

# UNFUNDED CAPITAL NEEDS: NO BUILD ANALYSIS

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## Preliminary Summaries

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TPB Technical Committee  
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# Unfunded Capital Needs (UCN) Background

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- Identify a limited set of currently unfunded multi-modal projects with the greatest potential to improve regional system performance that the TPB can champion for funding and inclusion in the Constrained Long Range Plan (CLRP)
- Three Phases:
  - Phase I: Develop a Baseline Report (FY 2016)
  - Phase II: Develop a Plan of Unfunded Regional Priority Projects (FY 2017)
  - Phase III: Incorporate Unfunded Priority Projects Into the Region's Long-Range Transportation Plan (FY 2018)



# Phase I: Develop a Baseline Report (FY 2016)

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- No Build: system performance with growth in demand (Population and Employment) but without any of the capital improvements in the current (2015) CLRP ✓
- Planned Build - system performance with growth in demand and capital improvements in the current (2015) CLRP ✓
- All Build - system performance with growth in demand and capital improvements in the current (2015) CLRP plus all of the currently unfunded capital improvements inventoried by the TPB



# No Build Scenario

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- 2040 Population and Employment (Round 8.4 Cooperative Forecasts)
- Transit and Highway Networks: 2015 (no capital improvements)



# 2015 CLRP Scenario

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- The CLRP identifies regionally significant transportation projects and programs that are planned between now and 2040
- Over 500 Projects are included from simple highway landscaping projects to billion-dollar highway and transit projects
- CLRP includes 7% more lane miles of roadway, and 14% more miles of rail / streetcar transit
- More information about projects, including detailed maps, can be located at [https://www.mwcog.org/clrp/resources/KeyDocs\\_2015.asp](https://www.mwcog.org/clrp/resources/KeyDocs_2015.asp)



# CLRP Projects

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- Some of the projects that are included in the CLRP and NOT in 2040 No Build:
  - The H. St. / Benning Rd. Streetcar (DC)
  - Purple Line LRT and Corridor Cities Transitway BRT (MD)
  - I-270 Improvements – HOV and General Purpose Lanes (MD)
  - Express Toll lanes on I-95 (VA)
  - Highway and Transit Components of I-66 Project Inside and Outside the Beltway (VA)
  - Silver Line Phase II (VA)
  - US 1 BRT from Huntington Metro to Woodbridge (VA)



# Technical Analysis

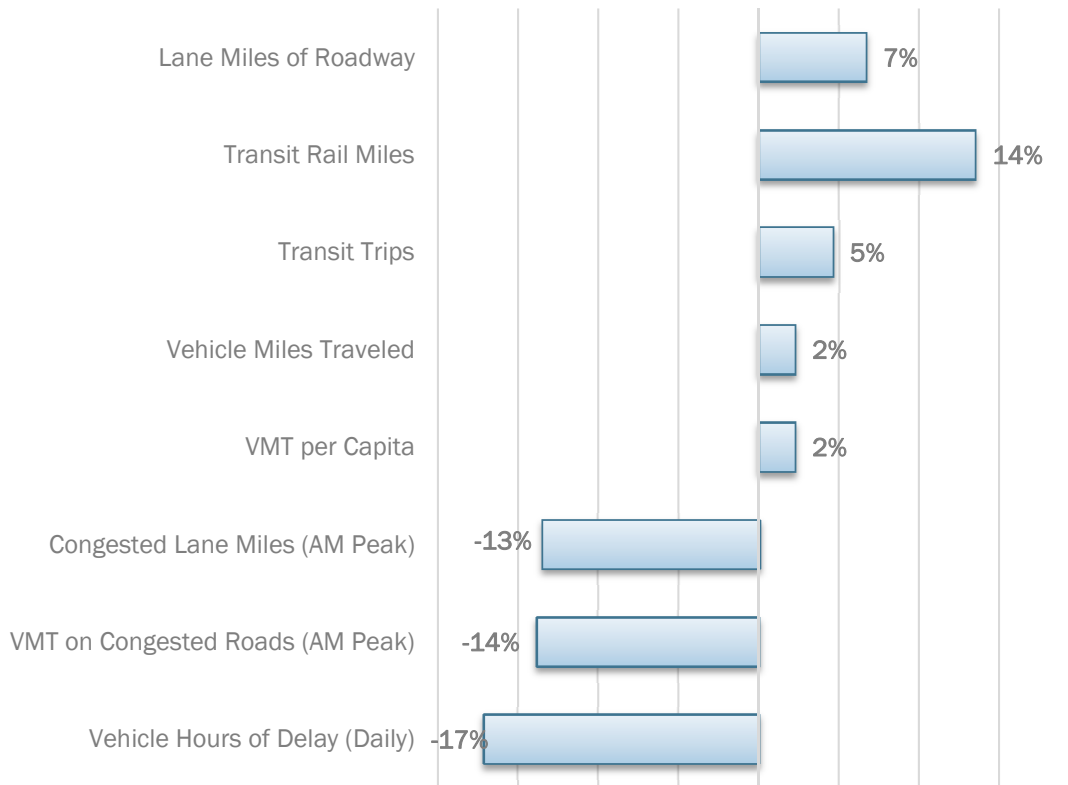
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- CLRP Performance Analysis:
  - Base: 2015 (CLRP)
  - Build: 2040 (CLRP)
- **UCN Analysis:**
  - **Base: 2040 No Build**
  - **Build: 2040 (CLRP)**



# CLRP versus No Build: What Does the CLRP Do?

Performance Analysis in 2040: CLRP versus NB



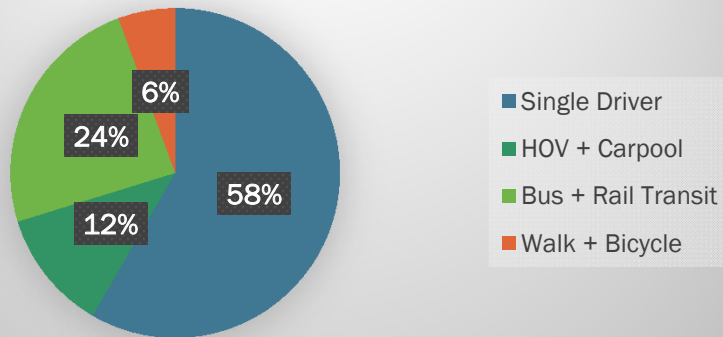
- CLRP increases daily transit trips by 5% (nearly 70,000 trips) and daily VMT by 2%
- Projects in CLRP reduce the number of Congested Lane Miles, VMT on Congested Roadways, and Vehicle Hours of Delay (by 17%)



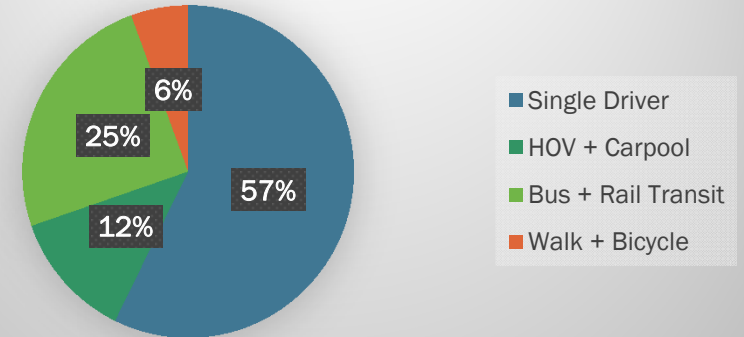


# CLRP versus No Build: Mode Shares

Work Trip Mode Shares: 2040  
No Build



Work Trip Mode Shares: 2040  
(CLRP)

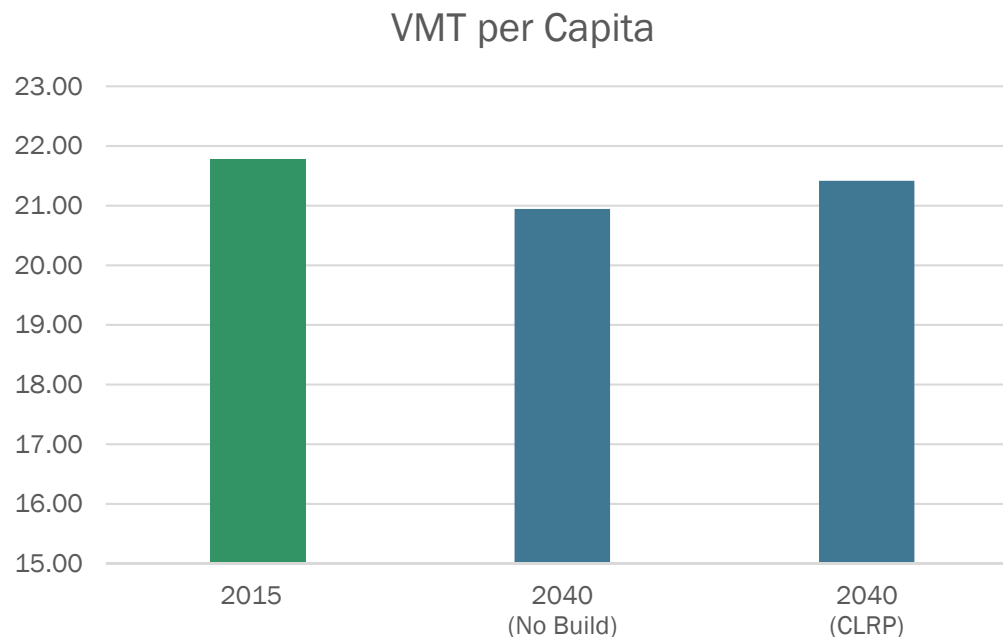


- Increase in transit trips leads to a slight shift in commuting mode share toward transit and away from single driver trips
- Mode shares for all purposes remain unchanged



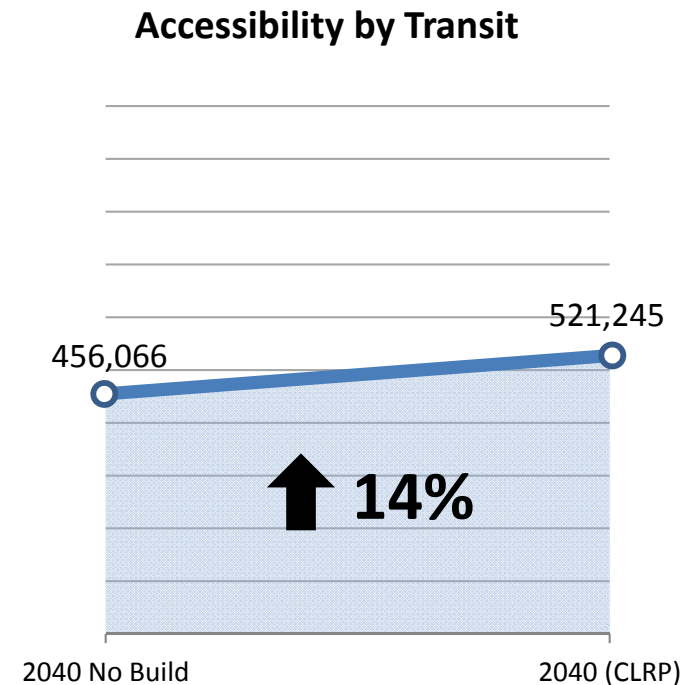
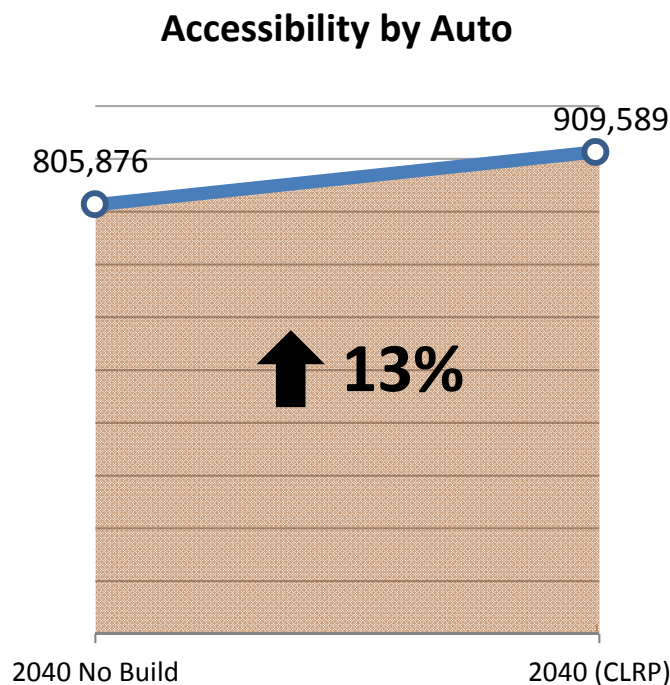
# CLRP versus No Build: Vehicle Miles Traveled per Capita

- VMT per Capita increases by 2% in 2040 (CLRP) relative to 2040 No Build
- VMT per Capita decreases by 4% in 2040 No Build compared to today (2015)
- VMT per Capita in 2040 (CLRP) is lower by 2% relative to today (2015)



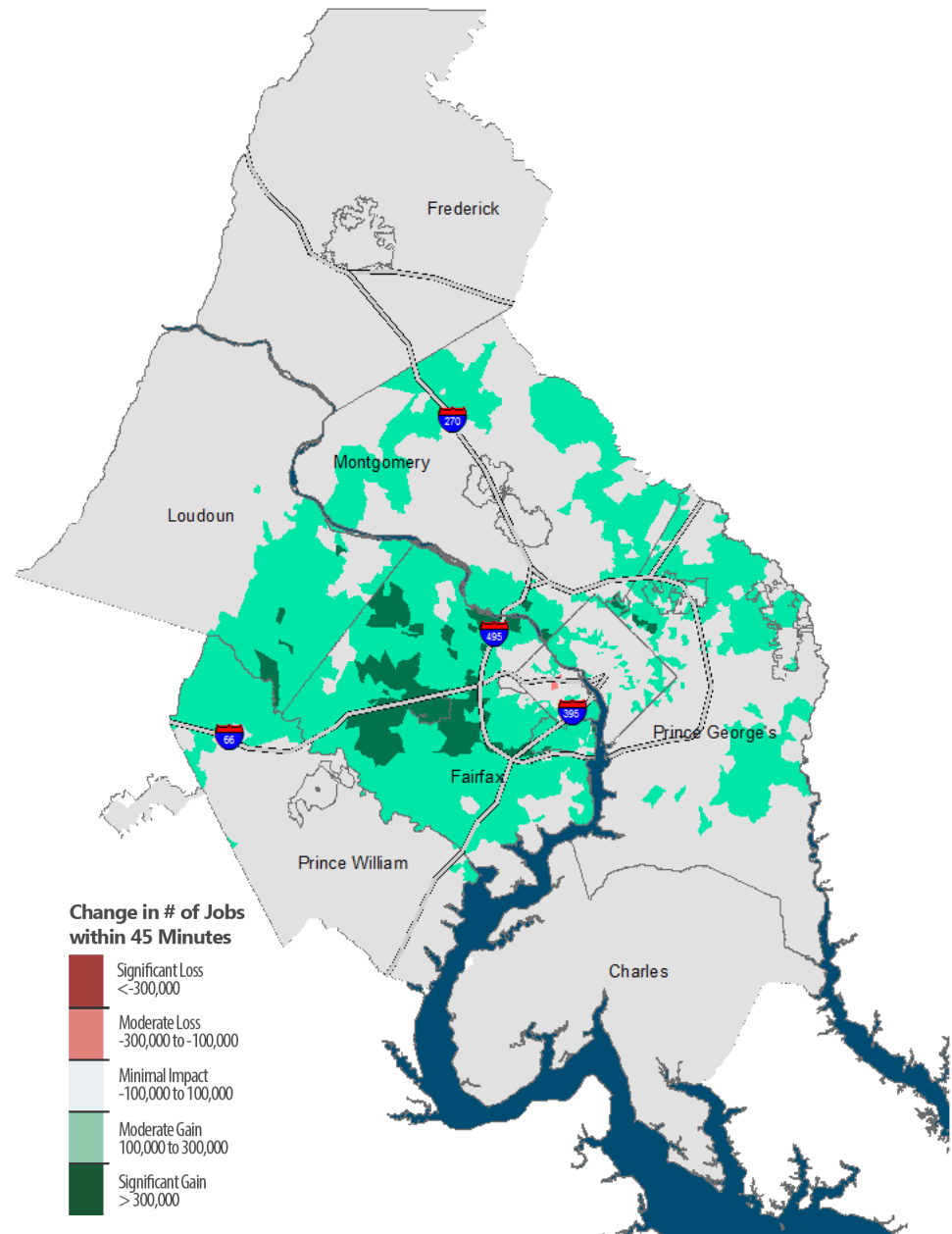
# CLRP versus No Build: Average Number of Jobs Accessible

- CLRP increases the number of jobs accessible within 45 minutes by automobile and transit



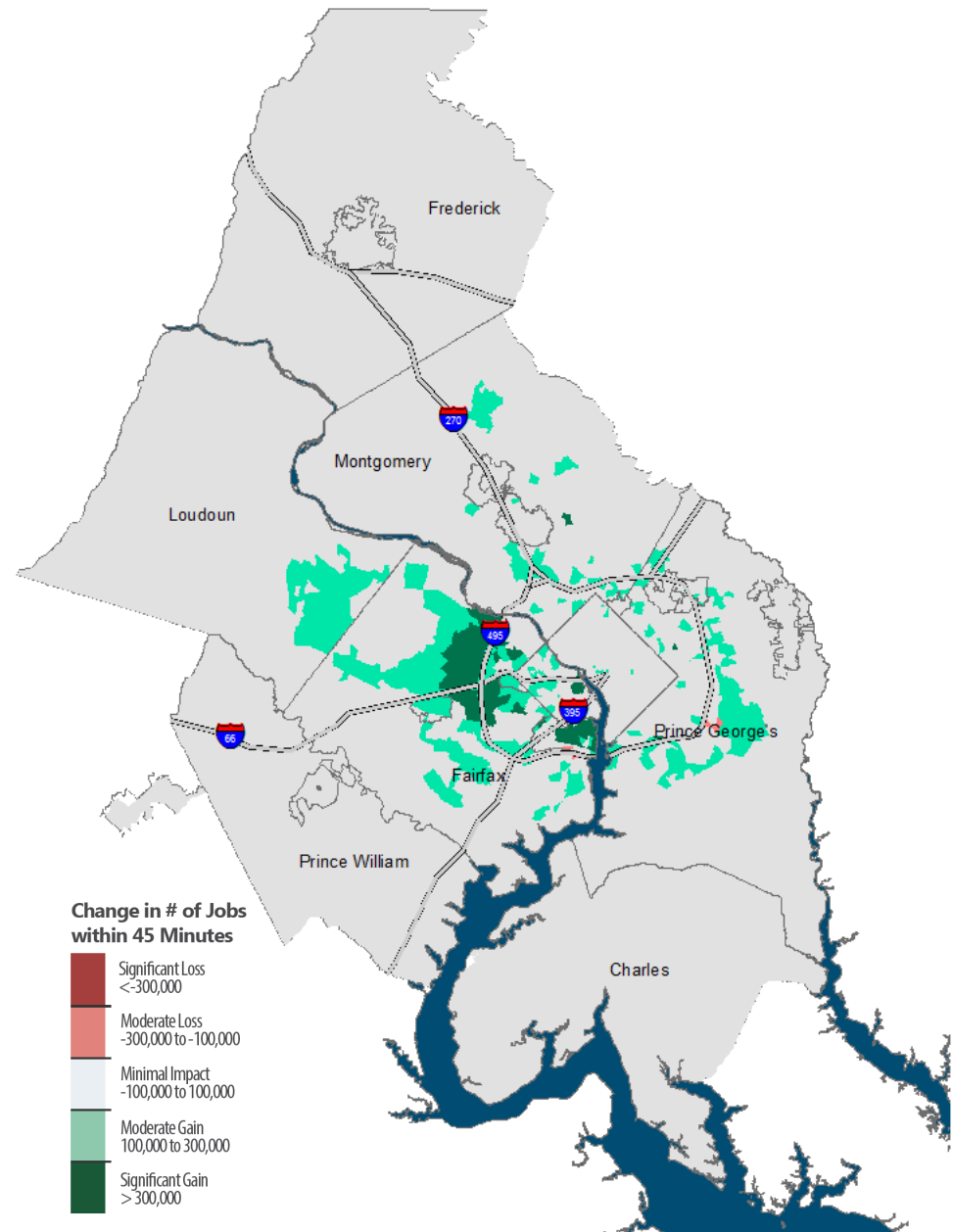
# CLRP versus No Build: Change in Access to Jobs by Auto

- CLRP increases access to jobs by auto throughout the region, with largest increases in accessibility taking place in the I-66 Corridor Outside of the Beltway



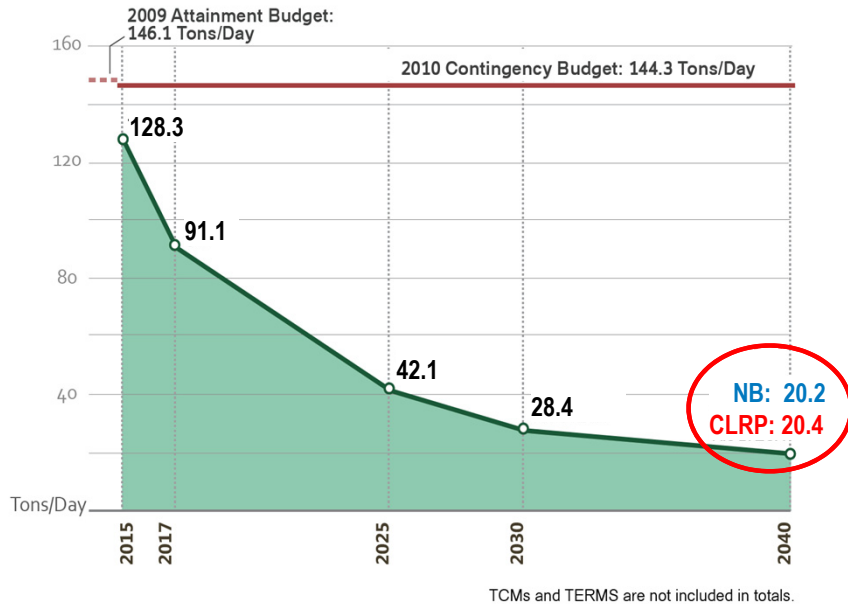
# CLRP versus No Build: Change in Access to Jobs by Transit

- CLRP increases access to jobs by transit throughout the region
- Areas in the I-66 Corridor Outside of the Beltway see increases in accessibility with addition of new express bus services
- Blue / Yellow line corridor in Virginia experiences increases in accessibility with addition of Potomac Yards Station



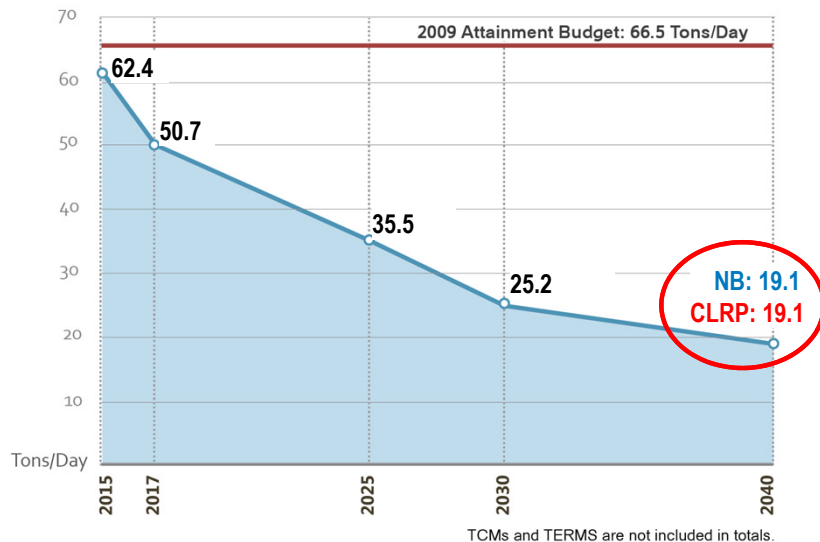
# CLRP versus No Build: Emissions

## Ozone Season Precursor Nitrogen Oxides (NO<sub>x</sub>)



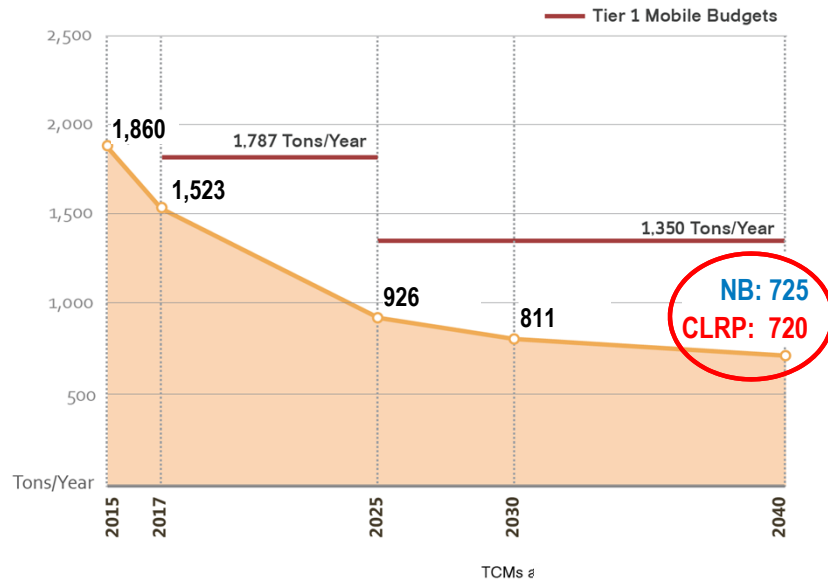
- Emissions of all criteria pollutants are expected to drop steadily between 2015 and 2040 due to tougher federal fuel and vehicle efficiency standards, as well as investments in transit and highway infrastructure
- Criteria pollutants do not change significantly from No Build to CLRP (within 1%)

## Ozone Season Volatile Organic Compounds (VOC)

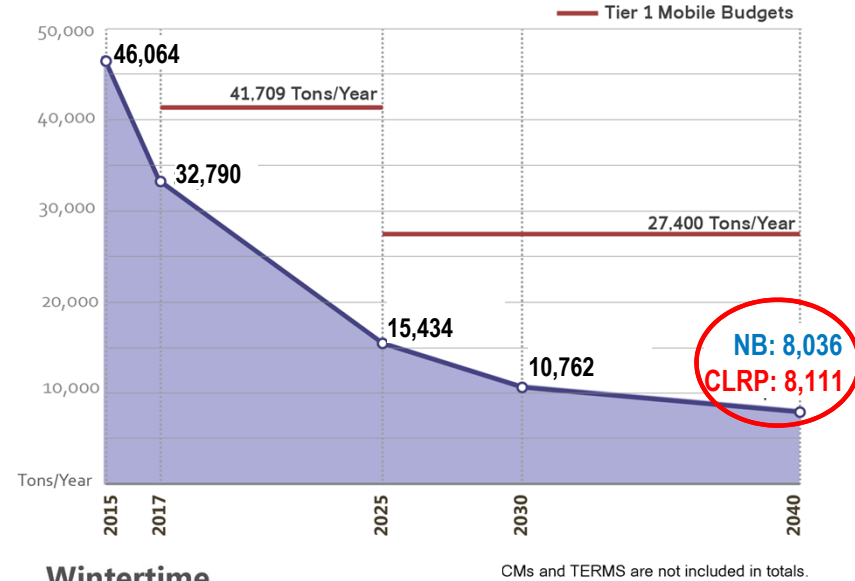


# CLRP versus No Build: Mobile Source Emissions

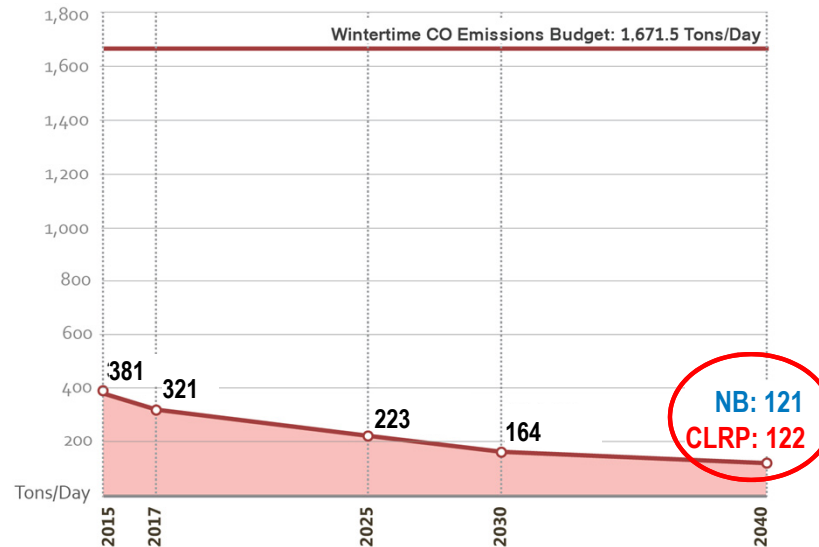
Annual Particulate Matter Direct (PM2.5)



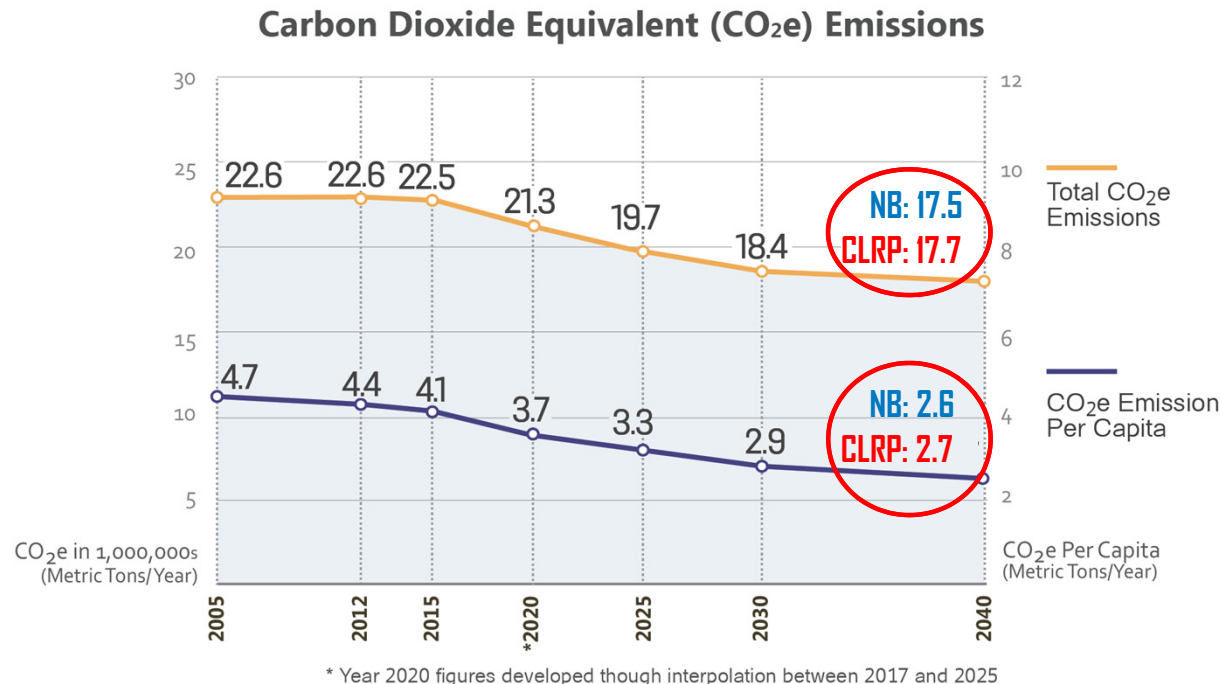
Annual Particulate Matter (PM2.5) Precursor Nitrogen Oxides (NO<sub>x</sub>)



Wintertime Carbon Monoxide (CO)



# CLRP versus No Build: Mobile Source Greenhouse Gas Emissions



- Total CO<sub>2</sub>e emissions under the 2015 CLRP are forecast to drop by 22% between 2015 and 2040, while CO<sub>2</sub>e emissions per capita are expected to drop at an even greater rate of 44%
- Total CO<sub>2</sub>e emissions change very slightly in CLRP relative to No Build (within 1%)



# Key Findings: What Does the CLRP Do?

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- Total transit trips increase by 5% (nearly 70,000)
- Total VMT and VMT per capita increase by 2%
- Despite the slight increase in VMT, compared to No Build or “Do Nothing” scenario, expanded highway and transit capacity lead to decreases in congestion and Daily Vehicle Hours of Delay (by 17%)
- Average number of jobs accessible by auto and transit within 45 minutes during morning commute increases by 13% and 14%, respectively
- Emission estimates in CLRP change very slightly and are within 1% of No Build estimates
- Criteria pollutants in CLRP are within the established budgets



# Next Steps

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- Staff will further evaluate No Build results by geographic subarea
- Staff will continue with input preparations for All-Build scenario



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