ITEM #3

Commuter Connections TERM Analysis
FY 2015-2017 (July 2014-June 2017)
Evaluation Framework Update Summary

Review of FYs 2012-2014 Framework and
Proposed New Elements for FYs 2015-2017
October 20, 2015

What is the "Evaluation Framework?"

- The TERM Evaluation Framework is a report documenting how data will be collected and what evaluation methods will be used to analyze data for evaluation of Commuter Connections' TERMs.
- This summary outlines the key elements of the Evaluation Framework and new elements and enhancements proposed for the FY 2015-2017 evaluation cycle.
- The Framework is updated for each triennial evaluation cycle – last update was in 2012 for the 2011-2014 evaluation:
  - Update goals and performance indicators set by the MWCOG Transportation Planning Board
  - Update data collection methods and analysis approach that will be used to asses TERM impacts – updates to match the 2014 TERM analysis and new methods/approaches since the 2014 TERM analysis was completed.
  - Identify anticipated TERM evaluation challenges and opportunities to enhance the reliability and usefulness of TERM data to MWCOG and Commuter Connections

Proposed Framework Document Outline

1. Overview
2. Evaluation objectives and issues
3. Performance measures
4. Evaluation components for each TERM
5. Data collection sources and tools
6. Basic method for calculating program impacts
7. Reporting and communicating evaluation results
8. Evaluation schedule and responsibilities

Evaluation Objectives

- Measure impacts of the TERMs implemented by Commuter Connections, using appropriate performance measures
- Provide information for MWCOG to communicate TERM performance information effectively to stakeholders, such as:
  - Regional policy makers (Contributions to regional transportation goals)
  - Program funders (Effectiveness and cost-effectiveness of investment)
  - Commuter Connections staff and local program partners (Program effectiveness and enhancement opportunities)
  - Employers, commuters, and other travelers (Organizational, personal, societal benefits)

Evaluation Principles / Issues

Results are useful to decision-making and management

- Measure performance on indicators related to regional goals for transportation and TERMs
- Use common, quantitative performance measures to facilitate comparisons among TERM and between TERMs and other strategies
- Facilitate ongoing activity reporting and estimate of benefits for day-to-day program management
- Track both continued (baseline) impacts and new impacts during the analysis period

Methods are efficient and reliable

- Report only impacts that are directly associated with TERMs and that can reasonably be estimated within budget
- Avoid double-counting benefits by addressing service overlap
- Follow industry-accepted and recognized evaluation techniques that are compatible with regional, state, and national practices
- Be resource efficient and unobtrusive for COG partners
- Use locally-collected data that reflect actual travel experience

TERMs to be Evaluated – FY 2015-2017

Four TERMs:

1. Maryland Telework
2. Guaranteed Ride Home
3. Employer Outreach (including EO-Bicycling)
4. Mass Marketing

Also, Commuter Operations Center (Basic Services and Software Upgrades)

Performance Measures

Performance measures must be useful and relevant to TERM decision-making and will include:

Awareness – mode options, programs / services

Attitudes – travel, mode options

Program participation – use of Commuter Connections services, desired improvements

Satisfaction – customer / user satisfaction with services

Impacts of service use:

- Utilization / travel change – New "placements" in alternative modes
- Travel impacts – Vehicle trips reduced and VMT reduced, person trips/person VMT in non-SOV modes
- Environmental impacts – Emissions and energy reduced
- Cost impacts – Consumer cost saving, cost-effectiveness of programs

Proposed Data Collection and Analysis Tools

Data collection tools and tracking systems to collect data for 2015-2017 evaluation:

- **Surveys** (by *TERMs evaluated*)
  - Employee surveys administered by employers (*Employer Outreach*)
  - State of the Commute survey (*Telework, Mass Marketing*)
  - Guaranteed Ride Home survey (*GRH*)
  - Telework employer follow-up survey (*Telework, Employer Outreach*)
  - CC applicant Placement Rate survey (*Commuter Operations Center, Software Upgrades*)
  - Bike-to-Work Day survey (*Mass Marketing*)
  - 'Pool Rewards participant survey *(Mass Marketing)*
  - Retention Rate survey *(GRH, Commuter Operations Center)*

- **Databases/other tracking data** (*TERMs evaluated*)
  - ACT! Employer Contact database (*Employer Outreach*)
  - Telework Assistance database (*Telework*)
  - Online service users database (*Commuter Operations Center*)
  - Online GRH registrant database (*GRH*)
  - Commuter Operations Center website and call volume tracking (*Mass Marketing*)
  - Documentation of media / marketing activities (*Mass Marketing*)
  - Event participation tracking (*Mass Marketing*)
  - 'Pool Rewards participant data *(Mass Marketing)*

- **Analysis tools**
  - EPA COMMUTER model v2.0 (*Employer Outreach*)

Basic Impact Calculation Methodology Steps

Consistent for all TERMs (except Employer Outreach). The methodology starts with a "population of interest," population of commuters who potentially were influenced by the TERM, and applies calculation factors derived from surveys of a sample of the population to estimate travel shifts among the full population and the impacts of the change.

The five calculation factors are:

1) **Placement rate** (percent of commuters in the population of interest who self-report a shift to alternative modes as a result of the TERM)

2) **Vehicle trip reduction** (VTR) factor (average number of vehicle trips reduced per day by each "placement" - commuter who shifts to a commute alternative; taking into account the types of mode shifts and frequency of mode use)

3) **Commute distance** – Average one-way commute trip distance of commuters who are start/increase use of alternative modes (self-reported)

4) **Drive alone access** – Percentage of carpoolers/vanpoolers and transit users who drive alone to the location where they meet their carpool, vanpool, bus, or train

5) **Drive alone access distance** – Distance commuters travel to carpool/vanpool/transit meeting points

Impacts are calculated by applying the factors within the following methodology steps.

Step 1) **Define population** – Estimate commuter population "base" for the TERM (e.g., all commuters, GRH applicants, online service users, etc.)

Step 2) **Estimate new commute alternative placements** – Multiply number of commuters in the population of interest by the placement rate for that population

Step 3) **Estimate vehicle trips reduced** – Multiply number of placements by the Vehicle Trip Reduction (VTR) factor for that TERM

Step 4) **Estimate VMT reduced** – Multiply number of vehicle trips reduced by average commute distance for the population base

Step 5) **Adjust vehicle trips and VMT for access mode** – Discount vehicle trips reduced and VMT reduced to account for commuters who drive alone to meet rideshare modes and transit

Step 6) **Estimate emissions reduced** – Multiply adjusted vehicle trips and VMT reduced by emissions factors consistent with the regional planning process to estimate NOx, VOC, PM2.5, and GHG emissions reduced (e.g., CO2, NOx precursors).

Possible Framework Enhancements – 2015-2017

Continue the basic methodology outlined above, but integrate enhancements to the method and to specific TERMs:

1. Update Framework to reflect methods applied in 2014 TERM analysis and changes to individual TERMs.

2. Describe methodology for new Retention Rate survey – Define ongoing benefits of past shifts to alternative modes (e.g., alt mode shifts that occurred before the three-year evaluation period but that are still in effect).

3. Explore options to collect TERM-related data by new data collection methods (e.g., panel surveys, Quick Response (QR) codes, address-based sampling).

4. Collect data to help Commuter Connections better position the contribution of Commuter Connections' TERMs in sustainability, livability, and performance-based planning

5. Collect data to quantify benefits of Commuter Connections programs in business terms to encourage greater involvement of employers in commute programs (e.g., reduced parking demand, employee satisfaction)

6. Format and organize TERM-related data to facilitate communication of TERM results and other Commuter Connections' program benefits to regional and local decision-makers (e.g., data formatted for infographics, survey "briefs," etc.)

1. Update Framework to reflect methods applied in 2014 TERM analysis and changes in individual TERMs

Background – The evaluation process defined in the Framework evolves over time, both in what programs are evaluated and how they are evaluated. The Framework defines the Commuter Connections programs that are in effect and describes the most up-to-date methods available at the time the document is written. But if programs change, new data become available, or better methods are developed between the time the document is written and the evaluation is performed, the evaluation applies the newest and best data and methods to the current program portfolio.

Since the FY 2012-2014 Framework was prepared, Commuter Connections has made a few changes to the TERMs covered by the evaluation. Additionally, several methods not described in the 2012-2014 Framework were applied in the 2014 evaluation and/or appear to be promising options for the Commuter Connections TERM analysis. The FY 2015-2017 Framework will incorporate these program and method changes so that the Framework represents the evaluation method that is anticipated at this time.

Recommendation – Update framework as described below:

- All TERMs – Update trip, VMT, and emissions reduction goals to be consistent with COG Conformity Tracking Sheet.
- Maryland Telework – Update to reflect MWCOG-assisted TW outside of Maryland captured under the Commuter Operations Center and Integrated Rideshare TERM.
- Guaranteed Ride Home – No changes since 2012-2014 methodology.
- Employer Outreach
  - Continue basic methodology (continued programs, new programs)
  - Confirm program elements that constitute a Level 3 program – ensure that employers included in the calculation meet the required Level 3 / Level 4 test for the TERM
- Mass Marketing
  - Update 'Pool Rewards methodology to include vanpool incentive; define data and data collection options
  - Update methodology for Car-Free Day and define data needed to assess impacts for other special events that might be implemented
- Commuter Operations Center and Integrated Rideshare TERM – Add methodology to calculate impacts from Commuter Connections telework assistance outside Maryland.

2. Describe methodology for new Retention Rate survey

Background – In previous TERM evaluations, mode shifts motivated by TERMs were assumed to extend through the three-year cycle, that is, a commuter who made a mode shift in the first month of the cycle was assumed to be still using the mode in the last month. But impacts were not assumed to be longer than three-years, so were not carried over to the next evaluation cycle. If mode shifts do extend beyond three years, additional impacts could be retained from one three-year evaluation cycle to the next.

Recommendation – The upcoming evaluation will include a new "Retention Rate" survey to estimate the share of past service users who continue to use alternative modes. The 2016 survey will interview Commuter Connections online system users and GRH users who participated in these programs prior to the start of the evaluation period. Users will be asked about their current modes, how long they have used their current modes, what CC services they received, and how those services influenced them to begin and/or continue to use alternative modes. The survey data will be used to develop a "retention" curve or lifecycle of continued alternative mode experience. The methodology also will define options to collect data on mode use in future TERM evaluations. This could be accomplished through a similar survey, conducted once in the six-year period or through ongoing data collection that is analyzed either as data are collected or at a later point in time.

3. Explore options to collect TERM-related data by new data collection methods.

Background – Since the beginning of the Commuter Connections TDM evaluation, the methods for collecting evaluation data have evolved from exclusively telephone and paper surveys to incorporate cell phone interviews, Internet-based surveys, and mixed telephone-Internet methods for TERM-user surveys. These methods again will be used in the FY 2015-2017 evaluation, but new methods also could be useful for TERM-related data collection.

Recommendation – Examine other data collection options to minimize the cost to collect TERM-related data, while ensuring continued data quality and accuracy. For example, some possible options could include:

- Expanding the share of cell phone interviews in telephone surveys
- Use of QR (Quick Response) codes to disseminate survey links for location-based and Point-of-Sale services, where it is impractical to follow-up with service users
- Use of cell phone apps to collect passive travel data, with prior agreement of respondents
- Address-based sampling methods to expand the reach of Internet survey for regional / general population surveys, such as the State of the Commute survey
- Panel surveys to track changes in travel patterns of service users over a period of time

This analysis will identify surveys and other data collection situations in which various options could be feasible and the pros and cons of each method.

4. Collect data to help Commuter Connections better position the contribution of Commuter Connections' TERMs in sustainability, livability, and performance-based planning.

Background – Transportation decision-making and investment is increasingly focused on measures that reflect a broad view of transportation goals, such as sustainability, livability, health and safety, and system performance, measures that require data beyond that currently collected under the TERM evaluation. A proactive effort to collect and report data on the broader contributions TERMs make to regional societal objectives would reinforce Commuter Connections' value to the community and elevate Commuter Connections' contribution to management of the regional transportation system.

System performance (congestion, delay and travel time reliability) particularly requires an understanding of the temporary and spatial distribution of travel. The current TERM analysis evaluates Commuter Connections' impacts at a regional / aggregate level; it does not estimate where and

when other impacts such as reductions in vehicle trips and vehicle miles of travel due to Commuter Connections and its partners are occurring.

Recommendation – Whenever feasible, incorporate questions in the SOC and user surveys to define societal and regional benefits of TERM programs. In some cases, these data could be analyzed by other MWCOG departments in regional or local planning studies. We also recommend exploring the use of other existing analytical tools, such as the Trip Reduction Impacts of Mobility Management Strategies (TRIMMS™) 3.0 model methods to estimates the impacts of a broad range of transportation demand initiatives. TRIMMS™ also can help assess program cost effectiveness by estimating both costs that directly affect transportation users ("internal costs") and the external or societal costs associated with driving, such as congestion delay, air pollution, excess fuel consumption, and increased accident risk, which are not directly incurred by auto users but are borne by society as a whole.

The 2014 SOC and GRH surveys added questions about the primary roadways that commuters used for their trip to work and the time they typically arrive at work. While the samples were too small to document delay reductions by route, analysis of the data suggested that some routes had disproportionate shares of alternative mode use. Further data collection through the SOC and other TERM-related surveys could expand the trip data and highlight corridors of interest that could be further analyzed using travel data from INRIX or other passive collection sources. To support future analysis, we recommend continuing to collect route and time data on CC surveys, whenever possible and examine other data sources that might be easily obtained from other sources.

5. Collect data to quantify benefits of Commuter Connections programs in business terms to encourage greater involvement of employers in commute programs

Background – A large component of the overall TERM impacts is generated by the Employer Outreach program, thus employers' willingness to engage in TDM activities is a fundamental element of the success of the overall program. Employers will be most likely to engage in commuter programs if they perceive a tangible organizational benefit (e.g., reductions in office space and parking, reductions in payroll taxes from commute benefits, receiving LEED certification). Some empirical evidence exists for a limited number of TDM services (e.g., telework productivity), but documentation is limited for other modes (e.g., carpool promotion) and TDM services. Efforts to collect data to illustrate the role of TERM and employer actions in use of alternative modes and commuters' attitudes could help quantify benefits that accrue to employers. This information could help outreach staff to more effectively market Commuter Connection services and, ultimately, yield more TERM results.

1. Personnel operations (absenteeism/tardiness, recruitment/retention, productivity)
2. Employee morale, teamwork, communication
3. Facility impacts (parking reduction, worksite congestion)
4. Financial (tax benefits to corporations)
5. Social recognition / corporate good will (e.g., image, LEED, Best Workplaces for Commuters)

Recommendation – The 2013 SOC survey added questions on business-related activities that employees undertook while commuting via alternative modes. Seek additional opportunities through COG / Commuter Connections surveys to identify business benefits. For example, include questions

in the SOC survey and other TERM-related surveys to estimate of how availability of commuter options improves job access and affect turnover/recruitment. Provide data for talking points and research briefs that jurisdiction partners could use when meeting with employers.

6. Format and organize TERM-related data to facilitate communication of TERM results and other Commuter Connections' program benefits to regional and local decision-makers

Background – The objective of the TERM evaluation process is to provide data on the performance of TERMs to assist regional and local decision-makers, funders, and program staff to make sound program funding and operations decisions. To this end, the TERM evaluation produces a technical assessment of performance to apply to the region's conformity tracking. However, the many surveys and analyses performed for the evaluation also collect a wealth of data on current travel patterns and trends, traveler attitudes, and customer satisfaction that could be useful for other audiences and other purposes beyond conformity determination.

By expanding the range of data transmitted and by focusing the presentation of data on the needs and interests of other audiences, Commuter Connections could expand the value of its data collection and analysis investment and provide value to various new audiences.

Recommendation – The 2014 Evaluation Framework team outlined an approach to identify new audiences for Commuter Connections information, the information that would be useful to them, and communication tools that would be most appropriate. Commuter Connections staff used this outline in discussions with local TDM staff and determined that brief "top findings" summaries of survey and evaluation data could be useful tools to disseminate evaluation results to audiences that would be unlikely to read technical reports. In the 2015-2017 evaluation period, we will work with COG staff to provide and format data that Commuter Connections can use to prepare such summaries for the 2016 SOC survey and other TERM-related surveys and to disseminate evaluation data in other new formats, such as online distribution methods (e.g., social media, targeted emails, blogs, podcasts, videos, net-conferences, etc.).