VMT 101

September 15, 2021 | Clean Air Council

The cleanest mile is the one that is never driven.

TODAY'S AGENDA

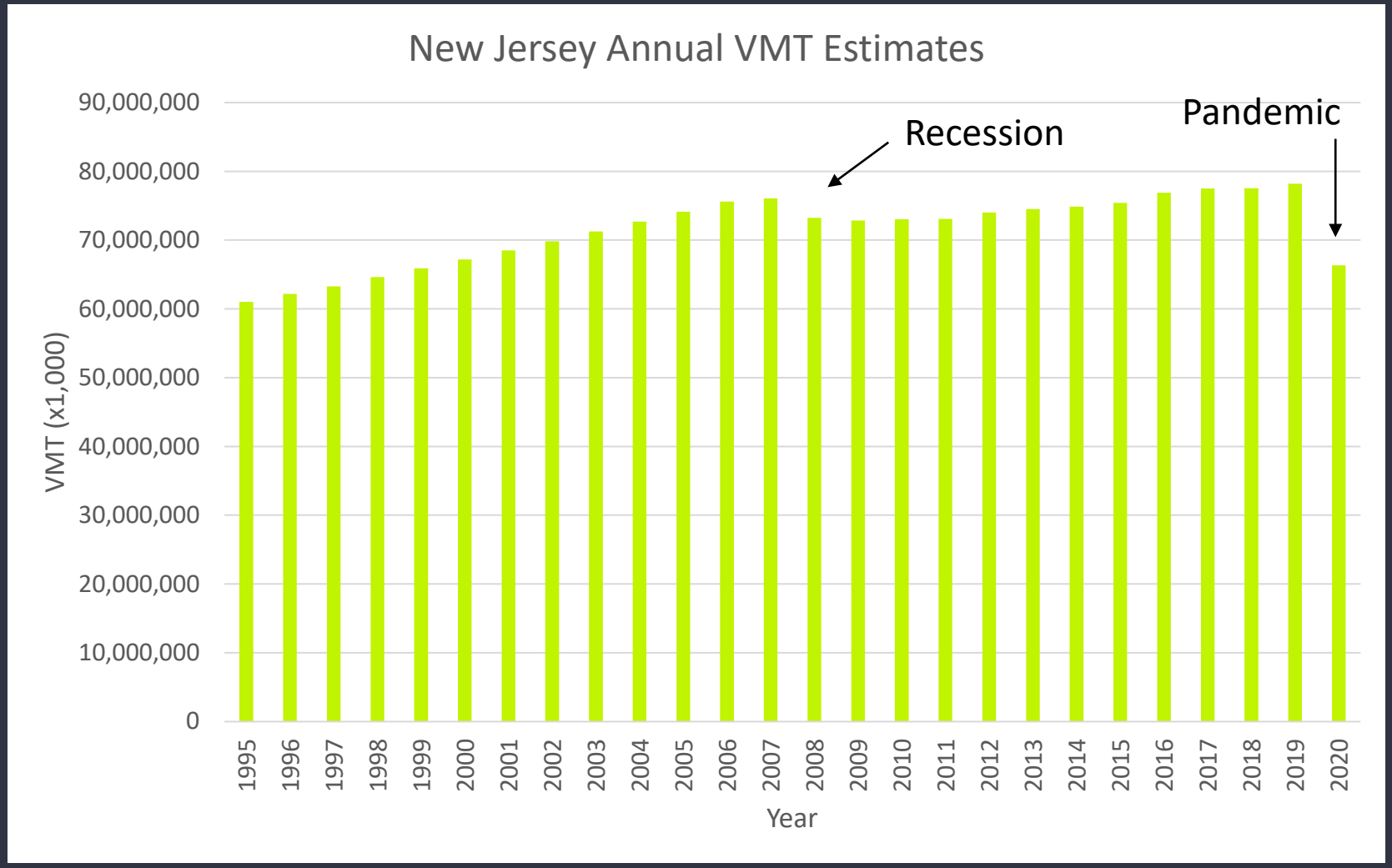
1. What is VMT
2. VMT Data
3. VMT Reduction Strategies
4. Nexus with Climate Mitigation
5. Next Steps
6. Questions

WHAT IS VMT?

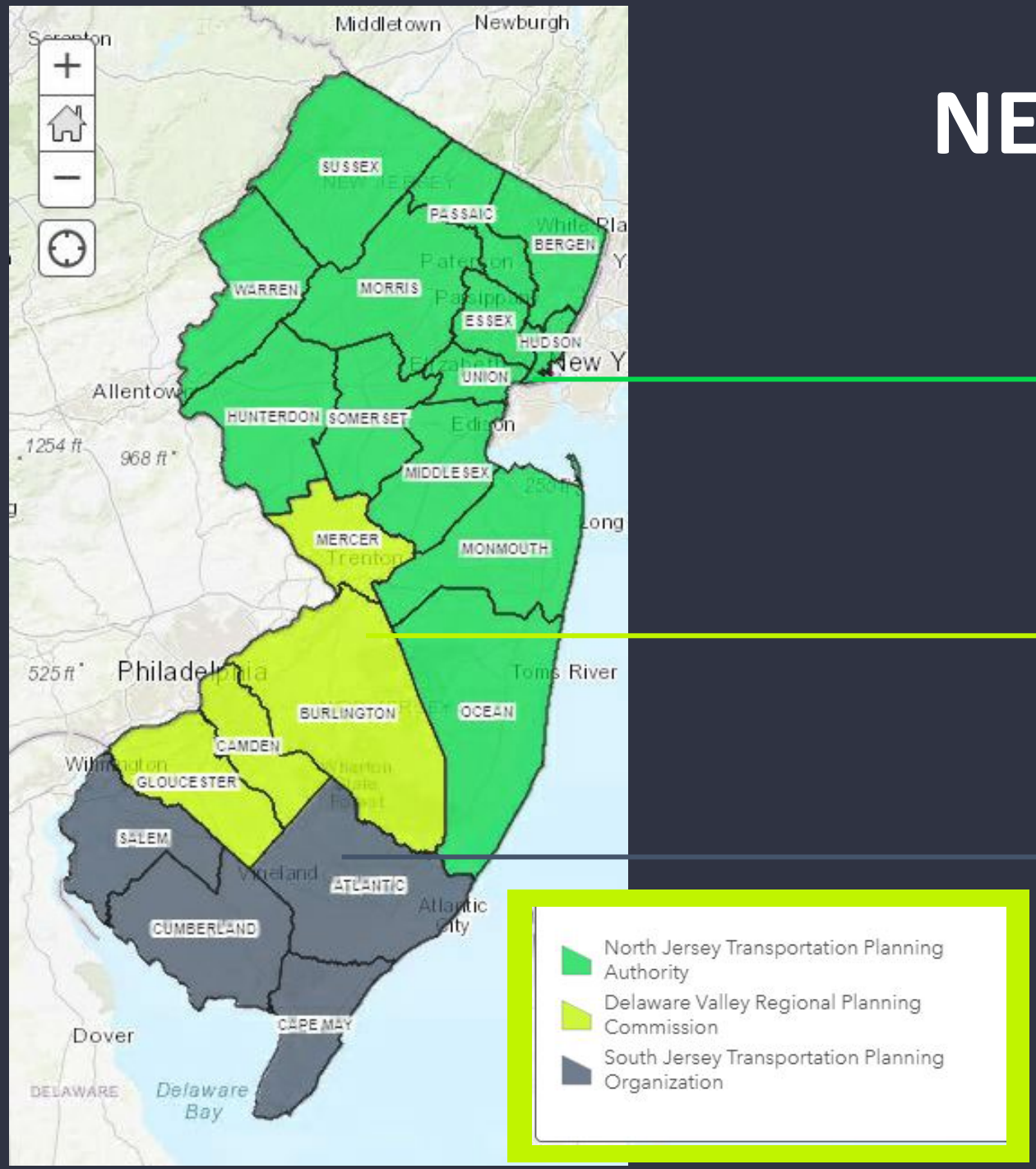
Vehicle Miles Traveled (VMT) is an indicator of vehicle use, accounting for the total miles traveled on roads and highways by motor vehicles in the state.

NEW JERSEY VMT TRENDS

New Jersey experienced a 15% decrease in VMT between 2019 and 2020.



NEW JERSEY VMT TRENDS



72% of VMT in NJTPA

75% of Population

20.3% of VMT in DVRPC

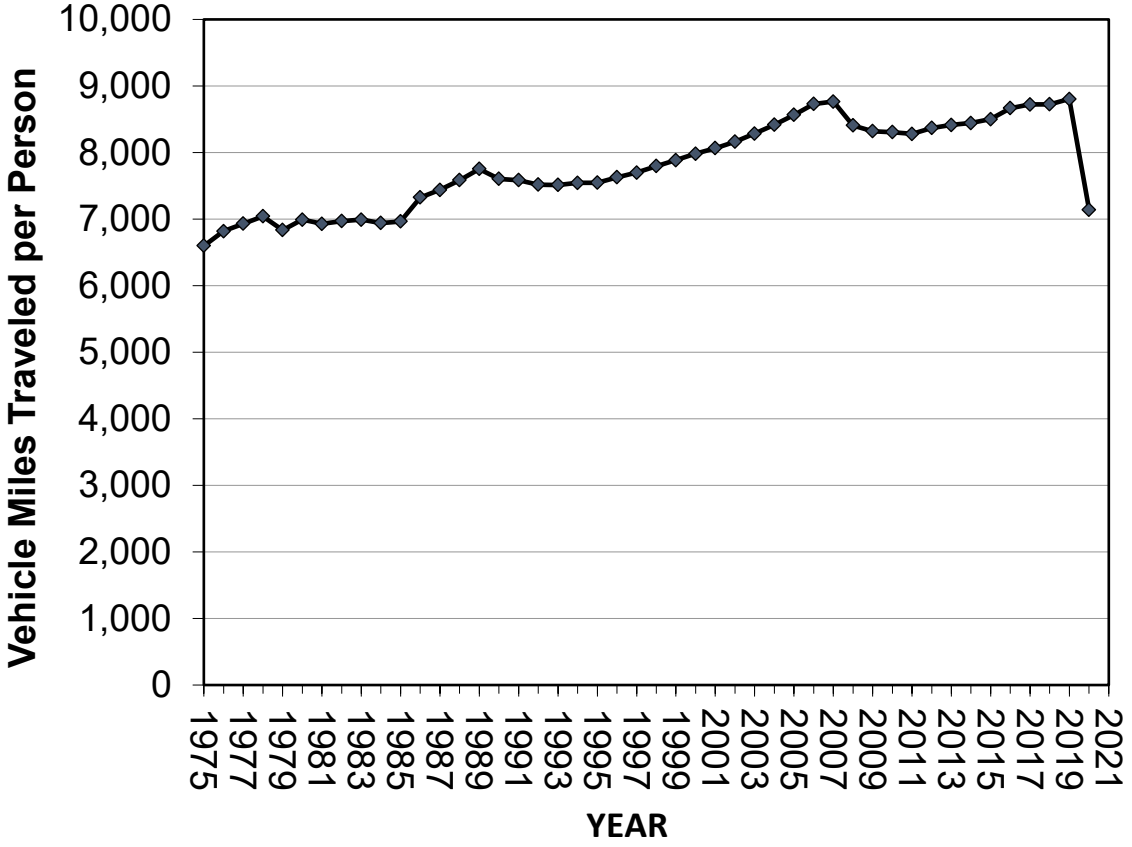
18% of Population

7.6 % of VMT in SJTPO

6% of Population

South Jersey Transportation Planning Organization, 2021. Regional Transportation Plan 2050 Moving South Jersey Forward https://www.sjtpo.org/wp-content/uploads/2021/01/Final-RTP-2050_1.25.2021.pdf , Accessed on 9/9/2021

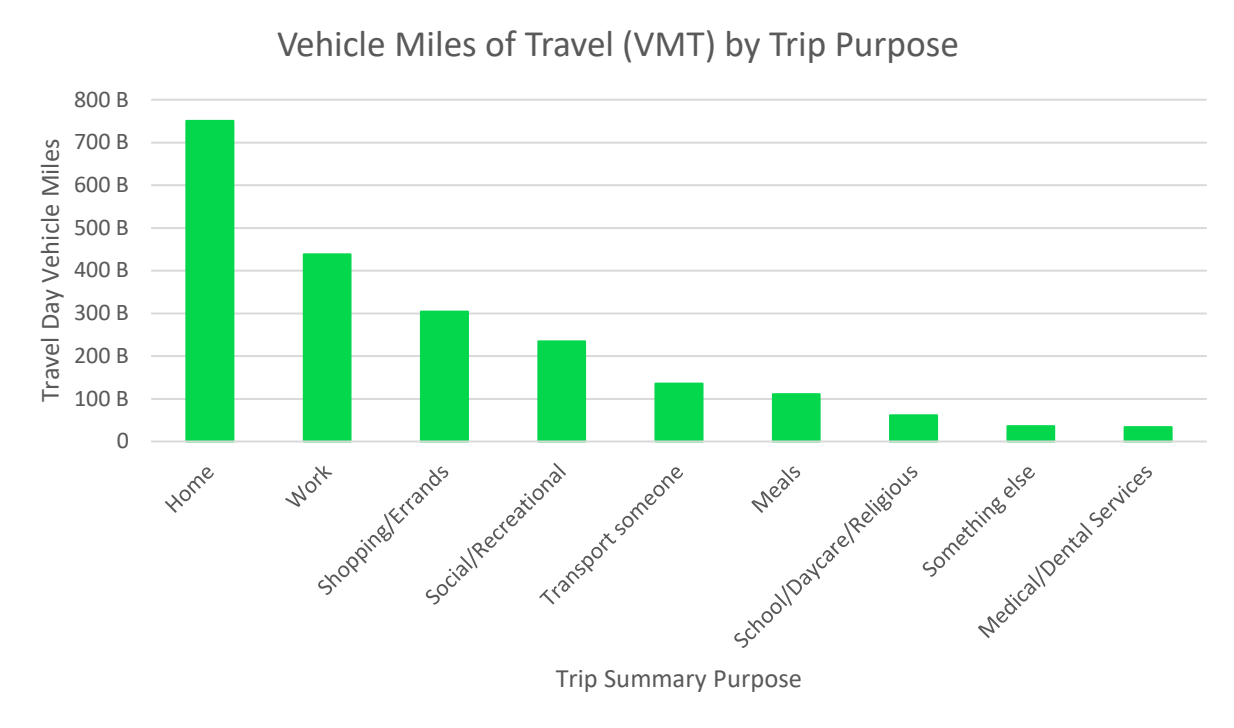
NEW JERSEY VMT TRENDS | INDIVIDUAL CONTRIBUTIONS



- VMT per person has been increasing over time, with a statistically significant and increasing linear trend.

- Annual per capita miles traveled has increased by roughly 840 miles per person over the last 20 years (approx. 42 miles per year).

VMT BY PURPOSE



Trip Summary Purpose	Travel Day Vehicle Miles		
	Sample Size	Sum (Millions)	Percent
Home	205,743	750,398	35.6
Work	92,392	438,062	20.8
Shopping/Errands	134,048	304,334	14.5
Social/Recreational	52,877	234,535	11.1
Transport someone	44,991	135,897	6.5
Meals	43,347	111,118	5.3
School/Daycare/Religious	16,288	61,822	2.9
Something else	10,045	36,236	1.7
Medical/Dental Services	11,568	33,480	1.6

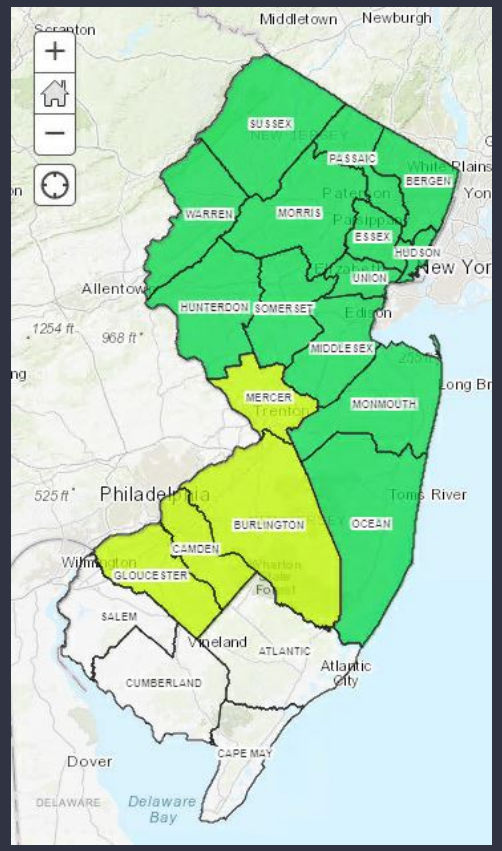
2018 VMT BY VEHICLE

Gasoline Vehicles	$MTCO_2e$	VMT	% $MTCO_2e$	% VMT	$MTCO_2e$/Mile
Passenger Truck	15,545,598	34,048,028,358	41.1%	43.81%	0.00046
Passenger Car	11,759,410	32,872,317,445	31.1%	42.30%	0.00036
Light Commercial Truck	1,827,632	4,012,583,065	4.8%	5.16%	0.00046
Single Unit Short-Haul Truck	591,024	532,758,833	1.6%	0.69%	0.00111
Motorcycle	160,639	420,627,305	0.42%	0.54%	0.00038
Motor Home	10,404	9,403,258	0.027%	0.012%	0.00111
Single Unit Long-Haul Truck	8,883	7,900,963	0.023%	0.010%	0.00112
Transit Bus	4,082	3,178,315	0.011%	0.004%	0.00128
School Bus	1,989	2,073,016	0.005%	0.003%	0.00096
Refuse Truck	1,448	811,136	0.004%	0.0010%	0.00179
Combination Short-Haul Truck	93	52,082	0.0002%	0.00007%	0.00179
Gasoline Total	**29,911,202**	**71,909,733,776**	**79%**	**92.5%**	**0.00042**

Diesel Vehicles	$MTCO_2e$	VMT	% $MTCO_2e$	% VMT	$MTCO_2e$/Mile
Combination Long-Haul Truck	3,231,379	1,593,899,633	8.54%	2.05%	0.00203
Combination Short-Haul Truck	1,416,286	811,961,488	3.74%	1.04%	0.00174
Single Unit Short-Haul Truck	1,321,452	1,186,672,385	3.49%	1.53%	0.00106
Single Unit Long-Haul Truck	487,690	461,397,139	1.29%	0.59%	0.00106
Passenger Truck	459,128	668,574,209	1.21%	0.86%	0.00069
Transit Bus	237,961	179,509,342	0.63%	0.23%	0.00133
Intercity Bus	205,244	113,081,138	0.54%	0.15%	0.00182
School Bus	197,963	202,928,032	0.52%	0.26%	0.00098
Light Commercial Truck	146,398	225,763,731	0.39%	0.29%	0.00065
Refuse Truck	121,787	67,512,811	0.32%	0.09%	0.00180
Passenger Car	100,904	287,030,657	0.27%	0.37%	0.00035
Motor Home	6,932	6,245,716	0.018%	0.008%	0.00111
Diesel Total	**7,933,124**	**5,804,576,281**	**21%**	**7.5%**	**0.00137**

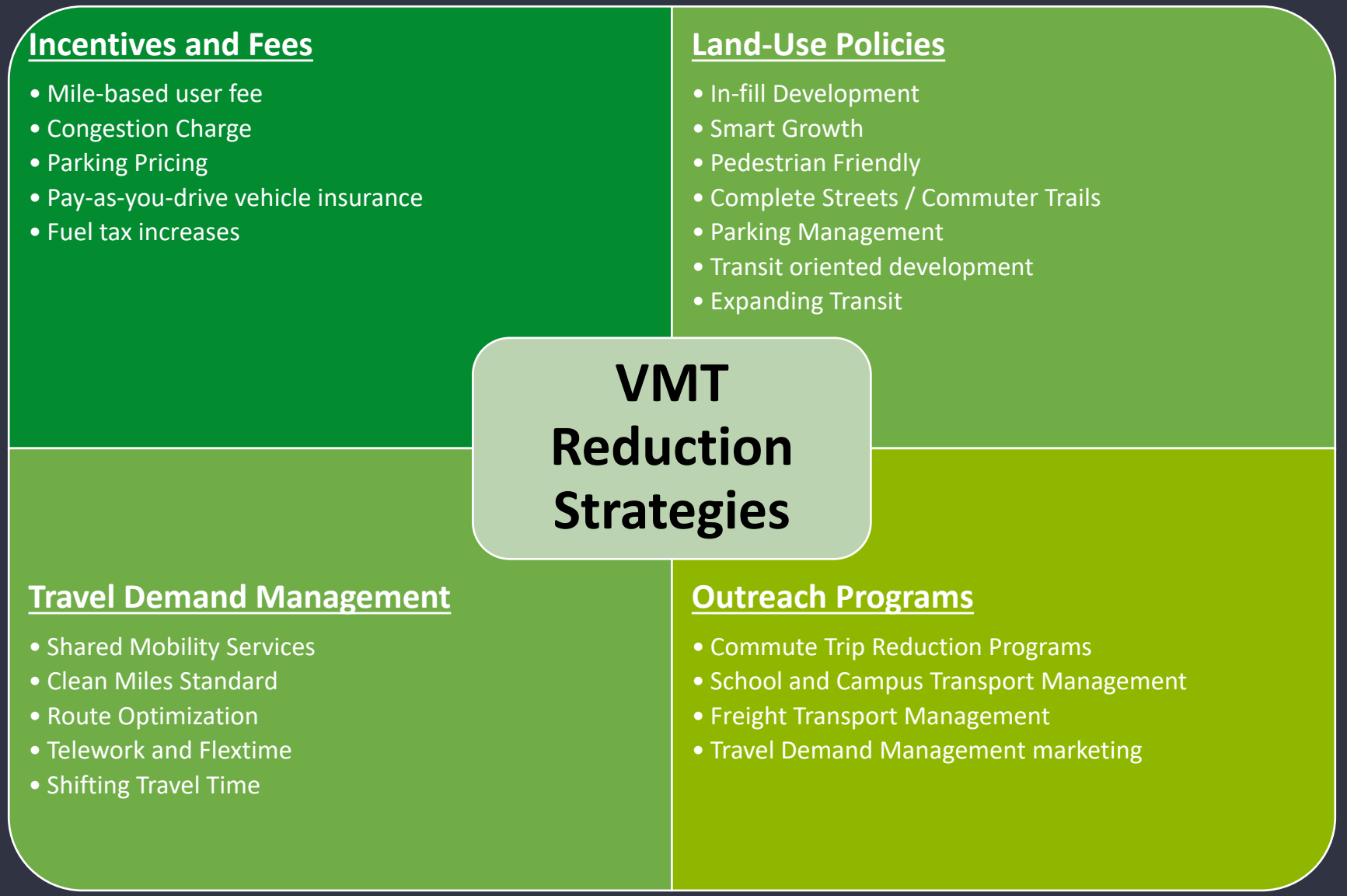
VMT GROWTH PROJECTIONS

- NJTPA estimates an 11% increase in VMT by 2050
- DVRPC estimates anywhere from -5% to +53% change in VMT by 2050

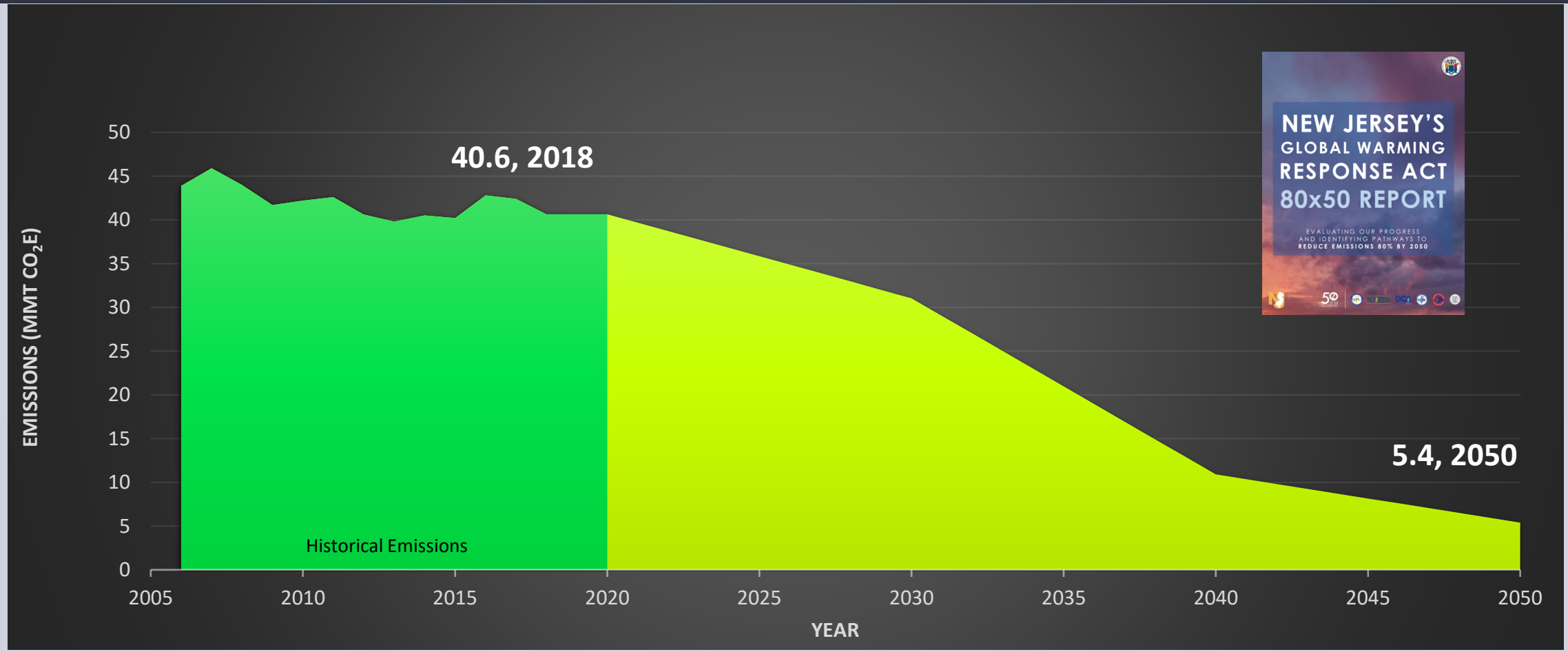


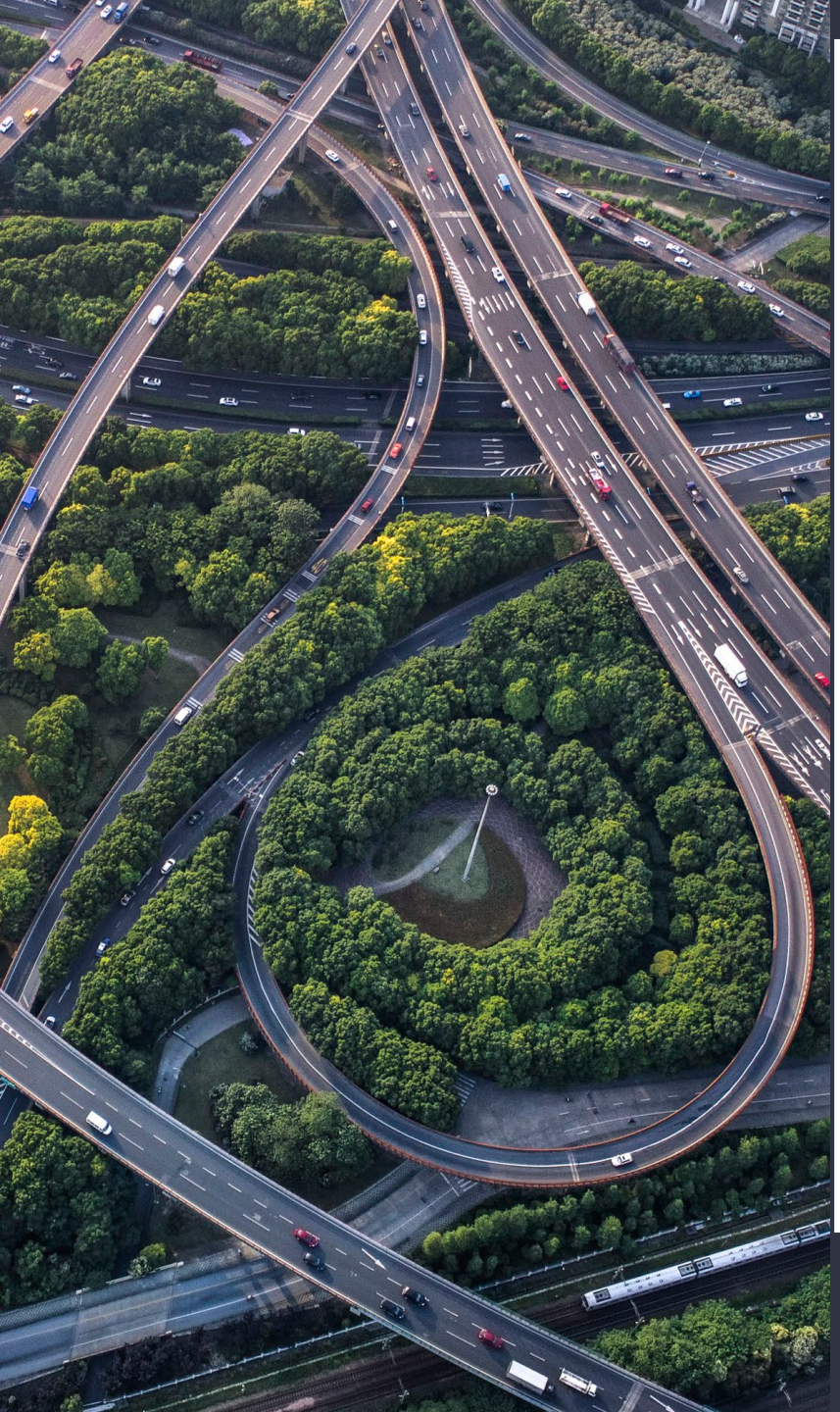
Delaware Valley Regional Planning Commission, 2021. Exploratory Scenarios For Greater Philadelphia. https://www.dvrpc.org/2050, Accessed on 9/9/2021.

North Jersey Transportation Planning Authority, 2021.Long Range Transportation Plan 2050. https://www.njtpa.org/NJTPA/media/Documents/Get-Involved/Public-Involvement/Public-Comment/plan2050_draft.pdf. Access on 9/10/2021.


Incentives and Fees
• Mile-based user fee
• Congestion Charge
• Parking Pricing
• Pay-as-you-drive vehicle insurance
• Fuel tax increases
Land-Use Policies
• In-fill Development
• Smart Growth
• Pedestrian Friendly
• Complete Streets / Commuter Trails
• Parking Management
• Transit oriented development
• Expanding Transit
VMT Reduction Strategies
Travel Demand Management
• Shared Mobility Services
• Clean Miles Standard
• Route Optimization
• Telework and Flextime
• Shifting Travel Time
Outreach Programs
• Commute Trip Reduction Programs
• School and Campus Transport Management
• Freight Transport Management
• Travel Demand Management marketing

TRANSPORTATION & CLIMATE





POSSIBLE REDUCTIONS

% Total VMT	$MMTCO_2e$	VMT Reduction
5	1.89	3,885,715,502.85
10	3.78	7,771,431,005.70
15	5.68	11,657,146,508.55
20	7.57	15,542,862,011.40
25	9.46	19,428,577,514.25
30	11.35	23,314,293,017.10
35	13.25	27,200,008,519.95
40	15.14	31,085,724,022.80
45	17.03	34,971,439,525.65
50	18.92	38,857,155,028.50
55	20.81	42,742,870,531.35
60	22.71	46,628,586,034.20

EMISSION REDUCTION PATHWAYS

1

Electrify Light-Duty Vehicles

2

Decarbonize Medium-and Heavy-Duty Vehicles

3

Increase NJ Transit Ridership & Transit Villages

4

Incentivize Work-from-Home Policies, Home Delivery and other strategies

5

Support regional and national efforts to improve fuel economy of light-duty fossil-fuel powered new vehicles

2019 EMP

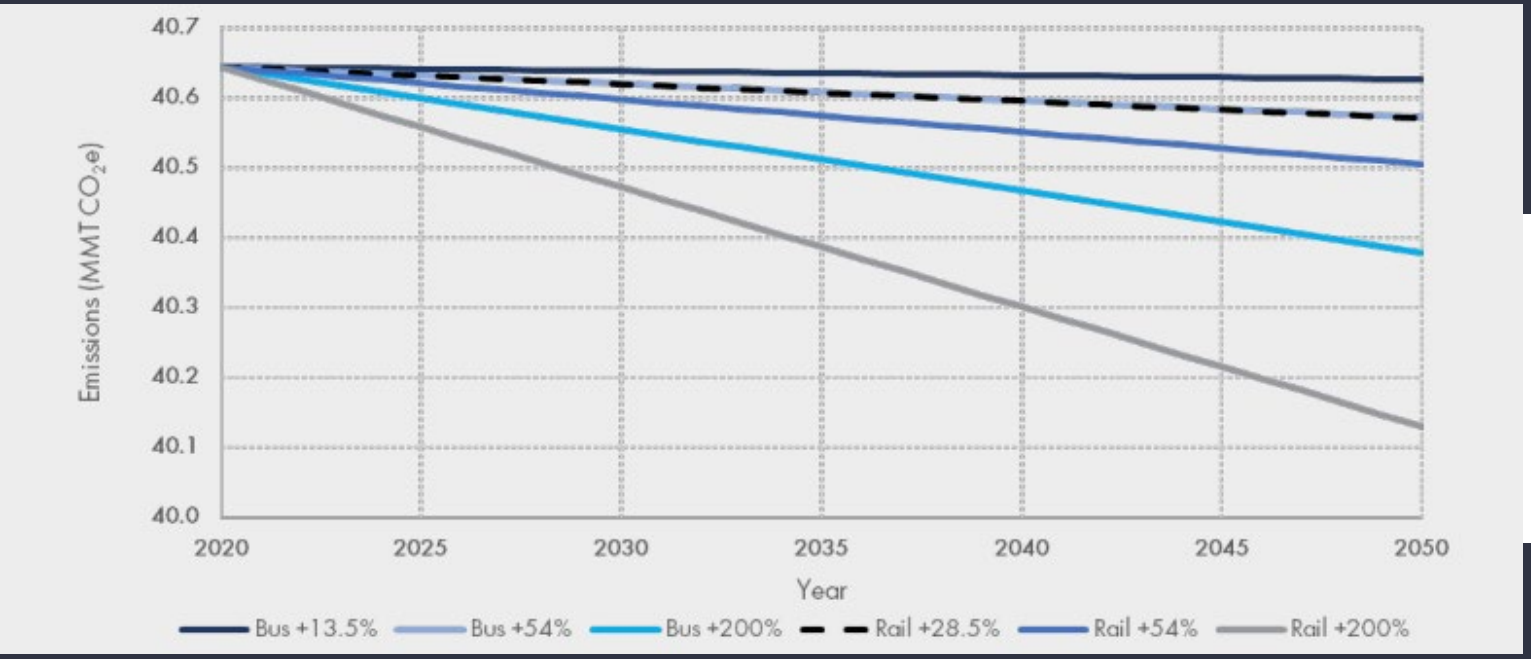
VMT Reduction Strategies

PATHWAY 3:
INCREASE NJ TRANSIT RIDERSHIP AND EXPANSION OF TRANSIT VILLAGES

- NJ TRANSIT delivers over three billion passenger miles of mobility annually.

EMISSIONS REDUCTIONS FROM PATHWAY 3

Transportation Sector Emissions Under Public Transit Ridership Scenarios.



Scenario	Ridership Increase in 2050 (Percent)	2050 Annual Avoided Emissions (MMT CO_2e)	Cumulative Avoided Emissions through 2050 (MMT CO_2e)
Bus Ridership Low	13.5%	0.02	0.28
Bus Ridership High	54%	0.07	1.11
Bus Ridership Aspirational	200%	0.26	4.11
Rail Ridership Low	28.5%	0.07	1.14
Rail Ridership High	54%	0.14	2.15
Rail Ridership Aspirational	200%	0.51	7.97

TRANSIT VILLAGES

- A transit village is a pedestrian-friendly mixed-use district or neighborhood oriented around the station of a high-quality transit system.

Irvington's Bus Terminal

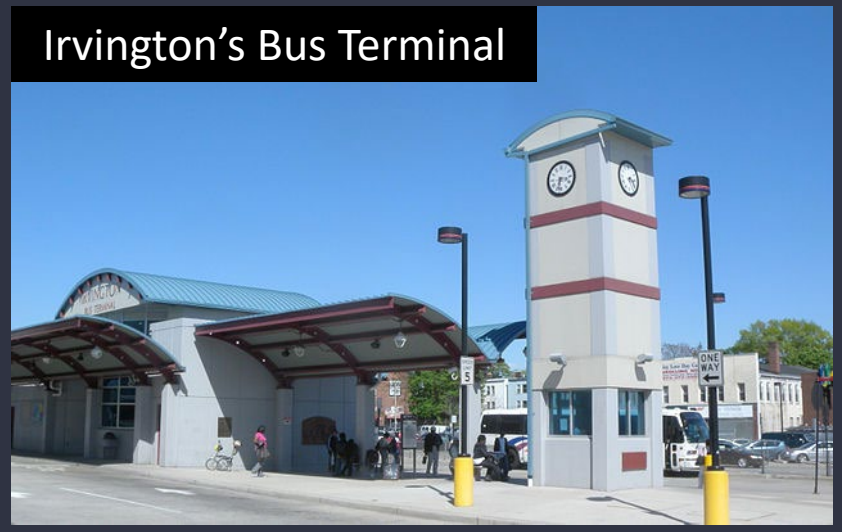
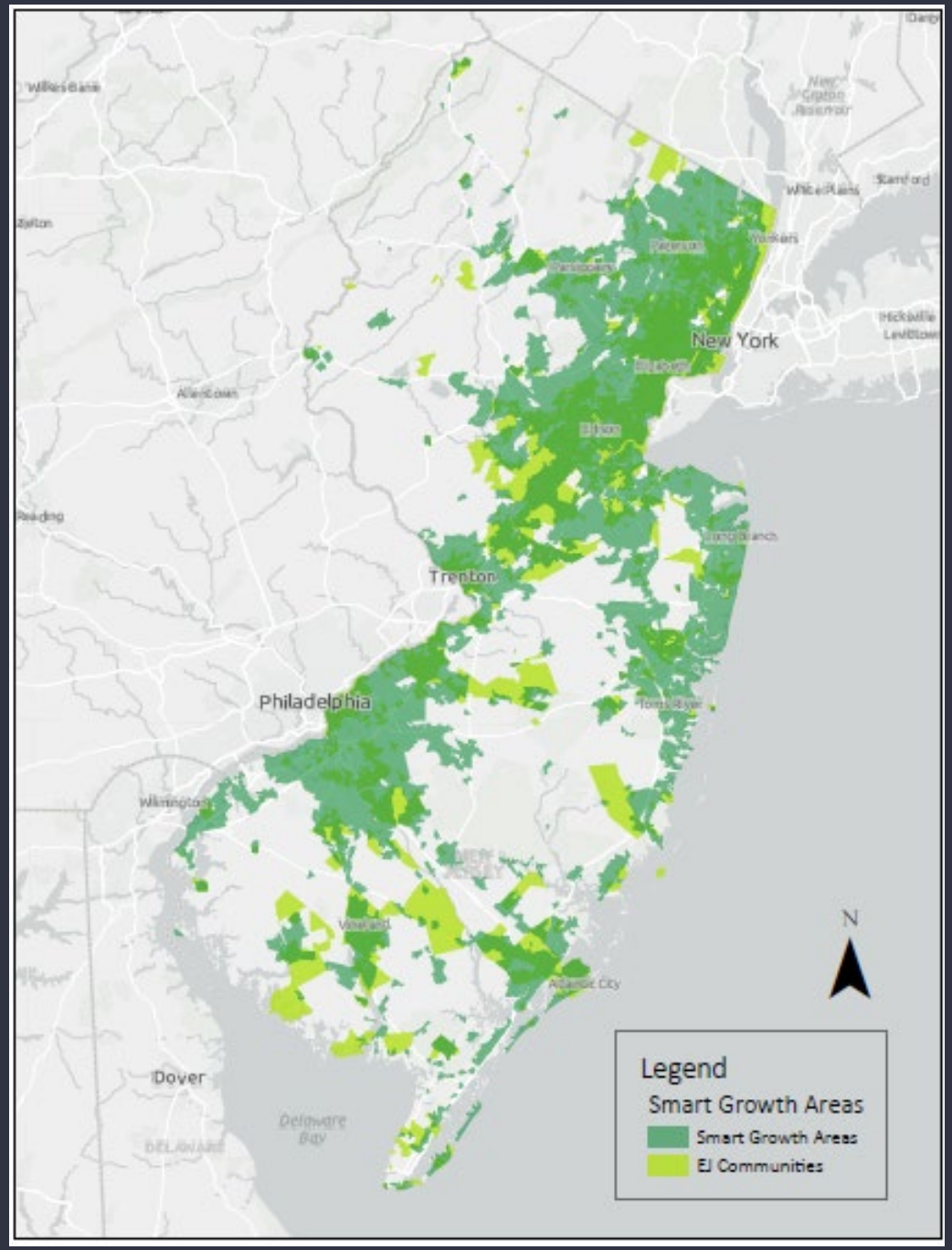


Image from: https://www.njfuture.org/2015/07/10/two-new-transit-villages/

SMART GROWTH + EJ

- Housing Market Considerations
- Affordability & VMT
- NY-NJ-PA Metro Area
  - Longest Travel Time: 37.7 Minutes
  - Highest Percentage of Workers with commutes of at least 60 minutes, at 22.7%
  - Largest transportation system, with longest average travel time.



Smart Growth and EJ Communities, June 2021, Kristen Brennan, K2EC

ROAD SAFETY

1. Preliminary Data from January to September 2020 by the National Highway Traffic Safety Administration.
2. When comparing traffic deaths to the number of miles driven, the rate of fatalities rose by 24%
3. Active Transportation Options and Street Safety

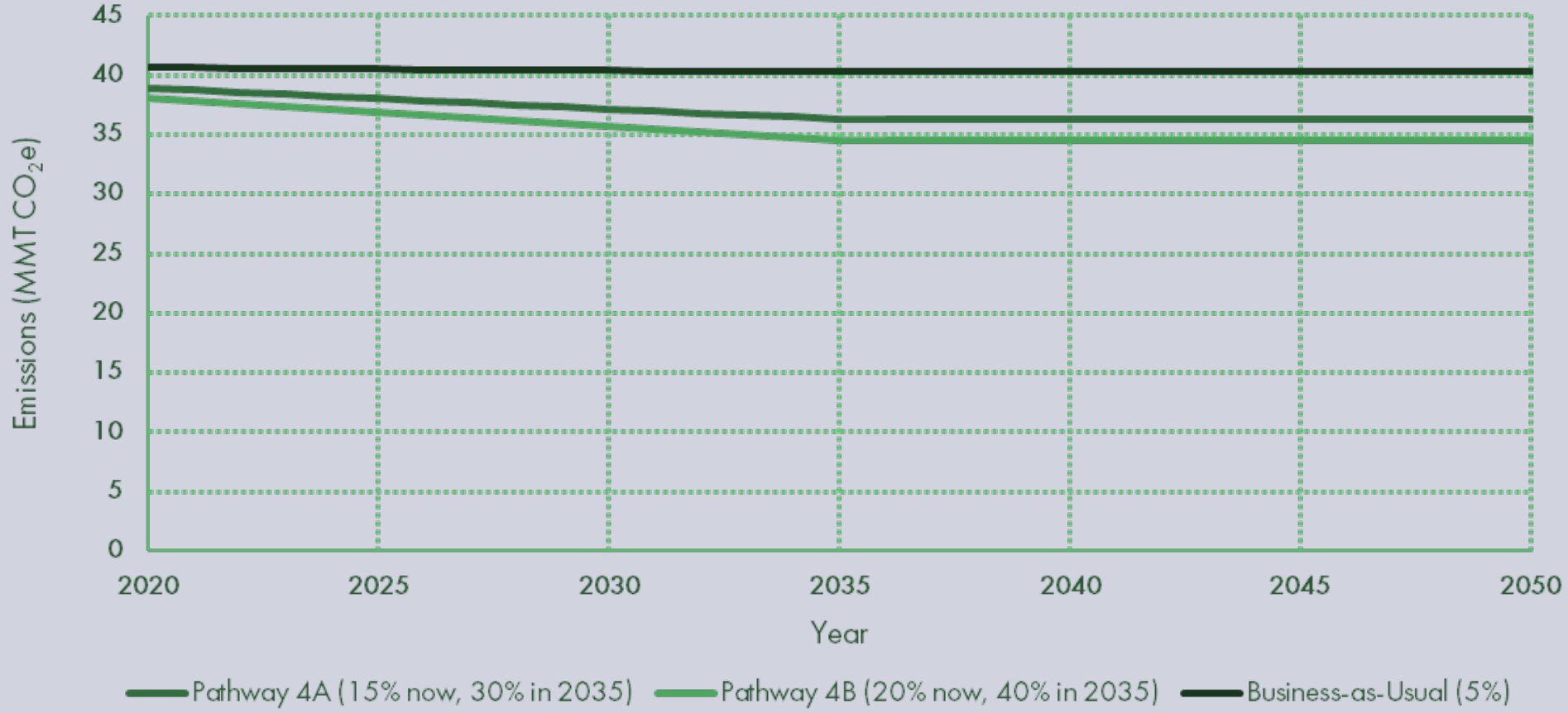
Crash Stats: Early Estimate of Motor Vehicle Traffic Fatalities for the First 9 Months (Jan–Sep) of 2020 (dot.gov)

PATHWAY 4: WORK-FROM-HOME POLICIES, RIDESHARING, HOME DELIVERY AND OTHER STRATEGIES

- Transportation strategies that collectively reduce vehicle miles traveled (VMT).
- VMT = measures the amount of travel for all vehicles in a geographic region over a given period of time, typically a one-year period. It is calculated as the sum of the number of miles traveled by each vehicle.

EMISSIONS REDUCTIONS FROM PATHWAY 4

Transportation Sector Emissions Under Three Work-from-Home Scenarios



NEXT STEPS

List of Potential Invitees to the CAC Public Hearing	
Department of Transportation	Keep Middlesex Moving
NJ TRANSIT	EZRide
NJ Turnpike Authority	Ridewise of Raritan Valley
Department of Community Affairs	TransOptions, Inc
Housing and Mortgage Finance Agency	Sustainable Jersey
State Department Office of Planning Advocacy	Rutgers Voorhees Transportation Center
North Jersey Transportation Planning Authority	New Jersey Bike Walking Coalition
Delaware Valley Regional Planning Commission	State Smart Transportation Initiative
South Jersey Transportation Planning Organization	Smart Growth America
Cross County Connection	The Nature Conservancy
Greater Mercer TMA	Natural Resource Defense Council
goHunterdon	New Jersey Future
Hudson TMA	American Planning Association New Jersey Chapter

QUESTIONS

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