

Metro's Sustainability Impact

Transit is Essential to a Thriving
Region



Metro and the Region



The Region Has Ambitious Sustainability Goals

Metro delivers the high-quality transit that our region and federal partners need to meet climate, resiliency, equity and mobility goals



Climate Action Plan
Revitalizing Efforts to
Bolster Adaptation & Increase Resilience



Transit is Essential to Attaining the Region's Goals



\$9.4b

Additional business output from transit.

\$330b

Property value in Metro station areas.

1.2m

Auto trips avoided each day by 2025.

\$27b

Avoided road construction costs.

1.2m

Metric tons of greenhouse gases avoided by transit.

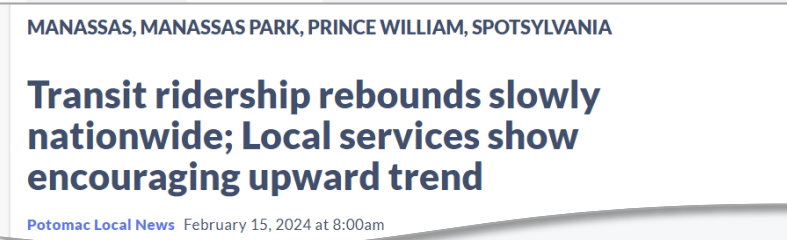
\$2b

Avoided parking construction costs.

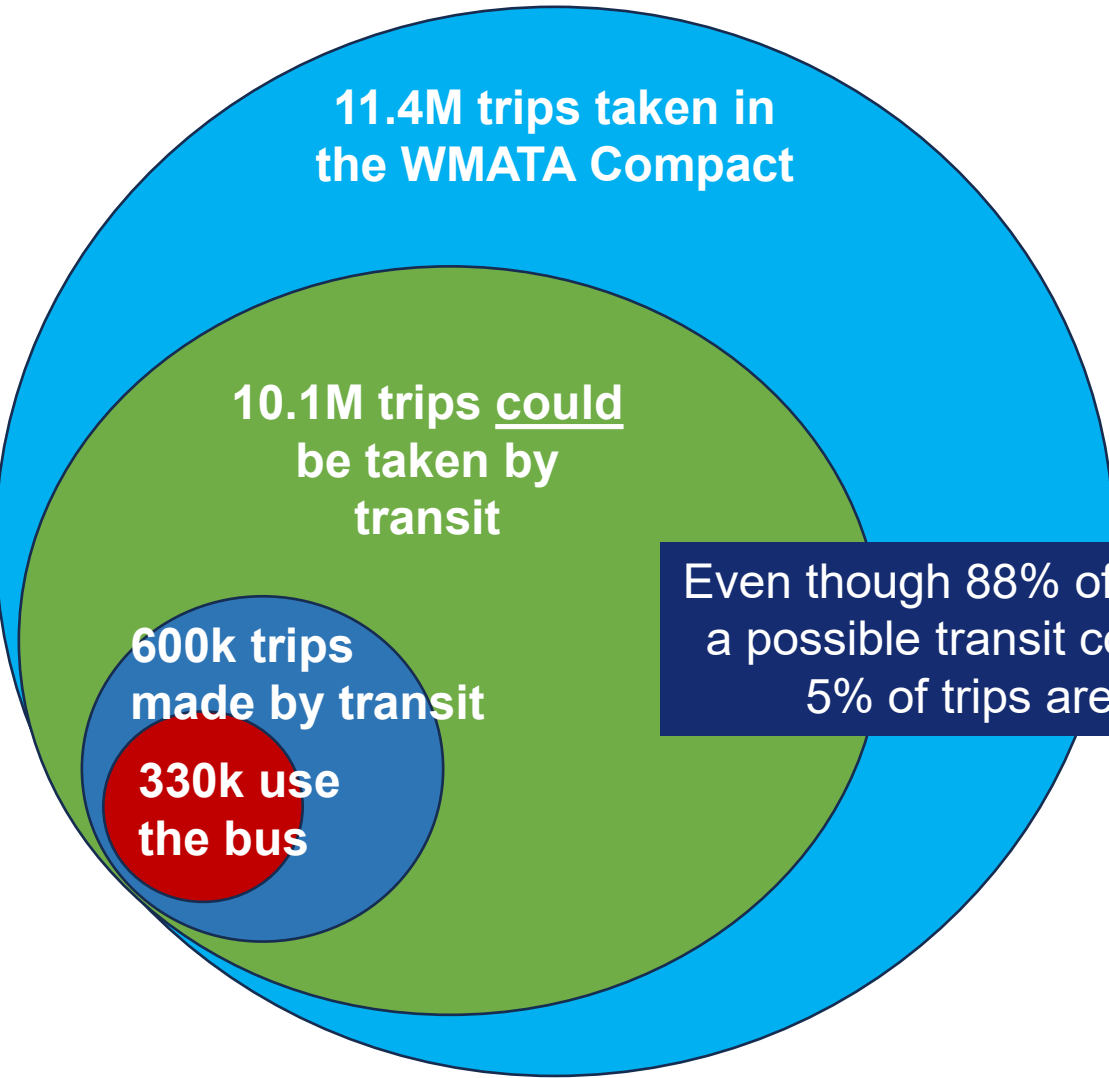


Ridership Recovery and Travel Trends

- **Fundamentals** of transit ridership have not changed
 - *Ridership continues to be highest on weekdays and peaks*
- However, many **patterns** have changed:
 - *Higher weekday off-peak and weekends ridership*
 - *Rail ridership lower on Mondays and Fridays*
- Local bus systems carrying near pre-pandemic levels
 - *Greater in some cases, esp. Alexandria DASH which is fare-free*
- Commuter bus and rail systems are carrying ~25% pre-pandemic levels
- Metrorail ridership approximately 70% of April 2019
 - *12% lower on Saturdays and 15% higher on Sundays*
- Metrobus ridership 102% of April 2019
 - *13% higher on Saturdays, 35% higher on Sundays*



Transit Has Huge Market Potential in the DMV



11.4M trips taken in the WMATA Compact

10.1M trips could be taken by transit

600k trips made by transit

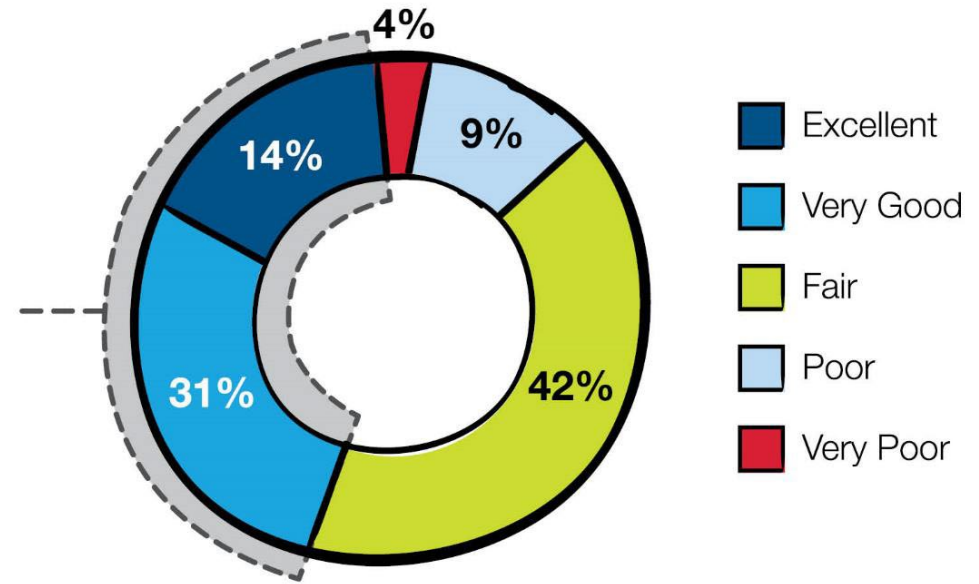
330k use the bus

Average Daily in 2023

Even though 88% of daily trips have a possible transit connection, only 5% of trips are on transit

Where there's high-quality transit and density, transit captures up to 20% of trips

45% of people surveyed rated the region's bus services as "very good" or "excellent"



2022 Public Survey

Source: WMATA Better Bus Network Public Survey (2022)

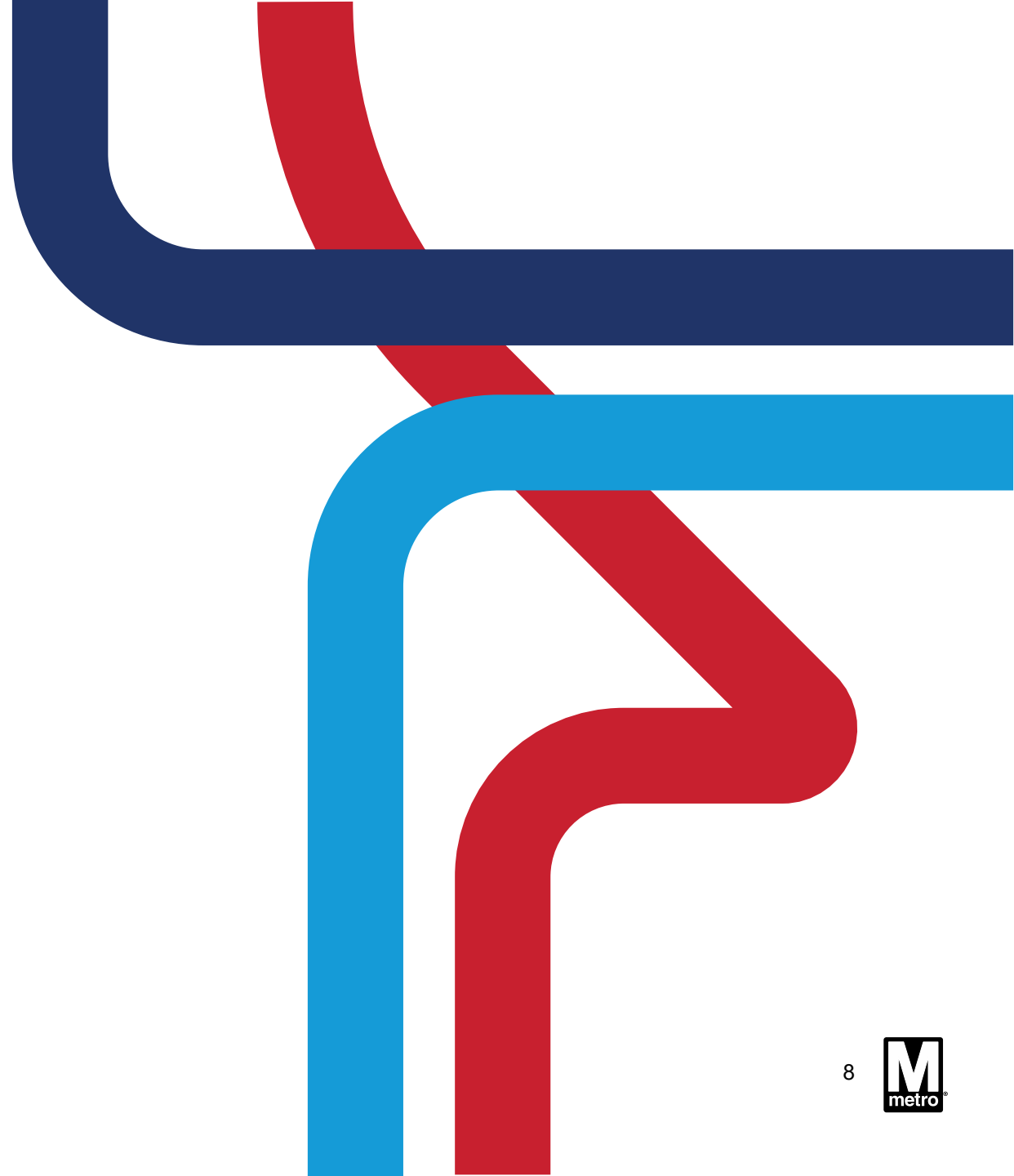
A Sustainable Region Needs Healthy Transit

- Every transit trip **fosters a healthy region** and **prevents greenhouse gas emissions** by reducing travel-related carbon emissions
- Transit also promotes **equity, environmental stewardship, economic prosperity, and social wellbeing**

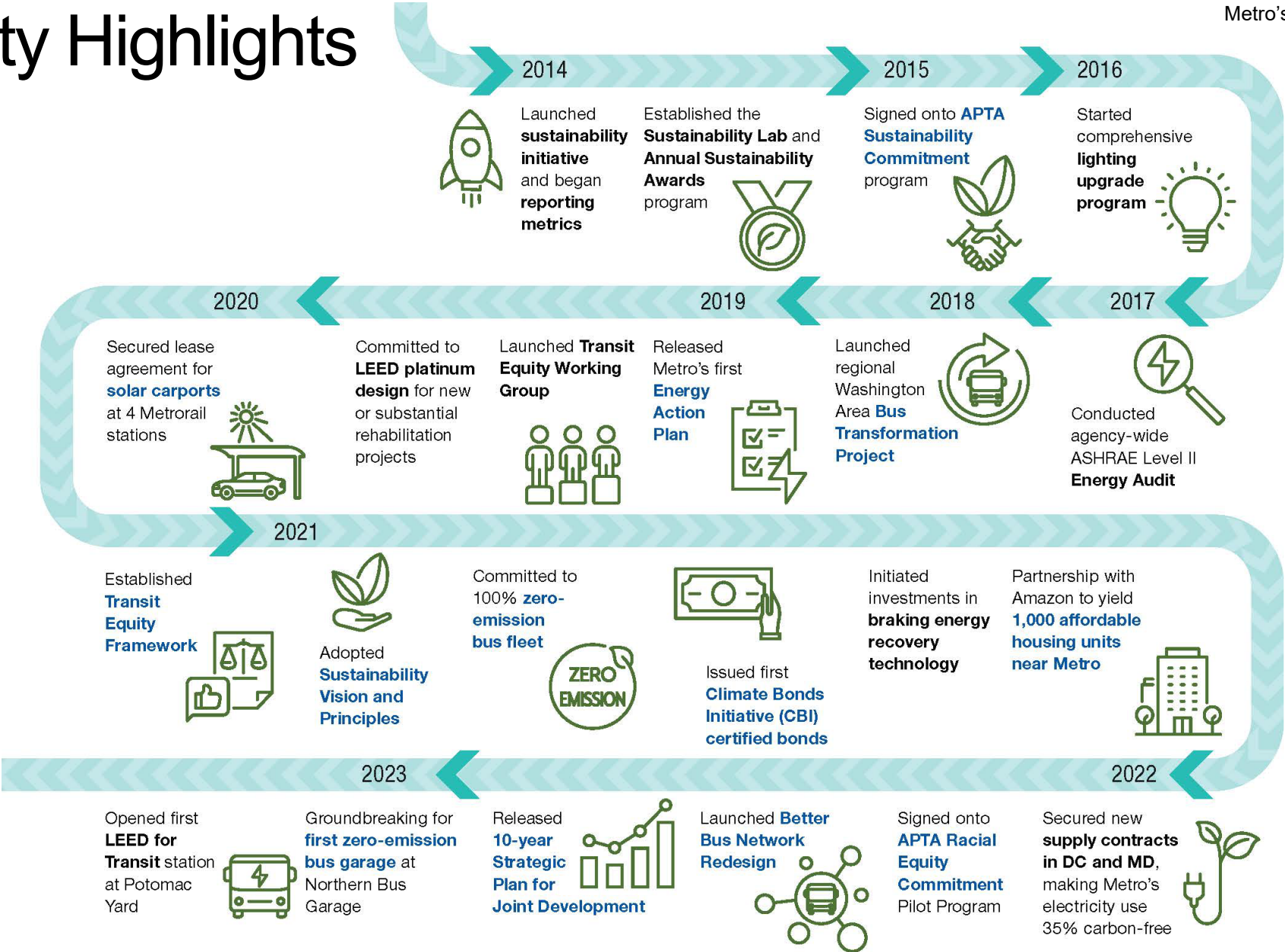


More people riding transit is key to meeting the region's sustainability goals

Advancing Sustainability at at Metro



Sustainability Highlights



Metro's Strategic Plan Includes Environmental Sustainability Initiatives and Targets

Metro's Sustainability Impact



Decarbonize Metro infrastructure and equipment



Optimize natural resource stewardship



Modernize design, construction, and operations

Environmental Sustainability Targets:

- Increase regional greenhouse gas emissions avoidance by 10% by 2028
- Achieve net-zero carbon by 2050
- Increase to 100% carbon-free electricity by 2033
- Achieve 100% zero-emission bus by 2042
- Achieve 100% zero-emission non-revenue and paratransit fleets by 2050
- Increase number of facilities with green certifications
- Maintain water use per revenue mile at <1

Delivering emissions reductions to the region and its residents



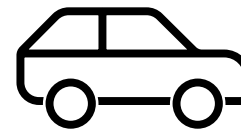
Net Regional Emissions Avoidance

Target: Increase emissions avoidance by 10% by 2028
Direction of desired performance: **up** ↑

- As Metro's ridership grows, our positive environmental impact increases – helping the region meet emissions reduction goals
- **In FY2023, more than 78,000 metric tons of emissions were avoided, equivalent to** →
- Increased ridership along with Metro's decarbonization – including energy and cost efficiency investments, transition to zero-emission fleets, and clean power – will boost sustainability benefits



...the **carbon absorbed by a forest about twice the size of Washington, D.C.**



...the **emissions from about 200 million miles** driven by an average gasoline powered passenger vehicle



...the **emissions from generating electricity used for about 15,000 homes** in a year

- Comparisons generated from EPA Greenhouse Gas Equivalencies Calculator: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

- More than 78,000 metric tons of annual avoided emissions is a net estimate derived from subtracting service delivery emissions from estimated gross annual avoided emissions due to mode shift to Metro service; methodology based on APTA's 2009 Recommended Practice Quantifying Greenhouse Gas Emissions from Transit. Updates are underway to align this metric with APTA's current recommendation

Clean Energy Sources and Efficiency Investments Reduce Emissions

Metro's Sustainability Impact



Path to zero emissions

Target: Net zero carbon by 2050

Direction of desired performance: **down** ↓

- Actions we are taking:
 - Invest in energy efficient vehicles, equipment, and practices
 - Procure clean energy
 - Develop decarbonization strategy for future initiatives
- Energy efficiency investments have yielded significant annual energy reductions and cost avoidances
 - ~\$7M annual energy cost avoidance
 - ~\$1.5M one-time energy efficiency rebates from utilities

Transitioning to Clean Electricity



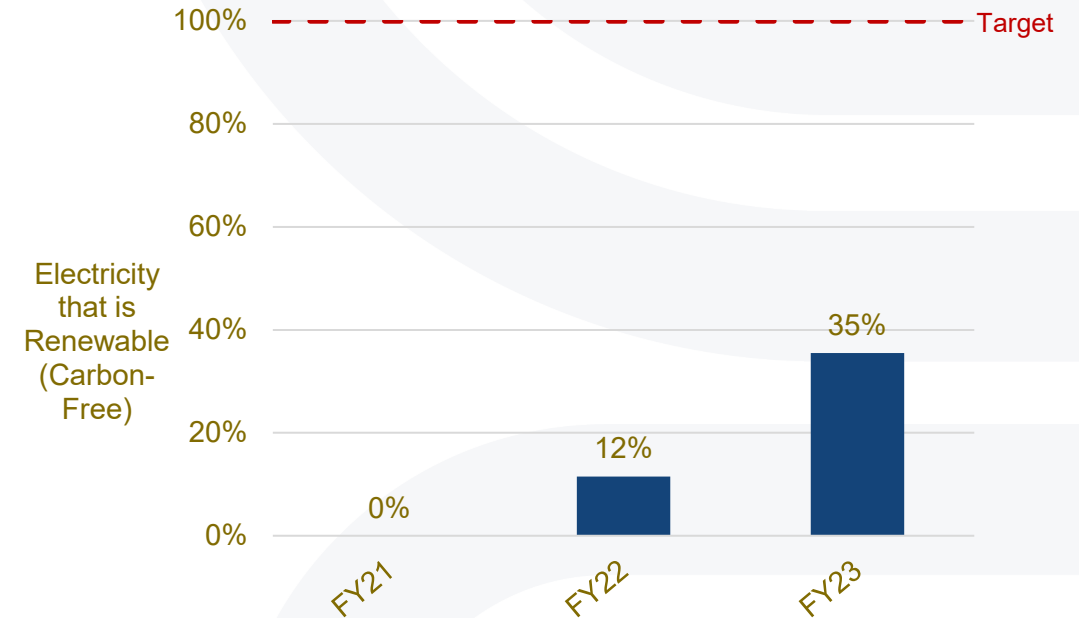
35% carbon-free electricity in FY2023

Target: 100% carbon-free electricity by 2033

Direction of desired performance: *up* ↑

- Support the region's clean energy transition and keep costs low by strategically engaging with the market
- Partnered with the General Services Administration (GSA) to purchase energy:
 - Secure favorable pricing
 - Lower administrative costs
 - Renewable energy requirements
- Clean energy approach includes:
 - Investing in on-site renewables (e.g. solar)
 - Requiring renewable energy certificates
 - Identifying and pursuing emerging opportunities

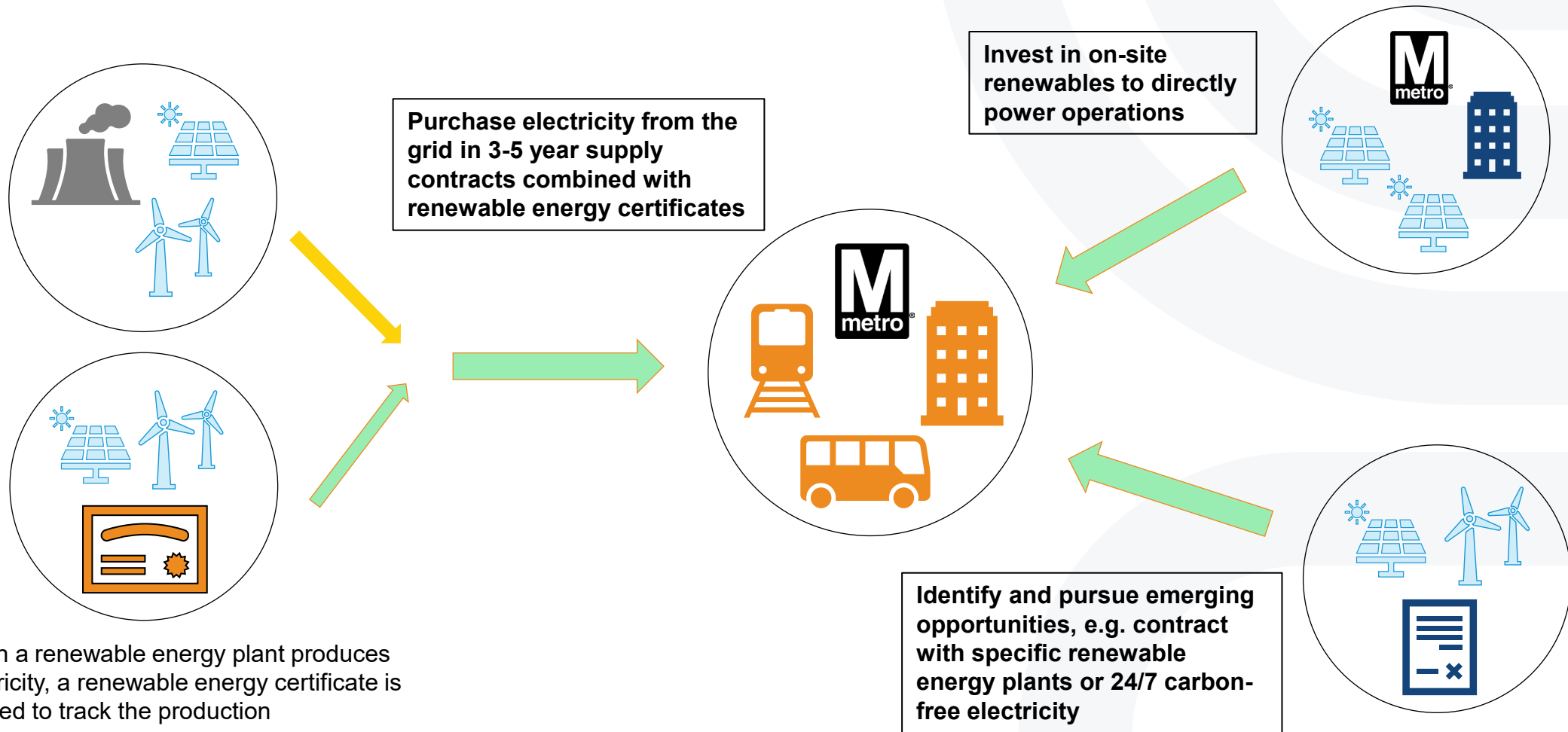
Carbon-free electricity usage



Metro uses almost **800,000,000 kilowatt hours** of electricity every year – about equal to the **energy consumption of 31 Nationals Park stadiums**

Path to 100% carbon-free electricity

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When a renewable energy plant produces electricity, a renewable energy certificate is created to track the production

Supports financing of renewable energy generation

Directly supports construction of new renewables with a potential local element

Generating Renewable Energy



Solar Installation at Naylor Rd



On-Site Solar

- 10 MW solar carport lease – generating enough clean electricity to power 1,100 homes
 - 3rd party design, build, and operate – outsourcing risk, management, and cost
 - Parking amenities for customers and clean energy to our region
- Solar planned for several new facilities: Bladensburg and Northern bus garages

Zero-emission fleets promote clean air, health, and livability



Zero-emission fleet transitions underway

Target: 100% zero-emission bus by 2042

Target: 100% zero-emission paratransit and non-revenue by 2050

- Zero-Emission Bus Transition Plan accelerated by three years – providing path to 100% zero-emission bus service by 2042
- Two battery-electric buses entered service in 2023; deliveries of additional 10 begin in 2024
- Electrification of Northern, Bladensburg, and Cinder Bed bus garages underway
- Transition planning for 100% zero-emission non-revenue and paratransit service vehicles by 2050 underway



Two new 60-foot electric buses in service on the W4 route from Anacostia to Deanwood in November 2023

Increasing Tree Canopy



Tree Canopy

- Partnerships to plant trees
 - Partnership with the Anacostia Watershed Society to plant 385 trees at four Metrorail stations in Maryland and D.C.
- Trees provide health and environmental benefits
 - Improve customer experience by providing shade and green space
 - Over 100,000 pounds CO₂ sequestered over 20 years
 - Nearly 2 million gallons rainfall intercepted/ stormwater mitigated over 20 years



Tree planting at Hyattsville Crossing

Reducing Waste from Construction



Construction Waste Diversion

- Recent projects utilizing Leadership in Energy and Environmental Design (LEED®) credentials diverted significant amounts of construction waste from landfills:
 - 82% Eisenhower Office Building (~1,800 tons waste diverted)
 - 84% New Carrollton Office Building (~1,150 tons of waste diverted)
 - 90% L'Enfant Headquarters (~9,300 tons of waste diverted)
 - 92% Andrews Bus Garage (~1,900 tons of waste diverted)
 - 91% Dulles Rail Yard Buildings (~4,500 tons of waste diverted)



LEED-certified Dulles Rail Yard

Using Green Certifications as a framework for facility modernization

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Metro's L'Enfant Headquarters Building



Building LEED® Facilities

- 12 completed LEED® certifications
 - L'Enfant Headquarters received LEED Platinum certification from USGBC
- 3 built to LEED® and awaiting certification
 - New Carrollton and Eisenhower office buildings
 - Potomac Yard-VT Metrorail Station – first LEED® for Transit Pilot and second infill station
- 4 designing to LEED® standards
 - Heavy Repair & Overhaul Facility
 - Northern and Bladensburg Bus Garages
 - MTPD District 3 substation

- LEED® = Leadership in Energy and Environmental Design
- Information based on Green Business Certification Inc. LEED certification documentation



Investing in modern equipment decreases water consumption



Modernization for efficient water use

Target: < 1 Gallon/VPM

Direction of desired performance: **down** ↓

- High-efficiency equipment at LEED®-certified facilities (e.g., bus garages, rail yards, support facilities)
- Bus wash water reuse at bus garages
- Chiller upgrades
- Remote chiller water monitoring and treatment systems

-Water use intensity = gallons of water consumed divided by vehicle revenue miles

-LEED® = Leadership in Energy and Environmental Design



Newly Installed Chiller at Benning Rd

Promoting Innovation and Best Practice Adoption

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Testing battery-powered track maintenance equipment



Sustainability Challenge & Lab

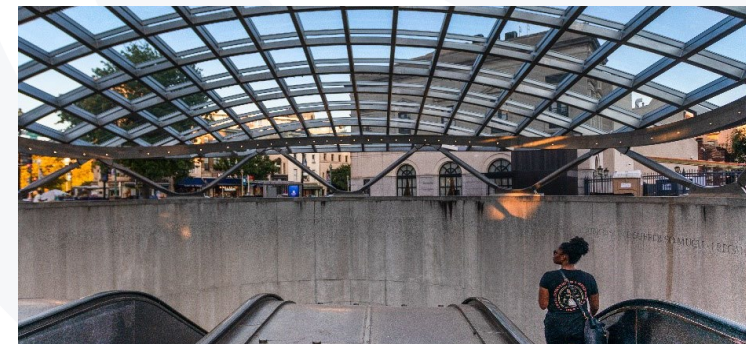
- Sustainability Challenge recognizes adoption of sustainable innovation and best practices
 - Celebrated ~80 employees in 2024
- Sustainability Lab evaluates and supports new sustainability practices and technologies
 - Current projects include battery-powered track maintenance equipment and battery/electric leaf blowers

Opportunities to Drive Sustainability Forward



Needs and Opportunities to Improve Transit and Drive Regional Sustainability Forward

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Regional Partnership

Prioritizing transit, walking, and biking reduces vehicle miles traveled and boosts regional benefits

Examples: Transit Oriented Development, Bus Priority, Network of bike/ped paths, Transfer/connection hubs

Service

Frequent, reliable service optimizes existing transit investments

Examples: Better Bus Network Redesign, all-day/all-week frequent bus and rail service

Modernization

Transitioning to cleaner fuels and enhancing energy and cost efficiency

Examples: 8000-series railcars, Automated operations, On-site solar, Resiliency projects

- Contact: Rachel Healy, Director, Sustainability
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- Resources: Metro's Sustainability Hub:
<https://www.wmata.com/initiatives/sustainability/>

Thank you!