

HOUSTON METRO CLIMATE ACTION PLAN

METRO Going Green: Pathway to Sustainability

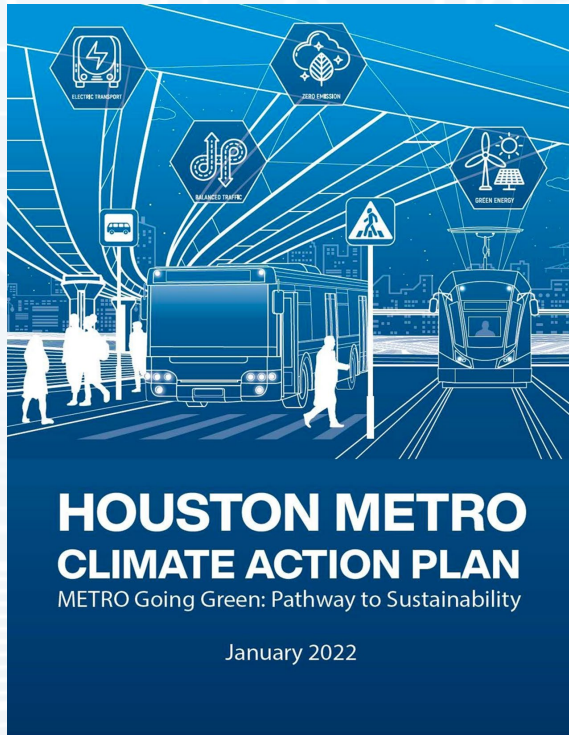


HOUSTON METRO CLIMATE ACTION PLAN

METRO Going Green: Pathway to Sustainability



METRO's Climate Action Plan



- Provides a 2-year roadmap to reduce greenhouse gas.
- Aligns with FTA's climate change guidance.
- Aligns with City of Houston's Climate Action and Resilient Houston Plans.
- Inventories existing efforts [Going Green page](#).
- Identifies new opportunities.
- Applies "PDCA" to track progress.

Drivers

EXTREME WEATHER

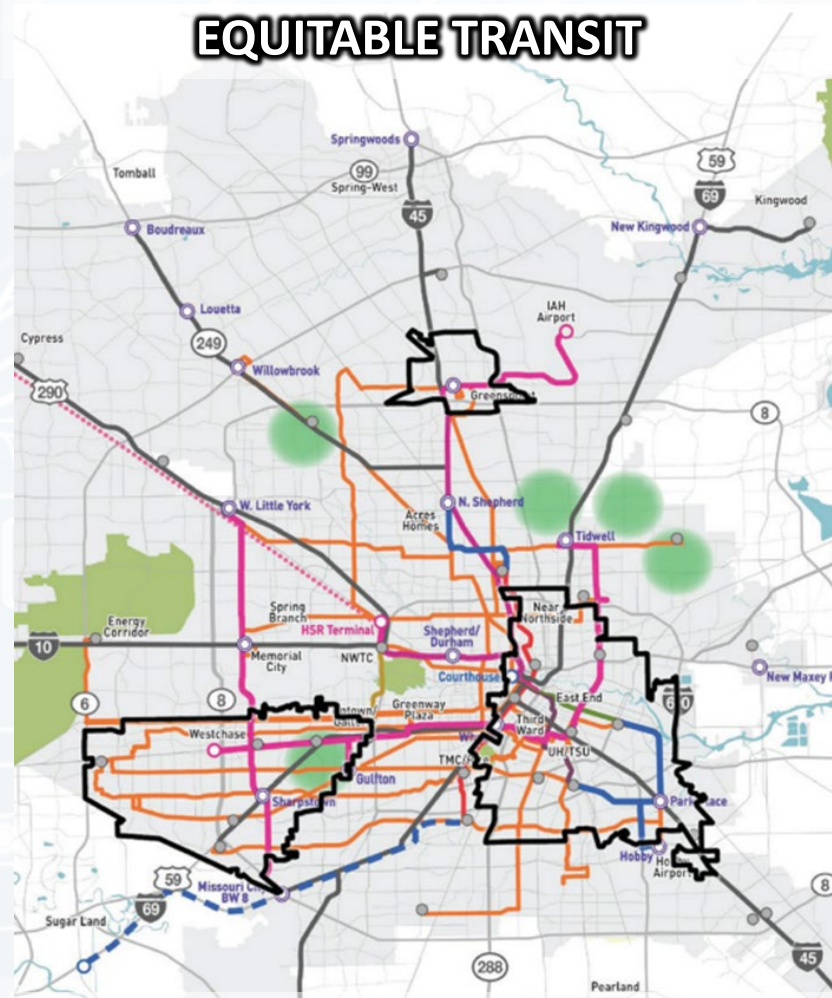


2021- Uri



2017- Harvey

EQUITABLE TRANSIT



METRONext- complete communities

AIR QUALITY



CAP Goals – Sustainability Vision Statement



METRO will shift to procuring only zero-emission buses by FY2030.



METRO will manage its operations to avoid or minimize environmental impacts on the health and safety of our customers and employees.



METRO will apply green principles to the design and management of its facilities. METRO will foster sustainable use of natural resources by promoting energy management, energy creation / generation, recycling, re-use, and re-purposing of materials and waste reduction management opportunities.



METRO will collaborate with educational institutions and community organizations to achieve shared environmental goals.



METRO will develop an agency wide Climate Action Plan to achieve the objectives of this Sustainability Vision Statement.

Climate Action Plan

Drivers

CAP Goals

Next Steps

Climate Action Plan

Goal 1:

Zero Emission Buses by 2030

Goal 2:

Minimize Environmental Impacts.

Goal 3:

Sustainability in design, construction, and management.

Goal 4:

Collaborate to achieve shared environmental goals.

Goal 5:

Create CAP.

Implement Battery Electric Bus.

Test Fuel Cell Electric Buses.

AV Electric Bus.

Capability assessments at facilities.

Workforce Development.

Zero-emissions funding.

Map Carbon Footprint.

Environmental Management Plan.

Evolve Houston Collaboration.

Inventory existing practices.

Energy Management Plan.

Energy Conservation Plan.

LED Lighting Conversion.

25% to 35 renewable by 2030.

Chiller plant upgrades.

Solar pilot.

"Green Bonds" evaluation.

Urban Design Guidelines.

Collaborate with alternative energy programs

CenterPoint Energy coordination.

EVolve Houston MOU / Membership.

APTA Zero-emissions Fleet Committee / industry groups.

Join H-GAC Clean Cities Coalition.

Regional collaboration (Community solar co-ops, H2 Hub).

Collaborate w/ Transit Agencies.

Collaborate w/ community organizations.

Collaborate w/ equity focused non-profits (LINK& Evolve).

Develop, Track, & Monitor CAP activities.

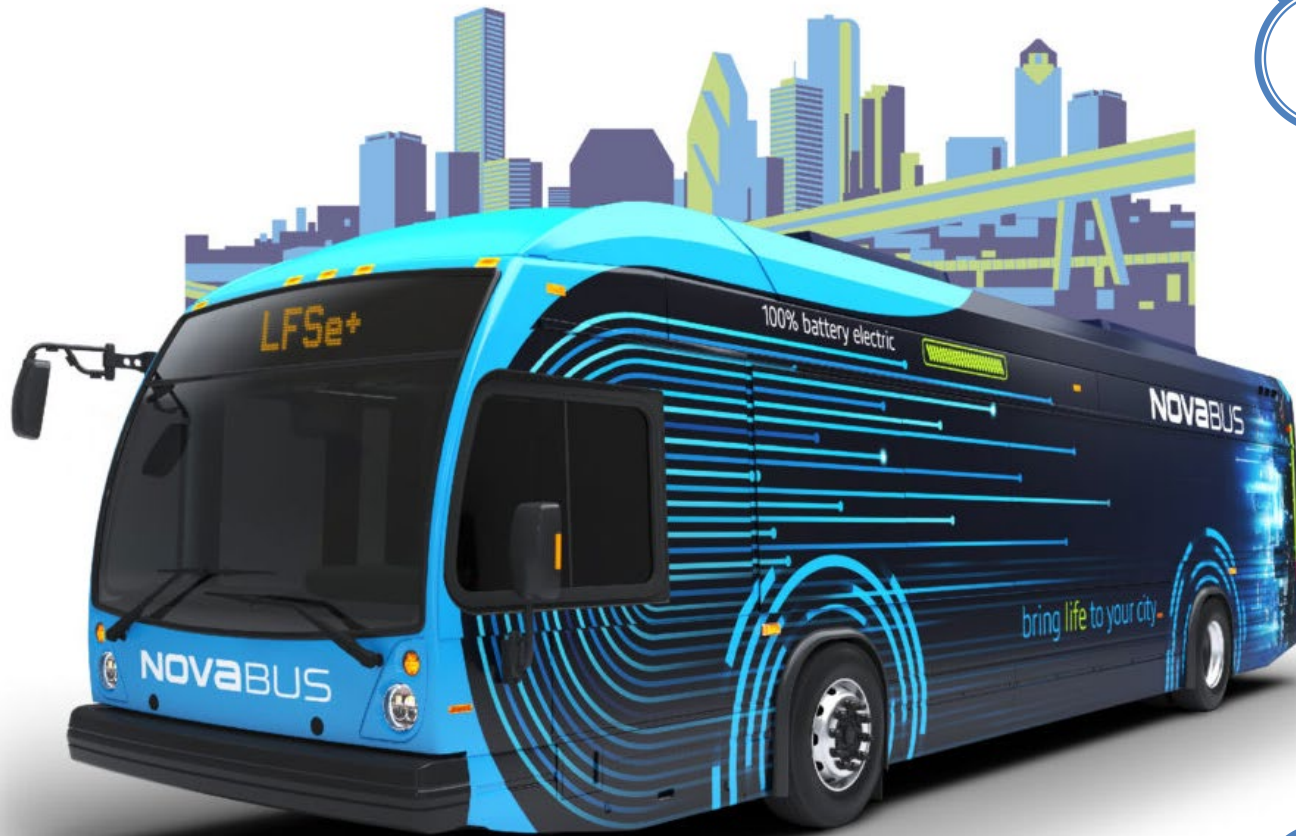
Climate Action Plan

Drivers

CAP Goals

Next Steps

Goal #1: Zero Emission Buses by 2030



- Implement Battery Electric Bus
- Test Fuel Cell Electric Buses
- AV Electric Bus
- Capability assessments at facilities
- Workforce Development
- Zero-emissions funding

Goal #1: Zero Emission Buses by 2030



Contracted with Nova Bus for 20 Battery Electric Buses (BEB)

Contracted with Creative Bus Sales for 10 electric paratransit vans

Developed "Level 4" automated buses specs

Staff research on Fuel Cell Electric Buses (FCEB)

Implementing Virtual Reality to improve training program

Developing zero-emissions fleet transition plan

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Goal #2: Minimize Environmental Impacts.



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Metric Tons Carbon Equivalent (MTCO₂eq)
(40,000Miles)

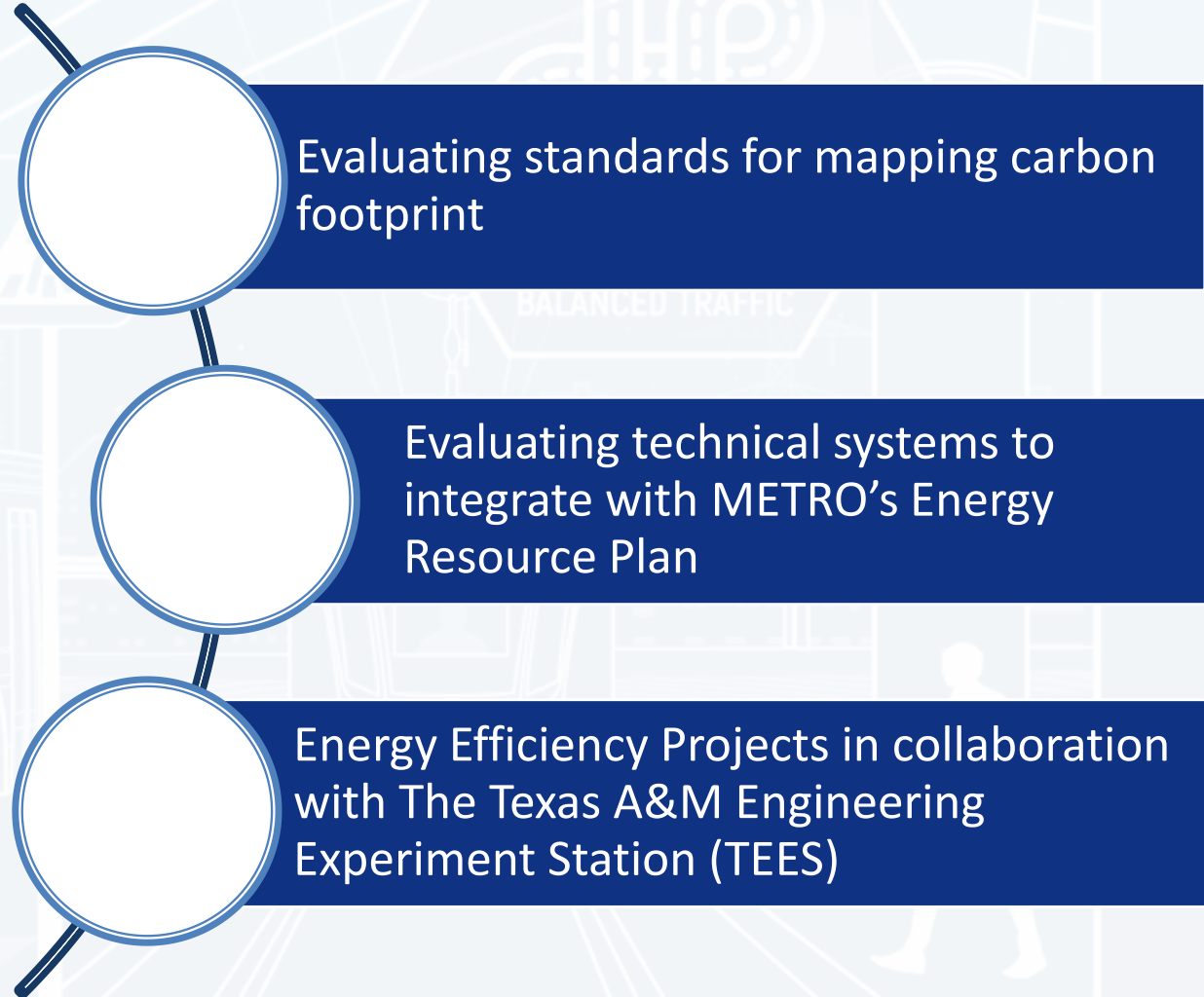


14-Passenger(27.6)

Hybrid Bus (64.8)

CNG Bus (76.8)

Diesel Bus (78)



Climate Action Plan

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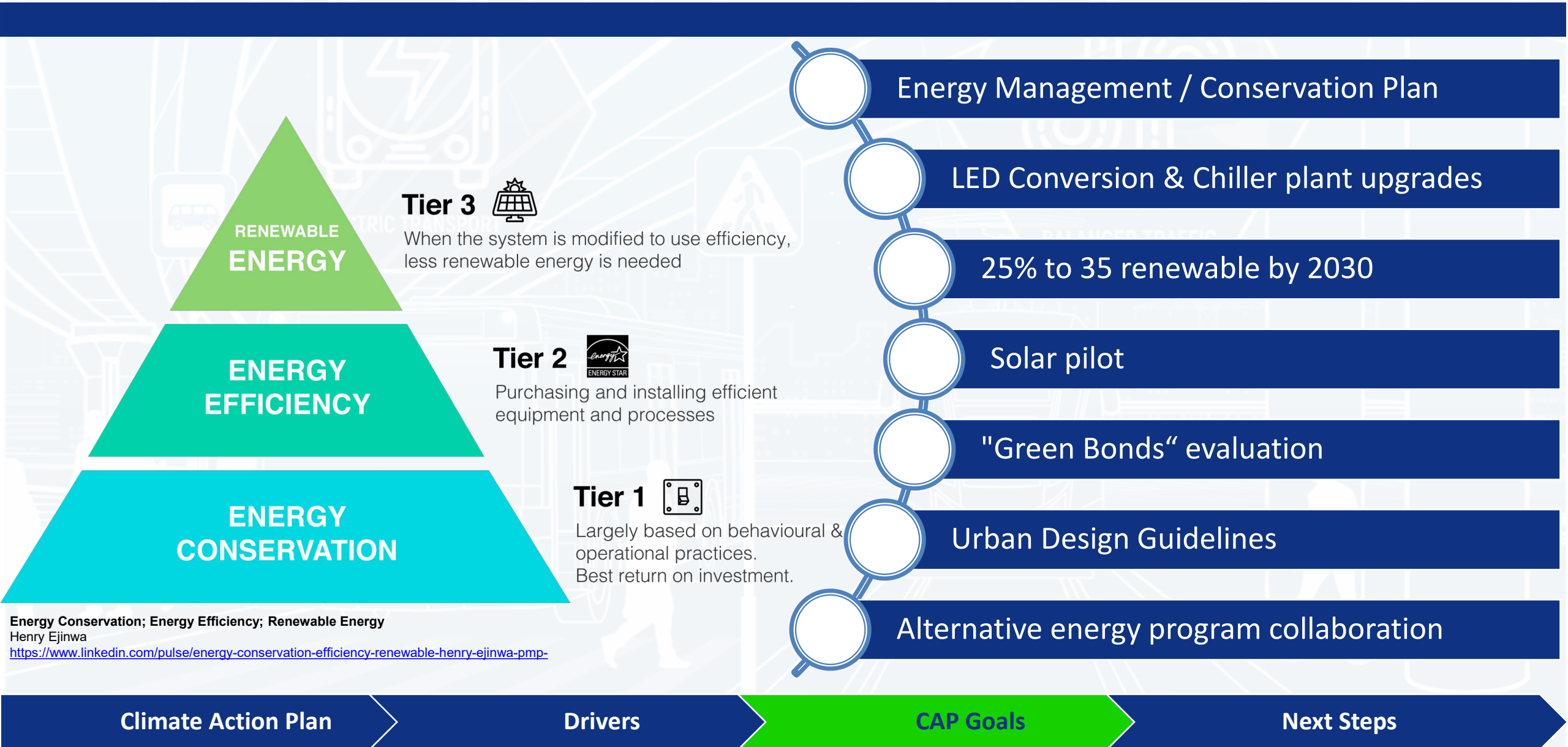
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CAP Goals

Next Steps

Goal #3: Sustainability in design, construction, and management.



Energy Conservation; Energy Efficiency; Renewable Energy
Henry Ejinwa
<https://www.linkedin.com/pulse/energy-conservation-efficiency-renewable-henry-ejinwa-mpm->

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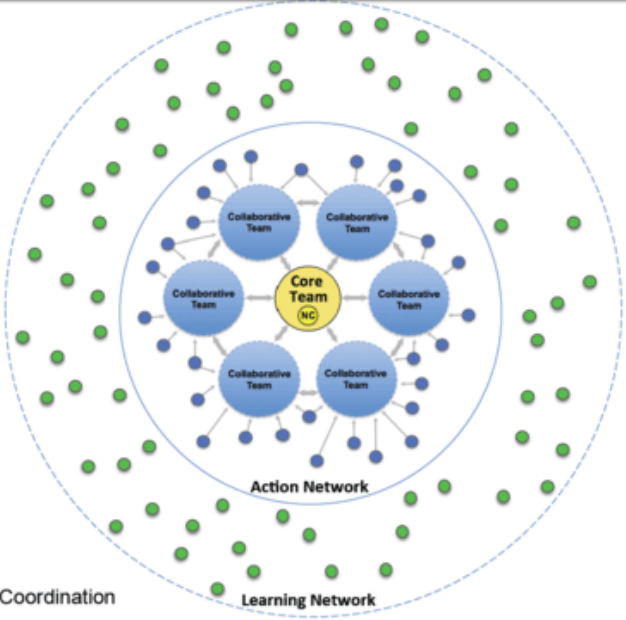
Drivers

CAP Goals

Next Steps

Goal #4: Collaborate to achieve environmental goals

Hybrid Action/Learning Network



- CenterPoint Energy coordination
- EVolve Houston MOU / Membership
- APTA Zero-emissions Committee / industry groups
- Join H-GAC Clean Cities Coalition
- Regional collaboration (solar co-ops, H2 Hub)
- Collaborate w/ Transit Agencies
- Collaborate w/ community orgs & equity focused non-profits

Cutting Through the Complexity: A Roadmap for Effective Collaboration (SSIR)
Ehrlichman et al.
https://ssir.org/articles/entry/cutting_through_the_complexity_a_roadmap_for_effective_collaboration

Goal #4: Collaborate to achieve environmental goals



(Race, 2021)

Partnered with UH on NSF grant for equitable EV access

Representation at H-GAC's Clean Cities Coalition

SXSW 2022

GHP's Houston Hydrogen HUB H2 Working Group

Texas Innovation Alliance and Team Houston calls

Coordinate with non-profits

Hydrogen Economy - Home - University of Houston
University of Houston - UH Energy, Sustainable Energy Development Program, The Hydrogen Economy Micro-credentialing Program
<https://www.uh.edu/uenergy/sed-program/hydrogen>

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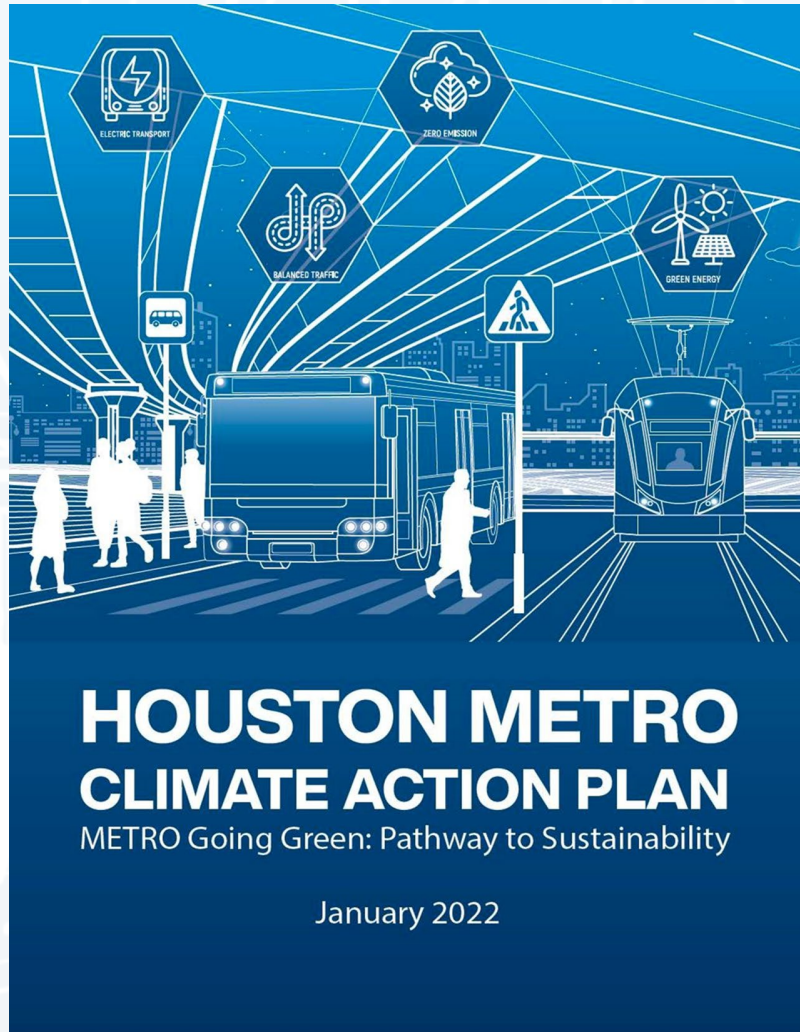
Climate Action Plan

Drivers

CAP Goals

Next Steps

Goal #5: Develop Climate Action Plan



- Develop, Track, & Monitor CAP activities
- Coordinated review w/ regional partners
- Board Approval
- FY22 Q2 Report

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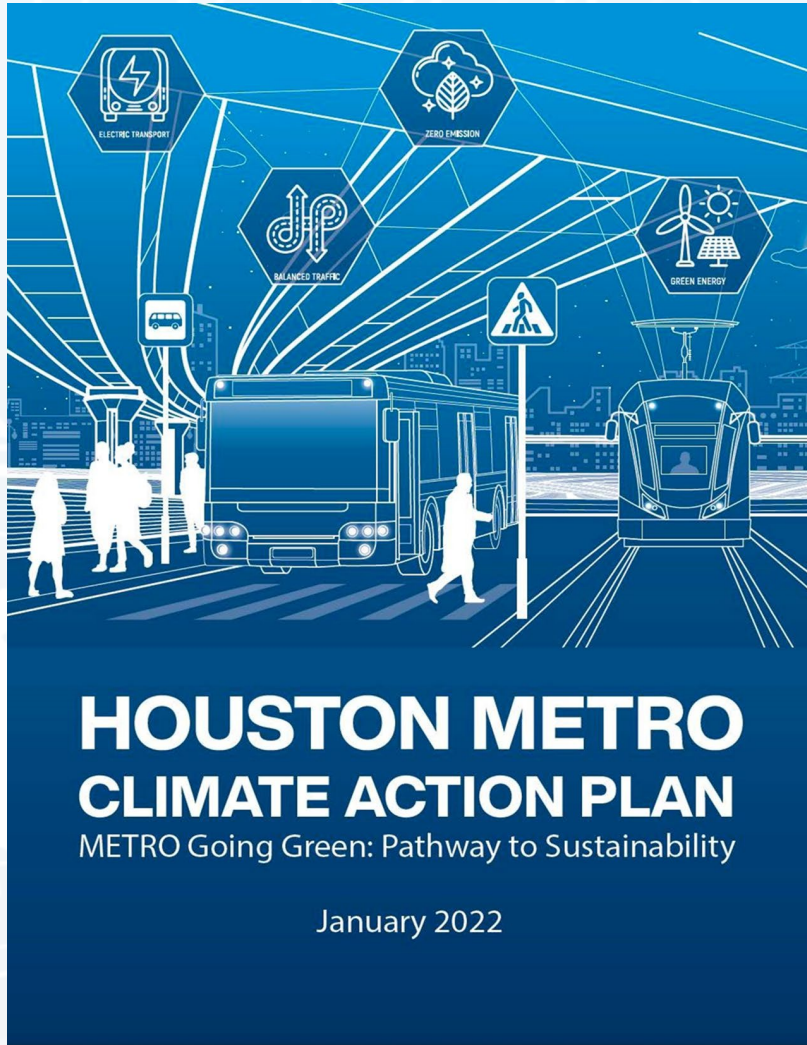
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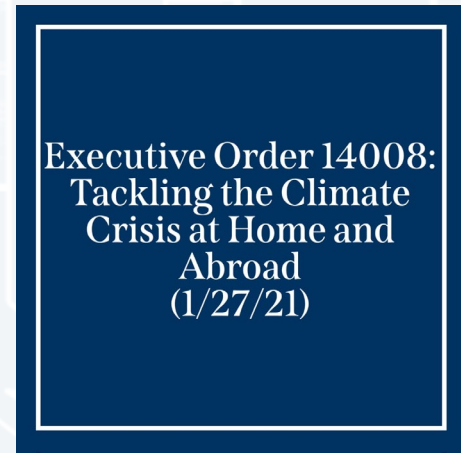
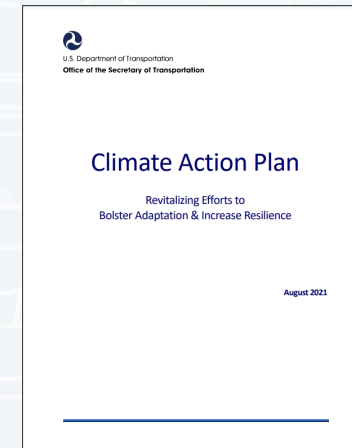
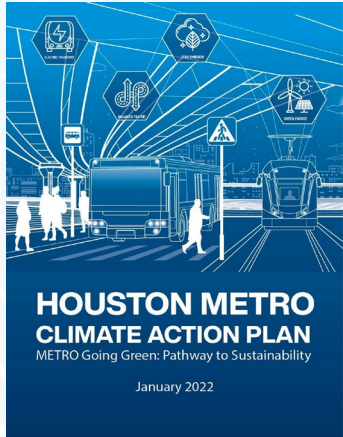
Next Steps

Next Steps



- **Deliver the initiatives in the CAP**
- **Communicate Externally**
 - Clean Cities Coalition
 - Transportation Air Quality Subcommittee
 - Update external Marketing Material
 - Promotional items
 - Website
- **Promote Internally (Lunch & Learns / Think Tanks)**
 - Environmental Management Systems
 - Energy Management / Conservation Plans
 - Zero Emissions Buses
- **Improve monitoring / reporting process**

Bonus - Resources



Bryan D. Carroll
Project Manager | Office of Innovation
Metropolitan Transit Authority of Harris County
(O) 713-615-6423
(E) bryan.carroll@ridemetro.org

Climate Action Plan

Drivers

CAP Goals

Next Steps



ELECTRIC TRANSPORT

BALANCED TRAFFIC