



Municipal Fleet Electrification

A Case Study of Ann Arbor, MI
June 2020



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Introduction

The [Climate Mayors Electric Vehicle Purchasing Collaborative](#) (the Collaborative) is a joint effort by [Climate Mayors](#), the [Electrification Coalition](#) and [Sourcewell](#) working towards accelerating the transition of city fleets to electric vehicles (EVs). By creating a new and innovative cooperative purchasing mechanism, the Collaborative is reducing major barriers to fleet electrification for cities and other public agencies. In addition to an innovative cooperative purchasing option, the Collaborative offers a host of technical resources, analyses, and staff support, which reduces major barriers to fleet electrification for cities and other public agencies.

In 2017, Ann Arbor's Mayor Christopher Taylor joined the Climate Mayors network—over 400 U.S. mayors who are committed to taking meaningful action on climate change. The Electrification Coalition (EC) is the non-partisan, non-profit organization that leads implementation of the Climate Mayors' transportation electrification initiative, leveraging its broad experience as a municipal partner in accelerating EV adoption on a mass scale. Sourcewell, a public procurement agency, facilitates a competitive solicitation and award process for vehicles and service equipment on behalf of their 50,000+ members across North America.

The Collaborative's partners have come together to offer a one-stop platform which connects cities with a growing selection of EVs and charging stations, transparent pricing, policy guidance, technical resources, assessment tools, and financing options that can leverage the federal EV tax credit to reduce the up-front costs of EVs and support cities' fleet electrification. The Collaborative also provides cities with training, best practices, educational materials, and analysis to support the successful transition of municipal fleets to electric.

Municipal Fleet Electrification: City of Ann Arbor, Michigan

As a vocal advocate for aggressive greenhouse gas (GHG) emission reductions, the City saw fit to demonstrate municipal leadership with fleet electrification. The impetus came as a result of an update to the City's Green Fleets Policy in 2018,

mandated by the City Council. The updated policy directed City staff to incorporate best practices and lessons learned from peer municipalities and specifically promoted the purchase of EVs where feasible.

The Fleet Plan now includes guidance for fleet staff to consider and compare vehicle life cycle cost, fuel type, and fuel efficiency standards in procurement decisions. This led to the purchase of three all-electric Chevrolet Bolts in 2019, a first for the municipality. The successful deployment of these vehicles and the momentum incited by engagement with the Collaborative and the EC emboldened Ann Arbor to go further. They committed to a total of 20 electric and plug-in hybrid electric vehicles to be added to their fleet in the 2019-20 Fiscal Year.

Ann Arbor was motivated by the Collaborative's broad network of municipal peers and the EC's knowledgeable staff, which serve as both a policy and technical resource for cities. Ann Arbor leveraged the Collaborative to access peer learning connections with other municipalities, EV policy best practices, technical fleet and vehicle resources, and guidance to support various aspects of the City's overall sustainability policies and programs.

The EC's long-standing support to the City's EV program included the identification of suitable fleet vehicles for transition to electric, the development of



The Ann Arbor Green Fleets Policy (2018) has become a staple in the Collaborative's resource library and is routinely shared with participating cities as a source of inspiration for the development of similar internal policies.



Signage for the fleet saying “City Electric Vehicle Parking Only”

Ann Arbor’s forthcoming EV-Ready ordinance, the transit electrification portion of the City’s unanimously adopted Carbon Neutrality Plan, and best practices guidance on vendor selection and the installation of public access charging infrastructure around the city. The Collaborative consistently provided wide-ranging expert support to Ann Arbor’s vehicle electrification actions, from the fleet garage to the City Council floor.

About Ann Arbor, MI

With approximately 120,000 residents, Ann Arbor is the principal city in Michigan’s Washtenaw County and has traditionally been characterized by the progressive politics of its municipal government. Ann Arbor’s City Council passed their Climate Action Plan at the end of 2012, setting ambitious goals to reduce community-wide emissions—25% by 2025 and 90% by 2050. At the time, though, no specific reduction goals were defined for the City fleet. The 2018 update to the Green Fleets Plan set the stage for Ann Arbor’s first fleet EVs in 2019: three Chevrolet Bolts which were placed in the motor pool, the water treatment plant, and code enforcement divisions. This pilot deployment was well received by City staff. After

connecting with the EC through the Climate Mayors EV Purchasing Collaborative, Ann Arbor saw the opportunity for a working partnership that could support the City’s ambitions both in policy and practice.

Ann Arbor was especially interested in continuing the EV transition among its light-duty class of vehicles, since several models of electric sedans were now on the market. Turning to the EC staff for guidance on next steps, Ann Arbor shared the City’s fleet inventory to receive suggestions on further electrification opportunities. EC staff reviewed the City’s 215 light-duty vehicle fleet and identified the Building Department’s inspector vehicles as a promising area of focus. This vehicle application is frequently identified by cities as a good fit for EVs based on vehicle type, daily use patterns, and high utilization rate, which increases the return on investment with a lower total cost per mile.

After accounting for vehicle age and mileage, EC staff recommended many good candidates to the fleet among these inspector vehicles. Other favorable indicators included these vehicles’ use of a central parking location, which allowed for economies of

scale when installing the associated charging infrastructure, regular scheduled down-time, and a well-defined service area that fits well with the Bolts' range. These City EVs are also highly visible to the public, which Ann Arbor hopes will help increase private EV adoption citywide, as the community goal is 20% EV penetration by 2030. Ann Arbor subsequently committed to electrify this entire cohort over the course of the fiscal year, transitioning 14 inspector vehicles from Chevrolet Equinoxes to Chevrolet Bolts. Six other Bolts were deployed across the Community Standards unit (3 vehicles), the Motor Pool (2 vehicles), and the City's Water Treatment Plant (1 vehicle).

Peer Learning Opportunities: Policy

With city fleet electrification underway, Ann Arbor now moved to encourage increased EV uptake around the city and into the future. As City staff worked to develop Ann Arbor's first EV-Ready ordinance, they reached out to the EC in search of best practices and lessons learned from other municipalities. By definition, the bedrock of the Collaborative is collaboration, not only to leverage buying power and secure favorable pricing for vehicles and equipment, but also to inform the development of EV policy. EC staff were able to quickly connect Ann Arbor's team with other Collaborative cities including Atlanta, GA; Denver, CO; and Columbus, OH—all of whom provided valuable insights from their past work developing similar ordinances in their respective jurisdictions. The peer learning session provided Ann Arbor with guidance on how to set ambitious yet attainable goals for EV readiness in new construction including in

multi-family dwellings and guidance on how to conduct meaningful stakeholder coordination.

Ann Arbor staff greatly appreciated this peer connection facilitation as they sought to replicate success from other regions and were impressed by the breadth and strength of the Collaborative's network. Particularly because Atlanta's ordinance had recently been adopted, similar to Ann Arbor, the Ann Arbor team found invaluable benefit in discussing their pathway to get the bill passed before Council.

Strategic Support to Transit Electrification Policy: Ann Arbor's Carbon Neutrality Plan

In May 2020, Ann Arbor staff found themselves in need of support as they presented their newly developed Carbon Neutrality Plan, 'A2Zero,' to the Ann Arbor City Council for approval and adoption. This plan took the City's 2012 Climate Action Plan to a greater level of detail and ambition, committing to community-wide carbon neutrality by the year 2030. Prioritizing vehicle electrification was one of six core strategies of the proposed plan, as well as reducing overall city-wide vehicle miles traveled by at least 50% by the target year.

However, the high up-front cost of the city fleet electrification combined with the electrification of the bus fleet put the Carbon Neutrality Plan in danger of being rejected, wholesale, by Council. This rejection would have been a huge setback, given the potential for emissions reductions outlined in the other

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On both policy and technical fleet aspects, we've been really grateful for the connection to other cities that are working to advance similar issues. The peer-to-peer learning opportunities that the Electrification Coalition provided through the Collaborative have been instrumental.”

Emily Drennen
Sustainability Analyst
City of Ann Arbor, MI



actions, the co-benefits associated with each, and staff's efforts to date.

Upon the Council's cost concern of the A2Zero plan as introduced, the City's Green Fleets Team reached out to the EC for technical review and strategic support. The City team was looking for ways to improve the argument for the \$86M investment, or otherwise equip Council with sufficient confidence to adopt the Plan. Drawing on prior work on transportation electrification policies, EC outlined a strategy to help Ann Arbor defend their proposed bus electrification action through available and creative financing solutions:

- **Alternative funding strategies:** Several opportunities in the near-term to cover the difference between the cost of a battery electric bus and a traditional ICE transit bus, including upcoming rounds of MI Volkswagen Settlement funding, FTA Low or No Emission Program opportunities, and other potential federal funding programs—in addition to any available funding from MI state.
- **Procurement alternatives:** Financing through battery leasing is another option to reduce or even eliminate the capital delta.
- **Timing:** Create a strategic procurement timeline for bus electrification in phases, that aligns with end goal of transitioning to electric buses based on replacement schedules, operational needs, and available funding, as opposed to transitioning the same number each year.

The EC also provided the City staff with resources that demonstrate the expected cost reductions in battery technology in the coming years.

This indicates that the price premium of battery electric buses over traditionally fueled buses is expected to narrow rapidly over the next decade.

Emily Drennen, Ann Arbor's Sustainability Analyst, was elated by the EC's rapid and thorough attention to her team's request, remarking that she "really appreciated the relationship the City has with the Electrification Coalition" given the urgent need and only days between the request, the response, and a final vote from Council on the fate of the A2Zero plan. The resources and talking points from the EC indeed proved helpful, since the A2Zero plan was unanimously approved by Council just over a week later.

Ongoing Support and Emerging Leadership

With the Ann Arbor's Carbon Neutrality Plan now adopted, City staff anticipates further engagement with the Electrification Coalition to support the achievement of A2Zero's vehicle electrification strategy. The City has already tapped the EC as a best practices resource for charging station equipment, installation costs, and technical considerations as it targets installation of at least 200 EV chargers annually, funded through utility rebates.

Ann Arbor's leadership on fleet electrification is also becoming more widely known. Both Drennen and the City's Fleet and Facilities Manager, Matthew Kulhanek, report being contacted by municipalities both inside and outside the region, to learn more about their EV purchases and development of the



"The City has benefitted from having a resource like the Electrification Coalition – to be able to see what other cities are doing, what trends are happening across the nation. I really appreciate being able to utilize the EC as a knowledge base for information and insights and as a sounding board for issues or ideas that the city may not be sure about. This has been a good year for EVs with the city, but Ann Arbor is still new to electrification, so the EC's support has been really appreciated."

Matthew J. Kulhanek
Fleet & Facilities Manager
City of Ann Arbor, MI

City's EV policies. Kulhanek is happy to connect with other fleet managers and share the City's experiences with deploying EVs. It has been almost one year since the City's first EV deployment, so the fleet team is beginning to compile and compare the EV metrics.

Conclusion

Ann Arbor's continuing engagement with the EC staff through the Climate Mayors EV Purchasing Collaborative provided an invaluable resource for the City as they got their electrification program off the ground. By maintaining engagement and leveraging the City's own vehicle electrification commitment to the Collaborative, Ann Arbor was able to access the diverse expertise of the EC staff, which informed and supported the development and adoption of the City's ambitious emissions reduction and transportation electrification planning.

The EC's experience ensured that Ann Arbor had a trusted, non-partisan partner upon which they could rely for advice and best practices related to everything from light-duty fleet analysis, procurement options and costs, and charging station costs and considerations, to the evolution of the electric bus industry. This has meant that Ann Arbor was able to sustain the momentum of each initiatives' success, which has led to increased ambition and confidence in the electrification undertaking for City staff.

Ann Arbor's experience demonstrates the additional value that cities can obtain by engaging with the Collaborative. It is more than just a convenient, competitive, and cost-effective procurement solution for vehicles and charging equipment.

The Collaborative is a vibrant community of municipalities whose collective experience advances electrification nationwide. With the Collaborative's support, Ann Arbor was able to successfully transition 20 traditional sedans to all-electric vehicles—and that was just the beginning. As the City becomes increasingly recognized as a leader in transportation electrification implementation and planning, the Collaborative encourages other municipalities to join their ranks. Connect with us today for our support achieving your city's near- and long-term vehicle electrification goals.



A2Zero: Ann Arbor's Living Carbon Neutrality Plan outlines a 2025 vision for electrifying 100% of the City's light duty fleet.



Climate Mayors, founded in 2014, is a bipartisan, peer-to-peer network of U.S. mayors working together to demonstrate leadership on climate change through meaningful actions in their communities, and to express and build political will for effective federal and global policy action. The Climate Mayors coalition has emerged as a key voice and demonstration of the ongoing commitment of U.S. cities to accelerate climate progress.



Electrification Coalition

The Electrification Coalition (EC) is a nonpartisan, not-for-profit group of business leaders committed to promoting policies and actions that facilitate the acceleration of electric vehicle adoption on a mass scale in order to combat the economic, environmental and national security dangers caused by our nation's dependence on oil.



Sourcewell is a self-supporting government organization, partnering with education and government agencies throughout North America. On behalf of 50,000 members, Sourcewell conducts competitive solicitations, awarding to the most responsive and responsible vendors.

For more information about how your agency can partner with the Climate Mayors EV Purchasing Collaborative to take advantage of cooperative purchasing and rich technical assistance, please visit: www.DriveEVFleets.org

Or call 800-267-7830