GCRTA Climate Action Plan

Organizational, Services & Performance Monitoring Committee

March 1, 2022

History

- April 21, 2021, President Biden announced greenhouse gas reduction goals for the United States

- In response, FTA created the Sustainable Transit for a Healthy Planet Challenge

- 170 Transit Agencies are participating

Greater Cleveland Regional Transit Authority   RTA

Healthy Planet Challenge

- Develop a Climate Action Plan
    - Build on existing programs
    - Set greenhouse gas emissions targets
    - Create goals and strategies with measurable indicators

Greater Cleveland Regional Transit Authority

Project Milestones

- Internal Steering Committee: Jan-Feb
  - DGMs, Directors and Project Managers

  in various areas of GCRTA's operations

- External Steering Committee: February 23
- Board Committee Presentation: March 1
- Plan Due to FTA: April 15

Baseline Year

- 2018 established as baseline year
  - Robust data
  - Pre-pandemic
- Tracking two categories of emissions
  - Scope 1: Direct Emissions
  - Scope 2: Indirect Direct - Purchased Energy

Greater Cleveland Regional Transit Authority

RTA

Emission Calculations

- <u>Scope 1</u>: Based on fuel usage and vehicle miles
  - Data multiplied by vehicle emission factor
  - Utilize Greenhouse Gas Protocol
- <u>Scope 2</u>: Based on electric and natural gas usage
  - Data multiplied by emission factor for utility grid
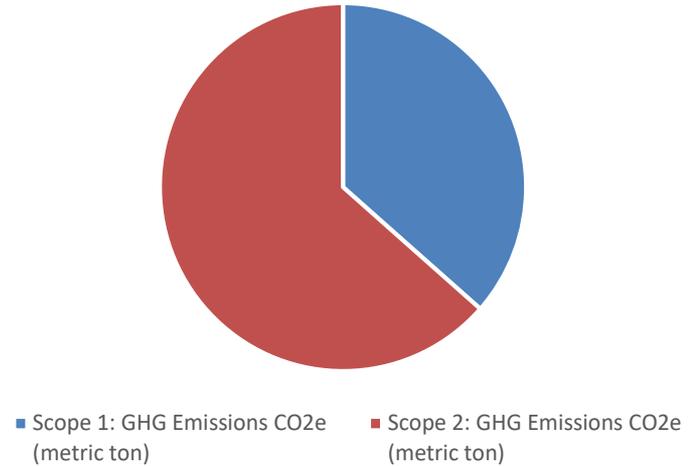 - Utilize EPA's Emission Factors Hub

Emission Breakdown

GCRTA produced 103,685 metric tons CO2e in 2018

- 37% Scope 1
- 63% Scope 2

GCRTA produced 81,036 metric tons CO2e in 2021

- 21.84% drop from 2018

2018 Emissions by Category

■ Scope 1: GHG Emissions CO2e (metric ton)　　■ Scope 2: GHG Emissions CO2e (metric ton)

Greater Cleveland Regional Transit Authority

RTA

Potential Fleet Strategies

- Convert all revenue buses to non-diesel (mostly CNG) by 2035
- Have a 10 bus Electric Bus Pilot in place by 2024
- Expand Electric bus pilot to 20 buses
- Phase out gasoline fueled Non-Revenue and Paratransit Vehicles, replacing with hybrid and electric

Greater Cleveland Regional Transit Authority

Potential Rail Strategies

- Add all Rail Switch Heaters on the Light Rail Lines to the remote access system
- Complete Substation Renewal Program
- Place new rail cars in service. Efficiency considerations include:
  - On-board regenerative braking
  - Potential to use higher voltage (with additional substation upgrades)
- Complete Light Rail Track Rehabilitation Projects and Catenary Restoration Projects to help minimize stray current.
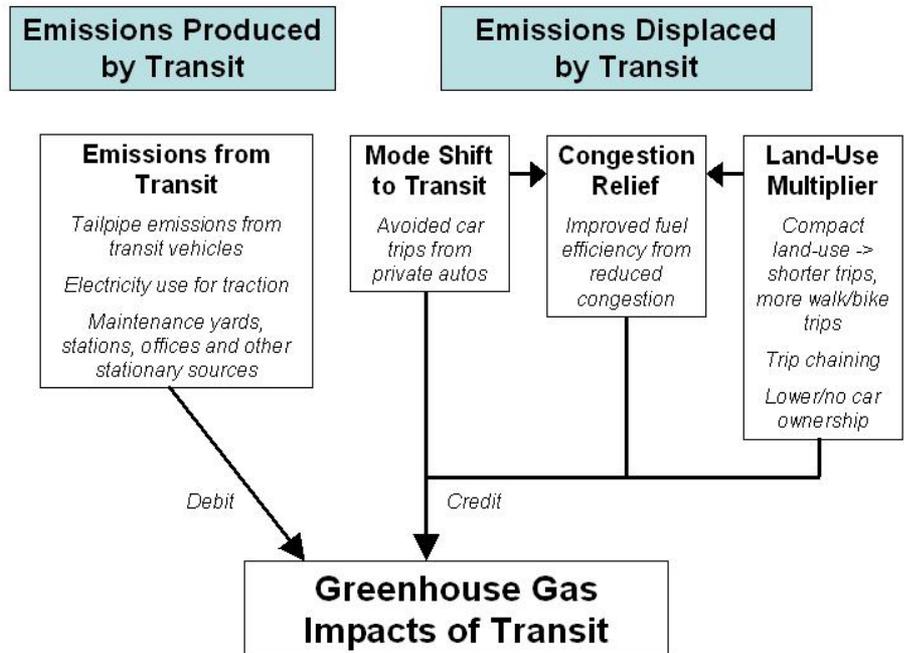
Potential Facilities Strategies

- Conduct Energy Audit of all major facilities

- Implement currently identified near-term upgrades:
  - Upgrade and fully integrate a Building Automation System at all Major Facilities
  - Replace the floor heating system for the Central Rail Shop
  - Upgrade the HVAC Control system at all substations to be a SMART system with remote access
  - Continue LED lighting retrofits

Greater Cleveland Regional Transit Authority

RTA

Potential Energy Source Strategies

- Install solar panels
  - Possible Locations: Along Windermere spur track, over mainline track, facility parking lots, facility roofs (Hayden roofing project).
  - Power catenary or facilities
  - Own, lease, or host community solar
- Clean power purchase

Displaced Emissions

- Mode-shift to transit is a climate action strategy

- Can offset GCRTA emissions in climate strategy

Emissions Produced by Transit		Emissions Displaced by Transit	
Emissions from Transit	**Mode Shift to Transit**	**Congestion Relief**	**Land-Use Multiplier**
Tailpipe emissions from transit vehicles	*Avoided car trips from private autos*	*Improved fuel efficiency from reduced congestion*	*Compact land-use -> shorter trips, more walk/bike trips*
Electricity use for traction			*Trip chaining*
Maintenance yards, stations, offices and other stationary sources			*Lower/no car ownership*

Debit   *Credit*

Greenhouse Gas Impacts of Transit

Potential Ridership Strategies

- Implement strategies identified in GCRTA 10-year strategic plan, Framework for the Future:
  - Implement the Expanded Funding Concept of the System Redesign, which will increase service by 25%
  - Add BRT amenities on priority corridor routes
  - Institute Fare Equity Strategies

Greater Cleveland Regional Transit Authority

RTA

Potential Ridership Goals

- <u>Ridership Rebound Scenario:</u> Achieve a 10% increase of Passenger Miles Traveled from 2018 (baseline) levels by 2050

- <u>Ridership Growth Scenario:</u> Achieve aggressive ridership growth in line with community-driven mode shift climate plan goals and in partnership with regional policy strategies
  - Example: Cuyahoga County climate change plan goal equivalent to about 20% increase from 2018 levels by 2030
  - Increasing county transit mode share by 2-3% means doubling pre-pandemic ridership (2.5% trips in 2015)

RTA

Overall Emission Targets:

- <u>Most Feasible:</u> Achieve reduction of GHG emissions / PMT from 2018
  - 10% by 2030
  - 30% by 2040
  - 60% by 2050

- <u>Stretch Target:</u> Achieve reduction of GHG emissions / PMT from 2018
  - 40% by 2030
  - 60% by 2040
  - 80% by 2050

Challenges

- Ridership
  - Returning to Pre-pandemic levels
- Implementation
  - Acquiring and implementing required technology

Next Steps

- Finalize the Climate Action Plan
  - Deadline to submit, April 15, 2022
- Track Progress
- Update Climate Action Plan on Annual Basis

Greater Cleveland Regional Transit Authority

Questions