Appendix A – Project Initiation Meeting Memo

MEMORANDUM

to	Kelly Eagan, Project Manager, Caltrans District 3
from	Joan Chaplick, Public Involvement Specialist, MIG, Inc.
re	Caltrans District 3 Corridor System Management Plan (CSMP) Transit/Bicycle Performance Measures Project Initiation Meeting, October 1, 2010
date	10/06/10

Participants

Kelly Eagan, Caltrans District 3 Planning
Dawn Cheser, Caltrans District 3 Planning
Nieves Castro, Caltrans District 3 Planning
Anne Mahaney, Caltrans Bicycle Facilities Unit
Ryan Ong, Caltrans Headquarters Division of Mass Transportation
Robert Peterson, Caltrans District 3 Traffic
William Davis, Caltrans District 3 Surface Transportation Program
Jeff Pulverman, Caltrans District 3 Planning
Nick Compin, Caltrans Headquarters Operations
Nick Deal, Caltrans District 3 Planning
Joan Chaplick, MIG, Inc.
Andi Nelson, MIG, Inc.

Welcome and Team Introductions

Kelly Eagan, Caltrans Project Manager, welcomed meeting participants and provided brief, opening remarks about the Caltrans District 3 Transit/Bicycle Performance Measures Project. Ms. Eagan shared that this District 3 project represents a new effort by Caltrans to develop performance measures for transit/bicycle performance measures in corridor planning. The results of this project will serve as a prototype for other Caltrans Districts. Ms. Eagan invited meeting participants to introduce themselves and describe their role in the project.

Joan Chaplick, MIG, Inc., served as facilitator for the discussion and reviewed the meeting agenda and the objectives of the project initiation meeting. The meeting objectives were to share information about the project, review the schedule and tasks, discuss how the performance measures would be used, determine the benefits of developing such measures, discuss best practices, review upcoming outreach activities, and determine next steps.

Project Overview

Kelly Eagan provided background on Corridor System Management Plans (CSMPs) and the Transit/Bicycle Performance Measures Project. The CSMPs integrate capital improvements, traffic and transit management strategies into planning documents which focus on achieving a common goal: keeping people and goods moving safely and efficiently through a corridor. The annual State of the Corridor (SoTC) Reports serve to document corridor system performance and track implementation progress for each CSMP. The purpose of the CSMP and SoTC is to create a partnership planning process that focuses on system management strategies and coordinated capital investments so that all pieces of the corridor function as an efficient transportation system. Performance evaluation measures are implemented to track the effectiveness of strategies and projects.

While the 2009 CSMP and 2010 SoTC include state highway system (SHS) performance measures, there is a lack of performance data for the non-SHS transportation modes, such as transit and bicycle modes. Performance measures are an integral part of corridor management and investment decision making and help identify efficient and effective system operational strategies and capital improvements.

The desired outcome of the Transit/Bicycle Performance Measures Project is to improve mobility along the CSMP corridors by focusing on the integrated management of the entire transportation network, including select freeway and parallel roadways, transit, and bicycle components of the corridor. The measures will be developed in consultation and coordination with local partner agencies and stakeholders.

Project Schedule and Tasks

The project includes the following tasks to be completed within a four month timeframe.

- Identify best practices that can help inform development of the transit/bike performance measures.
- Conduct phone interviews with selected stakeholders to get their advice on the approach and best practices. Also, identify potential participants for working group sessions.
- Facilitate working group sessions to discuss development of performance measures.
- Review draft performance measures with Caltrans and working group members.
- Finalize transit and bicycle performance measures.

Use of Performance Measures

Meeting participants identified and discussed the use of performance measures. Transit and bicycle performance measures will be used to:

- Inform and add value to the regional planning processes.
- Factor into SoTC Reports.
- Document Caltrans' transit and bicycle projects and actions.
- Reinforce Caltrans' value of all transportation modes and establish a strong policy statement.

- Facilitate collaboration between Caltrans, agencies, and jurisdictions and develop measures that agencies and jurisdictions will recognize.
- Provide a prototype for use by other Districts and establish best practices for the State.
- Address challenges and gaps to accessibility, mobility and connectivity.
- Provide an opportunity to establish transit and bicycle baseline data or metrics.

Methods to Measure Performance

Methods to measure transit and bicycle performance surfaced as an important aspect of performance measure development. Meeting participants discussed methods that could be used to determine a current state of the transit and bicycle data in the District. The following statements and recommendations emerged from this conversation.

- We need reliable baseline data to measure transit and bicycle performance. While some sources may not be ideal or have the information organized in a manner that would be most useful to us, there are established data sources we can use. These include:
    - National Household Travel Survey (NHTS).
    - Caltrans data (number of miles in corridor network, number of miles available to bicycles, and number of feet along corridor shoulders).
    - Number of people (through put data) along corridor; the efficiency and effectiveness of the corridor.
    - Local and regional transit data that is reported to the FTA (transit funding, miles, and ridership information).
    - Existing barriers to transit and bicycle use.
    - Safety data including number of bicycle/traffic collisions.
- Methods should focus on measuring performance from a corridor perspective rather than a local perspective.
- Methods should focus on performance measure outcomes rather than the corridor bicycle and transit outputs.
- It is important to collect transit and bicycle data specific and applicable to performance measures.
- Qualitative data, in addition to quantitative data, can be used to assess performance measures.
- Existing performance measures can be a resource; such as Multi-Modal Levels of Service in the 2010 Highway Capacity Model (HCM), nationwide.
- Maintaining cost-effectiveness is important when determining the ability to measure transit and bicycle performance.
- The availability of credible, current data is a challenge.

Benefits of Developing Performance Measures

Meeting participants discussed the benefits of developing transit and bicycle performance measures. Participants agreed there was some overlap with the previous conversation of measure uses. Some of the benefits of the measures (and the results they help achieve) include:

- Increase transit ridership and bicyclists on identified state corridors in the District.
- Increase the capacity of corridor, congestion and delay, which will benefit transit in the short-term.
- Increase accessibility, mobility and connectivity, especially for commuters.
- Increase transit and bicycle use along the corridor.
- Encourage transit and bicycle facility consistency statewide.
- Validate and maintain support for projects that benefit multi-modes.
- Benefit the economy, environment, and equity.
- Support California SB 375 goals.
- Provide an opportunity for agencies to be involved in the development of performance measures.
- Validate funding needs and advocate for transportation projects.
- Achieve CSMP Agreements.
- Increase the frequency and reliability of express buses, thereby increasing transit agency revenue.
- Provide an opportunity to collect data for corridor planning and other planning efforts.
- Meet SACOG Blueprint goals to reduce vehicle-miles traveled (VMT) and encourage alternative modes of transportation.
- Encourage contiguous measures across Caltrans districts.

Best Practices

Several best practices and model performance measures were referenced throughout the meeting. Meeting participants suggested the team refer to the following sources:

- Sacramento Area Council of Governments (SACOG) performance measures.
- Caltrans District 3 bike plans.
- Statewide Bicycle Plan.
- State performance measures.
- Established protocols and practices, such as Multi-modal Level of Service in the 2010 Highway Capacity Model (HCM), nationwide.
- Performance measures that evaluate the outcome, such as the through put of people on a given corridor.
- Agency general plans and bike plans may include relevant data and policies.
- Highway design manual, including shoulder dimensions and maintenance standards.
- Measuring Transportation Network Performance (NCHRP 08-67).
- Caltrans Mass Transportation Performance Measures.

Upcoming Outreach

Outreach for this project is anticipated to take place over a three-to-four-month time-frame. Outreach activities will target transit and bicycle stakeholders and will include a facilitated best practices discussion, eight-to-ten phone interviews, and a two-to-three-hour working group session.

Meeting participants identified potential stakeholders and partner agencies to participate in upcoming outreach activities and to provide transit and bicycle-related data. The following were identified:

- Regional Transportation Planning Agencies (RTPA) in each corridor. Participants emphasized working with CSMP partnerships and stakeholders initially.
- Districts, and cities and counties, including Sacramento County, City of Elk Grove, Folsom, Davis, and others.
- Air Quality Management District (AQMD).
- Sacramento Area Bicycle Association (SABA).
- SACOG Transit Coordination Committee
- California Bicycle Advisory Committee (CBAC), a key bicycle advocate in the state.
- Meeting to solicit input from agencies on Transit Performance Measures.
- Meeting to develop Bicycle Performance Measures.

Next Steps and Conclusion

MIG will send all project materials electronically for Project Team review, with a clear deadline for submitting comments and suggestions for improvement. Content experts will be asked to review reference materials and other documents generated through this process before they are distributed to the team. Kelly Eagan will serve as the main point of contact for team communications and materials distribution.

The following action items were identified:

- Draft meeting minutes for team review (MIG, Wednesday, October 6, 2010).
- Set up and confirm a focused meeting (preferably a conference call) of identified RTPAs including: PCTPA, Caltrans, MIG, SACOG, NCTC, EDCTC, and BCAG (MIG, Kelly Eagan and Jeff Pulverman, week of October 4th or 11th).
- Provide Best Practices examples and additional key stakeholders to MIG (Project team, week of October 4th and 11th)
- Research Best Practices (MIG, Project Team, week of October 4th)
- Draft initial list of stakeholders to be contacted during Outreach Process for team review (MIG, Project Team, week of October 11th)
- Draft initial list of stakeholder interview questions for team review (MIG, week of October 11th)

- Conduct eight-to-ten stakeholder interviews (MIG, October, 2010).
- Present key findings from outreach activity to team (MIG, November, 2010)

The project team will identify dates for the next team meeting as the outreach activities are conducted and key findings are determined.

Appendix B – Group Interviews and Workshop Summary Memos

MEMORANDUM

to Kelly Eagan, Project Manager, Caltrans District 3

from Joan Chaplick, Public Involvement Specialist, MIG, Inc.

re Caltrans District 3 Corridor System Management Plan (CSMP)
Transit/Bicycle Performance Measures MPO/RTPA Briefing, October 25, 2010

date 10/29/10

Participants

Kelly Eagan, Caltrans District 3 Planning
Dawn Cheser, Caltrans District 3 Planning
Nieves Castro, Caltrans District 3 Planning
Jerry Barton, El Dorado County Transportation Commission (EDCTC)
Dan Landon, Nevada County Transportation Commission (NCTC)
Joan Chaplick, MIG, Inc.
Andi Nelson, MIG, Inc.

Introductions and Project Overview

Dawn Cheser welcomed meeting participants and provided brief, opening remarks about the Caltrans District 3 Transit/Bicycle Performance Measures Project. Kelly Eagan, Caltrans Project Manager, shared that this District 3 project represents a new effort by Caltrans to develop performance measures for transit/bicycle performance measures in corridor planning. Ms. Eagan invited meeting participants to introduce themselves and describe their role in transportation planning in the region. The desired outcome of the Transit/Bicycle Performance Measures Project is to improve mobility along the CSMP corridors by focusing on the integrated management of the entire transportation network, including select freeway and parallel roadways, transit, and bicycle components of the corridor.

Joan Chaplick, MIG, Inc., served as facilitator for the discussion and reviewed the project purpose, goals, and schedule. The meeting objectives were to share information about the project, solicit feedback from the MPO/RTPA participants, and identify contacts for upcoming survey and workshops.

Discussion

MPO/RTPA meeting participants had the opportunity to provide feedback and ask questions. Participants referred to the following potential best practices and suggestions:

- Bicycle performance measures should assess safety for bicyclists. Mobility is less of a factor along I-49 and I-50.
- Measuring continuity between road sections is important for bicycles.
- EDCTC performance measures compare roadways with existing facilities to roadways without facilities and assess safety.
    - The County's Bicycle Transportation Plan is not fully implemented at this time.
- Accessibility of transit stops are an important measure of successful transit, including barriers to transit for transit riders and bicyclists.
- Corridor design that provides for appropriate intersection locations, allowing for smooth access and facilitates traffic flow.

Participants suggested the following data sources and potential data needs:

- EDCTC's Administrative Operations Report, which is produced twice per year. The report includes: ridership information, basic performance measures, fare box recovery data, and ridership information.
- CSMP includes ridership information in relation to vehicle-miles traveled (VMT) on the corridor.
- Transit agencies maintain ridership data.
- Caltrans Highway Performance data maintains annual VMT data, which provides a baseline.
    - PEMS includes VMT detections, but not for all areas in the Sacramento region. The Highway Performance book is not an appropriate tool to measure quality of corridor. Additionally, the 2008 Public Road data is not model quality to be used assessing performance.
- Mr. Landon suggested evaluating transit using travel time, increased transit ridership data, time of day people take transit, and service during important and/or peak travel time. Transit performance measures and analysis could provide data to forecast or measure the benefit of increased transit travel.

Participants discussed the benefit and potential challenges related to transit and bicycle performance measures including:

- Bicycle travel is occasional and does not significantly impact traffic congestion along I-49; an increase in bicycle travel would not reduce congestion.
- Transit is a constant service along I-49; a small percentage of residents use transit since they live far from central urban areas.
- Increased transit use could provide traffic congestion relief.

Ms. Eagan asked participants how the measures could support County Transportation Commissions and plans. It is in Caltrans' interest to evaluate the complete transportation system when evaluating a project and include safety for bicycle (for example).

- Performance measures should not give a false perception that congestion will be decreased with increasing bike transportation
- Reduce new data needs; use existing bicycle and transit data.

Potential Contacts

Stakeholders and related plans and programs were identified during the focus group including:

- Mindy Jackson, El Dorado County Transit
- Dan Bolster, El Dorado County bicycles
- Jerry Barton, El Dorado County bicycles
- Susan Healy Harmon, Nevada County Transit Services Division
- Mike Harmon, Nevada County bicycles
- Nevada County Bicycle and Transit Plan
- Nevada County Pedestrian Plan (development in process)

Next Steps and Conclusion

MIG will schedule stakeholder interviews for October 25 through November 5, 2010; the Transit Workshop will take place between November 22 and 26; and the Bike Workshop will be held November 29 through December 3, 2010.

The project team will identify dates for the next team meeting as the outreach activities are conducted and key findings are determined.

MEMORANDUM

to Kelly Eagan, Project Manager, Caltrans District 3

from Joan Chaplick, Public Involvement Specialist, MIG, Inc.

re Caltrans District 3 Corridor System Management Plan (CSMP)
SACOG Transit Coordinating Committee (TCC) Meeting – November 10, 2010

date 11/12/10

Participants from Project Team

Alyssa Begley, Caltrans District 3
Rupinder Jawanda, Caltrans District 3
Nieves Castro, Caltrans District 3 Planning (by phone)
Joan Chaplick, MIG, Inc. (by phone)

Introduction

Through advance coordination with Jim Brown, Chairperson of the TCC, Kelly Eagan received an invitation for the project team to participate in the November 10th meeting of the TCC. The TCC provides a forum for the discussion of transit plans and issues, coordinates transit studies and systems on a regional basis, disseminates federal, state and local transit information, reviews and comments on the Metropolitan Transportation Plan and the Metropolitan Transportation Improvement Plan, and gives input into SACOG's Overall Work Program.

Kelly's original direction was to contact Jim Brown for advice on how best to involve transit agencies in the development of transit performance measures for inclusion in future CSMP's. Jim recommended that Caltrans introduce the concept at the November 10th meeting. This topic was one of approximately ten agenda items and about 10-15 minutes was devoted to the topic.

Kelly Eagan prepared a one-page summary of the project for distribution and presentation at the meeting. Unfortunately, Kelly was unable to attend the meeting. Joan Chaplick provided a short description of the project to the group and managed the discussion.

Discussion

Joan briefly described Caltrans's goals for the project which are to identify 1-2 transit-related measures that could help determine if mobility was improving along the corridor. She explained that Caltrans is very aware of the range of measures that transit agencies monitor regularly and did not intend to introduce any new requirements. Caltrans was seeking advice on what existing data and related measures could be used or adapted for inclusion in the CSMP's.

Participants had several questions. These included:

- How does Caltrans intend to use the performance measures?
- Will Caltrans be focusing on the number of people or vehicles moving through the corridor? It may be beneficial to look at people and delay.
- What is the sphere of influence for Caltrans?

Participants also had several suggestions:

- Consider using performance measures that transit operators already provide for Transportation Development Act reporting (Mindy Jackson – El Dorado County Transit Authority).
- Person minutes of delay would be more valuable than vehicle minutes of delay (Mike Wiley – Sacramento Regional Transit (SacRT)).
- Explore New Starts eligibility performance measures. Though it isn't done by all transit systems in the region (M. Wiley – SacRT).
- Consider looking at Transit User benefits. The data is available and is defined at the federal level.
- Consider looking at the measures developed for vehicles and see if there are parallel measures that can be developed for transit.
- Don't limit the approach to considering how transit performs within the corridor. Some of the biggest impacts occur where transit crosses the corridor (perpendicular). This is where there may be the biggest opportunity to improve performance. For example, improving the efficiency of interchanges using Intelligent Transportation System improvements, such as Bus Rapid Transit preemption at interchanges (Marc Heiman – SACOG).
- It was suggested the Caltrans be open to combining opportunities to conduct transit projects as part of the State Highway Operation and Protection Program (SHOPP). It was mentioned that Caltrans has been more open recently to discussions regarding the addition of transit, bike, and pedestrian improvement features as part of capital projects.
- Review existing CSMP performance measures at the workshop (Jim Brown – SACOG).
- Explain how Caltrans will use the performance measures at the workshop (Jim Brown – SACOG).

- Second Mindy Jackson's comment regarding the use of existing data, not new data collections (Jim Brown).
- Is this effort applicable to Fixed Route and/or Dial-A-Ride service?

Joan thanked the participants for their ideas and suggestions and informed participants they were likely to receive an invitation to an upcoming workshop that would focus on this topic. Participants suggested that the topic be discussed as broadly as possible so that transit agency participants could identify what would be most important to them in terms of corridor mobility and then develop the measures from there. If there were any questions, comments, or ideas, they were encouraged to contact Kelly Eagan, the Caltrans Project Manager.

MEMORANDUM

to Kelly Eagan, Project Manager, Caltrans District 3

from Joan Chaplick, Public Involvement Specialist, MIG, Inc.

re Caltrans District 3 Corridor System Management Plan (CSMP)
SACOG Bicycle and Pedestrian Advisory Committee (BPAC) Meeting, October 28, 2010

date 02/14/11

Participants

Kelly Eagan, Caltrans District 3
Dawn Cheser, Caltrans District 3
Nieves Castro, Caltrans District 3
Joan Chaplick, MIG, Inc.
Andi Nelson, MIG, Inc.
Dan Bolster, EDCTC
Ed Cox, City of Sacramento
Eric Fredericks, Caltrans/ WalkSacramento
Erik Reitz, YCTD
Greg Foell, Orangevale RPD
Greta Vohlers, City of West Sacramento
Jim Antone, Yolo Solano Air District
Jim Konopka, City of Folsom
Joe Concannon, SACOG
John Burton, Dry Creek Parkway
John Deeter, ECOS
Ken Gaines, SACDOT
Kevin Becker, City of Citrus Heights
Lacey Symons, SACOG
Lindell Price, Pedestrian advocate
Mark Thomas, City of Rancho Cordova
Pete Atwood, SACOG
Tony Powers, Dokken Engineering
Walt Seifert, SABA

Introduction

Through advanced coordination with Lacey Symons, Chairperson of the BPAC, Kelly Eagan received an invitation for the project team to participate in the October 28, 2010 meeting of the BPAC. The Committee functions as an advisory committee to the SACOG Board of Directors on the non-motorized content of plans and on priorities for non-motorized projects. The 80-member committee includes representatives from local bicycle and pedestrian advocacy groups as well as local government and nonprofit groups involved in bicycle and pedestrian planning.

The BPAC agenda provided 20 minutes to review and discuss the Caltrans District 3 Transit/Bicycle Performance Measures Project.

Project Overview

Kelly Eagan, Caltrans Project Manager, and Dawn Cheser, Caltrans District 3 Planning, thanked BPAC members and provided brief, opening remarks about the project. Ms. Eagan shared that this District 3 project represents a new effort by Caltrans to develop performance measures for transit/bicycle performance measures in corridor planning. The desired outcome of the Transit/Bicycle Performance Measures Project is to improve mobility along the CSMP corridors by focusing on the integrated management of the entire transportation network, including select freeway and parallel roadways, transit, and bicycle components of the corridor.

Caltrans is seeking input on potential performance measures to evaluate bicycle, pedestrian, and transit access within and across the highway corridors, which include I-5, I-80, U.S. 50, Highway 99, and Highway 49. Ms. Eagan explained that the project team will convene a working group on bicycle performance measures in December 2010. Before this working session, the project team is interested in hearing from a variety of stakeholders including the BPAC members.

Discussion

Ms. Eagan invited committee members to comment and ask questions regarding available bicycle data and potential measurements for bikes in the corridor. The committee referred to the following available data sources:

- Regional Bicycle, Pedestrian, and Trails Master Plan include goals and criteria on evaluating regional projects.
- Existing bicycle facilities, safety of the facilities, and connections among facilities.
- SABA bicycle counts.
- Switter injury, fatality, and crash statistics.
- FHWA's Bicycle Level of Service (LOS) recommendations.
- Caltrans Traffic Operations has a guide for bikes and pedestrians.
- Highway Design Manual, updated by Division of Design.

The committee members suggested the following potential performance measurements:

- Evaluate highway crossings as barriers to corridor access for bikes and pedestrians.
- Determine the best method to make interchanges bicycle friendly. The goal is to shift from intolerable to friendly interchanges. The difference between a one-lane and two-lane on/off ramp is significant for bicycles.
- Develop a standard for crossings, including the distance between crossings, along CSMP corridors. The standard should be tailored to on urban, suburban, or rural settings.

    - Compare the ratio of crossings on corridor facilities to the developed standard.
- Develop suitability standards for bicycle access on roads and interchanges.

Joan thanked the participants for their ideas and suggestions and informed participants they were likely to receive an invitation to an upcoming workshop that would focus on this topic. If there were any questions, comments, or ideas, they were encouraged to contact Kelly Eagan, the Caltrans Project Manager.

MIG

MEMORANDUM

to Kelly Eagan, Project Manager, Caltrans District 3

from Joan Chaplick, Public Involvement Specialist, MIG, Inc.

re Caltrans District 3 Corridor System Management Plan (CSMP)
Bicycle Performance Measurements Workshop – December 13, 2010

date 1/05/10

Workshop Participants

Jim Antone, Yolo Solano AQMD
Walt Seifert, Sacramento Area Bicycle Advocates
Tara Goddard, City of Davis Public Works Department
David Takemoto-Weerts, University of California, Davis
Stanley, Yuba County Trails
Lindell Price, El Dorado County Advocate
Joseph James Hurley, Sacramento AQMD
Ed Cox, City of Sacramento
Jim Konopka, City of Folsom
Mark Thomas, City of Rancho Cordova
Chris Dougherty, City of Sacramento
Greta Vohlers, City of West Sacramento
Jerry Barton, El Dorado County Transportation
Solvi Sabol, Placer County Transportation Planning

Participants from Project Team

Kelly Eagan, Caltrans District 3 Planning
Dawn Cheser, Caltrans District 3 Planning
Jeff Pulverman, Caltrans District 3 Planning
Nieves Castro, Caltrans District 3 Planning
Nick Compin, Caltrans District 3 Planning
Joan Chaplick, MIG, Inc.
Andi Nelson, MIG, Inc.

Introduction

Kelly Eagan welcomed the meeting participants and turned the meeting over to Joan Chaplick who served as the facilitator and moderator for the workshop. Ms. Chaplick reviewed the workshop agenda and asked participants to introduce themselves and identify their agency affiliation. She also reviewed the overall purpose of integrated multi-modal corridor management and provided background on Corridor System Management Plans (CSMPs).

Ms. Chaplick provided brief, opening remarks about the Caltrans District 3 Transit/Bicycle Performance Measures Project and project timeline. The desired outcome of the Transit/Bicycle Performance Measures Project is to improve mobility along the CSMP corridors by focusing on the integrated management of the entire transportation network,

including select freeway and parallel roadways, transit, and bicycle components of the corridor. She explained the objective of the bicycle workshop is to identify one to two bicycle performance measures that could help determine if mobility is improving on the corridor and identify potential data and reporting needs for performance measures.

She explained that Caltrans was seeking to work with existing data and did not intend to introduce any new requirements. Caltrans was seeking advice on how existing data and related measures could be used or adapted for inclusion in the CSMPs.

Best Practices

Moving into the Best Practices portion of the workshop agenda, Ms. Chaplick reviewed guiding principles of performance measure best practices. Before the workshop, the project team met with the SACOG Pedestrian and Bicycle Advisory Committee, Metropolitan Planning Organization, and the Regional Transportation Planning Agencies (RTPAs) to provide direction on what measures should be considered. Key findings and best practices from these meetings focused on the following key themes: safety, connectivity, facility specifications, and system completion. She then briefly reviewed example local, regional, State, and nationwide best practices.

Discussion

Joan invited workshop participants to engage in a discussion regarding bicycle performance measures; participants were encouraged to ask questions and provide comments. Participants had numerous questions about CSMP's and were seeking to understand how the corridors were defined. They were also having difficulty understanding how bicycle travel should be considered in the context of the corridor, especially where bicycles might not be allowed on sections of the roadway. They also noted that bicyclists travel a wide variety of routes and their route choices are usually influenced by safety and access. Bicyclists will regularly select the more bike-friendly route – even when it is longer.

It should be noted that the development of bike performance measures for corridor plans is a new activity and Caltrans recognizes that it needs the help of stakeholders to complete this effort. The participants included a mix of agency staff and advocates with different expertise and priorities. Feedback from participants indicated more detailed information about corridor planning and maps of the corridor would have aided the discussion.

The group's discussion has been organized as follows to help identify and group the points of greatest interest and concern.

Safety

Participants had several suggestions related to safety performance measures and available data sources.

- Potential safety performance measures for bikes along State corridors include:
    - Speed differential between bike and traffic by facility type. The greater the speed differential, the greater the risk for bicyclists. One way to address this is to reduce the speed of vehicular traffic. Most bicycles travel

at 5-15 MPH and one can assume that vehicles travel at the speed of the posted traffic MPH
    - Severity of total accidents along the corridor within a certain time period.

- Participants identified the following potential safety data ideas and suggestions:
    - Bicycles counts are available from: ACS, County, local TMA employee programs, and mechanical counters.
    - Sacramento County bike usage data along the American River Parkway.
    - Evaluating safety performance based on collisions/accident data is a challenge because data is not comprehensive.
    - The ACCMA and City of Seattle may have examples of bicycle safety performance measures.
    - Participants suggested that Caltrans start gathering bicycle performance measure data now for the future.

- Participants commented on safety performance measures including:
    - One participant commented that safety is not really a corridor mobility issue.
    - Another participant stated that if bike trips are not being made because there are safety concerns (there is likely a lot of that), then safety does relate directly to mobility.

Connectivity and System Completion

Participants had several suggestions related to connectivity and system completion performance measures and available data sources.

- Potential connectivity and system completion performance measures for bikes along State corridors include:
    - Bike access to and across the corridor, which could include cross-corridor east/west bike trips and the number of access points for bicycles.
    - Number of miles of out-of-direction travel for bicycles. A minimal amount of out-of-direction travel is optimal for bicycles and improves connectivity. Participants suggested determining the number of miles by comparing direct, unobstructed route mileage and with actual bicycle route mileage. Ultimately, bicycles should have access to direct routes between activity centers and key destinations.
    - Standard freeway crossing distance. Participants suggested managing an expectation for crossings of limited access facilities (freeways). If there was a design standard, such as crossings at mile intervals, then there could be a higher level and more simple measure of effectiveness for out of distance travel for bikes.
    - Bicycle trip duration by time or distance. Data is needed for each bicycle trip; this information would need to be tabulated.
    - Bicycle travel duration by time or distance.
    - Bicycle access to transit along the corridor.
    - Number of difficult transitions in the bicycle system along the corridor.

- Number of bicycle signalization amenities. Potential aspects to measure include: the delay time of traffic signals and the number of times bicycles need to stop and/or reduce their momentum on the corridor.

- Participants identified the following potential connectivity and system completion data ideas and suggestions:
  - Trip purpose and type of trip data is needed. SACOG has data from the May Bike Month regarding trip purpose and type of trip, but it is not comprehensive.
  - Number of people at key destinations data is needed.
  - Existing bicycle maps could provide exact bicycle routes within corridor, which would help to determine the system's baseline mileage.
  - Data needed to determine how routes interface with bicycles.
  - The grade of corridor roads could help to determine the momentum of bicycles.
  - Number of cyclists and usage is needed. Caltrans has some district-level bicycle survey data, but need usage data. One participant suggested measuring bicycle usage on the American River parkway.

- Participants provided suggestions related to connectivity and system completion performance measures:
  - Create a bicycle-only corridor within CSMPs.

Facility Specifications

Participants had several suggestions related to facility specifications performance measures and available data sources.

- Potential facility specifications performance measures for bikes along State corridors include:
  - Continuity of bicycle paths along the corridor.
  - Number of Class II bike lanes along the corridor.
  - Quality of corridor crossings for bicycles. One participant suggested developing a corridor-specific rating system to determine if a corridor is bike-friendly; rating gradations could be high, medium, and low.
  - Quality of stress pavement and ratio of rumble strips along corridor. It was noted that this measure parallels an existing CSMP performance measure for vehicles.
  - Barriers

- Participants identified the following potential facility specifications data ideas and suggestions:
  - Winter and summer month bicycle usage data should be collected and compared.

Questions and Comments

Participants had several questions and comments related to CSMPs, bicycle performance measures and available data sources. These included:

- What is the definition of a corridor in the CSMP? Does the corridor include parallel bike paths?
    - The corridor includes bicycle facilities in place or planned and parallel routes.
    - Yes, the corridor includes parallel bike paths.
    - *Follow-up response from Caltrans:* Several participants requested clarification regarding corridor limits and overall corridor system management. The corridor limits include a combination of distinct parallel and /or adjacent surface transportation networks (e.g., freeway, arterial, transit, and rail networks) that serve a particular travel market or markets and that are affected by similar transportation needs and mobility issues. Caltrans worked with local agency staff to identify these networks.
- Will Caltrans consider developing performance measures for pedestrians and corridor crossings?
- What is the definition of transportation services?
- Can performance measure data be compared year to year?
- How do bicyclists feel about travel on the corridor?
- How many bicycle commuters are on the corridor/ use the corridor?
- How does Caltrans intend to use the performance measures?
- Will Caltrans be focusing on the number of people or vehicles moving through the corridor? It may be beneficial to look at people and delay.
- What is the sphere of influence for Caltrans?

Summary and Next Steps

Joan thanked the participants for their ideas and suggestions. Workshop participants will be informed of upcoming advancements and, possibly, asked to review draft bicycle performance measures. If there were any questions, comments, or ideas, they were encouraged to contact Kelly Eagan, the Caltrans Project Manager.

MIG

MEMORANDUM

to Kelly Eagan, Project Manager, Caltrans District 3

from Joan Chaplick, Public Involvement Specialist, MIG, Inc.

re Caltrans District 3 Corridor System Management Plan (CSMP)
Transit Performance Measurements Workshop – December 17, 2010

date 1/18/10

Workshop Participants

Jim Brown, SACOG
Rosemary Covington, Sacramento Regional Transit
Scott Ousley, El Dorado County Transit Authority
Lindell Price, El Dorado County Advocate

Participants from Project Team

Kelly Eagan, Caltrans District 3 Planning
Dawn Cheser, Caltrans District 3 Planning
Nieves Castro, Caltrans District 3 Planning
Nick Compin, Caltrans District 3 Planning
Joan Chaplick, MIG, Inc.
Andi Nelson, MIG, Inc.

Introduction

Joan Chaplick welcomed meeting participants and introduced the members of the project team in attendance. Joan reviewed the workshop agenda and asked participants to introduce themselves and identify their agency affiliation. Ms. Chaplick provided brief, opening remarks about the Caltrans District 3 Transit/Bicycle Performance Measures Project and project timeline.

Ms. Chaplick then introduced Kelly Eagan of Caltrans. Ms. Eagan reviewed the overall purpose of integrated multi-modal corridor management and provided background on Corridor System Management Plans (CSMPs). She confirmed that the desired outcome of the Transit/Bicycle Performance Measures Project is to improve mobility along the CSMP corridors by focusing on the integrated management of the entire transportation network, including select freeway and parallel roadways, transit, and bicycle components of the corridor. She explained the objective of the transit workshop is to identify one to two transit performance measures and identify potential data and reporting needs for these performance measures.

She reminded participants that Caltrans is aware of the range of measures that transit agencies monitor regularly and Caltrans did not intend to introduce any new requirements. Instead, Caltrans was seeking advice on what existing data and related measures could be used or adapted for inclusion in the CSMPs.

Best Practices

Moving into the Best Practices portion of the workshop agenda, Ms. Chaplick reviewed the guiding principles for developing performance measures which emphasize stakeholder involvement. She briefly reviewed several case studies from local, regional, State, and nationwide examples. The examples suggest potential performance measures related to ridership, transit availability and accessibility, reliability, safety, and cost effectiveness. The case studies were intended to suggest potential measures that might be useful for this process.

Discussion

Participants asked questions and commented throughout the meeting. The discussion opened with a variety of questions and participants commented that they were challenged by the meeting's purpose and outcomes. Transit agencies track significant data and regularly report on performance measures. Participants were not quite clear about why Caltrans needed to develop these measures and how they would be used. The request for clarity and a more specific response to the purpose and usage of the measures was expressed frequently throughout the meeting. Caltrans representatives reiterated that the measures were intended to help determine if mobility was improving on the corridor and could be used to inform future planning and funding decisions. They may be a catalyst for future project and funding partnerships.

It should be noted that the development of transit performance measures for corridor plans is a new activity and Caltrans recognizes that it needs the help of stakeholders to complete this effort. Stakeholders participating in the meeting expressed skepticism about the need for these measures or and how their data could be adapted to respond specifically to corridor mobility determinations. They also were concerned that there might be unintended consequences related to how the measures might be used in the future, especially as it relates to project funding.

The group's discussion has been organized as follows to help identify and group the points of greatest interest and concern.

Workshop participants identified the following main question to answer during the workshop: "what is the productivity of the corridor?" One participant articulated that, "the goal of transit performance measures is to improve the capacity of the transit system."

Available Data

Participants had several suggestions and comments related to available data sources.

- Potential transit ridership data sources include:
    - Sacramento Regional Transit maintains ridership data. They have bus and light rail data that is readily available and accurate; an automatic counter is used on all buses and light rails. Rail data, on the other hand, is less precise since data is collected using a manual counter.
    - El Dorado County Transit maintains bus ridership data by bus route. The information is readily available and accurate; the commuter bus from Placerville to Downtown Sacramento may provide the most appropriate ridership data for

corridor mobility. The transit agency, though, does not use automatic counters.

- Network Diagnostic Tool (NDT) Data is collected by all transit agencies. Smaller transit operators report NDT data to Caltrans. Larger transit operators collect different data including: time of day, ridership by route, etc.

- The following information is available and collected by most transit agencies: miles, hours, and passenger data.
    - Sacramento Regional Transit (RT) has data regarding when riders board and disembark. RT can also isolate data over time and by route. El Dorado County Transit Agency has NDT data including: number of passengers and passenger hours. The Agency does not have data showing when riders board and debark; their data is not as complex as Sacramento RT.

Challenges

Participants recognized several challenges related to transit, performance measures, and available data.

- Most transit agencies in the region need Multivariate testing (MVTs) on transit.
    - MVTs on all transit vehicles would make data gathering and transmission to Caltrans easier for transit agencies.
- Participants noted that it is a challenge to provide data to Caltrans for the purpose of the transit performance measurements; it will take resources (time and money that agencies do not have) to report data in a standard format across agencies.
    - Transit agencies currently report data in a format that includes multiple corridors and is not limited to one stretch of road as it would be if data was provided to Caltrans for the purpose of transit performance measures.
    - Transit agencies count ridership; but it is difficult to determine which and how many riders travelled specifically on the corridor. The agencies would need to make some assumptions of what percentage of riders travelled the corridor.

Transit Agency Needs

Participants expressed a number of transit agency needs to support Caltrans' development and assessment of transit performance measures.

- In order to identify the appropriate data to assess transit mobility along the corridor, Caltrans needs to define the corridor's parameters and provide a specific definition of corridor. Then, agencies can determine the transit ridership within the corridor.
    - *Follow-up response from Caltrans:* Several participants requested clarification regarding corridor limits and overall corridor system management. The corridor limits include a combination of distinct parallel and /or adjacent surface transportation networks (e.g., freeway, arterial, transit, and rail networks) that serve a particular travel market or markets and that are affected by similar transportation needs and mobility issues. Caltrans worked with local agency staff to identify these networks.

Caltrans recognizes that CSMP boundaries may need to be refined and adjusted. It is important that bus, car, and truck system owners and operators agree upon corridor boundaries and key goods and service areas.

- Transit agencies need Caltrans data that is collected on roadside characteristics, so that they can provide the appropriate and parallel data to assess transit performance measures.
- Agency representative requested Caltrans clarify the following: Is Caltrans ultimately interested in the throughput of people from one point to another? Or the total number of passengers on transit?
    - *Follow-up response from Caltrans*: Several participants requested clarification regarding Caltrans data needs and ultimate goal for CSMPs. Caltrans is interested in measuring the mobility of people through the corridor regardless of travel mode.

Opportunities

Participants suggested several methods to improve and measures for Caltrans to determine corridor mobility.

Potential Performance Measures

- Measure the vehicle hours of service provided in the corridor; ridership per hour over time.
- Measure the passenger trips per hour, which includes people and hours spent.
- Determine if people are able to access transit.
- Determine the resources it would take for transit in the region to get X% of market share of a specific corridor.

Other Methods

- Assess the Park-n-Ride lot capacity.
    - Assessing the parking lot capacity will help to determine the capacity of rail systems, transit, etc. This could answer the following question: does a transit agency have the capacity to meet the need for transit in this area?
    - Transit agencies do not collect this data, but Caltrans has historically collected parking lot data.
    - It is important to measure parking lot capacity during peak hours.
- Develop a formula that is uniform for all transit agencies and corridors to estimated, as accurately as possible, the data (ridership, passenger trip hours, etc.) in each corridor.
    - The formula would aim to determine the proportion of riders and hours on each corridor. The formula would take existing ridership, hours, and miles into account, and, using a mathematical equation, distill it for each specific corridor.
    - Participants suggested Caltrans develop this formula and ask transit agencies to review it. Jim Brown of SACOG offered a potential SACOG modeling tool to help develop the formula.

- One participant suggested that transit performance measures may not be the most effective way to develop partnerships and identify funding opportunities.
    - *Follow-up response from Caltrans:* I would like to articulate Caltrans' current CSMP goal to explain why Caltrans needs multi-modal performance measures. CSMPs were the first attempt to move the concept of Integrated Corridor Management (ICM) from theory into practice. During the development of the first CSMPs, Caltrans and partner agencies identified and implemented strategies to enhance mobility in the corridors. The first CSMPs measured performance for vehicular travel on the State Highway System.

      Today, Caltrans' goal is go one step further and partner with all system owner/operators to coordinate all transportation modes and service deliveries. Caltrans believes that partnering will ensure the increased mobility in the corridors for: the State Highway System, parallel roadways, bicycles, and public transit. Based on our experience, transit performance measures for the CSMP corridors will ensure increased mobility in the corridors independent of mode.

      By working together to monitor the corridors, system operators will identify projects (operational or capacity) that can be jointly funded and have the ability to improve the mobility of people/goods. The 50-year vision of integrated corridor management goes further. By investing and modifying corridor infrastructure through (detection, bus lanes, aux lanes, CMS, etc.) and completing the ITS architecture, all system owner/operators can share technologies and a space at the TMC to manage the corridors real-time.
- One participant suggested, instead of developing and implementing performance measures, work to meet transit needs that are identified in the MTP 2035 and other existing policy documents in the region. Transit project needs are included in these documents, and, potentially, do not need to be identified again through performance measurement.
- Develop and implement a parallel performance measure system for vehicles and transit in the CSMPs. Participants noted that there is transit data available to support this.

Summary and Next Steps

Joan thanked the participants for their ideas and suggestions. Workshop participants will be informed of upcoming advancements and, possibly, asked to review draft action items in the near future. If there were any questions, comments, or ideas, they were encouraged to contact Kelly Eagan, the Caltrans Project Manager.

Appendix C – Best Practices Summary

MIG

MEMORANDUM

from Joan Chaplick, Project Manager, MIG, Inc.

to Kelly Eagan and Dawn Cheser, Caltrans District 3 Planning

re Best Practices for Bicycle and Transit Performance Measures

date December 23, 2010

I. Background and Introduction

Caltrans is developing transit and bicycle performance measures for inclusion in future Corridor System Management Plans (CSMPs) and other planning documents. The first step in performance measurement development is a review of Caltrans, external agencies and organizations' practices. Caltrans staff identified numerous examples that served as a starting point during a Project Development Team (PDT) meeting held on October 1, 2010. Additionally, MIG staff undertook a review of regional, state, and national bicycle and transit performance measures and best practices. In this memorandum, MIG staff briefly describes example performance measures and related processes. The results are presented the following sections:

- Purpose of Performance Measures
- Types of Performance Measures
- Characteristics of Effective Performance Measures
- Transit Measures
- Bicycle Measures
- Conclusion

Several factors were revealed during this research that should be taken in account while developing transit and bicycle performance measures. The factors include having a clear understanding of purpose, types and characteristics of effective measures. The National Cooperative Highway Research Program (NCHRP) suggests the following:

II. Purpose of Performance Measures

Performance measures are used to provide a clear roadmap for agencies as they aim to meet established goals and objectives. The National Cooperative Highway Research Program (NCHRP) states:

> [Transit and bicycle] system performance depends critically on how the parts fit and work together, not merely on how well each performs independently; it depends on interactions rather than on actions. Furthermore, a system's performance depends on how it relates to its environment—the larger system of which it is a part—and to other systems in that environment.[1]

III. Types of Performance Measures

The NCHRP identifies four main types of performance measures: Multi-jurisdictional, multi-modal, multi-strategy, and multi-stage.[2] The following is a brief description of each type.

- Multi-jurisdictional performance measures assess the impact of the system in relation to mutual goals and transportation objectives.
  - Challenging to develop a common set of performance measures
  - Use of performance information can be increased and improved through collaboration and dialogue.
- Multi-modal performance measures can improve mobility and accessibility for all system users.
- Multi-strategy performance measures compare the benefits of smaller-scale investments, such as system operations projects, to larger roadway projects. The purpose of these is to measure added capacity through more efficient traffic operations and smoother traffic flow.
- Multi-stage performance measures provide an opportunity to evaluate a project at various stages, linking planning and implementation.

IV. Characteristics of Effective Performance Measures

According to a study conducted at the Rensselaer Polytechnic Institute, effective transit performance measurement systems share the following characteristics[3]:

- Stakeholder acceptance: Stakeholders include the governing body, management, staff, and customers.
- Linkage to organizational goals: Goals and objectives should be quantifiable so that accomplishments can be gauged using the performance measurement system.
- Clarity: The measures, the methods, and the reporting of results are important to how well results are understood and accepted.

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[1] National Cooperative Highway Research Program. Report 664 – Measuring Transportation and Network Performance. July, 2010.
[2] National Cooperative Highway Research Program. Report 664 – Measuring Transportation and Network Performance. July, 2010.
[3] Regional Transit Performance Indicators: A Performance Measurement Model, Nakanishi, Yuko J. and List, G.F., Rensselaer Polytechnic Institute, Troy, NY, 2000.

- Reliability and credibility: The accuracy and usefulness of measured results depends on the quality of data used in calculating measures.
- Variety of measures: Performance measures should reflect a broad range of relevant issues.
- Number of measures: The variety of measures must be balanced against the need to avoid overwhelming users and reviewers.
- Level of detail: Measures should be sufficiently detailed to accurately identify areas where improvement is needed, without being more complex than necessary.
- Flexibility: The system should permit change over time as organizational goals evolve, but should preserve enough stability to allow comparisons over time.
- Realism of goals and targets: Targets should be realistic, but optimistic.

The National Cooperative Highway Research Program Report 664 states best practices include a performance measurement system that:

- Reflects the multiple objectives addressed by public transit including mobility and efficiency.
- Maximizes the automation of data collection and electronic information management to support a performance measurement system.[4]

V. Transit Performance Measures

I. Sacramento Region

Sacramento Regional Transit

The Sacramento Regional Transit District's Strategic Plan (2004-2009) includes performance measures for financial sustainability, customer service, regional leadership, quality workforce, and ethical and sound business practices. Applicable transit performance measures in the Plan include:

- Ridership average (number of passenger trips per million) including daily ridership and ADA passenger trips.
- Transit mode split, which is the proportion of people who use transit in comparison to the people who use other modes of transportation.
- Transit service availability within ¼ mile of "high transit need zones."

El Dorado County Transit Authority

The El Dorado County Transit Authority (EDCTA) prepares an administrative operations report every six months, which presents a comparison of performance

[4] Best Practices for Public Transportation: Guidance for Local Governments and Transit Operators to Achieve the Blueprint Vision of Significantly Increased Transit Use. Sacramento Transportation and Air Quality Collaborative. December 2005.

measures between fiscal years.[5] All transit services are evaluated using the following performance measures:

- Passenger trips
- Revenue miles
- Revenue hours – the number of hours a vehicle is in-service. Generally, revenue hours are impacted by schedule and service adjustments..
- Passenger fares
- Operating expenses
- Farebox recovery – The ratio of fare revenue to operating costs.
- Operating Cost/ Passenger Rails – The average trip cost per passenger.
- Operating Cost/ Revenue Hour
- Operating Cost/ Revenue Mile
- Passenger Trips/ Revenue Hour
- Passenger Trips/ Revenue Mile
- Vehicle Revenue hrs. per Employee
- Average Fare per Passenger

EDCTA sets an annual goal for increasing ridership by at least three-percent (3%).

Nevada County Transportation Commission

Nevada County's Transportation Development Plan is designed to enable the Transit Services Commission (TSC) to monitor performance and guide financial stewardship of Gold County Stage and Telecare services. The Plan includes goals, standards and performance measures. The performance measures provide the mechanism for judging whether or not the standards (quantifiable observable measures that reflect achievement of the goals) have been met. Performance measures vary based on type of transit.

To measure the service efficiency goal, the following performance measures are assessed:

- Farebox recovery ratio standard
    - As a collective system, all services (both local and regional services) should meet or exceed a minimum system-wide recovery ratio of 10%. A target of 13% is recommended in order to improve efficiency and reduce public subsidy of transit operations.
    - The demand response service's ratio of farebox income to operating costs should meet or exceed 10%.

To measure the service effectiveness goal, the following performance measures are assessed:

- Improvement in effectiveness standard.

[5] El Dorado County Transit Authority, Administrative Operations Report Fiscal Year 2009/10.

    - All services are expected to increase ridership productivity by a minimum of 1% annually.
- Service effectiveness standard.
    - Commuter and regional services are expected to serve a minimum of 7.0 passenger-trips per vehicle service hour and local route services are expected to serve a minimum of 8.0 passenger-trips per vehicle hour.
    - Demand service is expected to serve a minimum of 2.0 passengers per vehicle service hour.

To measure the service quality goal, the following performance measures are assessed:

- Passenger load standard (Gold County Stage)
- Accident standard (Gold County Stage)
- Road calls (Gold County Stage)
- Preventative maintenance standard (Gold County Stage)
- Vehicle standard (Gold County Stage)
- Vehicle cleanliness standard (Gold County Stage)
- Passenger complaint standard (Gold County Stage)
- Training standard (Gold County Stage)
- On-time performance standard (Gold County Stage)
- Missed trips standard (Gold County Stage)
- Service availability standard (Demand Response Service)
- On-time performance standard (Demand Response Service)
- Missed trips standard (Demand Response Service)
- Trip denial standard (Demand Response Service)

To measure the accessibility goal, the following performance measures are assessed:

- Service area standard
- Vehicle accessibility standard

To measure the planning and management goal, the following performance measures are assessed:

- Planning standard
- Service monitoring standard
- Transportation Development Act standard
- Land use planning standard
- Coordination standard
- Marketing standard
- Administrative cost standard

Butte County Association of Governments

The Butte County Association of Governments (BCAG) prepared the Regional Transportation Improvement Program 2010/11-2014/15 in response to the 2008

State Transportation Improvement Program (STIP) Cycle. The California Transportation Commission has required that each RTIP be evaluated for performance and cost effectiveness. BCAG has been asked to use the following criteria:

- Change in vehicle occupants, freight and goods, travel time or delay.
- Change in accidents and fatalities.
- Change in vehicle and system operating costs.
- Change in access to jobs, markets and commerce.
- Change in frequency and reliability of rail/transit service.
- Change in air pollution emissions.
- Change in passenger, freight and goods miles carried.

Placer County Transportation Planning Agency

The Placer County Transportation Planning Agency's 2035 Regional Transportation Plan (RTP). The following performance criterion helps the Agency to set priorities for implementation of RTP projects.

- Improve transportation safety throughout the region.
- Relieve congestion on roadways and continuously improve air quality.
- Enhance regional integration for all modes, and increase multi-modal travel opportunities.
- Maintain existing transportation facilities to comply with all applicable standards.
- Implement transportation projects that preserve natural and cultural resources.
- Provide opportunities for public participation in all stages and phases of transportation planning and project development and implementation.

The Agency identifies multiple tools and datasets to quantify information where available and evaluate the performance of the Plan. Datasets include: Highway Performance Monitoring System (HPMS) data, transit operator financial audits, Triennial Performance Audit to evaluate the effectiveness, efficiency, and economy of transit operations.

San Joaquin Regional Transit District and COG

The San Joaquin Regional Transit District's Short Range Transit Plan (RTD) includes performance measures for transit.[6] When reviewing individual service efficiency and effectiveness, the RTC uses the following performance measures:

- Service efficiency and cost effectiveness: operating cost per revenue hour, operating cost per revenue mile and net subsidy per passenger trip.
- Service reliability: interruptions to revenue service and on-time performance.

[6] San Joaquin Regional Transit District Short Range Transit Plan, Fiscal Year 2009-2013. Available online at: http://sanjoaquinrtd.com/srtp/pdf/20090701-SRTP-Final.pdf

- Service effectiveness: ratio of passengers per revenue hour and passengers per revenue mile.
- Fare ratio recovery: ratio of revenues received per cost to operate the service.

The San Joaquin Council of Governments (SJCOG) includes transit performance measures in its 2011 San Joaquin Council of Governments' Regional Transportation Plan.[7] Performance measures help SJCOG achieve its goal to increase access and mobility in the region. Transit performance measures include:

- Improve current regional average of transit frequency (60 Minutes) by service (fixed route/intercity bus) by 65% by 2035.
- Increase current annual usage of public transit to population from 83:1 to 67:1 by 2035.
- Increase current number of passengers served per train miles by 30% by 2035.
- Increase current regional percentage of con-time bus routes per year by 2035.
- Reduce annual average passenger rail headway delay due to conflict with freight operations by 95% by 2035.
- Increase the number of available Park & Ride lot spaces (1,450) by one space per every 100 dwelling units through 2035.
- Increase Park & Ride lot utilization per available spaces from 70% to 85% by 2035.

City of Folsom Transit Performance Measures

The City of Folsom's Short-Range Transit Plan outline performance measures, standards, and monitoring practices meet the Folsom Stage Line's goals and objectives.[8]

[7] 2011 San Joaquin Council of Governments' Regional Transportation Plan.
[8] Folsom Short-Range Transit Plan Final Report, August 1999.

Folsom Stage Line Goals, Objectives, Performance Measures, Standards and Monitoring Methods			
Goals and Objectives	**Performance Measures**	**Standards**	**Monitoring**
1. Provide a transit system that is effective in meeting the needs of the community.			
a. Provide convenient transit service.	% of major activity centers within 1/8 mile of routes	100%	Annually as part of SRTP update
b. Provide reliable transit service.	% scheduled departures 0-5 minutes late % DAR pick-ups within 15 minutes of quoted time Missed trips Miles between roadcalls	90% 90% Zero 10,000	Quarterly field monitoring by Lead Worker Monthly operating reports
b. Provide safe transit service.	Miles between preventable accidents	100,000	Monthly operating reports
c. Provide attractive services which respond to market demands for transportation.	Annual ridership growth	Equal to population growth	Annually as part of SRTP update
d. Proved coordinated transit services.	% timed transfers with LRT during peak periods	80% of connections within 10 minutes	Annually as part of SRTP update
e. Provide accurate and timely marketing information	Marketing materials accurate and widely distributed	Yes	Annually as part of SRTP update
2. Operate and manage the transit system efficiently.			
a. Minimize operating costs per unit of service provided.	Annual increase in cost per vehicle revenue hour	Annual increase < 90% of CPI	Annually as part of SRTP update
b. Maximize vehicle life through preventive maintenance.	% of preventive maintenance inspections completed within 500 miles of target	100%	Monthly operating reports
c. Maximize service productivity.	Passengers per vehicle revenue hour	Fixed route - 12 psgrs/hr within 2 years Dial-a-ride - 6 psgrs/hr	Monthly operating reports
d. Maximize cost recovery through farebox receipts.	% cost recovery through farebox receipts	20% systemwide 10% Dial-a-ride	Monthly operating reports
3. Provide accessible transit service.			
a. All vehicles equipped with working lifts.	% vehicles equipped with working lifts	100%	Annually as part of SRTP update
b. Concentrations of elders and persons with disabilities served by transit.	% of known concentrations of seniors and persons with disabilities served by transit	100%	Annually as part of SRTP update
c. Provide adequate capacity to meet demand.	Peak loading conditions not to exceed 150% of capacity	At all times on all services	Monthly operating reports
d. Work with community to identify areas where new services are required.	Meetings with community groups, employers in response to comments from public	Respond within 30 days to all service requests and resolve in six months.	Annually as part of SRTP update
Source: Table 4-1, Folsom Short-Range Transit Plan Final Report, August 1999			

Elk Grove e-tran

The City of Elk Grove's Transit Services Department is responsible for the operation of e-tran and e-van within the City of Elk Grove. The City's annual budget includes performance measures for transit services.[9] Transit performance measures include:

- Total number of e-tran passengers
- Total number of e-van passengers
- Total number of revenue hours: e-tran
- Total number of revenue hours: e-van
- Passengers per revenue hour: e-tran
- Passengers per revenue hour: e-van

[9] City of Elk Grove. Budget 2010: Chapter 10 – Enterprise Funds. Available at: http://www.elkgrovecity.org/documents/agendas/attachments/budget/2010/10-enterprise-funds.pdf

II. California

California's Capitol Corridor

The Capitol Corridor Joint Powers Authority prepared the Capital Corridor Intercity Passenger Rail Service Business Plan Update FY 2009-10-FY2010-11, which presents the strategic plan and funding request for the next two fiscal years. The Plan outlines the performance standards used to evaluate Amtrak and the Union Pacific Railroad (UPRR) including:

- Route ridership
  - Average daily ridership
  - Percent change in route ridership
  - Percent change in train passenger miles
  - Percent change in train miles
  - Passenger miles per train mile (PM/TM)
- System operative ratio (train and feeder bus)
  - Percent change in total revenue
  - Percent change in total expenses
  - Train revenue per train mile
  - Train revenue per passenger mile (yield)
  - Train expenses per train mile
  - Train only state cost per train mile
  - Train only state cost per passenger mile
- On-time performance
  - Percent of California Car Fleet available
- Operating results
  - Total revenue
  - Total expenses

California Department of Mass Transit

The California Department of Mass Transit's preliminary draft Statewide Transit Strategic Plan report reviewed 39 short range transit plans across the State. The report highlights common performance measures including:

- Customer service
  - Customer satisfaction
  - Customer on-time arrival to destination
  - Transit access
  - Efficient transfer-wait time
- Transit travel demand
- Physical infrastructure
- Financial health

The report also reviews common standard measures including:

- On-time performance

    - Less than one minute before scheduled arrival
    - Leaving no later than 5 minutes of scheduled departure
    - Most agencies try to achieve between 90 to 95 percent on-time arrival
- Fare-box recovery ratio
    - TDA requires a 20% recovery ratio and is a standard, but some regions expectations are higher
- Passenger boarding
    - Measures effectiveness of routes

The following system performance indicators are variables that were commonly found across the state:

- On-time arrival
- Distance between road-call/mechanical breakdown
- Average weekday/weekend boarding
- Percent of system ridership or mode share
- Peak/off-peak load
- Percent of trips missed
- Operator absence
- Headway

The following are common performance measures for the Sacramento region:

- Annual ridership growth
- System passengers per revenue vehicle hour
- Percentage cost recovery through fare box receipts
- Annual operating cost increase per revenue vehicle hour

Performance Measures for Rural Transportation Systems

Caltrans' 2006 Performance Measures for Rural Transportation Systems Guidebook includes performance measures for the following seven main performance categories.[10]

- Safety
    - Accident rate per million vehicle miles traveled
- Mobility
    - Origin-destination travel times along major corridors (min)
    - Actual Average Speeds (mph)
    - Delays (sec or min)
- Accessibility
    - Accessibility different (min): time from a particular point between the fastest and second-fastest routes to State Highway System access points.
- Reliability
    - Variability of travel times between major OD pairs

[10] Caltrans. Performance Measures for Rural Transportation Systems Guidebook. June, 2006.

- Productivity
  - Number of people throughput
  - Lost lane miles
  - System wide (or) per roadway segment
- Return on investment
  - Life-cycle costs (dollars)
  - Life-cycle benefits
  - Net present value (dollars)
  - Benefit/cost ratio (benefits divided by costs)
  - Rate of return on investment
  - Project payback period
  - Calculated benefits: travel time savings, vehicle operating cost savings, accident cost savings, and emission cost savings.

Alameda County Congestion Management Agency

The Alameda County Congestion Management Agency outlined performance measures with their corresponding long-range goal, objective, required data, outcomes, and cautionary notes regarding the use of required data.[11] Transit performance measures include:

- Transit routing. Required data: Current CMP requirement.
- Transit frequency. Required data: Current CMP requirements. Number of lines operating at each frequency level.
- Transit ridership. Required data: Number of riders.

MTC Transportation 2035 Performance Objectives

The Metropolitan Transportation Commission developed performance objectives for each goal in the 2035 Plan, linking transportation performance measurement to the organization goals.[12]

- Economy Goal: Maintenance and safety
  - Local streets and roads: Maintain pavement condition index of 75 or better
  - State highways: Distressed land-miles no more than 10% of system.
  - Transit: Average asset age no more than 50% of useful like and average distance between service calls of 8,000 miles.
- Economy Goal: Reliability and freight
  - Reduce delays 20% per capita from today.
- Environment Goal: Clean air
  - Reduce vehicle miles traveled 10% per capita from today.
  - Reduce emissions fine particulate matter and carbon dioxide.

[11] Alameda County Congestion Management Agency 2008 Countywide Transportation Plan.
[12] MTC, Transportation 2035 Plan: Performance Assessment Report. Available online: www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035Plan-Perf_AssessmentReport.pdf, p.3

MTC proposes quantitative performance measures to meet the goals listed above. Examples of quantitative performance measures include benefit-cost ratio (monetized) reflecting:

- Recurrent delay (vehicle hours)
- Nonrecurring delay (vehicle hours)
- Transit travel time
- Fatal and injury collisions

San Luis Obispo Regional Transit Authority

The San Luis Obispo Regional Transit Authority includes five performance measures that are calculated for each fiscal year.[13] The five performance measures are as follows:

- Operating cost;
- Fare revenue;
- Vehicle Revenue Miles (VRM)
- Vehicle Revenue Hours (VRH)
- Unlinked passenger trips

III. Nationwide

Capital District Transportation Committee

The Capital District Transportation Committee (CDTC) in Albany, New York collected performance measures that aimed to improve overall network performance.[14]

- Access
  - Percentage of p.m. peak-hour trips transit accessible
  - Percentage of p.m. peak-hour trips with transit advantage
  - Percentage of p.m. peak-hour trips accessible by bicycle and walking.
- Accessibility
  - Travel time between representative locations
- Congestion
  - p.m. peak-hour trips excess person-hours delay
  - Excess person-hours of peak-hour delay per person-miles traveled
  - Excess person-hours of peak-hour delay per person
- Flexibility
  - Reserve capacity on the urban expressway and arterial system (p.m. peak-hour vehicle miles of capacity

[13] San Luis Obispo Regional Transit Authority. Short Range Transit Plan Update for RTC Fixed Route Service Transit Plan Update.
[14] CDTC Congestion Management Process, 2007. Available online: www.cdtcmpo.org/rtp2030/amterials/cm-doc.pdf.

- Safety
    - Estimated annual societal cost of transportation accidents (SM)

Transit Cooperative Research Program

A survey of 22 transit operators and 10 related planning agencies conducted by the Transit Cooperative Research Program identified the following performance measures as being the most widely used.[15]

Measures Used by at Least 50% of Agencies

- Cost effectiveness
- Ridership
- On-time performance
- Cost-efficiency
- Accident rates

Additional Measures Used by 25-50%

- Road (service) calls
- Employee productivity
- Missed trips
- Complaint/compliment ratio
- Passenger load

Other Performance Measure Examples:

- Weighted average ratio of auto-to-transit travel times
- Coverage/turn-down rate for demand-responsive services.
- Customer satisfaction and customer loyalty.
- Incident reports and other measures of passenger safety, including vandalism, other crime, and safety personnel/passenger ratios.
- Energy consumption per passenger.

Florida Department of Transportation

The Florida Department of Transportation reports on the performance of Florida's transportation system and the performance of our agency for many years in various reports on a policy-level, a system level, a program-level, and a project level. Mobility is defined as "the ease with which people and goods move throughout their community, state, and world." The Department uses the following transit mobility performance indicators:

- Transit mobility[16]
    - Ridership – total passenger trips
    - Auto/transit travel time ratio – door-to-door trip time

[15] A Guidebook for Developing a Transit Performance Measurement System (Report 88), Transit Cooperative Research Program, Transportation Research Board, 2003.
[16] Florida Department of Transportation. Long Range PP FY 2010/11-2014/15. September 2009.

- Reliability – on-time performance
- Coverage - % person minutes served
- Frequency – Buses per hour
- Span – hours of service per day
- Load factor 0 % seats occupied

The principles of the mobility performance measure program include:

- Builds on national research
- Policy-driven and supported by data
- Reflect the users' experience in the system
- Address multimodal considerations
- Results are understandable to the General Public
- Results can be forecast into the future

New York City Transit Authority

The New York City Transit (NYCT) Authority's mission is to provide timely and reliable mass transit to more than 7 million daily riders.[17] NYCT established three main performance indicators (PIs) to ascertain how closely this mission is being met including:

- En route schedule adherence (-1 to +5 minutes)
- Headway regularity (+/- 50%)
- Wait assessment

Data is collected electronically and indicators are reported semi-annually to the public. Detailed internal diagnostic reports are issued frequently to help operations management improve service performance.

VI. Bicycle Performance Measures

There are several statewide guides and manuals that set standards for bicycle facilities. While these documents do not include performance measures, they identify how to determine the completeness and quality of bicycle facilities. Performance measures related to system completeness can be developed using these documents.

Caltrans Highway Design Manual

Chapter 1000 Bikeway Planning and Design of the Highway Design Manual (HDM) includes miles of conventional highway miles with standard shoulder widths in Chapter 1000 as follows:

> "Many rural highways are used by touring bicyclists for intercity and recreational travel. It might be inappropriate to designate the highways as

[17] Transportation Research Board Business Office. "Performance Measurements on Mass Transit: Case Study of New York City Transit Authority." Transit 2009, volume 2.

bikeways because of the limited use and the lack of continuity with other bike routes. However, development and maintenance of 1.2 m (3.9 ft) paved roadway shoulders with a standard 100 mm (3.9 in) edge line can significantly improve the safety and convenience for bicyclists and motorists along such routes."[18]

The HDM includes general criteria for bicycles and design guidelines for bicycle facilities.

Guide for Development of Bicycle Facilities

The American Association of State Highway and Transportation Officials developed the Guide for Development of Bicycle Facilities that comprehensively guides the planning, design, and operation and maintenance of bike lanes, shared use paths, bicycle crossings, bicycles on freeways, and parking facilities.

Caltrans Manual - Pedestrian and Bicycle Facilities in California

The Pedestrian and Bicycle Facilities in California Report prepared for Caltrans Planners and Engineers provides standard and innovative practices for bicycle facilities, Class I bike paths, Class II bike lanes, Class III bike routes, signals, roadway design and resurfacing. [19] Class III bike routes are shared facilities which service either to: provide continuity to other bicycle facilities; or designate preferred routes through high demand corridors.

Standards and recommendations for Class II Bike Lanes and Class III Bike Routes in the Report include:

- Bike lanes should be 1.5 m (or 5 feet) wide (Class II).
- Delineation lines must be dropped at the approach of the right-turn lane (Class II).
- Bike Xing signs to warn motorists of the potential for bicyclists crossing their path (Class II).
- Bicycle-sensitive detectors within the bike lane (Class II).
- Wide curb lanes of at least 14 feet (Class III).
- Curb lanes 16 feet or wider, the edge line should be stripped (Class III).
- Avoid directing bicyclists onto sidewalks or other streets for short distances (Class III).

Alameda County Congestion Management Authority

Alameda County's Congestion Management Agency outlined performance measures with their corresponding long-range goal, objective, required data,

[18] Caltrans Highway Design Manual Chapter 1000 Bikeway Planning and Design. June 26, 2006.
[19] Caltrans and Alta Planning and Design. Pedestrian and Bicycle Facilities in California: A Technical Reference and Technology Transfer Synthesis for Caltrans Planners and Engineers. July, 2005.

outcomes, and cautionary notes regarding the use of required data.[20] Bicycle performance measures include:

- Completion of County-wide Bike Plan. Required data: Miles and percent completion of Bikeway Plan.
- Roadway Accidents. Required data: Number of accidents/number of miles from Switter/TASIS System

City of Seattle

The City of Seattle monitors performance measures to determine the amount of progress being made toward achieving the goals and objectives of the Bicycle Master Plan.[21] These measures are designed to quantify the overall goals and objectives of the Plan. For each measure, the City identified a baseline measurement, performance target, data collection frequency, and data collection responsibility. Performance measures include:

- Number of cyclists observed at counting locations throughout Seattle.
- Number of police reported bicycle crashes per total number of bicycles counted and annual traffic volumes.
- Percentage of Bicycle Facility Network completed.
- Number of bicycle racks installed through the SDOT Bicycle Parking Program.
- Number of Seattle Bicycling Guide Maps distributed
- Percentage of targeted SDOT staff who participate in training on bicycle issues.
- Number of bicycle project grant applications applied for and obtained for bicycle programs.
- Number of bicycle spot improvements completed.

Vermont Agency of Transportation

The State of Vermont Department of Transportation's Vermont Bicycle and Pedestrian Policy Plan establishes two performance measures:

- Reported motor vehicle crashes involving bicyclists
- Miles of bicycles fatalities developed

Nationwide Bicycle Performance Measure Survey

The State of Vermont reviewed several other state's bicycle performance measures, such as Arizona, Florida, Maryland, New Jersey, Oregon, Tennessee, Washington, Wisconsin. The survey found that performance measures can address different aspects of the state's bicycle program including[22]:

- Safety

[20] Alameda County Congestion Management Agency 2008 Countywide Transportation Plan.
[21] City of Seattle. Seattle Bicycle Master Plan, Chapter 7.
[22] Vermont Bicycle and Pedestrian Policy Plan, Technical Memorandum #1. October, 2005.

    - Number of serious injury of fatal pedestrian or bicycle crashes within an area.
    - Percentage of all crashes that involve bicyclists.
    - *Note: The best types of safety performance measures account for pedestrian and bicycle usage, or exposure.*
- Usage
    - Number of people bicycling.
    - Percent of all trips that are made by bicycle modes.
    - *Note: these are typically based on count, consensus, or survey data.*
- Facilities - non-motorized facility provision.
    - Miles of roadway with paved shoulders.
    - Mikes of greenway paths.
    - Percent of intersections with curb ramps or pedestrian signals.
- Education/Enforcement - measures of the number of people educated on bicycle safety behavior.
    - Percentage of students taught in bicycle safety education classes.
    - Percent of bicyclists wearing helmets
- Land Use - measures of land use development in relation to the location and quality of non-motorized facilities.
- Institutionalization - measures that address operating procedures related to non-motorized transportation within organizations.
    - Total amount spend on bicycle programs by the state DOT
    - Number of employees that are trained on bicycle design.
    - Number of local governments that prepare bicycle master plans.
    - Number of citizens that are members of bicycle advocacy groups.

Potential Bike Performance Measures

Anne Mahaney, Caltrans Bicycle Facilities Unit and member of the PDT, suggested the following potential bike performance measures:

- Ratio of designated bikeway miles to road miles
- Miles of roadway without gaps or barriers for bicyclists
- Number of cities with bicycle parking ordinances
- Ratio of bicycle parking spaces to automobile parking spaces
- Maintenance frequency
- Connections to other travel modes (airports, rail, bus, waterways, parking lots, etc)
- Number of bicycle and motorcycle detection intersections with traffic-actuated signals (Caltrans Traffic Operations Policy Directive, TOPD 09-06)
- Number of local governments with bicycle transportation plans
- Bicycle transportation investments, including maintenance, as a percentage of the total transportation investment for the corridor. Or Number of bikeways planned in a concurrent transportation project
- Number of bicycle fatalities and injuries per X VMT.

VII. Conclusion

The approaches presented in this memorandum are the starting point for future PDT and working group discussions. The results of the best practice review indicate that there are common topics and measurements that appear between different agencies and organizations. Caltrans staff need to determine which topics should have measurements and if the appropriate data is available to make the measurement viable. It is likely this list will be supplemented as additional practices are identified during the stakeholder interviews and throughout the project period.

Appendix D – List of Participants

List of Participants

Project Team

Kelly Eagan, Caltrans District 3 Planning
Dawn Cheser, Caltrans District 3 Planning
Nieves Castro, Caltrans District 3 Planning
Jeff Pulverman, Caltrans District 3 Planning
Nick Compin, Caltrans District 3 Planning
Joan Chaplick, MIG, Inc.
Andi Nelson, MIG, Inc.

RTPAs

Jerry Barton, El Dorado County Transportation Commission (EDCTC)
Dan Landon, Nevada County Transportation Commission (NCTC)

SACOG TCC

Alyssa Begley, Caltrans District 3
Rupinder Jawanda, Caltrans District 3

SACOG BPAC

Dan Bolster, EDCTC
Ed Cox, City of Sacramento
Eric Fredericks, Caltrans/ WalkSacramento
Erik Reitz, YCTD
Greg Foell, Orangevale RPD
Greta Vohlers, City of West Sacramento
Jim Antone, Yolo Solano Air District
Jim Konopka, City of Folsom
Joe Concannon, SACOG
John Burton, Dry Creek Parkway
John Deeter, ECOS
Ken Gaines, SACDOT
Kevin Becker, City of Citrus Heights
Lacey Symons, SACOG
Lindell Price, Pedestrian advocate
Mark Thomas, City of Rancho Cordova
Pete Atwood, SACOG
Tony Powers, Dokken Engineering
Walt Seifert, SABA

Bike Workshop Participants

Jim Antone, Yolo Solano AQMD
Walt Seifert, Sacramento Area Bicycle Advocates
Tara Goddard, City of Davis Public Works Department
David Takemoto-Weerts, University of California, Davis
Stanley, Yuba County Trails
Lindell Price, El Dorado County Advocate
Joseph James Hurley, Sacramento AQMD

Ed Cox, City of Sacramento
Jim Konopka, City of Folsom
Mark Thomas, City of Rancho Cordova
Chris Dougherty, City of Sacramento
Greta Vohlers, City of West Sacramento
Jerry Barton, El Dorado County Transportation
Solvi Sabol, Placer County Transportation Planning

Transit Workshop Participants

Jim Brown, SACOG
Rosemary Covington, Sacramento Regional Transit
Scott Ousley, El Dorado County Transit Authority
Lindell Price, El Dorado County Advocate

Appendix E – Workshop Invitations and Thank You Letters

December 3, 2010

Dear Sir or Madam,

Caltrans requests your attendance at the Corridor System Management Plan (CSMP) Performance Measurement Workshop for Bicycles on Monday, December 13, 2010 from 1:00PM to 3:00PM.

We would like your assistance in identifying 1-2 bicycle performance measures for use in assessing and reporting on the status of overall mobility within corridors within which integrated system management is being implemented. Caltrans has developed first generation CSMPs to begin the process of integrating daily system operations with capital improvements and traffic and transit management strategies for all modes and across jurisdictions to improve the safety and mobility of people and goods along these corridors, However, they primarily measured the performance of vehicular travel on the State Highway System. The goal is to develop meaningful and understandable performance measures for bicycling and transit to be used to assess and report on overall corridor mobility. This will require the creativity of a diverse group of bicycling representatives to assist Caltrans with the identification of these measures.

We hope that you or your representative can join us:

Date: *December 13, 2010*
Time: *1:00PM – 3:00PM*
Location: *SACOG Boardroom, 1415 L Street, Sacramento, CA, 95814*

Please RSVP for you or your representative to Andi Nelson at andin@migcom.com or 510.845.7549 by December 6th. Meeting materials and the agenda are included herein. Lunch will be provided at 12:30PM.

Thank you.

Kelly Eagan

Corridor Planning Manager
US 50, SR 99 South, I-5
Caltrans District 3
Planning & Local Assistance
Office: (530) 741-5452

December 3, 2010

Dear Sir or Madam,

Caltrans requests your attendance at the Corridor System Management Plan (CSMP) Performance Measurement Workshop for Transit on Friday, December 17, 2010 from 9:00AM to11:30AM.

We would like your assistance in identifying 1-2 transit performance measures for use in assessing and reporting on the status of overall mobility within corridors within which integrated system management is being implemented. Caltrans has developed first generation CSMPs to begin the process of integrating daily system operations with capital improvements and traffic and transit management strategies for all modes and across jurisdictions to improve the safety and mobility of people and goods along these corridors, However, they primarily measured the performance of vehicular travel on the State Highway System. The goal is to develop meaningful and understandable performance measures for bicycling and transit to be used to assess and report on overall corridor mobility. This will require the creativity of a diverse group of bicycling representatives to assist Caltrans with the identification of these measures.

We hope that you or your representative can join us:

Date: *December 17, 2010*

Time: *9:00AM – 11:30AM*
Location: *SACOG Boardroom, 1415 L Street, Sacramento, CA, 95814*

Please RSVP for you or your representative to Andi Nelson at andin@migcom.com or 510.845.7549 by December 10th. Meeting materials and the agenda are included herein. Breakfast refreshments will be available at 8:30AM.

Thank you.

Kelly Eagan

Corridor Planning Manager
US 50, SR 99 South, I-5
Caltrans District 3
Planning & Local Assistance
Office: (530) 741-5452

January 26, 2011

Dear Sir or Madam,

Thank you for participating in the Corridor System Management Plan (CSMP) Performance Measurement Workshop for Bicycles held on Monday, December 13, 2010. A wealth of information and experience was shared by you and other participants during our discussion and we really appreciate you taking the time to attend.

Your advice and direction with this process is extremely important and we hope that you can continue to be involved and provide feedback. As a follow-up, we are providing the following for your consideration:

- "Corridor mobility" and "corridor system management" definitions;
- Proposed draft bicycle performance measure; and,
- Minutes from the workshop (see attached).

Definitions of Key Concepts

Participants asked for definitions of "corridor mobility" and "corridor management," both of which are key concepts. In response, we have developed the following:

- Corridor Mobility - The movement of people and goods along a combination of discrete parallel transportation networks (freeway, arterial, bike, and transit) to serve a particular market(s) that exhibit similar transportation needs.

- Corridor Management –The identification and implementation of strategies to maintain and enhance corridor mobility.

Proposed Draft Bicycle Performance Measurement

Based on our synthesis of the discussion at the workshop, we propose to develop, in partnership with regional and local agencies, a baseline performance measure that provides a listing of bike route gaps and an annual reporting of gap closures for those bike routes.

Although a variety of potential measures were discussed, this particular measure appeared to be of paramount interest to everyone and is arguably one of the most important to facilitating bike use to improve overall corridor mobility.

We would appreciate any feedback you have on this proposed measure no later than *February 4, 2011*. Based on the input we receive, we will revise and finalize the proposed bicycle performance measurement. We look forward to continuing to work with you on the development and implementation of performance measures in the corridor management planning process.

Please feel free to contact me if you have questions.

Thank you.

Kelly Eagan
Corridor Planning Manager
US 50, SR 99 South, I-5
Caltrans District 3
Planning & Local Assistance
Office: (530) 741-5452

Appendix F – Bicycle and Transit Workshop Wallgraphics

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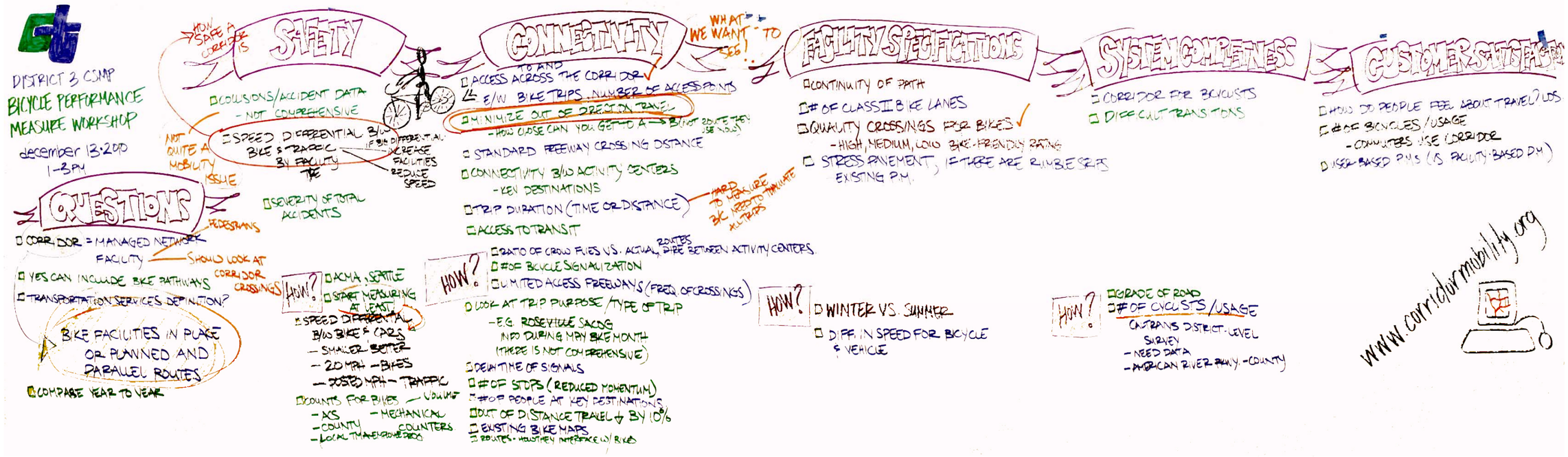


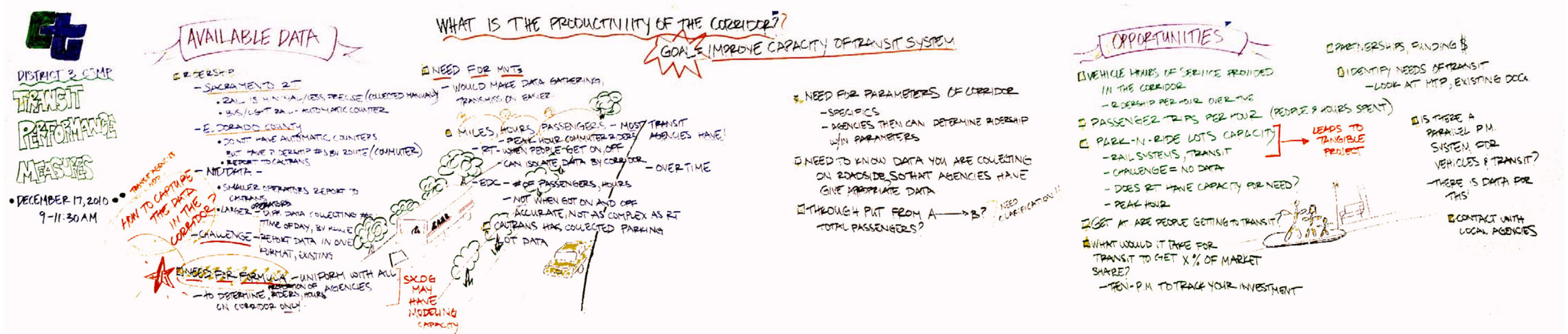
CALTRANS DISTRICT 3 CSMP BICYCLE AND TRANSIT PERFORMANCE MEASURES

Bicycle Performance Measures Workshop

December 13, 2010

Prepared By:

MIG



CALTRANS DISTRICT 3 CSMP BICYCLE AND TRANSIT PERFORMANCE MEASURES

Transit Performance Measures Workshop

December 17, 2010

Prepared By:

MIG