

# Zero Emissions Bus Transition Plan Update

Metropolitan Council Committee of the Whole

Presented by: Carrie Desmond

10/20/21

# Zero-Emission Bus Transition Plan (ZEBTP)

- Establish a plan to move Metro Transit's bus fleet from primarily diesel to zero-emission buses
- Metropolitan Council is required to develop the Transition Plan by State of Minnesota Statute 473.3927
- Due to State Legislature February 15, 2022
  - Update at least every five years
- Anticipated to be a requirement of future FTA competitive grant applications



# ZEBTP Project Goals

## Define Guiding Principles

- Technical viability
- Equity & environmental justice
- Financial impact

## Set Milestones & Goals

- Short term (2021-2025)
- Medium term (2026-2030)
- Long term (beyond 2030)

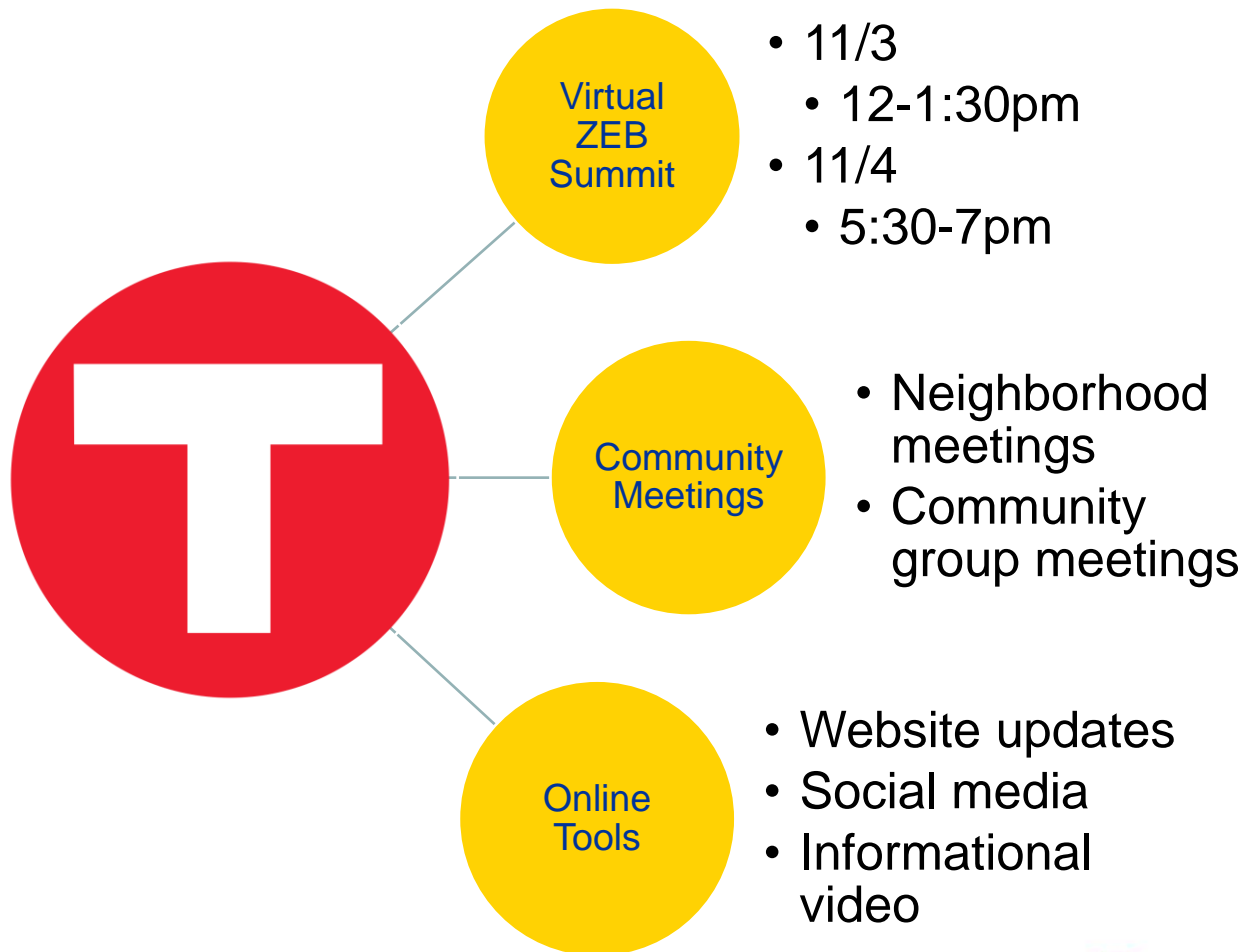
## Develop Strategies

- Service design
- Bus quantities
- Charger types & locations

# Preliminary ZEBTP Schedule

	July 21	Aug 21	Sept 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
<b>Guiding Principles</b>	Active	Active	Active	Active	Active	Completed	Completed	Completed
<b>Peer Outreach</b>	Completed	Completed	Active	Active	Completed	Completed	Completed	Completed
<b>Fleet / Facility / Service Assessment</b>	Completed	Completed	Active	Active	Active	Active	Completed	Completed
<b>Stakeholder Engagement</b>	Completed	Completed	Completed	Active	ZEB Summit 11/3 & 11/4	Completed	Completed	Completed
<b>Finalize Plan</b>	Completed	Completed	Completed	Completed	Completed	Active	Active	Submit 2/15/22

# Stakeholder Engagement



# Battery-Electric Bus: Benefits and Challenges

- **Benefits:**
  - Less dependence on fossil fuels
  - Fewer greenhouse gases (GHG)
  - Quieter vehicles, less vibration, greater comfort
- **Challenges:**
  - Technology readiness for vehicles and infrastructure
  - Fleet lifecycle / replacement timing
  - Major facility and operational changes



# Met Council's Equity Considerations Dataset

- Population Characteristics of Service Areas:
  - Population Density
  - % Black, Indigenous, People of Color (BIPOC)
  - % Zero-Car Households
  - % Housing Cost Burdened
  - Number of years Areas of Concentrated Poverty
- Environmental Factors of Service Areas:
  - Avg. land surface temperature on a hot summer day (heat island)
  - Lifetime cancer risk from inhalation of air toxics (Persons per million)

# Zero Emission Fleet Plan in CIP

- CIP planned funding of electric buses and infrastructure:
  - 8 buses in 2022
  - 70 buses in 2025
  - 22 buses for Gold Line and Purple Line
- CIP includes unfunded targets for zero emission fleet:
  - 30 electric buses in 2022-2024 identified with proposed Xcel Energy Partnership
  - 155 buses in 2026 and 2027
- CIP updated annually
  - ZEBTP will inform 2023-2028 CIP
  - Technical viability and funding availability key to future adoption



## C Line Update

- Factory Acceptance Testing - completed 9/23
- Replacement charger installation – completed 10/4
- Commissioning ongoing
- Training activities
- Return to service



# Minneapolis Bus Garage Electrification

- FY21 Low/No Grant
  - (8) 40' Proterra 675kWh long range buses for use in local service
  - Proterra depot chargers
- FY19 Low/No Grant
  - (2) Indoor pantograph style quick chargers
  - 2MW rooftop solar array
  - 2MW/800kWh battery storage system



# How to Stay Engaged

- Participate in the ZEB Summits and invite your network
  - Wednesday, November 3, 2021 from 12pm – 1:30pm
  - Register at [https://us02web.zoom.us/webinar/register/WN\\_qWaiORm0TgSQbZ561xjtVQ](https://us02web.zoom.us/webinar/register/WN_qWaiORm0TgSQbZ561xjtVQ)
  - Thursday, November 4, 2021 from 5:30pm - 7pm
  - Register at [https://us02web.zoom.us/webinar/register/WN\\_N3VdwFbFRrihzmLELIUMDw](https://us02web.zoom.us/webinar/register/WN_N3VdwFbFRrihzmLELIUMDw)
- Next Council Presentation – early 2022
- Contact Carrie Desmond, Principal Engineer Electric Bus Infrastructure with questions:  
[Carrie.Desmond@metrotransit.org](mailto:Carrie.Desmond@metrotransit.org)