

# Air Quality Conformity

---

## Visualize 2045 Long Range Transportation Plan Air Quality Conformity Analysis

Presentation for the  
Metropolitan Washington Air Quality Committee  
September 26, 2018  
Item 4

Jane Posey, TPB Transportation Engineer



# Long Range Transportation Plan

---

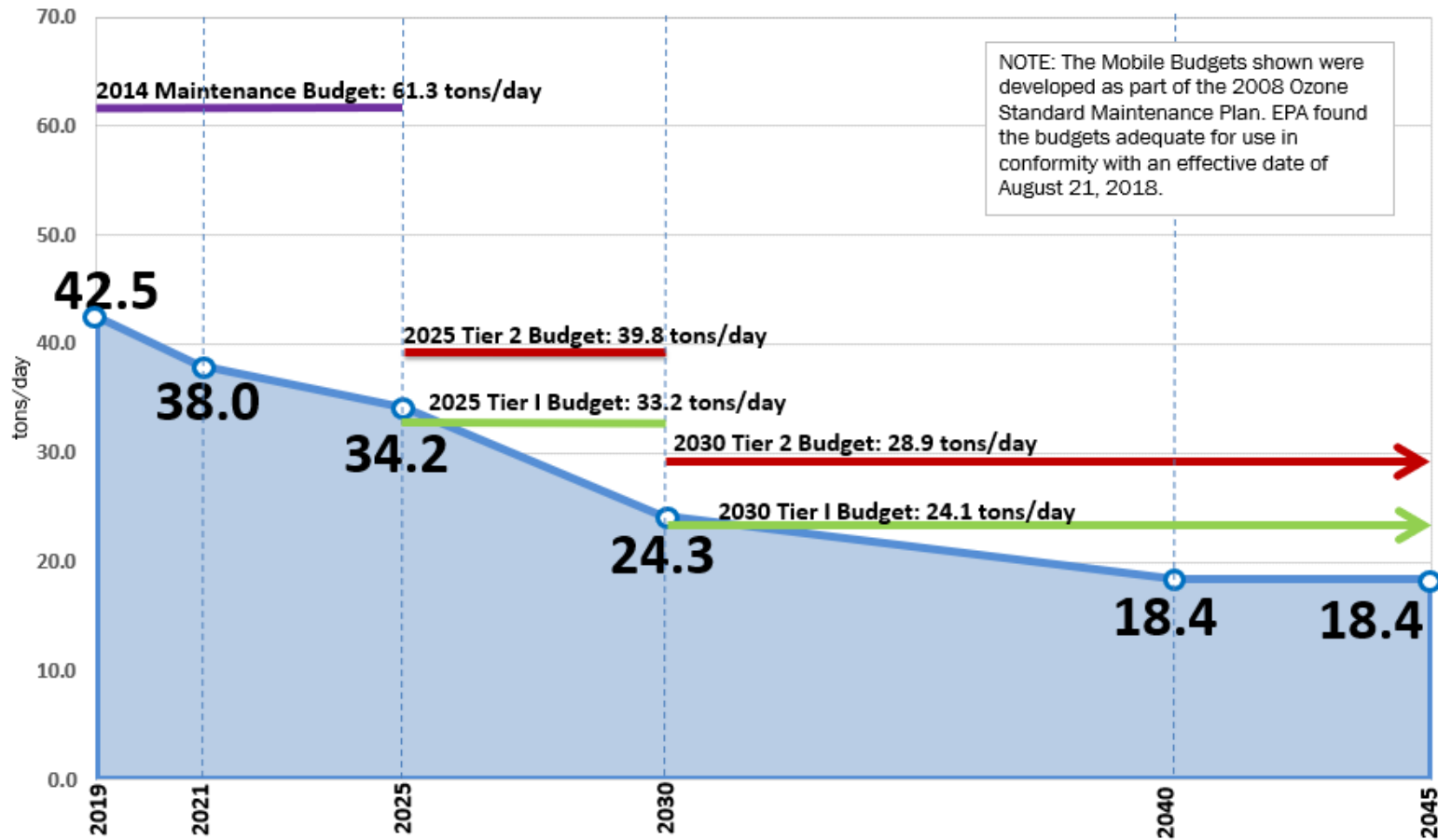
## Visualize 2045

- Federally Mandated Quadrennial Update
- New 2045 Out Year
- Updates to financial plan, demographics, modeling tools, projects/programs/policies
- Uses New 2008 Ozone Maintenance Plan Mobile Emissions Budgets
- Regional Priorities Reflected in Update Include:
  - ✓ Increased Housing to Improve Economic Competitiveness
  - ✓ Improved Metrorail reliability
  - ✓ Reduced Congestion



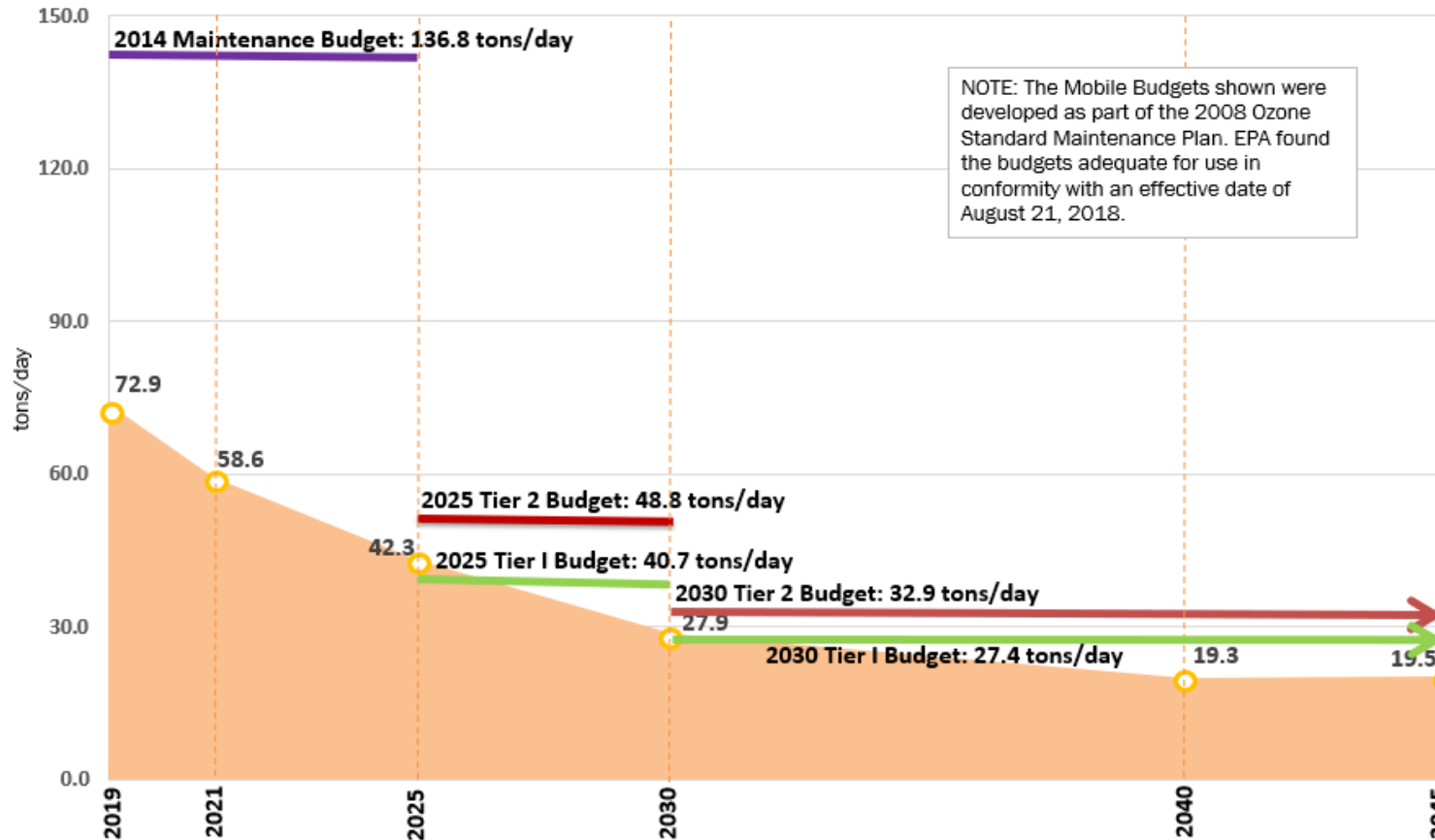
# Air Quality Conformity

## Mobile Source Emissions and Mobile Budgets Ozone Season VOC



# Air Quality Conformity: Findings

## Mobile Source Emissions and Mobile Budgets Ozone Season NOx



# Air Quality Conformity

---

From the August 6, 2018 Federal Register – Notice of Adequacy Finding for the Mobile Budgets in the 2008 Ozone Maintenance SIP:

“The MVEBs ...that include a transportation buffer will be used only as needed in situations where the conformity analysis must be based on *different data, models, or planning assumptions, including, but not limited to, updates to demographic, land use, or project-related assumptions,* than were used to create the first set of MVEBs in the maintenance plan”



# Conformity Inputs: MP vs Visualize

	Maintenance Plan Mobile Budgets	Visualize 2045 Conformity Emissions
Cooperative Forecasts	Round 9.0	Round 9.1
Vehicle Fleet	2014 VIN	2016 VIN
Travel Demand Model	Version 2.3.66	Version 2.3.75
Project Inputs	2016 CLRP	Visualize 2045
Metrorail Constraint	yes	no



# Conformity Inputs: Demographics

---

## Cooperative Forecasts (2018-2045)

Round 9.0 → Round 9.1

12K ▲ households (policy action by 3 States to increase housing in the region)

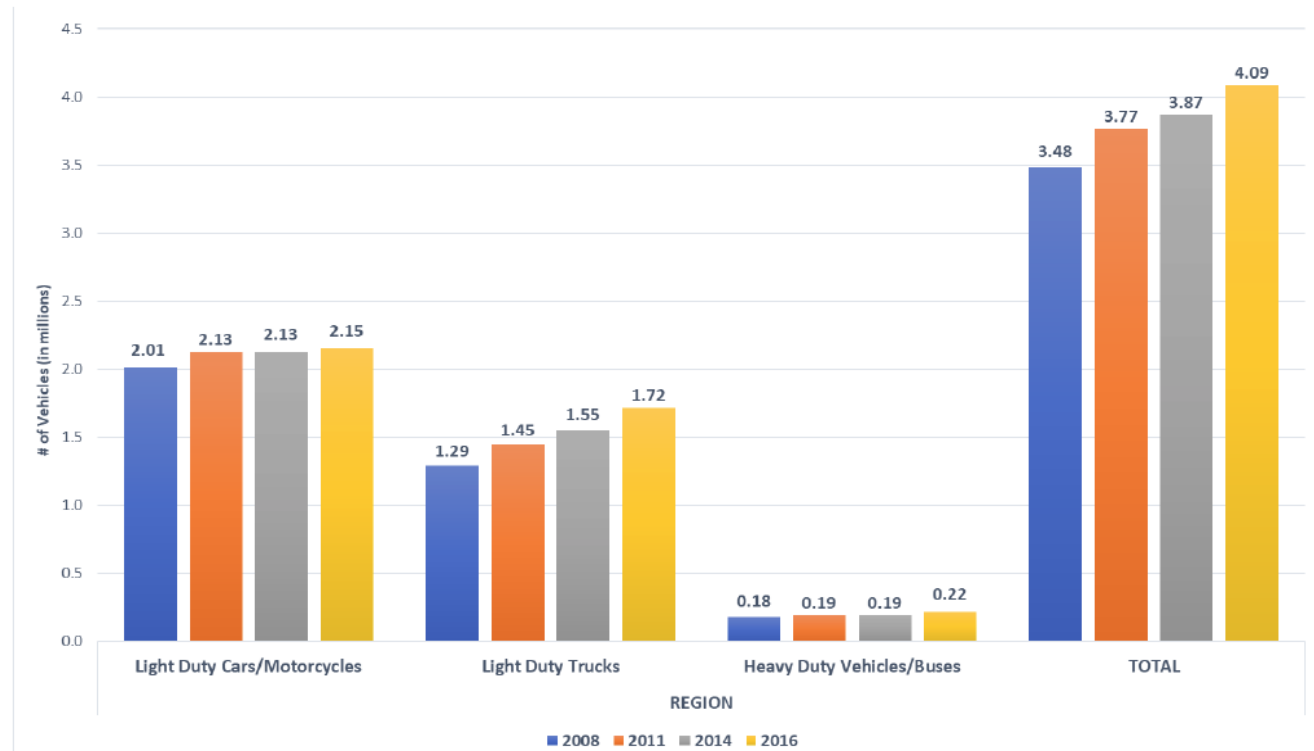
40K ▲ population

8K ▼ jobs, but  
14K ▲ jobs in 2025  
11K ▲ jobs in 2030



# Conformity Inputs: Vehicle Fleet

## 2014 VIN vs 2016 VIN Historical Growth in Vehicles By Type



\* Based on Decoded Records





# Conformity Analysis: Travel Model

---

## Travel Demand Model v2.3.66 → v2.3.75

- Improved accuracy of airport trip modeling
- Enhanced managed lanes modeling



# Conformity Inputs: Projects/Programs

## 2016 CLRP → Visualize 2045

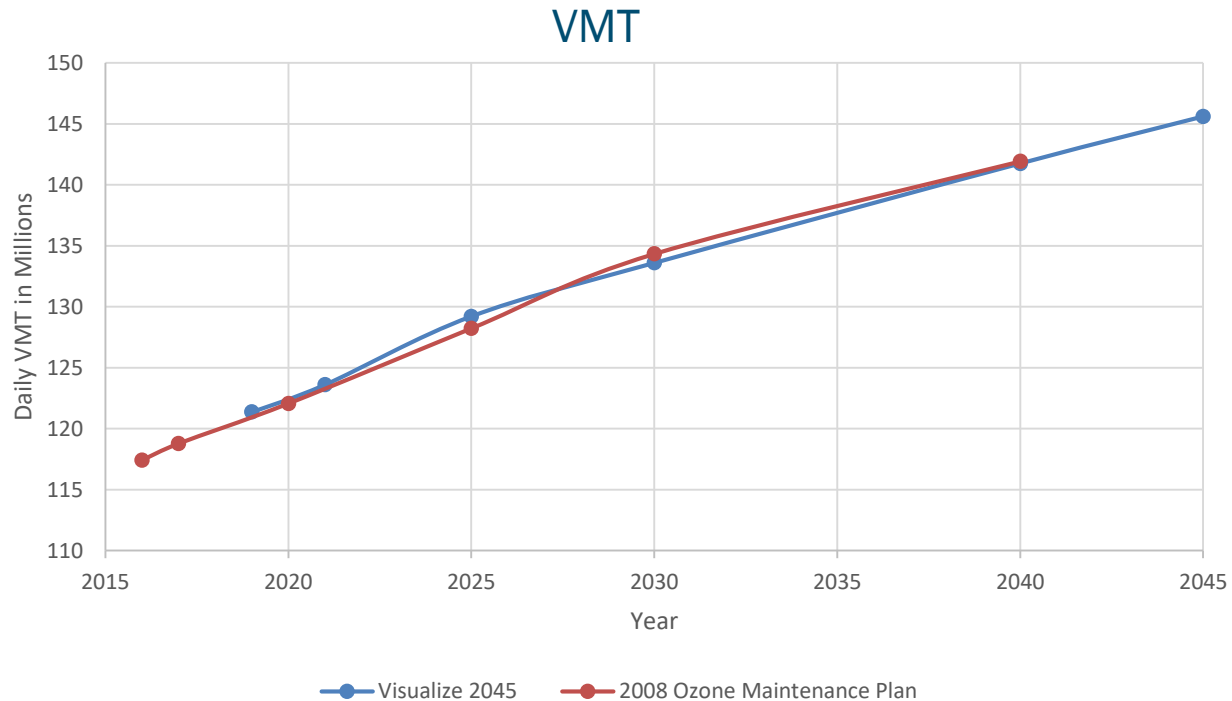
- New Managed Lanes on I-270 and MD Beltway
- VA Beltway Express Lanes Connection with MD Beltway
- New BRT – Five Corridors in Montgomery County
- Metrorail Core Capacity Improvements (\$5.4 Billion)\*
- US 301 Widening
- Bike Lane Corridors in the District

\*Allowed for removal of “transit constraint”



# Conformity Results: MP vs Visualize

## TRAVEL DEMAND OUTPUT\* Visualize 2045 vs 2008 Ozone Maintenance Plan

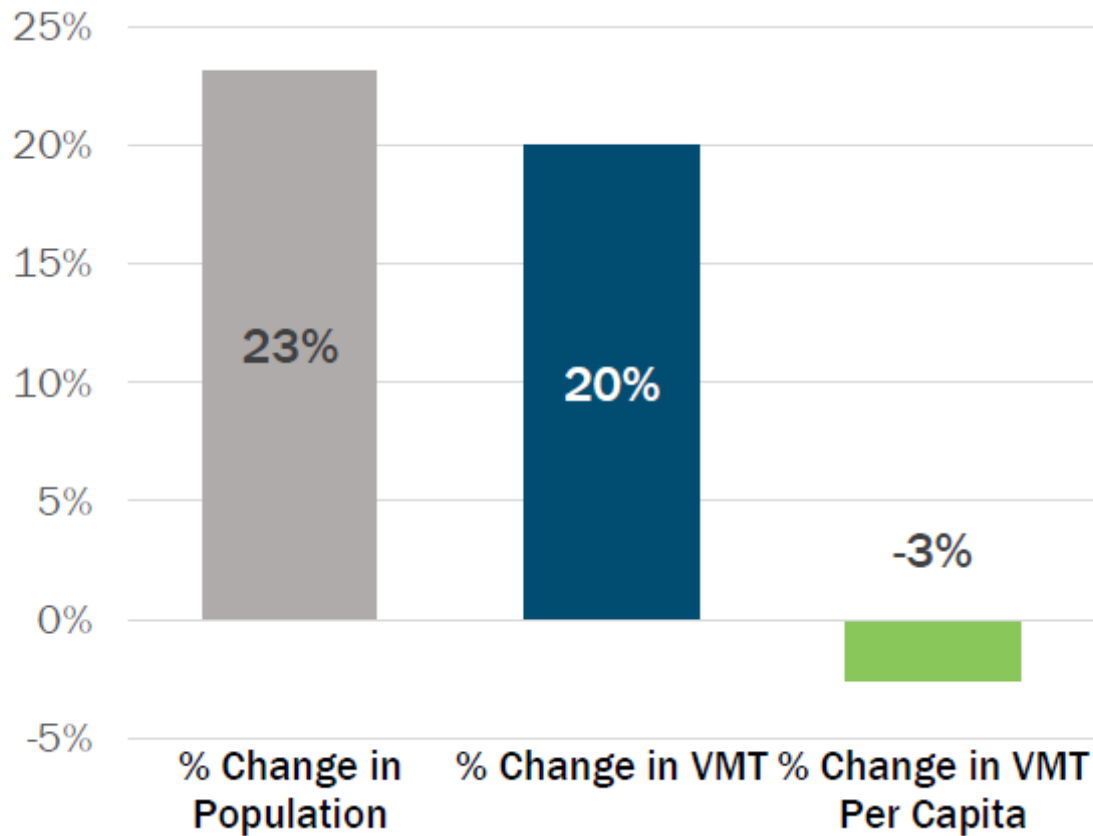


\* For TPB Planning Area



# Conformity Results

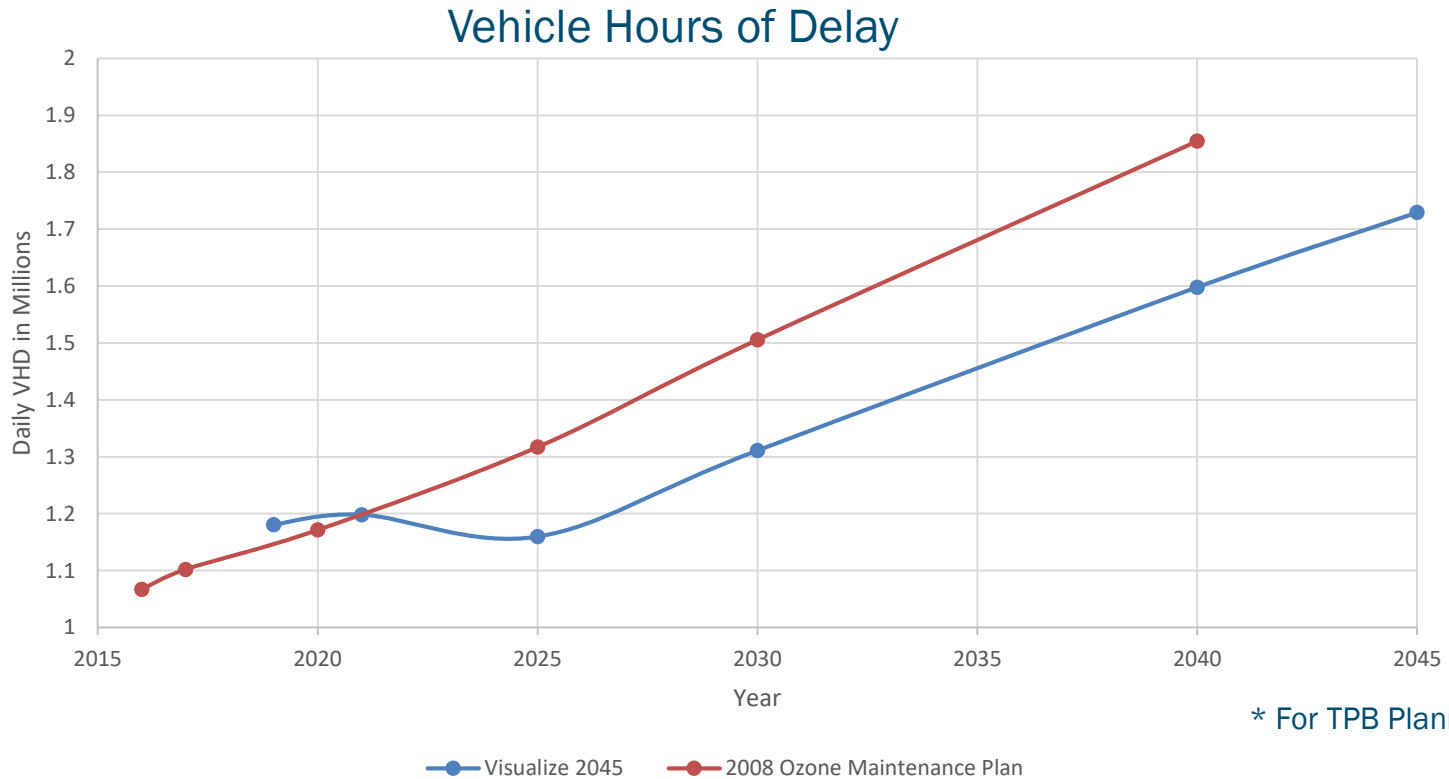
## VMT Per Capita (Today - 2045)



# Conformity Results: MP vs Visualize

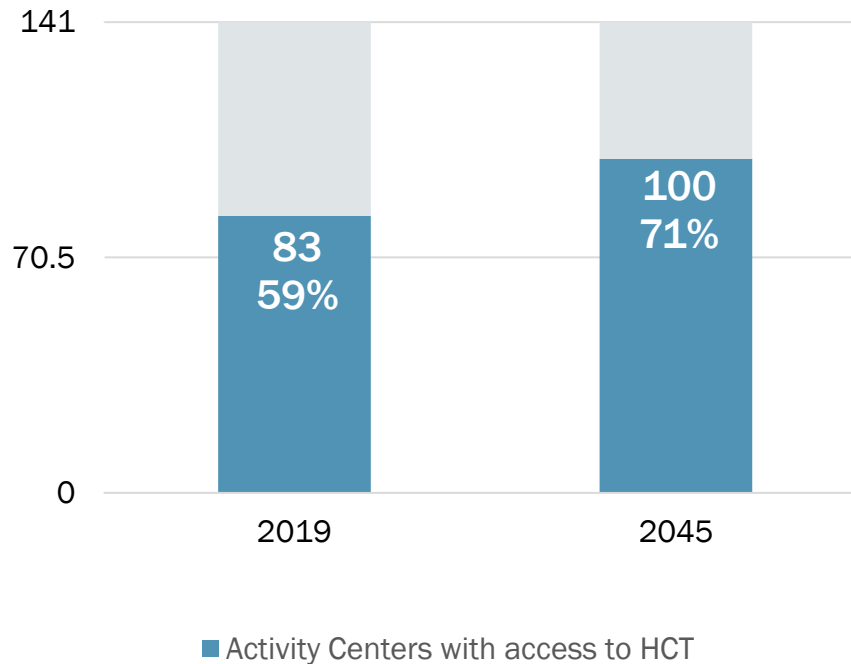
## TRAVEL DEMAND OUTPUT\*

### Visualize 2045 vs 2008 Ozone Maintenance Plan



# Conformity Results

## More Activity Centers connected to High-Capacity Transit

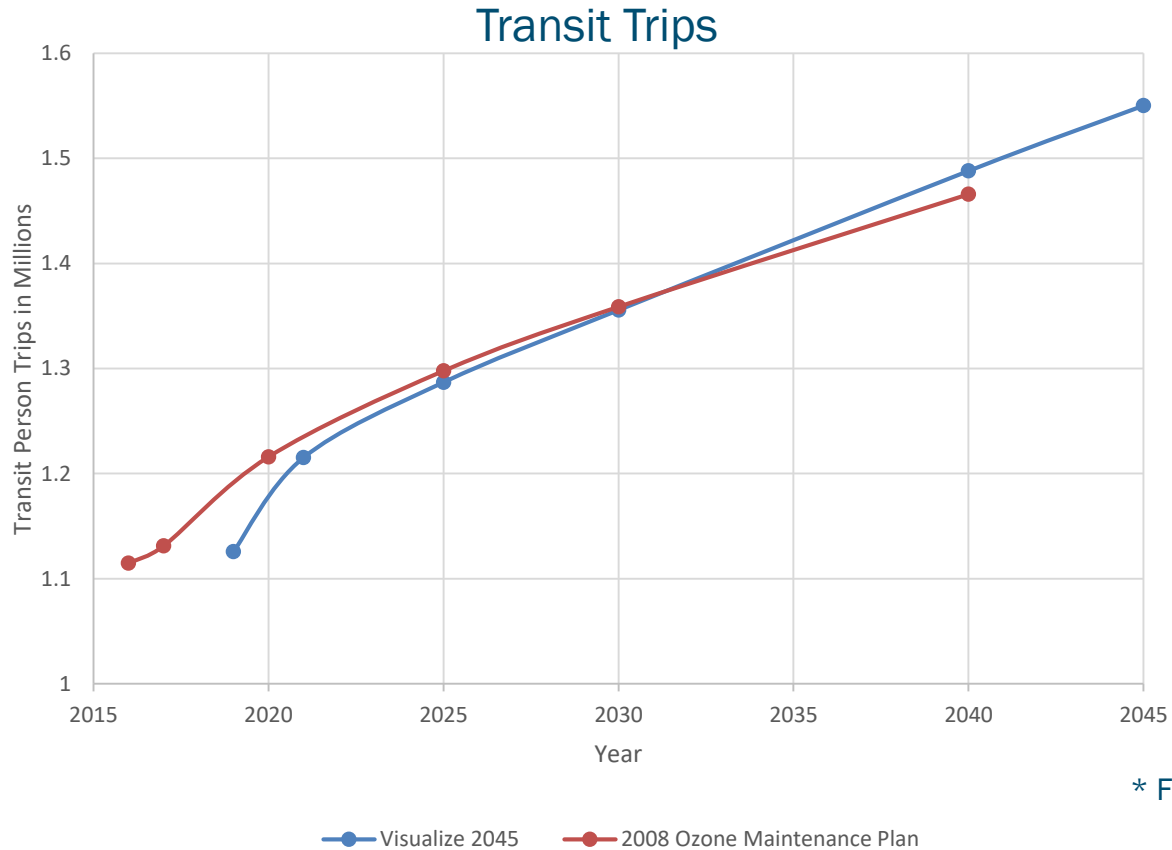


\* "Proximity" defined as within one mile of rail or within ½ mile of BRT.



# Conformity Results: MP vs Visualize

## TRAVEL DEMAND OUTPUT\* Visualize 2045 vs 2008 Ozone Maintenance Plan



# Conformity Results: Sensitivity Test

## VIN Sensitivity Test: 2025 Analysis Year

### EMISSIONS VS TIER 1 MOBILE BUDGETS

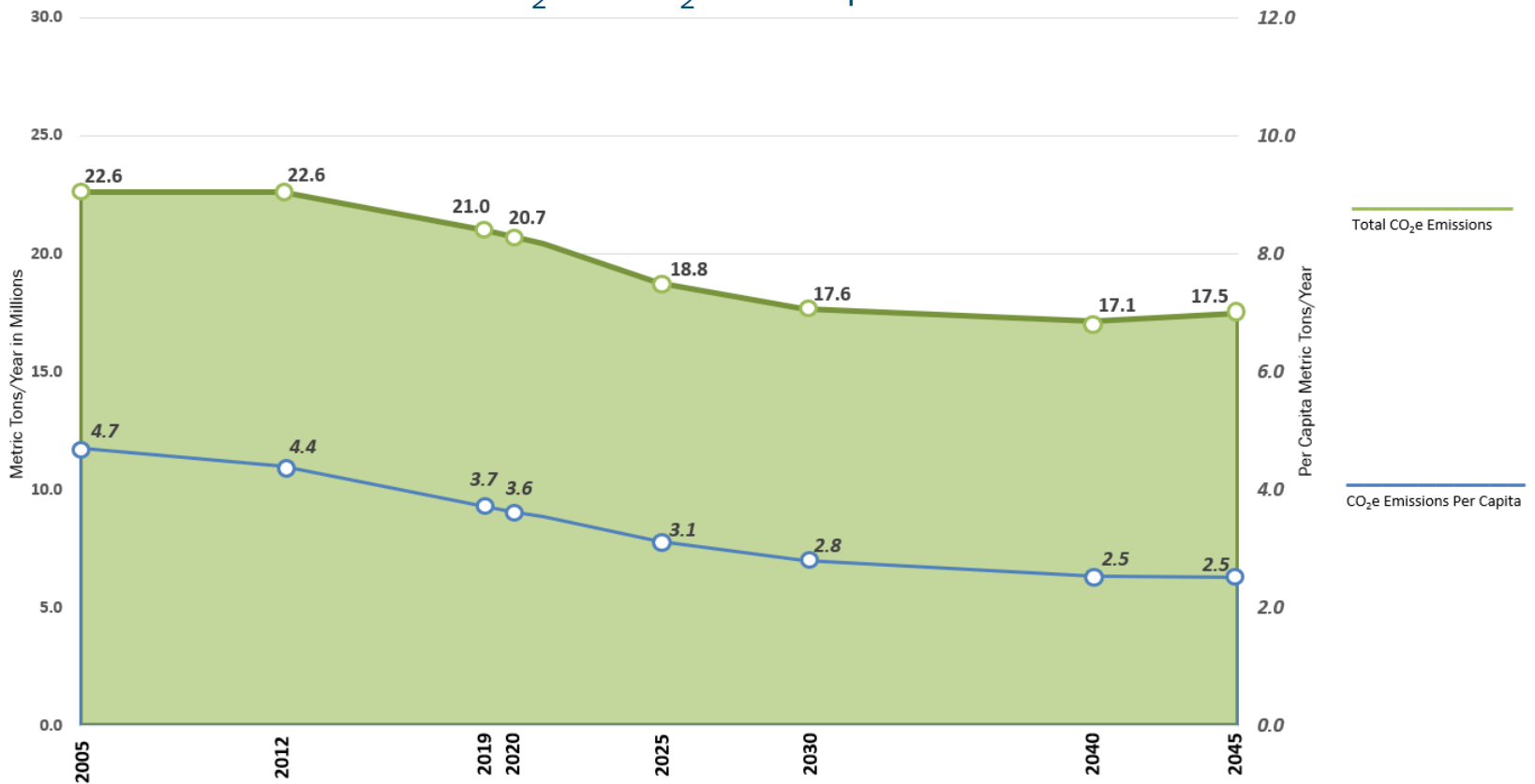
	2025 Tier 1 Mobile Budgets (tons/day)	2016 VEHICLE FLEET			2014 VEHICLE FLEET		
		Conformity Analysis (tons/day)	Conformity Analysis Difference (tons/day)	Conformity Analysis Percent Diff	VIN Sensitivity Test (tons/day)	Sensitivity Test Difference (tons/day)	Sensitivity Test Percent Diff
VOC	33.2	34.188	0.988	3%	33.608	0.408	1%
NOx	40.7	42.321	1.621	4%	40.5	-0.2	-0.5%





# Greenhouse Gases

Visualize 2045  
Greenhouse Gas  
Mobile Source Emissions  
CO<sub>2</sub> and CO<sub>2</sub> e Per Capita



# Air Quality Conformity

---

## Next Steps...

- Comment Period: Sept 7- Oct 7
- Presentation to TPB: Sept 21
- Presentation to MWAQC: Sept 26
- TPB Asked to Approve the Conformity Analysis, the Visualize 2045 Transportation Plan, and the FY2019-2024 TIP: Oct 17

