steer davies gleave

2011-2013 REGIONAL TRAVEL OPTIONS PROGRAM EVALUATION

Final Report

April 2014

steer davies gleave

2011-2013 Regional Travel Options Program Evaluation

Final Report

April 2014

Prepared for:
Caleb Winter
Metro
600 NE Grand Ave.
Portland, OR 97232-2736

+1 (503) 797 1758
WWW.OREGONMETRO.GOV

Prepared by:
Steer Davies Gleave
1900 Wazee Street, Suite 250
Denver, Colorado 80202

+1 (303) 416 7226
www.steerdaviesgleave.com

CONTENTS

FIGURES

TABLES

APPENDICES

steer davies gleave

Executive Summary

Regional Travel Option Evaluation Overview

This executive summary outlines the key findings and conclusions from the 2011-2013 Regional Travel Options Program Evaluation. In this period 27 projects were evaluated based on their ability to promote regional goals, enable travel behavior change, and ultimately shape a more livable, equitable, and sustainable metropolitan area.

Each of the 27 projects was assessed with a new Multiple Account Evaluation Framework (MAE) that was customized to align with the RTO program's high level goals and objectives, as well as regional policy and objectives. This new evaluation process allows broader and longer term changes enabled by the RTO program to be evaluated along with direct operational elements of the program.

Based on this evaluation there is strong evidence from 2011-2013:

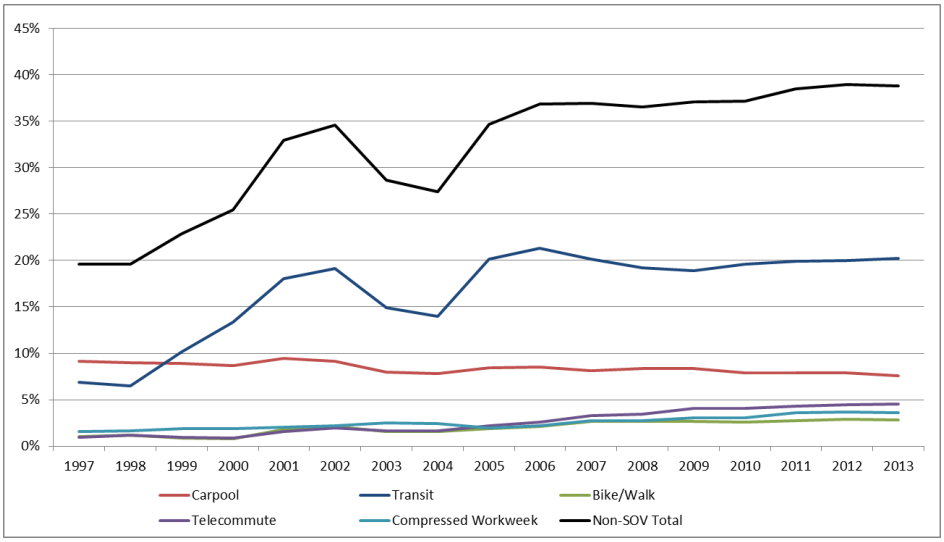
- The RTO program contributes to the region's triple bottom line goals in a cost effective manner. For example, investment by the RTO Program was matched by other funding sources for a number of projects. Total program spending on projects was $4,35,2701: $2,514,320 was provided by the RTO program and $1,838,381 was match funds from other sources. This means $4 out of every $10 spent was match funding.
- Changes in travel behavior create a variety of benefits for the region.
- The diverse array of RTO program projects have sustained or exceeded the amount of travelers choosing travel options over automobiles.

Choosing Travel Options

Available data suggests that the overall vehicle miles reduced (VMR) of past periods was maintained – meaning investments in the RTO Program have enabled sustained behavior change. This has led to a reduction in vehicle miles travelled of **almost 47 million miles per year during the evaluation period** - nearly 20 vehicle miles per resident of the metropolitan area**.** Further, RTO employer outreach partners helped employers reach a 2013 non-single occupant vehicle (non-drive alone) mode split of 39% - a 1.0 percentage point increase from 2011 (Figure 1). Over 84,522 individuals actively participated and nearly 1,000,000 individuals were engaged by different elements of the program.

The evaluation found that RTO Program investments enable a shift to travel options in the region through a variety of tools that are on par with other TDM programs in the country. While some programs have plateaued – meaning their contribution to VMR reduction has slowed, but past reductions are maintained – the overall RTO Program plays a critical role in ensuring annual reductions in vehicle miles travelled are maintained.

FIGURE 1 1997-2013 NON-DRIVE ALONE COMMUTE TRIPS AT WORKSITES PARTICIPATING IN ECO SURVEY



Impact of Travel Change

By reducing auto travel by nearly 47million miles per year, the RTO program enabled a number of benefits that are in line with regional triple bottom line goals and policy. This reduction reflects investment in travel options since the 1990s, which has led to strong cumulative benefits. In this evaluation period the RTO Program contributed to regional goals and policy:

- The region saw a large reduction of climate change causing emissions with a reduction of over 18,881 tons of carbon dioxide;
- Environmental integrity has been enhanced due to large reductions in other local pollutants, like PM10 (particulate matter), that impact human health and adversely affect the environment;
- The economy benefited with over $17 million returned to the local economy due to travelers using travel options instead of auto travel. Travelers also saved almost $24 million in parking fees;
- Regional equity goals and policies were supported through projects that successfully engaged environmental justice populations – increasing equity and improving accessibility in the region; and
- A healthy region was promoted by increasing the number of people taking transit, bicycling or walking.

A summary of program benefits is included in table 1. These benefits highlight the program's strength in using travel behavior change as a catalyst to achieve broader regional goals. The new MAE used for this evaluation holistically analyzes each of the programs to best understand its strengths, opportunities for improvement, and contributions to the RTO Program.

Evaluation Process

This evaluation process thoroughly assessed each RTO program project based on 18 indicators across five accounts. The accounts used in this evaluation process are drawn from RTO program plans and regional policy and are:

Account	Description of account applied to each RTO project
Environment	The project aids in enhancing and protecting the natural assets and environment of the region by reducing pollutants and consumption of energy and non-renewable resources.
Equity and Health	The project promotes equity and health benefits by creating opportunities for greater accessibility and use of healthier travel options.
Economy	The project contributes to the region's economic vitality by promoting low cost travel options and the efficient use of land.
Efficiency	The project enables the transportation system to be used more efficiently through increased use of travel options and is run in an effective and efficient manner
Engagement	The project raises awareness of, and participation in travel options resources and events among residents, employers, and other community members to use travel options and travel options resources and services more frequently.

Whereas past evaluations focused on specific measures of travel behavior change, the MAE process allows a more holistic analysis. By focusing on a variety of relevant indicators, this evaluation framework enables more robust evaluation of programs and greater measurability and alignment with regional goals.

Moving Forward

As the program continues to evolve, the MAE framework can be used to guide and inform planning, project investment, and data collection processes. This will in turn enable program staff and partners to understand and manage the benefits of the program in future evaluations. To move forward with the MAE process, RTO staff discussed new reporting standards to use annual reports that summarize RTO projects as part of an MAE process. Also under consideration is withholding a percentage of the grant funding until the report is received.

This evaluation process also identified measures that can be taken to enable the success of future evaluations and continued use of the MAE framework. The following areas are highlighted as points of improvement for the RTO Program moving forward:

- **Prioritize data collection and standardization:** develop a standardized data collection process that is tied to level of investment;
- **Consistent data collection:** ensure data is collected consistently over time, as well as within programs, to enable accurate evaluation and comparison;
- **Annual/end-of-grant reporting:** work with grant holders to develop a template for data collection and reporting that is tied to the MAE framework and end of year reporting;
- **Develop improved synergies between program partners and service providers**: RTO programs already leverage other resources for greater impact – however there is an opportunity for RTO programs to increase cooperation to achieve greater impact; and
- **Grant process refinement:** the granting process should be refined over the next two year period to enable program partners to better use the MAE framework in reporting, data collection, and planning.
- **Continue MAE development:** the MAE framework used for this project is oriented around goals and objectives from the most recent plans and policies. As plans and policies change over time the MAE should also be adapted to ensure its continual alignment with regional issues and opportunities.

These recommendations, as well as a more detailed evaluation, are explored further within the evaluation report.

Table 1 - RTO Program Wide MAE

	INDICATOR	COMMUTER SERVICES	IM PROGRAMS	RTO MARKETING	GRANT PROJECTS	TMAS	TOTAL
ENVIRONMENT	Emission reductions- VOC (tons)	36.94	3.77		4.26	16.62	61.60
	Emission reductions- Nox (tons)	31.01	3.17		3.58	13.95	51.72
	Emission reductions- CO (tons)	419.01	42.81		48.37	188.52	698.72
	Emission reductions- PM10 (tons)	11.95	1.31		1.34	0.33	14.93
	Emission reductions- PM25 (tons)	0.72	0.08		0.08	0.16	1.04
	Emission reductions- air toxins (pounds)	3,200.42	326.99		366.19	1,312.51	5,206.10
	Reduction in climate change emissions (tons)	12,788.01	466.28		141.44	5,780.99	19,176.72
	Annual gas savings (gallons)	1,389,910.26	142,007		159,030.55	570,008.90	2,260,957.06
EQUITY AND HEALTH	Reduction in average household combined cost of housing and transportation	$7,506.90	$188.10 - $141.34				
	Improved reliability for environmental Justice Populations			Some multi language engagement			
	Health improvement opportunity	1% increase in bike trips	0.5%-16% Increase	Increase in active use reported	4,000 new bike commuters		
ECONOMY	Increased reliability for access to jobs						
	Increased access to work employment by alternative modes			Potential improvement			
	Decrease parking demand	$15,368,205	$1,570,173		$1,758,395	$6,302,575	$24,999,349
	Dollars returned to local economy	$10,573,325	$1,080,279		$1,209,776	$4,336,172	$17,199,552
EFFICIENCY	Vehicle Miles Reduced (VMR)	28,576,555	2,919,673		3,269,665	11,719,383	46,485,276
	Mode split or increase in non-drive alone mode share		4-13% reduction			0.5% driving reduction, 26-32% Travel Options use	
	Program cost effectiveness- per VMR	$0.03-$0.07	$0.09-$0.19		$0.01-$0.23	$0.02-$0.04	$0.01-$0.23
	Program cost effectiveness- per person	$14 - $20.33 per contact	$129.69	$0.78-$3.04 per collateral, $0.61-$2.95 per person			
	Leverages partner resources	11%-33%	20%-148%		38%-251%	56%-101%	42%
	Leverage infrastructure/capital investments			Highlights new routes			
	Increased cost effectiveness of alternative travel investment through improved ridership						
ENGAGEMENT	Participation	28,397 people	13,949 people	39,395 people	Greater than 13,000 people reached,	15,493 participants	84,522 participants
	Awareness	17%-48%, 7,993 Impressions, 975 pieces of collateral		19%-20% recognition, 962,328 impressions made,7,688,001 media impressions, 100,000,000 transit ad views, 53,000 items distributed	30%-40% awareness, 5,970 indirect contacts, over 55,000 collateral distributed	10,900 impressions	979,198 Impressions, 108,000 collateral distributed

steer davies gleave

1 Introduction

Report Overview

1.1 This report contains the 2011-2013 Regional Travel Options (RTO) Program evaluation. The RTO program is historically evaluated on a biennial basis. The evaluation process serves an opportunity to understand how investments in travel behavior change are paying off, which programs offer the greatest rates of change, the broader impacts of the program, and operational factors.

1.2 Twenty seven out of more than thirty projects, grant holders, and Transportation Management Associations (TMAs) have been evaluated in the 2011-2013 evaluation. The evaluation process took place in two stages:

- **Part 1** used an approach in line with past evaluations that assesses the investment, reduction in vehicle travel, and goals of each program;
- **Part 2** is a Multiple Account Evaluation that assesses the wider benefits and impacts of the program.

1.3 The remainder of this section outlines the context of the RTO Program and the past evaluations. The rest of the report is structured as follows:

- Section 2- describes the evaluation framework and the MAE process;
- Section 3- shows estimates for the program and regional vehicle mile reduction values as well as individual program evaluations;
- Section 4- outlines the overall benefit of the RTO Program; and
- Section 5- shares conclusions and recommendations.

RTO Program Context

1.4 The RTO Program works to improve awareness and use of sustainable travel options in the Portland metropolitan region. This is accomplished through strategic investment in a range of programs and services which promote non-drive alone modes including individualized marketing, employer commuter travel options, partnership grants and traveler information tools.

1.5 More than 27 projects, TMAs, and grant holders were funded through the RTO Program in the 2011-2013 evaluation period. The RTO Program elements analyzed in this report can be broken down into:

- Commuter Services- include regional-level ridematching/ridesharing and employer services, such as TriMet employer outreach. These programs have consistent funding.
- Individualized Marketing- grant projects which targets interested households within a specific geographic area, motivating them to use travel options more frequently.

- Transportation Management Associations- Non-profit coalitions of local businesses and public agencies that improve commuting options for their employees. The one exception is South Waterfront Community Relations which focuses primarily on residential outreach.
- RTO Marketing- Metro led initiatives and projects that provide targeted travel options information to travelers.
- RTO Grant Programs- sponsored events and limited duration community outreach initiatives organized by community and regional travel options partners.

Peer Program Review

1.6 An evaluation of other TDM programs in the nation can be used to identify best practices applicable to RTO programs. In order to contextualize the scope and scale of the RTO program, a peer review has been conducted with a focus on the structures, funding/financing mechanisms, and impacts of TDM programs in the USA. The full evaluation can be seen in Appendix A.

1.7 Information on services offered, funding sources, and governance structure is summarized in Table 1.1 below, while the full review is provided in Appendix A. As the table shows, the reviewed programs vary in program breadth, with some focusing on school travel promotion and less on employer or resident engagement. In comparison to peer cities, RTO offers a wider range of programs and uses a shared central/TMA delivery model to optimize delivery.

TABLE 1.1 PEER REVIEW SUMMARY

	Program Areas							Structure	Funding
	Carpool Matching	Vanpool	Guaranteed Ride Home	School Engagement	Telework	Employer Engagement	Resident Engagement		
RTO	✓	✓	✓		✓	✓	✓	Central/TMAs	CMAQ
Way To Go!	✓	✓	✓	✓	✓			TMAs	CMAQ
Metro Transit	✓	✓	✓		✓			TMAs	CMAQ
iCommute	✓	✓	✓	✓		✓		Central	CMAQ

1.8 As noted in the table, the projects supported by the RTO program are consistent with other TDM programs across the country. The RTO program also supports residential engaging – either through individualized marketing or by investing in South Waterfront Community Relations TMA.

1.9 One element of programming that is a focus in other TDM programs but is not currently in the RTO Program's scope is school engagement. This type of TDM programing focuses on transport behavior change for students of all ages, as well as their guardians.

Evaluation Methods

1.10 The 2011-2013 evaluation utilizes familiar concepts from past evaluations while also demonstrating how a Multiple Account Evaluation (MAE) framework (Appendix E) can be used to more holistically analyze the impacts of individual programs as well as the RTO program holistically. This approach was used to meet stated goals of conducting an evaluation that is consistent with previous evaluations while also demonstrating more holistic techniques for program evaluation.

1.11 In many cases, data was provided by grant holders, TMAs, and program staff that can readily be used to conduct the evaluation. However, additional data had to be collected or base data was expanded upon to estimate the overall impacts of the RTO program.

Review of Past Evaluations

1.12 Two past evaluations of RTO's program were reviewed as part of the development of the MAE. The first evaluation was carried out between January 2007 - December 2008 by Portland State University and the second was undertaken by Nelson\Nygaard between January 2009-June 2011 as part of the 2012-2017 Strategic Plan Update.

2007-2009 Evaluation

1.13 The report notes a reduction in drive alone mode share between 1996 and 2006. The examination aimed to analyze the separate but related steps of service provision, participation, satisfaction/quality, and action. Distinguishing between outputs and outcomes was a second priority.

1.14 The evaluation was based upon written documents (e.g., contracts and reports), partner interviews, and datasets provided by Metro. Detailed assumptions for attributing vehicle miles reduced (VMR) to the RTO programs is explained in the text. The evaluation found that between 2007-2009, the drive alone, bicycling, and walking mode shares all increased and carpool and vanpool mode shares remained static.

2009-2011 Evaluation

1.15 Nelson\Nygaard evaluated 33 programs at a high-level and three programs in depth. For each of the 33 programs, they evaluated whether it reached its goals as specified in the contract. This part of the evaluation was carried out through interviewing partners and reviewing annual reports and data provided by Metro.

1.16 The evaluation is comprehensive in the number of programs it covers and very consistent in its calculations. It is also fairly concise which makes it easy to understand.

Past Evaluation Indicators

1.17 Some of the key indicators employed in the past evaluations in one or more of the RTO projects include the following:

- Non-drive alone mode share;
- Increased use of travel options (bicycling, walking, carpooling, transit, telecommuting);
- VMR;
- Awareness;
- Participation;
- Satisfaction; and
- Cost per VMR.

1.18 The indicators from the previous evaluations are incorporated in the development of the framework utilized in this evaluation. VMR, cost per VMR, and non-drive alone mode share serve as key indicators in the evaluation under the Efficiency account. Program awareness is incorporated into the MAE framework as part of the Engagement account. Further description on how these factors are included in the evaluation framework are included in Appendix E.

steer davies gleave

2 Evaluation Framework

Overview

2.1 In order to understand the impact of programs, the evaluation process utilizes two components. The first is a High Level Analysis that is a combination of analyzing the investment from Metro, reported VMR reductions, and a qualitative and quantitative of assessment of stated goals and achievements. This approach is similar to the methods used in the past evaluations.

2.2 Budget information on investments was provided by Metro, while VMR and goal data was provided in project contracts and materials. The level of data available varies significantly between each project. This first stage of the evaluation provides a foundation for stage 2, which is the Multiple Account Evaluation (MAE).

2.3 Additional VMR data has been calculated using ECO survey data provided by Metro, DEQ, Wilsonville SMART and TriMet. This data is presented as a supplement to the MAE and High-Level Analysis to further inform decisions.

Multiple Account Evaluation Framework

Background

2.4 Multiple Account Evaluation enables the review and assessment of projects and programs in a clear and holistic manner. The MAE process is a new evaluation tool in the 2011-2013 evaluation. Whereas other evaluation techniques focus on only one or a few factors, MAE frameworks combine a variety of factors to enable a nuanced evaluation that takes into account a wider array of policies, goals, and outcomes.

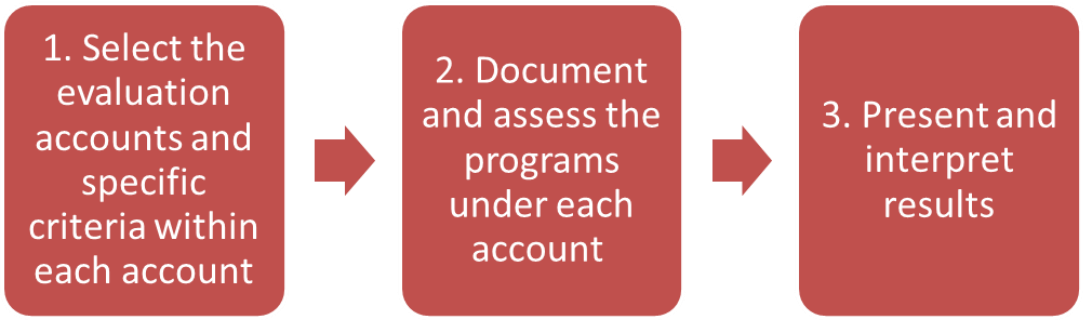
2.5 An MAE framework has been developed that allows programs to be measured beyond their VMR and investment by creating indicators that reflect the unique policy, goals, and plans that inform the programs actions.

2.6 The MAE framework divides the benefits and impacts of a project or program into a set of 'accounts' – an account contains a number of sub criteria or indicators that are based on policy, strategic plans, and program goals. These accounts are shaped by policy goals and objectives and are informed by partner feedback. Accounts are developed in order to represent the breadth of policy goals and objectives that are related to the project or program being analyzed.

2.7 Indicators or sub criteria are used to represent specific elements of the goals represented in the account. Both qualitative and quantitative data analysis techniques can be used to assess indicators. Indicators are measurable based on available program data, however it is common that they may require additional analysis or data expansion– for example, using emissions factors to determine the environmental benefits of vehicle travel reductions. In other cases large data sets may be used, such as censuses or surveys. Additionally, analytical models are also used to model benefits in situations where no measurable program data is readily available.

2.8 The MAE process is composed of three steps shown in Figure 2.1:

FIGURE 2.1 MULTIPLE ACCOUNT EVALUATION DEVELOPMENT PROCESS



Accounts

2.9 Accounts and indicators are the output from Part 1 of the MAE process. The accounts package together various regional and program policies to ensure the RTO Program and its projects are evaluated not only based on RTO Program goals, but also to ensure that alignment with regional goals is realized. Appendix E contains an in-depth overview of account selection in the form of the RTO MAE Framework report. The accounts are summarized in Table 2.1

TABLE 2.1 SUMMARY OF ACCOUNTS

Account	Description of account applied to each RTO project
Environment	The project aids in enhancing and protecting the natural assets and environment of the region by reducing pollutants and consumption of energy and non-renewable resources.
Equity and Health	The project promotes equity and health benefits by creating opportunities for greater accessibility and use of healthier travel options.
Economy	The project contributes to the region's economic vitality by promoting low cost travel options and the efficient use of land.
Efficiency	The project enables the transportation system to be used more efficiently through increased use of travel options and is run in an effective and efficient manner
Engagement	The project raises awareness of, and participation in travel options resources and events among residents, employers, and other community members to use travel options and travel options resources and services more frequently.

Indicators

2.10 The indicators which form the basis of the evaluation are outlined in Table 2.2. The MAE process involves individual analysis of each indicator under each account to develop a holistic evaluation. Depending on the availability of data, some indicators may be measured qualitatively or quantitatively. For the current evaluation period, complete data was not available for each indicator.

2.11 The discrepancies in available data and the differing ways to measure individual indicators requires a nuanced process for evaluation. A process map and description of the evaluation process are provided in Appendix F.

Table 2.2 - Summary of Indicators

	INDICATOR	UNITS	DESCRIPTION
ENVIRONMENT	Emission reductions	Tons of VOC, PM, NO; pounds of air toxins	A measurement of the tons of different pollutants that cause local environmental issues (VOC, PM, NO, etc.) Developed based on emission rates and VMR
	Reduction in climate change emissions	Tons of CO_2E	A measurement used to compare the emissions from various greenhouse gases weighted by global warming potential (GWP). Measurement of metric tons of CO_2E emitted from light duty vehicles. Typically thought of as a result of vehicle technology, fuel characteristics, and VMT. Developed based on emission rates and VMR
	Annual gas savings	Gallons/year	A proxy for reduction in non-renewable resources used in the region's transportation system. Calculated based on VMR data
EQUITY AND HEALTH	Reduction in average household combined cost of housing and transportation	$/household	Affordability measure - Convert non-SOV trips into household transportation cost savings; in cases where the cost savings benefits are localized and housing costs are known, household cost savings could be converted into combined cost of housing and transportation
	Improved reliability for environmental justice populations	Minutes	Evaluate the reliability to work or destinations for environmental justice populations
	Health improvement opportunity	% of active trips	Active transportation as a proxy for improved health
ECONOMY	Increased reliability for access to jobs	Minutes	Difference in reliability to work in minutes before project(s) investment and after project investment
	Increased access to work employment by alternative modes		A measure of how travel options are used to access worksites – either through the commute to work mode split (for RTO evaluation), or qualitative surveying for individual companies or areas.
	Decrease parking demand	$	Total amount of savings due to reduced parking needs. Convert non-SOV trips into number of parking spaces reduced and multiply by the average cost of parking.
	Dollars Returned to local economy	$	An estimate of money saved by the region based on VMR and parking cost savings
EFFICIENCY	Vehicle Miles Reduced (VMR)	Miles	Vehicle miles travelled reduced annually
	Mode split or increase in non-drive alone mode share	Change in percentage points	The percent of trips using alternative modes supported by the RTO program
	Program cost effectiveness	$/VMR	A representation of the average cost per vehicle mile reduced
	Leverages partner resources	Percent or Qualitative	Qualitatively measured or measured using the percentage of RTO investment matched by other funding sources.
	Leverage infrastructure/capital investments	$ or qualitative	Assess the level to which the program leverages or is aligned with infrastructure spending - proposed improvements / look at long range plans - look at future projects
	Increased cost effectiveness of alternative travel investment through improved ridership	$/year	Difference in operating cost ratio before project(s) investment and after project investment for transit projects, HOV lanes, bike facilities, and other non-drive alone modes
ENGAGEMENT	Participation	Qualitative and Quantitative	Participants: residents who respond to a call to action
	Awareness	Qualitative and Quantitative	Awareness: residents exposed to messages or information about the program

steer davies gleave

3 Program Evaluation

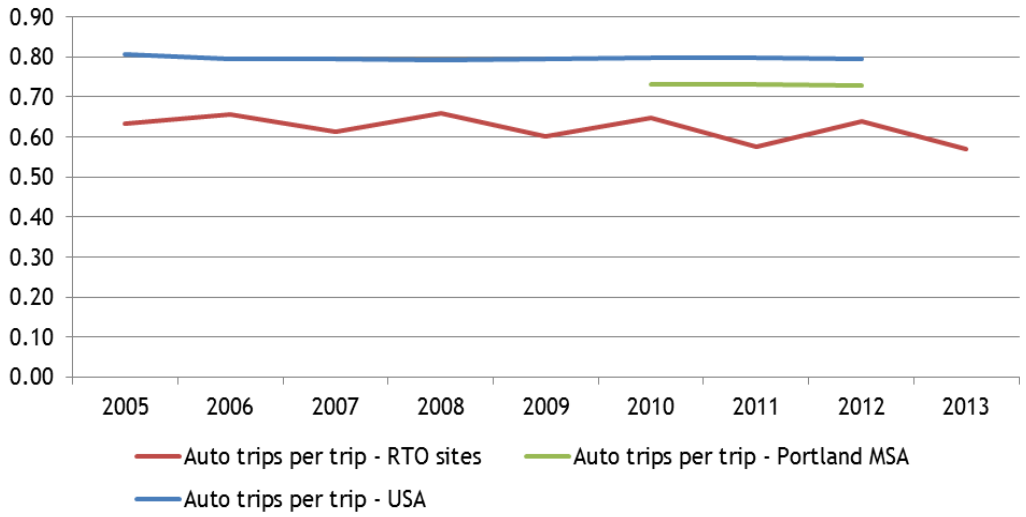
Historic Vehicle Miles Travelled Reductions

3.1 Calculating the reduction in travel due to TDM programming is a nuanced process involving multiple steps. In the case of the RTO Program, regional data in the form of the ECO Survey can be used to understand how different programs enable behavior change in the region. The Department of Environmental Quality (DEQ) ECO program specifies that employers with more than 100 employees must implement plans that are designed to reduce the number of commute trips. This evaluation includes 132,975 employees at 752 sites

3.2 The ECO survey data on commute habits is collected by TriMet and contains survey information from a number of sources, including program partners such as DEQ, Lloyd TMA, Westside Transportation Alliance, and Wilsonville SMART.

3.3 Figure 3.1 outlines the trend in auto trip reduction from 2005-2013 using ECO data and the USA data comes from ACS 1 year samples. The Portland MSA data was only provided for 2010-2012 and uses ACS 5-year estimates for the available years. The reduction is shown as auto vehicle trips, which includes vehicles used for carpools, to illustrate changes in auto dependency.

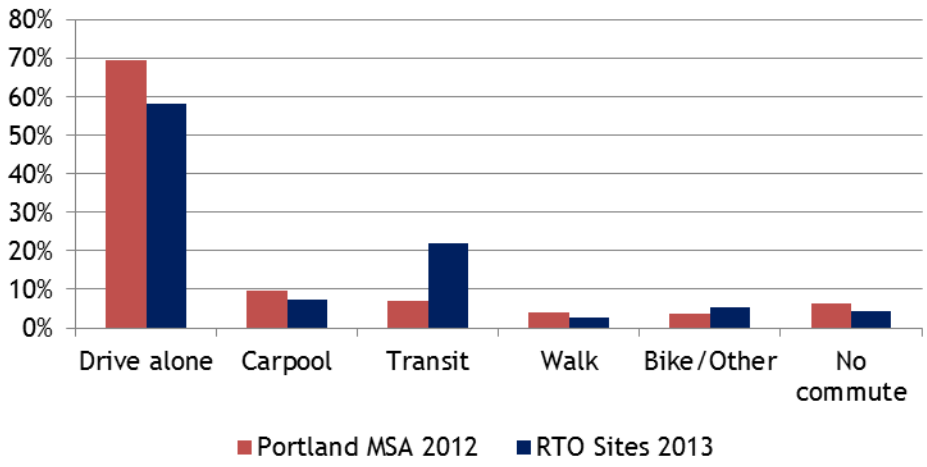
FIGURE 3.1 AUTO TRIP REDUCTION IN RTO PROGRAM AREA



3.4 Since 2004, the even years consistently show greater auto usage than adjacent odd years. This discrepancy may be due to differences in characteristics of the sites surveyed in even versus odd years. After supporting a commute options program, many sites survey every other year so one or two large sites may be creating the annual ups and downs in the chart. RTO sites historically and presently have lower auto trip rates than the national average, as well as reporting lower trip rates than the Portland MSA for years where data was available.

3.5 Figure 3.2 compares the commuter mode split from the American Community Survey for the Portland metropolitan statistical area with the mode split data from the ECO survey.

FIGURE 3.2 COMMUTER MODE SPLIT COMPARISON



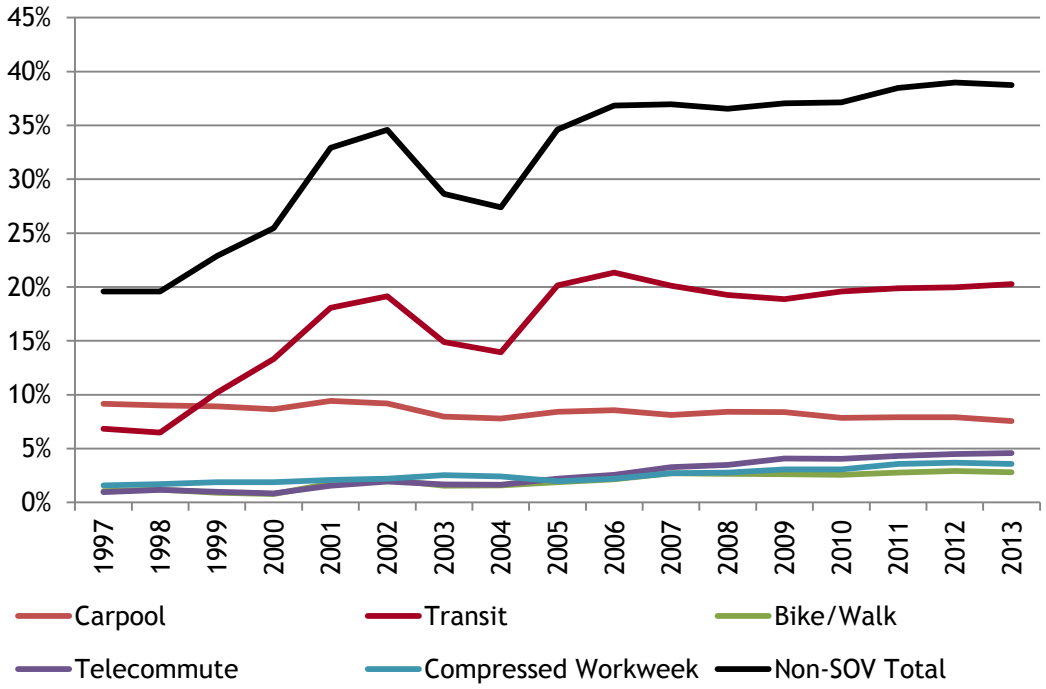
3.6 As indicated in Figure 3.3, commuters working at RTO sites are more likely to use a travel option than those in the background population. However, employees of RTO sites drive about as much as the average worker in the City of Portland. The average drive alone rate for the City of Portland RTO sites is 56%, which is lower than the region's commute rate. These statistics support the benefits of employer engagement programs for reducing the drive alone rate.

3.7 A second note is that the percentage of commuters who indicated they did not commute was lower for RTO sites than the state and MSA averages. However, these averages may include people who work from home and who are not part of a large 100+ employee company – meaning the no commute percentages do not necessarily reflect teleworking or other travel options.

3.8 Compared to national travel rates, as of 2012 Portland had a daily vehicle miles of travel per person of 18.62, which was lower than the national average of 21.64. While Portland has historically been lower than the national average, the mileage rate for Portland has consistently been decreasing over the past decade.

3.9 Figure 3.3 shows the historic mode split for the employment sites based on a rolling two year average. The ECO data does not collect data from each site every year which causes the data to have a peak pattern – there is a pronounced difference between even and odd years. A two year average allows a smoother curve to be shown that highlights the broader changes in travel behavior in the region.

FIGURE 3.3 1997-2013 NON-DRIVE ALONE COMMUTE TRIPS AT WORKSITES PARTICIPATING IN ECO SURVEY



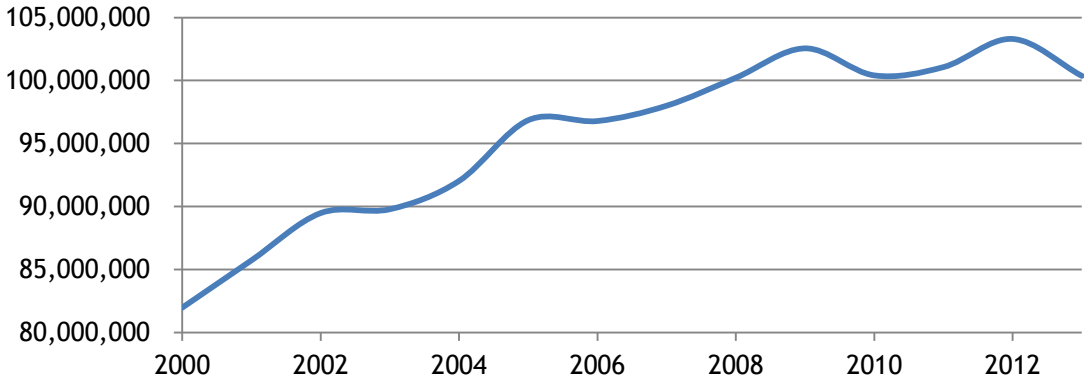
3.10 As noted in Figure 3.3, since a drop off between 2002 and 2003, there has been consistent growth in use of non-drive alone travel options in the region. This graph also highlights that transit, carpool, compressed workweek, and telecommute have all entered a plateau pattern with limited change between years.

3.11 Between 2002-2005 the survey data indicates a drop in the percentage of trips that use travel options, in particular transit. The 2007-2008 evaluation by Portland State University indicated that this drop could be associated with the absence of a single large employer whose transit mode share was 25% higher than other employers. Extrapolating from this finding, this decrease could be based on two conditions: (1) regional travel may have changed in this time period due to a number of factors and (2) a decrease in employers participating in the survey or program during this period.

3.12 Analysis of regional travel trends using supplementary data would suggest that this decrease is more related to (2) – employers with high travel option use may have not participated in the survey, which would decrease the overall percentage of employees using travel options across the survey respondents.

3.13 For example, Figure 3.4 outlines regional boardings across all services provided by TriMet.

FIGURE 3.4 TRIMET DAILY BOARDINGS FROM 2000-2013



3.14 As noted in Figure 3.4, transit boardings have steadily increased since 2000, with a slight decrease in 2011. This is aligned with previous discussion on the 2002-2005 decrease in option use reported in Figure 3.3 – likely the travel rate decrease is due to changes in survey participation rather than an actually decrease in transit use as no regional decrease was observed in this time.

3.15 Additionally, during the 2011 decrease in transit boardings, sites surveyed showed a slight increase in transit mode share with no accompanying increase.

3.16 Additional analysis of employer program elements is provided in Appendix C and describes further means of refining the changes observed in VMR for employer sites.

Evaluated Programs and Services

3.17 The evaluation follows a two-step process: (1) High Level Analysis and (2) Multiple Account Evaluation (MAE). Twenty seven projects have been evaluated using the High Level Analysis as well as relevant portions of the MAE framework. As the framework was developed in 2013, not all programs have relevant quantitative and/or qualitative data for each indicator.

3.18 Table 3.5 shares the list of evaluated programs based on their program type. All data provided in this table is based on information provided by program partners and RTO staff. Further information about programs and results is provided in the MAE.

TABLE 3.1 PROGRAM EVALUATION SUMMARY

	RTO Budget Portion	Other Matching	Reviewed 2011 Report	Reviewed 2009 Report
Commuter Services				
Ridematch/Rideshare Services	$111,500	-	✓	✓
Metro Regional Vanpool Program	$147,500	-	✓	✓
TriMet Employer Outreach Program	$775,600	$88,800	✓	✓
Wilsonville SMART Options	$66,400	$7,981	✓	✓
Individualized marketing projects				
Discover Wilsonville[1]	$191,700	$38,400	✓	×
Gresham SMART	$100,000	$44,500	✓	×
Portland NNE SmartTrips[2]	$171,520	$253,600	✓	×
Transportation Management Association Programs				
Gresham Regional Center TMA	$81,100	$81,600	✓	✓
Lloyd TMA	$96,800	$56,500	✓	✓
Swan Island TMA	$106,600	$59,800	✓	✓
Westside Transportation Alliance TMA	$106,400	$63,100	✓	✓

[1] Started July 2010

[2] Started July 2010

RTO Program Marketing				
Bike There!	$22,900	-	✓	✓
Vamanos Spanish-language outreach	$222,100	-	✓	×
Walk There! Guidebook	$34,900	-	✓	✓
RTO Grant Program				
BTA Bike Commute Challenge	$27,500	$69,100	✓	✓
Community Cycling Center Communities in Motion	$34,100	$16,200	✓	×
City of Forest Grove Forest Grove Bicycle Parking Shelters	$45,000	$16,900	×	×
Lloyd Links	$30,000	$35,000	✓	×
OPAL -East Portland Community Bus Stop Assessment	$51,200		×	×
Portland Sunday Parkways	$9,900	$956,000	×	×
SMART Ped/Bike Coordinator	$29,900	$38,000	✓	×
Wilsonville Sunday Streets	$51,700	$12,900	×	×

3.19 The high level analysis for each program, including an overview of the program and a statement on its goals, data requirements, and level of investment is contained in Appendix B.

Multiple Account Evaluations

3.20 Tables 3.6-3.11 contain the MAE for each program category:

- Table 3.6: Commuter Services MAE
- Table 3.7: Individualized Marketing MAE
- Table 3.8: Transportation Management Association MAE
- Table 3.9: RTO Program Marketing MAE
- Table 3.10 - 3.12: Grant Holder MAE

3.21 Each table offers as complete an evaluation as is possible for each program funded in the 2011-2013 funding period. Aside from the TriMet Employer Outreach program, whose VMR value was obtained from the ECO analysis, all values were obtained from program reports and staff.

Table 3.2- Commuter Services MAE

	INDICATOR	RIDEMATCH/RIDESHARE SERVICES	REGIONAL VANPOOL PROGRAM	TRIMET EMPLOYER OUTREACH	WILSONVILLE SMART	TOTAL
ENVIRONMENT	Emission reductions- VOC (tons)		2.57	34.37		36.94
	Emission reductions- Nox (tons)		2.16	28.86		31.01
	Emission reductions- CO (tons)		29.16	389.85		419.01
	Emission reductions- PM10 (tons)		0.05	11.90		11.95
	Emission reductions- PM25 (tons)		0.02	0.69		0.72
	Emission reductions- air toxins (pounds)		222.720	2,997.702		3,200.42
	Reduction in climate change emissions (tons)		889.93	11,898.08		12,788.01
	Annual gas savings (gallons)		96,725	1,293,185		1,389,910.26
EQUITY AND HEALTH	Reduction in average household combined cost of housing and transportation		$7,506.90			$7,506.90
	Improved Reliability for Environmental Justice Populations					
	Health improvement opportunity	1% increase in bike trips logged in DLC			Encourages WalkSMART participants to walk daily	1% increase in bike trips
ECONOMY	Increased reliability for access to jobs					
	Increased access to work employment by alternative modes	yes- 3% decease in SOV travel	yes- increase in vanpool			
	Decrease parking demand		$1,069,488	$14,298,718		$15,368,205
	Dollars Returned to local economy		$735,808	$9,837,518		$10,573,325
EFFICIENCY	Vehicle Miles Reduced (VMR)		1,988,669 (maintained)	20,571,248 (maintained) 6,016,638 (new)		28,576,555
	Mode split or increase in non-drive alone mode share	3% of SOV drivers switched to travel options				
	Program cost effectiveness- per VMR		$0.07	$0.03		$0.03-$0.07
	Program cost effectiveness- per person	$14 per user		$20.33 per contact		$14 - $20.33 per contact
	Leverages partner resources			11%, coordination with 17 program partners	33%	11%-33%
	Leverage infrastructure/capital investments			Promoted and leveraged LRT and bus expansion		
	Increased cost effectiveness of alternative travel investment through improved ridership					
ENGAGMENT	Individuals reached	2,310 people	151 riders	13,222 contacts, 24,765 transport fair attendees, 168 employers	60 registered walkers at 2010 WalkSMART event	28,397 people
	Brand awareness	17% (DLC), 48% (DLSM), 7,993 Impressions		975 bus schedules distributed		17%-48%, 7,993 Impressions, 975 pieces of collateral

Table 3.3 - Individualized Marketing MAE

	INDICATOR	DISCOVER WILSONVILLE	GRESHAM SMART TRIPS	N/NE SMARTTRIPS	TOTAL
ENVIRONMENT	Emission reductions- VOC (tons)	1.322		2.45	3.77
	Emission reductions- Nox (tons)	1.110		2.06	3.17
	Emission reductions- CO (tons)	15.000		27.81	42.81
	Emission reductions- PM10 (tons)	0.458		0.85	1.31
	Emission reductions- PM25 (tons)	0.027		0.05	0.08
	Emission reductions- air toxins (pounds)	114.571		212.417	326.99
	Reduction in climate change emissions (tons)	457.793		8.49	466.28
	Annual gas savings (gallons)	49,757		92,251	142,007
EQUITY AND HEALTH	Reduction in average household combined cost of housing and transportation	$188.10		$141.34	$188.10 - $141.34
	Improved Reliability for Environmental Justice Populations				
	Health improvement opportunity	13% increase in walking trips	0.5% bike to MAX, 1.3% walk to MAX, 2.3% walk to bus	16% increase in active transportation	0.5%-16% Increase
ECONOMY	Increased reliability for access to jobs				
	Increased access to work employment by alternative modes				
	Decrease parking demand	$550,160		$1,020,013	$1,570,173
	Dollars Returned to local economy	$378,510		$701,769	$1,080,279
EFFICIENCY	Vehicle Miles Reduced (VMR)	1,023,000	not calculated	1,896,673	2,919,673
	Mode split or increase in non-drive alone mode share	4.1% driving reduction, 13% increase in walking, 9% increase in transit	4% driving reduction, 3.6% increase in transit, 1.2% increase in carpool	13% driving reduction	4-13% reduction
	Program cost effectiveness- per VMR	$0.19		$0.09	$0.09-$0.19
	Program cost effectiveness- per person	$61.84	$45.43	$22.42	$129.69
	Leverages partner resources	20%	45%	148%	20%-148%
	Leverage infrastructure/capital investments			Going to the River multimodal investment	
	Increased cost effectiveness of alternative travel investment through improved ridership				
ENGAGEMENT	Individuals reached	3,100	3,200	7,649	13,949 people
	Brand awareness	69.2%	21'%	22%	21-69.2%

Table 3.4 - TMA MAE

	INDICATOR	GRESHAM REGIONAL CENTER	LLOYD	SWAN ISLAND	SOUTH WATERFRONT COMMUNITY RELATIONS	WESTSIDE TRANSPORTATION ALLIANCE	TOTAL
ENVIRONMENT	Emission reductions- VOC (tons)		12.8	0.63	0.14	3.05	16.62
	Emission reductions- Nox (tons)		10.74	0.53	0.12	2.56	13.95
	Emission reductions- CO (tons)		145.14	7.19	1.59	34.590	188.52
	Emission reductions- PM10 (tons)		0.26	0.01	0.01	0.061	0.33
	Emission reductions- PM25 (tons)		0.12	0.01	0.001	0.029	0.16
	Emission reductions- air toxins (pounds)		1005.712	54.940	12.179	239.676	1,312.51
	Reduction in climate change emissions		4429.69	241.99	53.640	1,055.67	5,780.99
	Annual gas savings		436,770	23,860	5,289	104,089	570,009
EQUITY	Reduction in average household combined cost of housing and transportation						
	Improved Reliability for Environmental Justice Populations						
	Health improvement opportunity		Increase in active trips reported	22,185 cycling challenge miles	10% of all trips are by bicycle		
ECONOMY	Increased reliability for access to jobs		Bike commute options developed at employer sites				
	Increased access to work employment by alternative modes						
	Decrease parking demand		$4,829,360	$263,819	$58,483	$1,150,914	$6,302,575
	Dollars Returned to local economy		$3,322,600	$181,507	$40,236	$791,828	$4,336,172
EFFECTIVENESS	Vehicle Miles Reduced (VMR)		8,980,000	490,560	108,746	2,140,077	11,719,383
	Mode split or increase in non-drive alone mode share		0.5% driving reduction	26% Travel Options Use	32% Travel Options Use		0.5% driving reduction, 26-32% Travel Options Use
	Program cost effectiveness- per VMR*		$0.02			$0.04	$0.02-$0.04
	Program cost effectiveness- per person						
	Leverages partner resources	101%	58%	56%	100%	59%	56%-101%
	Leverage infrastructure/capital investments						
	Increased cost effectiveness of alternative travel investment through improved ridership						
ENGAGEMENT	Participation		625 event participants, 96 personalized trip plans, 848 direct contacts, surveyed 12,000+ employees				15,493 participants
	Awareness	Transportation fair, newsletters, social media updates					10,900 impressions

*Not calculated for some TMAs due to VMR quantified for less than 20% of TMAs reach

Table 3.5 - RTO Marketing MAE

	INDICATOR	BIKE THERE!	VAMANOS	WALK THERE!	BE SEEN, BE SAFE (2012/13)	CAREFREE COMMUTER CHALLENGE	BIKE MONTH	TOTAL
ENVIRONMENT	Emission reductions							
	Reduction in climate change emissions							
	Annual gas savings							
EQUITY AND HEALTH	Reduction in average household combined cost of housing and transportation							
	Improved Reliability for Environmental Justice Populations		Campaign designed specifically to engage Spanish-speaking populations in target neighborhoods					Some multi language engagement
	Health improvement opportunity	Increase in cycling	Increase in active modes	Increase in walking				Increase in active use reported
ECONOMY	Increased reliability for access to jobs							
	Increased access to work employment by alternative modes	Potential improvement	Potential improvement					Potential improvement
	Decrease parking demand							
	Dollars Returned to local economy							
EFFICIENCY	Vehicle Miles Reduced (VMR)							
	Mode split or increase in non-drive alone mode share							
	Program cost effectiveness- per VMR							
	Program cost effectiveness- per person	$0.64 per person	$2.95 per person	$0.61 per person				$0.78-$3.04 per collateral, $0.61-$2.95 per person
	Leverages partner resources							
	Leverage infrastructure/capital investments	Highlights bike boulevards/new infrastructure	Shows existing/ improved infrastructure	Highlights new walking routes				Highlights new routes and infrastructure
	Increased cost effectiveness of alternative travel investment through improved ridership							
ENGAGEMENT	Participation	14,589 people	187 workshop participants	21,434 People		3,185 people		39,395 people
	Awareness	19%	"577,085 media impressions, 73,000 maps, 6,000 promo safety items"	20%	"468,718 impressions, media: TV: 2 million Print: 300,000 Online/mobile: 200,000 Transit ads: 100M, 46,000 safety items at 30 locations"	2013 ad buy: 3.75 million impressions, 2012 ad buy: 2.4 million impressions	"493,610 impressions from OPB ads, 7,000 bike seat covers"	19%-20% recognition, 962,328 impressions made,7,688,001 media impressions, 100,000,000 transit ad views, 53,000 items distributed

Table 3.6 - Grant Projects MAE

	INDICATOR	BTA BIKE COMMUTE CHALLENGE	COMMUNITY CYCLING CENTER COMMUNITIES IN MOTION	CITY OF FOREST GROVE FOREST GROVE BICYCLE PARKING SHELTERS	LLOYD LINKS	OPAL - EAST PORTLAND TRANSIT STOP PROJECT	PORTLAND SUNDAY PARKWAY	SMART BIKE/PED COORDINATOR	WILSONVILLE SUNDAY STREETS	CITY OF TIGARD WAYFINDING	
ENVIRONMENT	Emission reductions- VOC (tons)	3.856			0.408					Improved walkability due to signage	4.26
	Emission reductions- Nox (tons)	3.237			0.343						3.58
	Emission reductions- CO (tons)	43.739			4.633						48.37
	Emission reductions- PM10 (tons)	1.335			0.008						1.34
	Emission reductions- PM25 (tons)	0.078			0.004					Improved walkability due to signage	0.08
	Emission reductions - air toxins (pounds)	334.080			32.105						366.19
	Reduction in climate change emissions	0.037			141.407						141.44
	Annual gas savings	145,088			13,943					Improved walkability due to signage	159,030.55
EQUITY	Reduction in average household combined cost of housing and transportation										
	Improved Reliability for Environmental Justice Populations		Increased access to bicycles to low income and minority communities			Project focused on improved transit service for EJ populations					
	Health improvement opportunity	Over 4,000 new bike commuters	Established park for cycling	Promoted cycling							4,000 new bike commuters

Table 3.7 - Grant Projects MAE

	INDICATOR	BTA BIKE COMMUTE CHALLENGE	COMMUNITY CYCLING CENTER COMMUNITIES IN MOTION	CITY OF FOREST GROVE FOREST GROVE BICYCLE PARKING SHELTERS	LLOYD LINKS	OPAL - EAST PORTLAND TRANSIT STOP PROJECT	PORTLAND SUNDAY PARKWAY	SMART BIKE/PED COORDINATOR	WILSONVILLE SUNDAY STREETS	CITY OF TIGARD WAYFINDING	
ECONOMY	Increased reliability for access to jobs	Reported 20 miles of lane cleared in one month	Created bicycle repair hub, training, access to bicycles								
	Increased access to work employment by alternative modes	Reported 20 miles of lane cleared in one month									
	Decrease parking demand	$1,604,230			$154,166						$1,758,395
	Dollars Returned to local economy	$1,103,710			$106,066						$1,209,776
EFFICIENCY	Vehicle Miles Reduced (VMR)	2,983,000			286,665						3,269,665
	Mode split or increase in non-drive alone mode share										
	Program cost effectiveness- per VMR	$0.01			$0.23						$0.01-$0.23
	Program cost effectiveness- per person	$0.47									
	Leverages partner resources	251%	48%, 15+ partnerships	38%	117%		9657%	127%	25%		38%-9657%
	Leverage infrastructure/ capital investments										
	Increased cost effectiveness of alternative travel investment through improved ridership										

Table 3.7 - Grant Projects MAE

	INDICATOR	BTA BIKE COMMUTE CHALLENGE	COMMUNITY CYCLING CENTER COMMUNITIES IN MOTION	CITY OF FOREST GROVE FOREST GROVE BICYCLE PARKING SHELTERS	LLOYD LINKS	OPAL - EAST PORTLAND TRANSIT STOP PROJECT	PORTLAND SUNDAY PARKWAY	SMART BIKE/PED COORDINATOR	WILSONVILLE SUNDAY STREETS	CITY OF TIGARD WAYFINDING	
ENGAGEMENT	Participation	13,000 cyclists	Newsletters, postings, tabling at events, workshops, neighborhood meetings, partnerships, design charettes		1,696 direct contacts	209 survey participants			8 presentations to community organizations	101 survey respondents	Greater than 13,000 people reached
	Awareness	30%			5,800 indirect contacts		40% Awareness, 1000 Sunday Parkways posters, 54,000 general Sunday Parkways flyers distributed; over 170 media stories	Contact group of 129 people on mailing list	Mailed newsletters to every address in the zip code, handed out flyers, and promoted awareness through social media	In the walking survey, 2/3 indicated a need for signage / mapping	30%-40% awareness, 5,970 indirect contacts, over 55,000 collateral distributed

steer davies gleave

4 Regional Program Evaluation

4.1 The MAE process has been applied to each RTO project completed during the evaluation period to develop a high level understanding of the RTO Program as a whole. This analysis, while incomplete, due to inconsistencies in data or missing data under each project category (for example, TMA, Grant), is a useful view of the 2011-2013 RTO Program for future planning, grant processes, and plan development.

4.2 Two MAE tables have been prepared. The first, Table 4.1, provides summaries and ranges for each program category. Values, such as emissions, that are absolute and can be summed have been totaled to reflect the overall benefit of program categories and the RTO program. Values that represent a per unit measure or are more qualitative have been treated differently. Qualitative measures are embedded in Table 4.2, while per unit measures, such as cost per VMR, are turned into ranges in order to highlight the disparity in values found during the evaluation.

4.3 Table 4.2 uses a scale of lowest to highest scale to measure all data available per program category, including the qualitative, and comment on its value add in this area. This chart demonstrates comparative program performance in a qualitative way. However, it should be noted that direct comparison between categories needs to be contextualized based on the number of programs in each category and the number of programs with data.

Table 4.1 - RTO Program Wide MAE

	INDICATOR	COMMUTER SERVICES	IM PROGRAMS	RTO MARKETING	GRANT PROJECTS	TMAS	TOTAL
ENVIRONMENT	Emission reductions- VOC (tons)	36.94	3.77		4.26	16.62	61.60
	Emission reductions- Nox (tons)	31.01	3.17		3.58	13.95	51.72
	Emission reductions- CO (tons)	419.01	42.81		48.37	188.52	698.72
	Emission reductions- PM10 (tons)	11.95	1.31		1.34	0.33	14.93
	Emission reductions- PM25 (tons)	0.72	0.08		0.08	0.16	1.04
	Emission reductions- air toxins (pounds)	3,200.42	326.99		366.19	1,312.51	5,206.10
	Reduction in climate change emissions (tons)	12,788.01	466.28		141.44	5,780.99	19,176.72
	Annual gas savings (gallons)	1,389,910.26	142,007		159,030.55	570,008.90	2,260,957.06
EQUITY AND HEALTH	Reduction in average household combined cost of housing and transportation	$7,506.90	$188.10 - $141.34				
	Improved reliability for environmental Justice Populations			Some multi language engagement			
	Health improvement opportunity	1% increase in bike trips	0.5%-16% Increase	Increase in active use reported	4,000 new bike commuters		
ECONOMY	Increased reliability for access to jobs						
	Increased access to work employment by alternative modes			Potential improvement			
	Decrease parking demand	$15,368,205	$1,570,173		$1,758,395	$6,302,575	$24,999,349
	Dollars returned to local economy	$10,573,325	$1,080,279		$1,209,776	$4,336,172	$17,199,552
EFFICIENCY	Vehicle Miles Reduced (VMR)	28,576,555	2,919,673		3,269,665	11,719,383	46,485,276
	Mode split or increase in non-drive alone mode share		4-13% reduction			0.5% driving reduction, 26-32% Travel Options use	
	Program cost effectiveness- per VMR	$0.03-$0.07	$0.09-$0.19		$0.01-$0.23	$0.02-$0.04	$0.01-$0.23
	Program cost effectiveness- per person	$14 - $20.33 per contact	$129.69	$0.78-$3.04 per collateral, $0.61-$2.95 per person			
	Leverages partner resources	11%-33%	20%-148%		38%-251%	56%-101%	42%
	Leverage infrastructure/capital investments			Highlights new routes			
	Increased cost effectiveness of alternative travel investment through improved ridership						
ENGAGEMENT	Participation	28,397 people	13,949 people	39,395 people	Greater than 13,000 people reached,	15,493 participants	84,522 participants
	Awareness	17%-48%, 7,993 Impressions, 975 pieces of collateral		19%-20% recognition, 962,328 impressions made,7,688,001 media impressions, 100,000,000 transit ad views, 53,000 items distributed	30%-40% awareness, 5,970 indirect contacts, over 55,000 collateral distributed	10,900 impressions	979,198 Impressions, 108,000 collateral distributed

Table 4.2 - RTO Program Category Ranking

ACCOUNT	COMMUTER SERVICES	IM PROGRAMS	RTO MARKETING	GRANT PROJECTS	TMAS
ENVIRONMENT					
EQUITY AND HEALTH					
ECONOMY					
EFFICIENCY					
ENGAGEMENT					
OVERALL					

TMA evaluation results based on data from Lloyd TMA and WTA, additional data was not available for evaluation.

steer davies gleave

5 Conclusion

Program Analysis

5.1 This evaluation's focus was on collecting and displaying key information about each program invested in by the RTO program. In the process of collecting and treating data for the MAE framework, high level evaluation conclusions were assembled for each program category.

5.2 Table 5.1 outlines the overall findings of the evaluation process for each program category.

TABLE 5.1 RTO PROGRAM EVALUATION KEY CONCLUSIONS

Program	Key Conclusions
Commuter Services	▪ Overall data availability is at an acceptable level for these programs, however further information on trips made by choice passengers (i.e. through rideshare, carpooling ,etc…) would be ideal. ▪ These programs offer strong benefits and are cost efficient, while balancing hard outcomes with softer measures, like engagement.
Individualized Marketing Programs	▪ These programs offer a consistent level of data that aided in analysis. ▪ The outcomes demonstrate the potential of individualized marketing to lead to VMR and wider regional benefits. ▪ The higher price per engagement needs to be weighed against the benefits these programs can produce compared to other programs.
RTO Program Marketing	▪ The RTO Program Marketing projects did not have data available for environmental or economic consideration, however it did demonstrate strong results for engagement. ▪ Partners agreed on a marketing plan to save time and money by coordinating marketing efforts, leveraging messages and increasing awareness. ▪ Future marketing programs could build on strengths in engagement while complementing their results with strong data collection.
Grant Projects	▪ Grant holder projects with high levels of data demonstrated strong results. However some projects did not demonstrate the same degree or variety of benefits. ▪ This is not due to specific challenges with the program structure, but rather the wide variety of projects supported by the grant program. In future evaluations when projects prepare data matched to the evaluation this result is expected to change. ▪ The program demonstrated strong results in engagement.
TMAs	▪ More TMAs should report their data – only Lloyd TMA and WTA offered the level of data necessary for this analysis. ▪ Program results show strong benefits across most areas, however many TMAs did not collecting data on social benefits during the evaluation timeframe. ▪ Large emission reductions and VMR were provided by Lloyd TMA.

Program	Key Conclusions
	▪ Results from South Waterfront TMA suggest there is potential in further residential engagement to reduce VMT and create equity and health benefits.

Recommendations

5.3 Observations from the data review and analysis have identified areas where Metro's programs could operate more effectively, thus improving the provision of services and the behavior change outcomes of programming. The evaluation has identified several key areas for improvement:

- Prioritize data collection and standardization;
- Consistent data collection;
- Annual/end-of-grant reporting;
- Improved synergies between program partners and service providers
- Refine the grant process to include MAE considerations.
- Continue the development of the MAE

Prioritize Data Collection and Standardization

5.4 The 2011-2013 evaluation ranked programs based on cost and their level of available data. Table 5.2 summarizes the number of programs in each category:

TABLE 5.2 PROGRAM BREAKDOWN BY LEVEL OF INVESTMENT AND DATA AVAILABILITY

Level of Investment	Low Data	Medium Data	High Data	Total
Low	1	2	2	5
Medium	2	2	1	5
High	1	7	1	9
Very High	-	3	1	4

5.5 Programs that have high or very high cost should consistently deliver high data quality, however, as noted in this evaluation, no programs in these investment levels deliver data of that quality. This makes it difficult for these programs to be evaluated in an effective and accountable manner.

5.6 This challenge can be overcome by benchmarking future levels of investment to minimum levels of data collection. Levels of data collection should be set so that they can be used to accurately evaluate the program, but also so that collection is achievable by the partner.

5.7 Not only will this facilitate the use of an MAE framework and more holistic and in depth evaluations, but it will also clarify data collection processes for program partners.

Consistent Data Collection

5.8 The most significant barrier to program evaluation is a lack of coordinated data collection within program areas. Particularly where programs share similar objectives, there is an opportunity to standardize data collection and reporting. Recognizing that data needs are not consistent or practical across program areas, the data requirements by program area are detailed in Table 5.3 below.

TABLE 5.3 DATA REQUIREMENTS BY PROGRAM AREA

Program Area	Minimum Data Requirements
Commuter Services	VMR, awareness and participation, RTO Program investment and local match, active mode use, sample of branded materials and their reach
IM Programs	VMR, mode share before/after, RTO Program investment and local match, awareness and participation, branded materials and customization for participants, participant feedback
TMAs	VMR, individuals engaged, branded materials, RTO Program investment and local match
RTO Marketing	Number of products used/distributed, awareness and participation, RTO Program investment and local match, interactions with other programs, branded materials, brand recognition
Grant Programs	VMR, time scale of program, RTO Program investment and local match, people reached, branded materials

5.9 Developing templates or web forms which are linked to a master spreadsheet may increase the ease with which reports are submitted, while increasing the consistency of the data. A move to this type of system will also speed up the evaluation process by providing a centralized data repository where data may be easily accessed and compared.

5.10 Data collection could also be doubled up between program areas. For example, a large survey that covers multiple programs, as opposed to several individual surveys may be a way to maximize data collection while limiting time and resources spent by partners on data collection.

5.11 Where consistent data has been provided, there are inconsistencies in methodology which make it difficult to make like-for-like comparisons. Providing clear guidance on the methodology for determining VMR, mode shares, etc. and the time frames at which they are measured will help to improve the robustness of future evaluation results.

Comprehensive Annual/End-of-Grant Reporting

5.12 At present, there is inconsistent year-end and end-of-grant reporting which makes it difficult to get a full sense of various program activities and what has been achieved with Metro funding.

5.13 As program goals are stated explicitly in the proposals for RTO grant programs, it would be beneficial for these goals to be addressed explicitly in the annual report. This provides an opportunity for program providers to share the successes of their program, particularly where the results are qualitative and it is difficult to extrapolate from client-centered final reports whether or not goals have been achieved. Further to this, it is suggested that Metro's core programs also undertake regular goal-setting to ensure that programs remain focused and defined in their activities.

5.14 Where quarterly reports are produced, it is valuable to also provide annual reporting to be clear on overall results, rather than just noting the differences between quarterly performance. In some instances it was observed that quarterly reports noted increases over the previous quarter's performance, or the improvement over the same quarter in the year before, but tended not to comment when there were declines in program performance.

Local Program Synergies

5.15 In completing the evaluation, it was noted that there appears to be a lack of coordination between other potential partners working on behavior change who would also have an interest in promoting travel options. While some program partners, such as TriMet, currently document their collaborative efforts, for many projects such information is not available.

5.16 During reporting program partners should share and document their collaborations, joint investments, and the support they receive from other partners. This will enable transparency and also allow existing synergies to be better recognized. For example, TriMet documented 35 meetings with TMAs throughout the current evaluation period. Additionally, the Community Cycling Center's Communities in Motion project acknowledged extensive links to local groups which greatly facilitated understanding of their program reach.

5.17 Other non-profit groups such as Bicycle Transportation Alliance or Oregon Walks (or groups specific to local areas) could also be involved in some projects which would extend the benefit of the program beyond the grant cycle. It is possible that these links already exist, but are not well documented at present.

Grant Process and the MAE Framework

5.18 As changes are made to the Metro program, it will be essential to avoid rapid changes in the way programs are evaluated and awarded funds. As a transition is made to more broad-based evaluation, such as the MAE used in this evaluation, it will be necessary to accommodate programs and give them time to adapt to new requirements.

5.19 A staged progression to the MAE format is recommended. In this format, the MAE tool would be used in the 2014-2015 year as a test run. This will allow partners to familiarize themselves with the tool, the sort of data that optimizes its effectiveness, and how the tool can be used for future planning. The results of this evaluation would not be binding on fund allotment, but rather allow partners to familiarize themselves with the methods. The next biennial evaluation would more rigorously implement the MAE.

Continue the Development of the MAE

5.20 The MAE used in this evaluation allows the holistic benefits of individual programs and the overall RTO Program to be assessed. However, the tool can be further refined in terms of indicators as well as process of application.

5.21 As policy and goals continue to evolve in the region, so must the MAE framework. As new pieces of policy and new plans are implemented the indicators the MAE framework uses should be reviewed in order to ensure their continued relevancy.

5.22 Additionally, an MAE structure for each program type should be developed. The current MAE represents a broad spectrum of indicators that the RTO Program as a whole is trying to attain. However, some elements of the RTO Program, such as RTO Program Marketing, are used as key enablers for behavior change and are not necessarily intended to directly create benefits across all the accounts.

5.23 When setting up contacts with programs, an agreement should be made based on which elements of the MAE the individual program is best equipped to deliver on. This set up can enable overall positive results for the RTO Program holistically, while also ensuring the unique strengths and benefits of individual programs are not overshadowed by no or low performance in other areas.

steer davies gleave

Appendix A Peer Program Review

A1 PEER PROGRAM REVIEW

A1.1 A peer review was conducted to contextualize the RTO Program among other leading national TDM programs. The peer review was based on the types of services provided by other TDM programs as well as the financing/funding structures employed by these programs.

Way To Go!

A1.2 Way To GO! (formerly RideArrangers) is a TDM program in the Denver metro area that provides a variety of travel options. Key services provided include:

- Carpool matching;
- Vanpools;
- Telework programs;
- Guaranteed Ride Home;
- SchoolPool ride matching program; and
- Bike to Work Day.

A1.3 Way To Go! has been managed by the local MPO, DRCOG, since 1975. In July 2011, Way To Go! partnered with six transportation management organizations (TMOs), which use the same model as TMAs, that support TDM programs for specific areas within the region. As part of this restructuring, Way To Go! supports the services provided by the TMOs and focuses on areas not served by these agencies.

A1.4 Funding for Way To Go! comes primarily from Congestion Mitigation and Air Quality (CMAQ) funds from the federal government.

A1.5 One of the key strengths of the region's TDM programs is effective coordination. This is evident in the relationship between Way To Go! and the TMO: although both offer TDM services, each agency is assigned a specific geographic region. This effective example of coordination and communication between agencies reduces program inefficiency.

Metro Transit

A1.6 Metro Transit is a TDM program operated by the local MPO, Metropolitan Council, of the Twin Cities region. Key services provided by Metro Transit include:

- Carpool matching
- Vanpool
- Telework programs
- Transit promotion
- Guaranteed Ride Home program
- Commuter survey development
- Bicycling promotion
- Commuter Challenge

A1.7 Like Way To Go!, Metro Transit coordinates and provides support for regions managed by TMOs. In areas not served by a TMO, Metro Transit serves as the main resource for TDM services.

A1.8 CMAQ funds are the main source of funding for the TDM programs in the Metropolitan Council area.

A1.9 One of the key strengths of the region's TDM program is coordination between the regional Metro Transit program and the local TMOs, which minimizes inefficiencies and improves communication. In contrast, weaknesses include lack of funding opportunities (Metro Transit relies solely on CMAQ from the federal government) and difficulty measuring the outcome of TDM programs.

iCommute

A1.10 iCommute is run by the San Diego Regional Council of Governments. The program provides information about commuting options for employers and commuters. Key services include:

- Carpool matching
- Vanpool
- Transit promotion
- Support for bicycling
- Guaranteed Ride Home program
- SchoolPool ride matching program
- Technical support for employers

A1.11 One of the unique strengths of the program is its partnership with local employers. For example, iCommute offers an Employer Starter Kit to assist employers with implementing TDM programs, and works closely with employers to tailor programs for specific commuter needs.

steer davies gleave

B1 PROGRAM DESCRIPTIONS

Program Descriptions

5.24 Each program included in the evaluation has been listed below, along with a summary of program activities, goals, funding level and the availability of data for evaluation.

5.25 The program activities and goals were obtained from relevant project documents, and funding information was provided by RTO staff. The level of funding assessment divided the programs by the funding ranges shown below in Table B.1.

APPENDIX TABLE B.1 EVALUATION FUNDING RANGES

Funding Range	Funding Level
Low	$0 - $50,000
Medium	$50,000 - $100,000
High	$100,000 - $150,000
Very High	$150,000+

5.26 Data availability was measured qualitatively, and considered the number and quality of project documents provided to the evaluation team.

5.27 Programs were also assessed based on their stated results and goals. This process reviewed any available reports, such as annual or grant reports, as well as initial goals set during the RTO Program's investment process. Program goal evaluation categories are outlined in table B.2.

APPENDIX TABLE B.2 PROGRAM GOAL ANALYSIS

Does the available data indicate goals were met?	Criteria
Yes	Discrete goals are articulated and data or justification that is directly related to those goals is articulated in formal reporting and quantitative data. General or broader goals are linked to compelling and well-articulated information within formal reports.
Partially	Discrete goals have been articulated in the planning process, however data and results are not available for all goals or the results do not reach specified goals. For the project's broader goals, information may be available however a link to goal achievement for all goals cannot be determined.
Unsure	Project goals are not clearly articulated or available data is not sufficient to comment on whether or not articulated goals have been met.

Commuter Services

Ridematch/Rideshare Services: Drive Less. Connect., Drive Less. Save More Marketing & Carefree Commuter Challenge	**Core Program**

Metro provides a supporting role to enable regional ridematch/rideshare services including Drive Less. Connect. (DLC), Drive Less. Save More marketing campaign and the Carefree Commuter Challenge. The DLC ride-matching tool was launched in by the State of Oregon in 2010, replacing the Carpool Match Northwest tool. This service allows participants to connect with carpool partners through work and community networks, tracking daily trips to show cost and environmental savings. Metro's role is to coordinate DLC among partners, answer a helpline and respond to customer emails.

The Drive Less. Save More campaign and the Commute Challenge are tools used to promote DLC and sustainable travel more generally. After not being held in 2011, the Carefree Commute Challenge was reinstated in 2012 to promote the region's travel options and increase registrations for DLC. The Challenge allows participants to log trips via sustainable modes on DLC and win prizes based on their participation. Significant increases in registration for DLC were observed during the Challenge, in addition to a peak in the number of trips logged. The post survey shows a small decrease in car trips as driver, and 1% increases in bike and transit trips.

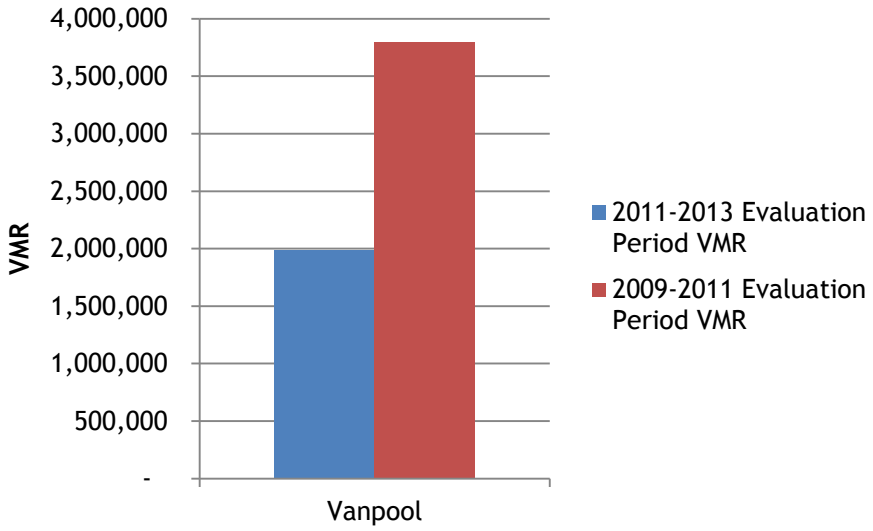
Goals:	**Outcomes:**
▪ Prompt experimentation and use of travel options ▪ New Drive Less. Connect. registrants and carpool formation ▪ Build relationships with local employers ▪ Increase visibility of service providers and resources	▪ 7,993 Drive Less. Connect. users (2,310 active) as of July 1, 2013 ▪ 17% program awareness of Drive Less. Connect. ▪ 17% of those aware claimed it helped them make fewer trips by car ▪ Added 1,248 users during Carefree Commute Challenge (3,185 total signed up) ▪ 6.15 million ad impressions for Carefree Commute Challenge 2012-2013 ▪ 3% decrease in car trips as driver, 1% increase in bike and transit trips due to Challenge ▪ 48% program awareness of Drive Less. Save More, a 14% increase from 2010

Program Goals Met: Yes	Funding Level: High	Data Availability: Medium

Metro Regional Vanpool Program	Core Program

Metro's Vanpool Program coordinates vanpool services for commuters in the Portland metropolitan area. During the evaluation period, the program transitioned from subsidizing vanpool operations to providing an incentive for the first three months of vanpool operations. Rider data was only provided for FY11-12, which shows a decline in the number of vanpools and a slight decrease in ridership.

The VMR for the vanpool program was derived from ridership data. This VMR value represents a maintenance of 1,988,669 VMR out of the total 3,800,000 VMR achieved in the previous evaluation. While additional VMR over previous evaluations was not achieved, this value still indicates the overall effectiveness of the vanpool program. New VMR was not attained in this evaluation period due to changes strategic priorities.



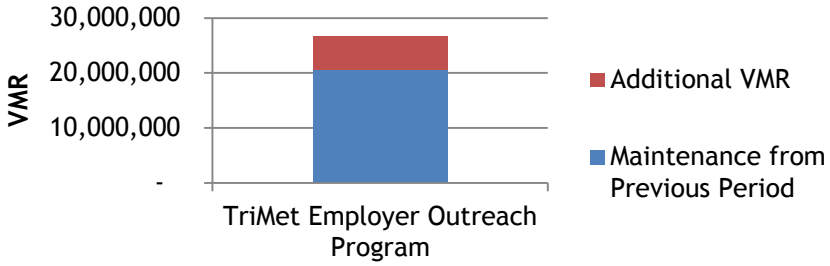
Goals:	Outcomes:
▪ General goals focused on facilitating use of vanpools and reducing VMR.	▪ 18 vanpools serving 151 riders as of June 2012 ▪ VMR of 1,511,389 for FY11-12

Program Goals Met: Yes	Funding Level: High	Data Availability: High

TriMet Employer Outreach Program	Core Program

TriMet provides programming to encourage and support employer transportation programs including meeting with employers, business associations and TMA's, attending events, transportation fairs, public outreach, administering an Emergency Ride Home program, ECO survey processing and running a Vanpool Shuttle Program. The quarterly reporting format tends to obscure reporting, as differences are only shown between quarters, with no annual data provided.

Trimet's VMR value was derived from available work site data. Data from these sites indicates a VMR value of 26,587,886. As noted in appendix C, this value contains two components: a maintenance component and a new VMR component. In this reporting period, 20,571,248 VMR from previous periods were maintained and an additional 6,016,638 VMR was achieved. This indicates overall sustainability of behavior change along with potential for further improvement.



Goals:	Outcomes:
• Increase the use of non-drive alone travel options for commute trips among employers and colleges (measure travel mode splits with transportation surveys) • Market and provide multimodal travel options to employers, employees, commuters, plus college staff and students • Increase awareness of travel options in coordination with regional campaigns and local partner efforts • Provide education about travel options in suburban areas including those not served well by transit	▪ Added transit subsidies at 125 employer worksites increasing from 1,067 at end of fiscal 2011 to 1,192 at end of fiscal 2013 ▪ Added 238 employer transportation programs over the evaluation period to 1,692 worksites from 1,454 at the end of fiscal 2011; a 16% increase ▪ Added 169 worksites on TriMet employer programs from 983 at end of fiscal 2011 to 1,152 at fiscal end 2013 ▪ Decline of 16 annual employer and college programs renewed, from 247 in 2011 to 231 in 2012 ▪ Increased non-drive alone mode split for employers working with the TriMet Employer Outreach program from 27.1% in 2009 to 38.5% in 2011. ▪ Partnership with 17 other projects/programs including May Bike Month and Car Free Commute Challenge

Program Goals Met: Yes	Funding Level: Very High	Data Availability: High

Wilsonville SMART Options	Core Program
The South Metro Area Regional Transit (SMART) provides fixed-route service within the City of Wilsonville. SMART aims to reduce drive alone usage, build transit ridership, promote knowledge of transit funding, goals, and services, and facilitate communication with local stakeholders.	
Goals: ▪ Reduce drive alone auto trips ▪ Build transit ridership ▪ Strengthen communication between SMART and stakeholders ▪ Increase knowledge of plans, transit service and improvements, and funding strategies	**Outcomes:** ▪ Increases in transit ridership ▪ A new online trip planner was added to the SMART website which allows for individualized trip planning ▪ Successful Marketing and outreach to commuters and residents for local services rideshare, bicycling, walking, and regional connections

Program Goals Met: Yes	Funding Level: Medium	Data Availability: Low

Individualized Marketing Projects

Discover Wilsonville	
The Discover Wilsonville individualized marketing project was developed with the aim of increasing the proportion of Wilsonville's walking, biking and transit trips versus drive-alone trips by automobile. The campaign took place in the summer of 2011 and combined direct mailings where residents could request program materials, with outreach events including interactive booths/tables, guided walks and bike rides. The program saw over 3,000 participants receive materials and take part in activities, resulting in a VMR of 1,023,000 miles in the evaluation period. Before and after surveying was conducted by Portland State University.	
Goals: ▪ Reduce drive alone auto trips ▪ Reduce automobile trips among Wilsonville residents ▪ Increase the number of walking, biking, transit and carpooling trips ▪ Improve neighborhood mobility and quality of life ▪ Raise awareness and understanding of travel options ▪ Support local businesses and employers ▪ Promote healthy and active lifestyle and transportation choices ▪ Improve transportation access to jobs	**Outcomes:** ▪ Share of trips made by driving reduced by 4.1% ▪ 12.9% increase in walking trips ▪ 9% increase in transit use ▪ Five direct mailings reaching 7,185 households ▪ Program materials ordered by 1,106 households ▪ 2,000 participants in activities ▪ 69.2% program awareness

Program Goals Met: Yes	Funding Level: V.High	Data Availability: Medium

Gresham SmartTrips Individualized Marketing Project

The Gresham SmartTrips IM project used the Smart Trips methodology with the aim of reducing drive-alone trips in the vicinity of Civic Drive, a new TriMet light rail station. The program distributed information about travel options through various media, events, and direct household delivery. Before and after surveys were used to measure behavior change.

Program goals were met with the exception of single occupant/drive alone trips which increased slightly, despite an overall decrease in driving trips and an increase in transit trips.

Goals:	**Outcomes:**
▪ Reduce single occupant/drive alone trips by 4% ▪ Reach all residents at least 5 times with travel options messages ▪ Reach interested residents in target area at least 10 times with travel options messages ▪ Involve 12% of the targeted population in at least one program or project related to travel options ▪ Place 10 media stories in area papers, newsletters, outlets and on the web that provide information about travel options ▪ Increase awareness of the regional "Drive Less. Save More." marketing campaign	▪ Reduced all driving trips by 3.7% ▪ Mode share for public transportation increased 3.6% ▪ Contacted 8,100 households with information about travel options ▪ 2,200 households responded to mail-out ▪ 62 media announcements promoted or referenced the SmartTrips project ▪ 67 community educational events to promote travel options ▪ Included the "Drive Less. Save More." logo and email on most incentive items and written materials; SmartTrips logo and material formats were borrowed to emulate (and not recreate) the City of Portland's program. This also ensures consistent branding. ▪ 36% of target area residents participated in at least one program or event ▪ Increased awareness by 21%

Program Goals Met: Partially	Funding Level: High	Data Availability: Medium

OPAL East Portland Transit Stop Project

OPAL Environmental Justice Oregon (OPAL) aims to increase transit ridership and walking, while reducing drive alone trips for low-income communities and communities of color in East Portland. This project is focused on developing an assessment of bus stops in order to identify how current stops are used and determine areas for improvement. This process includes surveys, site assessments, prioritization of sites, and a post survey to evaluate changes made.

Goals:

- Reach residents in target areas two times with transit options information
- Reach interested residents in target areas five times with transit information
- Engage at least 100 low-income and/or people of color in target areas in at least one workshop and one assessment
- Organize Transit Rider Subcommittee for EPAP, representing diverse populations such as low-income, people of color, elderly, disabled, and youth riders
- Develop and place 5 media stories in area papers, newsletters, radio and television outlets and facilitate media interviews with at least 3 participants
- Increased awareness of the connection between pedestrian and transit options and positive health outcomes and the "Drive Less. Save More." marketing campaign
- Improvements implemented at three prioritized transit stops
- Transit ridership at prioritized stops will increase by 10%; Walking will increase by 10%; Bicycling will increase by 5%; and drive alone trips will be reduced by 5% percent.

Outcomes:

- Conducted surveying for 209 community members
- Developed an assessment process for bus stops that includes a number of amenities such as cross walks, schedules, shelters, or lighting.
- Conducted assessment of bus stops

Program Goals Met: Partially	Funding Level: Low	Data Availability: Medium

Portland N/NE SmartTrips

The project used the comprehensive SmartTrips methodology to reduce drive alone trips and increase the use of travel options. The program targeted 48,283 households in the North/Northeast Portland and provided promotion and encouragement in conjunction with the *Going to the River* multimodal investment program. The project used technology-based communication components including Facebook and Twitter, and also used a volunteer ambassador program with 35 ambassadors to support program activities.

The N/NE final report determined VMR for both program participants and the program area, and saw high program awareness in the target area, but did not comment on other goals such as mode split, outreach messaging or program involvement.

Goals:

- Reduce VMT by 8% and increase mode split for bicycling by 20%, walking by 10% and carpooling by 3% in the project area
- Decrease drive alone trips by 8% in project area
- Reach all area residents at least 5 times with travel options messages
- Reach interested residents in the target areas at least ten times with travel options messages
- Involve 35% of the targeted population in at least one program or project
- Place five media stories in local media
- Increase awareness of CarpoolMatchNW.org and increase the number of residents who log on to the site
- Increase awareness of the "Drive Less. Save More." marketing campaign

Outcomes:

- 1,896,673 VMR between September 2010-September 2011
- 16% target population participation
- 7,659 material orders
- 13% relative reduction in driving trips among program participants
- 16% relative increase in active transportation use
- 94 educational events including walks, bike rides, workshops, clinics and outreach events
- 32% awareness in target area following the program

Program Goals Met: Yes	Funding Level: Very High	Data Availability: Medium

Transportation Management Association Programs

Gresham Regional Center TMA (GRCTMA)

The GRCTMA offers programs and services to enable Gresham residents to travel safely and easily to local destinations using travel options.

Mode share/VMR measures were not included in reporting and the 2012-2013 final report had not been made available.

Goals:	**Outcomes:**
▪ Decrease VMT by facilitating non-drive alone trips ▪ Increase awareness of available travel options ▪ Create options and strategies that improve non-drive alone access for employees ▪ Increase mobility and livability ▪ Strengthen the links between housing, employment, economic development and transportation ▪ Increase employee stability ▪ Decrease parking demand	▪ Co-hosted a Transportation Fair to engage the public in promoting sustainable transportation and helped coordinate a Bike Month challenge ▪ Well-established relationships with 8 employers representing approximately 3,000 people ▪ Attained relationships with new employers

Program Goals Met: Partially	Funding Level: High	Data Availability: Medium

Lloyd TMA

The Lloyd TMA offers transportation programs and services encouraging commute options through improving transit, bike, pedestrian systems and aims to increase awareness of travel options in the district.

Goals:

- Increase employee use of transit for commute trips
- Increase employee use of transit for Universal Pass members
- Increase bicycle commute trips 5% yearly
- Increase pedestrian commute trips 3.3% yearly
- Maintain rideshare commute mode share
- Continue advocating for pedestrian safety and amenity improvement funding
- Increase awareness of travel options

Outcomes:

- Transit trips increased to 39%
- Bicycle commutes increased over 5% annually
- Walking trips increased 24%
- Rideshare commuting remained at 9%
- Conducted outreach events and attended public safety meetings and fairs in the district
- Sent over 1,000 *Transportation Matters* e-newsletters to employees and partners
- Collaborated extensively with local stakeholders to organize events and improve infrastructure for biking and walking
- Recorded over 1,701,000 commute-option miles through the Commuter Rewards program

Program Goals Met: Yes	Funding Level: High	Data Availability: Medium

Swan Island TMA

The Swan Island TMA seeks to improve mobility for freight transport by increasing awareness and opportunities for travel options on Swan Island.

Mode share/VMR were not included in reporting.

Goals:	**Outcomes:**
▪ Decrease demand on regional transportation system by facilitating non-drive alone trips ▪ Increase awareness of available travel options ▪ Increase freight mobility ▪ Support economic recovery/development ▪ Improve bike/ped access ▪ Reduce employee commute costs ▪ Decrease parking demand	▪ 26% travel option use ▪ Almost 4,500 employees engaged out of 10,000 ▪ Exceeded 2011 levels of evening shuttle ridership. ▪ Increased carpool use and 20,440 VMR from vanpools ▪ 284 cyclists in a cycle challenge resulting in 22,185 VMR

Program Goals Met: Yes	Funding Level: High	Data Availability: Low

Westside Transportation Alliance TMA		
WTA aims to reduce drive alone work commute trips, reduce greenhouse gas emissions, and create healthy, livable communities.		
Goals: ▪ Decrease demand on regional transportation system by facilitating non-drive alone trips ▪ Increase awareness of available travel options ▪ Increase mobility and livability ▪ Increase employee stability ▪ Decrease parking demand ▪ Increase awareness about the health benefits of active transportation ▪ Increase awareness about the active transportation corridors in Washington County ▪ Promote the urgency of reducing CO2 emissions and the power of personal choice	**Outcomes:** ▪ Attended over ten committees, promoted regional incentive programs, staffed transportation fairs, and hosted networking events ▪ Sent out monthly newsletter to businesses and partners, over 3,000 views on YouTube channel, over 1,500 views on Facebook page ▪ Business members saved over 3,200,000 miles through compressed work weeks and teleworking ▪ Business members saved over 10,200,000 lbs. of CO2 by choosing non-drive alone commuting options ▪ Business members saved over 500,000 gallons of gasoline by choosing non-drive alone commuting options	
Program Goals Met: Yes	Funding Level: High	Data Availability: Medium

South Waterfront Community Relations

South Waterfront Community Relations (SWCR) offers a TMA for residents of the South Waterfront Community. This organization aims to reduce VMT per capita by 2030 by 30%. The organization offers a variety of initiatives including bicycle repair workshops, a monthly walking series, and newsletters.

Goals:

For 2030:

- Reduce per capita VMT by 2030 by 30%, consistent with the Climate Action Plan.
- Projected reduction would include VMTs from 5.41% per year to 3.9%, saving nearly 25 million vehicle miles traveled by 2030.
- VMT for employees would reduce from 16.8 miles per day to 11.76 and for residents from 14.4 miles per day to 10.08 miles by 2030.
- Reduce parking ratios per employee to 2.0 per 1,000 square feet of land use (current at 2.5 per 1,000 square feet)
- Attain 40% non-drive alone mode split goal for district for employees, include at least:
    - 20% transit mode share
    - 10% bike/walk mode share

Outcomes:

- 10.5% (231) response rate for a community survey
- 108,746 difference in cumulative miles travelled by surveyed residents, when compared to their last location
- 24% of residents reduced car ownership
- Portland Streetcar retail outlet for tickets and passes
- Established Monthly Walking Series and Annual 'Bike n' Brew' (Bicycle Repair)
- Transportation Lecture Series
- Monthly/Weekly Transportation Tips – Electronic & Traditional Newsletters
- Set up Real-time –Transit Displays and Portland Streetcar retail outlet for tickets and passes
- Transportation Lecture Series
- Monthly/Weekly Transportation Tips – Electronic & Traditional Newsletters

Program Goals Met: Partially	Funding Level: High	Data Availability: Medium

Traveler Information Tools and Services

Bike There! map

The Bike There! map provides information and resources to support walking and biking trips in Portland and Vancouver. The regional bike map covers 1.1 million acres of the region and outlying areas, and includes inset maps to show urban centers in greater detail. The website includes additional safety and trip planning information, and an online interactive version of the map.

Goals:	**Outcomes:**
▪ Promote and support the use of biking for transportation purposes ▪ Introduce residents to places to bike in their communities ▪ Promote bicycle safety ▪ Reach low income and underserved communities	▪ Distributed 29,210 copies of the Bike There! map ▪ 19% awareness of Bike There! map ▪ 15% of individuals who were familiar with the map reported biking more places because of it ▪ Awareness predicted by bike access (22% aware) and higher household incomes (23-27% aware)

Program Goals Met: Partially	Funding Level: Medium	Data Availability: Medium

¡Vámonos!Spanish-language outreach

The ¡Vámonos!project was developed to increase awareness of family-friendly walk and bike options in the cities of Cornelius, Forest Grove and Hillsboro. The development of culturally-relevant English and Spanish bilingual maps is intended to educate residents on safe routes to local destinations such as schools, parks and grocery stores. These maps are distributed free of charge at locations throughout the neighborhoods and are complemented by Spanish and English web resources, and outreach at community events.

Goals:

- Create community ownership and engagement by developing an oversight committee of groups that reflect the values of the community.
- Engage the Latino community in development and outreach activities to promote health through walking and biking.
- Increase the awareness of great places to bike and walk for health, recreation and transportation in Cornelius, Forest Grove and Hillsboro through printed and web-based biking and walking materials in English and Spanish.
- Increase awareness of the benefits of walking and biking for transportation and health in Cornelius, Forest Grove and Hillsboro, primarily among Latino families, through community.

Outcomes:

- Outreach event series resulted in 3,300 face-to-face conversations and distribution of 7,147 information pieces about walking and biking
- Targeted media campaign, including Spanish radio ads were aired during the summer of 2011 reaching 116,169 households
- Distribution of 73,000 ¡Vámonos! maps, 2,000 promotional packs and interactions with 4,300 residents

Program Goals Met: Yes	Funding Level: Very High	Data Availability: Medium

Walk There! Guidebook

The Walk There! guidebook provides information and resources to support walking in Portland and Vancouver. The walking guidebook provides directions for 50 transit-accessible treks within the region and is supplemented with a free iPhone app which provides directions for 10 walks. The website also includes other walking resources and safety information.

The program does not state quantitative goals, which makes it difficult to measure the effectiveness of efforts.

Goals:	Outcomes:
▪ Promote and support the use of walking for transportation purposes ▪ Introduce residents to places to walk and in their communities ▪ Promote pedestrian safety ▪ Reach low income and underserved communities	▪ Distributed 21,434 copies of the Walk There! guidebook ▪ 20% awareness of Walk There!, a 10% increase over 2010 ▪ Of those familiar, 68% aware of guidebook and 23% aware of map ▪ 32% of respondents reported walking to more places or discovering new routes

Program Goals Met: Yes	Funding Level: Medium	Data Availability: Medium

RTO Grant Program

BTA Bike Commute Challenge

BTA runs an annual Bike Commute Challenge which encourages Portland Metro area residents to bike to work.

Though falling slightly short of engagement targets, over two years the challenge engaged over 13,000 unique individuals including 4,000 new bike commuters. They also delivered 150 Bike Commute Workshops and engaged underserved communities through workshop outreach with community partners, schools and light industrial workplaces.

Goals:	Outcomes:
▪ Increase number of businesses to 1,400 ▪ Increase number of individuals to 13,000 ▪ Provide 150 on-site Bike Commute Workshops over 2 years with 75% in target areas ▪ Teach 8 commute workshops over two years in underserved communities ▪ Increase vehicle miles replaced by 5% to 1,565,745 miles over two years	▪ Participating workplaces increased from just under 1,400 in 2011 to over 1,400 in 2012 ▪ Over 13,000 unique participants ▪ Thousands of individuals reached at more than 150 workshops, clinics, and workplace fairs ▪ Successfully expanded workshops beyond white-collar workplaces

Program Goals Met: Yes	Funding Level: Low	Data Availability: High

Community Cycling Center Communities in Motion

The Communities in Motion Project developed a partnership between two affordable housing complexes, Hacienda and New Columbia, and the Community Cycling Center to evaluate and address the barriers to bicycling as a transportation mode in these communities.

Goals:	Outcomes:
▪ Implement best practices through "train the trainer" programs to provide opportunities for increased involvement and employment ▪ Engage 300 youth and families and foster 8-16 leaders over two years ▪ Provide skills, knowledge, confidence and equipment for people to choose bicycling as a travel option ▪ Conduct outreach to promote bicycle programming. ▪ Provide ongoing training and support to community leaders	▪ Trained 22 community leaders to lead rides and teach basic bike repair workshops ▪ Hundreds of participants at the various rides, workshops, and other community events ▪ Workshops delivered on bike safety and maintenance ▪ Extensive outreach efforts including newsletters, tabling, neighborhood meetings, mixers, design charettes, and other events

Program Goals Met: Yes	Funding Level: Low	Data Availability: Medium

City of Forest Grove Bicycle Parking Shelters Project

The City of Forest Grove aimed to provide new bus parking structures in order to enable cycling within the city. Specific locations were selected based on their foot traffic. These shelters draw 'eyes on the bike' and also provide a functional means for travelers to secure their bikes.

Goals:	Outcomes:
▪ The project will install three shelters that will serve: ▪ Pacific University, which has 3213 students. ▪ Forest Grove Town Center, which has 200 businesses and 2,620 persons living within	▪ Three bicycle parking shelters were installed

Program Goals Met: Yes	Funding Level: Low	Data Availability: Low

Lloyd Links

Lloyd Links is an individualized marketing and outreach program run by the Lloyd TMA which targets changes in commuter behavior through one-on-one assistance, education, promotion, incentives and routine follow-up.

The program engaged with employees and worksites through direct contact, newsletters, at the Commuter Connections store and at TMA events. While the TMA has had success with engagement, it is difficult to separate the results of TMA-related efforts from those specifically related to Lloyd Links. 96 personalized trip plans were completed over the evaluation period.

Goals:	**Outcomes:**
▪ Reduce drive alone trips ▪ Reduce parking and traffic congestion in the Lloyd District and its arterial areas. ▪ Increase awareness and encourage use of multiple alternative modes of travel (e.g., bike in spring/bus in winter) ▪ Educate individual employees on the quantified impact of personal mode choices (e.g., personal financial and carbon analyses) ▪ Increase walking, biking and transit trips of employees who live within 5 miles of the Lloyd District ▪ Increase mode share within specific businesses to meet district goals (i.e., target employees of underperforming businesses as contrasted to the district goals for access by specific mode). ▪ Retain current users of non-drive alone modes	▪ 286,665 VMR tracked through the Commuter Rewards Program ▪ 20 newsletters distributed to over 5,500 employees; 25 events held annually

Program Goals Met: Partially	Funding Level: Low	Data Availability: High

Portland Sunday Parkways

Sunday Parkways events promote active transportation by opening up the city's streets to walking and biking, and connecting neighborhoods and people.

Participation was slightly lower in 2012 (103,350 participants) than 2011 (107,200 participants) due to inclement weather. However, other goals related to community association and resident engagement, media and physical activity/fitness vendors were achieved.

Goals:	**Outcomes:**
▪ Increase the health and the physical activity of all Portland residents ▪ Reduce dependence on the car for all transportation trips ▪ Prioritize participation and outreach to low-income and communities of color who are at high risk for diseases related to lack of physical activity ▪ Increase awareness of biking and walking as modes of travel ▪ Increase environmental and climate change awareness ▪ Increase neighborhood mobility and livability ▪ Increase economic opportunities for local businesses	▪ Well over goal of 100,000 participants total at events ▪ Outreach and extended parks to minority communities; significant increase in participants of low-income or minority background ▪ Extensive outreach and promotion of event; reached every Portland resident at their home ▪ 1,000 posters posted and 54,000 flyers distributed ▪ Signage encouraging healthy eating was set up along parkway corridors

Program Goals Met: Partially	Funding Level: High	Data Availability: Medium

SMART Pedestrian/Bicycle Coordinator

The coordinator worked to implement SMART outreach programs and provided support to the City of Wilsonville's community development department with activities related to active transportation.

Key coordinator activities included employer outreach, creating map outreach tools, pursuing walk-friendly community recognition and Safe Routes to School funding, and coordinating a Bicycle and Pedestrian Task Force as well as Bike Smart group bike rides.

Goals:	Outcomes:
▪ Hire a Bicycle and Pedestrian Coordinator ▪ Create and produce neighborhood specific walking and biking maps ▪ Coordinate community-based bike/pedestrian advisory committee ▪ Organize community walks and bicycle rides ▪ Increase trips by walking and biking ▪ Increase neighborhood mobility and livability ▪ Educate community members and City staff on how to be more bike and pedestrian friendly ▪ Create opportunities for area residents and employees to walk, bike, and take transit in the area ▪ Promote healthy, active lifestyle choices for transportation	▪ Created Wilsonville Bike and Walk Map and distributed over 15,000 copies ▪ Formed the "Bicycle and Pedestrian Task Force" ▪ Direct outreach to employers and residents ▪ Provided input for prioritizing infrastructure projects ▪ Increased participation in transportation programs and activities ▪ Achieved recognition as a Walk Friendly Community (WFC)

Program Goals Met: Yes	Funding Level: Medium	Data Availability: Low

Wilsonville Sunday Streets		
The Sunday Streets program is modelled after other successful open streets events and focuses on connecting neighborhoods and people.		
Goals: ▪ Reduce auto trips and improve air quality ▪ Reduce vehicle miles driven by area residents ▪ Increase the health and activity of residents ▪ Increase awareness of travel options in the area ▪ Increase neighborhood mobility and livability ▪ Use transportation incentives and programs to support local businesses and area economic development ▪ Create opportunities for area residents and employees to walk, bike and take transit in the area ▪ Promote healthy, active lifestyle choices for transportation ▪ Create community within neighborhoods ▪ Provide residents an opportunity to discover and appreciate neighborhood parks	**Outcomes:** ▪ Newsletters sent to every address in Wilsonville, informational flyers posted, social media advertisements, 8 presentations to community groups ▪ 100+ volunteers ▪ Achieved participation target of 3,000	
Program Goals Met: Yes	Funding Level: Medium	Data Availability: High

steer davies gleave

C1 EMPLOYER PROGRAM ELEMENTS ANALYSIS

Employer Analysis

Analysis by employment site by program element

C1.1 The first component of this analysis replicated the techniques and methodology used in previous evaluation with the 2011 to 2013 data. This analysis consists of calculating the total VMR across all sites and then calculating the VMR per survey factor. Each survey has a number of questions related to different elements of travel behavior, travel programs, and the employer site. These questions are framed as survey factors in this evaluation to determine how different factors, many of which are tied to travel options, support travel behavior change on a site by site basis.

C1.2 VMR is calculated by applying the previous period's auto trips per trip rate to the number of commuter trips reported for the current period. This gives a forecasted number of auto trips. Next, the current period's auto trips are subtracted from the forecasted result to show a difference in predicted and actual trips by auto. VMR is calculated through the application of average trip rates. The difference of these two values represents the VMR.

C1.3 Example Calculation: Transit within ¼ Mile

- 2011 Auto trip rate at sites within ¼ mile of transit: 0.55 auto trips/trip
- 2011 Total trips at sites within ¼ mile of transit: 226,544 trips
- 2011 Auto trips at sites within ¼ mile of transit: 171,113 trips
- 2013 Total trips at sites within ¼ mile of transit: 208,188 trips
- 2013 Auto trips at sites within ¼ mile of transit: 115,367 trips
- 2013 Predicted auto trips:

  (2011 Auto trip rate x 2013 total trips) – 2013 Auto trips =
  (0.55 x 208,188) – 115,367 = -434 trips

- Auto trips from all sites (both increases and decreases in VMT) were added up.
- Assuming an average trip length of 8.6 miles and 261 work days per year the VMR value is -389,860 miles. Meaning, overall auto travel increased at these sites during the 2011-2013 period compared to what the VMR would have been had the 2011 trip continued through to 2013.
- While there are fewer auto trips at these sites in 2013, there are also fewer trips overall which means that while VMT has deceased, it is below what would have been expected based on reported program efficacy in 2011.

C1.4 Table C.1 shows the results for the previous and current periods of analysis. Due to changes in which employers are engaged in the survey year to year, the two years compared do not have an identical set of employers.

APPENDIX TABLE C.1 VMR TRENDS BY SURVEY ELEMENT

Survey Element	Comparison of VMR between 2009-2011 and 2011-2013 Evaluation Periods
Transit within a ¼ mile of site	Decreased effectiveness compared to past evaluation period
Nearby transit with headways below 30 minutes	Decreased effectiveness compared to past evaluation period
Free parking is available near the site	Decreased effectiveness compared to past evaluation period
Parking leased or reserved for employees	Increased effectiveness compared to past evaluation period
Carpool or vanpool designated parking	Decreased effectiveness compared to past evaluation period
Charging a fee for parking	Increased effectiveness compared to past evaluation period
Program to introduce TriMet ECO Outreach	Decreased effectiveness compared to past evaluation period
TriMet Employee Kit on commuter options and programs	Increased effectiveness compared to past evaluation period
Board to inform commuters, establish vanpools, etc.	Great increase in effectiveness compared to past reporting period
Transport coordinator who assists with trip planning	Great increase in effectiveness compared to past reporting period
Subscription to transportation newsletter	Great increase in effectiveness compared to past reporting period
Secure Bike Locker on site	Minor changes between evaluation periods
Showers provided on site	Minor changes between evaluation periods
Bicycling incentives offered	Increased VMT, overall program achieves VMR maintenance
Company subsidy for portion of transit passes or tickets	Minor changes between evaluation periods
Employer allows use of pre-tax payroll deductions for transit passes	Increased effectiveness compared to past evaluation period
Transit incentives provided by non-TriMet programs	Minor changes between evaluation periods
Incentives for carpooling	Minor changes between evaluation periods

Survey Element	Comparison of VMR between 2009-2011 and 2011-2013 Evaluation Periods
Assistance matching carpool or vanpool participants	Decreased effectiveness compared to past evaluation period
Van is provided for Vanpool	Decreased effectiveness compared to past evaluation period
Guaranteed free taxi rides for emergencies, transit service disruptions, etc.	Decreased effectiveness compared to past evaluation period
Flexible schedule to accommodate alternative commuting methods	Decreased effectiveness compared to past evaluation period
Compressed work week to reduce number of commutes	Decreased effectiveness compared to past evaluation period
Working from home to reduce the number of commutes	Minor changes between evaluation periods

C1.5 As noted in the table, there is a wide range of results for VMR between factors within both periods of analysis. Eight factors demonstrate a change from a reduction in vehicles miles to an observed increase. While these results offer a unique perspective on changes in travel behavior, their limitations should be noted. These limitations include are based on high levels of aggregation.

C1.6 Because this analysis groups sites together by common elements (i.e. all sites that have a particular program or survey element), sites with high VMR performance and low VMR performance are grouped together. This analysis is high level and may attribute low VMR levels to a certain program or survey element, despite the diverse array of programs/elements that are operational at all sites.

C1.7 For example, a site with vanpool and TMA membership is grouped with sites that may only have TMA membership when determining the total TMA contribution to VMR. Sites with both features could have a higher VMR than sites with only one the vanpool or TMA membership. If a site's vanpool stopped functioning, the site may see an increase in VMT, which would be reflected when summing all TMAs, despite the increase being unrelated to the TMA. This may reflect a lower level of effectiveness for the TMA than is appropriate, meaning it is difficult to discern the contribution of a TMA or project to VMR using high level analysis.

C1.8 A second limitation is that geographic effects are difficult to discern. For example, two transit pass sites may be added together – one may be in an auto oriented area and the other may be in a more transit friendly area. The impact of geography is not included in VMR totals.

C1.9 Despite these limitations, the VMR levels for each project do generally indicate how well that particular employer program element is performing. VMR trends have also been established based on sites belonging to TMAs. These are shown in Table C.2.

APPENDIX TABLE C.2 VMR FOR SITES SUPPORTED BY TMAS

TMA	Comparison of VMR between 2009-2011 and 2011-2013 Evaluation Periods
Lloyd	Increased effectiveness compared to past evaluation period
Gresham	Increased effectiveness compared to past evaluation period
Swan Island	Decreased effectiveness compared to past evaluation period
WTA	Decreased effectiveness compared to past evaluation period
Wilsonville SMART	Increased effectiveness compared to past evaluation period

C1.10 Commuters of RTO program sites that submitted basic ECO survey data reduced auto usage by **26,587,886 vehicle-miles** per year between the 2011 and 2013 evaluation period. Within the program evaluation, this VMR value is attributed to the TriMet Employer program. This value contains two components: a maintenance component and a new VMR component. Maintenance reflects the quantity of VMR from the past period that was kept in this period. From 2012-2013 all VMR were kept and an additional VMR (new VMR) was attained.

C1.11 In this reporting period, 20,571,248 VMR from previous periods were maintained and an additional 6,016,638 VMR was achieved.

C1.12 Table C.3 displays VMT and VMR data for the 2011-2013 period:

APPENDIX TABLE C.3 VEHICLE MILES TRAVELLED AT TRIMET SITES

Total VMT 2011	Predicted VMT 2013	Total VMT 2013	Difference 2011-2013	New VMR	Maintained VMR
328,232,917	307,661,670	301,645,032	26,587,886	6,016,638	20,571,248

C1.13 The data does suggest that the overall VMR of past periods has been maintained – meaning investments in the RTO Program have enabled sustained behavior change. The 6,016,638 miles reduced in the 2013 period is on top of past reductions. A number of factors outside of the control of the RTO program can contribute to varying rates of travel. Their analysis is outside of the scope of this study.

C1.14 These findings suggest that there is in effect a slowing of the rate of transfer from drive alone to the use of travel options. This may indicate that the current techniques have reached their target market and other techniques may be required for the rest of the market.

C1.15 For example, if certain sites are maintaining VMR with current programs that would suggest that core audiences for current RTO programs have been triggered and new

tools are required to engage audiences that are not responsive to existing methods. New incentives, engagement tools, or policies may be required to reach out to audiences that are not engaged by current practices.

C1.16 Additionally, this slowing rate of mode shift could also indicate that, while the techniques are working, further improvements are needed to continue to drop the percentage of drive alone trips and ultimately VMT. These improvements could come from increased investment in programs or focusing existing programs on higher potential markets.

ECO Data and Linear Regression

C1.17 A limitation of using the ECO data directly is that it does not comment on which programs support VMR. Sites may be influenced my multiple programs – all of which contribute to reductions.

C1.18 A linear regression analysis of all ECO sites was conducted to develop a further understanding of how individual programs influence travel behavior. This analysis was used to understand what portion of VMR at each site may be mathematically portioned to each program. More information on the regression analysis is contained in Appendix D.

C1.19 ECO survey data is available for 1,460 unique sites, which were surveyed between 1995 and 2013. Because the data spans both time and space, the regression can control for either differences between sites or differences between survey years.

C1.20 Differences between sites include average income of employees and accessibility. Differences between years include economic conditions and the price of gasoline. Controlling for the differences between sites produced a model that fit the observed data with an R-squared value of 0.873. An ideal model has an R-squared value of 1 – typically a score above 0.6 would suggest a strong fit. As the R-squared value is 0.873 this model is considered to be strongly fitted to existing data.

C1.21 Table C.4 shows the results of the regression model. The regression findings are not used in the MAE as they only offer a perspective on factors considered in the survey. VMR has been translated into a 5 point scale: 1(low VMR or increase in miles travelled) and 5(high VMR). In essence, the regression model does not offer a complete picture of the programs at a local level where various geographic factors may impact their performance. However, it does offer an indication of impact at a regional level, which is useful for interpreting regional successes and variation among the different funded programs.

C1.22 Additionally, these results can be used to inform how to set up transport programs at new sites or inform future specific studies into the efficacies of individual programs or survey factors. The results of the fixed-effects regression must be understood within a broader context and highlight areas for future research and analysis beyond this evaluation.

C1.23 Similar to above, it should also be noted that these VMR values should be used for developing an informed understanding of the program. However, as they do not draw

from every site in every year and there may be variability between surveys techniques used at each site, the values are not seen as a complete measure of VMR for all employer sites in the region.

APPENDIX TABLE C.4 REGRESSION ANALYSIS VMR FOR SURVEY FACTORS

TriMet Survey Data Factor	VMR due to Factor	Potential Explanation
Nearby transit with headways below 30 minutes	4	Transit access alone can contribute to VMR
Free parking is available near the site	1	Free parking enables higher automobile use
Parking leased or reserved for employees	2	Potentially, only a set number of spots are reserved so there is limited parking at these sites.
Carpool or vanpool designated parking	3	Specified parking for travel options enables their uptake.
Fees for Parking	1	Charging for parking may cause users to drive more to recoup the cost of a parking pass. Sites that use daily rates vs. annual should be separated in future surveys.
TriMet Employee Kits provided on site	2	TriMet Kits enable engagement on travel options and alternatives.
Board to inform commuters, establish vanpools, etc.	1	Further analysis of committees is requires – for example, this number could indicate that committees are formed at high auto use sites and may take longer to have impact.
Transport coordinator who assists with trip planning	5	Trip planning support can enable employees to find the best options for their trip.
Secure Bike Locker on site	1	This outcome needs further research - future surveys should measure the number of bike lockers. Additionally this number could be weighed against a site's bike mode shift. Bike lockers may increase cycling at heavy auto use sites, but not induce other shifts.

TriMet Survey Data Factor	VMR due to Factor	Potential Explanation
Transit tickets and passes available at site	1	This result suggests that the transit ticket program does not facilitate a broader shift to transit across all sites. Individual sites may show stronger results that could be used to understand the benefits of this factor.
Company subsidy for portion of transit passes or tickets	3	This result indicates that subsidies reduce barriers to use of transit at most sites.
Company allows use of pre-tax payroll deductions for transit passes	4	This result indicates that tax-credits reduce barriers to use of transit at most sites.
Transit incentives provided by non-TriMet programs	1	This result reflects that additional incentives may not be reaching their target audience.
Incentives for carpool	3	This result indicates that carpool incentives (discounts, reimbursements, free lunches, etc…) increase carpool uptake and VMR.
Assistance matching carpool or vanpool participants	1	This result indicates that carpooling assistance has not produced a general VMR in the region. However, there may be some sites where matching has enabled carpooling greatly and further analysis is required.
Van is provided for Vanpool	1	Data is required about the quality and quantity of vans used at sites. A decrease in site vanpools may reflect the decrease in VMR.
Flexible schedule to accommodate alternative commuting methods	3	Flex hours are generally shown to reduce VMR; this result is in line with expectations.
Previous participation in the ECO survey	2	Involvement with previous surveys indicates a history with the program. This result suggests that sites that have stronger ties to the employer engagement program attain stronger results.

steer davies gleave

LINEAR REGRESSION ANALYSIS

D1.1 A linear regression was conducted to estimate the VMR impacts of individual programs. As the central goal of the RTO program is to reduce auto use, the dependent variable of the regression is a measure of auto use.

D1.2 Mode split is not a convenient dependent variable since those who drive alone must be distinguished from those who carpool. Furthermore, VMT is a misleading dependent variable because the sample size for the ECO survey varied between years.

D1.3 "Auto trips per trip" (ATpT) was chosen as the dependent variable, since it can easily be converted to VMR, but is also comparable between years.

D1.4 ATpT is calculated via the following formula:

$$ATpT = \frac{DriveAlone + \frac{Carpool2}{2} + \frac{Carpool3}{3} + \frac{Carpool4}{4} + \frac{Carpool5}{5} + \frac{Carpool6}{6}}{Commutes}$$

Where:

$DriveAlone = number\ of\ roundtrip\ commutes\ per\ week\ driving\ alone$

$Carpoolx = number\ of\ roundtrip\ commutes\ per\ week\ carpooling\ with\ x\ passengers$

$Commutes = number\ of\ round-trip\ commutes\ per\ week$

D1.5 VMR is calculated from ATpT using the following formula:

$$VMR_{y1-y2} = (ATpT_{y1} * Commutes_{y2} - ATpT_{y2} * Commutes_{y2}) * \frac{Workdays}{5} * Dist * 2$$

Where:

$VMR_{y1-y2} = veh-mi\ traveled\ reduced\ between\ years\ y1\ and\ y2$

$ATpT_{yx} = Auto\ trips\ per\ trip\ in\ year\ yx$

$Commutes_{y2} = number\ of\ round-trip\ commutes\ per\ week\ in\ year\ y2$

$Workdays = workdays\ in\ y2\ (261\ in\ 2013)$

$Dist = average\ one-way\ auto\ commute\ distance\ (8.6\ mi)$

D1.6 After running the initial model, it was determined that a selection of programs did not make a statistically significant impact on VMR. A second regression excluding the insignificant programs was conducted to re-estimate coefficients.

D1.7 Table C.1 shows the coefficients for the significant variables, as well as the VMR that can attributed to the variable between 2011 and 2013. Additionally, a variable representing the number of years the site has been enrolled in the ECO program was included

APPENDIX TABLE D.1 PROFRAM COEFFICIENTS AND VMR

Program	Description	Coefficient
BusMaxAvailThirty	Nearby transit with headways below 30 minutes	-0.0191
FreeParkAvailable	Free parking available near site	0.0295
CompanyParking	Reserved parking for employees	-0.0448
CarpoolParkingSpaces	Reserved parking for carpoolers	-0.0267
ChargeToPark	Charging a fee for parking	0.1020
TriMetEmpKit	TriMet Employee Kit on commuter options and programs	-0.0235
TransPlanningBoard	Committee to inform commuters, establish vanpools, etc	0.0528
CoordinatorPlansTrips	Personalized commute planner on site	-0.0516
BikeLockers	Bike lockers provided on site	0.0245
TMsold	Transit tickets and passes sold at site	0.0488
AnnualPasses	Annual transit passes subsidized	-0.0544
PreTaxDeduction	Pre-tax payroll deduction for transit expenses	-0.0497
nonTriMetTransitIncentive	Transit incentives provided by non-TriMet programs	0.0393
CarpoolInc	Incentives to carpool	-0.0597
CarpoolHelp	Trip matching to facilitate carpooling	0.0336
Vanpool	Company operated vans for employees	0.0780
FlexTime	Flexible schedule to accommodate alternative commuting methods	-0.0184
YearsOfECO	Years of participation in ECO survey	-0.0075

steer davies gleave

RTO Program Evaluation

Draft Multiple Account Evaluation Framework

Report

February 2014

Prepared for:
Caleb Winter
Metro
600 NE Grand Ave.
Portland, OR 97232-2736
503-797-1758
www.oregonmetro.gov

Prepared by:
Steer Davies Gleave
1900 Wazee Street, Suite 250
Denver, Colorado 80202
USA

+1 (303) 416 7226
www.steerdaviesgleave.com

CONTENTS

FIGURES

TABLES

APPENDICES

1 Report Overview

Introduction

1.1 Steer Davies Gleave (SDG) was commissioned to evaluate the Metro Regional Travel Options (RTO) Program from July 2011 to June 2013. As part of this evaluation process, a new evaluation framework is to be developed consistent with regional policy goals. The framework will then be applied to the programs implemented with RTO funding and support.

1.2 This report provides an overview of the draft Multiple Account Evaluation (MAE)developed to serve as this project's evaluation framework as well as a tool for future planning and evaluations. The Multiple Account Evaluation framework developed for the RTO Program is composed of five accounts:

- Environment
- Equity
- Economy
- Effectiveness
- Engagement

1.3 The following report sections discuss development of this framework as well as relevant policies and strategies that inform it. The 20 indicators developed for this evaluation framework are also discussed.

Report Structure

1.4 The report is broken down into three sections.

- Section 2 of this report provides a brief summary of Multiple Account Evaluation and the development process.
- Section 3 covers the process used to develop the RTO Multiple Account Evaluation. This includes a review of key policy and strategy documents, as well as a summary of past evaluations. Partner engagement results are also discussed.
- Section 4 presents the five accounts and indicators used within each account that were developed for the RTO Program.

2 Multiple Account Evaluation

Overview

2.1 The aim of this project is to evaluate the progress of the RTO Program from July 2011 – June 2013 with respect to policy goals and objectives. To do so, SDG drafted a new evaluation framework that is useful for program review and long term planning.

2.2 The RTO Program funds a diverse set of projects that support and provide resources that enable transportation behavior change. The goals and objectives of the RTO Program are aligned with and shaped by other regional goals and priorities. As a result, the RTO Program aims to create multiple outcomes and benefits for the Portland Metro region.

2.3 A Multiple Account Evaluation (MAE) will enable the program and its components to be assessed in a holistic, relevant, and consistent way.

A Primer on Multiple Account Evaluations

2.4 Whereas traditional analysis tools focus on one or a few factors that measure a project's impacts and successes, Multiple Account Evaluation enables the review and assessment of projects and programs based on a variety of factors. This evaluation process is considered to be more holistic and representative of the wider spectrum of benefits and impacts than traditional approaches such as benefit-cost analysis.

2.5 In general, MAE frameworks can be used to:

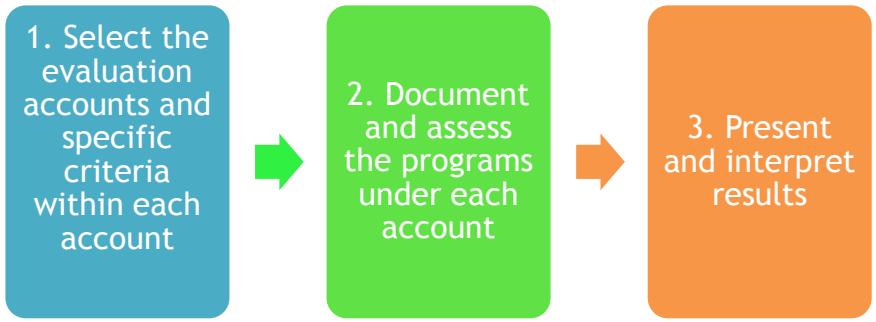
- Consider the broader impacts of projects beyond the financial elements and also include qualitative benefits and impacts;
- Demonstrate the trade-off among different objectives; and
- Assess and evaluate different projects against program policy and objectives allowing an examination of the direct and broader policy impacts.

2.6 Multiple Account Evaluation divides the benefits and impacts of a project or program into a set of 'accounts' – an account contains a number of sub criteria or indicators that are based on policy, strategic plans, and program goals.

Multiple Account Evaluation Development Process

2.7 The MAE process is composed of three steps:

FIGURE 2.1 MULTIPLE ACCOUNT EVALUATION DEVELOPMENT PROCESS



2.8 This report covers step 1, while steps 2 and 3 will be discussed in future reports.

2.9 Account and indicator selection is shaped by both policy and partner feedback. Accounts are typically shaped by policy goals and objectives and are informed by partner feedback. Rather than represent each policy goal individually, goals may be bundled together to form an account. Accounts are developed in order to represent the breadth of policy goals and objectives that are related to the project or program being analyzed.

2.10 The indicators or sub criteria represent specific elements of the goals represented in the account. Both qualitative and quantitative data analysis techniques can be used to assess indicators. Indicators should be measurable based on available program data, however it is common that they may require additional analysis or data expansion. In practice some indicators can be determined by expanding available data – for example, using emissions factors to determine the environmental benefits of vehicle travel reductions. In other cases large data sets may be used, such as censuses or surveys. Additionally, analytical models are also used to model benefits in situations where no measurable program data is readily available.

2.11 For steps 2 and 3, which will be addressed in future reports, the MAE framework will be applied to individual projects as well as the RTO Program overall. Individual programs will be evaluated to understand their progress towards goals and strategic outcomes.

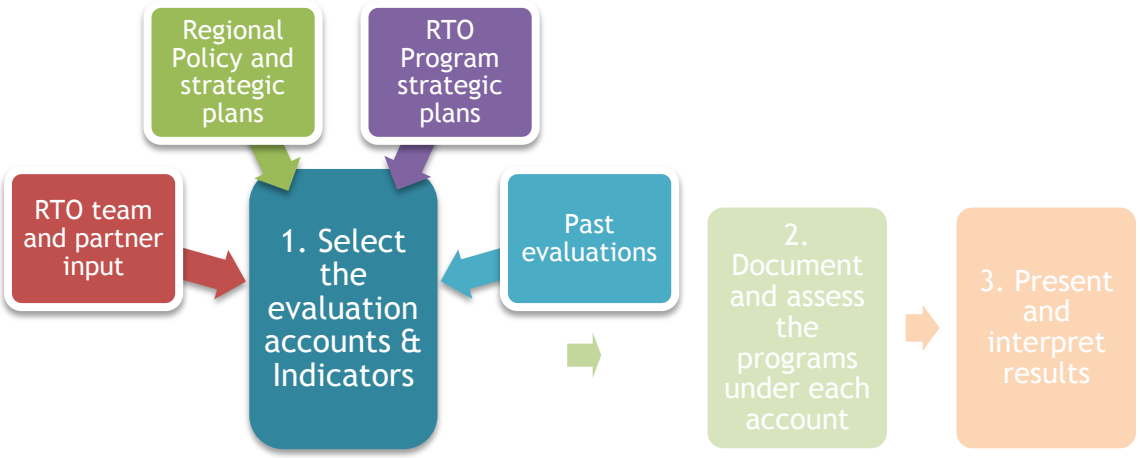
2.12 The overall evaluation will enable project-to-project comparisons – such as comparing the performance of different TMAs. The framework also will be used to review of the RTO Program holistically. Comparison between evaluations will be possible as the MAE framework will be historically consistent with past evaluations.

3 Account and Criteria Development

Introduction

3.1 Four primary sources of input were selected to inform the development of the MAE framework. These sources ensure the accounts and indicators it uses are measurable and useful for evaluating the RTO Program. These are illustrated in Figure 3.1.

FIGURE 3.1 MAE ACCOUNT INPUTS



3.2 Relevant regional plans and strategies that connect the RTO Program to regional goals were reviewed to aid in the development of MAE accounts and criteria that are relevant to programs and regional policy.

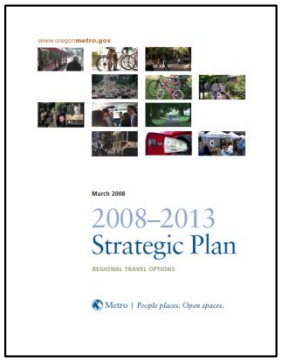
3.3 Previous evaluations were also reviewed to ensure this framework will allow connections to all RTO biennial evaluations.

3.4 Additional partner input from workshops and communications has also been used to develop the accounts outlined in this chapter.

Regional Travel Options Strategic Plan Review

3.5 Two Regional Travel Options strategic plans were included in the development of this MAE framework. First is the 2008-2013 Strategic Plan, which represents the objectives and goals that past programs contributed to. Second is the 2012-2017 Strategic Plan, which represents the future direction of the RTO Program along with refined goals and objectives.

2008-2013 RTO Strategic Plan



3.6 All programs and projects that fall under the RTO Program operated based on the 2008-2013 RTO Strategic Plan. Therefore, the 2008-2013 plan is an essential document for informing the development of the MAE framework.

3.7 The 2008-2013 plan is based on implementing strategies to increase the use of travel options while reducing pollution and improving mobility. The plan has six goals that include objectives and strategies. These goals are:

- **Goal 1:** Continue a regional collaborative marketing campaign to increase awareness and use of travel options and reduce drive-alone car trips.
- **Goal 2:** Support employers and commuters to increase the use of travel options for commute trips.
- **Goal 3:** Provide information and services to support increased use of travel options for all trips.
- **Goal 4**: Promote and provide services that support increased use of travel options in local downtowns and centers.
- **Goal 5:** Report progress to aid decision-making and encourage innovation.
- **Goal 6**: Follow a collaborative decision-making structure that provides program oversight and advances the goals and objectives of the Regional Transportation Plan (RTP).

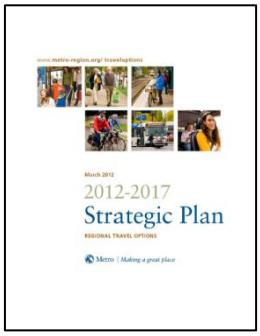
3.8 The goals and their respective objectives and strategies were used to inform both the accounts and indicators used in this MAE framework.

3.9 The RTO Strategic Plan also includes key themes from the 2035 RTP policy:

- Support System Management Policies
- Leverage Capital Investments
- Support Development of Centers And Corridors
- Reduces Air Pollution and Greenhouse Gas Emissions

3.10 The RTO Strategic Plans were created with reference to the 2035 RTP; therefore, these regional policies are included in the MAE framework.

2012-2017 RTO Strategic Plan



3.11 The 2012-2017 Strategic Plan represents continued development and refinement RTO strategy and policy. While the plan is an evolution of the 2008-2013 plan, there are new policies and strategies included. It is not expected that all facets of the program were to operate under the new Strategic Plan immediately. For example, grant agreements formed under the prior Strategic Plan were not adjusted mid-course. The 2012-2017 plan outlines 2012-2013 as a phase where Metro RTO and partners orient their approaches to the new Strategic Plan.

3.12 The goals of the 2012-2017 RTO Strategic Plan are:

- **Goal 1:** Align the RTO program with regional economic development, growth management, and liveability objectives
- **Goal 2**: Be a leader in developing local, regional, state, and national policies that promote walking, biking, transit, and high-occupancy vehicle travel
- **Goal 3:** Support local partners to engage with employers and commuters to increase the use of travel options for commute trips
- **Goal 4:** Develop tools to support the use of travel options to reduce drive-alone trips

3.13 The plan also demonstrates a 'triple bottom line' view on program outcomes composed of:

- Economic Benefits
- Social (Equity and Public Health) Benefits
- Environmental Benefits

3.14 The plan attaches draft indicators to these themes and also expresses ways in which they fit into broader regional policy, particularly the 2035 RTP. All three themes were adapted into MAE accounts.

3.15 The goals expressed in the 2012-2017 Strategic Plan are well aligned with the 2008-2013 Strategic Plan goals. This is beneficial to developing an MAE framework that integrates the past goals and objectives with the present strategic plans' goals and objectives. The framework aims to be used for current programs operating under 2008-2013 plan and also in future years when programs operate under the 2012-2017 plan. With this alignment, the framework can adequately measure 2008-2013 programs while also being useful to subsequent evaluations.

Regional Policy and Plan Review

3.16 Three regional plans were reviewed in the development of the MAE framework. The plans include the Regional Transportation Plan (RTP), the Climate Smart Communities Strategy Toolbox, and the Equity Strategy. The 2008-2013 and 2012-2017 Strategic Plans stress the RTO Program's intention for increased alignment with regional policy

through explicit goals and objectives. This review follows up on these goals and ensures that regional policy is included in the MAE.

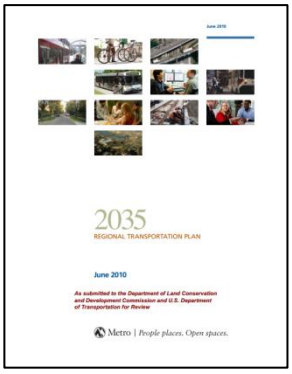
3.17 In addition to these documents, the Region's Six Desired Outcomes were also used to shape the MAE. These outcomes are:

- Vibrant Communities
- Economic Prosperity
- Safe and Reliable Transportation
- Leadership on Climate Change
- Clean air and Water
- Equity

3.18 These outcomes represent the high level goals of regional policy that leaders are working towards. They were integrated into the MAE framework to ensure it has a high level of alignment with regional policy.

Regional Transportation Plan

3.19 The RTP details the region's transportation priorities and goals through the year 2035, taking into account the unique challenges and circumstances in the Metro region. These goals established in the RTP informed the development of the MAE. The ten goals from the RTP considered in the development of the MAE are:



- Goal 1: Foster Vibrant Communities and Efficient Urban Form
- Goal 2: Sustain Economic Competitiveness and Prosperity
- Goal 3: Expand Transportation Choices
- Goal 4: Emphasize Effective and Efficient Management of the Transportation System
- Goal 5: Enhance Safety and Security
- Goal 6: Promote Environmental Stewardship
- Goal 7: Enhance Human Health
- Goal 8: Ensure Equity
- Goal 9: Ensure Fiscal Stewardship
- Goal 10: Deliver Accountability

3.20 Several major themes were identified from the RTP goals. These include Environment (goals 6, 7), Economics (goals 2, 9), Equity (goal 8), and Effectiveness (goals 3, 4, and 10). These four themes were incorporated into the MAE framework as separate accounts.

Climate Smart Communities Strategy Toolbox

3.21 The Climate Smart Communities (CSC) Strategy Toolbox was also evaluated as part of the policy and plan review. The CSC Toolbox identifies transportation and land use strategies to reduce greenhouse gas emissions from automobile use.

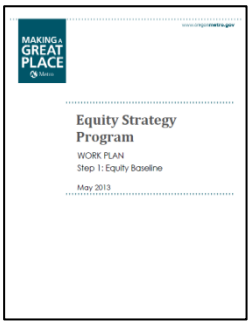
3.22 It also describes the targets for emissions reduction in the region as adopted by the Oregon legislature in 2009. Further, it connects additional environmental, economic, health, and public safety benefits to reducing greenhouse gases.

3.23 The plan also identifies 'co-benefits' – positive changes that occur due to implementing CSC strategies. The co-benefits beyond reducing GHG emissions are:

- Increased accessibility to jobs, goods, services
- Public safety
- Improved air quality
- Consumer savings from reduced transportation costs

3.24 Accounts and indicators relating to greenhouse gas reduction and the corresponding benefits were integrated into the MAE framework. Environment was selected as an account in the MAE with indicators from the CSC Toolbox including emissions reductions. The additional benefits from reducing greenhouse gases are also incorporated into the MAE framework, including increased accessibility to goods and services and increased effectiveness of transit due to improved ridership. These benefits are integrated into the Economy and Effectiveness accounts.

Equity Strategy



3.25 The Equity Strategy informs policy on issues of equity and was evaluated as part of the policy and plan review in order to ensure these elements are integrated into the MAE. The overarching goal of the Equity Strategy is to establish a framework to bring equity into Metro policy and decisions. The specific goals of the Equity Strategy are to:

- Establish an evidence-based decision making process that ensures meaningful engagement from communities most impacted by disproportionate burdens.
- Co-create internal and external capacity to understand Metro's role in advancing equity across the region's desired outcomes.
- Identify the institutional systems that stand in the way of equitable outcomes, as well as the institutional systems that provide opportunities to support equitable outcomes, including the tools needed to implement equitable practices throughout the agency.

- Define and implement a Metro-specific equity strategy that is actionable and measurable.

3.26 The MAE framework includes Equity as an account due to the emphasis on equity issues in both the RTP and the Equity Strategy. The Equity Strategy also emphasizes Engagement as a primary objective, which was also adopted as an account in the MAE framework.

Past Evaluation Review

3.27 Two past evaluations of RTO's program were reviewed as part of the development of the MAE. The first evaluation was carried out between January 2007 - December 2008 by Portland State University and the second was undertaken by Nelson\Nygaard between January 2009-June 2011 as part of the 2012-2017 Strategic Plan Update.

2007-2009 Evaluation

3.28 The report notes a reduction in drive alone mode share between 1996 and 2006. The examination aimed to analyze the separate but related steps of service provision, participation, satisfaction/quality, and action. Distinguishing between outputs and outcomes was a second priority.

3.29 The evaluation was based upon written documents (e.g., contracts and reports), partner interviews, and datasets provided by Metro. Detailed assumptions for attributing Vehicle Miles Reduced (VMR) to the RTO programs is explained in the text. The evaluation found that between 2006-2008, the drive alone, bicycling, and walkable mode shares all increased and carpool and vanpool mode shares remained static.

2009-2011 Evaluation

3.30 Nelson\Nygaard evaluated 33 programs at a high-level and three programs in depth. For each of the 33 programs, they evaluated whether it reached its goals as specified in the contract. This part of the evaluation was carried out through interviewing partners and reviewing annual reports and data provided by Metro.

3.31 The evaluation is comprehensive in the number of programs it covers and very consistent in its calculations. It is also fairly concise which makes it easy to understand.

Past Evaluation Indicators

3.32 Some of the key indicators employed in the past evaluations in one or more of the RTO projects include the following:

- Non-drive alone mode share
- Increased use of alternative travel options (bicycling, walking, carpooling, transit, telecommuting)
- VMR
- Awareness.

- Participation
- Satisfaction
- Cost per VMR

3.33 The indicators from the previous evaluations are incorporated in the development of the MAE. VMR, cost per VMR, and non-drive alone mode share serve as key indicators in the evaluation under the Effectiveness account. Program awareness is incorporated into the MAE framework as part of the Engagement account.

Partner Engagement

3.34 A partner workshop was held on November 12, 2013 that engaged RTO Program staff and partners on the MAE evaluation framework. This workshop also focused on discussing how the MAE framework would be used and how it could expand upon past evaluations. Three key themes that aid in the development of the MAE Framework were identified in the workshop. These themes are:

- **Planning:** the evaluation framework and outputs of the evaluation should aid in planning and inform decision making.
- **Learning:** the evaluation framework and outputs of the evaluation should enable the RTO Program staff and partners to better understand the successes and impacts of their programs.
- **Influencing:** the evaluation framework and outputs of the evaluation should measure and share relevant factors that can inform and influence decision makers and stakeholders.

3.35 A summary of these themes is included in Appendix A. These themes are not specific accounts or indicators, but inform the development of the MAE by framing who will use the framework and evaluation results, and what they will be used for.

4 Proposed Metro-MAE Framework

Accounts Overview

4.1 The plans and past evaluations contributed to the development of the following five accounts: Environment, Equity, Economics, Effectiveness, and Engagement.

4.2 These accounts package together various regional and program policies to ensure the RTO Program and its projects are evaluated not only based on RTO Program goals, but also to ensure that the program goal of alignment with regional goals is realized.

4.3 The accounts are summarized in Table 4.1

TABLE 4.1 SUMMARY OF ACCOUNTS

Account	Description of account applied to each RTO project
Environment	The project aids in enhancing and protecting the natural assets and environment of the region by reducing pollutants and consumption of energy and non-renewable resources.
Equity	The project promotes equity and health benefits by creating opportunities for greater accessibility and use of healthier travel options.
Economy	The project contributes to the region's economic vitality by promoting low cost travel options.
Effectiveness	The project is run in an effective and efficient manner and yields transportation system effectiveness improvements.
Engagement	The project engages citizens, employers, and other community members to use travel options more frequently.

4.4 The first three accounts (Environment, Equity, and Economy) are well aligned with assessing the outcomes of the program. The Effectiveness and Engagement accounts enable the inputs and outputs of the program to be evaluated based on their ability to enable the outcomes explored in the first three accounts.

4.5 These accounts were developed based on the review process outlined in Section 3. Table 4.2 shows which policy informed the development of each account.

TABLE 4.2 POLICIES AND REPORTS THAT INFORMED ACCOUNTS

Policy/Report	2008-2012 RTO Strategic Plan	2012-2017 RTO Strategic Plan	Regional Transportation Plan	Climate Smart Communities	Equity Strategy	2007-2008 RTO Evaluation	2009-2011 RTO Evaluation	Region's Six Desired Outcomes
Environment	✓	✓	✓	✓		✓	✓	✓
Economics	✓	✓	✓					✓
Equity	✓	✓	✓		✓			✓
Effectiveness	✓	✓	✓	✓		✓	✓	✓
Engagement	✓	✓			✓	✓	✓	✓

Account 1: Environment

4.6 The Environment account measures whether the program aids in enhancing and protecting the region's natural environment. As transportation systems affect air quality, water quality, energy consumption, and climate change, measureable impacts of transportation on the environment is of paramount concern. The indicators used for this account are shown in Table 4.3.

4.7 Goals and outcomes addressing the quality of the environment are prevalent throughout the Regional Transportation Plan, Climate Smart Communities Strategy Toolbox, and RTO plans. The link between the indicators used in this account and these goals is outlined in Table 4.4.

TABLE 4.3 ENVIRONMENTAL INDICATORS

Indicator	Units	Description
Emission reductions	Tons of VOC, PM, air toxics, NO	A measurement of the tons of different pollutants that cause local environmental issues (VOC, PM, NO, etc.) Developed based on emission rates and VMR.
Reduction in climate change emissions	Tons of CO2E	A measurement of the CO2E (equivalent) reductions facilitated by the project (contains CH4, CO, CO2, etc.) / Measurement of metric tons of CO2 emitted from light duty vehicles. Typically thought of as a result of vehicle technology, fuel characteristics, and VMT. Developed based on emission rates and VMR.
Annual gas savings	Gallons/year	A proxy for reduction in non-renewable resources used in the region's transportation system. Calculated based on VMR data.

TABLE 4.4 POLICY REFERENCES TO ENVIRONMENTAL INDICATORS

Indicator	2007-2008 RTO Evaluation	2009-2011 RTO Evaluation	RTO Plan 2008-2013	RTO Plan 2012-2017	Climate Smart Communities	Regional Transportation Plan	Region's Six Desired Outcomes
Emission reductions	o	o	✓	✓	o	✓	o
Reduction in climate change emissions	o	o	✓	✓	✓	✓	o
Annual gas savings	-	-	o	✓	-	-	o

✓:contained in document o:informed by document -:not included in document

Account 2: Equity

4.8 The Equity account evaluates the RTO program's provision of affordable, healthy, and equitable transportation services to residents across the region. Specific measures of equity include reducing transportation costs and ensuring that Environmental Justice populations such as low-income, elderly, minority, and disabled persons have access to affordable transportation options (i.e., the benefits of RTO program investments are broadly shared across the community).

4.9 Table 4.5 outlines the equity measures used in this framework and Table 4.6 outlines the connection of equity indicators to regional policy.

TABLE 4.5 Equity Indicators

Indicator	Units	Description
Reduction in average household combined cost of housing and transportation	$/household	Affordability measure - Convert non-SOV trips into household transportation cost savings; in cases where the cost savings benefits are localized and housing costs are known, household cost savings could be converted into combined cost of housing and transportation.
Improved Reliability for Environmental Justice Populations	Minutes	Evaluate the travel time to work or destinations for environmental justice populations
Health improvements	% of active trips	Active transportation as a proxy for improved health

TABLE 4.6 Policy References To Equity Indicators

Criteria	2007-2008 RTO Evaluation	2009-2011 RTO Evaluation	RTO Plan 2008-2013	RTO Plan 2012-2017	Climate Smart Communities	Regional Transportation Plan	Region's Six Desired Outcomes
Reduction in average household combined cost of housing and transportation	-	-	-	✓	-	✓	o
Reduction in travel time for EJ populations	-	-	o	o	-	✓	o
Health improvements	o	o	-	✓	o	o	o

✓:contained in document o:informed by document -:not included in document

Account 3: Economy

4.10 The third account, Economy, includes indicators that assess the degree to which the programs aid in improving the local economy. The effect of transportation on the local economy includes costs associated with congestion and parking. Transportation affects the local economy, for example the movement of goods and people's access to jobs and services. As such, Economy is a key theme in the Regional Transportation Plan and RTO Plans and serves as an account in this evaluation.

TABLE 4.7 ECONOMIC INDICATORS

Indicator	Units	Description
Increased access to jobs	Minutes	Difference in travel time to work in minutes before project(s) investment and after project investment.
Decrease parking demand	$	Total amount of savings due to reduced parking needs. Convert non-SOV trips into number of parking spaces reduced and multiply by the average cost of parking.
Dollars Returned to local economy	$	An estimate of money saved by the region based on VMR

TABLE 4.8 POLICY REFERENCES TO ECONOMIC INDICATORS

Criteria	2007-2008 RTO Evaluation	2009-2011 RTO Evaluation	RTO Plan 2008-2013	RTO Plan 2012-2017	Climate Smart Communities	Regional Transportation Plan	Region's Six Desired Outcomes
Increased access to jobs	-	-	-	-	o	o	o
Decrease parking demand	-	-	-	✓	-	o	o
Dollars Returned to local economy	-	-	-	✓	-	o	o

✓:contained in document o:informed by document -:not included in document

Account 4: Effectiveness

4.11 Effectiveness describes the degree to which RTO projects leverage available resources, complement the work done by partners, and provide a range of high quality transportation options. Effective and efficient management of transportation systems'

resources and delivering high quality, coordinated services are crucial components to successful programs.

4.12 Effective RTO project implementation relates back to the policy goals of the RTP, Climate Smart Communities and RTO Strategic Plans. Effectiveness consequently serves as an account in the MAE framework.

4.13 Table 4.9 outlines the indicators used in this framework and table 4.10 outlines which policies inform these indicators.

TABLE 4.9 EFFECTIVENESS INDICATORS

Indicator	Units	Description
Vehicle Miles Reduced (VMR)	Miles	Vehicle miles travelled reduced annually
Mode split or increase in non-drive alone mode share	change in percentage points	The percent of trips using alternative modes supported by the RTO program
Program cost effectiveness	$/VMR	A representation of the average cost per vehicle mile reduced.
Leverages partner resources	Ratio or Qualitative	Qualitatively measured or measured using a ratio of VMR/$ based on RTO funding and VMR/$ including all funds
Leverage infrastructure/capital investments	$ or qualitative	Assess the level to which the program leverages or is aligned with infrastructure spending - proposed improvements / look at long range plans - look at future projects
Increased cost effectiveness of alternative travel investment through improved ridership	$/year	Difference in operating cost ratio before project(s) investment and after project investment for transit projects, HOV lanes, bike facilities, and other non drive alone modes.

TABLE 4.10 POLICY REFERENCES TO EFFECTIVENESS INDICATORS

Criteria	2007-2008 RTO Evaluation	2009-2011 RTO Evaluation	RTO Plan 2008 - 2013	RTO Plan 2012 - 2017	Climate Smart Communities	Regional Transportation Plan	Region's Six Desired Outcomes
Vehicle Miles Reduced (VMR)	✓	✓	✓	✓	✓	✓	o
Mode split or increase in non-drive alone mode share	✓	✓	✓	✓	-	✓	o
Program financial efficiency	✓	✓	-	-	-	-	o
Leverages other funds	o	o	o	o	-	o	o
Leverage infrastructure/capital investments	-	-	-	-	-	-	o
Increased cost effectiveness of alternative travel investment through improved ridership	-	-	-	-	✓	-	o

✓:contained in document o:informed by document -:not included in document

Account 5: Engagement

4.14 The Engagement account assess how effectively projects engage with the local community. This account measures how well projects use engagement tools to improve the reach and breadth of their work. Specific examples include programs that enable households, employers, employees, and others to receive information about their transportation options. Engagement additionally involves gathering feedback from the community about the effectiveness and quality of projects.

4.15 Two indicators are proposed for this account, however there is nuance behind how they are evaluated. The quality of engagement and how this engagement affects local communities will be assessed based on available program resources. Additionally the quantity of people reached, hours of engagement run, and types of materials distributed inform this account and its indicators. Table 4.11 outlines the two indicators and Table 4.12 shares which policies influenced them.

TABLE 4.11 ENGAGEMENT INDICATORS

Indicator	Units	Description
Participation	Qualitative and Quantitative	Residents who respond to a call to action
Awareness	Qualitative and Quantitative	Residents exposed to messages or information about the program

TABLE 4.12 POLICY REFERENCES TO ENGAGEMENT INDICATORS

Criteria	2007-2008 RTO Evaluation	2009-2011 RTO Evaluation	RTO Plan 2008-2013	RTO Plan 2012-2017	Climate Smart Communities	Regional Transportation Plan	Region's Six Desired Outcomes
Participation	-	-	✓	o	-	-	-
Awareness	o	o	o	o	-	-	-

✓:contained in document o:informed by document -:not included in document

APPENDIX

A

PARTNER ENGAGEMENT RESULTS

A1 PARTNER ENGAGEMENT RESULTS

APPENDIX TABLE A.1 PARTNER ENGAGEMENT THEMATIC ANALYSIS

<table>
<tr><th>Learning</th><th>Influencing</th></tr>
<tr><td>

Develop a better understanding of the quality and quantity of work undertaken
Analyze the impact of investment
Best practice sharing
Evaluates the qualitative elements of programs
Develop a better understanding of the quality and quantity of work undertaken
Best practice sharing
Demonstrate progress towards RTP goals
Focus on measuring what matters

</td><td rowspan="2">

Share the evaluation to influence and inform decision makers
Use with project managers who plan/build the program to demonstrate value
Help sell results in order to increase buy in from stakeholders
Use the results to recruit business members
Communicating results to the elected board
Award applications
Articulate the value that TDM brings locally and regionally
Ensure the evaluation articulates the value of investments in RTO/DM Demonstrate progress towards RTP goals
Present the results in a way that resonates with decision makers
To aid in generating RTO funds
Enable the ‘stories’ of the projects and programs to be told

</td></tr>
<tr><th>Planning</th></tr>
<tr><td>

Aid in the development of fiscal year work plans
Support the development of annual or long term plans
Aid in the integration of the RTO Program with the Regional Transportation Plan
Strategic planning and grant development
Inform targets set in future strategic plans and regional transportation plans (RTP)
Portray results in a way that can inform targets set in future strategic plans and regional transportation plans (RTP)

</td></tr>
</table>

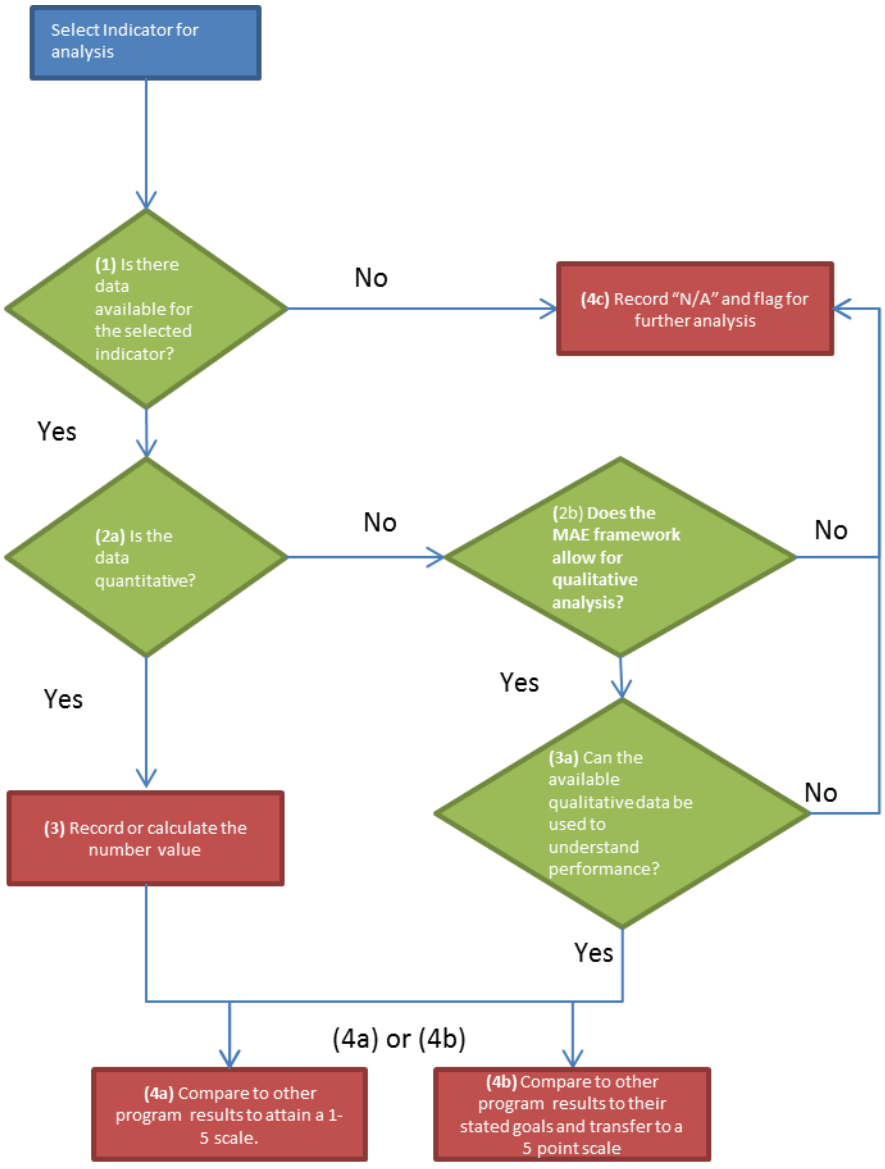
steer davies gleave

F1 MAE INDICATOR ANALYSIS

Indicator Analysis

F1.1 Figure and Table E.1 provide a flowchart framework to aid in analyzing each indicator in the MAE framework.

APPENDIX FIGURE F.1 MAE INDICATOR ANALYSIS FRAMEWORK



APPENDIX TABLE F.1 INDICATOR ASSESSMENT METHODOLOGY

Step	Description
(1) Is there data available for the selected indicator?	At this stage the evaluation should only focus on whether there is data or not. If there is no data available move to (4c). For indicators that require a calculation to derive the data from existing data move to (2a)
(2a) Is the data quantitative?	Record the numerical value based on the MAE report (i.e. VMR, people engaged). If no numerical data exists, check if qualitative is appropriate. If the indicator can be calculated, such as emissions reductions, calculate and move to (3a).
(3a) Record or calculate the number value	If the quantitative indicator is readily available or it is a simple calculation (i.e. a ratio of dollars spent over VMR) then record or calculate the value. For more involved calculations see step 1.
(2b) Does the MAE framework allow for qualitative analysis of this indicator?	Review the MAE document to see if a type of qualitative evaluation is useful for this indicator.
(3b) Can the available qualitative data be used to assess the indicator?	Review notes and documents on the program for reference to the indicator. If no, flag as NA with a note on lack of qualitative data.
(4a) Compare to other program results to attain a 1-5 scale.	Compare to other program results on a 1-5 scale. Quantitative items can be set based on relative performance, while qualitative items should be compared based on the principles and goals expressed in the MAE document. This process enables direct comparison of programs.
(4b) Compare to other program results to their stated goals and transfer to a 5 point scale	Compare the indicator's performance against stated goals. This methodology is useful to understand the performance of individual programs as programs with a higher VMR. For example, under (4a) a program with the highest VMR may score a 5, while other quality programs with a smaller scope would achieve a lower score, even if they were successful. (4b) allows goal oriented evaluation, but is only useable when targets are set.
(4c) Record "N/A" and flag for further analysis	There are two flags that should be raised: - Quantitative with no data - Qualitative with no appropriate data

F1.2 Table E.2 outlines the adjustment factors used for each indicator in the MAE.

F1.3 Emission factors used in this table were obtained from EMFAC standards. Because the current DEQ emission factors are older than the updated EMFAC factors, the EMFAC set was deemed more suitable for this MAE. Additionally, other standards for emission calculation, such as the EPA standards, were considered to be too general for this MAE. The DEQ approved the use of EMFC factors for all emissions calculations in this evaluation.

APPENDIX TABLE F.2 MAE INDICATOR CALCULATION FACTORS

Variable	Value	Units
Regional population[4]	1,690,785	people
Portland MSA population (ACS 5YR 2012)	1,794,570	People
One-way auto commute distance	8.6	mi
Workdays/yr	261	days
Trips per day	2	trips
ACS assumed carpool occupancy	3	passengers/auto
Auto cost	$0.37	USD 2013/mi
Parking cost[5]	$4.63	USD 2013/day
Fuel efficiency	20.56	mi/gal
Transit fare	$2.50	USD 2013/trip
Price of gas	$3.26	USD 2013/gal
VOC	1.2927	g/mi
NO_x	1.0853	g/mi
CO	14.6628	g/mi
CO_2	0.4475	kg/mi
PM10	0.026	g/mi
PM2.5	0.0123	g/mi

[4] American Community Survey, 1 year estimate of three county population, 2012.

[5] Based on a median garage parking rate of $185 divided over 20 work days. Median rate derived from Collier's 2012 Parking Rate Survey of North America.