will be placed upon the facility based on the 100% transition:

NO.	REPLACEMENT VEHICLE CLASS	VEHICLE REPLACEMENT YEAR	# MILES PER DAY	ENERGY USE/MILE (kWh/mile)	DWELL TIME (No. of Hours)	FLAT AVERAGE HOURLY CHARGING POWER DEMAND (kW)	REQUIRED CHARGER LVL	ESTIMATED TOTAL ENERGY REQUIREMENTS (kW/day)
9	4	2025	73	0.8	10	5.84	LVL2(2.5kW-20kW)	58.40
17	4	2025	34	0.8	10	2.72	LVL2(2.5kW-20kW)	27.20
20	2	2025	50	0.35	10	1.73	LVL2(2.5kW-20kW)	17.30
21	2	2025	0	0.35	10	0.00	LVL2(2.5kW-20kW)	0.00
15	4	2026	42	0.8	10	3.36	LVL2(2.5kW-20kW)	33.60
16	4	2026	32	0.8	10	2.56	LVL2(2.5kW-20kW)	25.60
3	4	2026	110	0.8	10	8.80	LVL2(2.5kW-20kW)	88.00
5	4	2027	34	0.8	10	2.72	LVL2(2.5kW-20kW)	27.20
6	4	2027	34	0.8	10	2.72	LVL2(2.5kW-20kW)	27.20
23	4	2027	70	0.8	10	5.60	LVL2(2.5kW-20kW)	56.00
25	4	2027	64	0.8	10	5.12	LVL2(2.5kW-20kW)	51.20
22	4	2027	74	0.8	10	5.92	LVL2(2.5kW-20kW)	59.20
24	4	2027	75	0.8	10	6.00	LVL2(2.5kW-20kW)	60.00
26	4	2028	79	0.8	10	6.32	LVL2(2.5kW-20kW)	63.20
28	5	2029	64	1.1	10	7.04	LVL2(2.5kW-20kW)	70.40
27	5	2029	34	1.1	10	3.74	LVL2(2.5kW-20kW)	37.40
4	4	2030	54	0.8	10	4.32	LVL2(2.5kW-20kW)	43.20
7	4	2030	90	0.8	10	7.20	LVL2(2.5kW-20kW)	72.00
11	4	2030	65	0.8	10	5.20	LVL2(2.5kW-20kW)	52.00
12	4	2030	86	0.8	10	6.88	LVL2(2.5kW-20kW)	68.80
2	4	2030	98	0.8	10	7.84	LVL2(2.5kW-20kW)	78.40
8	4	2030	94	0.8	10	7.52	LVL2(2.5kW-20kW)	75.20
14	4	2030	86	0.8	10	6.88	LVL2(2.5kW-20kW)	68.80
34	5	2030	224	1.1	10	24.64	LVL3(over 20kW)	246.40
33	5	2030	224	1.1	10	24.64	LVL3(over 20kW)	246.40
1	4	2031	78	0.8	10	6.24	LVL2(2.5kW-20kW)	62.40
10	4	2031	48	0.8	10	3.84	LVL2(2.5kW-20kW)	38.40
18	4	2031	85	0.8	10	6.80	LVL2(2.5kW-20kW)	68.00
19	4	2031	76	0.8	10	6.08	LVL2(2.5kW-20kW)	60.80

Harbor	**TOTAL ENERGY DEMAND (kW)**	**1882.7**
Staggered on/off	**TOTAL ENERGY DEMAND (MW)**	**1.9827**
(1800-0530)	**OPPORTUNITY ENERGY (kW)**	**100**

Current and Future Resources

Harbor Transit has worked to identify funding opportunities available to provide support for transitioning to a zero-emission fleet and work to offset the costs for vehicles and infrastructure. These opportunities have been aligned with Harbor Transit's transition plan. Harbor Transit will be seeking additional grant funding through Federal grants, such as the Diesel Emissions Reduction Act (DERA), Low and No Emission Grant, Buses and Bus Facilities, Rebuilding American Infrastructure with Sustainability and Equity (RAISE), and additional grant funding applications that may arise. Furthermore, Harbor Transit will be pursuing funds through state and local opportunities, as well as working with, Grand Haven Board of Light & Power to secure funding for infrastructure taking advantage of their current and future make-ready infrastructure programs.

PROGRAM	SPONSOR	TRANSIT VEHICLE ELIGIBLE	EVSE ELIGIBLE	AVAILABLE FUNDING (Most recent)	NOTES
Alternative Fuel Vehicle Emissions Inspection Exemption	State of Michigan	Yes	No	Varies	• Michigan Compiled Laws 324.6311 and 324.6512
Charge Up Michigan	State of Michigan (EGLE)	No	Yes	Up to $70,000	• EV Charger Funding Opportunities • Charge Up Michigan Fleet provides funding for local government fleets for Level 2 chargers
Diesel Emissions Reduction Act (DERA)	EPA	Yes	No	Varies	• Michigan Clean Diesel Program • FY22 Funding TBD
Volkswagen (VW) Environmental Mitigation Trust	State of Michigan (EGLE)	Yes	No	$64.8M	• Funding is being released across several rounds. • VW Environmental Mitigation Trust
Buses & Bus Facilities (5339)	USDOT/FTA	Yes	Yes	$409.59M	• FTA Grants for Buses and Bus Facilities FY2021 Notice of Funding
Low-No (5339c)	USDOT/FTA	Yes	Yes	Varies ($182M FY21)	• Notice of available funding typically in 1st quarter of the calendar year. • CALSTART is expecting $5 billion in the next five years. • FTA Low or No Emission Vehicle Program - 5339(c)

Electric Vehicle Rebate Program	State of Michigan	No	Yes	TBD	• This is a Governor Whitmer proposal and at the time of this report, it has not been introduced to the Michigan State Legislature • If submitted and passed, fleet light-duty maintenance and admin vehicles may be eligible for a $2500 rebate each • The legislation would also allow for a $500 rebate for at-home charging infrastructure
Qualified Plug-In Electric Vehicle (PEV) Tax Credit (30D)	IRS	No	No	$2500-$75000 Tax Credit	• Allows for tax credit for light-duty electric vehicles, including maint. / admin. electric vehicles • Amount of tax credit varies based on battery capacity and weight of vehicle under 14,000 lbs • Has been retroactively extended since 2009 but currently inactive; consult tax professional after purchase of light-duty maint./ admin. electric vehicles for eligibility
Alternative Fuel Infrastructure Tax Credit (30C)	IRS	No	Yes	Up to 30% cost of EVSE	• Expired Dec. 31, 2021, with discussions ongoing to retroactively extend the credit, as it has been every previous year • Consult a tax professional for future eligibility
Other Grants/Funding Programs	DOT/FHWA	Yes	Yes	Varies based on program	• Various Federal DoT/FHWA grant and funding opportunities for transit agencies

State Incentives

Alternative Fuel Vehicle (AFV) Emissions Inspection Exemption

Dedicated AFVs powered by compressed natural gas, propane, electricity, or any other source as defined by MDOT are exempt from emissions inspection requirements. (Reference Michigan Compiled Laws 324.6311 and 324.6512.)

Charge Up Michigan Placement Project

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) provides funding to public or private organizations for the installation of direct DC fast chargers, site preparation, and networking fees and signage. Applicants must be enrolled in a utility electric vehicle (EV) program. Grants are equal to the lesser of 33.3 percent of the total cost of the project or a direct match of the electric utility funding, up to $70,000. For more information, including eligibility requirements and application, see the EV Charger Funding Opportunities website.

Diesel Emissions Reduction Act (DERA)

As a result of U.S. Environmental Protection Agency (EPA) regulations, diesel engines manufactured today are cleaner than ever before, but because diesel engines can operate for 30 years or more, millions of older, dirtier engines are still in use. Reducing exposure to diesel exhaust from these engines is especially important for human health and the environment. EPA offers funding for projects that reduce diesel emissions from existing engines. For more information visit the Michigan Clean Diesel Program.

- **MI Clean Diesel Program: Please note that the 2022 RFP closed on Feb. 18, 2022.**

Volkswagen (VW) Environmental Mitigation Trust

In 2017, Michigan was allocated $64.8 million as part of a national settlement with VW. The settlement resolved allegations of excess oxides of nitrogen emissions from passenger vehicles. The settlement funds, managed by the Michigan EGLE are being used to support projects which:

- **Reduce nitrogen oxide (NOx) emissions from qualifying mobile sources;**
- **Maximize the air quality benefits statewide, focusing on urban areas and those designated as being in non-attainment (NA) with the National Ambient Air Quality Standards (NAAQs);**
- **Reduce emissions from school buses; and**
- **Increase the adoption of ZEVs and AFVs and equipment.**

Vehicles must be registered and operate only within state lines and replace an operational 2009 or older powertrain.

The Michigan EGLE offers grants for eligible on- and off-road vehicles and equipment. Projects must reduce nitrogen oxide emissions, improve air quality, and increase adoption of ZEVs and AFVs and equipment. Eligible vehicles and equipment include local freight vehicles (medium- and heavy-duty trucks and port drayage trucks), shuttle and transit buses, port cargo handling equipment and forklifts, airport ground support equipment, and more. The program is funded by Michigan's portion of the VW Environmental Mitigation Trust. For more information, including available requests for proposals, see the EGLE Fuel Transformation Program website.

Grant Sources

Buses and Bus Facilities (5339)

Grants for the Buses and Bus Facilities Program are designed to assist in the financing of buses and bus facilities capital projects, including replacing, rehabilitating, purchasing, or leasing buses or related equipment, and rehabilitating, purchasing, constructing, or leasing bus-related facilities. Additionally, recipients are permitted to use up to 0.5 percent of their requested grant award for workforce development activities eligible under federal public transportation law (49 U.S.C. 5314(b)) and an additional 0.5 percent for costs associated with training at the National Transit Institute. $372 million is available in FY22. For more information, please visit the Buses and Bus Facilities notice of funding (NOF).

FTA Low-No (5339c)

The Low or No Emission competitive program provides funding to state and local governmental authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities. The cost structure for Low or No is 80% FTA and 20% local match which will be secured by MDOT. In FY2021, $182 million in funding was awarded to low- and no-emission buses and facilities that support them, and in FY2022, $1.1 billion is available. The funding levels vary each year, and it is expected that the funding levels will continue to increase year over year, with a possible total of $2 billion across the next 5 years. For more information, please visit Low or No Emission Vehicle Program.

Other Grant/Funding Programs

The U.S. Department of Transportation (DOT) releases funding each year for electric vehicle infrastructure projects through several grant opportunities, some of which transit agencies are eligible to apply, including the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program, Discretionary Grant Program for Charging and Fueling Infrastructure, and the newly released National Electric Vehicle (NEVI) Formula Program.

Federal Tax Incentives

Qualified Plug-In Electric Vehicle

A tax credit of $2500 - $7500 is available for the purchase of a new qualified plug-in electric vehicle. The amount of tax credit is determined by the vehicle's battery capacity and gross vehicle weight rating up to 14,000 Ibs, as well as other qualifying standards. Each electric vehicle manufacturer is eligible for 200,000 plug-in electric vehicle credits, and at the time of this report, only General Motors and Tesla have expanded their allotted credits. Please consult a tax professional for eligibility for any light-duty fleet electric vehicles. (Reference Alternative Fuels Data Center).

Alternative Fuel Infrastructure Tax Credit

Electric vehicle infrastructure is eligible for tax credit up to 30%, not including permitting and inspection fees. The tax credit expired December 31, 2021 but is expected to be retroactively extended as has been done in previous years. Please consult a tax professional to determine eligibility after purchase of charging station. (Reference Alternative Fuels Data Center).

Innovative Financing Mechanisms

Industry is responding to the critical need to help finance the higher costs currently associated with vehicle electrification. Many new business models and offerings have come into play, and several organizations

have developed new financing mechanisms to support the acceleration of vehicle electrification. Charging-as-a-service is one of these new models. Typically, transit agencies would need to finance all costs associated with the construction and deployment of infrastructure and then pay a utility for the electricity used as fuel to charge the bus. Under charging-as-a-service, an outside company, the utility, or vendor provides turn-key project management services for the construction and installation of infrastructure. The company or vendor then owns, operates, and maintains the infrastructure. The transit agency is then only responsible for paying the company or vendor a flat fee per kWh or miles driven.

Charging-as-a-service is an attractive option because it allows transit agencies to avoid the high upfront capital expenditures required to install infrastructure, the resources needed to secure outside funds, and the unpredictability of winning grants or issuing bonds to fund infrastructure construction. In many cases costs incurred by transit agencies include utility demand charges—and the responsibility of maintaining infrastructure. It also provides the transit agency with more certainty for the operational costs of the fleet.

Policy and Legislation Considerations

The Biden Administration has made historic steps to curb emissions and increase technological capabilities within the U.S. Through the funding allocated by the Infrastructure Investment and Jobs Act (IIJA), there is a clear desire on behalf of the administration to support the transition to zero-emissions across the nation's transit systems. In the spirit of this legislation, Harbor Transit has committed in the planning of its transition fleet to be 100% zero-emission by 2031.

Looking across the zero-emission technology currently available, Harbor Transit has developed this fleet transition plan around manufacturers that already meet current Buy America and FTA required testing requirements (e.g., Altoona). This will further ensure the transition plan will be current and amended as more products are available that meet all Federal guidelines and regulations.

State Level Policy

U.S. Climate Alliance

Governor Whitmer has joined the **U.S. Climate Alliance** along with more than 16 other states that are committed to taking real, impactful, on-the-ground action that urgently addresses the climate challenge. As a Alliance member, states commit to achieve the Paris Agreement's goal of keeping temperature increases below 1.5 degrees Celsius by:

- Reducing collective net GHG emissions at least 26-28 percent by 2025 and 50-52 percent by 2030, both below 2005 levels, and collectively achieving overall net-zero GHG emissions as soon as practicable, and no later than 2050.
- Accelerating new and existing policies to reduce GHG pollution, building resilience to the impacts of climate change, and promoting clean energy deployment at the state and federal level.
- Centering equity, environmental justice, and a just economic transition in their efforts to achieve their climate goals and create high-quality jobs.
- Tracking and reporting progress to the global community in appropriate settings, including when the world convenes to take stock of the Paris Agreement.

MI Healthy Climate Plan

In April 2022, the Michigan Department of Environment, Great Lakes, and Energy released its **MI Healthy Climate Plan.** This plan identifies the action for fulfilling Governor Whitmer's 2020 commitment for the state to achieve 100% economy-wide carbon neutrality by 2050. Zero-emission and transit are key to the state's success.

Charge Up Michigan

Charge Up Michigan, an initiative focused on charging infrastructure across the state has invested more than $45 million and will continue to spend more available dollars to ensure the access to charging infrastructure for all traveling by means of zero-emission in the state.

Midwest REV

The state of Michigan has joined 4 other Midwest states in a memorandum of understanding (MOU) to work in collaboration to advance zero-emission, electric vehicle adoption. In doing so, this will create

jobs, expand economic opportunity, promote energy independence, improve health, and improve the quality of life for all.

Local Level Policy

Generation Zero

Harbor Transit's plan is aligned with **CALSTART's Generation Zero**, a pledge-based program aimed at accelerating the growth of zero-emission transit vehicle deployments in the Midwest. Under this program, Harbor Transit is working collectively with regional stakeholders to accelerate the number of zero-emission transit vehicle deployments, including battery-electric bus (BEB) and fuel cell electric bus (FCEB) over the next 10 to 20 years. As a pledge participant, Harbor Transit supports the goal to make zero-emission transit vehicles and infrastructure commercially viable and cost competitive in the Midwest by 2025, including at least 1,500 vehicle orders and deployments by 2025 (i.e., 360% increase over 2020); we also support the goal for zero-emission transit vehicles to achieve 100% new sales in the market across the Midwest by 2040 and ideally as early as 2035, if the right eco-systems are in place.

Strategic Partnerships Supporting Plan

Michigan Department of Transportation (MDOT)

Harbor Transit will work in partnership with **MDOT** to ensure all aspects of this plan meet the goals and requirements of the state.

Utility

Harbor Transit's new operation facility is in the service territory of **Consumers Energy**. For to meet its desired plan of transitioning to a 100% zero-emission fleet by 2031, there will be close collaboration with Consumers Energy. In particular, Harbor Transit will work with Consumers Energy, to develop the plan for a 100% zero-emission fleet and that may be needed through the transitionary period to be prepared and ensure the best utility rate structure in support of operational needs.

Consumers Energy currently has a new construction mechanical drawings energy audit and Harbor Transit has collaborated with Consumers Energy for the development of the new operations facility and zero-emission vehicle transition.

Industry Stakeholders

CALSTART

Harbor Transit will work in partnership with **CALSTART**, a national 501 C3 non-profit, to assist with all planning, technology selection, deployment/implementation, and all other aspects required for a successful transition. CALSTART is a recognized stakeholder that has been supporting these efforts across the U.S. since 1992. They bring to the plan lessons learned and best practices, which will mitigate any risks as proven by the successful deployments across the U.S.

Workforce Impact

Increased adoption of zero-emission vehicles provides opportunities for workforce training and development, which will also further the entire state of Michigan for the transition to zero-emission vehicles. Closing workforce training and skills gap is vital to overcome for Harbor Transit to meet its 2031 plan.

MDOT will work with CALSTART to conduct a need-gap analysis for the partner agencies to identify the existing number of employees and position of employees that will require training for electric bus deployment (i.e., drivers, mechanics, building maintenance/electricians, trainers). The team will also assess current training practices and identify skills and/or certifications necessary to eliminate the identified gaps. By comparing the current state of the workforce to an identified new state with electric bus adoption, the analysis will help identify not just retraining and professional development needs but also internal advancement tracks, new positions and possibly restructuring opportunities. This analysis can then be used as a model for other transits agencies and fleets throughout the entire state of Michigan as each transition to vehicle electrification.

With the results of this analysis, MDOT will also collaborate with labor and industry partners to develop a state-wide strategy for retraining existing workforce and recruiting new workforce across Michigan. This strategy will help to ensure the state is adequately prepared to operate and maintain vehicle electrification at scale by developing a program that supports both career advancement for existing

employee through skilled training opportunities as well as establishes apprenticeship and partnership pathways for incoming workforce to access higher-paying, union careers.

The State of Michigan is leading the county in Electric Vehicle (EV) technology and already has invested $5 million in the development of the EV Vehicle Jobs Academy. This academy was developed with more than 100 employers, labor industry stakeholders and education institutes. This academy will educate and provide training solutions to meet the advance mobility and electrification industries talent needs by creating a skill-based curriculum around advanced vehicle technologies and their associated infrastructure; engineering, maintenance, and repair that have been adopted and implemented by multiple community college in the state of Michigan.
The goal of this workforce development plan is to distribute a curriculum that provides equitable access to training and reach existing and future employees in underserved and underrepresented communities. This training will be leveraged by Michigan Department of Labor and Economic Opportunity along with Michigan Alliance for Great Mobility Advancement to accelerate workplace development around advanced vehicle technologies; engineering, maintenance, and repair. Michigan Department of Transportation will also work to procure electric vehicles for all public transit agencies to contract through out the county.