Commuter Connections TERM Analysis
July 2011-June 2014 (FYs 2012-2014)
Evaluation Framework Enhancements

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

Proposed Framework Enhancements – 2011-2014

Method / Tool Updates to Reflect 2011 TERM Analysis

1. Update Framework to reflect TERM changes and methods applied in 2011 TERM analysis
2. Update description of State of Commute survey methodology to include cell-phone only households in survey sample.
3. Refine the methodology for the GRH and Commuter Connections Applicant Placement surveys to document used of combined telephone and Internet administration.

Measurement and Communications Enhancements

4. Apply life-cycle assessment to mode shifts to capture full duration of benefits for TERM impacts – e.g., do benefits extend beyond the three-year evaluation period?
5. Expand range of benefits of Commuter Connections programs to encompass comprehensive TDM results beyond mode split, VMT, emissions.
6. Document TERM impacts on transportation system performance to help Commuter Connections better position itself in regional performance-based planning
7. Quantify benefits of Commuter Connections programs in business terms to encourage greater involvement of employers in commute programs.
8. Develop enhanced tools to report and communicate TERM results and other Commuter Connections' program benefits to regional and local decision-makers.

Measurement and Communications Enhancements

4. Apply life-cycle assessment to mode shifts to capture full duration of benefits for TERM impacts – e.g., do benefits extend beyond the three-year triennial cycle?

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 one three-year evaluation cycle to the next.

Two studies, one by the Virginia Highway & Transportation Research Council (1985) and a second by RIDES for Bay Area Commuters (1994), addressed this question. The first study outlined a methodology for determining carpool and vanpool average life bases to help evaluate Virginia's ridesharing programs. The RIDES study examined the duration of rideshare arrangements among ridematch applicants through quarterly calls to a sample of applicants to determine if they continued carpooling.

Similar research could be performed for the Commuter Connections region to develop longevity factors for "assisted" ridesharing.

Recommendation / Proposed Actions – The impacts calculated for a particular Commuter Connections service are based on participation in the program. This enhancement would examine how participation is defined in each service and specify data collection / analysis activities to determine if credit for past participants also could be included in the calculation.

- Telework – Participation is defined as all commuters in the region who are teleworking at a point in time (SOC survey period), who learned of telework through CC. Because this counts all current teleworkers, it is already comprehensive. ***Recommend NO additional credit***.

- Employer Outreach – Participation is defined as all employers that participate in CC EO programs at the end of the 3-year evaluation period and includes both employers that join the program during the evaluation period (new) and those that joined before the evaluation period but are still involved (maintained).

  Employers that drop out during the evaluation period are not counted. It is possible some of these employers are continuing to offer commute services and it would be possible to survey them to determine ongoing services. But if they are no longer involved with CC, is it reasonable to include their independent actions as CC credit? ***Recommend NO additional credit***.

- Mass Marketing – Events – Participation is defined as all commuters who participate in the event at any time during the 3-year evaluation period. Each participant is counted only once:

  2011 TERM participation = 2009 event participants + First-time 2010 + First-time 2011

  Past participants who do not participate in any of the three evaluation-period events are not counted. It's possible some are still using bike to commute, but there is no practical way to survey them to determine ongoing participation. ***Recommend NO additional credit***.

- Mass Marketing – Advertising – Participation is defined as all commuters who recall commute info / service ads at a point in time (SOC evaluation period). The subsequent analysis includes all commuters who made either continued or temporary changes, thus it is already comprehensive. ***Recommend NO additional credit***.

- Guaranteed Ride Home – Participation is defined as all commuters who participate in GRH at any time during the 3-year evaluation period. It includes past participants who re-register and new registrants who join GRH during the period – e.g.:

  2011 participation = 2009 re-registrants + New registrants (2009, 2010, 2011)

  But nearly two-thirds of past participants continue using alternative modes, so it would be reasonable to include share of past participants from previous evaluation period.

  Consider this additional credit opportunity. Analysis that would be needed to expand this credit: define distribution of alternative mode period use following GRH drop out (e.g., percentage that continue 1 year, 2 years, etc) and estimate the percentage of past participants who could be credited to the next evaluation cycle.

- Commuter Operations Center – Participation is defined as all commuters who receive / use an online service during the evaluation period. Participation does not include commuters who received services in the previous period, made an alt mode shift and are still using the new mode.

  Consider this additional credit opportunity. To expand this credit, we would need to define the duration of "assisted alt mode use" and compare it against the three-year evaluation period. The data collection could be accomplished through periodic email surveys sent to a panel of COC users who made a shift to an alt mode to assess the drop-out or change rate of their alt mode use. Issues to resolve:

  - How to reduce panel attrition – Need to start with large sample, develop a protocol for tracking respondents who relocate, offer incentives in advance of their participation to keep engaged).
  - How to ensure past participants aren't also counted in new users – The tracking survey would need to include questions about follow-up or repeat use of COC online services.

5. Expand range of benefits of Commuter Connections programs to encompass comprehensive TDM results beyond mode split, VMT, emissions.

Background – Since 1997, TERMs' impacts have focused on travel and emission reduction. Now, sustainability, climate change, mobility, health/safety, and livability are joining congestion and air quality as forces shaping the region's transportation policies. Commuter Connections could be pro-active in collecting and reporting data on the broader contributions TERMs can make to regional social objectives and demonstrate the full value of Commuter Connections programs to the community. Such justification is a common expectation for other transportation investments, thus could elevate Commuter Connections role in the transportation system.

Recommendation / Proposed Actions – The TERM performance measures are officially defined by the COG TPB, thus we don't recommend changing the performance measures defined for individual TERMs in the Framework or reported in the TERM Analysis Report. Rather, Commuter Connections could consider the following actions:

- In the Performance Measure section of the Framework document, describe additional benefits that could be generated by Commuter Connections' services to support broad regional objectives – e.g.:
  - Transportation system efficiency
  - Social mobility
  - Public health and safety
  - Quality of life
  - Business and economic vitality
- Define performance measures that could be used to assess / document the benefits.
- Identify data collection needs for new measures and define those needs in the descriptions of key surveys in the Framework document.
- Collect data through SOC and user surveys to facilitate assessment of new TERM benefits.
- Report quantitative and/or qualitative results regarding expanded TERM benefits in survey reports and highlight benefit results in targeted communication outreach.
- Explore availability of analysis methods and tools that could be used to estimate new benefits. For example, the Trip Reduction Impacts of Mobility Management Strategies (TRIMMS) model offers methods to estimate economic impacts from VMT. (Sources: EPA: Potential Changes in Emissions Due to Improvements in Travel Efficiency. Environmental Protection Agency. March 2011. http://www.epa.gov/oms/stateresources/policy/420r11003.pdf

  FHWA: http://www.fhwa.dot.gov/resourcecenter/teams/planning/lut.cfm)

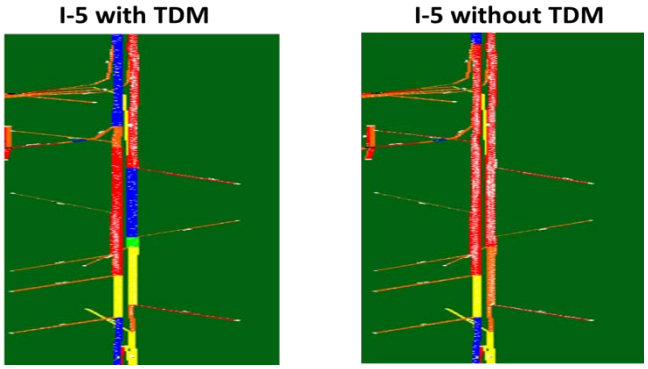
6. Document TERM impacts on transportation system performance to help Commuter Connections better position itself in regional performance-based planning

Background – Transportation decision-making and investment is increasingly focused on system performance – travel speed, volume, congestion, delay, and travel time reliability – measures that require an understanding of the temporary and spatial distribution of travel. The current TERM analysis evaluates Commuter Connections' impacts only at a regional / aggregate level; it does not estimate where and when reductions in vehicle trips and vehicle miles of travel due to Commuter Connections and its partners are occurring.

Commuter Connections could better document the congestion-reduction benefits of its programs by estimating where and when travel impacts are occurring and expressing the impact in terms related to congestion levels, such as reduction in delay and increase in travel time reliability. This would require measuring or estimating the spatial and temporal distribute of trip and VMT reduction, to assess impacts on a given facility or corridor.

Recommendation / Proposed Actions – In concept, this enhancement would develop a method to convert VMT reduction from Commuter Connections services into roadway delay reduction. Such a method would enable Commuter Connections to document a program benefit that is expected to be central to performance measurement requirements of recent transportation legislation and keep Commuter Connections' evaluation methodology on the forefront of TDM evaluation research.

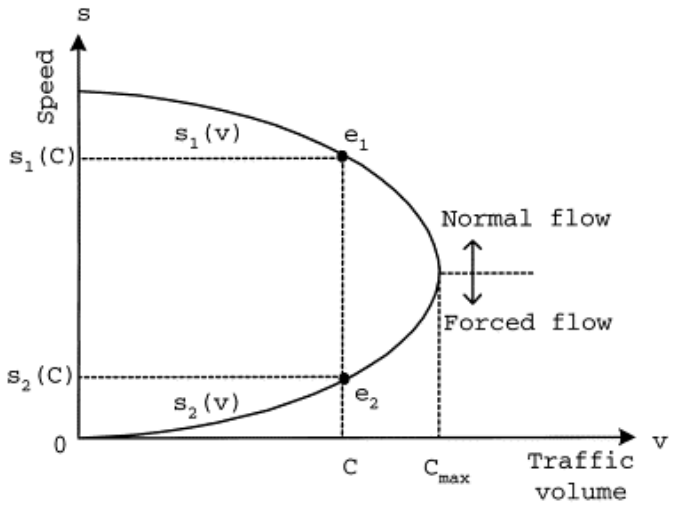
Measurement of roadway delay is commonly analyzed for roadway improvements, such as new travel lanes or intersection improvements that would increase travel speed on the roadway by adding road capacity or improving the flow of traffic. Traffic engineering analyses typically estimate reduction in roadway delay through traffic analysis modes that simulate the traffic volume and travel speed when the improvement is in place.



Traffic analysis models generally do not accommodate TDM actions, thus we need an alternative method to estimate how the capacity added when a TERM eliminates trips would affect travel speed. At a minimum, it appears likely that such analysis of Commuter Connections would require data to pinpoint the location of TERM trip and VMT reductions and an estimate of the amount of traffic currently on targeted roads. Thus, we recommend the following short-term actions be defined in the Framework document:

- Define new data elements to identify travel paths of program users who shift travel modes (e.g., O-D, primary travel routes) and the existing volume of traffic on targeted roads
- Data collection methods to collect user location data (e.g., surveys, mobile applications) and data on current volume of traffic (VDOT, MDOT, DDOT, COG)
- Explore calculation and/or modeled approaches to distribute trip reduction from TERM programs to roadway segments

Delay calculation approaches could include simulation models, but in the short-term, we are more likely to explore approaches that would estimate delay reduction using a multiplier factor. For example, if Commuter Connections programs eliminate 5% of the vehicles traveling on a specific roadway during the peak period, what percentage increase in speed could be expected? This approach might utilize the "speed / flow" relationship shown in the figure to the right, which shows how traffic speeds drop when the traffic volume reaches a certain level of congestion.



The analysis also will need to address several additional issues:

- What geographic subsets are reasonable for analysis (corridor, activity center, state, etc.)?
- How to assign credit/impacts when trips cross analysis area boundaries?
- How to capture value of productive time for alt mode users whose travel time is greater than the time for driving?
- What level of trip / VMT reduction is needed to see change in speed and measurable delay reduction – can TDM services achieve this level?
- Method to report impacts by location – how can the results best be reported to decision-makers, planners and engineers to assess buy-in?

7. 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, recognition from Best Workplaces for Commuters). 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. A systematic method that collects data to document 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, turnover, recruitment/retention)
2. Employee morale, teamwork, communication
3. Facility impacts (parking reduction, worksite congestion)
4. Cost elements (corporate taxes with pre-tax benefit program, productivity, health insurance saving/company wellness)
5. Social recognition / corporate good will (e.g., image, LEED)

Recommendation – Seek opportunities through COG / Commuter Connections surveys to identify business benefits. For example, include questions in the SOC survey to estimate reduced tardiness from use of alternative modes, productivity gains when commuters perform work tasks while using transit or riding in a carpool/vanpool, and how availability of commuter options improves job access and affect turnover/recruitment. Prepare talking points and brief results summaries from research studies that jurisdiction partners could use when meeting with employers.

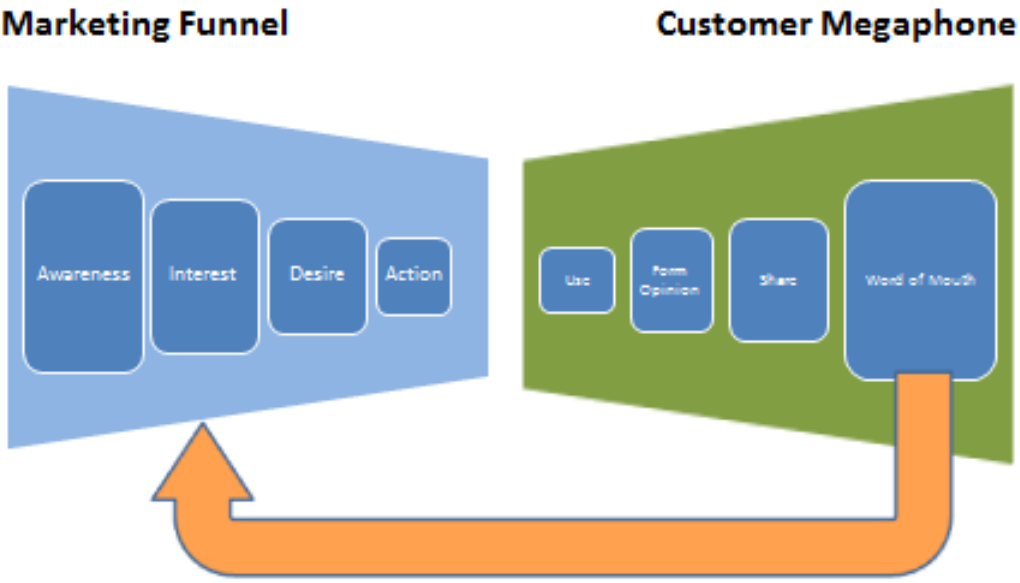
8. Develop enhanced tools to report and communicate TERM results and other Commuter Connections' program benefits to regional and local decision-makers.

Background – The objective of the TERM evaluation process is to provide meaningful information on the performance of TERMs to regional and local decision-makers, funders, and program staff. 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 used to "tell the Commuter Connections story" to other audiences to achieve purposes beyond conformity determination.

Possible other uses for the data include:

1. Inform decision-makers / funders of the cost-effectiveness of providing choices and promoting transportation demand management strategies to garner more TDM program support and resources
2. Demonstrate accountability, transparency and credibility as an objective source/steward of modest public resources
3. Increase marketing and service effectiveness by actively engaging existing and potential customers in outreach and feedback



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 / Proposed Actions – Three-step process

1 - Identify target audiences and information needs

2 – Repackage / expand reporting from existing research

3 – Define opportunities to expand use of new outreach media

1 – Identify Target Audiences and Information Needs

Audiences – Identify the needs of the targeted audiences and the actions that Commuter Connections would like those audiences to take. Likely key audiences could include:

- State and local decision-makers and funders
- Elected officials
- Commuter Connections program partners
- Local transportation planners, transportation providers
- Commuters / travelers
- Employers

Information Needs – To identify the range of information needs, solicit input from Commuters Connections staff and members of the Commuter Connections Evaluation Group and Commuter Connections Subcommittee on current and anticipated information needs for their key audiences. Then target the message and medium to the audience segments profiled by answering these questions:

- What issues / problems is each audience trying to address?
- What trends or conditions are influencing their organizational or personal success?
- Which issues / problems might have a transportation or TDM-related contribution?
- What information does the audience need to address the issues? What information and messaging would encourage the audience to select TDM actions?
- How could Commuter Connections' research results be packaged to be more useful to each audience?
- What media are used / could be used to reach each audience?

2 – Repackage / Expand Reporting from Existing Research

As a next step, repackage / expand the reporting from existing Commuter Connections research reports to be suitable for different uses. This could include, for example:

- Prepare for key surveys (e.g., SOC, GRH), a 2-3 page survey brief that presents the "top findings" that would be of interest to non-technical audiences
- Post the brief on the Commuter Connections website / Facebook page; distribute to funders and decision-makers
- Excerpt from the brief for outreach to media contacts and elected officials
- Distribute highlights to local program partners for communications to elected officials and decision-makers
- Prepare highlights presentations; post to website / Facebook

3 – Define Opportunities to Expand Use of New Outreach Media

Commuter Connections currently posts research reports on its website, for interested users to download. To expand the visibility of the results, explore options for new information formats, additional online distribution methods, and active distribution methods (e.g., social media, targeted emails, blogs, podcasts, videos, etc.).

Commuter Connections has a Facebook page (about 250 likes) and Bike to Work Day (followers) and Car Free Day (356 followers) programs are on Twitter. But there remains substantial room for growth. Surveys by Nielsen Research and Pew Research Center regarding the use of media and social media found:

- Nearly a quarter of total time spent on the Internet is spent on social networks and blogs
- Nearly four in five active Internet users visit social networks and blogs
- Nearly 40% of social media users access social media content from their mobile phone
- 47% of adults access information on traffic and transportation and 19% of adults use mobile devices to get local traffic or public transportation information
- Social networking apps are the third most-used among U.S. smartphone owners and Internet users over 55 are driving the growth of social networking through the Mobile Internet

(Source: Pew Research Center's Project for Excellence in Journalism and Internet & American Life Project (2011))

Action steps in this category also would need to build on a clear understanding of the audiences to be reached and the messages to be disseminated. But initial ideas could include:

- Post highlights of research on Commuter Connections Facebook page
- Distribute research results as downloadable ebook
- Release individual key research findings as Twitter posts
- Prepare targeted emails and blog posts on key findings of interest to specialized audiences and partner with local organizations to disseminate them
- Create brief video presentations on research highlights; post to website and Facebook