# FY2015 – FY2017 COMMUTER CONNECTIONS TRANSPORTATION DEMAND MANAGEMENT PROGRAM EVALUATION RESULTS

## Transportation Planning Board Technical Committee

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Agenda Item #11

National Capital Region
Transportation Planning Board

COMMUTER CONNECTIONS
A SMARTER WAY TO WORK

# Objective of Evaluation

- Apply methodology outlined in Evaluation Framework to:
  - Estimate effectiveness of Commuter Connections Programs
    - Telework Assistance (MD/VA)
    - Guaranteed Ride Home
    - Employer Outreach
    - Mass Marketing
  - Document results of Commuter Operations Center (COC)
- Data collection and program analysis are key components in determining how effective each of the measures and the program as a whole is performing.

# Objective of Evaluation

- Impacts calculated include:
  - VT/VMT Impacts
  - Air pollution/emissions reduction (NOx, VOC)
  - Greenhouse gas emissions (PM 2.5, PM 2.5 Precursor NOx, CO2)
  - Reduction in congestion (reduced hours of peak period delay)
  - Reduction in fuel consumption (gasoline cost savings)
  - Improved health/safety (accidents reduced per 1M VMT)
  - Noise pollution reduction (reduced motor vehicle noise)

# Objective of Evaluation

- A detailed framework methodology is in place on how data is collected and analyzed and how it then fits back into the regional planning process.
- The evaluation cycle occurs over a three year period and there are several studies and reports that are produced during this time (Placement Rate Study, Retention Rate Survey, State of the Commute, Employer Outreach database analysis, etc.)

# Data to Assess TDM Contributions to Regional Goals

**Background:** Transportation decisions are increasingly driven by sustainability, livability, health/safety, and system performance. TDM data can demonstrate TDM's wider range of societal benefits and contribution to regional transportation system performance

**Framework Update:** Expand efforts to collect data on societal benefits:

Collect data in SOC and user surveys to define CC users' travel route and time and role of TDM in QOL/livability and transportation satisfaction and for Performance Based Planning activities

Explore new measurement tools to estimate societal benefit (e.g., accident reduction) from reduced VMT

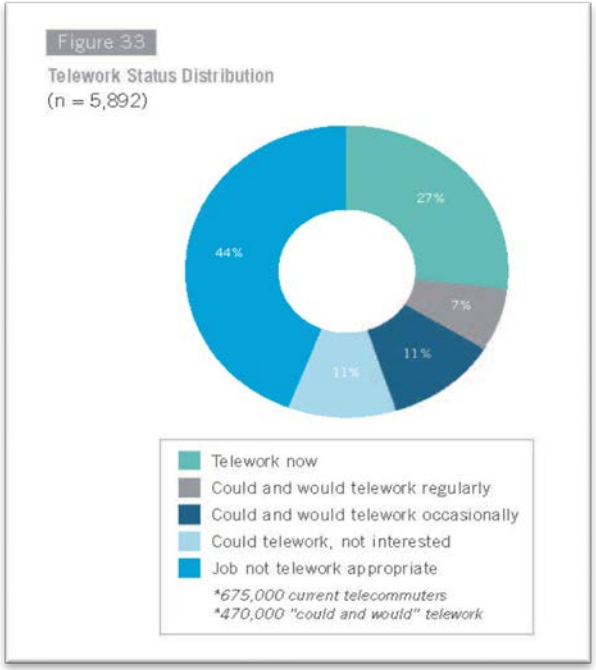
Explore how TERM data could be analyzed with travel movement data sources for location-specific analysis

# Data to Communicate Results/Benefits

**Background:** Comprehensive TDM evaluation produces technical data for tracking purposes (e.g. mode use, telework use, awareness of commuter services, perception of access to transit and regional transportation infrastructure). Surveys collect data that could be valuable to CC partners, funders, and other audiences.

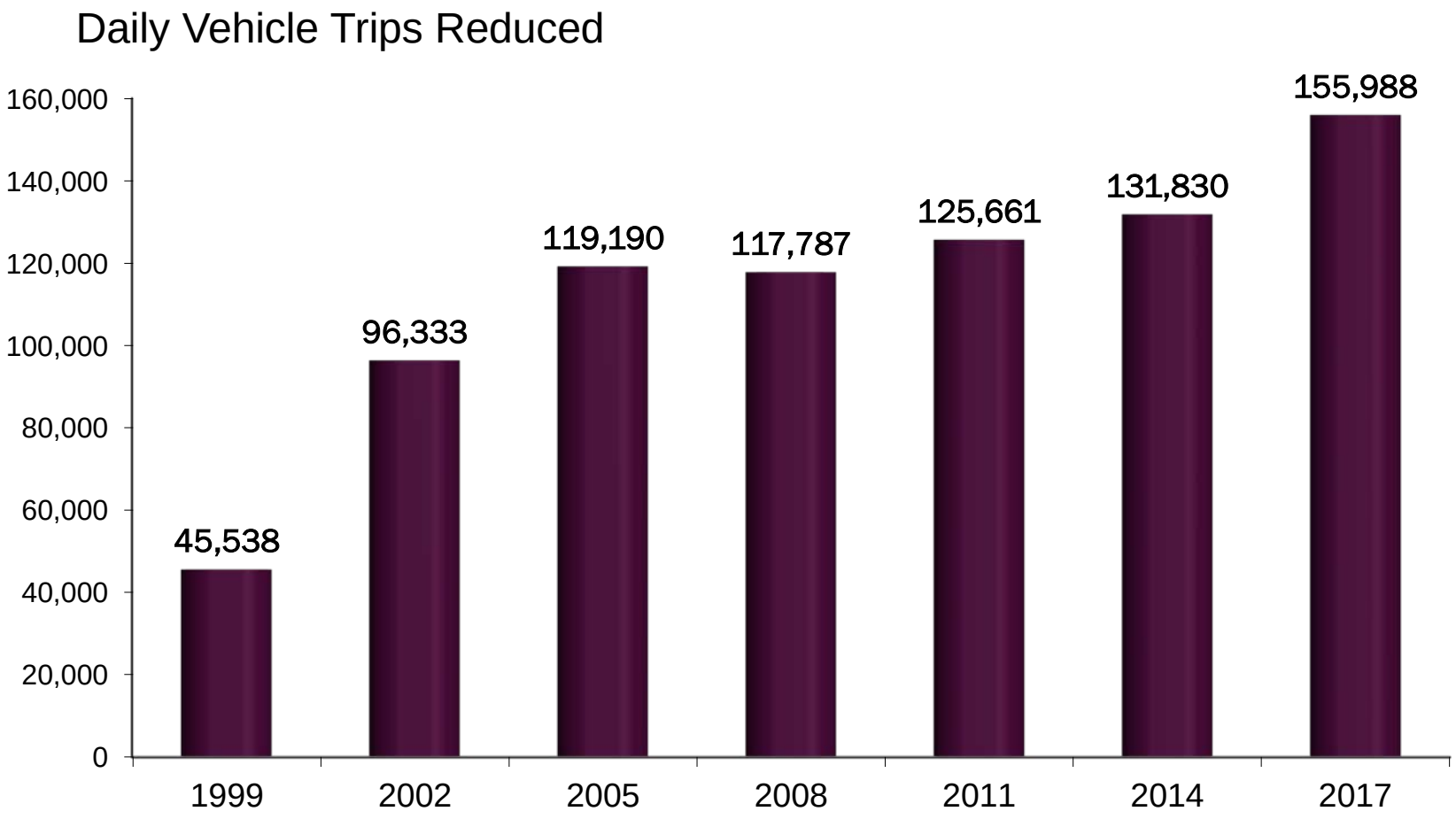
**Framework Update:** Format and organize data to facilitate communication of TDM results and CC value to stakeholders:

- For SOC, GRH, Placement surveys, 1-3 page "Top Findings" summary
- Format other survey/evaluation data for COG to package/disseminate through other means:
  - Social media, blogs
  - Targeted emails
  - Research briefs

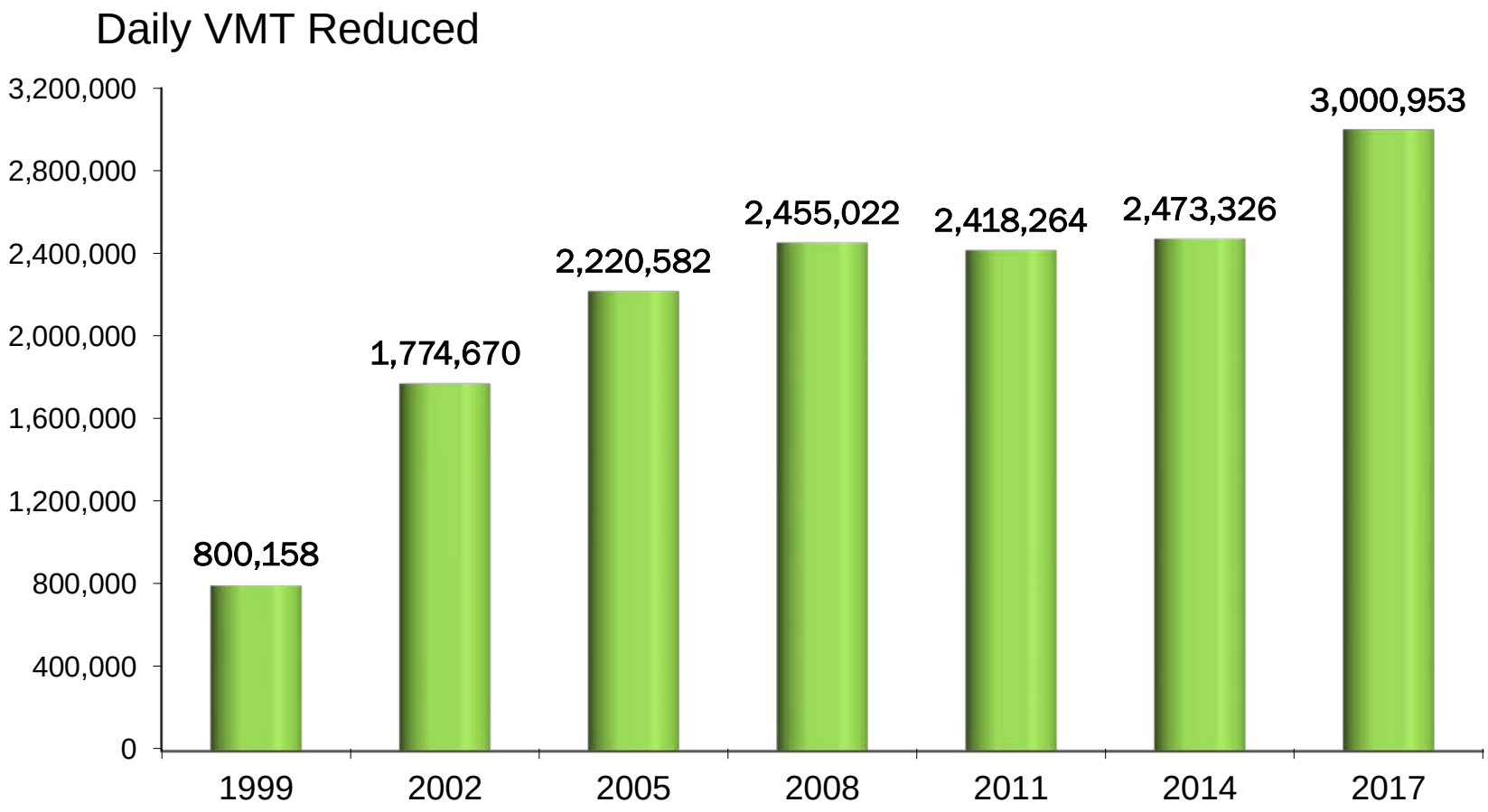



Overall Program
Results

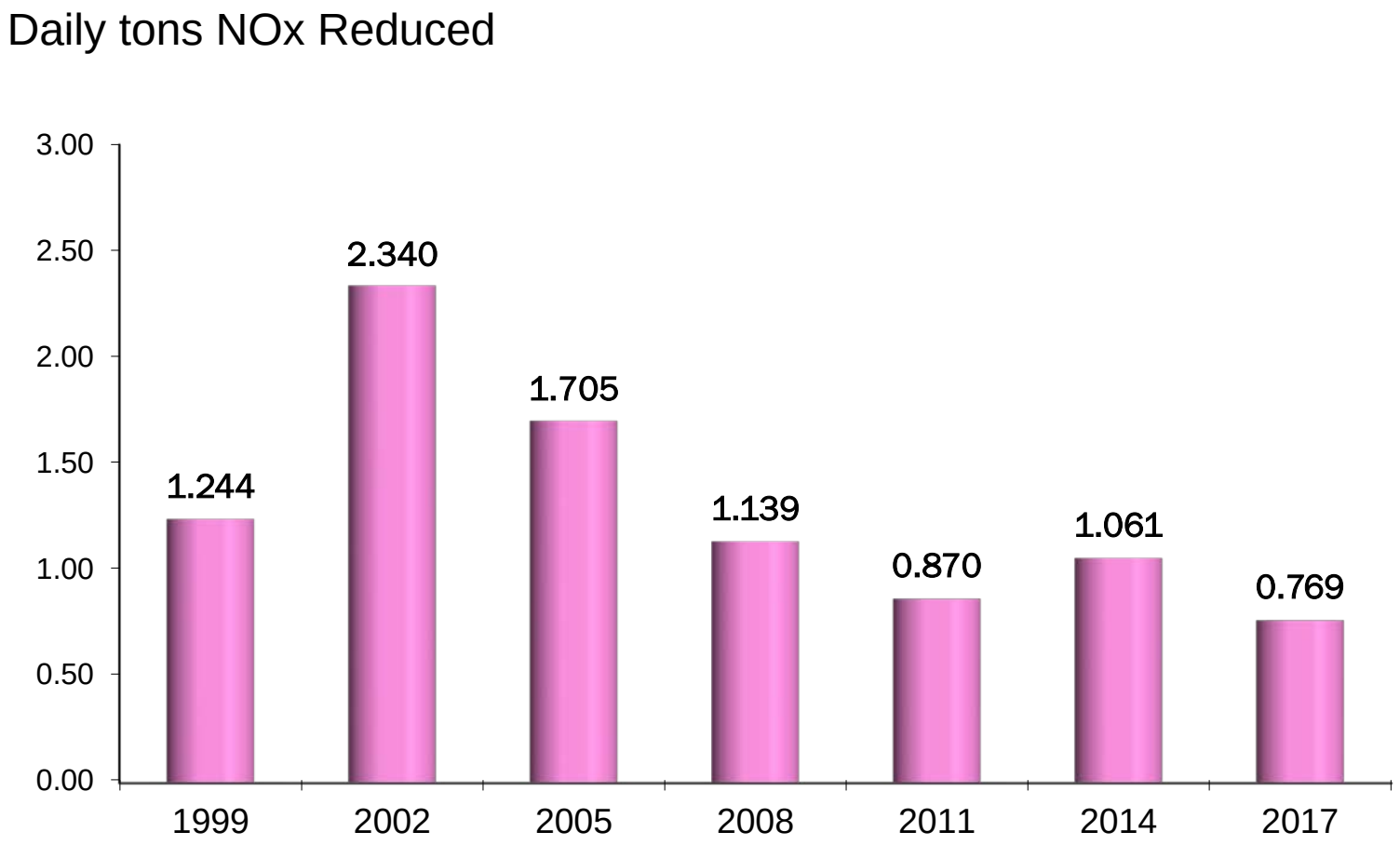
## Commuter Connections
## Vehicle Trip Reduction – 1999 to 2017



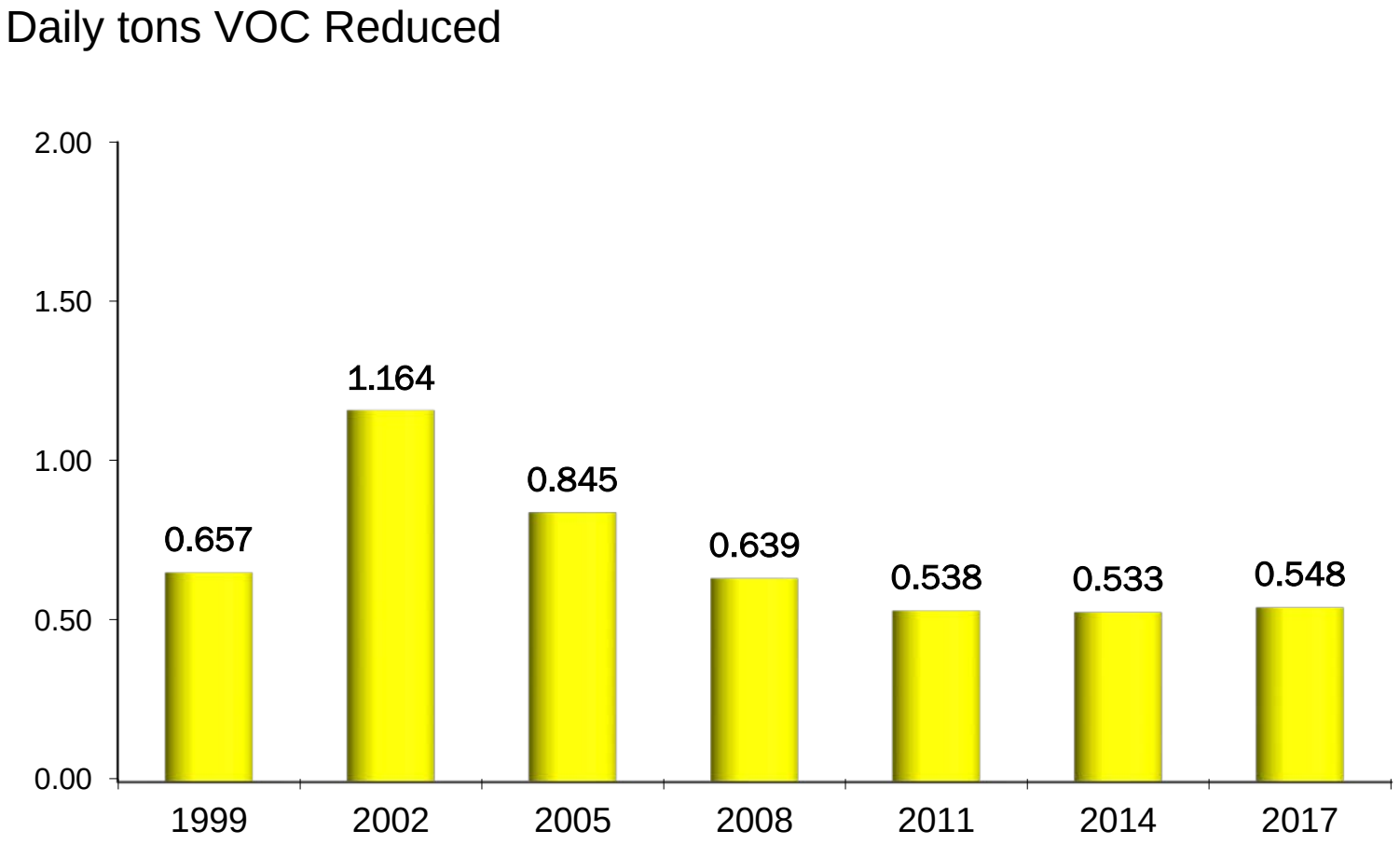
# Commuter Connections
# VMT Reduction – 1999 to 2017



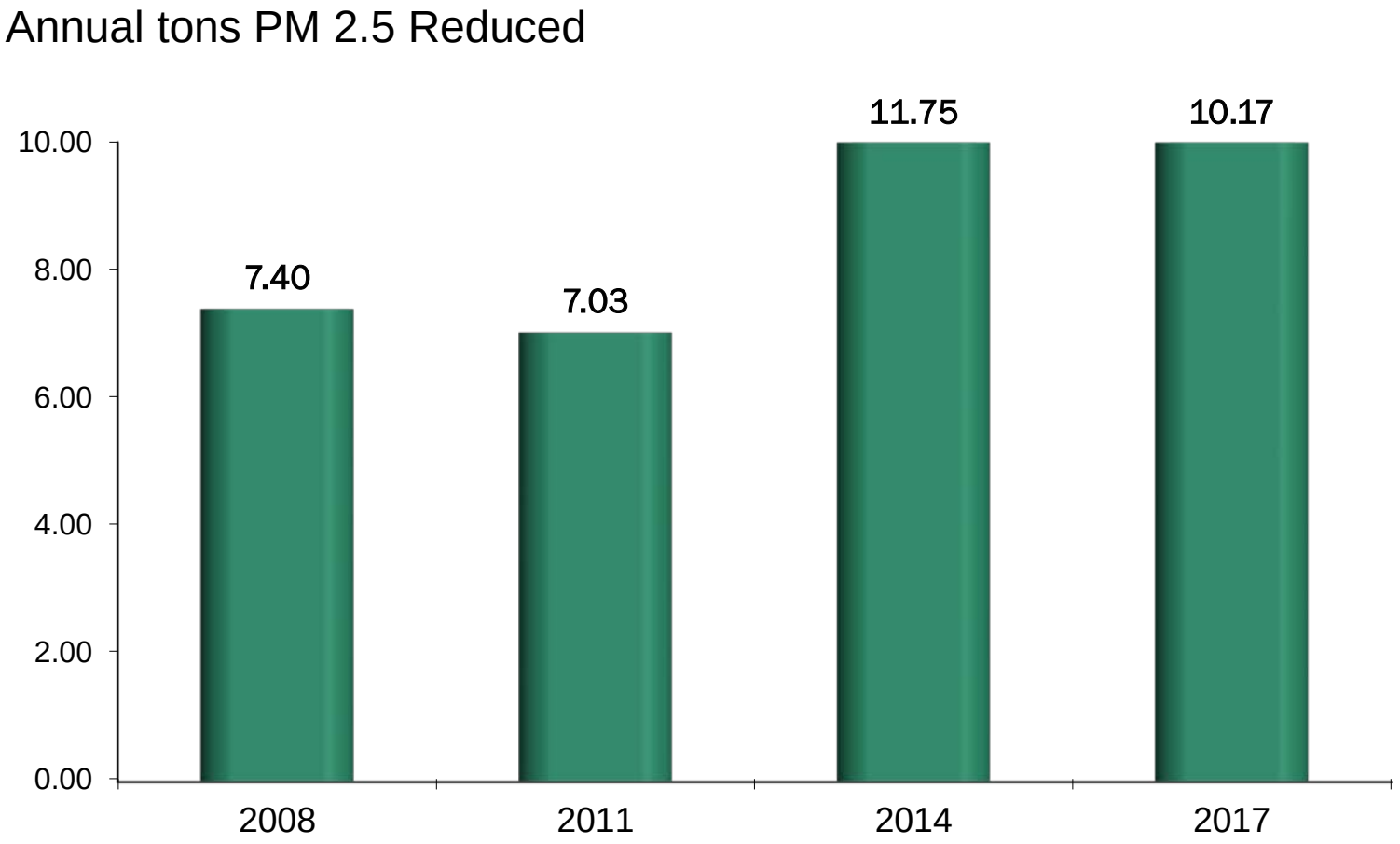
## Commuter Connections
## NOx Reduced (daily tons) – 1999 to 2017



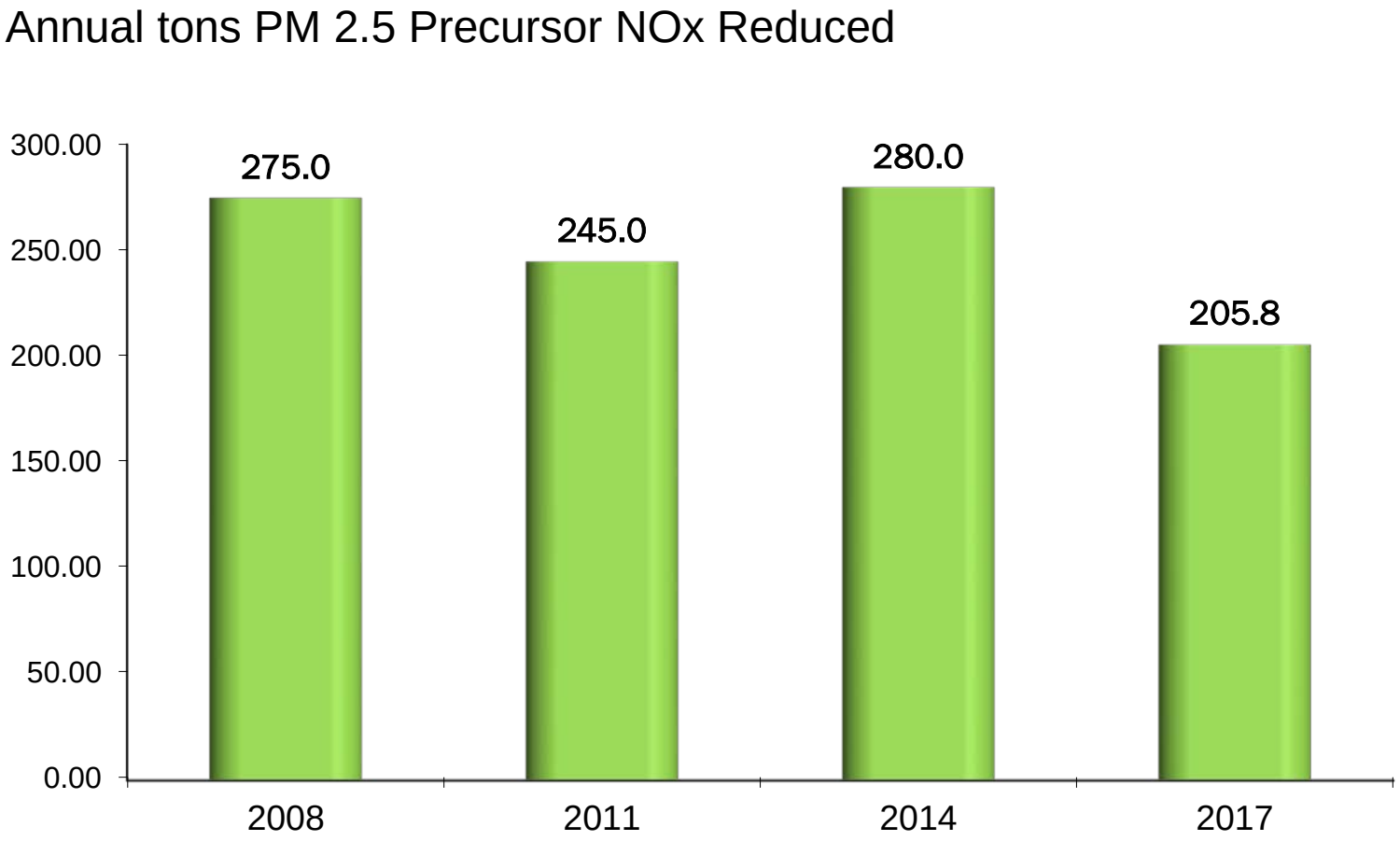
# Commuter Connections VOC Reduced (daily tons) – 1999 through 2017



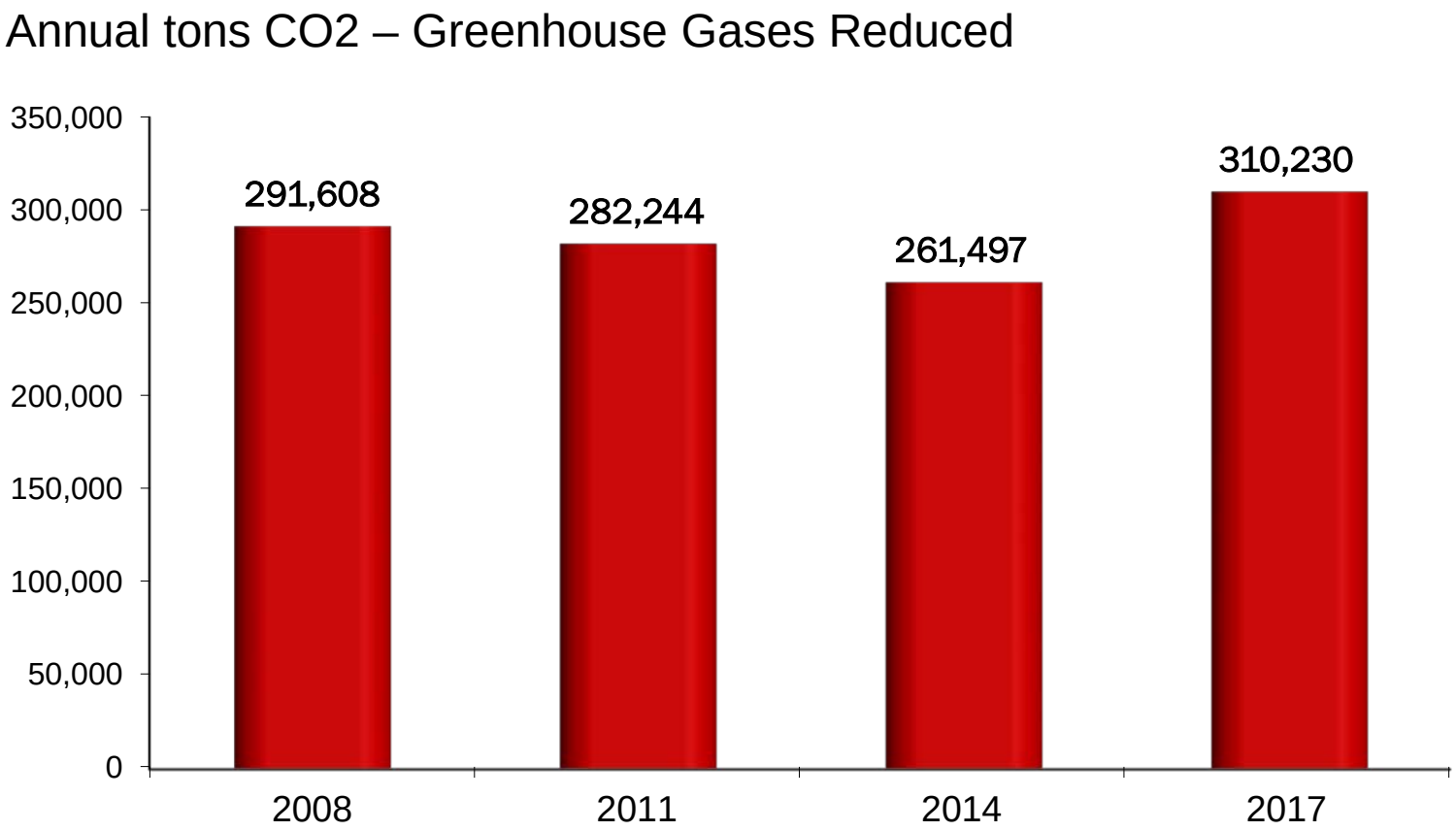
# PM 2.5 Reduced (annual tons) – 2008 to 2017



# Precursor NOx Reduced (annual tons) – 2008 to 2017



# CO2 Reduced (annual tons) – 2008 to 2017



# Benefit Cost Savings = Nearly $1.2 M per Day Generated by Regional TDM Program VT/VMT Impacts

| Societal Benefit | Benefit Unit | Base Units | Cost per Unit | Daily Cost Saving |
|---|---|---|---|---|
| – Air pollution | Tons pollutants | Varies | Varies | **$3,239** |
| – GHG's | Tons CO2 | 1,241 T | $36 | **$44,673** |
| – Noise pollution | VMT reduced | 3.0 M VMT | $0.0223 | **$66,921** |
| | | | | |
| – Congestion | Hr. delay reduced | 24,399 hr | $25.13 | **$613,138** |
| – Fuel saving | Gallons fuel saved | 166,720 gal | $2.51 | **$418,466** |
| – Health/safety* | Accidents avoided | 3.035 acc. | $15,952 | **$48,416** |
| | | | | |
| **All benefits** | | | | **$1,198,091** |

*Health/safety - Benefit unit is accidents avoided per 1M VMT;
Benefit cost per unit is a weighted average of accident occurrence by severity

# Next Steps

- Draft Evaluation Report
  - Currently under review by the Commuter Connections Subcommittee
- Final results will be used to calculate overall program cost effectiveness.
- Some adjustments may be made to certain program elements through the CCWP as needed.
- Results will be shared for regional planning purposes (e.g. CMP, Performance Based Planning, etc.)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