

Creating a Sustainable and Resilient Nashville

Sunrise Nashville

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of Mayor Freddie O'Connell



What I Do in a Day

- Set strategy for Metro environmental, sustainability and resilience priorities
- Lead administration environmental, sustainability, and resilience initiatives or those requiring centralized leadership across departments
- Advocate for and amplify departmental environmental, sustainability, and resilience projects
- Facilitate communication and leveraging of resources across departments on potential cross-cutting environmental, sustainability, and resilience projects
- Build relationships with external partners to further sustainability and resilience throughout the community
- Represent Metro in major community conversations or projects relating to the environment, sustainability, and resilience
- Anything else that comes up in a day!



We've planned a lot...



THE UNITED STATES
CONFERENCE OF MAYORS

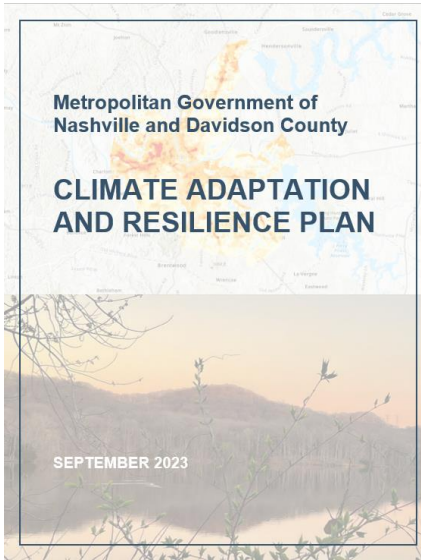
2009



2021



2023



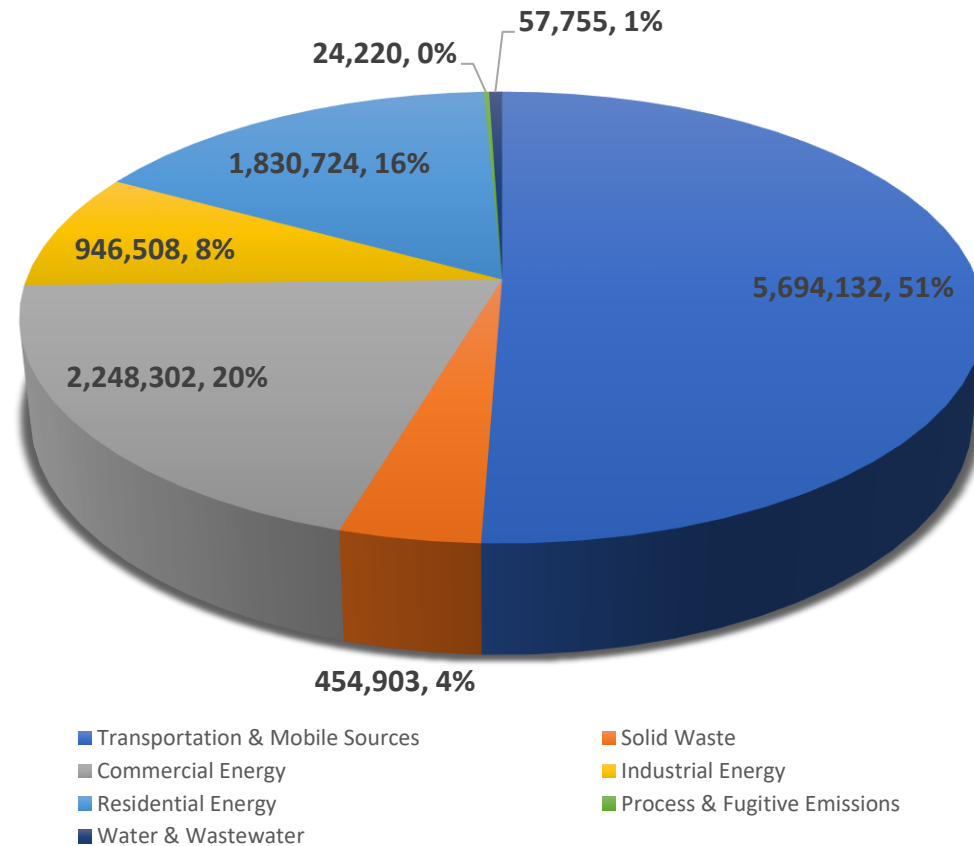
GLOBAL COVENANT
of MAYORS for
CLIMATE & ENERGY

2017



Understanding Nashville's Greenhouse Gas Emissions & Reduction Opportunities

2019 Community Emissions (MTCO₂e)



Climate Mitigation Requirements & Targets

- **Metro Code**
 - 2.32.065 – Metro fleet electrification program; 100% zero emissions by 2050 for general government fleet
 - 2.32.070 – Metro strategic energy management plan; 20% reductions in average energy and greenhouse gas emissions for government facilities
 - 2.32.080 – Metro renewable energy portfolio standard; 100% renewable energy for general government operations by 2041
 - 16.08.010 – Adopts 2018 International Building Code to improve energy efficiency and strengthen construction requirements for tornado resistance.
 - 16.60 – Green building requirements; metro government facilities pursue LEED certification (gold for buildings in the USD and silver for buildings outside of the USD) for new construction and additions.
- **Resolution**
 - RS2022-1358 adopts a community-wide and metro target of 80% reduction in greenhouse gas emissions from 2014 levels by 2050 and regular progress reporting (also included in Climate Action Plan)
 - RS2023-2393 adopts a community-wide and metro target of a 50 percent reduction in food waste from 2017 levels by 2030
- **Plans**
 - Zero waste (90% diversion from landfill) by 2050 (Climate Action Plan and Zero Waste Master Plan)
 - Reduce drive-alone rates from 70% to 40% by 2050; increase EV adoption rate to 40% by 2050 (Climate Action Plan)
- Other Metro policies have the benefit of reducing greenhouse gas emissions but may not be explicitly framed as such. Ex., Downtown Code Bonus Height Program, Unified Housing Strategy, tree density requirements on public and private properties, WalknBike Plan, multimodal access studies, etc.



Sustainability is Connected to All the O'Connell Administration Priorities



Priority Focus Areas Include:

- Emissions reductions (transportation sector and buildings)
- Green energy (solar)
- Solid waste reduction, diversion, and long-term management strategy

Nashville's Transportation Improvement Program

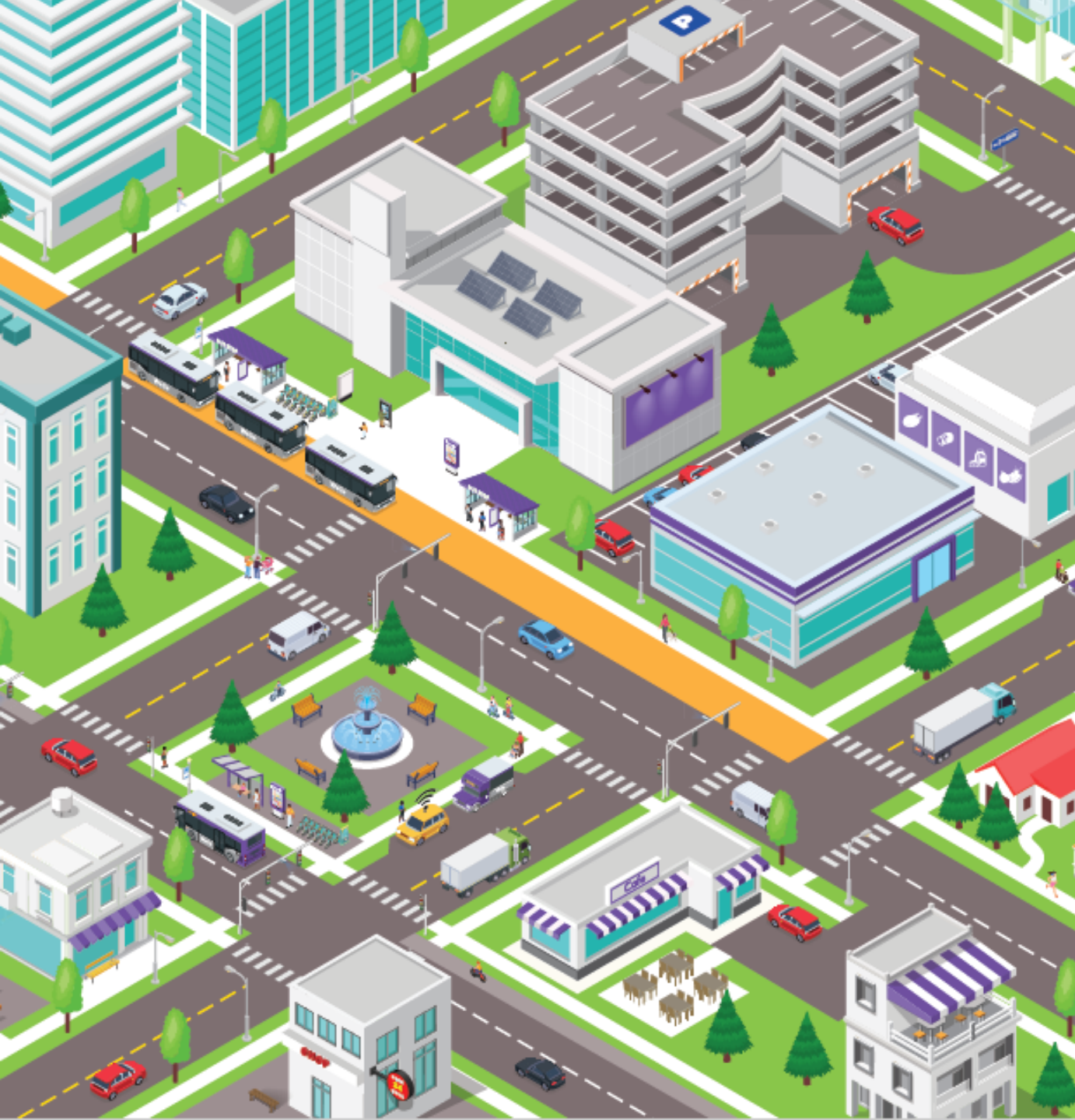
CHOOSE
HOW YOU
MOVE



ALL-ACCESS
PASS

SIDEWALKS,
SIGNALS, SERVICE
& SAFETY





CHOOSE HOW YOU MOVE

- Completes the WalkNBike Nashville priority **Sidewalk** network when combined with annual capital spending
- Upgrades nearly 600 Traffic **Signals**
- 24/7/365 and Expanded Transit **Service**
- Improves **Safety** for All Users

We need investment now.

Nashville lacks dedicated transportation funding

90%

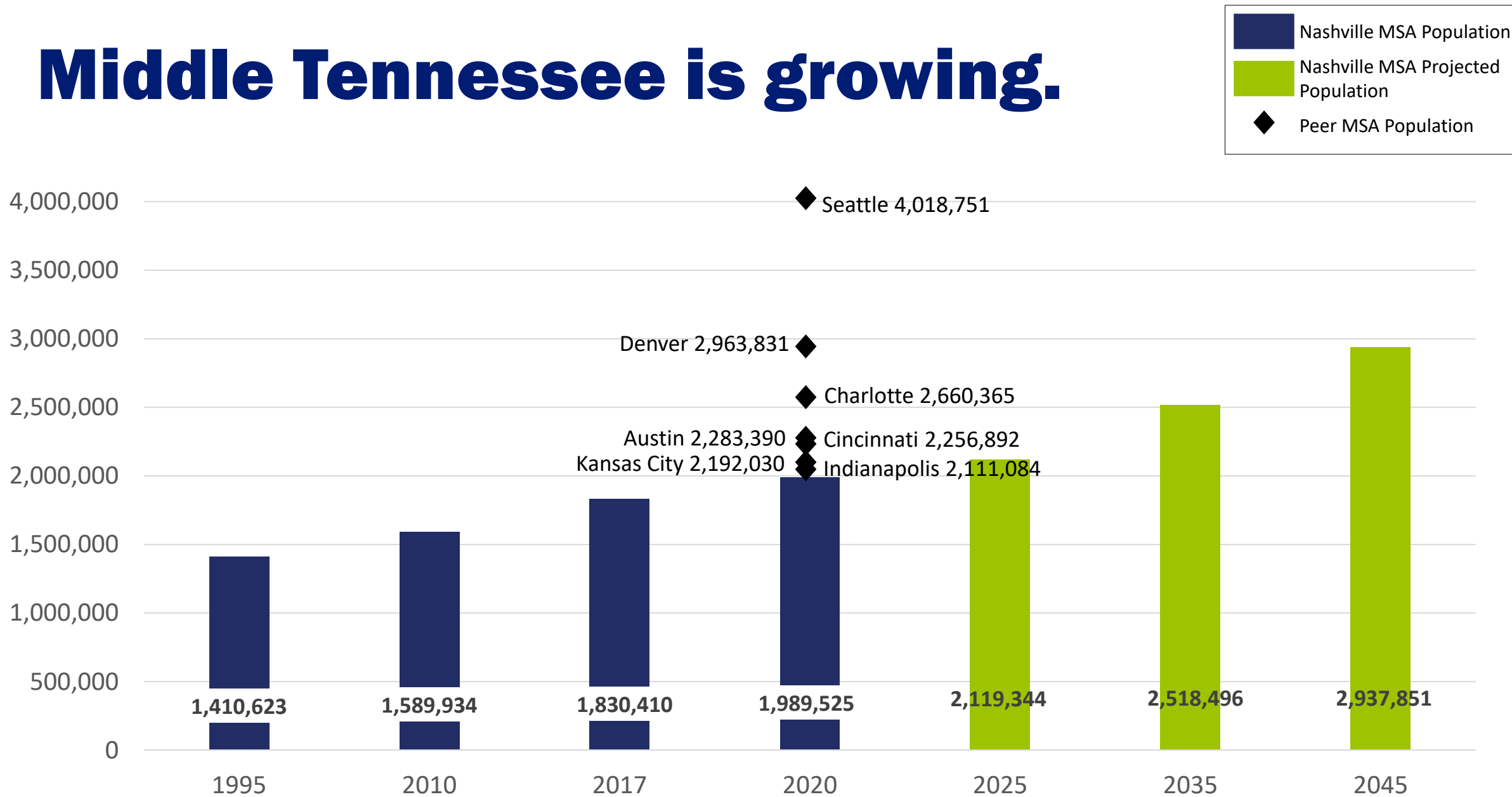
Supermajority support investing in public transit.

- Imagine Nashville project



Dickerson Pike

Middle Tennessee is growing.

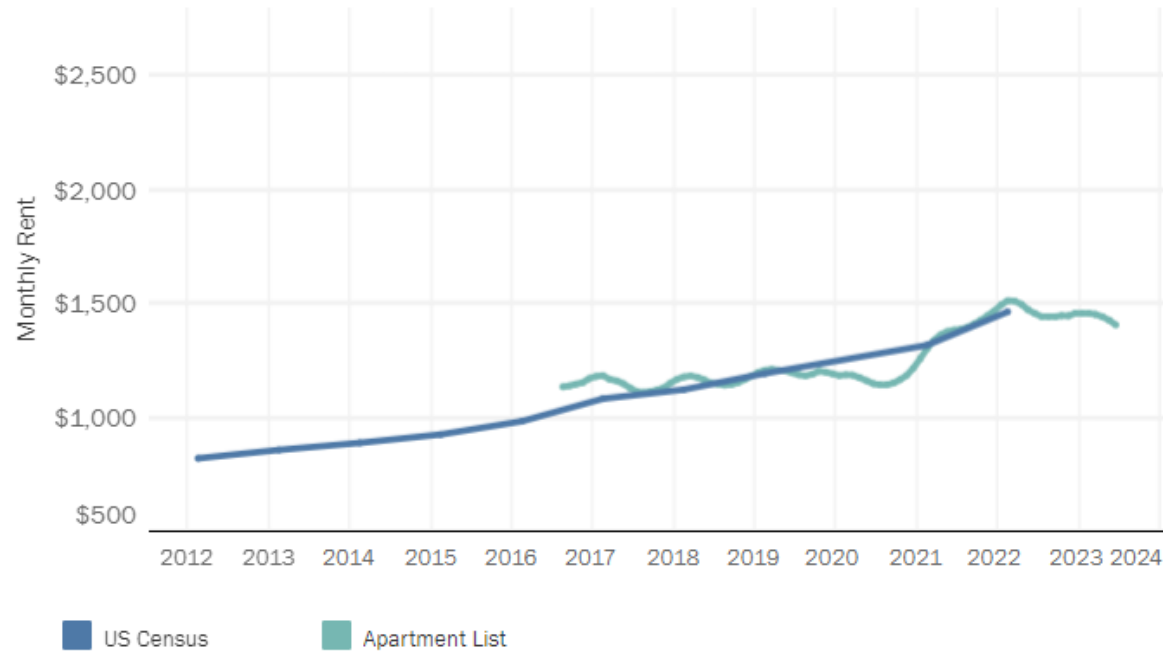


Sources: Greater Nashville Regional Council, Middle Tennessee Connected, 2021-2045 and adjusted U.S. Census Bureau Population, 2020

40% of income spent on housing and transportation



Average Monthly Housing Costs For Renters



Census data and Apartment List data show that rents have generally been trending upwards over the past decade. Apartment List suggests there have been short periods of declining costs.

Please note, Census data offers robust yet less timely data. Apartment List is used to showcase more recent monthly housing costs.

Average Monthly Housing Costs For Owners

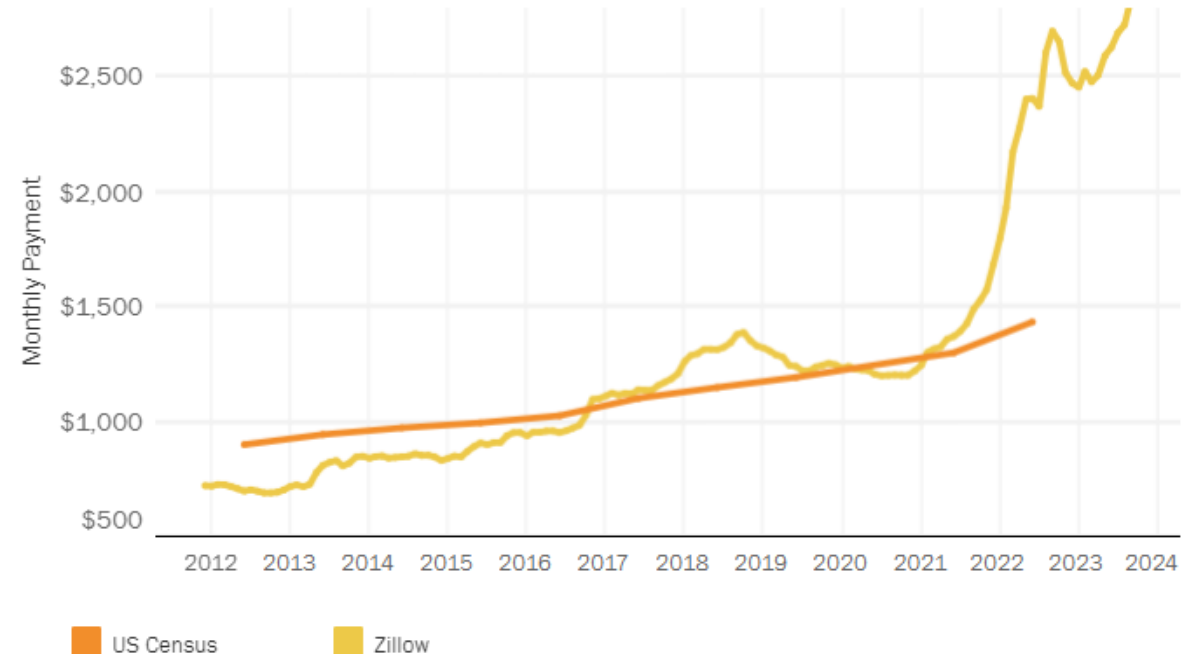
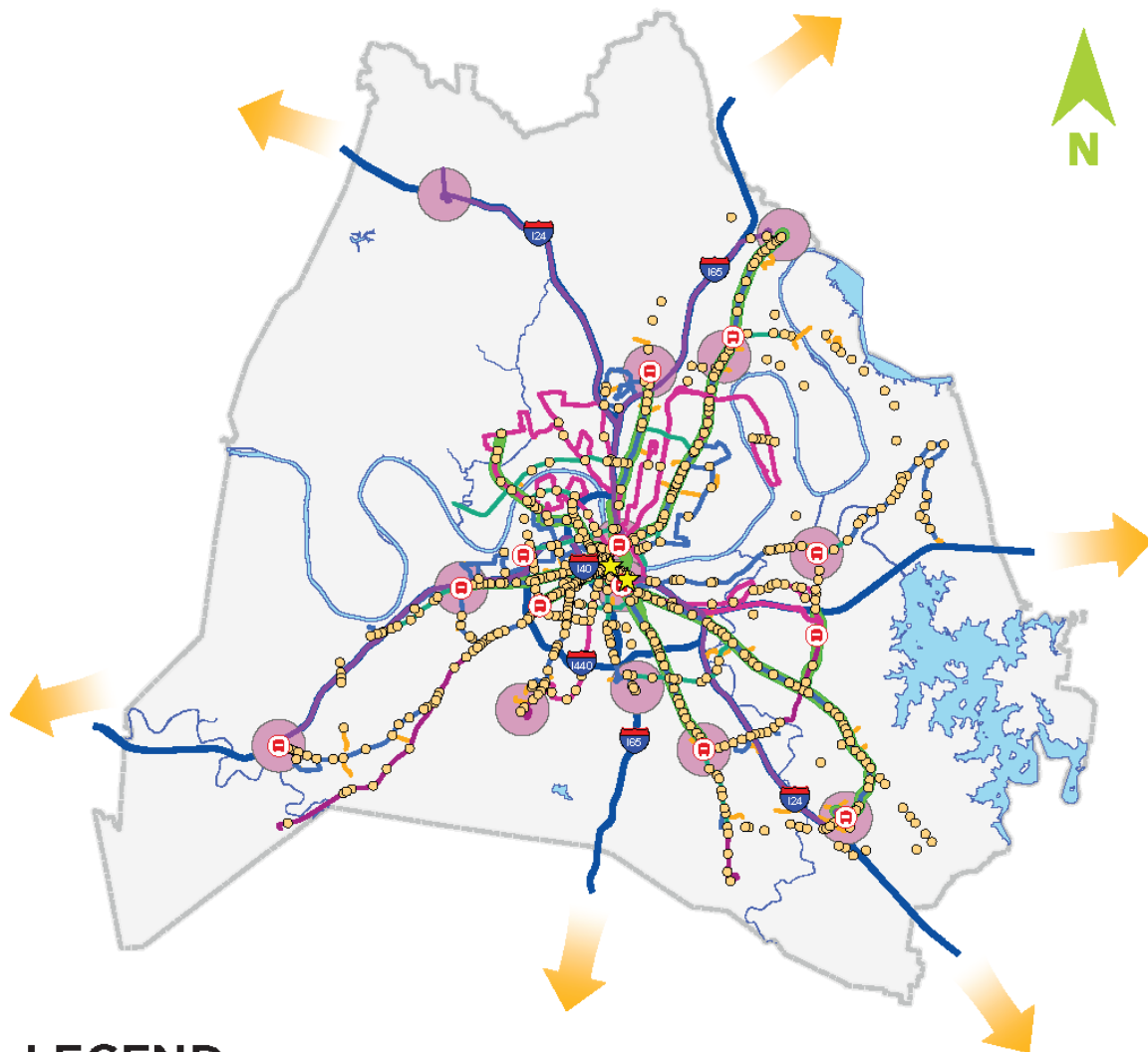


Chart shows the average actual owner costs compared with typical new monthly mortgage costs. Homeowners costs rose gradually up until around 2021. The typical new monthly mortgage costs increased by 5% between 2022 and 2023 whereas costs increased by over 80% between 2021 and 2022.

Sources: Typical new monthly payment – Zillow; Actual average monthly payment – Census



www.nashville.gov/transit



LEGEND

- | | | |
|---------------------------------|---------------------------|----------------|
| — All-Access Corridors | — Local Service | Transit Center |
| — Choose How You Move Sidewalks | — New Service | Signals |
| — Complete Streets | — Express Service | |
| — Frequent Network | Traffic Management Center | |



CHOOSE
HOW YOU
MOVE

Gallatin Pike

Sidewalks

Adding or upgrading 86 miles of sidewalks

↑ **50%**
in walkable
neighborhoods



Douglas Avenue

Adding or upgrading 86 miles of sidewalks

Completes
entire priority sidewalk
network



Dickerson Pike



CHOOSE
HOW YOU
MOVE

Signals

Nearly 600 traffic signals updated

Upgrade
2/3 of our
traffic signals



Murfreesboro Pike

Nearly 600 traffic signals updated

Connected
to new Traffic
Management Center



Traffic Management Center



////////////////////
**CHOOSE
HOW YOU
MOVE**
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Riding WeGo Public Transit

Service

Establish 54 miles of All-Access Corridors

2x hours of frequent service

+285 bus stops

12 transit centers



Nolensville Pike at Welshwood

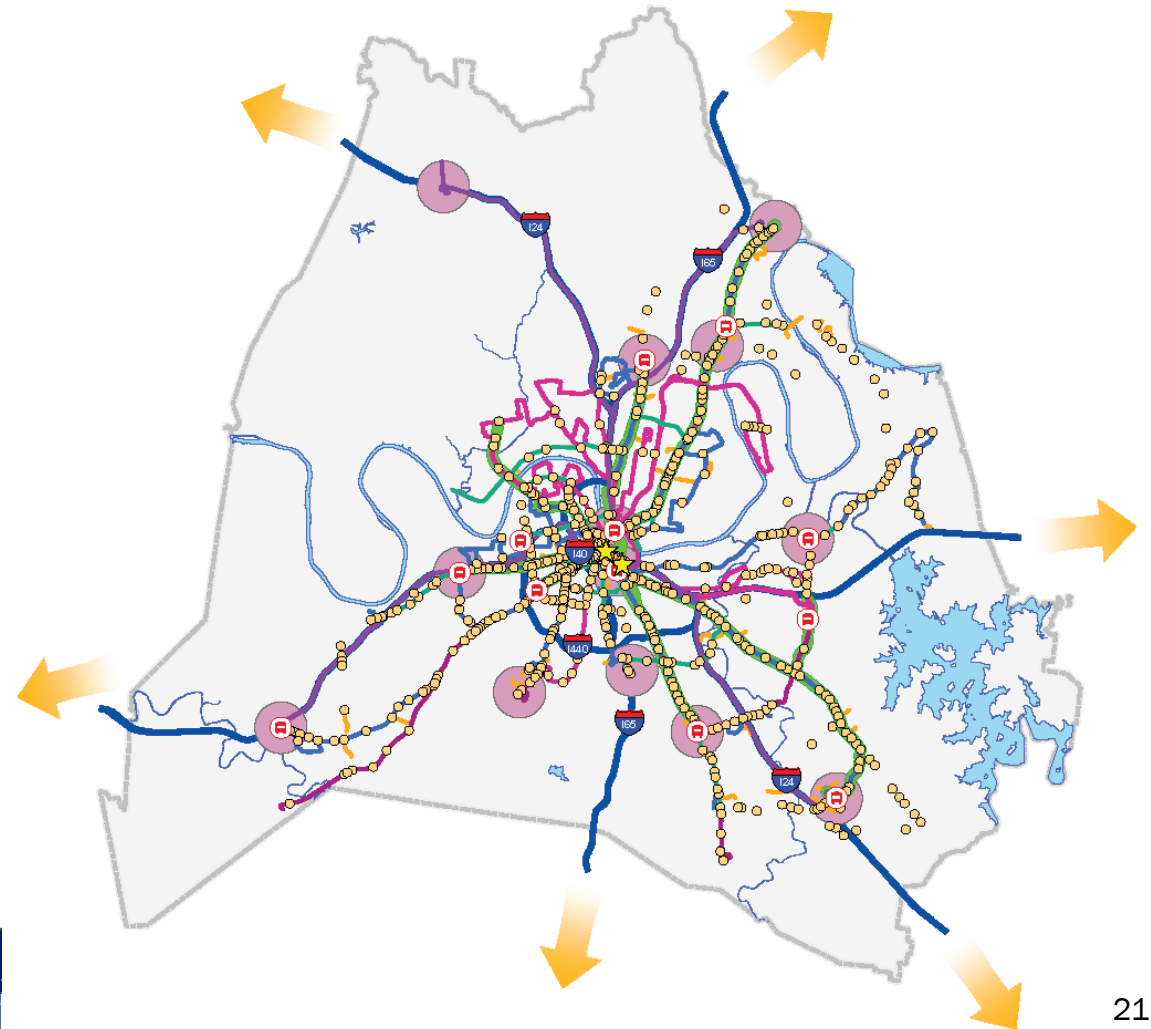
More service, to more places

17 park & rides

Expand WeGo Star

24/7 WeGo Access

More WeGo Link



Direct access to transit centers and bus stop improvements

Prepares for high-tech city



cost of living

24/7 workforce



Nolensville Pike Bus Shelter and Bike Lanes



CHOOSE
HOW YOU
MOVE

Nolensville Pike Safety Audit



Safety

Furthering Vision Zero

35 intersections
39 miles
of Complete Streets



12th Avenue South Complete and Green Street



CHOOSE
HOW YOU
MOVE

Bus Shelter Ribbon Cutting

Schedule and Impacts

Service sooner, capital projects later

Year 1

WeGo service enhancements start
Safety & lighting improvements begin
Initial sidewalk development
Some traffic signal improvements

Year 5

150+ signals upgraded
First All-Access Corridors begin service

Year 15

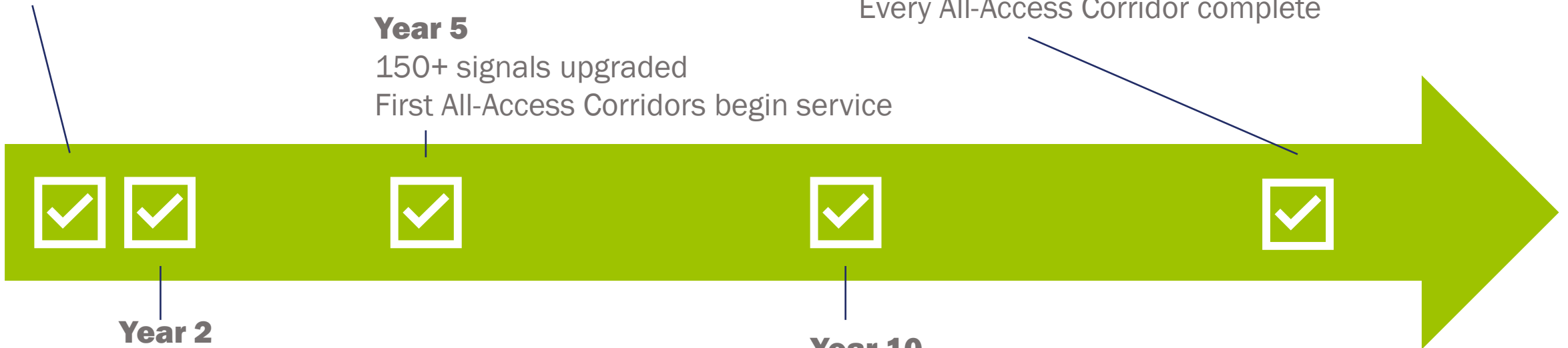
Upgraded nearly 600 traffic signals
Safety improvements on 78 miles of high-injury network
All 86 miles of sidewalk complete
Every All-Access Corridor complete

Year 2

Expanded bus service hours & frequency
Continue sidewalk and signal installations
Development of first Complete Street project

Year 10

60 miles of new and upgraded sidewalks
More All-Access Corridors begin service



You spend \$50, drop additional 25 cents.

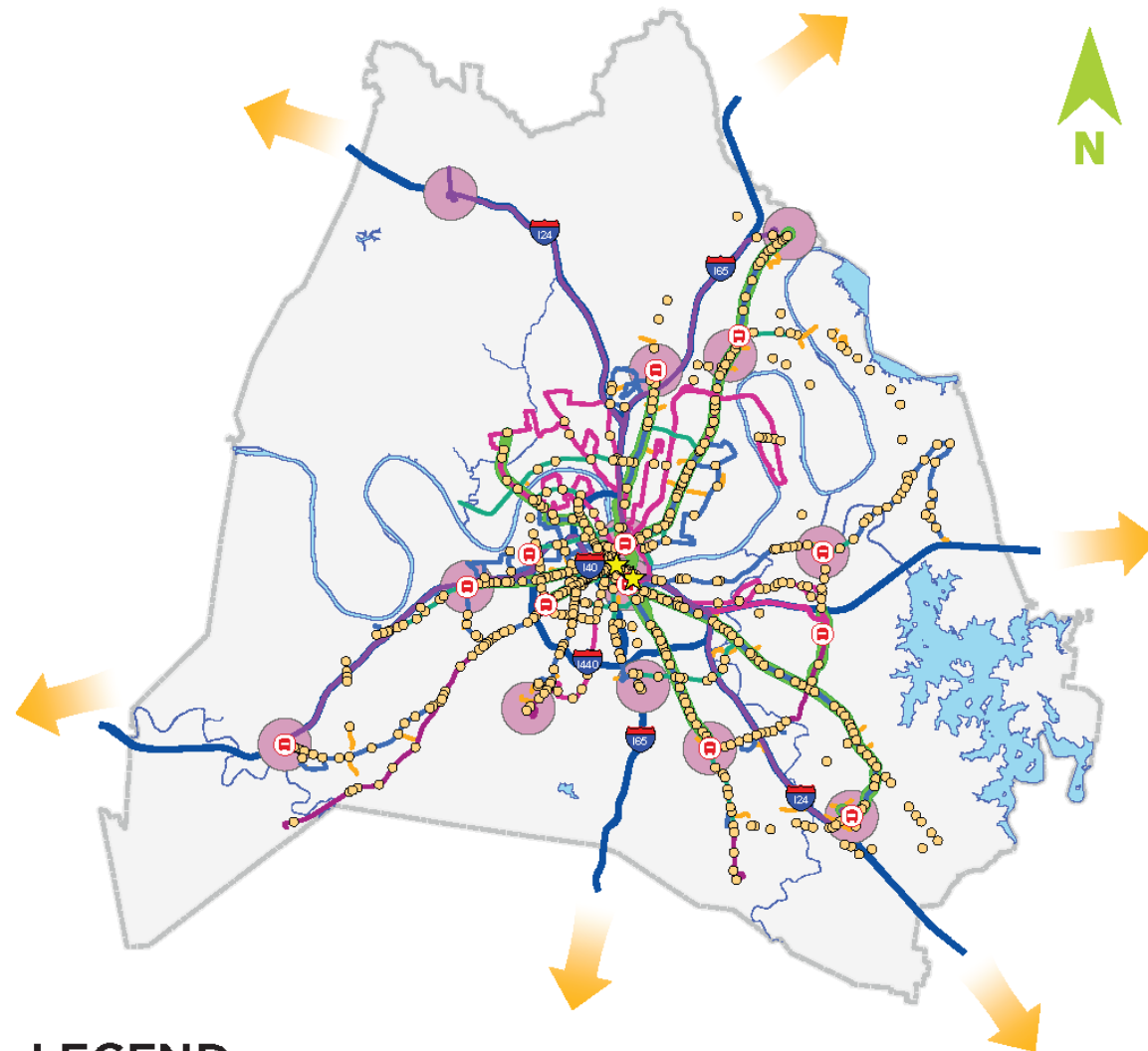
- About \$70 per year for most households
- Owning and maintaining new car is more than \$1,000/month
- Aligns sales tax by half penny increase with many surrounding counties



Tuckahoe Drive 25 mph
Residential Street



www.nashville.gov/transit



LEGEND

- | | | |
|---------------------------------|---------------------------|----------------|
| — All-Access Corridors | — Local Service | Transit Center |
| — Choose How You Move Sidewalks | — New Service | Signals |
| — Complete Streets | — Express Service | |
| — Frequent Network | Traffic Management Center | |

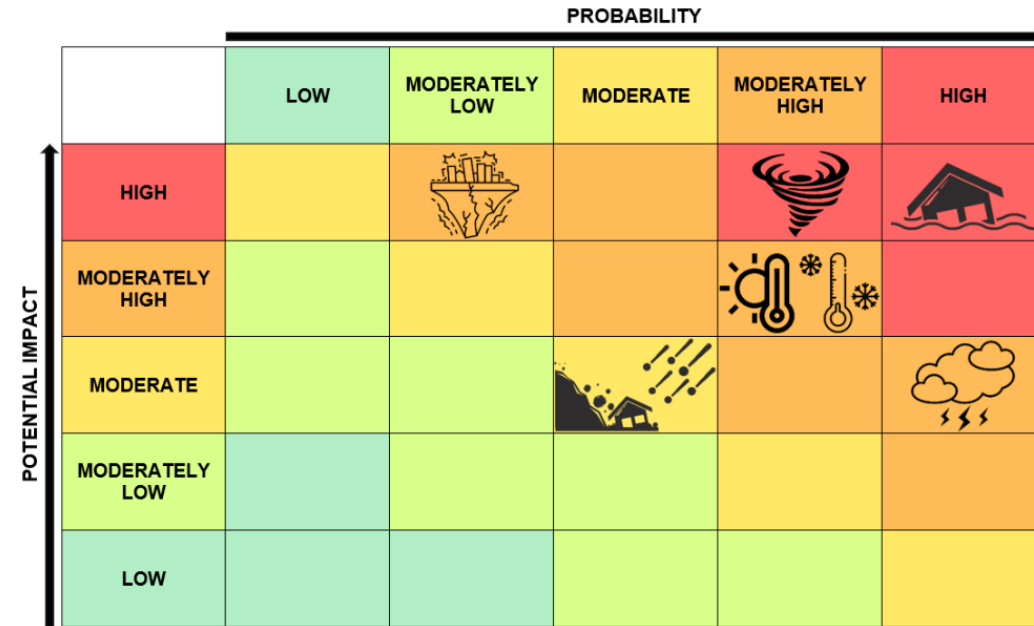
Food Scrap Pickup Pilot

- 750 households
- One-year of curbside compost collection scrap collection, free bag of compost, Zero Waste Nashville gift
- Inform efforts to scale curbside food scrap collection
- 52.2 tons of food scraps collected and diverted from the landfill since October 23


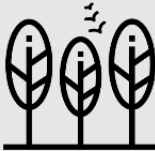






Climate Adaptation & Resilience Action Plan

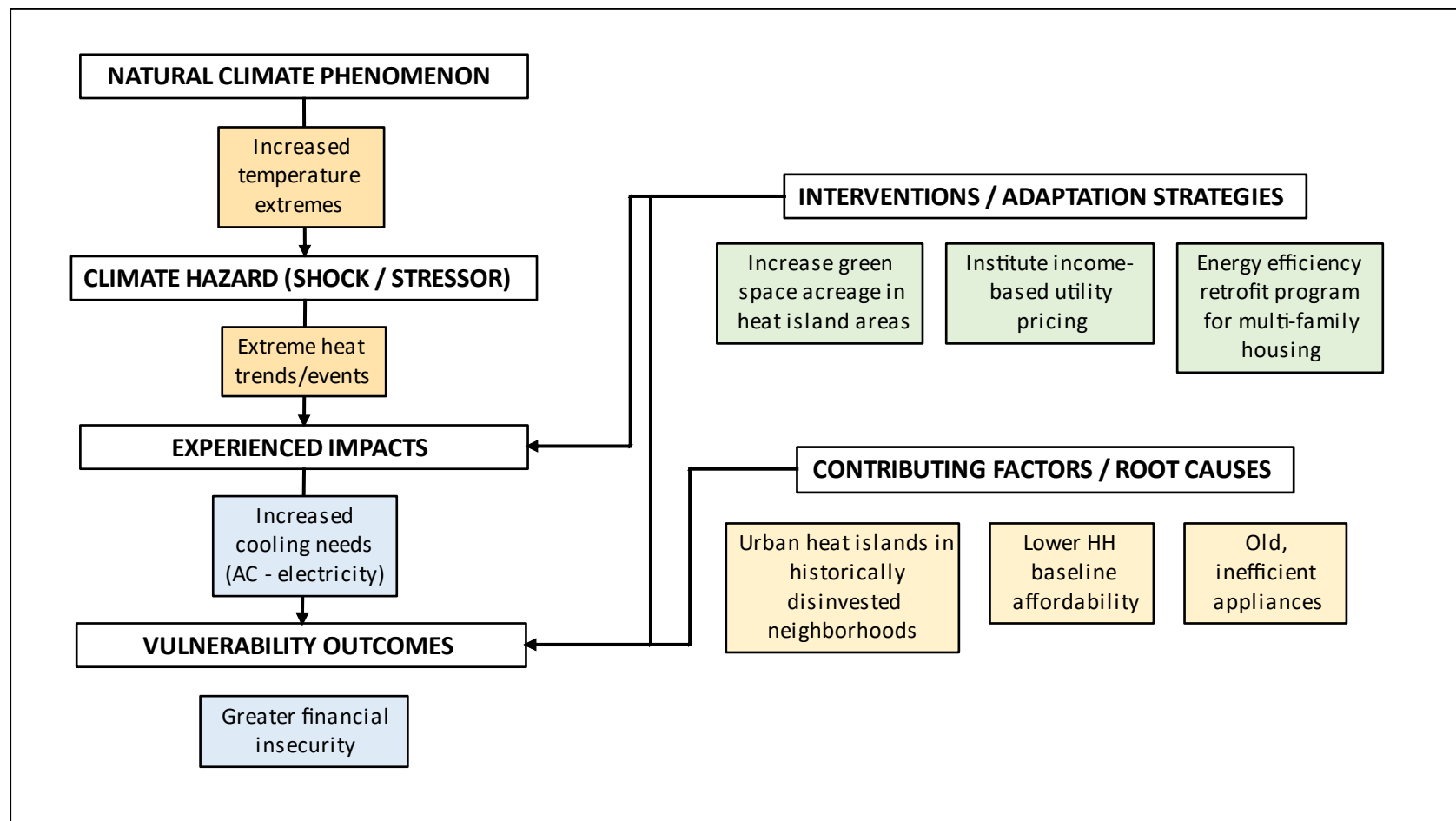
- Objectives of the CARP :
 - Identify Metro's main climate hazards, potential severity of impact and likelihood of occurrence;
 - Discuss climate change projections and expected future impacts;
 - Conduct a high-level climate risk and vulnerability assessment from a whole systems perspective;
 - Establish a roadmap for implementation of priority adaptation strategies that
- Accompanied by an internal Climate Resiliency Toolkit, to build capacity, make climate resilience an SOP, and facilitate cross-dept collaboration.



Understanding Vulnerability from a Whole System Perspective

									
Community & Culture		Natural Environment		Infrastructure		Economy		Public Safety	
A	Livelihood and affordability	D	Ecosystem services	H	Energy generation	N	Agriculture	Q	Emergency services
B	Health and wellbeing	E	Flora/forests/trees	I	Energy transmission	O	Supply chain	R	Law and order
C	Access to goods and services	F	Watersheds/hydrology	J	Water supply	P	Business continuity	S	Government Services
		G	Fauna/native species	K	Storm/waste-water and waste management			T	Community Safety
				L	Communications				
				M	Transportation				
Crosscutting: Equity									






 Assessed to be at highest risk



The Impact Chain Approach



Adaptive Capacity: Linking Potential Adaptation Strategy to High-Risk Areas

Pillar	Most Vulnerable Component	Adaptive Capacity - Focus of Interventions
 Community & Culture	Livelihoods and Affordability	Outreach programs and communication campaigns that educate and empower
		Improved public services and affordability plans
		Programs addressing housing safety and affordability
	Health and Wellbeing	Reduce ambient heat by increasing cooling spaces and strategies
		Improve the local environment and residents' quality of life
 Natural Environment	Ecosystem Services	Comprehensive disaster preparation and response planning
		Protect natural areas and increase canopy and green spaces
		Educate and incentivize more responsible public behavior
	Watersheds/ Hydrology	Encode and incentivize low-impact development
 Infrastructure	[Cross-Cutting]	Prioritize flood resilience and riverbank stabilization
	Energy Generation and Transmission	Review and update building codes and design standards
		Conduct comprehensive vulnerability assessment and adaptation planning
		Improve robustness and redundancy of electricity services
		Encode and incentivize low-impact development
 Economy	Supply Chain	Improve multimodal infrastructure and greenway interconnections
		Facilitate more urban and community gardens
		Conduct agricultural outreach and incentivize innovation
	Business Continuity	Create regional cooperation mechanisms for resource pooling
		Outreach programs and workforce development
		Outdoor workforce safety improvements
		Build financial reserves for recovery efforts
 Public Safety	Community Safety	Prioritize infrastructure redundancy improvements and weatherproofing
		[All of the above interventions are oriented at improving Public Safety]
		Tools to improve Metro Government's understanding and capacity
		Comprehensive disaster preparation and response planning

CARP Roadmap

Ensure Nashville is equitable, safe, accessible, and affordable for all residents in the context of a changing climate						Improve and protect public infrastructure and services from growing climate risks			Protect and preserve nature for future generations		Make equitable climate resilience a standard operating procedure for Metro Government		
Educate and Empower	Improve Access to Necessities and Services	Increase Stability of the Residential Environment	Ensure Habitability of the Ambient Environment	Create Equitable Economic Opportunity	Protect and Prepare	Plan and Adapt	Asset Management and Optimization	Build Redundancy and Strengthen Defenses	Preserve and Expand Green and Wild Spaces	Support Nature's Inherent Attributes	Require, Encode, and Ingrain	Quantify, Measure and Track	Train and Instill a Culture of Readiness
Conduct climate-specific outreach and capacity building	Create affordability plans for utility services	Retrofit, weatherize, and green-cool buildings	Enhance development controls and protections in flood zones	Remedy climate injustice	Develop strategies for extreme temperature protection	Adaptation planning for critical infrastructure and services	Review and optimize asset management programs	Improve robustness and redundancy of critical services and facilities	Finance and require more green and less grey	Employ natural flood mitigation strategies	Optimize codes, zoning ordinances, and design standards*	Map hazards and vulnerability for public information and internal decision-making	Conduct resilience and readiness training exercises and drills
Enable community resiliency hubs	Make health care affordable and accessible	Optimize codes, zoning ordinances, and design standards*	Expand greenery and deploy other strategies for heat control	Prevent green gentrification	Expand emergency shelters at the community level	Facility energy management planning	Consider creative approaches to valuation of public assets	Identify and correct single points of failure	Empower the public to protect the environment	Incentivize and control upstream practices	Develop and embed standard operating procedures into planning processes	Department-level risk assessments and master planning	Improve field staff safety standards
Incentivize to innovate and build resilience	Improve safety, efficiency, and multimodality of public transportation	Identify safety issues before they occur	Scale up low-impact approaches for stormwater management	Create climate-focused workforce development programs		Contingency planning for financial resources and the supply chain			Incentivize the private sector	Resilience-focused vegetation management	Integrate resilience criteria into budgets		Ensure comprehensive disaster monitoring, communication, and evacuation planning
	Grow urban gardens and food forests		Address historic and current harms from traffic			Leverage regional partnerships and assets					Adopt smart procurement policies		
						Synthesize policy							

Bloomberg American Sustainable Cities

- Nashville selected as one of 25 cities participating in the Bloomberg American Sustainable Cities (BASC) program.
 - 3-year initiative designed to leverage federal funding to incubate and implement transformative local solutions to build low-carbon, resilient, and economically thriving communities.
- Nashville will receive up to 3 dedicated staff with expertise in data analysis, insight development, human-centered design, systems thinking, and project management to bolster city capacity in driving progress on climate mitigation and promoting equitable outcomes.
- City will also receive multi-year, in-depth, customized policy and technical assistance in collaboration with community-based organizations to mobilize public, private, and philanthropic investments.
- Planning to pursue U.S. Environmental Protection Agency's community change grant to help support this work.



Thank you!

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