



# Compendium of Best Practices in Transit Climate Action Plans

August 2024



*Image source: a Niagara Frontier Transportation Authority*



U.S. Department of Transportation  
Federal Transit Administration

## About the Initiative

On June 15, 2021, FTA launched the [Sustainable Transit for a Healthy Planet Initiative](#) to advance the Biden-Harris Administration's goal of achieving a 50% reduction in economy-wide net greenhouse gas (GHG) emissions from 2005 levels by 2030. Through this initiative, transit agencies are encouraged to take bold actions and prioritize investments to further reduce GHG emissions from public transportation. Agencies are called on to develop climate, sustainability, or electrification or zero-emission fleet transition plans that include strategies with measurable goals to achieve GHG emission targets.

During Phases 1 through 3, over 100 participating transit agencies submitted plans that outlined strategies to reduce emissions. These included initiatives such as converting fleets to electric buses, making facilities more energy efficient or resilient, and generating power through renewable energy sources. At the end of each phase, FTA held Earth Day events where awards were presented to transit agencies exhibiting exemplary efforts in reducing greenhouse gas emissions, increasing sustainability, or implementing resilience measures.

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### Phase 1

- **Most Accomplished:** In January 2022, Antelope Valley Transit Authority (AVTA) in Lancaster, California met its 100% electric fleet goal and became the first all-electric transit agency in North America. [AVTA's climate action plan](#), *Where the Future Lives Today*, documents the journey to fleet electrification and outlines current efforts to further reduce the agency's carbon footprint by investing in solar power.
- **Most Ambitious:** The [Los Angeles County Metropolitan Transportation Authority's Sustainability Strategic Plan 2020](#) includes an aggressive GHG emissions reduction goal of reducing total GHG emissions by 79% relative to 2017 levels by 2030. This goal exceeds the President's goal of a 50% reduction in GHG emissions during the same timeframe. The plan includes additional aspirational goals related to water conservation, solid waste reduction, climate adaptation, energy use reduction, and economic development.
- **Most Collaborative:** [Iowa City Transit's climate action plan](#) describes how the agency successfully leveraged state, local and private partnerships to advance its climate action strategies. For example, a partnership with the local energy provider has allowed the agency to primarily operate its electric bus fleet with wind energy.
- **Most Equitable:** In Seattle, Washington, [King County Metro's strategic climate action plan](#) includes a community-driven framework for addressing climate change concerns and opportunities identified by frontline communities (i.e., those that will be disproportionately impacted by climate change). The plan outlines actions intended to address root causes of climate sensitivity that disproportionately impact frontline communities, with the goal of



Image source: Antelope Valley Transit Authority

developing solutions that address climate change and have co-benefits for social and economic equity.

- **Most Innovative:** Champaign-Urbana Mass Transit in Illinois demonstrated the use of creative solutions to implement the [Champaign-Urbana Mass Transit District climate action plan](#). The agency is the first transit agency in the nation with a hydrogen fleet fueled entirely by on-site renewable sources. The agency produces the energy to power its hydrogen fleet from solar arrays on its maintenance facilities.



*Image source: Champaign-Urbana Mass Transit District Climate Action Plan*

- **Most Transformative:** Sound Transit in Seattle, Washington created the [Sound Transit sustainability plan](#) that demonstrates the agency's commitment to making sustainability a holistic goal and a core part of the agency's mission. As reflected in their plan, sustainability touches every part of Sound Transit, from fleet electrification, to reducing resource use in agency operations, to working with contractors to ensure the use of the cleanest construction equipment. The agency has also committed to increasing staff engagement and training on sustainability.
- **First to the Finish:** Metropolitan Transit Authority of Harris County in Houston, Texas was the first transit agency to create and submit its [Houston Metro climate action plan](#) since the launch of FTA's Climate Challenge. Houston Metro created its plan in record time and submitted its final product to FTA on February 4, 2022. As part of the plan, the agency developed its first Sustainability Vision Statement to guide the agency as it seeks to eliminate its carbon footprint.

**Champions of the Challenge:** This award was bestowed on small, medium, and large transit agencies that developed plans with achievable, ambitious strategies for reaching their GHG emission reduction goals:

- **Capital Metropolitan Transportation Authority (Cap Metro),** Austin, Texas (large): [Cap Metro's Sustainability Vision Plan](#) outlines a path to achieve net zero carbon emissions by 2040. It supports livable communities, and sets ambitious goals in zero waste, water conservation, green buildings, and sustainable infrastructure. Their plan includes actionable targets and sustainability indicators that Cap Metro will use to measure the effectiveness of its efforts.
- **Central Ohio Transit Authority,** Columbus, Ohio (medium): [COTA's sustainability plan](#) provides a data-driven framework for achieving a zero-emission fleet by 2035 and net zero GHG emissions and net zero pollution emissions by 2045. The Sustainability Plan lays out other goals and targets in six performance categories: Equity, Diversity and Inclusion; Emissions; Ridership; Waste; Water; and Resiliency.
- **Rockford Mass Transit District,** Rockford, Illinois (small): The [RMTD's plan](#) establishes GHG reduction targets for fleet, energy, water, and solid waste emissions, and includes over 30 actionable strategies that RMTD will implement to meet its goal of achieving net zero emissions by 2050 and creating a more climate resilient transportation network.

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## Phase 2

- **Most Transformative:** Minnesota Valley Transit Authority (MVTA) in Burnsville, Minnesota, developed a comprehensive framework outlining key sustainability priorities and strategies to achieve greenhouse gas emission reductions across all agency departments. [MVTA's plan](#) highlights strategies to reduce greenhouse gas emissions and improve energy efficiency as part of its commitment to a sustainable and equitable future for residents in the seven communities it serves.



*Image source: Minnesota Valley Transit Authority 2023 Sustainability Plan*

**Champions of the Challenge:** This award is given to agencies that developed comprehensive zero-emission fleet transition plans that include elements to explicitly promote equity or detailed workforce development strategies.

- **Metropolitan Transportation Authority (MTA)**, New York, New York: As part of its [MTA Zero-Emission Bus Transition Plan](#), the agency details strategies for the nation's largest bus fleet that prioritize earlier and larger deployments of zero-emission buses in at-risk communities. MTA aims to transition to 100% zero-emission bus service by 2039 while also training workers in the new technology, maintaining service and prioritizing communities most impacted by poor air quality and climate change.
- **Chicago Transit Authority (CTA)**, Chicago, Illinois: [CTA drafted a comprehensive report](#) backed by data to inform the next steps to fully convert its 1,800-vehicle fleet to cleaner and greener electric buses. Among the plan's goals is to deploy buses and upgrade bus facilities in ways that promote equity and environmental justice throughout the city.
- **Everett Transit**, Everett, Washington: [Everett Transit's Zero Emission Fleet Transition Plan](#) sets a road map to transition its entire bus fleet by 2028, including workforce training. As of 2023, the agency's electrification had enabled Everett Transit to reduce approximately 2.2 million pounds of CO2 emissions throughout Snohomish County, Washington.

## Phase 3

**Champions of the Challenge:** This award celebrates agencies that developed robust climate action or sustainability plans that include strategies to significantly cut GHG emissions, implement resilience measures, or increase the sustainability of transit systems.

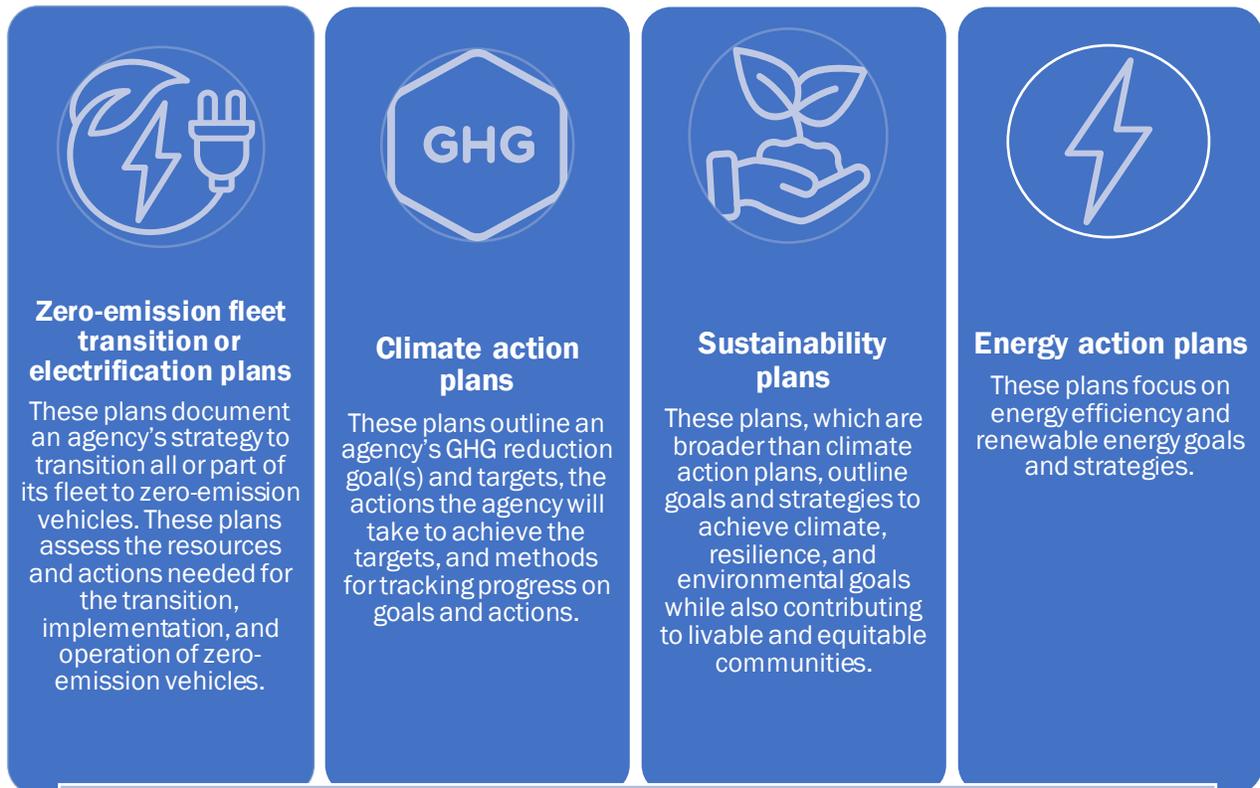
- **Santa Clara Valley Transportation Authority (VTA)**, San Jose, California: [Santa Clara's VTA developed a plan](#) to analyze emissions forecasts and vulnerability assessments, resulting in 33 greenhouse gas (GHG) reduction strategies and 14 climate change adaptation measures. VTA aims to increase resilience to climate risks and become carbon neutral by 2045.
- **Maryland Transit Administration (MTA)**, Maryland: [MTA developed a climate action plan](#) that outlines a suite of strategies to support system-wide GHG reductions. The agency also focused on adaptation and resiliency tools to improve preparedness and protection of transit assets.
- **Roaring Fork Transportation Authority (RFTA)**, Colorado: RFTA engaged stakeholders and analyzed methods to inform the strategy for their comprehensive [RFTA climate action plan](#). RFTA's efforts are designed to support their goal of transitioning to a 100% electric fleet by 2050.



Image Source: Roaring Fork Transportation Authority Climate Action Plan

## Overview of Plan Types

Transit agencies are pursuing a variety of strategies to minimize the environmental impact of their transit operations, with some agencies focusing on fleet electrification and others taking a more holistic approach to reducing the GHG emissions across their portfolios. The type of plan a transit agency developed to document its goals and strategies differed depending on the nature of its approach. The types of plans developed include:



## Scale of Plans

Transit agencies of all sizes successfully participated in the FTA Climate Initiative by developing GHG emission reduction strategies specific to their unique systems and communities.

### Examples from Small-Sized Agencies

**Ben Franklin Transit (BFT)** in Washington developed the [BFT climate action plan](#) that employs climate mitigation and adaptation tactics to ensure a safe, equitable and sustainable future for the community. By reducing emissions internally while simultaneously engaging the community through education and collaboration, this plan instills climate resiliency as its key goal. Climate mitigation and adaptation focus areas in BFT's plan include transit, land use, education, zero-emissions vehicles and infrastructure, transportation demand management, regional partnerships, and capital planning.



Image Source: GPMTD Fleet Transition Plan

**Greater Peoria Mass Transit District (GPMTD)** in Illinois developed the [GPMTD fleet transition plan](#) that outlines how the agency will move towards vehicles with low or no emissions. GPMTD plans to replace 46 diesel buses with 26 battery electric buses and 20 biodiesel buses, in addition to three battery-electric and four diesel-electric hybrid buses in service. Part of the agency’s fleet transition, which is currently underway, includes the construction of a new maintenance and administration building that will have the capability to charge an electric fleet with 300+ rooftop solar panels.

### Examples from Medium-Sized Agencies

**Jacksonville Transportation Authority** developed the [Jacksonville Transportation Authority Sustainability Action Plan](#) that contains a portfolio of actionable projects to reduce the agency’s environmental impact and improve overall efficiency. By prioritizing 15 short-term goals within six formalized focus areas, this plan serves as a benchmark to continually evaluate and improve the agency’s performance regarding sustainability. The focus areas are:

- Water Use and Pollutant Discharge
- Materials Management
- Facility Energy Use
- Healthy Communities
- Fleet Operations
- Economic Vitality

**Delaware Transit Corporation** developed the [Delaware Transit Corporation climate action plan](#) that focuses on setting agency-wide objectives and targets for their Sustainability Program. Focusing on energy efficiency and energy use, the plan makes an ambitious “50x30” target to reduce greenhouse gas emissions by 50% by the year 2030. Relevant strategies include:

- Transitioning paratransit fleet to 100% propane fueling
- Replacing non-revenue fleet with zero emissions vehicles
- Installing solar panels, EV chargers, LED lighting, and other energy-efficient technologies

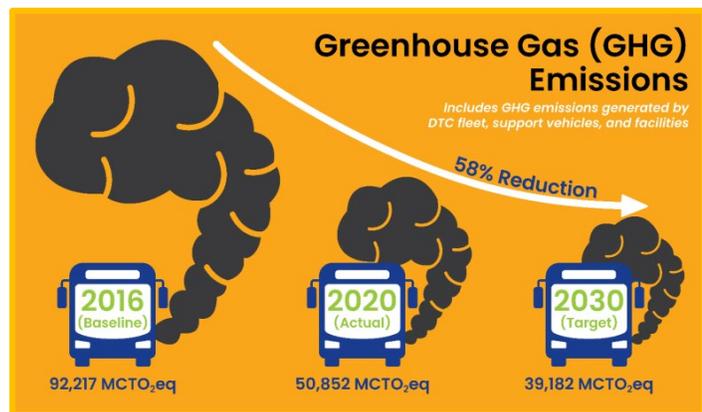


Image source: Delaware Transit Corporation’s Climate Action Plan

## Examples from Rural Agencies

**Crawford Area Transportation Authority** developed the [Crawford Area Transportation Authority Climate Action Plan](#) that sets a goal to reduce GHG emissions by 80% by 2030. By prioritizing the scope of public transit, active transportation, and public EV charging, this plan not only prioritizes sustainability, but also strategic partnerships within a rural community.

**Yuba-Sutter Transit** developed the [Yuba-Sutter Transit Climate Action Plan](#) that outlines three key goals to cost-effectively reduce the agency's footprint and promote sustainability. By focusing on infrastructure, fleet emissions, and ridership, this plan sets specific, timely benchmarks for meeting its goals, which include transitioning to a zero-emissions fleet by 2035 and constructing an energy-neutral facility.



*Image source: Crawford Area Transportation Authority Climate Action Plan 2022*

## Example of City- and County-Wide Plans

While many transit agencies developed agency-specific plans, in several areas, transit-related emission reduction strategies were included as part of a broader city or regional climate action plan.

The [City of Sedona, Arizona developed a climate action plan](#) outlining actions within the city's purview – those related to land use, the local transportation systems, and building construction – that will help put the city on a path to reducing GHG emissions by 50% by 2030. The plan includes strategies to improve and increase transit ridership, for which City of Sedona Transit is the lead.

[Broward County in Florida developed a countywide climate action plan](#) that includes 125 strategic actions to be implemented by local governments and community partners. The plan includes several transit-specific strategies for which Broward County Transit will be a key player. Relevant strategies include:

- Promote transit-oriented development
- Provide high-capacity transit supported by complementary land use in and across communities
- Electrify buses

## Special Emphasis Areas

In addition to focusing on GHG emission reductions, some transit agencies incorporated strategies across a few special emphasis areas, including: promoting workforce development, ensuring equity, utilizing a data-driven approach, and highlighting emerging technologies.

### Workforce Development

**Alameda Contra Costa County Transit District (AC Transit)** developed the [AC Transit Zero-Emissions Bus Rollout Plan](#) that incorporates a robust workforce training element focused on safety and familiarization, technical training, and zero-emissions bus (ZEB) project delivery. AC Transit created an ambitious “ZEB University” training curriculum and is collaborating with manufacturers to ensure that the required courses are implemented for all mechanics, service employees, and bus operators.

**The City of Charlotte and the Charlotte Area Transit System (CATS)** included workforce development as an action area in the [City of Charlotte Strategic Energy Action Plan](#) (SEAP). The City of Charlotte plans to establish a green workforce to support energy transition while also ensuring equity in job creation and the deployment of low carbon technologies.



Image source: Alameda Contra Costa County Transit District ZEB Rollout Plan

### Equity

**Metro Transit** in Minnesota listed “equity and environmental justice” as one of three guiding principles that shaped the [Metro Transit Zero-Emission Bus Transition Plan](#). The agency will maximize equity and environmental justice when investing in zero-emissions buses (ZEB) by using engagement and education to target underserved communities that face historic disinvestment and/or poor air quality. Using community feedback, Metro Transit has identified priority areas for ZEB deployment.

The Healthy Community and Workforce section of [Pinellas Suncoast Transit Authority’s \(PSTA\) Sustainable Strategic Plan](#) outlines goals for diversity and inclusion, such as the adoption of a strategic plan and toolkit to guide equity-related procurement and employee hiring best practices.



Image source: Pinellas Suncoast Transit Authority Sustainable Strategic Plan

PSTA also plans to create an equity assessment tool to ensure equity in planning projects, public outreach and engagement, service changes, and prioritization of capital projects. The tool will use U.S. Census data to form an index for identifying potentially disadvantaged populations.

### Data-Driven Approach

The **Capital Area Transit System (CATS)** in Baton Rouge, Louisiana created performance metrics and targets to measure eleven goals across four strategic priority areas that will be used to track the progress of their [CATS Sustainability Plan 2022](#). CATS set a baseline and goal for all performance targets and plans to report actual performance in each category quarterly. Strategic priority areas include mobility and ridership, management and financial sustainability, capital investment, and community stewardship.

The Department of Transportation Services and the **City and County of Honolulu** developed the [One Climate, One O’ahu Climate Action Plan 2020-2025](#)

that utilized a survey, engagement and education meetings, and a virtual open house to collect over 2,000 responses from community members. This data-driven approach allowed the agency to compile baseline information on resident activities and preferences towards climate actions.

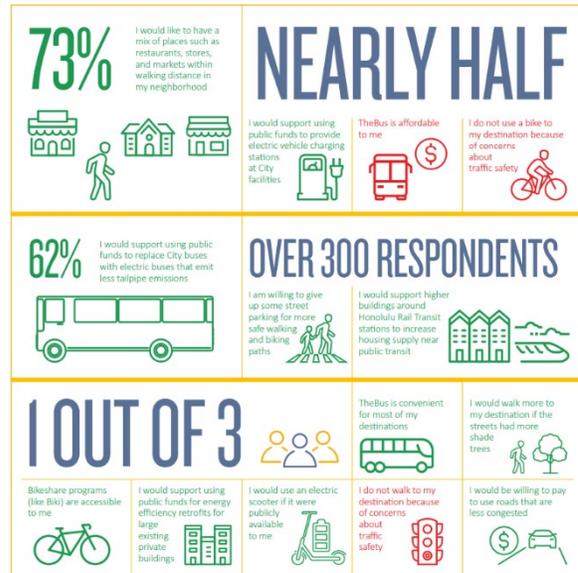


Image source: One Climate, One O’ahu Climate Action Plan

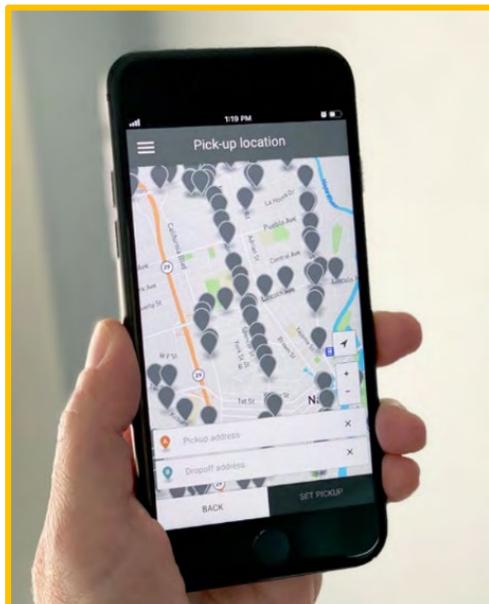


Image source: Napa Valley Countywide Transportation Plan

### Emerging Technologies

[Napa Valley Transportation Authority developed a countywide transportation plan](#) that highlights the future of mobility. The plan discusses autonomous, connected, electric, and shared vehicle technology as a means to further improve sustainability and resiliency efforts. By making strategic investments in communications technologies, a traffic operations center, and other key sectors, this plan takes actionable steps towards transit innovation.

## **Additional Resources**

### **[Transit Resilience Guidebook](#)**

FTA created this guidebook aimed at transit agencies, local government officials, metropolitan planning organizations, and other entities responsible for planning, funding, operating, or coordinating with transit agencies. It helps organizations anticipate, adapt to, and recover from service disruptions caused by extreme weather events, natural disasters, and climate change impacts. The guidebook presents recommendations and examples of how to identify and address climate vulnerabilities and build resilience into transit assets throughout the life-cycle process, while ensuring priority is given to protecting vulnerable populations.

### **[FTA Dear Colleague Letter: Fleet Transition Plan](#)**

This letter provides an update on FTA's implementation of the Grants for Buses and Bus Facilities Competitive Program and the Low or No Emission Program. The Bipartisan Infrastructure Law amended the statutory provisions for these programs to include the requirement that any application for projects related to zero-emission vehicles includes a Zero-Emission Transition Plan.

### **[FTA Transit Bus Electrification Tool](#)**

This is a Microsoft Excel-based spreadsheet tool that allows users to estimate the partial lifecycle greenhouse gas emission savings associated with replacing standard bus fleets with low-emission or zero-emission transit buses.

### **[Climate Action Plan Template](#)**

The template provides a sample structure that an agency can follow to document its climate action plan.

### **[APTA's Guidelines for Climate Action Planning](#)**

The APTA Guidelines lay out a framework for approaching climate action planning and discuss considerations to keep in mind as an agency goes through the planning process.

### **[Technical Assistance and Resources for Transit Agencies](#)**

Entities currently receiving Low or No Emission (Low-No) funds, planning to apply for Low-No funds, or using other FTA program funds for clean buses can contact the Joint Office of Energy and Transportation for technical assistance to plan for and deploy clean transit buses. The Joint Office's website, [driveelectric.gov](https://driveelectric.gov), includes additional resources to help transit fleets plan for and deploy clean transit buses.