

Commuter Connections TERM Evaluation FY 2015-17 Interim Results

Presentation to
Commuter Connections
Subcommittee
July 18, 2017
LDA Consulting
with
ESTC, CIC Research, CUTR





Methodology

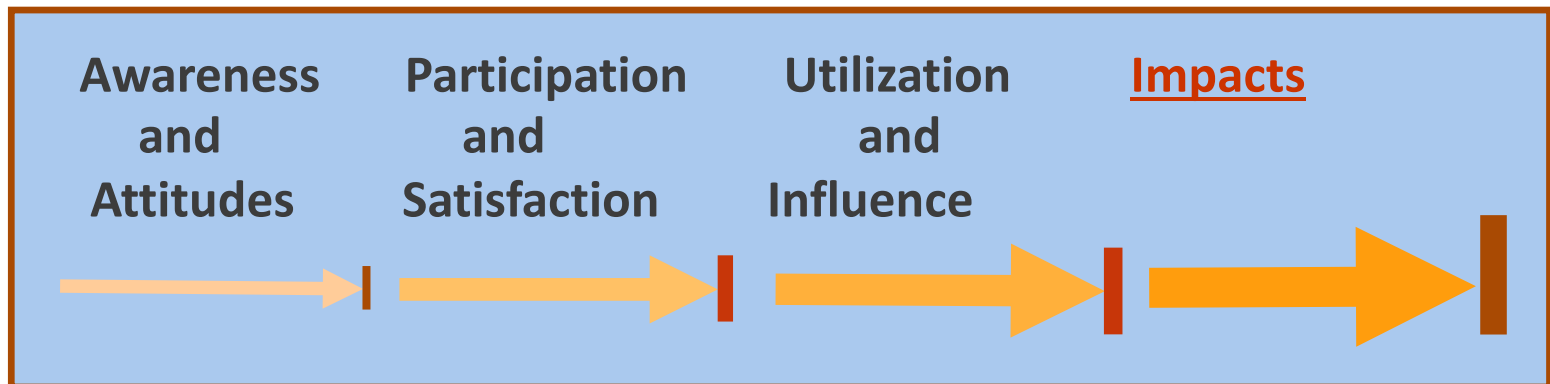
Objective of Evaluation

- Apply methodology outlined in Evaluation Framework to:
- Estimate effectiveness of four Commuter Connections TERMS
 - Telework Assistance (MD/VA)
 - Guaranteed Ride Home
 - Employer Outreach
 - Mass Marketing
- Document results of Commuter Operations Center
- Adjust impacts for overlap among programs



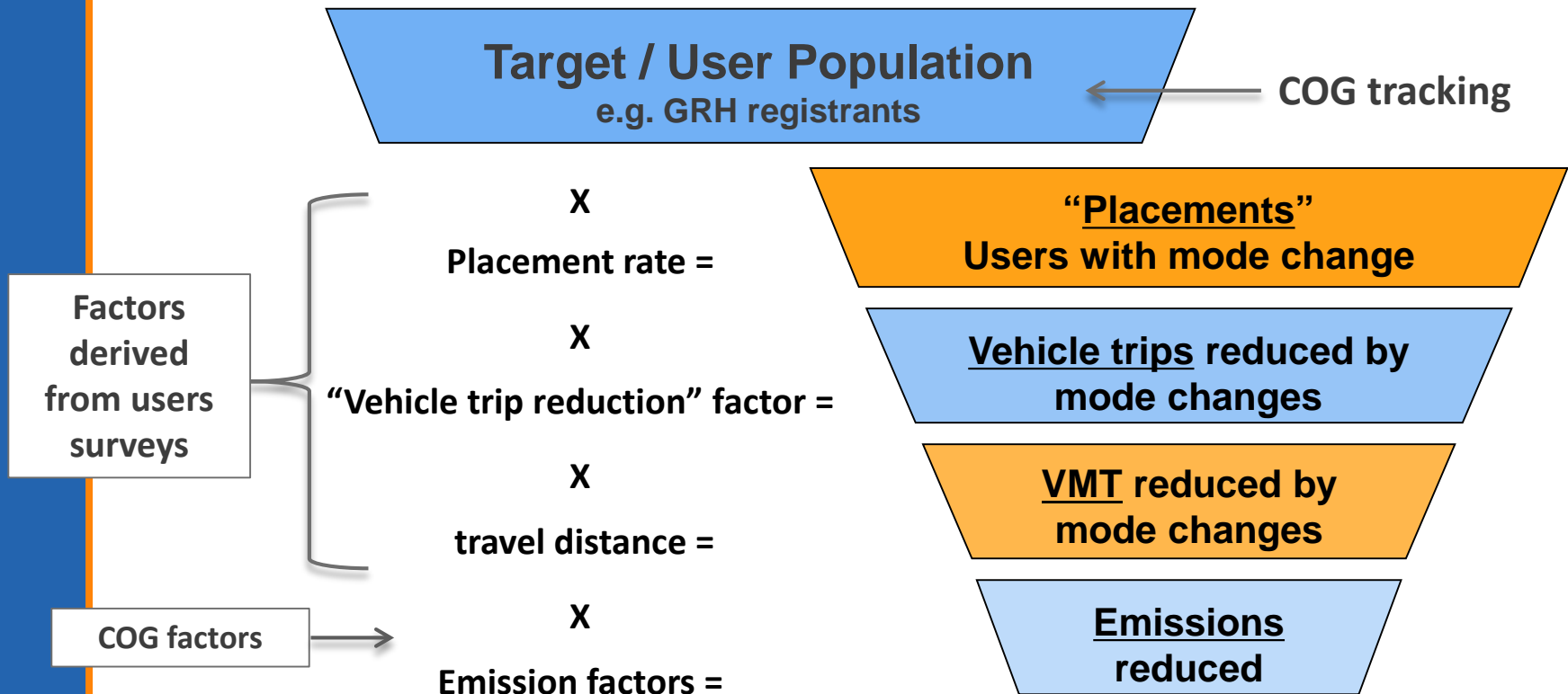
Performance Continuum

- Awareness – modes/programs
- Attitudes – willing to try modes
 - Participation – services used
 - Satisfaction – with programs
 - Utilization – mode / travel changes
 - Influences – motivations for change
 - Impacts of change (travel / AQ / energy)



Impact Calculation Approach

Impact calculation approach uses series of “multiplier” factors, applied to user population





Overall TERM
Results

Impacts for All TERMS + COC (Jul 2014 – Dec 2016)

Comparison of collective goals against collective impacts, including
Commuter Operations Center

	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
<u>Trips reduced</u>	144,156	146,464	<u>2,308</u>	+2%
<u>VMT reduced</u>	2,748,717	2,784,990	<u>36,273</u>	+1%
NOx reduced	1.212 T	0.715 T	(0.497) T	- 41%
VOC reduced	0.638 T	0.512 T	(0.126) T	-20%

Met vehicle trip and VMT goals

Shortfall in emission goals due to reduced MOVES model emission factors
for 2017 (cleaner cars).



Telework Assistance

Telework Assistance (MD and VA)



- Direct assistance to MD commuters
 - 11.1% of MD telecommuters cited CC/COG as TW info source = 44,316 telecommuters
- Assistance to MD employers
 - 42% of employers recalled assistance and made TW changes
 - Overall 1.9% increase in telecommuters at assisted worksites = 34 new telecommuters
- Assistance to VA employers participating in TW!VA (impacts will be calculated in August 2017 and added to updated TERM report)
- 44,350 telecommuters influenced by CC / COG (“placements”)
 - Each TC reduced 1.8 vehicle trips and 41 VMT each week
- Note also - some TW credit is counted in Employer Outreach

Telework TERM Impacts

	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
<u>Number of TCs</u>	31,854	44,350	<u>12,496</u>	+ 39%
<u>Trips reduced</u>	11,830	14,839	<u>3,009</u>	+ 25%
<u>VMT reduced</u>	241,209	361,204	<u>119,995</u>	+ 50%
<u>NOx reduced</u>	0.122 T	0.096 T	(0.026) T	- 22%
<u>VOC reduced</u>	0.072 T	0.070 T	(0.0024) T	- 3%

Met participation, vehicle trip, and VMT. Did not meet emissions goals

- TW continues to grow in the region and CC/COG continue to be source of information for telecommuters
- Impacts represent only CC contribution to regional TW (about 5% of regional TW trips reduced)

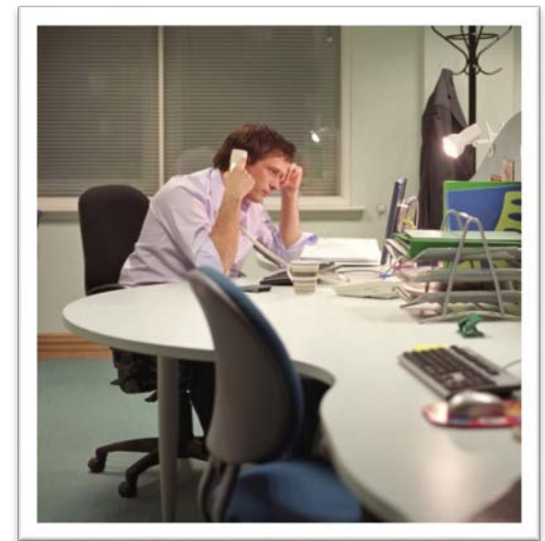


Guaranteed Ride Home

GRH TERM

- 15,245 GRH registrants in Dec 2016
 - 8,786 new registrants in FY 2015-17
 - 16,917 Pre-FY 2015 past registrants added to analysis for “retention” credit

 - 45% of FY 2015-17 registrants started new alt mode (6,853)
 - 14% of Pre-FY 2015 registrants were still using new alt mode (2,421)
- Some alt mode users shifted from another alt mode
- FY 2015-17 users reduced 0.82 daily vehicle trips; Pre-FY 2015 users reduced 0.31 daily vehicle trips
-
- GRH results were discounted:
 - Count only VMT within the MSA – registrants who live outside the MSA received only partial credit
 - Assign 8% of credit to Mass Marketing TERM



GRH Impacts



	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
GRH participants	36,992	15,245	(21,747)	- 58%
Trips reduced	12,593	5,890	(6,703)	- 53%
VMT reduced	355,136	166,946	(188,190)	- 53%
NOx reduced	0.177 T	0.037 T	(0.140 T)	- 79%
VOC reduced	0.097 T	0.021 T	(0.076 T)	- 78%

Pre FY 2015 “Retained” placements accounted for 12% of trips/VMT reduced

Did not meet goals – declining GRH participation possibly due to lower awareness; in 2016, only 21% of commuters knew a regional GRH program existed vs 59% in 2004

Impact will increase somewhat when Jan-Jun 2017 participation is added, but is not likely to reach goals then



Employer Outreach



Employer Outreach



- Three impact components
 - Overall program
 - New / expanded programs
 - Bike services

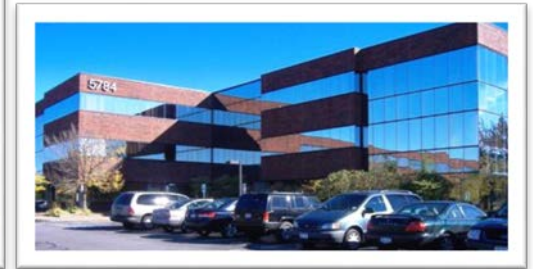
- Impacts calculated for:
 - Employers “maintained” in EO from June 2014
 - Employers with new / expanded programs since June 2014

- Employers deleted since June 2014 were replaced in the overall impact calculation

- EO is evaluated using EPA’s COMMUTER Model v2.0 to estimate vehicle trip and VMT reductions from various packages of TDM strategies in various settings of transit accessibility.

Employer Participation – Substantial New/Expanded

<u>Employer Group</u>	<u>Employers</u>	<u>Employees</u>
Counted in impacts		
■ Maintained (no change)	1,205	432,7283
■ Expanded since June 2014	188	110,207
■ New in 2017 analysis	<u>472</u>	<u>104,012</u>
Total in impact	1,865	646,502
Not counted in impacts		
■ Deleted since June 2014	285	115,011



EO – Employers by Jurisdiction*

<u>Jurisdiction</u>	<u>Total Employers</u>	<u>Employees</u>	<u>New/Expand</u>
- Alexandria	137	24,674	453
- Arlington	307	57,539	137
- DC	647	228,463	226
- Fairfax	237	187,772	74
- Frederick	23	21,853	10
- Loudoun	15	10,755	5
- Montgomery	430	78,406	138
- Prince George's	30	23,121	13
- Prince William	27	10,970	6
- Tri-Co Council	12	2,939	6

*Totals are official counts for impact calculations – totals will not match self-reported quarterly conformity statement

EO – Analysis of Vehicle Trip Reduction

- Percentage vehicle trip reduction by program type
 - Overall EO program 8.1% reduction
 - Maintained (base) 8.6% reduction
 - Expanded (additional) 3.2% reduction
 - New 10.0% reduction

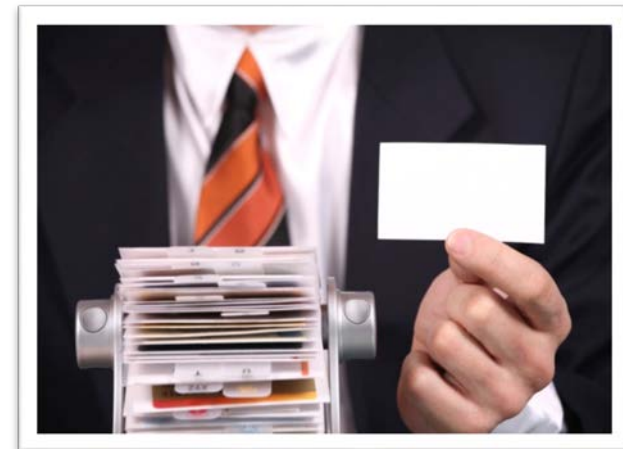


- EO – Bicycle
 - 557 employers offered bike services (232 new/expanded)
 - 330,927 employees at bike worksites
 - 0.1% vehicle trip reduction from bike

EO Impacts – Overall

	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
<u>Employers</u>	1,844	1,865	<u>21</u>	+ 1%
<u>Trips reduced</u>	82,120	95,582	<u>13,462</u>	+ 16%
<u>VMT reduced</u>	1,391,362	1,690,401	<u>299,039</u>	+ 21%
<u>NOx reduced</u>	0.559 T	0.436 T	(0.123) T	- 22%
VOC reduced	0.318 T	0.324 T	<u>0.005 T</u>	+ 2%

Met participation, vehicle trip, and VMT goals;
Also met VOC goal, but not NOx goal



EO Impacts – New / Expanded Programs

	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
<u>Employers</u>	96	660	<u>564</u>	+ 588%
<u>Trips reduced</u>	8,618	8,618	<u>20,967</u>	+ 143%
<u>VMT reduced</u>	140,622	373,553	<u>232,931</u>	+ 166%
<u>NOx reduced</u>	0.072 T	0.096 T	<u>0.024 T</u>	+ 33%
<u>VOC reduced</u>	0.046 T	0.071 T	<u>0.026 T</u>	+ 57%

Met all goals

High impact due to large number of employers with new/expanded programs - 564 in 2017



Mass Marketing



Mass Marketing

Six MM components

- Direct Influence – Commuter changed mode after hearing ad; no other CC contact
- “Referred” Influence – Heard ad, then contacted CC:
 - Share of GRH impact assigned to MM
 - Share of COC (rideshare app) assigned to MM

- ‘Pool Rewards carpool incentive



- Bike to Work Day



- Car Free Day



Mass Marketing Results



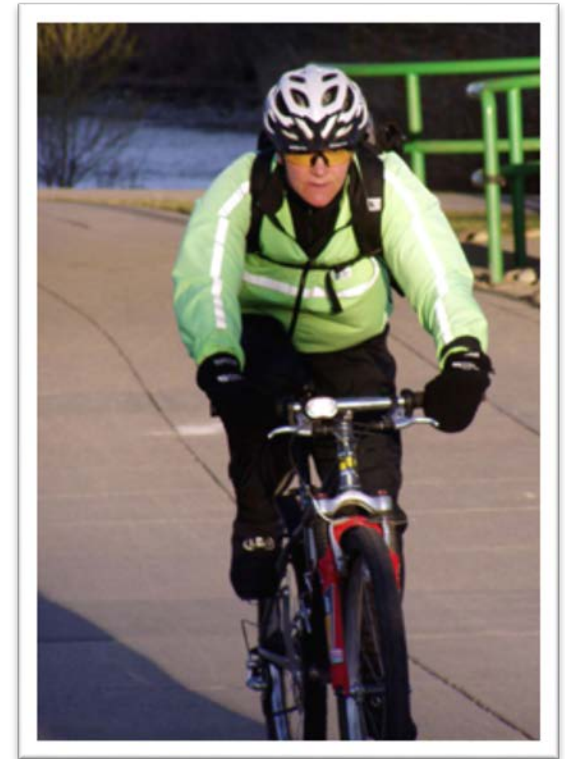
- Direct Influence
 - 21% of commuters recalled CC commute messages
 - 3.3% shifted to alt mode after ad
 - 60% who shifted said ad influenced change = 0.41% of regional commuters = **12,227 placements**

- “Referred” Influence – MM ads generated:
 - 16% of new COC (rideshare) apps (3% of all app) = **810 placements**
 - 8% of new GRH apps = **742 placements**

- ‘Pool Rewards
 - **131 participants**
 - 93% continued carpooling after program ended

BTW Day – 2014, 2015, 2016

- 49,233 total riders in three events – 23,610 “unique” riders
- Increased bike days after BTWD
 - 86% biked to work before
 - 8% new riders in summer or fall
 - 23% increased riding in summer or fall
- New / increased riding added:
 - 1.3 bike dy/wk in summer
 - 1.9 bike dy/wk in fall/winter
 - Total new bike trips – 3,856 per day
- 46% DA to work on non-bike days
- Ave 10.2 miles one-way bike commute distance



Car Free Day – 2014, 2015, 2016

- 12,595 total pledges in three events – estimate **11,335 “unique” participants**
- Calculated impacts for event day and continued use of alternative modes after the event
- Event-day participation:
 - 31% drove alone on non-CFD days
 - CFD participants reduced an average of 0.62 vehicle trips and 10.5 VMT = 7,058 vehicle trips (VT) and 74,043 VMT
 - Discounted VT and VMT to convert to estimated daily counts
- Continued participation after CFD:
 - Estimate that 10% of participants (1,134) continued new alt modes
 - Estimate average use 2 days/week = 0.25 VT reduced / day

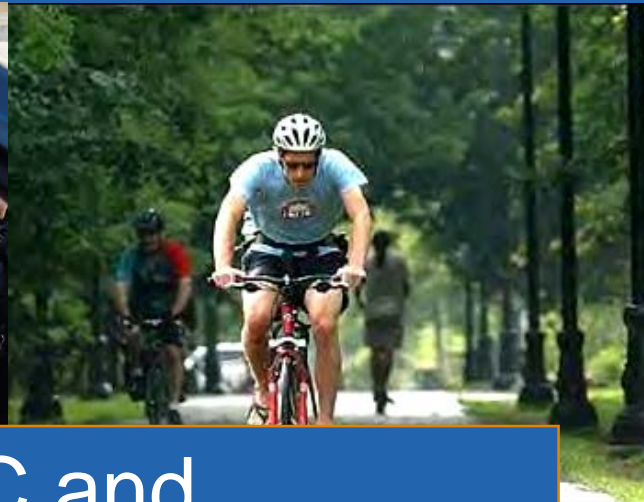


Mass Marketing Impacts

	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
<u>Placements</u>	23,168	22,458	(710)	- 3%
<u>Trips reduced</u>	10,809	9,713	(1,096)	- 10%
<u>VMT reduced</u>	181,932	150,832	(31,100)	- 17%
<u>NOx reduced</u>	0.085 T	0.040 T	(0.045) T	- 53%
VOC reduced	0.025 T	0.017 T	(0.008) T	- 31%

MM was slightly under the placement goal. Deficits were larger for trips and VMT reduced. VMT deficit was larger than VT deficit, because a sizeable share of shifts were to bike/walk and transit, which have shorter than average trip lengths

- 69% of vehicle trip impact from “direct influence,”
- 9% from “referred” influence
- 22% from ‘Pool Rewards, BTW Day, and CF Day events

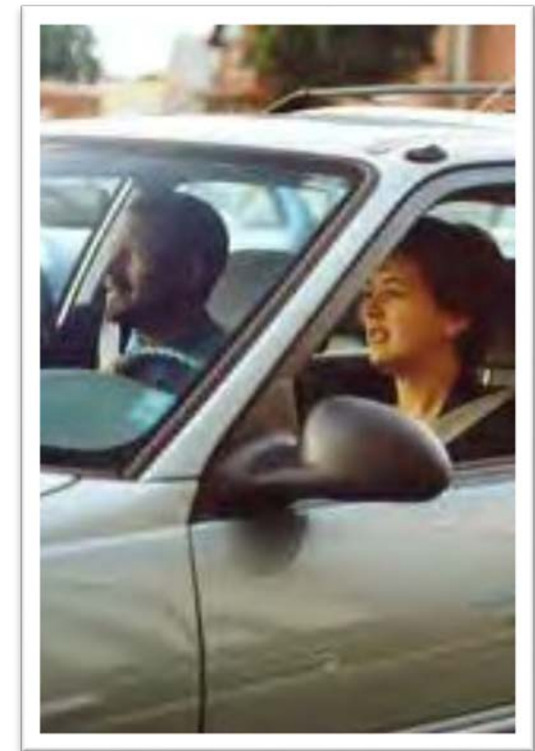


COC and Software Upgrades



Commuter Operations Center

- Three components: Commuter Operations Center “basic services,” “Integrated Rideshare–Software Upgrades,” and assisted telework for commuters not covered by the MD/VA Telework TERM
- 66,006 commuters assisted by COC from July 2014-Dec 2016
 - 30,224 new/reapply, 35,782 follow-up
 - 40% placed into new alt modes
= 26,306 new alt mode users
- 3,651 Pre-FY 2015 past uses added to analysis for “retention” credit; 20% were still using new alt mode = 710 “retained” alt mode users
- Direct assistance provided to 36,109 teleworkers who live and work outside MD
 - 7.4% of non-MD telecommuters cited CC/COG as TW info source



Software Upgrades

- Ridematch software upgrades
 - 44% of COC apps recalled receiving transit, P&R, TW, or bike info from CC
 - 8% used information – called transit agency, located P&R lot, tried telework, or tried bicycling
 - **5.4% used info to change modes (3,552 commuters)**
 - Ave daily reductions – 0.43 vehicle trips and 25 VMT
- VMT reduced discounted for apps who live outside the MSA
- Software upgrade impacts are deducted from COC base impacts to avoid double-counting



COC Impacts – Basic Services (including non-MD TW)

	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
Total apps	N/A	N/A	N/A	
Trips reduced	24,425	18,928	(5,497)	- 23%
VMT reduced	512,637	371,971	(140,666)	- 27%
NOx reduced	0.241 T	0.098 T	(0.143) T	- 59%
VOC reduced	0.115 T	0.075 T	(0.040) T	- 35%

Did not meet goals – participation was lower than anticipated

Non-MD telework accounted for

- 68% of COC vehicle trips reduced
- 53% of COC VMT reduced

Impact will increase when Jan-Jun 2017 participation is added



Software Upgrades

	<u>Goal</u>	<u>Impact</u>	<u>Net</u>	
Placements	N/A	3,552	N/A	
Trips reduced	2,379	1,512	(867)	- 36%
VMT reduced	66,442	43,636	(22,806)	- 34%
NOx reduced	0.028 T	0.009 T	(0.019) T	- 66%
VOC reduced	0.011 T	0.005 T	(0.006) T	- 51%

Did not meet goals – participation was lower than anticipated

Impact will increase when Jan-Jun 2017 participation is added





Impact Summary

TERM Analysis Observations

- The four TERMS met the collective goals for both vehicle trips (+7%) and VMT reduced (+9%)
- CC programs overall (TERMs + COC) exceeded the VT reduction goal (+1%) and VMT goal (+2%)
- Results reflect only 30 months of the 36-month evaluation period. The final impacts will be higher for most TERMS
- Shortfalls in individual TERMS were generally related to lower than expected participation
- TERMS did not meet emissions goals, but this was due to reductions in the 2017 emission factors, compared to the factors used when the goals were established



Impact Comparison of 2015-17 to 2012-14*

TERMs + Commuter Operations Center Combined

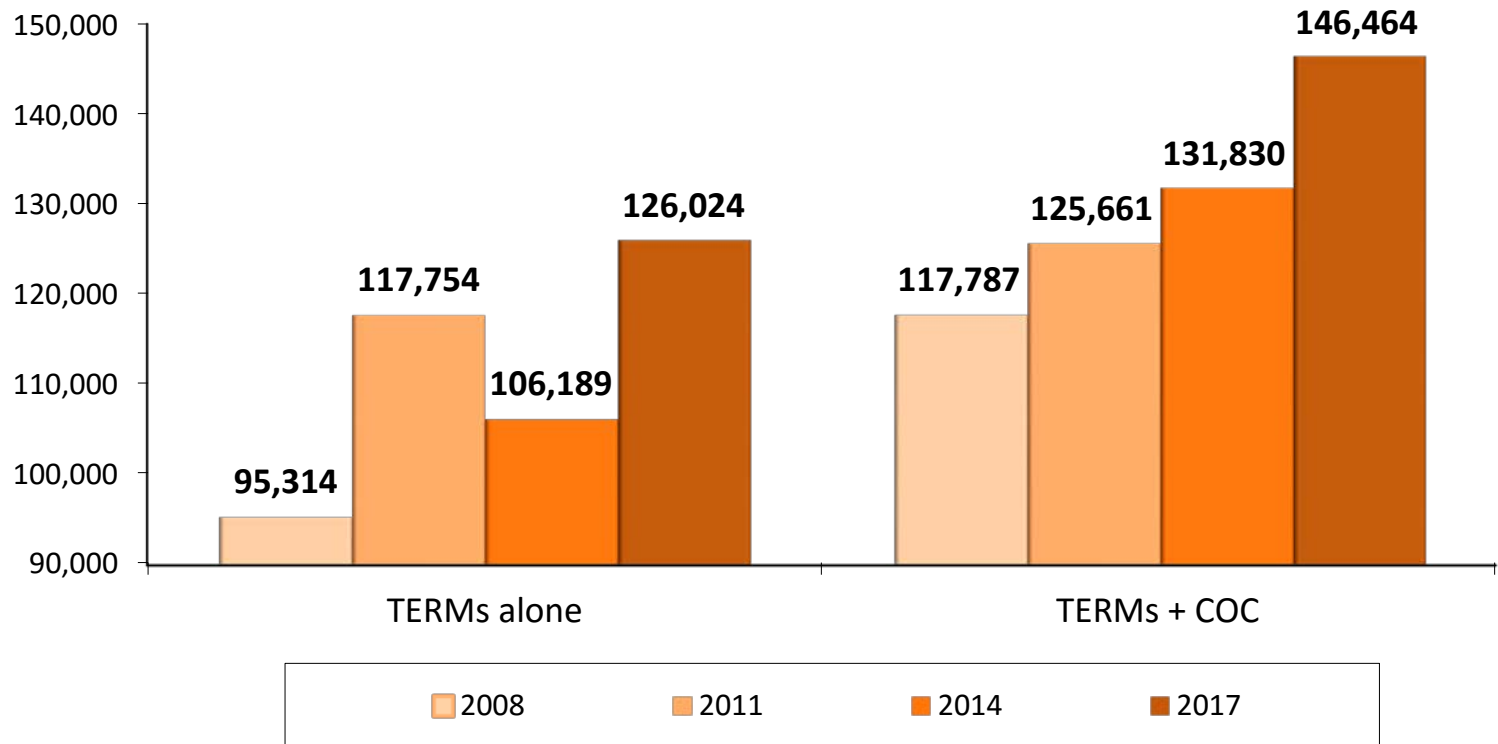
Impact Indicator	Impacts		
	Current <u>2015-17</u>	Previous <u>2012-14</u>	<u>Difference</u>
Daily Trips/VMT Reduced			
– Vehicle trips reduced (daily)	146,464	2,784,990	+11%
– VMT reduced (daily)	2,438,287	2,473,326	+13%
Daily Emissions Reduced			
– NOx (daily tons)	0.716	1.061	-32%
– VOC (daily tons)	0.512	0.533	-4%

* Note that 2015-17 includes only 30 months; Jan-Jun 2017 will be added in evaluation update. 2012-14 includes full 36-month evaluation period.

Trip Reduction – 2005-08, 2009-11, 2012-14, 2015-17*

TERMs Alone and TERMs + Commuter Operations Center

Daily Vehicle Trips Reduced

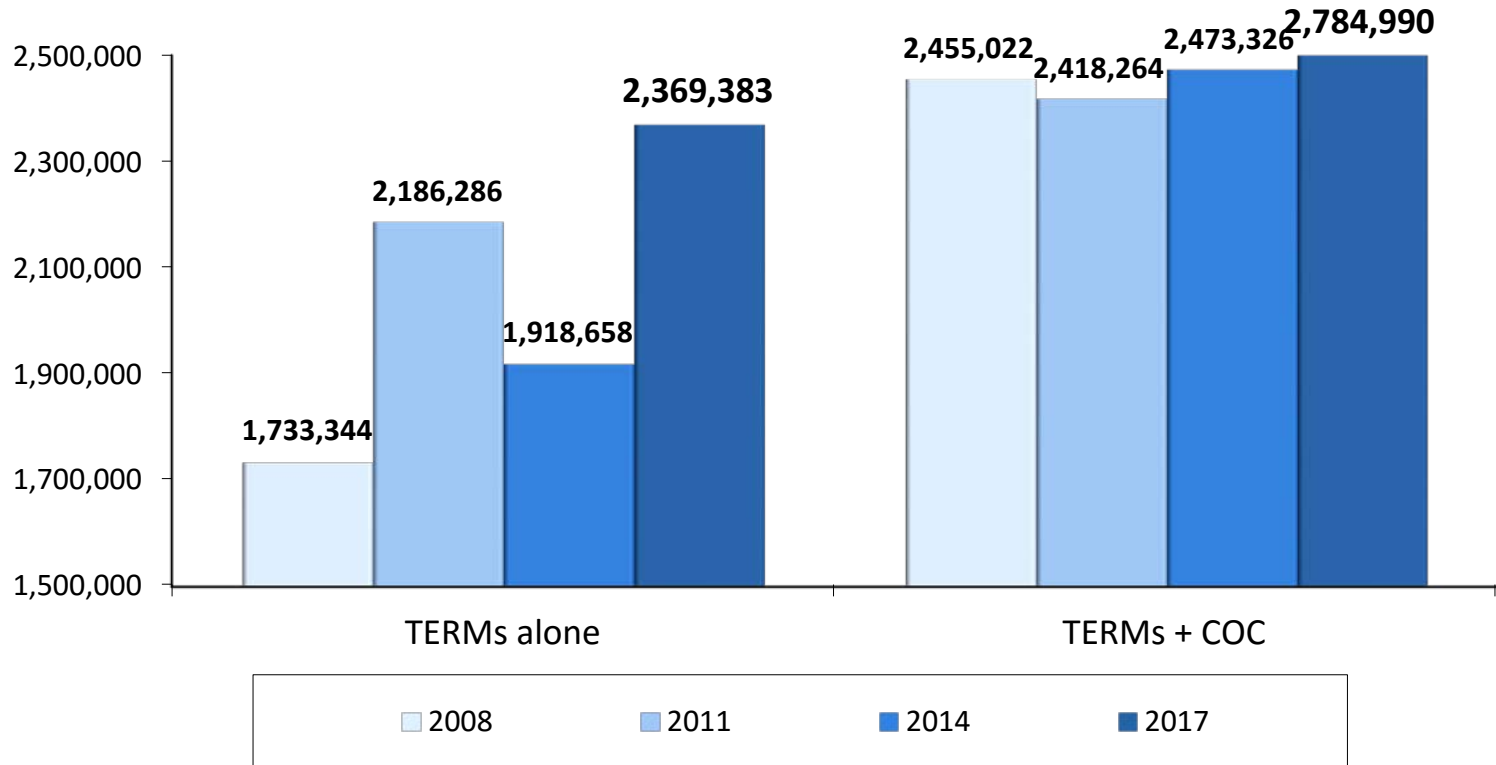


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VMT Reduction – 2005-08, 2009-11, 2012-14, 2015-17*

TERMs Alone and TERMS + Commuter Operations Center

Daily VMT Reduced



* Note that 2015-17 includes only 30 months; Jan-Jun 2017 will be added in evaluation update. All other periods include full 36-month evaluation period.



Questions?

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