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ASSOCIATION of GOVERNMENTS

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MEETING OF THE

HIGH-SPEED RAIL & TRANSIT SUBCOMMITTEE

Friday, February 15, 2013
10:00 a.m. – 12:00 p.m.

SCAG Los Angeles Office
818 West Seventh Street, 12th Floor
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Videoconference Available

Orange County Office
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San Bernardino County Office
1170 W. 3rd Street, Suite 140
San Bernardino, CA 92410

Ventura County Office
950 County Square Drive, Suite 101
Ventura, CA 93003

Imperial County Office
1405 N. Imperial Ave., Suite 1
El Centro, CA 92243

Riverside County Office
3403 10th Street, Suite 805
Riverside, CA 92501

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Jane Embry at (213) 236-1826 or via email embry@scag.ca.gov

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High Speed Rail & Transit Subcommittee
Member/Alternate/Ex-Officio Roster

Los Angeles County:	Hon. Mike Antonovich, **Vice-Chair**
	Hon. Frank Quintero
	Hon. Gene Murabito
	Hon. Bruce Barrows, Alternate
	Hon. Steve Hofbauer, Alternate
	Hon. Jess Talamantes, Alternate
Orange County:	Hon. Leroy Mills
Riverside County:	Hon. Karen Spiegel, **Chair**
	Hon. Ron Roberts

Ex-Officio Members

Nancy Pfeffer, Gateway Cities

Michael A. Morris, FHWA

HIGH-SPEED RAIL & TRANSIT SUBCOMMITTEE
AGENDA
FEBRUARY 15, 2013

The High-Speed Rail & Transit Subcommittee may consider and act upon any of the items listed on the agenda regardless of whether they are listed as information or action items.

CALL TO ORDER & PLEDGE OF ALLEGIANCE
(Hon. Karen Spiegel, Chair)

PUBLIC COMMENT PERIOD – Members of the public desiring to speak on items on the agenda, or items not on the agenda, but within the purview of the Subcommittee, must fill out and present a speaker's card to the Assistant prior to speaking. Comments will be limited to three minutes. The Chair may limit the total time for all comments to twenty minutes.

REVIEW AND PRIORITIZE AGENDA ITEMS

CONSENT CALENDAR		**Time**	**Page**
Approval Items			
1. Minutes of the January 18, 2013 Meeting	**Attachment**	**5 mins.**	**1**
2. Minutes of the February 7, 2013 Joint Meeting	**Attachment**		**4**
3. Receive & File: Updated Best Practices Technical Memo	**Attachment**		**8**
INFORMATION ITEMS			
1. Metro Disaster Preparedness and Response ***(Scott Norwood, Metro Emergency & Homeland Security Preparedness - Manager)***	**Attachment**	**20 mins.**	**16**
2. Metrolink Emergency Preparedness ***(Tracy Berge, Public Safety, Environment Manager)***		**10 mins.**	
3. California Earthquake Early Warning System ***(Philip Law – Acting Manager, Transit Rail)***	**Attachment**	**10 mins.**	**25**
4. Transit System Performance Draft Report ***(Matt Gleason – Associate Regional Planner)***	**Attachment**	**20 mins.**	**33**
5. Rail System Performance Draft Report ***(Steve Fox - Senior Regional Planner)***	**Attachment**	**15 mins.**	**64**
ACTION ITEM			
1. Draft Recommendations for Subcommittee Approval ***(Philip Law – Acting Manager, Transit Rail)***	**Attachment**	**20 mins.**	**95**

HIGH-SPEED RAIL & TRANSIT SUBCOMMITTEE
AGENDA
FEBRUARY 15, 2013

CHAIR'S REPORT

STAFF REPORT

ANNOUNCEMENTS

ADJOURNMENT

HIGH-SPEED RAIL & TRANSIT SUBCOMMITTEE
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

January 18, 2013
Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE HIGH-SPEED RAIL & TRANSIT SUBCOMMITTEE. AN AUDIO RECORDING OF THE MEETING IS AVAILABLE FOR LISTENING AT SCAG'S DOWNTOWN OFFICE AND A VIDEO OF THE MEETING IS AVAILABLE ON SCAG'S WEBSITE.

The High-Speed Rail & Transit (HSR&T) Subcommittee held its meeting at SCAG's downtown Los Angeles office with video-conferencing at SCAG's Regional Offices.

Members/Alternates Present

Hon. Mike Antonovich **(Vice-Chair)**	Los Angeles County
Hon. Steve Hofbauer, City of Palmdale	Los Angeles County
Hon. Leroy Mills, City of Cypress (via video-conference)	Orange County
Hon. Frank Quintero, City of Glendale	Los Angeles County
Hon. Karen Spiegel, City of Corona **(Chair)**	WRCOG
Hon. Jess Talamantes, City of Burbank	SFVCOG

Members/Alternates Not Present

Hon. Bruce Barrows, City of Cerritos	Los Angeles County
Hon. Gene Murabito, City of Glendora	SGVCOG
Hon. Ron Roberts, City of Temecula	District 5

Ex-Officio Members Present

Nancy Pfeffer (via video conference)	Gateway Cities COG
Michael Morris	FHWA

CALL TO ORDER & PLEDGE OF ALLEGIANCE

Hon. Karen Spiegel, Chair, called the meeting to order at approximately 10:00 AM and Hon. Jess Talamantes led the Subcommittee in the Pledge of Allegiance.

The Chair introduced the Subcommittee members, SCAG staff, and members of the public and requested that a roll-call be taken to confirm a quorum. A roll-call was taken by Jane Embry, Assistant to the Subcommittee. A quorum was confirmed.

PUBLIC COMMENT PERIOD

There were no public comments.

REVIEW AND PRIORITIZE AGENDA ITEMS

There was no reprioritization of the agenda.

CONSENT CALENDAR

Approval Item

1. Minutes of December 21, 2012

Receive and File

2. Draft Best Practices Technical Memorandum

A MOTION was made (Hofbauer) to approve the Consent Calendar. The MOTION was SECONDED (Mills). A roll-call vote was taken by Jane Embry and the MOTION was UNANIMOUSLY APPROVED.

INFORMATION ITEMS

1. First Mile/Last Mile Strategic Plan
   Alan Thompson, Senior Regional Planner, provided an overview of a joint study between SCAG and LACMTA, as part of their sustainability partnership. Mr. Thompson outlined the basis for the study and the project objectives.

2. Transportation and Land Use
   Genevieve Giuliano, Ferraro Chair and Professor at USC, provided an overview of the relationship between transportation and land use, noting the four major components: 1) Transportation, 2) Accessibility, 3) Land Use, and 4) Activity Patterns. Professor Giuliano stated that attracting passengers to transit is a necessary condition for market driven land use change.

3. Planning for Transit Oriented Development in the Post-Redevelopment Environment
   Cecilia Estolano, Member, Estolano LeSar Perez, Advisors LLC, stated that in this post-redevelopment environment, communities must look beyond traditional sources and traditional planning to access new ways of obtaining funds. Ms. Estolano discussed Senate Bill 1, which would authorize the creation of Sustainable Communities Investment Authorities, which would receive tax increment funds provided that certain economic development and planning requirements are met. Ms. Estolano also identified several options for cities to consider, including Long Range Property Management Plans required under CRA dissolution and transit-oriented affordable housing funds.

4. Joint Development Programs at Metro
   Roger Moliere, Chief, Real Property Management & Development, provided an overview of the projects that Metro is pursuing in its Transit Oriented Development Program. Mr. Moliere stated that Metro's goal is to make the surrounding areas and stations more attractive to encourage people to use public transportation. Mr. Moliere further stated that by unlocking the value of their real estate holdings, they can generate more income, which will increase their general fund and serve to keep transit fares lower and increase ridership.

5. Fullerton Forward Streetcar Project

Jay Eastman, Senior Planner, City of Fullerton, outlined its newly implemented study, College Town Connector. Mr. Eastman stated that the vision of the study is to create a public transit system between California State University, Fullerton and the Fullerton Metrolink Station. Mr. Eastman further stated that their goal is to pursue this in a manner which encourages private investment, accommodates population growth, maximizes sustainable operations, and enhances the city's quality of life.

6. Streetcar Oriented Development: Economic Development Aspects of TOD

Ron Golem, Principal, Bay Area Economics, outlined his organization's perspective on street cars and economic development. Mr. Golem stated that street cars promote denser and more efficient urban development patterns to accommodate growth. Mr. Golem provided an overview of street car partnership and financing strategies.

Supervisor Michael Antonovich stated that for downtown Los Angeles the streetcar proposal is problematic because the vehicles would be mixed in with auto traffic, which would create more congestion, and that an elevated monorail system connecting all the major areas of downtown would be more visionary.

CHAIR'S REPORT

The Chair noted the dates and times of the upcoming High-Speed Rail & Transit Subcommittee meetings.

STAFF REPORT

Regional Rail Vision Framework

Steve Fox, Senior Regional Planner, reviewed SCAG's Regional Rail Vision Draft Outline included in the agenda packet.

FUTURE AGENDA ITEMS

There were no future agenda items presented.

ANNOUNCEMENTS

Marco Anderson, SCAG staff, stated that on February 15, 2013, SCAG will host an event in conjunction with UCLA, "Planning for High-Speed Rail in Southern California Communities." The event starts at 1:00 PM and lunch will be provided.

ADJOURNMENT

The Chair adjourned the meeting at approximately 12:15 PM.

Minutes Approved By:

Philip Law, Acting Manager
Transit/Rail

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Joint Meeting of the High Speed Rail & Transit Subcommittee
and Transportation Finance Subcommittee
of the
Southern California Association of Governments

February 7, 2013

Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE JOINT MEETING OF THE HIGH-SPEED RAIL & TRANSIT SUBCOMMITTEE AND THE TRANSPORTATION FINANCE SUBCOMMITTEE. A DIGITAL RECORDING OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

A joint meeting of the High Speed Rail & Transit Subcommittee and the Transportation Finance Subcommittee was held at SCAG's office in downtown Los Angeles. The meeting was called to order by Transportation Finance Subcommittee Chair Hon. Gary Ovitt. A quorum was present.

High-Speed Rail & Transit Subcommittee Members Present:

Hon.	Karen Spiegel ***(Chair)***	WRCOG
Hon.	Frank Quintero	District 42
Hon.	Bruce Barrows	Distrcit 23
Hon.	Jess Talamantes	SFVCOG
Hon.	Leroy Mills	District 18
Ms.	Nancy Pfeffer (Ex-Officio)	Gateway Cities Council of Governments

High-Speed Rail & Transit Subcommittee Members Not Present:

Hon.	Mike Antonovich ***(Vice Chair)***	Los Angeles County
Hon.	Steve Hofbauer	District 43
Hon.	Ron Roberts	District 5

Transportation Finance Subcommittee Members Present:

Hon.	Bruce Barrows	Los Angeles County
Hon.	Gary Ovitt ***(Chair)***	San Bernardino County
Hon.	Brett Murdock	Orange County
Mr.	Denny Zane (Ex-Officio)	Move LA

Transportation Finance Subcommittee Members Not Present:

Hon.	Keith Hanks ***(Vice Chair)***	Los Angeles County
Ms.	Lucy Dunn (Ex-Officio)	Orange County Business Council

CALL TO ORDER

Transportation Finance Subcommittee Chair Hon. Gary Ovitt called the meeting to order at 2:36 p.m. Hon. Leroy Mills, Orange County, led the subcommittees in the Pledge of Allegiance. Chair Ovitt stated the Joint Meeting will focus on strategies to increase resources available to fund and finance transportation programs and projects with an emphasis on public transportation.

PUBLIC COMMENT PERIOD

No members of the public requested to make a comment.

CONSENT CALENDAR

None.

INFORMATION ITEMS

Mileage-Fee Design Strategies to Reduce System Cost and Increase Public Acceptance

Paul Sorensen, RAND Corporation, introduced his presentation by highlighting his key message points that would address mileage fees, their motivations and issues they raise, and focus on emerging strategies that are addressing public acceptance concerns, and also how to help reduce the cost of the system. Mr. Sorensen's presentation included the following topics;

- Motivations for Mileage Fees
- Implementation Mechanisms
- Core Challenges for Mileage Fees
- Promising Design and Transition Strategies

Ms. Nam, emphasized to the Subcommittees that with the adoption of an approved funding strategy as part of the 2012-2035 RTP/SCS, that incorporated a mileage-based fees system, the next step is to establish a path to move forward with that strategy. She left the Subcommittees to consider two (2) questions: 1) Are there mechanisms in place that SCAG can start to look towards potentially a demonstration initiative; and 2) How does SCAG mitigate some of the constraints associated with those strategies? The full presentation was included in the Agenda packet.

Public Understanding and Acceptance of Funding Options

Richard Bernard, FM3 Research, gave a presentation on the firm's research findings based on a telephone survey conducted in March and April of 2010, and a series of focus groups conducted in March and May of 2012, that included participants of residents in the five of the six SCAG counties. Mr. Bernard explained the research was focused on questions and information on different aspects of mileage-based user fees. Initially, the results were negative; the participants concerns was the disbelief the mileage-based user fees would significantly reduce traffic congestion and would create an increase of government control, decrease the incentive for purchasing fuel efficient/low emission vehicles, and would negatively impact the economy. The positive takeaways from these focus groups were that the residents support additional funding going to transportation improvements that include public transit, freeways, and local roads with mandatory local control of funds, and creating a reliable source of funding to address the wear and tear of aging freeway system.

Mr. Bernard recommended testing the awareness of the problems the residents have in the SCAG counties. He also acknowledged an opportunity to frame a positive message to inform the public addressing all of these concerns through a repetitive campaign. Throughout the course of ten (10)

years the goal would be to identify supporters, opponents, persuadable residents, and credible spokespeople to strengthen transportation funding awareness.

Public-Private Partnerships (P3s) and Transit

Marv Hounjet, Plenary Group, reported on the detailed structure of public-private partnerships (PPP) and its potential for transit. Mr. Hounjet specifically defined PPP, how it's structured, the role taken by sponsor and contractor, and what PPP does not include. Mr. Hounjet compared two projects, PPP versus traditional procurement, with similar components and noted the differences in risk transfer, alignments of interests, project management, sponsor financing, and project delivery impact. Questions were asked regarding specific clarifications of certain procurement methods and their applicability to transit projects, and Mr. Hounjet concluded by answering the Subcommittees' questions by providing additional scenarios and asking the members to consider the life-cycle cost of running an asset, to be as cost-effective as possible, and increase penalties for non-performance. The full presentation was included in the Agenda packet.

High Desert Corridor P3 Rail Component

Kern Jacobson, InfraConsult, briefed the Subcommittees on the High Desert Multipurpose Corridor (HDMC), a project that connects Palmdale to Victorville and on its viability as a PPP. What started as a highway only project has grown to become a potential linkage to the Statewide High-Speed Rail (HSR) network. Mr. Jacobson continued his presentation outlining the following topics:

- Primary Project Components
- Rail Component Options
- Travel Market and Ridership

In conclusion of the presentation, Mr. Jacobsen noted that the success of the HDMC relies upon the assumption of the cost of track improvements for the Los Angeles – Palmdale corridor by the CaHSRA, adequate market appetite, availability of early public funding, and the accuracy of ridership and revenue forecasts. The full presentation, along with the financial analysis, is included in the Agenda packet.

5. Options for Funding Rail Initiatives

Denny Zane, Move LA and Transportation Finance Subcommittee Ex-Officio Member, outlined three funding options: 1) statewide bonds, 2) sales tax on transportation fuels, and 3) multi-county or regional measures. Due to the local election requirements of passing any statewide measure by a two-thirds vote, Mr. Zane encourages to pursue a course of action that would lower the voter approval threshold. While these options will face significant hurdles, Mr. Zane concluded his report on a positive note.

CHAIR'S REPORT

No chair's report was given.

ADJOURNMENT

The meeting adjourned at 4:38 p.m. The next meeting of the High Speed Rail & Transit Subcommittee will be Friday, February 15, 2013. The next meeting of the Transportation Finance Subcommittee will be March 1, 2013.

Minutes Approved By:

Philip Law, Acting Manager
Transit/Rail

MEMO

DATE: February 15, 2013

TO: High-Speed Rail & Transit Subcommittee

FROM: Steve Fox, Senior Regional Planner, 213-236-1855, fox@scag.ca.gov

SUBJECT: Transit Best Practices – Completed Literature Review

BACKGROUND

As with many industries, the transit industry has a large body of "best practice" literature. The goal of the best practice exercise is to provide benchmarking and lessons learned examples for the transit professional to use in planning and designing aspects of service delivery so as not to reinvent the wheel and to avoid mistakes. The body of literature is very broad and includes such areas as Intelligent Transportation Systems (ITS), smart fare media, bus facilities, Bus Rapid Transit (BRT) design, employee relations and productivity, and service planning.

Discussions of this subject have occurred with the High-Speed Rail & Transit (HSR&T) Subcommittee and are also taking place with the Regional Transit Technical Advisory Committee (RTTAC). These discussions and the input received will provide a foundation for the development of the transit and rail elements of the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) update.

DISCUSSION

The body of transit best practice literature is extensive. Staff has been conducting a literature review of best practice efforts among various elements of transit service delivery including first mile/last mile, ITS, smart fare media, transit signal priority, BRT and on-road bus facilities. In addition, best practices are being identified and discussed by the HSR&T Subcommittee over the course of its six meetings. Following is a discussion of best practices studied to date.

First Mile/Last Mile

First Mile/Last Mile strategies are designed to increase the range and desirability of transit by removing barriers around transit stations and providing alternatives to access transit. Strategies include adequate sidewalk facilities, bike facilities such as bike lanes and lockers, bike sharing and car sharing. These strategies can increase the effective range of transit stations from less than ¼ mile to ranges greater than ½ mile.

In 2009, SCAG partnered with the City of Los Angeles in a study to maximize first mile/last mile strategies. The report, "Maximizing Mobility in Los Angeles – First and Last Mile Strategies" focused on six specific cost-effective strategies that can be used around transit stations. In 2012, SCAG began a partnership with the Los Angeles County Metropolitan Transportation Authority (Metro) to examine different station types and develop first mile/last mile recommendations geared towards these station types. Knowing this, the most effective strategies can then be implemented where they can be most effective.

Literature Review

The Mineta Transportation Institute published a report titled "Using Bicycles for the First and Last Mile of a Commute." This document details a bicycle summit held by the Institute to address how to best integrate cycling with existing forms of commuter transit and ways to increase first/last mile ridership. The main topics focused on safety, bikes on transit, the future of bike sharing, and work accommodations. Safety is being addressed as more and more bike facilities such as bike lanes are being implemented. Bikes on transit topics focused largely on the issues of bikes on Caltrain. Caltrain has seen a rise in the number of passengers taking bikes on board, which has caused capacity issues on their trains. Caltrain is updating its current fleet to be able to hold more bikes and planning for their new electric fleet to have adequate bicycle capacity. (Metrolink and L.A. County Metro Rail have taken out passenger seats to allow for more bikes recently.) Bike sharing was mentioned by many of the speakers and is starting to be implemented across the county. Anaheim has recently started a program and the cities of Long Beach and Los Angeles are following. On the subject of work accommodations, the speakers touched on having adequate safe bike storage areas at work. They also mentioned the need for space for people to go change and transition from biking to work. The full report is located here:
http://transweb.sjsu.edu/MTIportal/research/publications/documents/BikeCommute.pdf.

The Mineta Transportation Institute also authored a report titled: "Bicycling Access and Egress to Transit: Informing the Possibilities." This report looks into integrating bikes with transit as both become increasingly popular across the U.S. and are therefore resulting in bike capacity issues on transit vehicles. The study included five case studies in Boulder/Denver, Chicago, Ithaca, Portland and Santa Clara County. The study provides a baseline understanding of transit/cycling integration strategies. The full report is located at
http://transweb.sjsu.edu/PDFs/research/2825_bicycling_access.pdf.

"Bike Sharing in Europe, the Americas, and Asia" provides a historical review of bike sharing programs around the globe and looks at the future of bike sharing. It identifies four distinct generations of bike sharing: the first, free bike systems; the second, coin deposit systems; the third, information technology based systems; and finally, demand response, multi modal systems. The third system is the one being used today that is based on information technology and user fees. While the different cities vary, they are not deposit systems but rather member-based that a user pays for throughout the year. Non-members pay as they go but at higher rates. The next generation of bike sharing programs will include four advances over the third generation: flexible, clean docking stations; bicycle redistribution innovations; smartcard integrations with public transit and car sharing programs, and technology advances that will include touch screen interfaces; and GPS tracking and electric bike options at certain locations. Bike sharing began in Europe, which still is the world leader, but is really taking off in the U.S. The City of Anaheim recently rolled out a program and the City of Long Beach is launching one this spring. The paper details many experiences in individual cities and discusses lessons learned in the areas of bicycle theft and vandalism, bicycle redistribution, information systems, insurance and liability considerations, and pre-launch caveats.
http://76.12.4.249/artman2/uploads/1/Bikesharing_in_Europe__the_Americas__and_Asia.pdf

"Integrating Bicycling and Public Transport in North America" is another study of bike-transit integration in North America. This is a case study of bike integration in six American cities: San Francisco, Portland, Minneapolis, Chicago, Washington, and New York; and two Canadian cities:

Vancouver and Toronto. These cities have undertaken various measures of integration for bike and transit, including: 1) provision of bike parking facilities at rail stations and bus stops, with different degrees of shelter and security; 2) multi-functional bike stations providing not only parking but also a range of services such as bike rentals, repairs, parts and accessories, bike washing, showers and lockers; 3) bike racks on buses; 4) allowance of bike on rail options; and 5) bike paths, lanes, and on-street routes that lead to public transport stations and stops, thus facilitating the bike's role as feeders and collectors for transit. The main finding and recommendation was that there is a need for more funding to provide 1) more secure parking at rail stations and 2) to increase bike carrying capacity on rail systems. http://www.nctr.usf.edu/jpt/pdf/JPT12-3Pucher.pdf

Intelligent Transportation Systems and Smart Fare Media

Intelligent Transportation Systems (ITS) are systems that use modern detection, communications and computing technology to collect data on system operations and performance, and communicate that information to system managers and users for managing and adjusting the transportation system to respond to changing operating conditions, congestion, or accidents. ITS technology can be applied to arterials, freeways, transit, trucks, and private vehicles. ITS includes Advanced Traveler Information Systems (ATIS), Advanced Public Transit Systems (APTS), Advanced Traffic Management Systems (ATMS), Advanced Vehicle Control Systems (AVCS), and Commercial Vehicle Operations (CVO).

Smart fare media are being used more and more by transit agencies. The fare medium is a smart card with a chip that has stored value loaded on it. Its benefits are many, including eliminating the burdens of cash fare payments (exact change and longer boarding times at each stop), the ability to use on multiple transit operators within a particular region, and origin and destination information that is of great value to transit planners.

Best practices on this subject in our region include work being done by OCTA and VCTC's smart card implementation projects. At the December 21, 2012 HSR&T Subcommittee meeting, OCTA discussed its smart card/fare integration project. OCTA is intelligently designing its smart fare architecture by looking at other examples and considering the systems of other transit operators in the region and in their service area. OCTA hosted a Southern California "Super Users" Group discussion in partnership with SCRRA (Metrolink) and the USDOT Volpe National Transportation Systems Center in July 2011. OCTA is investigating an account based, open payment fare system, and no such system is fully operational in the U.S. at this point in time. OCTA expects to conclude the study and begin implementation of the system in late 2014. VCTC also presented Ventura County's history with smart cards, being one of the very first in the nation to implement a smart card. VCTC's efforts began in 1994, with a Smartcard Demonstration Partnership, and was implemented county-wide in 1996.

Literature Review

"Interoperable Transit Smart Card Systems: Are We Moving Too Slowly or Too Quickly?" discusses the array of institutional factors affecting public transit operators' adoption of interoperable smart cards. Although many transit agencies have implemented smart card technologies as stand-alone systems that cannot be used on other systems, others have done so as part of a regional partner architecture in which multiple agencies with contiguous or overlapping service areas develop compatible systems. Through a review of the literature and in-depth interviews with industry experts, it was found that whereas interoperable systems have the benefit of allowing riders to use one fare card across multiple operators, such systems have proved difficult to form and coordinate as they require consensus among multiple

parties. Four main institutional issues hindering implementation were identified: 1) staff and elected officials are often hesitant to relinquish local control over fare policies and collection because individual transit agencies are guided by different missions or priorities and tend to serve different markets of user groups; 2) the future of smart card technology is uncertain; 3) decentralized systems of decision making mean that inter-jurisdictional governance structures tend to be far more informal than intra-organizational operations and management; and 4) transit agencies typically lack the institutional capacity to comprehensively evaluate the costs and benefits of interoperable systems, and as a result, there are few rigorous evaluations of smart cards. A conclusion is that there are no national or regional standards for the technology and this remains a barrier. http://pubsindex.trb.org/view.aspx?id=777674

"Smart Card Data Use in Public Transit: A Review" is a comprehensive review of smart card usage worldwide. First, the varying technologies used are introduced along with advantages and disadvantages. Major issues addressed include: user convenience, vehicle dwell time delay, cost, fare security, and interoperability. Second, methods of using data are analyzed in three different approaches: strategic long term planning, tactical (service adjustment) planning changes, and evaluation of operational data. The paper also looks at smart card commercialization applications that have been conducted globally. https://www.cirrelt.ca/DocumentsTravail/CIRRELT-2009-46.pdf

"Travel Pattern Analysis Using Smart Card Data of Regular Users" is another paper discussing the integration of smartcard fare boarding data with GIS location-based information to analyze transit ridership for better service planning. The authors' methodology was applied to the Minneapolis/St. Paul Metro Transit agency in 2008. (Only 50% of riders at the time used a form of smart card for transit ridership.) The study placed particular emphasis on analyzing different stored values on cards against spatial usage of the ridership. The study showed that smart fare media can be used to identify ridership patterns that can lead to more efficient and effective service planning and evaluation.
ftp://ftp.hsrc.unc.edu/pub/TRB2011/data/papers/11-4258.pdf

"Implementing Regional Fare Systems" is an article in *Mass Transit* magazine that focused on the Seattle and Bay Areas' experiences of their respective public transit agencies cooperating to create a regional fare system on one smartcard. In the Seattle case, one of the challenges was deciding governance structure and business models to be used. Three types of governance structure were options: a joint powers authority, a main lead agency, or an inter-local agreement. The decision was with the inter-local agreement where costs and responsibilities were shared among partner agencies. In the Bay Area the major challenge was to incorporate 24 transit agencies in to one architecture. This was managed by the Metropolitan Transportation Commission, and the largest challenge was fare issues among so many transit operators.
http://www.masstransitmag.com/article/10219958/implementing-regional-fare-systems

Transit Facilities and Bus Rapid Transit

Bus Rapid Transit (BRT) is bus transit service that reduces travel time through treatments such as traffic signal priority, automatic vehicle location, dedicated bus lanes, limited-stop service, and pre-boarding fare payment. BRT service is often branded with its own fleet livery and stations. In our region, Metro operates the Orange Line and the Metro Rapid network. The Orange Line is "true" BRT, operating exclusively on its own right-of-way. The Metro Rapid network runs along city streets in mixed-flow traffic lanes (some bus lanes are in the planning phase), but benefits from signal priority and limited stops. Both services have reduced passenger travel time by 15 to 25% and have attracted

new riders to transit. The 2012 RTP/SCS includes new BRT or limited stop service throughout the SCAG region, including the sbX now being built in San Bernardino County and others in the planning stage in Orange and Riverside counties.

Literature Review

"Comprehensive Evaluation of Transit Signal Priority System Impacts Using Field Observed Traffic Data" was an analysis on an existing transit signal priority (TSP) system in Snohomish County, Washington State for Community Transit (CT) buses. In this study, impacts of the TSP system on both transit and local traffic operations were quantitatively evaluated on the basis of field-observed data. Simulation models were also built and calibrated to compute measures of effectiveness that could not be obtained from field-observed data. With simulation models and field observed data, the impacts of the TSP system on both transit and local traffic operations were quantitatively evaluated. The evaluation results showed that CT's system provided "remarkable" benefits to transit vehicles, with insignificant impacts to local traffic on cross-streets under the current coordinated control strategy. The major recommendation of the study was that more of CT's buses be equipped with the TSP technology. (In our region, it was found that the Metro Rapid program also had an insignificant effect on regular vehicle cross traffic for the Metro Rapid's extensive network of over 20 lines along heavily congested corridors. This was even true along Wilshire Blvd. where buses were running along the corridor every five minutes or less.) http://www.wsdot.wa.gov/research/reports/fullreports/699.1.pdf

"Integrating Transit Signal Priority within Adaptive Traffic Signal Control Systems" is another study looking at the effectiveness of different types of TSP systems. The study looks at three types of TSP and the effects they have on both transit vehicles and general traffic flow. The study involved a 21-intersection section of the Columbia Pike arterial in Arlington, Virginia. The study analyzed simulated peak morning, peak afternoon, and midday traffic on the three types of TSP: "fixed-time control," "adaptive splits," and "adaptive spits and offsets." The conclusion showed that all three methods provide benefits to transit service. Moreover, when express bus service was combined with the adaptive technology the best benefits were gained. As with other studies, it was shown that there were no negative general traffic flow consequences.
http://filebox.vt.edu/users/hrakha/Publications/Transit%20Signal%20Priority%20within%20Adaptive%20Control%20-%20Ver5.pdf

"Effective Bus-Only Lanes" explores geometric design and institutional barriers to effective bus-only lanes in the United States. It highlights design features for effective bus lanes in those communities with bus-only lanes (U.S. and abroad) and discusses institutional barriers, such as objections to remote enforcement and mixed-flow vehicle capacity reduction. It uses the City of San Francisco as an example of how a network of bus-only lanes could be implemented and what benefits could be derived. The current bus-only lanes in San Francisco vary in type and hours of operation. Some are peak hour curbside lanes; some are all-day or full-time curbside lanes; and the remainder are all-day or full-time dedicated lanes. Some allow taxis to operate in the lane with the buses. The conclusion is that San Francisco should standardize the hours of operation, signage and markings for its bus only lanes to improve bus service while decreasing operating costs. http://arch21.org/BusLanes/CB06C273.pdf

"Bus Rapid Transit Systems on Conventional Highways: A Review of the Literature and Practice" documents examples of BRT systems implemented on arterials, freeways and busways. On-street bus facilities have widespread applicability because of their relatively low costs, ease of implementation, and opportunities for incremental deployment. For these on-street facilities, numerous implementation

options exist depending on the placement of the bus lane (curb or median), direction of flow (normal or contra-flow), mix of traffic (e.g. dedicated bus lanes, buses and taxis, buses and goods delivery vehicles, or mixed traffic flow with automobiles), and traffic controls (turn controls, parking, loading and unloading of commercial motor vehicles, and signalization). Off-street BRT facilities, however, require higher investments in land and construction, and commonly take the form of special bus roadways that vary by type of construction (above grade, at grade, below grade), direction of flow (concurrent or contra-flow), and treatment of stations (on- or off-line). The paper discusses each type of treatment with its strengths and weaknesses.
http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2009/PWP-2009-01.pdf

"TCRP Report: Volume 1: Case Studies in Bus Rapid Transit" is a comprehensive review of implemented BRT systems around the world using 26 case studies, of which 12 are in North America. The report discusses reasons for implementing BRT, features of BRT, performance, costs, BRT prospects, and lessons learned on BRT elements such as the planning and implementation process, system concepts and packaging, running ways, stations, vehicles, fare collection, ITS applications, service planning and operations, traffic-transit integration, and performance.
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_90v1.pdf

"The BRT Standard" is a publication by leading technical experts to come to a common understanding of what constitutes internationally recognized best practices in BRT system design. Many are unaware of the characteristics of the best BRT systems and their potential to provide a quality of customer service usually associated with light rails and subways. This lack of awareness frequently results in demands for rail when BRT may be a comparable and much cheaper alternative. It can also result in inaccurately labeling minimal improvements to standard bus service as BRT. "The BRT Standard" provides a framework for system designers, decision makers, and the sustainable transportation community to implement and identify top-quality BRT systems. A corridor of a system can be certified as "Gold Standard," "Silver Standard," or "Bronze Standard" based on the scorecard. 2012 is a pilot year to test the scorecard and make modifications as needed.
http://www.itdp.org/documents/BRT_English_REVISED2_FINAL_LR.pdf

Performance Measurement

Transit agencies collect data to help identify how efficiently service is being delivered, how well service is being provided to their customers, and to understand the effects of actions taken previously to improve performance. Agencies use performance measures to monitor whether agency and community goals are being met, assess system performance over time, and identify ways to improve service in order to attract new riders. This also helps formulate productive changes to policy and procedures.

Literature Review
"Public Transit Performance Measurement Study" is a literature review of performance measures best practices prepared for Sound Transit. It details primarily West Coast transit agencies as examples that are recognized as being leaders in transit service delivery and the use of performance management systems.
http://reneewing.com/pdf/Performance_Measures_Study.pdf

"Assessing Transit Service Performance: Recommended Standards for the Santa Clara Valley Transportation Authority" reviews a range of typical transit performance measures and discusses the

logic behind each one. It focuses on the Santa Clara Valley Transportation Authority's (VTA) use of transit performance measures. It includes a peer review and attempts to identify best practices in the industry in order to formulate effective recommendations for VTA. Finally, the paper provides six recommendations to improve VTA's performance measures.
http://www.sjsu.edu/urbanplanning/docs/URBP298Docs/urbp298_HonorsReport_Tyree.pdf

"TCRP Report 88: A Guidebook for Developing a Transit Performance-Measurement System" is a guidebook that provides a step-by-step process for developing a performance-measurement program that includes both traditional and non-traditional performance indicators that address customer-oriented and community issues. The guidebook also provides an eight-step process for implementing or updating a performance-measurement program. The guidebook discusses categories of performance measures that agencies may wish to consider, different types of measures that can be used, data sources and data collection, management techniques that can be employed, and methods of reporting results. Detailed summaries are presented for over 400 performance measures, and twelve case-study examples of successful performance-measurement programs are provided.
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_report_88/Guidebook.pdf

"TCRP Report 141: A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry" is an important resource for transit managers, decision-makers, and others interested in using performance measurement and benchmarking as tools to (1) identify the strengths and weaknesses of their organization, (2) set goals or performance targets, and (3) identify best practices to improve performance. The research effort developed and tested a methodology for performance measurement and peer comparison for all fixed-route components of a public transit system (the motorbus mode specifically) and major rail modes. The report complements TCRP Report 88: "A Guidebook for Developing a Transit Performance-Measurement System," which describes how to implement and use performance measurement on an ongoing basis at a transit agency. The report describes eight steps for conducting a benchmarking effort.
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_141.pdf

Transit Oriented Development (TOD)

Transit Oriented Development (TOD) is a pedestrian, bicycle and transit friendly mixed-use form of development focused around transit stations. Concentrating higher density residential and/or employment development near transit stations makes transit more convenient and attractive and encourages new transit riders as well as more transit trips by existing transit riders. It also helps fulfill sustainable growth in our communities, thereby reducing VMTs and GHG emissions.

Literature Review
"Performance-Based Transit-Oriented Development Typology Guidebook" is a hands-on tool for identifying the different conditions that exist around transit stations and determining how that influences performance on a range of metrics. The guidebook includes detailed case studies from Los Angeles, CA, Oak Park, IL, West Irving, TX, Pittsburgh, PA, Berkeley, CA, Gresham, OR, Jersey City, NJ, Atlanta, GA, and Rockville, MD. Each case study serves as an example of one of the different place types and acts as a template for stakeholders to create their own existing conditions analysis. The guidebook builds off of the *TOD Database*, a web tool released in October 2010 that provides economic and demographic information for every existing and proposed fixed-guideway transit station in the United States.

http://reconnectingamerica.org/resource-center/books-and-reports/2010/performance-based-transit-oriented-development-typology-guidebook/

"Transit Oriented Development Best Practices" is a manual published by the Greater Cleveland Regional Transit Authority. This report documents a survey of best practices for implementing successful TOD as done by other agencies including lessons learned. The case studies include BART, Santa Clara County Valley Transportation Authority, Dallas Area Rapid Transit, Massachusetts Bay Transportation Authority, Baltimore Metro, St. Louis Metro, Tri-Met, and Washington Metropolitan Area Transit Authority.
http://www.riderta.com/pdf/tod/GCRTA_TOD_Best_Practices.pdf

"Sacramento Regional Transit: A Guide to Transit Oriented Development (TOD)" is a report published by Sacramento Regional Transit District. The report was developed as part of the District's effort to create a 30-year vision of the future of transit in California's capital, and explores the goals, objectives and challenges of transit-oriented development.
http://reconnectingamerica.org/news-center/reconnecting-america-news/2009/best-practices-in-tod/

NEXT STEPS

The completed literature review will also be provided to the RTTAC at its April 2013 meeting. This best practice research, along with presentations and discussions during the course of the HSR&T Subcommittee's proceedings, will be incorporated into the State of Transit Report as appropriate, and will provide a framework and starting point for development of the 2016 RTP/SCS update.

Los Angeles County
Metropolitan Transportation Authority

Local Transportation Emergency Preparedness

A Look at What the Region's Transportation Agencies are Doing to Prepare

Metro

The Southern California Region

- Los Angeles County Population estimate for 2011 is 9,889,056 (US Census Bureau)
- 88 Incorporated cities in the County
- The Greater Los Angeles area contains an estimated 2011 population of 18.1 million
- In the area there are 65 cities that have populations over 60,000.

Metro

Metro's Daily Transit Coverage

- Metro covers 1,433 square miles of Los Angeles County with over 2300 buses serving over 1,190,000 boardings each workday as well as providing service on nearly 90 miles of rail and fixed route bus ways.

Metro

Metro's Emergency Response Planning

- Internal Metro Response Capability
- Metro EOC
- Metro Continuity of Operations
- Metro Communications
- Public
- Board of Directors
- Government

Metro

Metro Preparedness Program

- Agency-wide Preparedness
- Operating Facility Preparedness
- Food, Water, and Supplies provided
- Employee Personal Preparedness
- Personal Preparedness Guide
- Red Cross Personal Preparedness Classes hosted

Metro

Metro Communications Plan

- Communications with the Riding Public
- Social Media
- Metro Website
- Announcements on Vehicles

Metro

Metro Communications Plan

- Communication with the Board of Directors
- Representative has a seat at the County EOC
- A Metro Liaison will be provided to the Los Angeles City EOC, and incident specific EOCs

Metro

Other Agencies in the Region

- Approximately 93 Transit Agencies exist in the Region contained within Los Angeles, Orange, San Bernardino, Riverside, Ventura Counties
- This number does not include school districts, or specialized transit such as Access Services

Metro

Transit Emergency Planning

- The initial problem in planning identified
- Too many planners are excluding local and smaller transit agencies from plans and planning

Metro

The TransMAC

- This is the Transit Mutual Assistance Compact
- The group formed approximately two years ago
- The goal is Regional Transportation Mutual Assistance in emergencies

Metro

TransMAC members

- Currently there are nine members of the Steering Committee
- Metro, OCTA, Foothill Transit, Long Beach Transit, OMNI Trans, Sunline Transit, the Los Angeles County OEM, Riverside County OEM, and Orange County EMD.
- CalEMA sits in an advisory capacity

Metro

TransMAC membership

- Open to all mass transit providers
- Currently we have been working with numerous agencies within the region over the last year

Metro

TransMAC works in progress

- Phase One– A compact between transit agencies has been drafted and is expected to be submitted to the member agencies by mid-year
- Phase Two– A plan to guide operation under the compact is in development and draft completion is targeted for spring 2014

Metro

TransMAC in the Future

- Phase Three of the project is planned to involve testing, training, and exercises, including all aspects of support between the transit agencies.
- Phase Three will commence after completion of a final operations plan

Metro

What Can You Do?

- Make sure that emergency planning includes local transit agencies
- Encourage your local agencies to become involved in regional planning efforts

Metro

Questions?

Metro

Contact information

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REPORT

DATE: February 15, 2013

TO: High Speed Rail & Transit Subcommittee

FROM: Philip Law, Acting Manager, Transit/Rail, 213-236-1841, law@scag.ca.gov

SUBJECT: California Earthquake Early Warning System

DISCUSSION:

On January 28, 2013, State Senator Alex Padilla introduced legislation to create a statewide earthquake early warning system (see Attachment 1). It would build upon an existing system of ground sensors called the California Integrated Seismic Network (CISN), and would be the first of its kind in the nation. Similar such systems already exist in other locations such as Mexico City (since 1991) and Japan (nationwide since 2007). In March 2011, a seismometer in Japan detected the magnitude 9.0 earthquake that triggered a tsunami off the coast of northeastern Japan, and provided an automatic stop signal to the Shinkansen bullet train about 12 to 15 seconds before the earthquake reached the mainland (see Attachment 2).

According to the Caltech Earthquake Early Warning (EEW) Project, the early warning system works by monitoring the different types of seismic waves that radiate from an earthquake epicenter. The faster but weaker P-waves are detected first, and provide the warning in advance of the slower-moving but more destructive S-waves. The greatest benefits of such a system would involve earthquakes greater than magnitude 7 that impact a large area, begin on a fault far away, and where the rupture propagates towards a specific area, e.g. an earthquake starting near the Salton Sea and rupturing north towards Los Angeles.

The amount of warning time at a particular location depends on its distance from the earthquake epicenter, with locations very close to the epicenter receiving no warning, and locations far removed from the earthquake epicenter receiving significant warning time but perhaps not experiencing any damage from shaking. For locations in between, the warning time could range from seconds to minutes.

In August 2012, the Bay Area Rapid Transit (BART) system worked with UC Berkeley seismologists to institute an EEW system using the CISN in northern California. This allows BART to slow and stop trains before the shaking starts and potentially prevent derailment.

There is currently no funding to develop and implement such a system statewide. According to Caltech, the annual budget for the CISN that is funded by the US Geological Survey/Advanced National Seismic System, California Emergency Management Agency, and others is about $15 million per year. A rough estimate of the cost to develop a robust and fully operational EEW-capable CISN system is estimated to be about an additional $80 million over five years.

ATTACHMENTS:

1. Senate Bill 135, Earthquake Early Warning System
2. "How Japan's Rail Network Survived the Earthquake," published June 28, 2011 on www.railway-technology.com

See also, Caltech Earthquake Early Warning web page, http://www.eew.caltech.edu/index.html.

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CALIFORNIA LEGISLATURE— 2013–2014 REGULAR SESSION

SENATE BILL **No. 135**

Introduced by Senator Padilla

January 28, 2013

An act to add Section 8587.8 to the Government Code, relating to earthquake safety.

LEGISLATIVE COUNSEL'S DIGEST

SB 135, as introduced, Padilla. Earthquake early warning system.

There is in state government, pursuant to the Governor's Reorganization Plan No. 2, operative July 1, 2013, the Office of Emergency Services. Existing law requires the office to develop and distribute an educational pamphlet for use by kindergarten, any of grades 1 to 12, inclusive, and community college personnel to identify and mitigate the risks posed by nonstructural earthquake hazards.

This bill would require the office, in collaboration with various entities, including the United States Geological Survey, to develop a comprehensive statewide earthquake early warning system in California.

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. The Legislature finds and declares the following:

(a) According to the United States Geological Survey, California is one of the most seismically active states, second only to Alaska.

(b) California has experienced dozens of disastrous earthquakes, which have caused loss of life, injury, and economic loss. Some of the most significant earthquakes in California's history include:

(1) The 1906 San Francisco earthquake, which, at a magnitude of 7.8, resulted in an estimated 3,000 deaths and over $500 million in property losses.

(2) The 1971 San Fernando earthquake, which, at a magnitude of 6.7, resulted in at least 65 deaths and caused property damage of over $500 million.

(3) The 1989 Loma Prieta earthquake, which, at a magnitude of 6.9, rocked the bay area and caused 63 fatalities and over $6 billion in property damage.

(4) The 1994 Northridge earthquake, which, at a magnitude of 6.7, claimed the lives of 60 people and caused estimated property damage of between $13 and $32 billion.

(c) About 90 percent of the world's earthquakes and over 80 percent of the world's largest earthquakes occur along the Circum-Pacific Belt, also known as the Pacific Ring of Fire. The Pacific Ring of Fire includes the very active San Andreas Fault Zone in California.

(d) The Uniform California Earthquake Rupture Forecast (UCERF) released in 2008 predicted a 99.7 percent likelihood of a magnitude 6.7 or larger earthquake in California in the next 30 years.

(e) A 2013 study published by the Caltech and the Japan Agency for Marine-Earth Science and Technology discovered that a statewide California earthquake involving both the Los Angeles and San Francisco metropolitan areas may be possible.

(f) Japan, Taiwan, Mexico, Turkey, Romania, Italy, and China either have or are working on earthquake early warning systems that are capable of saving lives and helping to mitigate loss.

(g) The Office of Emergency Services, Caltech, California Geological Survey, University of California at Berkeley, United States Geological Survey, and others have been conducting earthquake early warning research and development in California. They operate the California Integrated Seismic Network, which has a demonstration earthquake early warning capability.

(h) By building upon the California Integrated Seismic Network and processing data from an array of sensors throughout the state, a fully developed earthquake early warning system would effectively detect some strength and progression of earthquakes and alert the public within seconds, sometimes up to 60 seconds, before potentially damaging ground shaking is felt.

(i) An earthquake early warning system should disseminate earthquake information in support of public safety, emergency response, and loss mitigation.

SEC. 2. Section 8587.8 is added to the Government Code, to read:

8587.8. The Office of Emergency Services, in collaboration with the California Institute of Technology (Caltech), the California Geological Survey, the University of California Berkeley, the United States Geological Survey, and others, shall develop a comprehensive statewide earthquake early warning system in California.

How Japan’s Rail Network Survived the Earthquake

28 June 2011 Elisabeth Fischer

9

The earthquake and tsunami that devastated Japan in March 2011 threw the country's rail network into complete chaos. Elisabeth Fischer finds out how one of the world's most advanced railway and disaster management systems coped.

A brief 12-15 seconds before a massive earthquake of 8.9 magnitude hit mainland Japan on the afternoon of 11 March 2011, a seismometer at Kinkazan belonging to the country's eastern rail operator JR East sent an automatic stop signal to the Shinkansen - Japan's high-speed bullet train - electric power transmission system, triggering the emergency brake on 33 trains.

Industry experts agree that critical damage and, more importantly, great sorrow was averted due to the installation of such seismometers - the one at Shinkansen is one of nine along the Pacific coast - alongside the completion of anti-seismic reinforcement works such as quakeproof structures and anti-derailing systems that were undertaken based on the experience of the 1995 Great Hanshin-Awaji and 2004 Niigata Chuetsu earthquakes.

"Various kinds of solutions have been executed in the Japanese railway system based on previous experiences of disasters and accidents," says Mitsubishi Research Institute senior consultant and expert in railway development, Takeshi Fukayama. "Many of those solutions worked in this case and prevented, for example, the Shinkansen from suffering serious damage."

JR East's international department director Mitsuo Higashi agrees. Speaking in the May edition of International Railway Magazine, he said: "No critical damage to major structures was caused because of the anti-seismic reinforcements we had undertaken."

JR East's urgent earthquake detection and alarm system (UrEDAS) is made up of seismometers installed at 97 locations. As with the Shinkansen seismometer, when they detect earthquake-induced tremors, they determine the expected

effect of the earthquake and send out warning signals to cut the power supply to the trains.

The physical damage

The quakeproof systems and reinforcement works couldn't, however, save the railways from avoiding any damage whatsoever.

"Tracks were displaced in 2,590 places, and 1,150 electrification masts were broken, leaning or cracked," said JR East's Higashi in International Railway Magazine. He went on to describe the events as "extremely painful", adding that "the 11 March earthquake forced us to cancel, suspend or reduce train operations on most of our 7,512.6km network".

"According to Higashi, only one train, running under test without passengers, derailed that day."

But Tokyo's network fared rather well, and JR East was able to recommence business on all its lines on 12 March, with interruptions only caused by electricity shortages.

"Scheduled blackouts led to fewer train operations than in the normal situations in the Tokyo metropolitan area," says Fukayama. "Many trains also stopped because of inspection and track maintenance on the day of the earthquake," he continues. "The number of the people who could not go home on that day in the Tokyo metropolitan area was reported as 2.6 million."

According to Higashi, only one train, running under test without passengers, derailed that day, when it was approaching Sendai, before it was immediately halted by the emergency braking.

Meanwhile, the system's catenary avoided serious damage and breaks in the contact wires were rare. Only sub-messenger and autotransformer protection wires were damaged.

Moving away from Tokyo itself, the Kanto region, which includes the Greater Tokyo Area, and Tohoku, a region to the north of Kanto, were more severely hit with 1,200 places suffering great damage and 325km of conventional lines washed away by the tsunami. "At costal railways such as the Sanriku Railway and the JR Senseki Line, some rolling stocks, many stations and tracks were completely flowed out by the tsunami," says Fukayama. Altogether 23 stations were washed away, tracks and bridge piers were either eroded or buried, and five passenger and two freight trains were derailed.

Rebuilding Japan's rail network

According to JR East, the recovery of the 325km of seriously damaged conventional lines will be difficult. "We will develop recovery plans that are consistent with the reconstruction plans of the local and national governments,"

said Higashi in International Railway Magazine. However, it will probably take years to recover the coastal areas, although the intention is to rebuild the railways along with news towns that were destroyed by the tsunami.

By comparison, the Tohuko Shinkansen bullet trains re-started operations only 49 days after the earthquake. Around 8,500 engineers worked round the clock - repairing points, train stations and tunnels - in order for the service to resume in time for the spring holiday season at the beginning of May.

"The Tohuko Shinkansen bullet trains re-started operations only 49 days after the earthquake."

"As the railway system is large and complex, the speed of restoration was incredible," says Fukayama. "It is said one reason for the early recovery was that we had less damage in the structures because of strengthening measures based on former earthquakes. Moreover, the railway operators and other people concerned made the recovery a first-priority project."

But other damage will not be as easy to repair. The earthquake and tsunami has been a bitter financial pill to swallow for the operator, which has been in the black since it was founded in 1987.

According to JR East international desk manager Emiko Sayama, the company listed a special loss of JPY5.8bn ($72.3m) in the 2010 results for the year that ended on 31 March 2011.

The civil engineering structures are covered by an earthquake insurance, which has a maximum payout of JPY71bn ($842m) and will compensate for the largest amount of the damage. "But the actual amount of money to be paid will be determined after our actual losses are carefully examined," explained Higashi.

The director of JR East's international department went on to say that the plan for FY 2011 would be worked out on the basis of last year's results: "As very significant reductions in revenue and increases in cost are expected, we must be prepared for extremely harsh figures for our revenue and expenditure forecasts for FY 2011."

Need for improvement

While various measures saved the railways from experiencing worse damage, Kimitoshi Sakai, earthquake and structural engineering researcher at the Railway Technical Research Institute, believes the country's railway operators must introduce a common standard of seismic countermeasures in order to be better prepared for any future disasters. Shortly after the earthquake, he wrote in the institute's Railway Technology Avalanche magazine that the measures

taken after the earthquakes in 1995 and 2004 have been conducted independently from each other and hence their aseismic capability varies.

According to Sakai, improvements in earthquake safety for the whole railway system can only be reached when evaluated with a common standard to put countermeasures into practice, which have been determined on the basis of a rational principle. With a national system, seismic countermeasures could be put in place more cost-efficiently and be adjusted to the level of seismic activity in a specific area.

"This method allows the most appropriate countermeasures to be chosen for each target line by taking into account the seismicity, ground condition, structural conditions and the level of traffic," Sakai wrote.

Lessons to be learnt

Seeing pictures from the earthquake and the tsunami it is hard to believe that not one passenger died on any of the numerous trains in operation throughout the country that day, especially as Japan's rail network - including all the conventional lines as well as that of the high-speed bullet train, Shinkansen, the heart of the Japanese railway system - covers 27,500km and carries around 22.5 billion passengers every year.

However, the fact that the system survived largely intact does not mean operators will be complacent.

As a result, the earthquake and tsunami of March 2011 will not only show in financial figures of JR East, but also have an impact on the company's internal processes. According to Higashi, research on the events has to be conducted and lessons from 11 March have to be learnt. "We will determine the effectiveness of the measures that we have taken and decide what should be done in the future," he says.

"Actions have to be taken on an industrial, scientific and political level to be prepared for any future events."

Higashi believes that the training of train staff and crews is particularly important. Regular preparation has resulted in a mostly smooth evacuation this time but the quality has to be further improved.

Fukayama agrees, saying that Japan has to learn lessons from the disaster. He believes that actions have to be taken on an industrial, scientific and political level to be prepared for any future events - but hopes that better preparation will not be put to the test any time soon.

REPORT

DATE: February 15, 2013

TO: High Speed Rail and Transit (HSR&T) subcommittee

FROM: Matt Gleason, Associate Regional Planner, 213-236-1832, gleason@scag.ca.gov

SUBJECT: Regional Transit System Performance Report Update

***EXECUTIVE SUMMARY*:**
SCAG typically analyzes available performance data to establish existing conditions as part of the Regional Transportation Plan (RTP) development and update. At the December 21, 2012 High Speed Rail and Transit (HSR&T) subcommittee meeting, staff submitted a receive and file report on efforts to establish an annual review of transit system performance, and to establish data collection procedures to assist in increased performance monitoring in response to requirements contained in Moving Ahead for Progress in the 21st Century (MAP-21). Staff will provide an update on this effort, including a draft analysis of existing National Transit Database (NTD) data for several agencies operating heavy rail and fixed route bus service in the SCAG Region.

BACKGROUND:
Moving Ahead for Progress in the 21st Century (MAP-21) the omnibus transportation authorization passed in June 2012, continues to reinforce the importance of performance based planning in the RTP process, while also reinforcing the importance of maintaining a state of good repair for transportation infrastructure and assets. MAP-21 amends 23 U.S.C 150(c) to require MPOs to work in collaboration with transit agencies and state DOTs to establish performance measures consistent with performance targets related to transit asset management and transit safety, as set forth in 49 U.S.C. 5326(c) and 5329(d).

MAP-21 also mandates RTPs must employ performance based planning, that RTPs must include a System Performance Report, and that Federal Transportation Improvement Programs(FTIPs) must include "a description of the anticipated progress brought about by implementing the FTIP towards achieving the performance targets.

As an incremental step towards a) producing of a System Performance Report for the 2016 RTP/SCS, b) incorporating an annual review of system performance geared towards planning for operations and maintenance into SCAG's transit modal planning practices, staff has begun the production of an annual Regional Transit System Performance Report. This report would provide an annual format for measuring system performance, through the analysis of data reported by transit operators to the National Transit Database and the Office of the State Controller.

Staff have conducted a review of planning documents, reports, and resources to assess what types of performance measures should be analyzed on an annual basis, what modes should be analyzed, and which transit properties should be included in the analysis.

Agencies Included in Analysis

County	Agency		
Los Angeles	Access Services	Long Beach Transit	Montebello Bus Lines
	Antelope Valley Transportation Authority	Culver City Bus	Norwalk Transit System
	Arcadia Transit	LADOT	Santa Clarita Transit
	Commerce Transportation	Foothill Transit Agency	Santa Monica's Big Blue Bus
	LACMTA (Metro)	Gardena Municipal Bus Lines	Torrance Transit
Orange	Laguna Beach Municipal Transit	OCTA	
Riverside	Corona Cruiser and Dial-a-Ride	Riverside Transit Agency	SunLine Transit Agency
San Bernardino	Omnitrans	Victor Valley Transit Authority (VVTA)	
Ventura	Gold Coast Transit	Thousand Oaks Transit	Ventura Intercity Transit Authority (VISTA)

Given this review, staff proposes to produce an examination of current system performance along the following tiers, similar to the tiering structures in the 2001 and 2004 RTPS:

1. Rapid Transit (heavy rail, light rail, bus rapid transit operations)
2. Regional / Subregional (larger operations of motor bus service – including operations across jurisdictional boundaries by agencies receiving FTA 5307 funds)
3. Local (local and circulator motor bus service operations)
4. Specialized Operators (demand response and rural transit operations)

Operations within tier one and tier two are proposed to be the focus of the Fiscal Year 2010-2011 System Performance Report work effort, due to availability of data sources, including the National Transit Database In future years, strategies for analyzing tier three and tier four operations will be pursued.

Staff intend that the initial iteration of the report will focus on a series of cost efficiency, cost effectiveness, service delivery, mobility, maintenance and productivity measures, similar to MTC's *MTC Statistical Summary of Bay Area Transit Operators*. The data would be analyzed at the mode and agency level, in contrast to the RTP analyses where data was presented at the regional level. Staff believes that disaggregated analysis at the agency level can provide a benchmarking resource for transit properties in the SCAG region. Wherever feasible, a timeseries including up to twenty years of data will be analyzed to establish trends.

Proposed Measures

Performance Concept	Performance Measure
Cost Efficiency	Operating cost per revenue vehicle hour
	Farebox Recovery
Cost Effectiveness	Operating cost per passenger trip
	Operating cost per passenger trip
Service Effectiveness/ Productivity	Passengers per vehicle revenue hour
	Passengers per vehicle revenue mile
Maintenance	Fleet Average Vehicle Age
Mobility/Travel Time	Average Vehicle Speed

Proposed Format

Work has begun on the analysis process for the production of the Regional Transit System Performance Report. Staff will provide an update on this effort, including a draft analysis of existing National Transit Database (NTD) data for several agencies operating heavy rail and fixed route bus service in the SCAG Region.

ATTACHMENT A: PowerPoint Presentation
ATTACHMENT B: Fiscal Year 2010-2011 Transit System Performance Report: Operator Profile Samples

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System Performance Report

High Speed Rail & Transit Subcommittee

Southern California Association of Governments

February 15, 2013
Matt Gleason

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Background

- SCAG has Employed Performance Measures since 1998
  - Typically, existing system performance is measured every 4 years in the RTP
  - MAP-21 includes provisions that may move towards more frequent performance measurement, especially regarding the FTIP
  - FTA and FHWA are advising MPOs to incorporate more operational considerations in planning processes and documents

Transit in the SCAG Region, FY10-11:
Service Provision and Consumption

Service Provided

- Total Revenue Service Hours: 19,857,990
- Total Directional Route Miles: 17,905
- Total Vehicle Revenue Miles: 288,095,716

Service Consumed - Trips

- Total Passenger Trips: 703,590,631
- Per Capita Transit Trips: 38.8

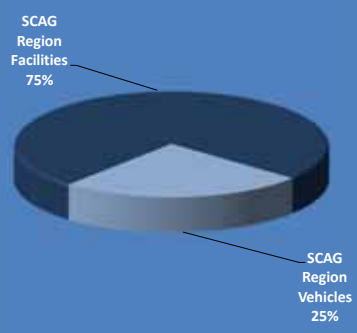
Service Consumed - Miles

- Total Passenger Miles: 3,632,121,046
- Per Capita Passenger Miles: 200.3

SCAG Region Fiscal Year 2010-2011
Financial Performance

SCAG REGION FISCAL YEAR 2010-2011: OPERATING COSTS AND REVENUES	
Total Operating Expenditures	$ 2,393,275,427
Vehicle Operations Costs	$ 1,306,588,679
Vehicle Maintenance	$ 440,391,335
Non Vehicle Maintenance	$ 147,767,893
General Administration	$ 490,826,453
Fare Box Revenues	$ 621,239,062

Transit Capital Expenditures, SCAG Region Fiscal Year 2010-2011



Source: NTD 2011

MTC
Statistical Summary of Bay Area Transit Operators

- Since 2000, MTC has put out a review of system performance at the larger bay area operators
- MTC uses the following measures:
  - Operating Expenses/Revenue Hours
  - Operating Expenses/Passenger Trips
  - Passenger Trips/Revenue Hours
  - Passenger Trips/Revenue Miles
  - Revenue Hours/Employee
  - Farebox Recovery
- Typically data are tracked in a 4-5 year timeseries
- Data sources are NTD, State Controller, operator questionnaires

SCAG Region System Performance

- SCAG region is much more complex environment
  - Nearly 70 providers of some sort of fixed route service
  - Almost 100 transit providers
  - Historically have focused on slightly different measures
  - Operators report data to NTD in a variety of manners

National Transit Database
Operators included in analysis

These operators are included in the system performance report
- Provide higher levels of service
- Frequently cross jurisdictional boundaries
- Receive FTA 5307 Funds
- Mix of modes
  - Fixed Route
  - Demand Response
  - Rail

County	Agency		
Los Angeles	Access Services Inc, of Los Angeles	LADOT	Montebello Bus Lines
	Antelope Valley Transportation Authority	Foothill Transit Agency	Norwalk Transit System
	Arcadia Transit	Gardena Municipal Bus Lines	Santa Clarita Transit
	Commerce Transportation	LACMTA (Metro)	Santa Monica's Big Blue Bus
	Culver City Bus	Long Beach Transit	Torrance Transit
Orange	Laguna Beach Municipal Transit	OCTA	
Riverside	Corona Cruiser and Dial-a-Ride	Riverside Transit Agency	SunLine Transit Agency
San Bernardino	Omnitrans	Victor Valley Transit Authority (VVTA)	
Ventura	Gold Coast Transit	Thousand Oaks Transit	Ventura Intercity Transit Authority (VISTA)

Recent Transit Performance Measurement Efforts

- Key Performance Indicator Exercise
  - Presented to RTTAC Winter 2011
  - Fed into RTP performance measurement
  - Aggregated at modal level
  - Focused on ridership, service delivery, and mobility
- Peer Regions Performance Benchmarking Exercise
  - Presented to RTTAC Spring and Summer 2011
  - Data aggregated by tier for comparison to other large Metropolitan Regions
  - Focused on productivity and costs

Proposed Measures

- Staff recommend the following measures be used in the report
- Mix of cost efficiency/ effectiveness, productivity, and speed/mobility
- Maintenance added

Performance Concept	Performance Measure
Cost Efficiency	Operating Cost/Revenue Hour
	Farebox Recovery
Cost Effectiveness	Operating Cost/Passenger Trip
	Operating Cost/Passenger Mile
Service Effectiveness/ Productivity	Passengers/Revenue Hour
	Passengers/Revenue Mile
Maintenance	Fleet Average Vehicle Age
Mobility/Travel Time	Average Vehicle Speed

Tiering and Modes

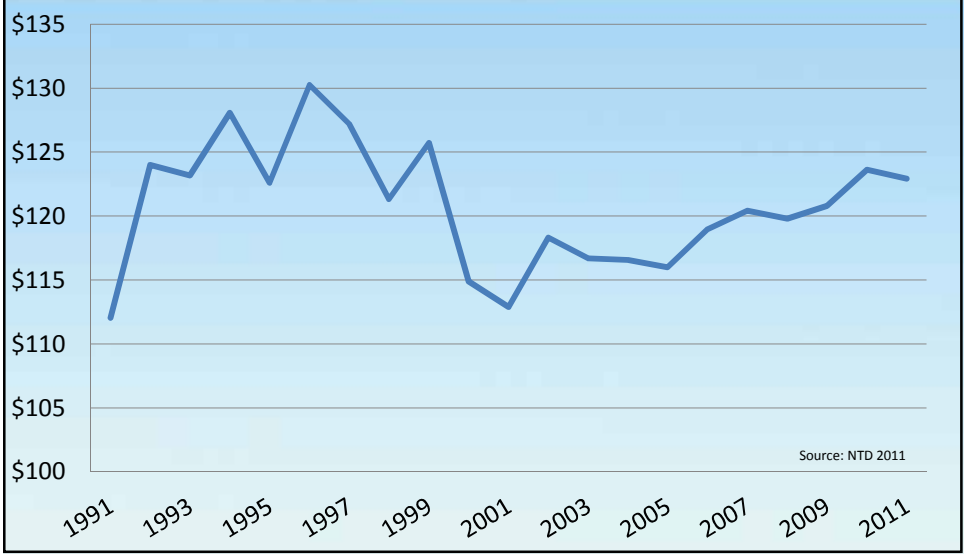
Staff are proposing to use the following tiering system:

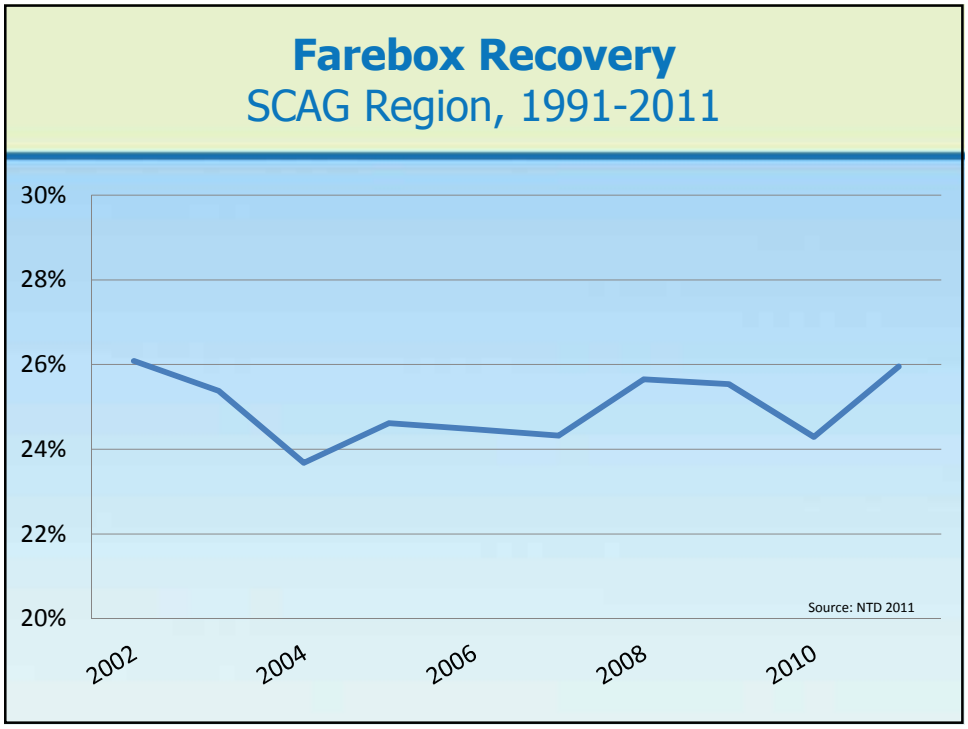
- Rapid Transit (heavy rail, light rail, commuter rail, bus rapid transit operations)
- Regional / Subregional (larger operations of motor bus – including operations across jurisdictional boundaries by agencies receiving FTA 5307 funds)
- Local (local and circulator motor bus operations)
- Specialized Operators (demand response and rural transit operations)

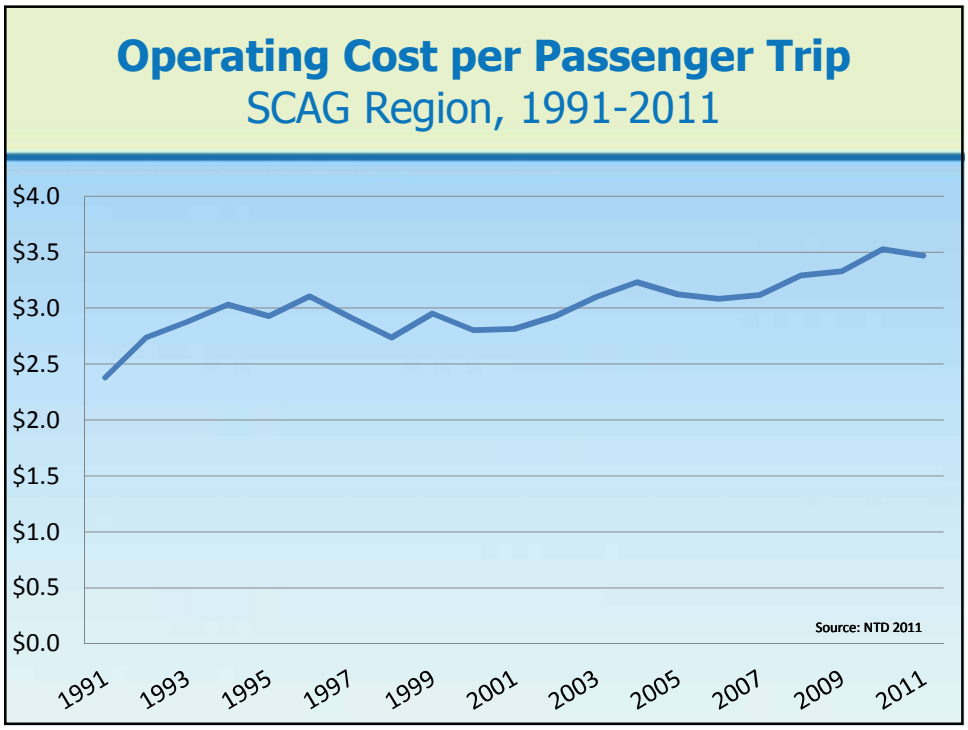
Example of System Performance Analysis

The following slides contain an example of the analysis for the entire SCAR Region

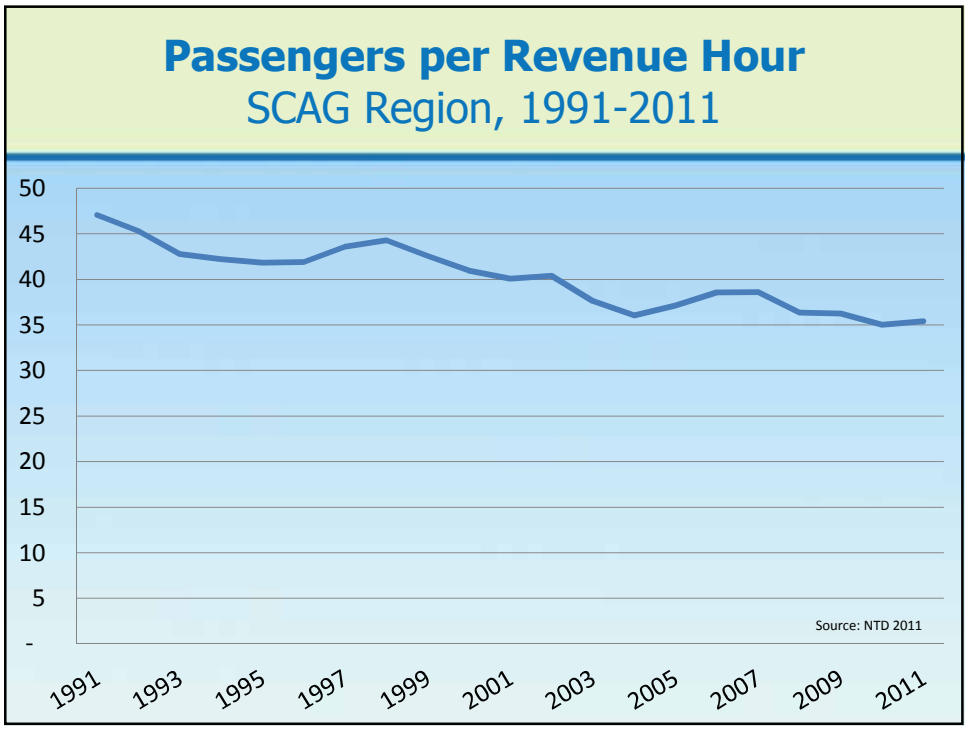
Operating Cost per Revenue Hour
SCAG Region, 1991-2011



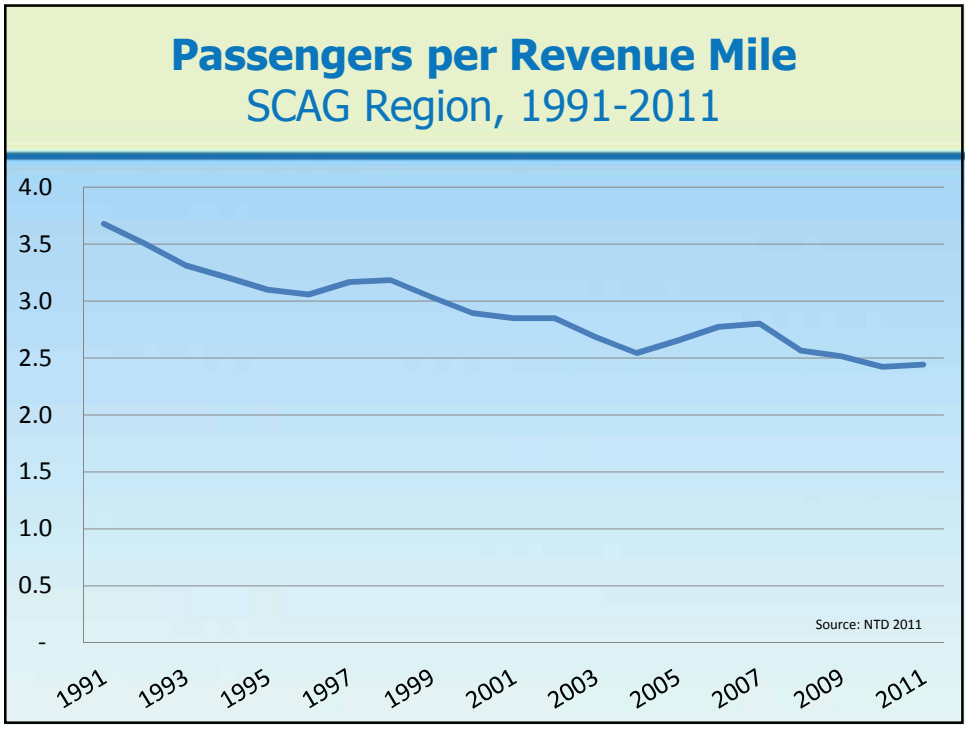

Farebox Recovery
SCAG Region, 1991-2011
30%
28%
26%
24%
22%
20%
Source: NTD 2011
2002
2004
2006
2008
2010


Operating Cost per Passenger Trip
SCAG Region, 1991-2011
$4.0
$3.5
$3.0
$2.5
$2.0
$1.5
$1.0
$0.5
$0.0
Source: NTD 2011
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011

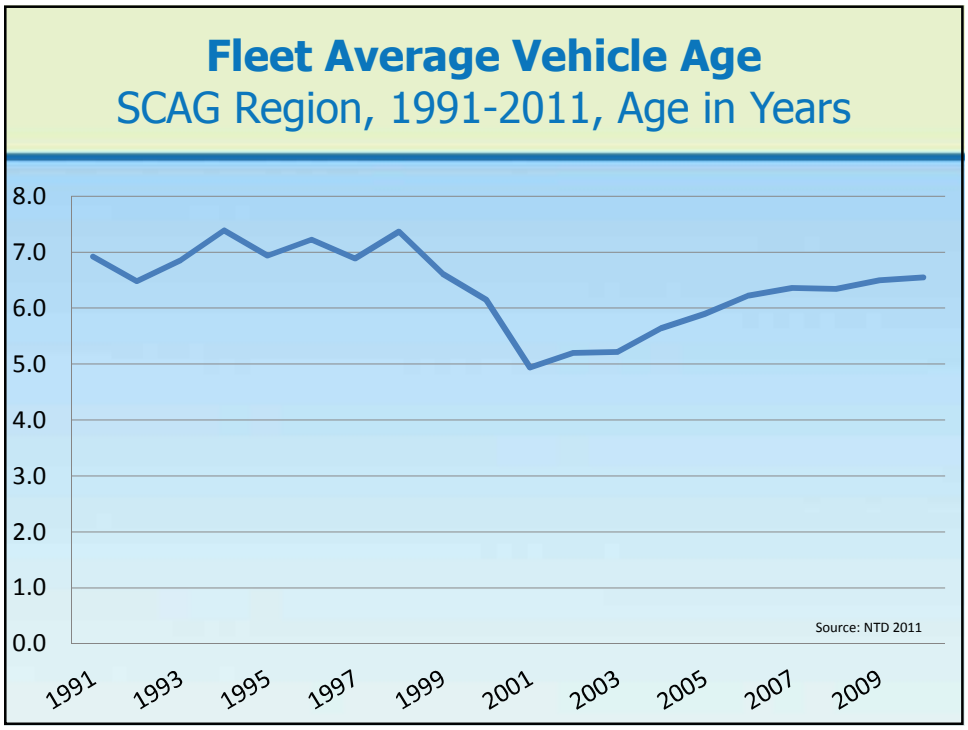

Operating Cost per Passenger Mile
SCAG Region, 1991-2011
$0.8
$0.7
$0.6
$0.5
$0.4
$0.3
$0.2
$0.1
$0.0
Source: NTD 2011
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011


Passengers per Revenue Hour
SCAG Region, 1991-2011
50
45
40
35
30
25
20
15
10
5
-
Source: NTD 2011
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011

Passengers per Revenue Mile
SCAG Region, 1991-2011

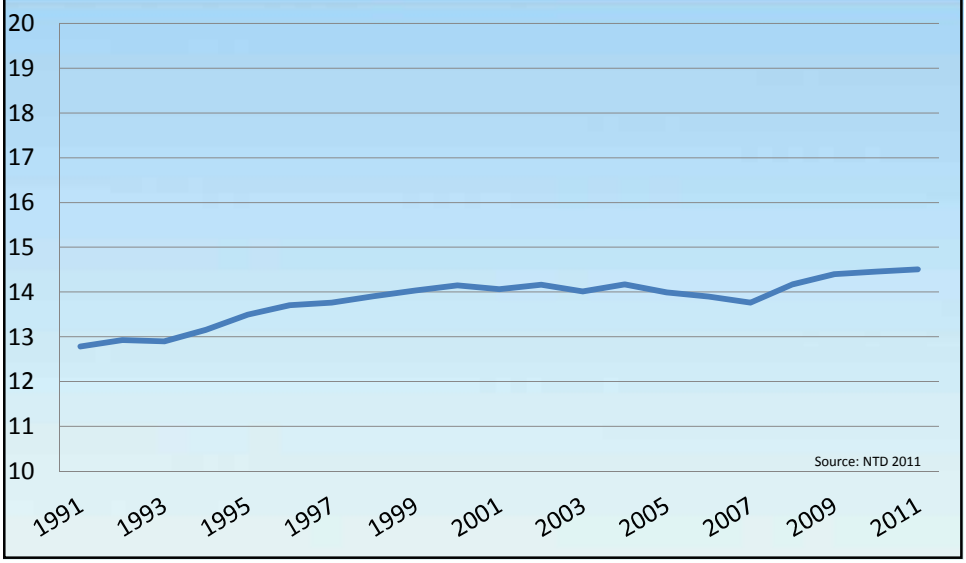


Fleet Average Vehicle Age
SCAG Region, 1991-2011, Age in Years

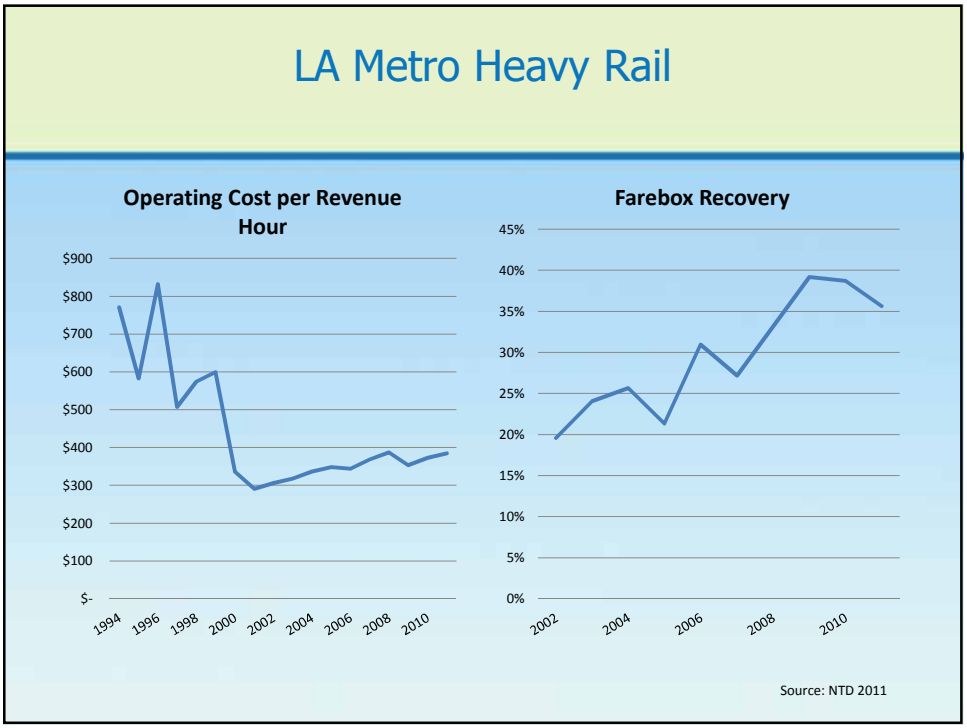


Fleet Average Vehicle Speed

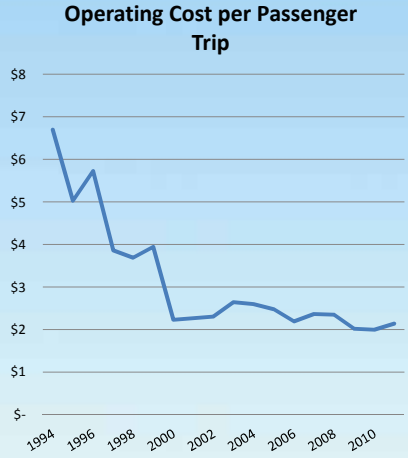
SCAG Region, 1991-2011, Miles per Hour

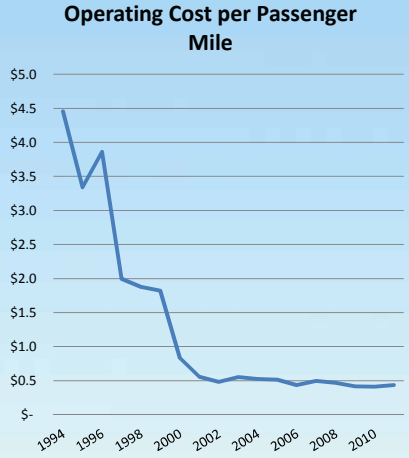


LA Metro Heavy Rail



LA Metro Heavy Rail



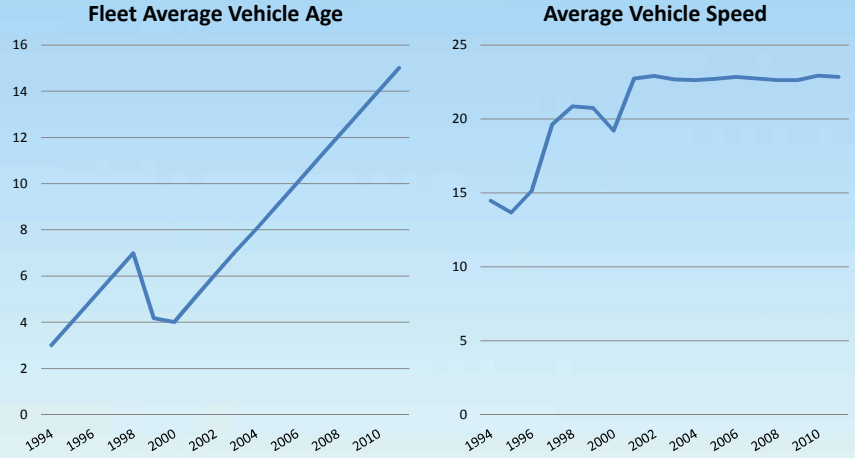


Source: NTD 2011

LA Metro Heavy Rail

Source: NTD 2011

LA Metro Heavy Rail

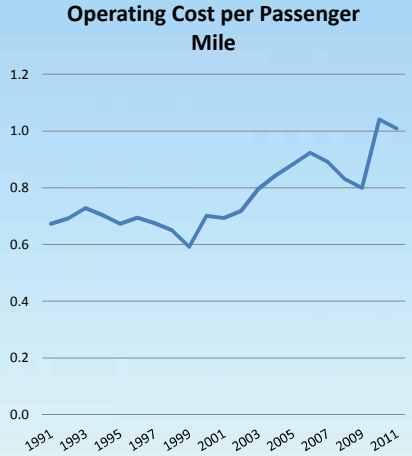


Source: NTD 2011

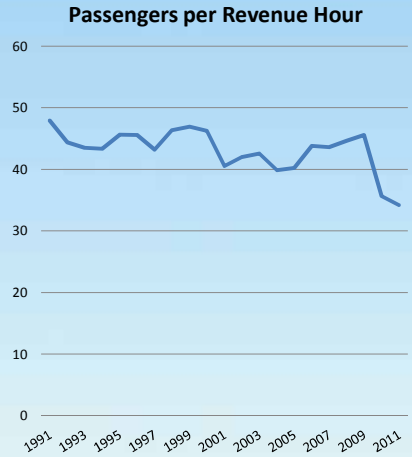
Culver City Municipal Bus Lines

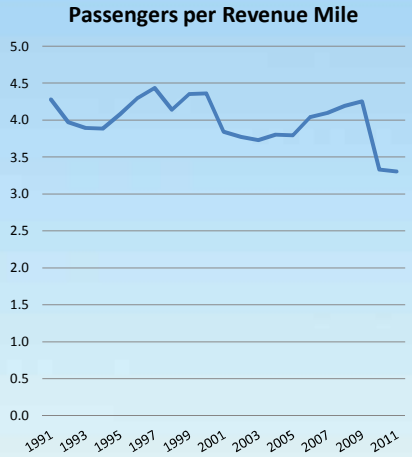
Source: NTD 2011

Culver City Municipal Bus Lines



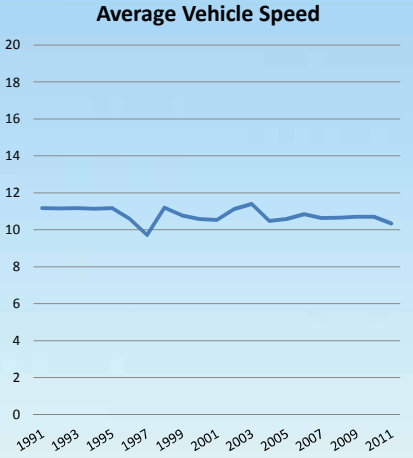
Culver City Municipal Bus Lines





Source: NTD 2011

Culver City Municipal Bus Lines



Source: NTD 2011

Next Steps

- Staff are analyzing FY 10-11 data made available Nov. 2012
  - Creating operator profiles
  - Coordinating with Regional Transit Technical Advisory Committee on development of draft report
    - RTTAC participants will receive draft via email
    - Staff will incorporate RTTAC input into final document
  - Final system performance report anticipated by April 2013

Questions?

For more information, please contact:

Matt Gleason – gleason@scag.ca.gov
(213)-236-1832

www.scag.ca.gov/transit/

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

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SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Fiscal Year 2010-2011 Transit System Performance Report:

Operator Profile Samples

Submitted to the Southern California Association of Governments' High Speed Rail and Transit Subcommittee, February 15 2013

Culver City Municipal Bus Lines[1]

Address:

4343 Duquesne Avenue,

Culver City, CA 90232

Website: http://www.culvercity.org/government/transportation/bus.aspx

Governance Structure: Municipally Owned Transit Property

Base Fare: $1.00

Day Pass: N/A

Monthly Pass: N/A

Total Operating Budget: $16,570,718

Annual Service Provided: 146,737 Hours

Service Area: 26 Square Miles

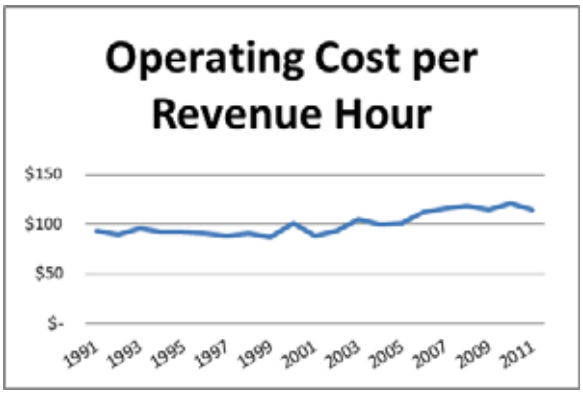
Fleet Size: 58 Vehicles

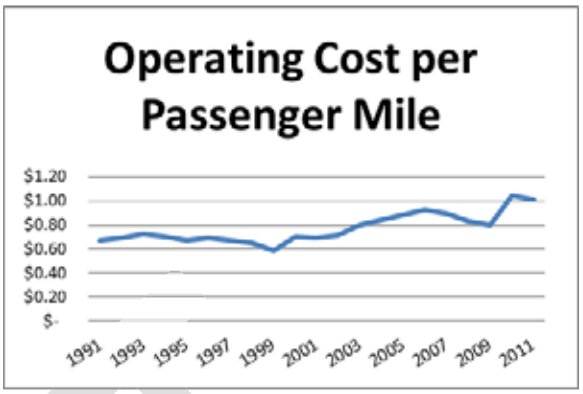
Extent of System: 108 Directional Route Miles

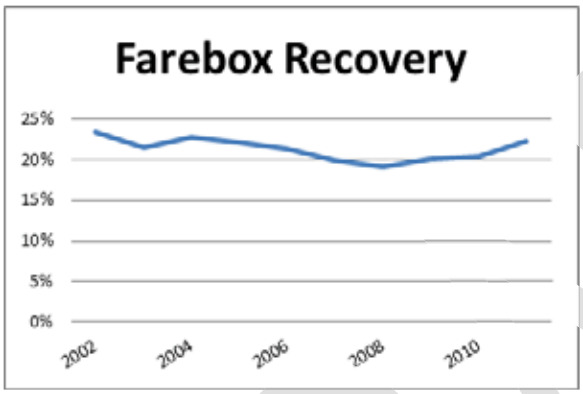
Span of Service: Forthcoming

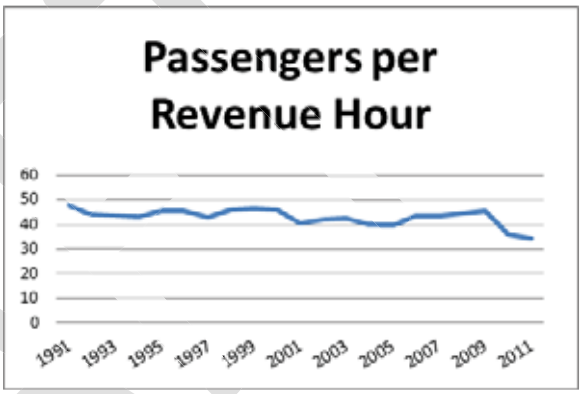
[1] All data presented in this report were obtained from the National Transit Database or relevant operator websites. All figures are in 2012 constant dollars, using inflation adjustments provided by the Bureau of Labor Statistics Consumer Price Index.

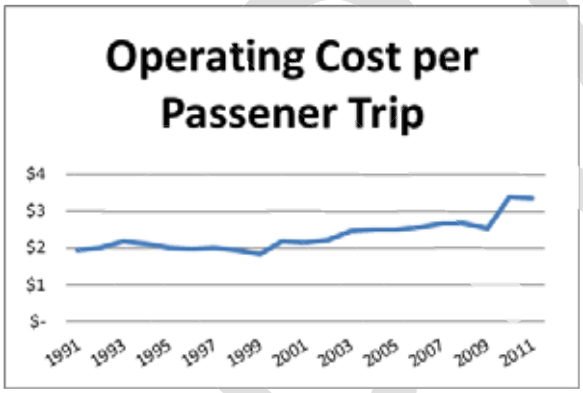
Culver City Municipal Bus Lines
Fixed Route Bus Service

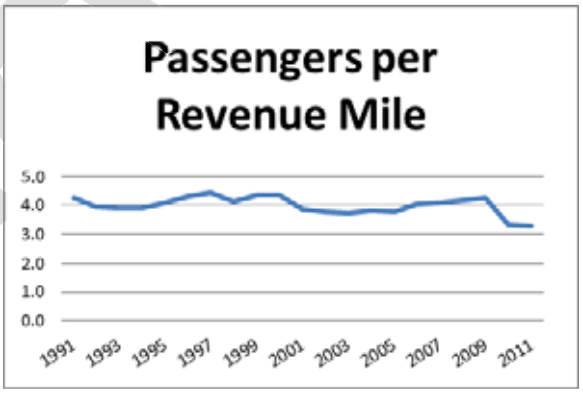


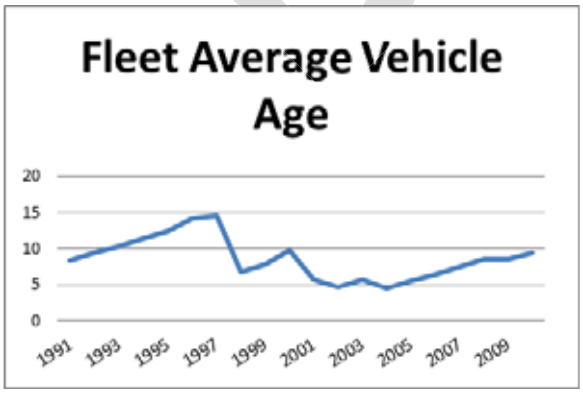


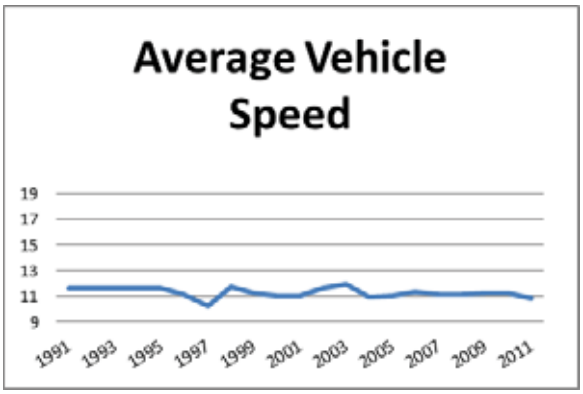












Los Angeles County Metropolitan Transportation Authority (Metro)

Address:

One Gateway Plaza

Los Angeles, CA 90012-2952

Website: http://www.metro.net

Governance Structure: County Transportation Commission and State Designated Transit District

Base Fare: $1.50

Day Pass: $5.00

Monthly Pass: $75.00

Total Operating Budget: $1,240,450,957

Annual Service Provided: 8,319,835 Hours

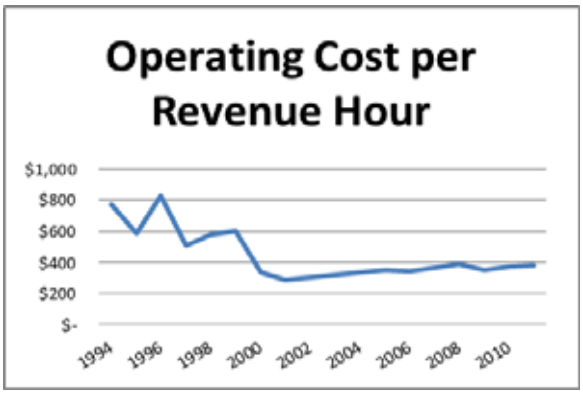
Service Area: 1,513 Square Miles

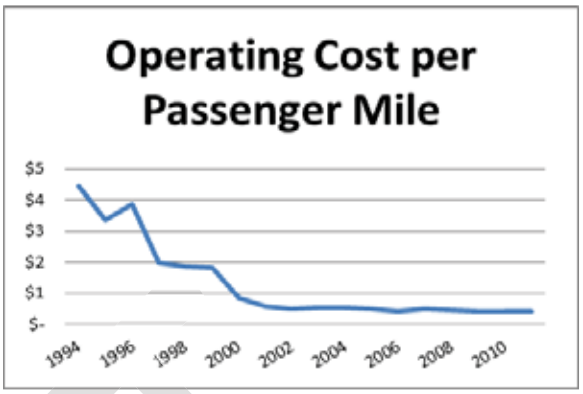
Fleet Size: 3,673 Vehicles

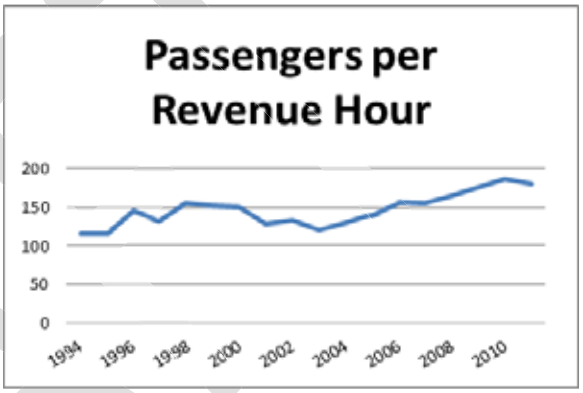
Extent of System: 3,915 Directional Route Miles

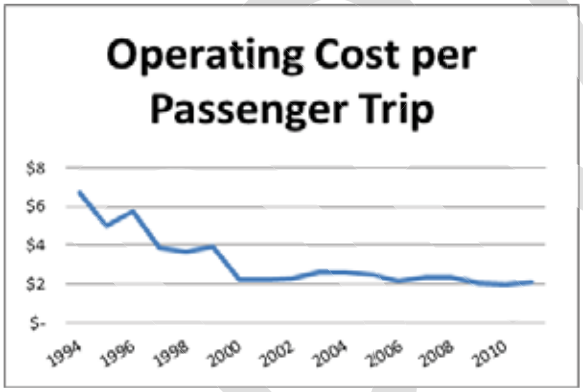
Span of Service: Forthcoming

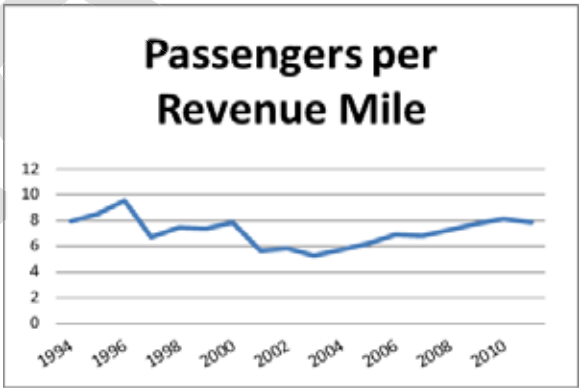
Los Angeles County Metropolitan Transportation Authority (Metro)
Heavy Rail Service

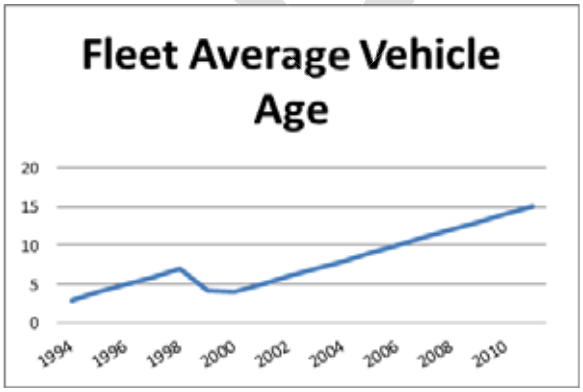


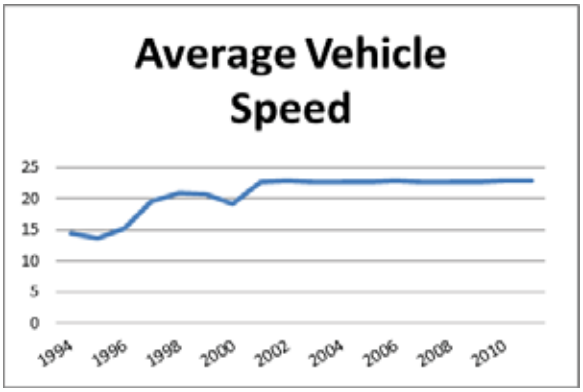












Orange County Transportation Authority (OCTA)

Address:

550 S. Main Street

Orange, CA 92868

Website: http://www.octa.net/default.aspx

Governance Structure: County Transportation Commission and State Designated Transit District

Base Fare: $1.50

Day Pass: $4.00

Monthly Pass: $55.00

Total Operating Budget: $232,399,146

Annual Service Provided: 2,367,267 Hours

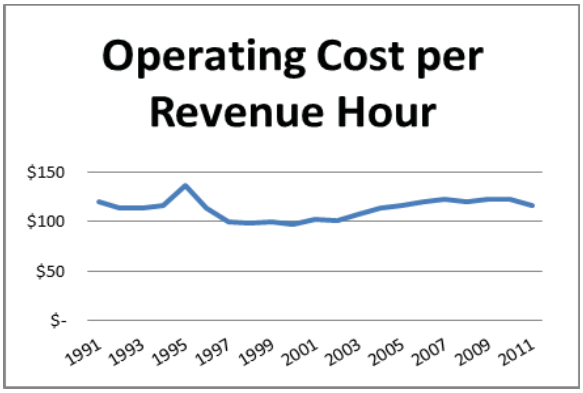
Service Area: 465 Square Miles

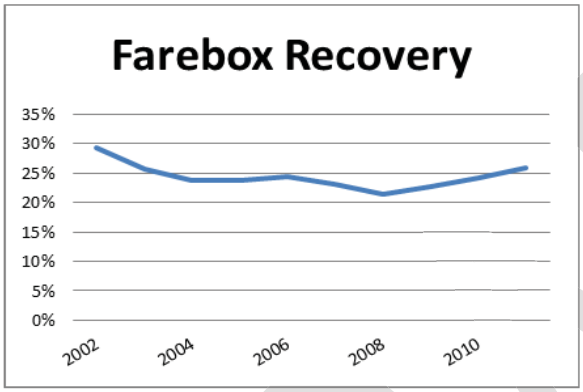
Fleet Size: 1,745 Vehicles

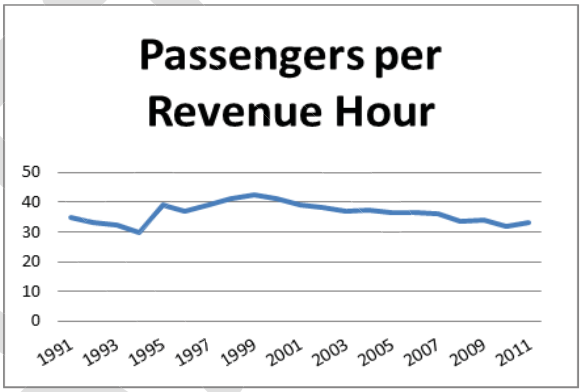
Extent of System: 2,074 Directional Route Miles

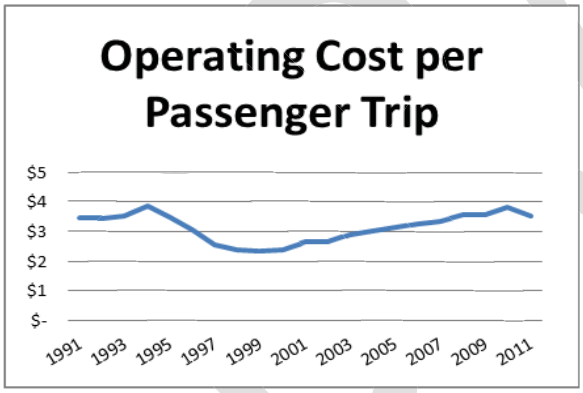
Span of Service: Forthcoming

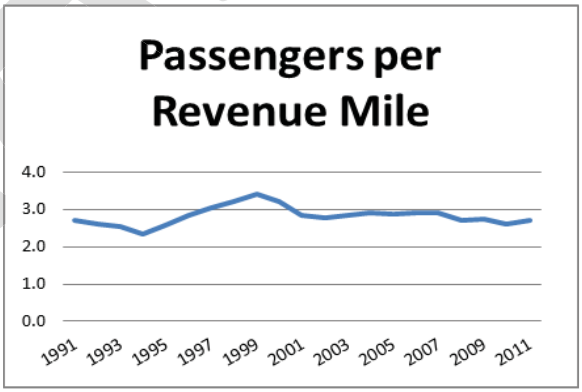
Orange County Transportation Authority
Fixed Route Bus Service

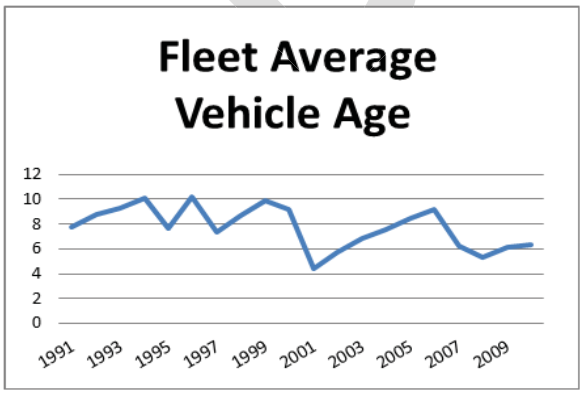


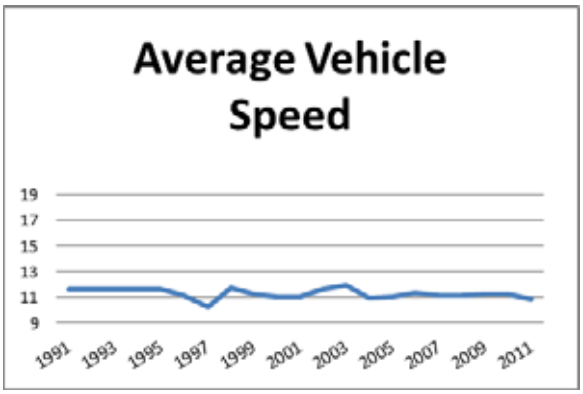












Riverside Transit Agency

Address:

1825 3rd Street

Riverside, CA 92507

Website: http://www.riversidetransit.com/home

Governance Structure: Joint Powers Authority

Base Fare: $1.50

Day Pass: $4.00

Monthly Pass: $50.00

Total Operating Budget: $45,092,129

Annual Service Provided: 600,356 Hours

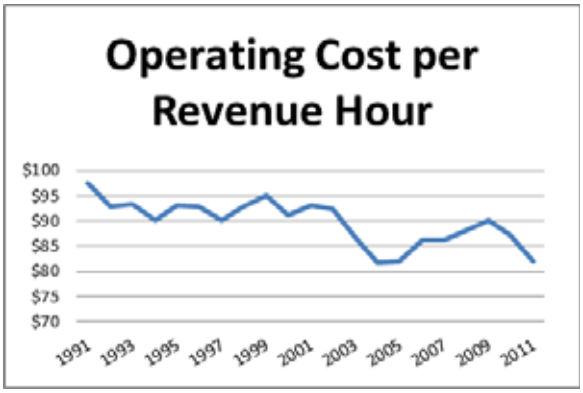
Service Area: 2,725 Square Miles

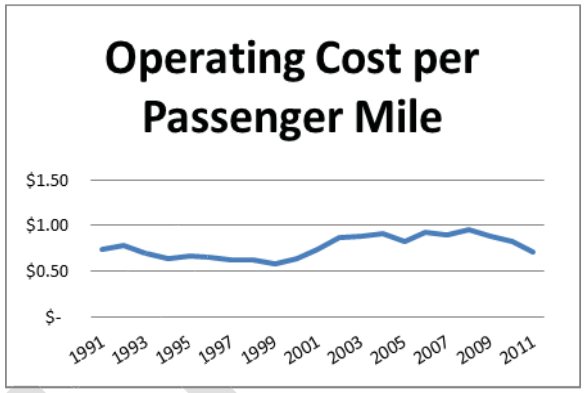
Fleet Size: 276 Vehicles

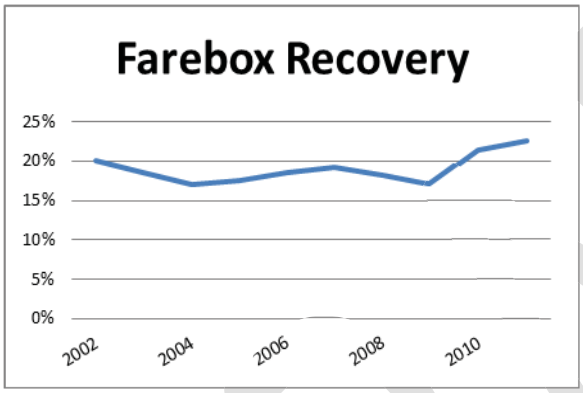
Extent of System: 1,471 Directional Route Miles

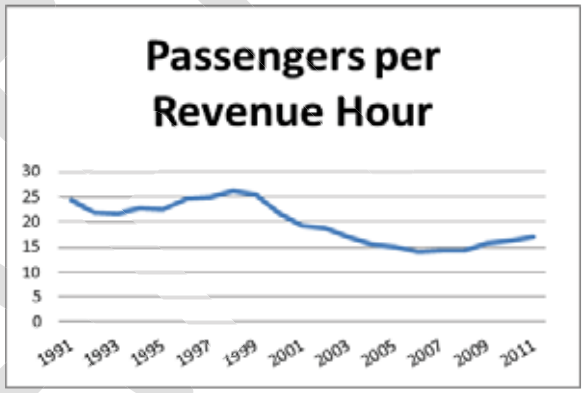
Span of Service: Forthcoming

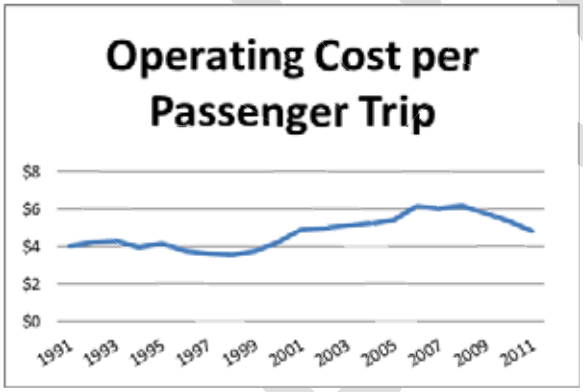
Riverside Transit Agency
Fixed Route Bus Service

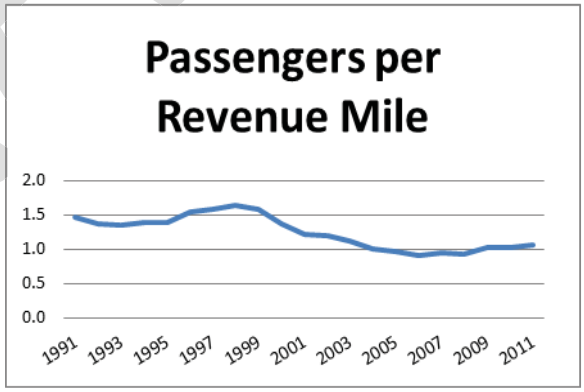


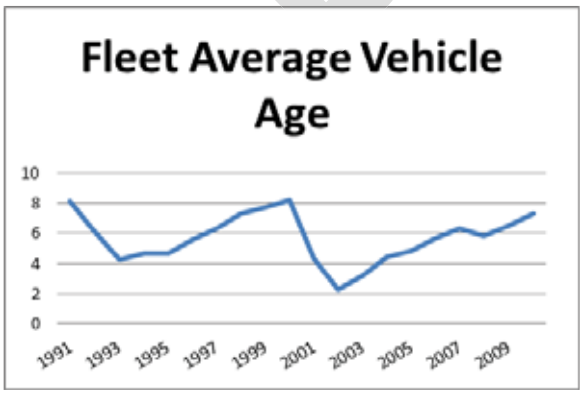


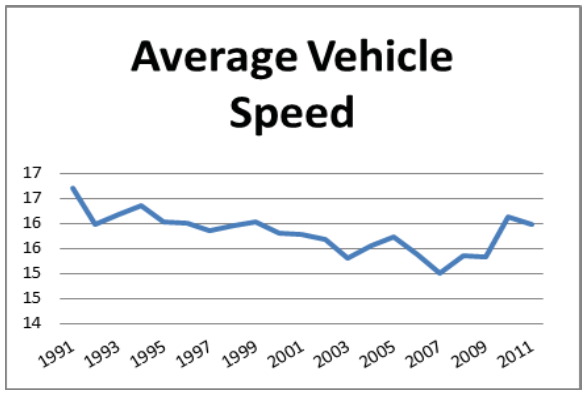












Omnitrans

Address:

1700 W. Fifth Street

San Bernardino, CA 92411

Website: http://www.omnitrans.org

Governance Structure: Joint Powers Authority/

Base Fare: $1.50

Day Pass: $4.00

Monthly Pass: $47.00

Total Operating Budget: $66,497,185

Annual Service Provided: 783,012

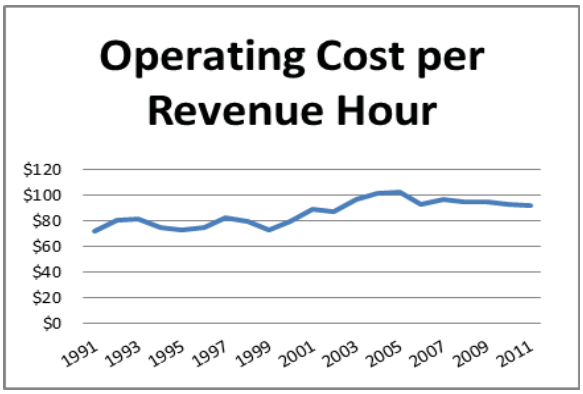
Service Area: 459 Square Miles

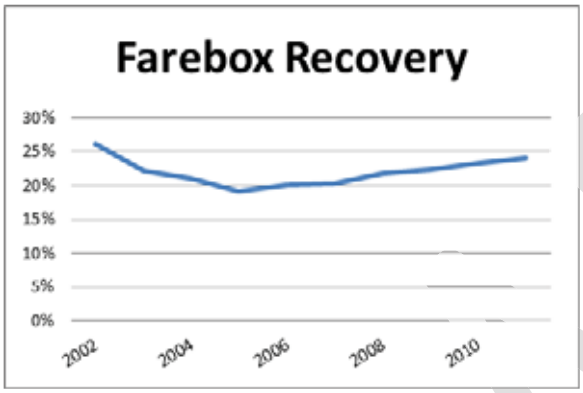
Fleet Size: 284 Vehicles

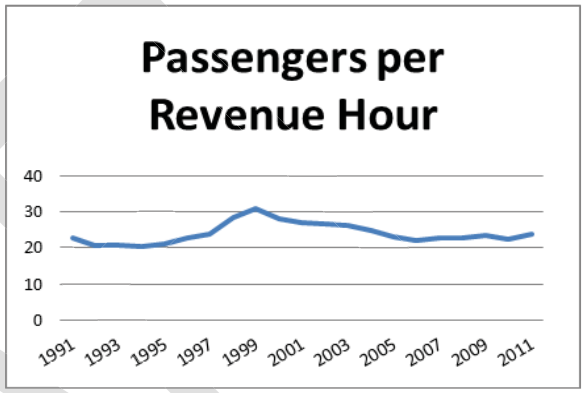
Extent of System: 844 Directional Route Miles

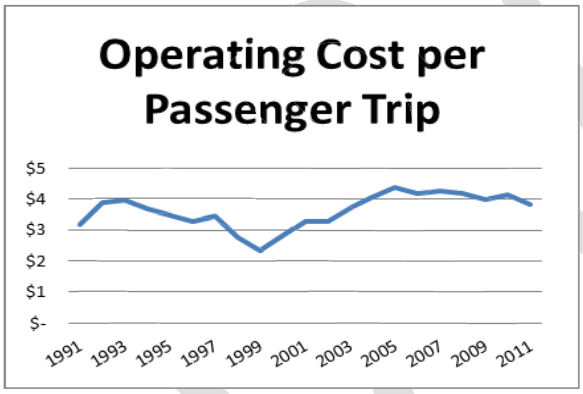
Span of Service: Forthcoming

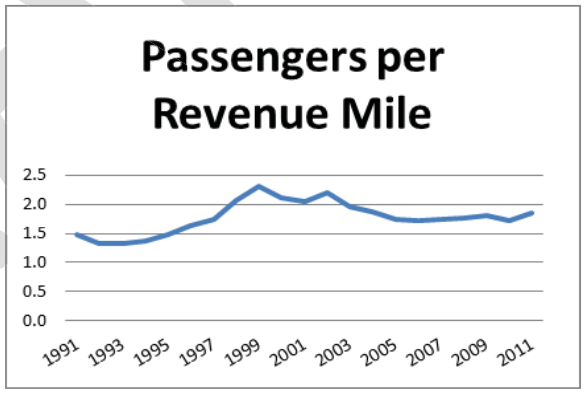
Omnitrans
Fixed Route Bus Service

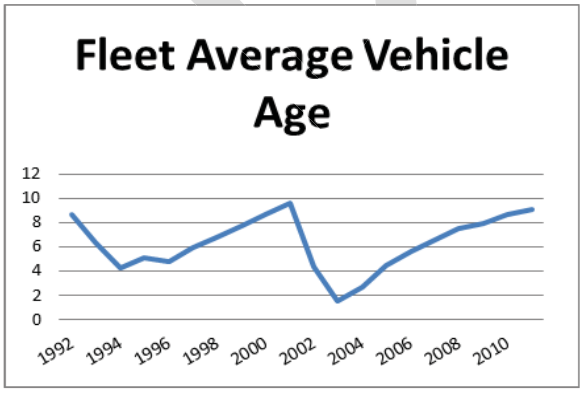


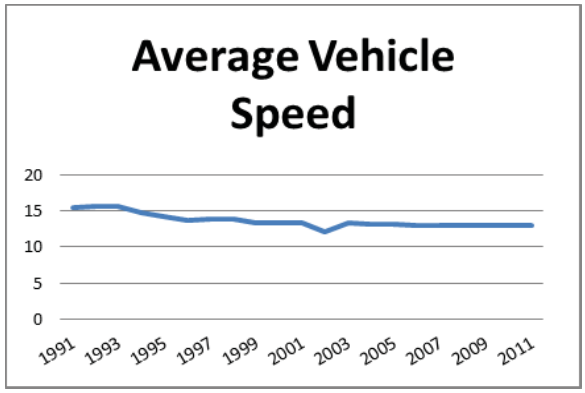












Ventura Intercity Service Transit Authority (VISTA)

Address:

Ventura County Transportation Commission

950 County Square Drive, Suite 207

Ventura, CA 93003

Website: http://www.goventura.org/?q=travel-ventura

Governance Structure: Service Brand of the Ventura County Transportation Commission

Base Fare: $1.25

Day Pass: N/A

Monthly Pass: $50.00

Total Operating Budget: $4,424,844

Annual Service Provided: 81,923

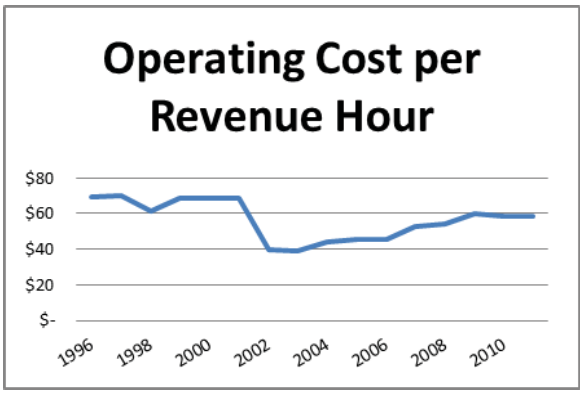
Service Area: 28 Square Miles

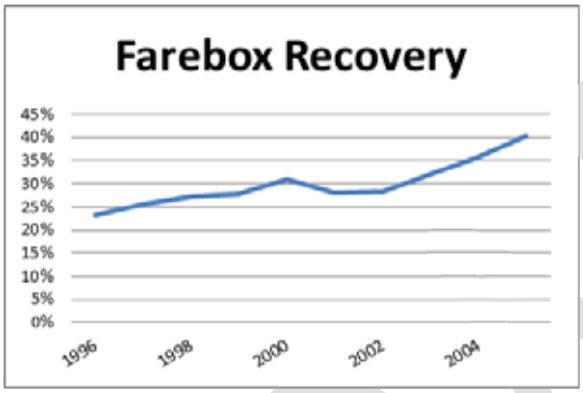
Fleet Size: 46 Vehicles

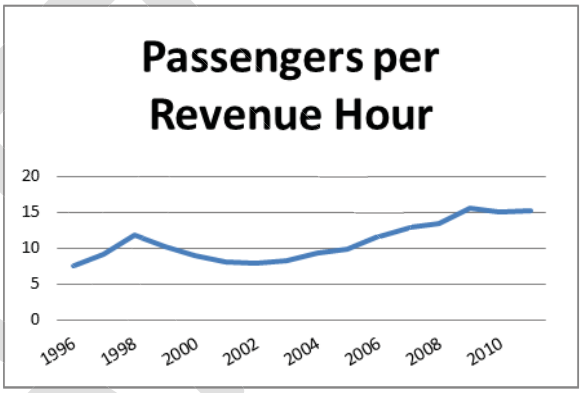
Extent of System: 336 Directional Route Miles

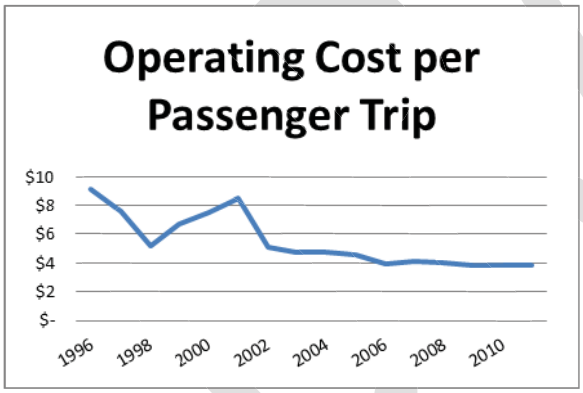
Span of Service: Forthcoming

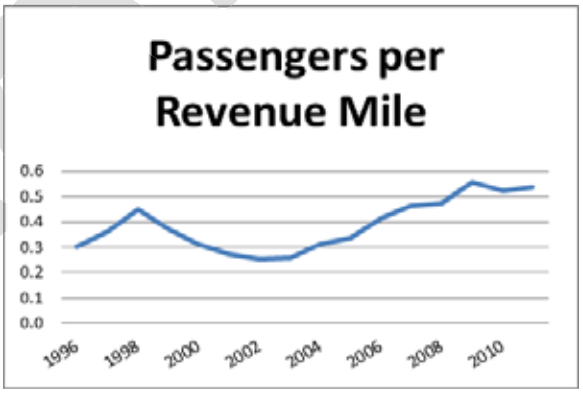
Ventura Intercity Service Transit Authority
Fixed Route Bus Service



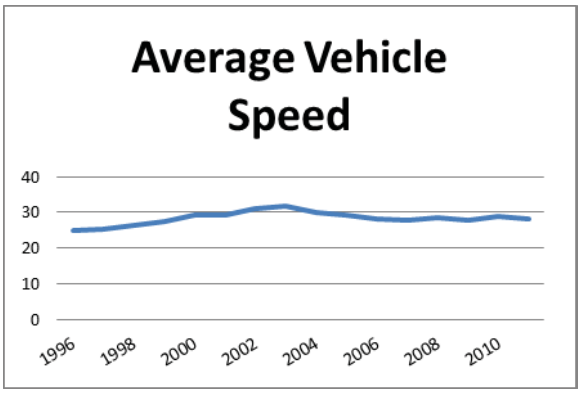








Fleet Average Vehicle Age – Data Unavailable



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DRAFT 2013 PASSENGER RAIL REPORT
WORK IN PROGRESS – FOR DISCUSSION ONLY

INTRODUCTION

The SCAG region has an extensive freight and passenger rail network that includes freight, commuter, and intercity operations along with plans for future high-speed operations. Southern California is experiencing a rail renaissance and many capital improvements are underway and planned along the existing passenger network and for corridors that are currently not served.

Many rail planning efforts led by a variety of agencies are also in process or have been recently completed. Recently completed documents include SCAG's 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), the California High-Speed Rail Authority's (CHSRA) 2012 Business Plan, the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Strategic Implementation Plan, and the Metrolink Antelope Valley Line Improvement Study. Efforts underway include the 2013 California State Rail Plan (which provides a comprehensive description of the California passenger rail network and is summarized in this report with a focus on Southern California), the High Desert Corridor environmental study, and the Metrolink San Bernardino Line Improvement Study.

These efforts are bringing rail and transportation agencies together in the planning and implementation process to an unprecedented level. The Southern California High-Speed Rail Memorandum of Understanding (Southern California MOU), the Southern California Rail Partners Working Group and the future locally-controlled Amtrak Pacific Surfliner service are examples of this. This *2013 Passenger Rail Report* discusses these planning developments, and also looks at the current existing conditions of our passenger rail system, planned improvements, future services, and strategies and recommendations to attract new riders. In doing so, this report coalesces the numerous rail planning efforts across the region and provides the foundation for development of a coordinated regional rail vision for the 2016 RTP/SCS update.

SOUTHERN CALIFORNIA PASSENGER RAIL NETWORK

This section reflects information on the Southern California passenger rail network provided in the Draft 2013 California State Rail Plan, released by Caltrans in February 2013. Southern California has a passenger rail network serving all six counties in SCAG's region—Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. Two operators provide passenger rail service within our region: Amtrak and the Southern California Regional Rail Authority (SCRRA), which operates the commuter rail service branded "Metrolink." Amtrak provides intercity service which is divided in to two types: interstate and intrastate. Four of Amtrak's fifteen interstate long distance routes: the Coast Starlight, the Texas Eagle, the Sunset Limited, and the Southwest Chief, connect our region with destinations throughout the country. Of these, the Coast Starlight and Southwest Chief offer daily service, while the other two offer service just three days a week.[1]

[1] Within the State of California the Sunset Limited and Texas Eagle are combined, operating in the same trainset until separated in San Antonio, Texas.

The Coast Starlight offers a daily round trip and is the second most popular long distance train in the Amtrak system, connecting Los Angeles, Oakland, Sacramento, Portland and Seattle. For many years, demand has been greater than its capacity during summer and holiday travel periods. While a significant portion of the route's ridership is generated by intrastate California travel, the route provides the only rail service north from Sacramento to Redding and Oregon, and the only one-seat ride rail service from the Bay Area to Los Angeles. Direct connections with the Pacific Surfliner at Los Angeles effectively extend the route south to San Diego. Connections with the Amtrak San Joaquin service at Sacramento and Martinez provide Central Valley access for travelers to and from the north.

The Sunset Limited operates three days a week in each direction connecting Los Angeles, Tucson, San Antonio and New Orleans and is the only rail service serving Palm Springs and the Coachella Valley.[2] To the east, it connects California to Tucson, El Paso, San Antonio, Houston, and New Orleans. The Texas Eagle, which links Chicago with San Antonio via Little Rock and St. Louis, operates jointly in a single trainset with the Sunset Limited from Los Angeles to San Antonio where it is decoupled from the Sunset Limited.

The daily round trip Southwest Chief provides the only rail service in California from Los Angeles east to Victorville, Barstow and Needles, and connects to Albuquerque, Kansas City and Chicago. Due to slow speeds navigating El Cajon Pass, the Southwest Chief takes about 3 and a half hours to travel between downtown L.A. and Victorville. Exhibit 1 indicates the location of both state- and Amtrak-supported intercity routes.

Amtrak provides much more frequent intercity service on the Pacific Surfliner. This 351-mile-long service travels between San Luis Obispo and San Diego along the LOSSAN rail corridor. The Pacific Surfliner is the second busiest service in Amtrak's national network, behind the Northeast Corridor, and moves nearly nine percent of Amtrak's total national ridership. Pacific Surfliner ridership has also been growing steadily over the years. Administrative and management services for this corridor are currently provided by the Caltrans Division of Rail, and both Amtrak and Caltrans contribute operating revenues for the Pacific Surfliner.

Amtrak Thruway buses provide an important extension for the Pacific Surfliner (and other Amtrak rail corridors). Caltrans contracts with Amtrak to provide connecting feeder bus services, and Amtrak in turn contracts with private bus operators. The Thruway buses function as a direct part of the Amtrak system, providing coordinated connections, guaranteed seating, and integrated fares and ticketing procedures, and are also included in Amtrak's central information and reservation systems. The current Pacific Surfliner bus routes and their origins/destinations are:

- Route 1 - Los Angeles to Bakersfield
- Route 4 - Los Angeles to Santa Barbara
- Route 17 - Santa Barbara-San Luis Obispo-San Francisco/Oakland
- Route 21 - Santa Barbara to San Jose
- Route 39 - Fullerton to Indio

[2] The train arrives in Palm Springs at 12:36 a.m. in the eastbound direction, and at 2:02 a.m. in the westbound direction, thereby rendering it unattractive and ineffective as interregional service in the SCAG region.

The Thruway route network is shown in Exhibit 2.

On the northern segment of the Pacific Surfliner, Thruway service from Los Angeles to San Luis Obispo via Santa Barbara has acted as market development for eventual rail service, thus playing an important role in testing and developing rail ridership. Currently, buses from Santa Barbara and San Luis Obispo to San Francisco provide an important extension for the service and testing of this market. Caltrans plans to expand and improve bus service on the route, including additional connections north to the San Francisco Bay Area.

SCRRA is the operator of commuter rail service in our region. Metrolink trains operate on 512 route miles of service along seven lines in Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Metrolink passengers travel further than most other transit passengers, having an average trip length of about 37 miles. In Fiscal Year (FY) 12, Metrolink provided 11,509,900 passenger trips. Five of its routes—the Ventura County Line, the Antelope Valley Line, the Orange County Line, the Inland Empire-Orange County Line, and the SR-91 Line—share portions of the LOSSAN Corridor with the Pacific Surfliner. Other Metrolink routes include the Antelope Valley Line, the San Bernardino Line, and the Riverside Line. The Metrolink route network is shown in Exhibit 3.

Exhibit 1: California Amtrak Services
Source: Caltrans DOR

Exhibit 2: Amtrak Thruway Bus Service in Southern California
Source: Caltrans DOR

Exhibit 3: The Metrolink Network
Source: SCRRA

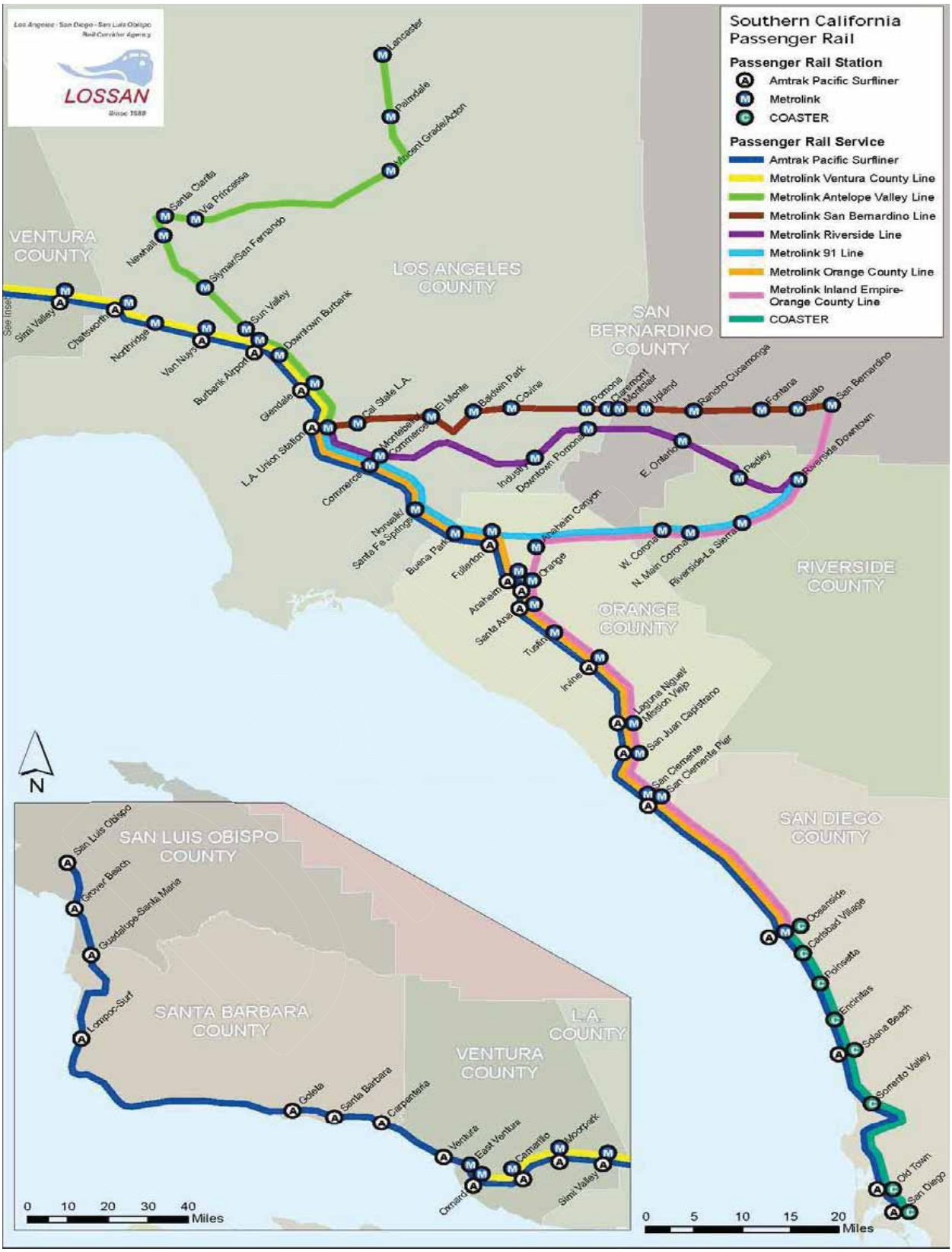

Exhibit 4: Pacific Surfliner, Metrolink and Coaster
Source: LOSSAN

PACIFIC SURFLINER

The Pacific Surfliner operates 11 daily round trips between San Diego and Los Angeles, with four northbound trips and five southbound trips extending north to Santa Barbara and Goleta. A fifth northbound trip serves San Luis Obispo, but begins only at Los Angeles instead of San Diego. Of the five round trips serving Santa Barbara and Goleta, two extend further north to San Luis Obispo, with the remaining round trips provided with dedicated Amtrak Thruway bus connections to and from San Luis Obispo at Santa Barbara.

Average speed between Los Angeles and San Diego is 46 mph in both directions. This segment includes more than 70 miles between Santa Ana and Sorrento Valley where the maximum track speed is 90 mph, the only location in the state where trains operate above 79 mph. Between Los Angeles and Santa Barbara, the average speed is 40 mph northbound and 36 mph southbound. The average speed between Santa Barbara and San Luis Obispo is 44 mph northbound and 51 mph southbound. San Diego to Los Angeles travel time averages 2 hours and 47 minutes. Los Angeles to Santa Barbara travel time averages 2 hours and 37 minutes northbound and 2 hours and 55 minutes southbound. Los Angeles to San Luis Obispo averages 5 hours and 26 minutes.

The 351-mile Pacific Surfliner includes 29 stations. Four of these stations have only limited service (not all train trips stop there), and the Old Town San Diego station only boards passengers in the northbound direction and only alights passengers in the southbound direction.

The county transportation commissions in Los Angeles, Orange, San Diego, and Ventura counties purchased most segments of the right-of-way (ROW) between Moorpark and San Diego over 20 years ago to implement commuter rail service. The Union Pacific Railroad (UP) owns 175 miles of the ROW between San Luis Obispo and Moorpark, and the Burlington Northern Santa Fe Railway (BNSF) owns 22 miles between Redondo Junction south of downtown Los Angeles and Fullerton.

In order to coordinate planning activities along the corridor, stakeholders formed the Los Angeles-San Diego-San Luis Obispo Rail Corridor Agency (LOSSAN) in 1989. LOSSAN is a joint powers authority (JPA) which seeks to address issues of safety, revenue, productivity and reliability along the LOSSAN corridor. Its membership consists of the San Luis Obispo Council of Governments (SLOCOG), the Santa Barbara Association of Governments (SBCAG), the Ventura County Transportation Commission (VCTC), the Los Angeles County Metropolitan Transportation Authority (Metro), the Orange County Transportation Authority (OCTA), the San Diego Association of Governments (SANDAG), the North County Transit District (NCTD), the San Diego Metropolitan Transit System (MTS) and the California Department of Transportation's Division of Rail (Caltrans DOR). SCAG, the California High-Speed Rail Authority (CHSRA), and the Riverside County Transportation Commission (RCTC) are ex officio members. Since its formation, LOSSAN has acquired nearly $1.2 billion in state and federal funding for the corridor, while also investing nearly $500 million in local funding. As a result of this investment, the Pacific Surfliner has seen significant ridership growth. Between 2000 and 2012, annual ridership increased 75%.

Currently, Caltrans DOR and Amtrak share responsibilities for operating the Pacific Surfliner. Amtrak considers 30 percent of the Pacific Surfliner service to be a part of its national long-distance "basic service," therefore the operating costs on this portion of the route are funded by Amtrak; Caltrans DOR funds the remaining 70 percent and also funds capital projects. Some of the costs of these projects are shared by local agencies, reflecting a perceived joint benefit to commuter and intercity rail. Beginning in Federal FY 13, Caltrans will be responsible for 100% of Pacific Surfliner operating costs as a result of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) Section 209 cost-sharing changes. Caltrans DOR is responsible for overseeing service on the route and coordinates marketing, scheduling, and on-board services with Amtrak. Amtrak operates all trains and maintains all of the equipment, and owns all of the locomotives and a majority of the cars; Caltrans DOR owns ten cars. LOSSAN serves as a planning and advisory group to Caltrans DOR and SANDAG provides staff support to LOSSAN with financial assistance from the other member agencies.

History

Passenger rail service has been operated in the Los Angeles to San Diego corridor since 1938. This service, originally named the San Diegan, was initially operated by the Atchinson-Topeka and Santa Fe Railroad. In 1971, when domestic passenger rail services were nationalized, Amtrak assumed operation of the San Diegan service. At this time there were just three round trips per day and many passengers used the service for connections to interstate trains. State support of the route began in 1976. The San Diegan route was extended to Santa Barbara in 1988, and then to San Luis Obispo in 1995. In 2000, the San Diegan was renamed the Pacific Surfliner in recognition of its expanded service area. In 1992, Metrolink commuter rail service was added to the corridor north of Oceanside, and in 1995 San Diego County's Coaster commuter rail service was implemented south of Oceanside, as a result of new state revenues from the passage of Proposition 116 in 1990. The Pacific Surfliner has steadily added service over this time up to its current 11 daily trains.

Performance

The Pacific Surfliner has a long-term trend of increasing ridership. Some of it is by virtue of adding service, but much of it is by being an attractive alternative to passenger car travel along the corridor. The Pacific Surfliner carried 2,664,935 passengers in FY 12. This is up from 1,742,768 ten years earlier. In FY 11, it carried 2,746,320 passengers, resulting in a 3% drop this year. The peak year was FY 08, at 2,835,132 boardings, before the Great Recession. In 2012 there was a period of track work replacing railroad ties on the BNSF portion of the line (L.A. to Fullerton) that resulted in cancelled trains, bus bridges, and poor on-time performance (OTP) that was the major contributor to this decrease. Reflecting the economic recovery, ridership in FY 11 was up 5% over FY 10.

OTP was 75.5% for FY 12 and 77.6% for FY 11. For the Pacific Surfliner, OTP is within 10 minutes at scheduled station stops for the Goleta to San Diego Trains, and within 20 minutes for the San Luis Obispo to San Diego trains. (The above figures are averaged to incorporate both segments.) Commuter rail, Metrolink and NCTD's Coaster, perform much better, generally above 90% and their OTP standard is within six minutes of scheduled times. Reasons for the Pacific Surfliner's lower OTP include maintenance work and slow orders from the host railroads, in this case freight operators as well as Metrolink whose member agencies own the tracks, and mechanical problems.

Revenue has done very well the last couple of years. It was up 8% in FY 11 and almost 11% for FY 12. This is due to the healthy ridership gain noted above for FY 11 and also due to the elimination of the off-peak non-summer fares (which were significantly cheaper than summer fares) in FY 12. There was also an across the board 2% fare increase in the summer of 2012. Farebox recovery has been in a healthy range of between 55% and 60% over the last ten years.

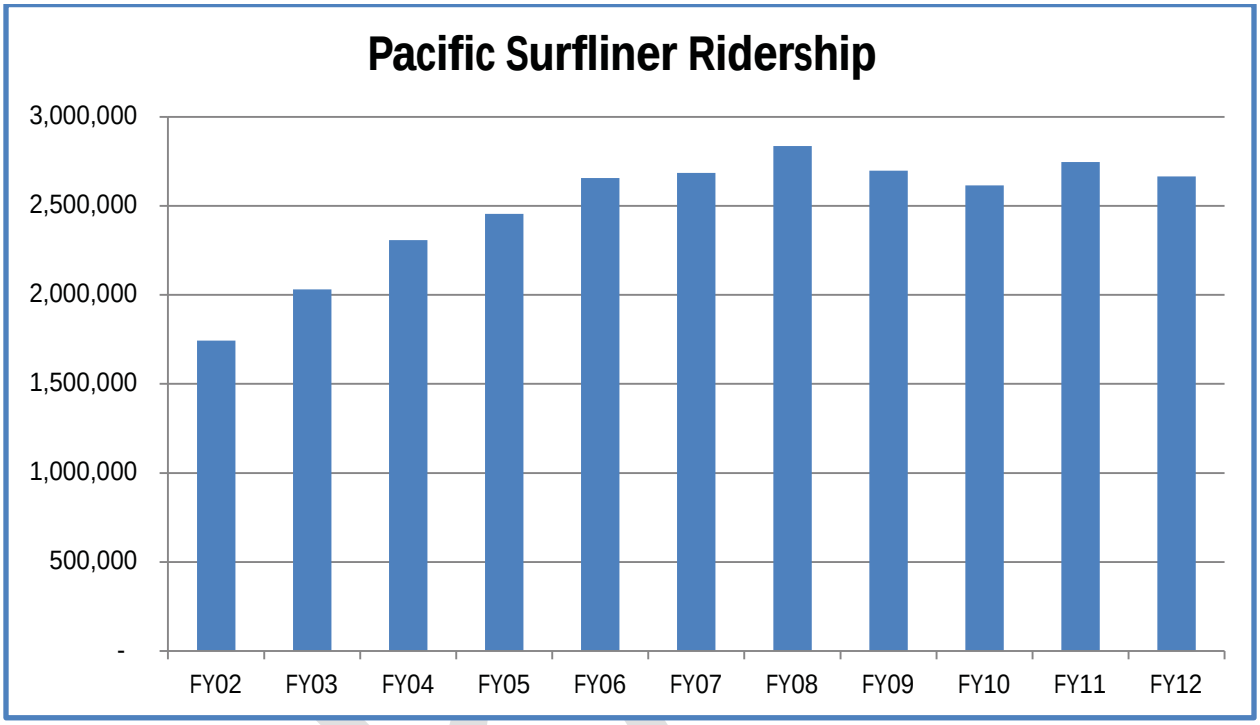

Exhibit 5: Pacific Surfliner Ridership
Source: Caltrans DOR

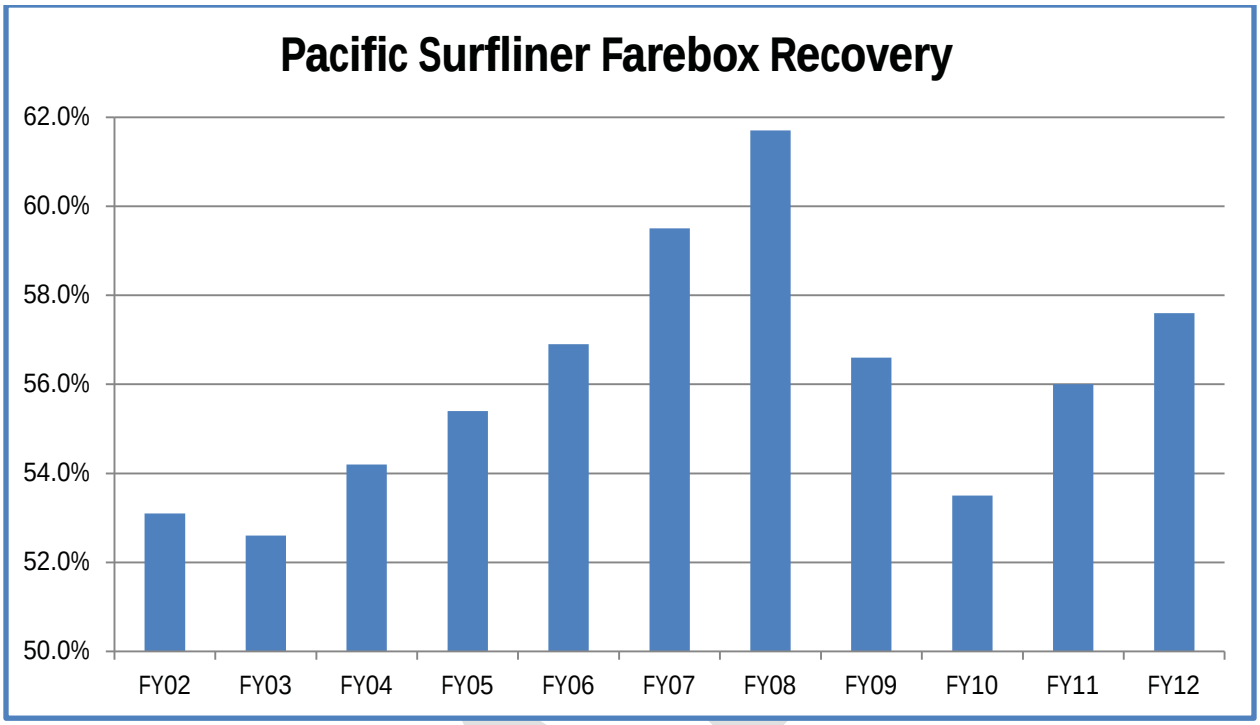

Exhibit 6: Pacific Surfliner Farebox Recovery
Source: Caltrans DOR

LOSSAN JPA

At the direction of the LOSSAN Board, the LOSSAN Chief Executive Officers (CEOs) group examined changes to the LOSSAN governance structure that would enhance the LOSSAN Board's ability to implement speed, service and marketing improvements, especially in light of upcoming changes to federal operating subsidies per Section 209 of PRIIA, and the Southern California MOU improvements. The LOSSAN CEOs group proposed a new JPA structure wherein the LOSSAN Rail Corridor Agency would have direct control of Amtrak operations, similar to Northern California's Capital Corridor JPA for Amtrak Capital Corridor Service.

The benefits of local management of passenger rail service in the LOSSAN corridor include:

- more efficient resource allocation related to service expansion, frequencies, and schedules;
- a unified voice at the state and federal levels when advocating on passenger rail issues, including funding for capital improvements;
- consolidated services such as fares, ticketing, marketing, and passenger information systems;
- coordinated capital improvement prioritization; and
- more focused oversight of OTP, schedule integration, mechanical issues, and customer service.

In August 2011, the LOSSAN Board unanimously approved the recommendation of the LOSSAN CEOs group to move forward and develop a governance initiative that would assume local control of the state-supported Amtrak Pacific Surfliner service. SCAG's Regional Council approved in concept the development of this local control governance at its November 2011 meeting.

Over the last year, the LOSSAN partners developed a statute bill to implement the new locally-controlled JPA. Senate Bill (SB) 1225 was authored by State Senator Alex Padilla and introduced into 2012's legislative session in February, 2012. It was approved by the state legislature in August 2012 and signed in to law by Governor Brown in September 2012.[3] SB 1225 provides a timetable for Caltrans DOR to transfer management of the Pacific Surfliner to the new locally-controlled JPA by June of 2015, if not sooner, by means of an Interagency Transfer Agreement (ITA). Importantly, it specifies that funding and levels of service will remain at least at the same levels for the initial three-year period from the ITA's effective date of execution. Caltrans DOR will continue to provide a supportive role in the corridor and coordinate on aspects such as statewide planning and connectivity, Amtrak Thruway feeder bus service, and equipment acquisition and coordination. Caltrans DOR will transition from being a voting member to an ex-officio member.

At its October 2012 meeting, the LOSSAN Board approved the amended JPA for distribution to its member agencies for their approval. All agencies, both voting and ex-officio, must approve these amendments for the local-control process to proceed. The timetable for member agency approval is by the end of January 2013. SCAG's Regional Council approved the amended JPA at its January 2013 meeting. The following is a summary of the major changes to the LOSSAN JPA:

- Makes changes to voting and ex-officio membership. Specifically, Caltrans DOR is transferred from a voting member to an ex-officio member and RCTC is transferred from an ex-officio member to a voting member. SCAG will continue to be an ex-officio member.

- Identifies supermajority voting as eight of ten votes, including at least one affirmative vote from each of four regions in the LOSSAN corridor for the following items (1) legislation, (2) JPA amendments in terms of membership and voting, (3) bylaws changes, (4) service reductions, and (5) cost sharing formulas.

- Identifies SANDAG as the Transitional Managing Agency to continue to provide administrative staff support to the LOSSAN Rail Corridor Agency from when the JPA is approved to when a managing agency is selected. A RFP is scheduled to go out in the spring of 2013 with selection of the first managing agency about four months later.

- Includes details on the roles and responsibilities of the managing agency and the managing director, who will be appointed by the LOSSAN Board and will lead the administrative duties of the LOSSAN Rail Corridor Agency. Other duties of the

[3] A companion bill, AB 1779, for local control of the Amtrak San Joaquin service in the San Joaquin Valley was also signed in to law.

managing agency include project development, budgeting and finance, business plan development, marketing, and fare policy.

- Includes additional purposes of the LOSSAN Rail Corridor Agency to administer and manage the operations of the corridor intercity passenger rail service as authorized in SB 1225.

- Includes details on the relationship between the LOSSAN corridor's commuter rail services in terms of (1) overall coordination and (2) exclusions for existing agreements, ownership rights, funding sources, and other aspects of commuter rail service.

METROLINK

Commuter rail service is defined in the National Transit Database as a transit mode that is an electric or diesel propelled railway for urban passenger train service consisting of local short distance travel operating between a central city and adjacent suburbs. Service must be operated on a regular basis by, or under contract with, a transit operator for the purpose of transporting passengers within urbanized areas (UZAs), or between UZAs and outlying areas. Such rail service, using either locomotive-hauled or self-propelled railroad passenger cars, is generally characterized by:

- multi-trip tickets,
- specific station-to-station or zone-to-zone fares,
- traditional railroad employment practices by the operator, and
- no higher station densities in more dense urban areas than suburban areas.

Commuter rail does not include heavy rail rapid transit such as subways, or light rail or streetcars. Commuter rail station stops tend to be much closer together than those of intercity passenger rail such as the Pacific Surfliner. Also, smaller portions of the total route alignment tend to be out of urbanized statistical areas, and a much higher proportion of passengers are daily riders. Peak ridership occurs on weekdays, whereas intercity rail operators often have weekend peak ridership. Commuter rail often fuses urban transit business models with railroad style operations. As a result, farebox recovery ratios tend to be lower, though operations costs tend to be similar.

History

The California State Legislature enacted SB 1402 in June 1990, requiring the county transportation commissions of Los Angeles, Orange, Riverside, and San Bernardino to develop a plan for regional transit services. In August 1991, the Southern California Regional Rail Authority (SCRRA) was created to plan, design, construct, and administer the operation of a regional passenger rail system serving the counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The SCRRA branded the regional commuter rail system "Metrolink." The SCRRA is a JPA consisting of five member agencies—Metro, OCTA, RCTC, San

Bernardino Associated Governments (SANBAG), and VCTC—and three ex-officio member agencies—SCAG, SANDAG, and Caltrans.

Metrolink's first three lines: the San Bernardino Line, the Santa Clarita Line (now the Antelope Valley Line), and the Ventura County Line, inaugurated service to downtown Los Angeles on October 1992. The Riverside Line was added in June 1993, the Orange County Line in April 1994, the Inland Empire-Orange County Line (IEOC) in October 1995, and the 91 Line between Los Angeles and Riverside via Fullerton in May 2002. The Orange County Line extends south to Oceanside in San Diego County, where it connects with the COASTER commuter rail service to San Diego and the SPRINTER rail service to Escondido. The SCRRA contracts with Amtrak to operate the commuter rail service, Bombardier for rail equipment maintenance, the Los Angeles County Sheriff's Department for security, Veolia Transportation Maintenance & Infrastructure, Inc. for track and structure maintenance, and Mass Electric Construction Company for signal and communications maintenance.

Performance

Metrolink operates 169 trains on seven lines carrying roughly 42,500 passengers on weekdays. On weekends, 44 trains are operated on Saturdays and 32 on Sundays. Average speed is about 40 mph. Limited express service is offered on the San Bernardino and Antelope Valley Lines. Metrolink carried 11,509,900 passengers in FY 12, a 7.9% increase from FY 11. This increase

can be attributed to the improving job market and new service. Ridership has generally increased year over year but was negatively impacted by the Great Recession.

The region's commuter rail service is relatively new compared to commuter rail networks in other parts of the country, especially in the East. The region boasts 4.32 commuter rail route miles per 100,000 residents, which is 2.71 times the median for large metropolitan regions. However, in 2008, residents of the SCAG region took only 0.7 trips per capita on the Metrolink system, below the national median of 0.82. In the Chicago area, by contrast, residents took 8.28 per capita trips, on a network that provides 11.8 route miles for every 100,000 residents; and Baltimore residents took 34 percent more commuter rail trips per capita on a network similar to that of the SCAG region. This shows the growth potential of Metrolink in our region.

Metrolink has made progress in improving its farebox recovery ratio. In FY 11, 46.1% of Metrolink's operating budget was funded by fare revenues. This compares with just 37.3% in FY 02. In FY 08, the farebox recovery ratio was 50.4%.

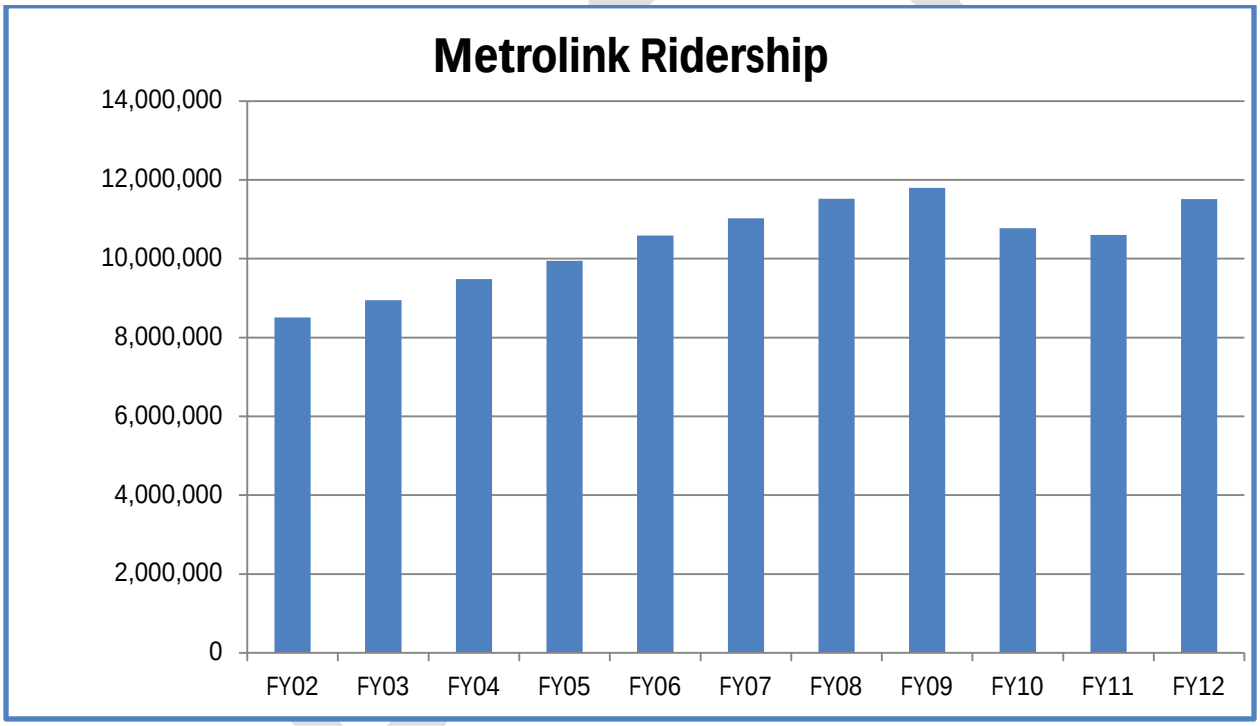

Exhibit 7: Metrolink Ridership
Source: SCRRA

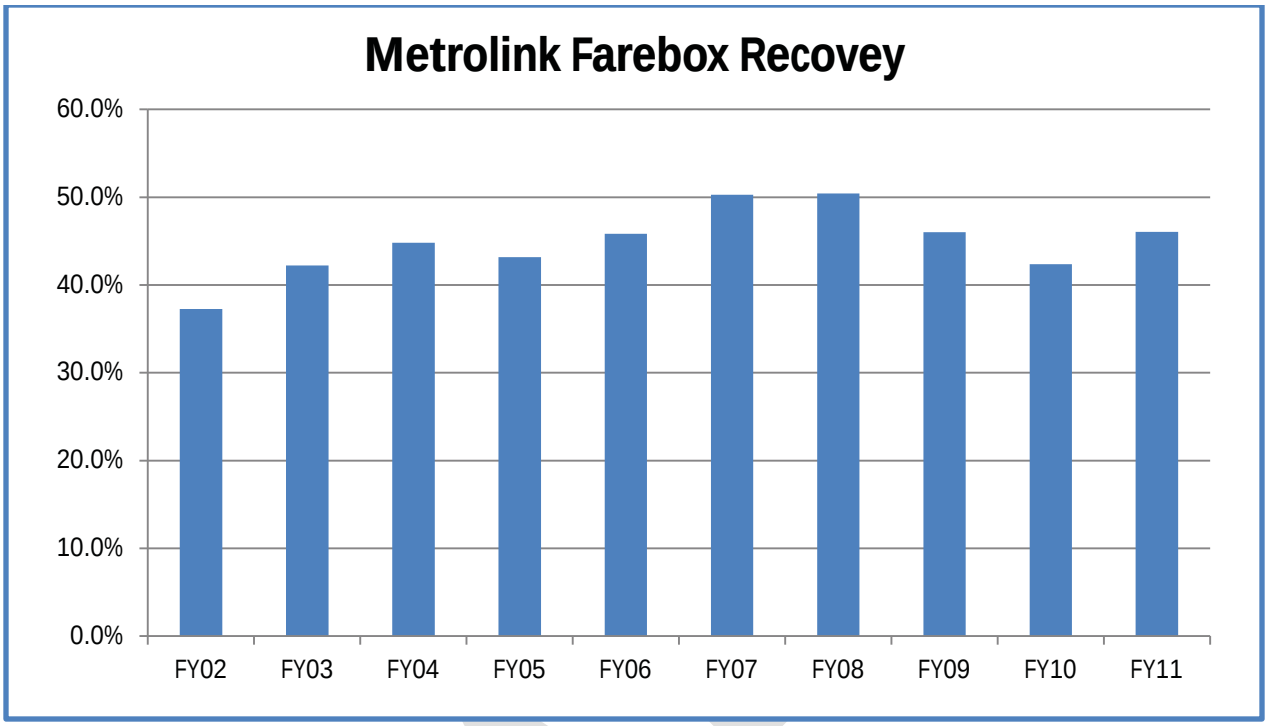

Exhibit 8: Metrolink Farebox Recovery
Source: NTD

Metrolink's OTP has been very good historically. A train is considered late if it departs a station 6 minutes or more from the scheduled time. Over the last 12 months, OTP ranged from 92.9% to 96.6%.

Metrolink implemented a number of service enhancements in 2012. Enhancements include adding one round-trip from Riverside to Laguna Niguel on the Inland Empire-Orange County Line, adding an additional train between Laguna Niguel and Fullerton on the Orange County Line, and adding four weekend round-trip trains on the Orange County Line between Los Angeles Union Station and Oceanside. Service increases combined with a $10 weekend pass allows passengers to visit destinations such as Disneyland, sports venues, beach areas and shopping centers. After holding fares constant for two years, fares were increased an average of 7% system-wide on July 1, 2012 to address rising operational costs. Metrolink's development of its Positive Train Control (PTC) collision avoidance system is moving forward and is scheduled for revenue service in September 2013, well ahead of the federal December 2015 mandate.

CALIFORNIA HIGH-SPEED TRAIN

The California High-Speed Train (CA HST) is a voter approved high-speed rail service connecting the state's major metropolitan areas. Voters passed Proposition 1A in 2008 for the first phase of the project from Los Angeles to San Francisco. The bond measure calls for speeds of up to 220 mph enabling the trip from L.A. to San Francisco to be completed in two hours and

forty minutes. The measure authorized the sale of $9.95 billion in bond funds for the first phase of the project. Phase 2 would connect Sacramento and San Diego via the San Gabriel Valley and Inland Empire to Phase 1.

CHSRA 2012 Business Plan

In April, 2012, the CHSRA released its revised 2012 Business Plan. This plan introduced the "blended/bookend" approach that calls for early investments in the existing passenger rail networks of Southern and Northern California to connect to the CA HST as it's built in phases. The plan also adjusts the cost and schedule, and commits to constructing the southern end first from the Initial Construction Segment (ICS) in the San Joaquin Valley rather than the northern end. The plan calls for Amtrak San Joaquin service to first operate on the ICS from north of Bakersfield to north of Fresno at speeds of up to 125 mph. True high-speed rail service would not start until the ICS is extended south to Palmdale and north to Merced, and this "Initial Operating Segment" (IOS) would constitute the first segment of the CA HST service with speeds operating up to 220 mph. This segment could be operational as early as 2021. As part of the blended approach, the project would be extended incrementally to the San Fernando Valley, San Jose, and Los Angeles Union Station, and eventually Anaheim with full Phase 1 build-out. Phase 2 is not addressed in the plan.

The plan includes a $30 billion reduction in cost, from $98 billion to $68 billion. (The original Phase 1 cost was $43 billion.) These cost savings are largely due to the new "Phase 1 Blended System" being from San Jose to L.A. Union Station. For the ICS, $3.5 billion in federal funding and $2.6 billion in state Prop 1A are being used. The plan also prioritizes investments in the segment between Palmdale and Bakersfield, often referred to as the "Bakersfield Gap."

The plan assumes a large amount of federal funding in the future, and also AB 32 cap-and-trade revenues, although how much is not identified. The plan assumes an operating profit starting with the IOS that is expected to attract private investment. Ticket prices from L.A. to San Francisco are forecast at 80% of the average Los Angeles to San Francisco airfare.

The project's phasing is in five steps. These are:

> **Step 1 – Initial Construction Segment (ICS)** – This 130 mile segment will be built from just north of Bakersfield to north of Fresno. Amtrak's existing San Joaquin service will first operate on this non-electrified set of track at speeds of up to 125 mph. Construction is expected to begin in the summer of 2013 and be completed in 2018.
>
> **Step 2 – Initial Operating Segment (IOS)** – This segment will be built south from Bakersfield connecting Palmdale and the San Fernando Valley with the ICS, and also extending north to Merced. This segment will operate true high-speed service with speeds up to 220 mph and will be blended with Metrolink in our region. Service could begin as early at 2021.
>
> **Step 3 – Bay to Basin** – This will extend true high-speed service from Merced to San Jose, connecting to San Francisco via blended Caltrain Service. Caltrain will be

electrified with signal improvements for higher speeds between San Jose and San Francisco as part of the blended system and as a result of the Northern California MOU. Service could begin as early at 2026.

Step 4 – The Phase 1 System – This step extends the project to L.A. Union Station, with continuing service to Anaheim using blended and improved Metrolink/Amtrak service. Service could begin as early at 2029. A "full build-out" of Phase 1 would extend to Anaheim and San Francisco (the original Phase 1).

Step 5 – The Phase 2 System – This step extends true high-speed service to Sacramento and San Diego. The adopted business plan does not include Phase 2 of the CA HST.

The CHSRA will soon begin work on its 2014 Business Plan. An updated Business Plan is required every two years per Proposition 1A.

Exhibit 9: California High-Speed Train Initial Operating Section
Source: CHSRA Business Plan, April 2012

Southern California High-Speed Rail Memorandum of Understanding

The blended approach involves improving existing passenger rail facilities in Southern California and the Bay Area (the "bookends") to connect to the CA HST as part of a phased implementation strategy to deliver the full system while reducing costs and impacts. This blended approach emerged from the debate and discussion by the SCAG Regional Council on whether to include Phase 1 of the HST in the 2012 RTP/SCS. Based on these discussions, the Regional Council agreed to include Phase 1 in the RTP/SCS and the Authority committed to spend $500 million in Prop. 1A funds, plus $500 million in matching funds, to improve the region's existing passenger rail system as part of the blended approach. All of the Southern California transportation agencies, stakeholders and the CHSRA agreed that investing in the region's existing passenger rail network is necessary to improve both the current and future rail travel markets, and so that the LOSSAN and Metrolink networks are optimally blended with the CA HST project once it is built. This commitment by CHSRA and the transportation agencies was formalized in a MOU with seven signatories representing CHSRA, Metrolink, SCAG, SANDAG, Metro, RCTC and SANBAG.[4] Key principles of the MOU include:

- the CHSRA agrees to fund an additional $1 billion in early investments in Southern California above and beyond the Prop 1A $950 million interconnectivity projects;
- a candidate project list is incorporated in to the MOU for the $1 billion in early investments to be funded by 2020;

[4] The City of Anaheim's city council voted to become a party to the MOU. The City's participation is pending.

- performance criteria are agreed on and also incorporated in to the MOU for selecting the projects from the candidate project list; and
- an agreed upon process for selecting the prioritized project list of these early investments.

The MOU includes a candidate project list to which $1 billion will be programmed in order to provide interconnectivity to the CA HST project, and improve the speed, capacity and safety of our existing passenger rail network. The MOU Working Group met over several months in 2012 and developed the project list with criteria for the MOU. The list includes 74 projects totaling $3.982 billion. While this is well over $1 billion, it represents a comprehensive project list that shows the need for capital improvements to improve speed and service for our region's existing rail network as well as to deliver the blended approach. The twelve criteria are:

- Project Readiness by 2020
- Fits Within Statutory Requirements for Prop 1A Funding for CA HST Phase 1
- Regional Connectivity to the HST System/Linkages
- Improved Operations/Speed
- Enables development of CA HST system
- Independent Utility
- Enhanced Capacity
- CPUC Hazard Ranking (Section 190)
- Safety Improvements to Increase Speed
- Leverages Local Investment
- County Priority
- Top County Priority

The top six projects on the list are each of the five county's (Los Angeles., Orange, Riverside, San Bernardino and San Diego) top projects, plus the Southern California Regional Interconnector Project (formerly the L.A. Union Station run-through tracks) due to its regional significance and benefit to all counties. They are:

Los Angeles	Southern California Regional Interconnector Project
Los Angeles	CP Brighton to CP Roxford Double Track
Orange	State College Blvd. Grade Separation
Riverside	McKinley St. Grade Separaton
San Bernardino	CP Lilac to CP Rancho Double Track
San Diego	San Onofre to Pulgas Double Track

All agencies which are signatories to the MOU have approved and executed the MOU. The CHSRA approved the MOU at its April 2012 meeting. The CHSRA also approved their new 2012 Business Plan at that meeting which incorporates the MOU into the plan. OCTA was an original proposed signatory to the MOU, however opted not to approve it but rather to pass a resolution supporting the blended/bookend approach and high-speed rail investments in our

existing passenger rail services. The Southern California Rail Partners Working Group is continuing the effort to secure funding for the projects and move them forward. A Finance Subcommittee has been established towards this end.

RAIL PROJECTS IN DEVELOPMENT

Metrolink and LOSSAN Corridor

Metrolink's short term capital investment priorities include improvements for capacity, access, and safety. The Metrolink Service Expansion Program (MSEP), sponsored by OCTA and Metrolink, will deliver increased Metrolink service between Fullerton and Laguna Niguel/Mission Viejo. This program was approved by OCTA's Board in 2005, but the Great Recession and slow economic recovery has slowed implementation. In order to facilitate increased commuter train volumes, OCTA and Metrolink have been constructing station and capacity improvements along the Orange County Line. This $91 million program of improvements includes a turn back facility at Laguna Niguel/Mission Viejo Station including double tracking two miles to the south, new track at Fullerton station, a new Metrolink station in Placentia, new parking structures in Fullerton, Tustin and Irvine, and new passenger amenities including shade structures and ticket vending machines. On the IEOC Line, the Anaheim Canyon station will see a second platform and pedestrian undercrossing constructed.

The Anaheim Regional Transportation Intermodal Center (ARTIC) broke ground last year. This architecturally rich station will combine a transportation gateway and mixed-use activity center on a 16-acre site owned by the City of Anaheim. ARTIC will serve as a hub for Orange County and the region, a landmark where freeways, major arterials, bus routes and Orange County's backbone rail system converge. The network of transit choices will continue to grow in the coming years as the number of Metrolink and Amtrak trains serving Anaheim and local and express bus routes increase. On opening day, ARTIC services will include: Metrolink, Amtrak, OCTA bus, Anaheim Resort Transportation, shuttles, taxis, and tour and charter buses. ARTIC will also accommodate future plans for the Anaheim Rapid Connection (ARC) and high-speed trains.

Orange County recently invested $85 million in the Orange County Grade Crossing Safety Improvement (OCX) program. This program provides grade crossing safety enhancements at 31 grade crossings in the cities of Orange, Anaheim, Tustin, San Juan Capistrano, Dana Point, San Clemente and Irvine. Additional safety improvements are also being made along the BNSF main line as part of the Orange County Bridges program. Currently, BNSF operates up to 70 freight trains a day along its mainline, and expects to run up to 130 a day by 2030. To reduce delay and improve safety, OCTA is constructing seven grade separations in the cities of Fullerton, Placentia, and Anaheim. The City of Irvine is also engaging in a $55.9 million effort to grade separate Sand Canyon Avenue. As with all grade separation projects, this new underpass will improve both safety and traffic flow.

Metrolink is also pursuing safety and capacity enhancements in Los Angeles County. The

Glendale Corridor Grade Crossing Safety Improvements program will enable Metrolink to meet the latest grade crossing and safety standards by installing automatic vehicle exit gates, pedestrian gates, roadway widenings, new sidewalks and handrails, and advance traffic signal pre-emption at six grade crossings in the city of Glendale. Additionally, Metrolink is engaged in a program of improvements to install tunnel lighting and intrusion detection systems in six L.A. County train tunnels, mostly along the Antelope Valley and Ventura County Lines.

Recently, Metrolink completed the reconstruction of L.A. Union Station's Platform 7. This $8.5 million project restored tracks 13, 14, and 15 into service after 35 years of non-passenger use, and also included improving communications systems, new lighting and message boards. Additional projects in Los Angeles County include double tracking between CP Brighton and CP Roxford, and CP Raymer to CP Bernson in the San Fernando Valley, a second station platform at Van Nuys station, Lancaster Station capacity improvements, the Dornan Street grade separation in Glendale, and the Southern California Regional Interconnector Project (formerly the L.A. Union Station run-through tracks) which will increase L.A. Unions Station's capacity by 40 to 50%.

In Riverside County, the largest near term capital priority is the Perris Valley Line (PVL). The PVL is a 24-mile extension of Metrolink's 91 Line, and will connect residents of Riverside, Moreno Valley, and Perris with jobs and services in Orange and Los Angeles Counties. This service will connect to the BNSF mainline near Riverside, and use the San Jacinto Subdivision that parallels I-215 to reach four new stations, including Hunter Park, Moreno Valley/March Field, Downtown Perris, and South Perris. Service is scheduled to begin in 2015 with 12 daily trains. This project represents the first addition of new track miles to the Metrolink system since the 1990s.

San Bernardino County is also expanding its rail network. The Downtown San Bernardino Passenger Rail Project is a one mile extension of Metrolink service into Downtown San Bernardino. Upon projected completion in 2014, commuter rail service will terminate at the future site of the San Bernardino Transit Center at E Street and Rialto Avenue. This will allow greatly increased regional transit access to downtown San Bernardino, an important center for government, commerce, and services in the San Bernardino Valley. Metrolink passengers will also be able to connect to the sbX E Street BRT service at this location, the Inland Empire's first BRT, and to the Redlands Rail, a future rail service to the city of Redlands via the Redlands Subdivision.

XpressWest

XpressWest is a HSR service under development connecting Palmdale, Victorville and Las Vegas along the future High-Desert Corridor and the current I-15 corridor. It will use steel wheel on steel rail technology with electrical propulsion operating at speeds of up to 150 mph to make the trip between Victorville and Las Vegas in 80 minutes. It will run daily, with peak departures up to every 20 minutes. With its western terminus at Palmdale, it will provide an important connection with the CA HST and the Metrolink Antelope Valley Line. The project is completely permitted and is lining up financing.

Coast Daylight

The Coast Daylight is a proposed passenger rail service operating between Los Angeles and San Francisco. It would operate one round trip per day, but unlike the Coast Starlight which serves Oakland and Emeryville and not San Francisco, this route would travel up the San Francisco peninsula from San Jose and serve Santa Clara, Palo Alto, Millbrae and downtown San Francisco.

A coalition of coastal counties has been working together to implement the Coast Daylight, and the Coast Rail Coordinating Council (CRCC) formed for this effort has been meeting on a quarterly basis. The LOSSAN Board, as well as over 20 agencies along the corridor, have passed resolutions of support for the Coast Daylight service. The significant challenges for this potential new service include funding for operations and rolling stock, and negotiations with the Union Pacific Railroad for operating rights.

X Train

The X Train is in the planning stages and would operate between Fullerton and Las Vegas along the UP ROW. Departures are planned for Thursday and Friday to Las Vegas with returns on Sunday and Monday back to Los Angeles. An introductory price of $99 each way includes first class accommodations and all-inclusive food & beverage service. The X Train recently signed an agreement with UP to operate on its ROW and it is possible service may begin as early as the Fall of 2013.

2012 RTP/SCS CONSTRAINED AND STRAGIC PLAN PROJECTS

In June 2011, the Regional Council approved the formation of the High-Speed Rail (HSR) Subcommittee. The purpose of the subcommittee was to help guide staff in defining and formulating high-speed rail strategies for the 2012 RTP/SCS's Constrained and Strategic Plans. Since several HSR projects were in the planning phases, with varying degrees of funding, costing, and operational specifics, the Regional Council formed the HSR Subcommittee to evaluate all of the projects in depth, so as to make informed project inclusion decisions for the Constrained and Strategic Plans. Due to their different levels of development, it was difficult to rate and compare the projects on a direct basis, and in some cases projects directly compete with one another. Therefore, staff developed an evaluation approach using various criteria to determine which projects in the planning phases are most viable, beneficial to our region, and offer the greatest chances of being implemented sooner rather than later.

The decision-making approach used to make a final recommendation of HSR projects to include in the 2012 RTP/SCS had three steps. The first step narrowed down the proposed HSR projects to a set of projects that were qualified for the Strategic Plan. The second step narrowed down the projects further to those to be included in the Constrained Plan. This required higher levels of details relative to costs, funding, ridership potential, community

and stakeholder support and other measures. The final step evaluated how the proposed HSR system worked together with the rest of the planned transportation system using SCAG's travel demand model. The criteria that staff used to formulate the preferred HSR alternative included: reasonableness of available funding, level and amount of costing details, current project status, level of stakeholder and public support, stakeholder consensus of project's alignment and operational characteristics, degree of regional connectivity, ridership potential and commuter rail potential. (To see the HSR projects applied to these criteria, please see Table 2: "High-Speed Rail Matrix" in the Passenger Rail Appendix of the 2012 RTP/SCS.) Projects selected for inclusion in the Constrained and Strategic Plans are detailed below.

Constrained Plan

California High-Speed Rail Phase 1

Phase I is from San Francisco to Anaheim via L.A. Union Station, and in our region from the Kern County line to Anaheim via L.A. Union Station with stops in Palmdale, Sylmar, Burbank, L.A. Union Station, Norwalk and Anaheim. This inclusion in to the Constrained Plan was conditional upon the CHSRA entering in to a MOU with Southern California transportation agencies to invest $1 billion in HSR funding to the LOSSAN and Metrolink corridors over the next few years.[5]

Amtrak LOSSAN Corridor and Metrolink System

Improvements to the LOSSAN corridor and Metrolink system will enable operation of HSR on some segments that would meet the FRA criteria of 110 mph or faster. Metrolink, Amtrak and the LOSSAN Rail Corridor Agency are continuously working towards speed and service improvements. The LOSSAN Strategic Implementation Plan has identified programs and policies to better coordinate all rail services in the corridor and aims to increase ridership and develop new markets. Also, the CHSRA's new blended approach and Southern California MOU programs $1 billion in funding for capital improvement projects.

Strategic Plan

California High-Speed Rail Phase 2

Phase II is from Madera to Sacramento and in our region from L.A. Union Station to San Diego through the San Gabriel Valley and Inland Empire. Phase II is in the Supplemental Alternatives Analysis phase and includes some alternative alignments in our region: either I-10 or SR 60 through the San Gabriel Valley, and either I-15 or I-215 from the Inland Empire to the San Diego County line. There is currently no funding for Phase II. Upon completion, Phase II will provide important access to planned and existing regional centers, including Ontario International Airport, the March Inland Port, and possibly San Bernardino International and Corona airports, helping to meet SCAG's long-term goal of regionalizing air travel in Southern California. Furthermore, Phase II may one day be the basis for further high speed rail extensions into Nevada or Arizona.

[5] Note that the 2012 RTP/SCS was adopted before the CHSRA adopted its 2012 Revised Business Plan incorporating the Blended Approach.

XpressWest

XpressWest will connect Las Vegas to Victorville using steel wheel on steel rail technology. There are no intermediate stops. The project has completed the environmental process and the FRA issued a record of decision (ROD) in July 2011. XpressWest Enterprises has applied to the FRA's Railroad Rehabilitation Improvement Financing (RRIF) program for a loan to start and complete construction of the project. In addition to the RRIF loan, private debt and equity is included in the project financing. Phase Two of this project will connect Victorville to Palmdale, thereby providing a connection with the CA HST and the Metrolink Antelope Valley Line. Phase Two is also included in the High Desert Corridor alternatives analysis of the Draft EIR/EIS.

XpressWest has received the following Federal approvals:

- July 2011: Federal Railroad Administration Record of Decision (ROD)
- October 2011: Surface Transportation Board issued Certificate of Public Convenience and Necessity
- October 2011: Bureau of Land Management ROD
- November 2011: Federal Highway Administration ROD
- December 2011: Executed lease agreement with BLM for the alignment and facilities located on federal land

Coachella Valley Daily Passenger Rail Service

Daily passenger rail service between downtown Los Angeles and the Coachella Valley would include stops at L.A. Union Station, Fullerton, Riverside, Redlands/Loma Linda, Beaumont/Banning, Palm Springs, Rancho Mirage and Indio. Ideally, service would be operated by Amtrak with at least two if not three daily round trips. Currently, rail service between downtown L.A. and the Coachella Valley is only provided three days a week with a very unattractive schedule as part of Amtrak's Sunset Limited/Texas Eagle services. UP owns this rail corridor east of Colton and is opposed to implementing additional passenger service without large capital improvements. However, Amtrak retains the right to operate passenger service on freight-owned railroads and there is a process in place to resolve freight opposition, although Amtrak and other partners such as Caltrans DOR and RCTC may be required to fund capital projects to mitigate potential financial damages to Union Pacific. A 2010 RCTC study estimates $75 million in station costs, $40 million in equipment costs, and $11.4 million in yearly operating costs to start this service. (These figures do not include any capital costs required to mitigate service disruptions incurred by Union Pacific.)

California/Nevada Super-Speed Train

The California/Nevada Super-Speed Train (CNSST) project would connect Las Vegas to Anaheim using maglev technology with intermediate stops in Primm, Barstow, Victorville, and Ontario. A Programmatic EIR/EIS was initiated in 2004 but has not been completed, and $45 million of federal funding has been earmarked for the environmental review. Plans call for building the first 40-mile segment either from Las Vegas to Primm or Anaheim to Ontario. No funds for construction have been identified at this point in time.

California/Nevada Super-Speed Train - Anaheim to Ontario Initial Operating Segment
This is a maglev project which is part of the larger Las Vegas to Anaheim project. This southernmost segment from Anaheim to Ontario is being considered as the initial operating segment of the larger project due to its strong ridership potential and regional connectivity, and its ability to operate as a stand-alone project. A $45 million planning study for this segment is included in the Constrained Plan.

Orangeline Northern Segment
The northern segment of the Orangeline is between L.A. Union Station and Santa Clarita. The Orangeline Development Authority (OLDA) is a JPA formed to pursue development of a higher speed, environmentally friendly, technology-neutral transit system from Cerritos to Santa Clarita. The southern section from L.A. Union Station to Cerritos is along the West Santa Ana Branch PE ROW that is partially funded by Measure R. A series of improvements in the corridor are being evaluated including the Southern California MOU effort, the Antelope Valley Line Infrastructure Improvement Plan, and the on-going Bob Hope Airport Ground Access Study. The Southern California MOU contains a list of priority projects including a proposed new Metrolink station at the Bob Hope Airport. Therefore, the OLDA Northern Corridor will benefit from a set of investments during the life of the 2012 RTP/SCS that will improve safety, efficiency, capacity, speed and connectivity. This supports OLDA's intermediate vision of more frequent service and increased hours of operation within the corridor.

PASSENGER RAIL STRATEGIES AND RECOMMENDATIONS

There are several strategies to increase rail ridership in our region. It is important to note that there are three distinct rail markets: commuter, intercity, and interregional. The first is served by Metrolink, the second by Amtrak, and the third will be served by the CA HST and XpressWest services. However, the four carriers can be attractive to passenger rail customers different from their own. Rail strategies include:

- Increasing speed
- Increasing service levels
- Cooperative fare agreements and media
- Cooperative marketing efforts
- Improving airport access
- First Mile / Last Mile strategies
- TOD around rail stations
- BRT / Rail connectivity

Speed and Service

LOSSAN and Metrolink are in the process of planning and implementing capital projects to improve capacity, speed, and service, bringing at least some segments of their networks up to the federally defined high-speed rail of 110 mph or greater. This includes the LOSSAN Strategic Implementation Plan for 2030 that is estimating ridership and additional service using a coordinated schedule among Metrolink, Amtrak and NCTD's Coaster commuter rail service.

This effort is resulting in extending some Metrolink trips to San Diego and some Coaster trips to L.A. Union Station. As speeds improve, these services will become more competitive with SOV travel and thus ridership will continue to grow.

Further, their schedules should be adjusted once the CA HST blended service reaches Southern California so that all rail services complement and feed each other. These local improvement efforts should now be expanded and sped up due to the new Southern California MOU partnership with the CHSRA.

Marketing and Fares

Cooperative fare agreements and media also offer opportunities for increasing rail ridership and attracting new riders. For example, the Rail-to-Rail pass allows Metrolink monthly pass riders who have origin and destination points along the LOSSAN corridor to ride the Pacific Surfliner. Agreements like this one could be expanded once the CA HST project is built. Metrolink has introduced innovative marketing, ticket pricing and operations strategies to increase ridership and reduce costs. In May 2011, Metrolink started express service demonstration programs on its San Bernardino and Antelope Valley Lines. This service reduces a large amount of travel time off the regular trips. By skipping most stops, travel time is reduced 33 percent to just one hour on the San Bernardino Line, and 25 percent to an hour and a half on the Antelope Valley Line. Metrolink also has specific trains for Dodgers', Angels' and Ducks' games, and other special events. Amtrak also initiated an express trip in February 2011. It reduces 17 minutes off the northbound trip (currently, there is no southbound express). The provision of more express trips in the future should attract new transit riders.

Metrolink has implemented some progressive new fares in the last couple of years, including the $10.00 all-weekend pass. From 7:00 p.m. Friday to 12:00 p.m. Sunday, riders can take multiple trips anywhere on the Metrolink system. Monthly pass holders can also take unlimited trips on the weekend regardless of their regular pass' origin/destination pair.

The CA HST will provide excellent regional connectivity by connecting with a robust network of intercity and commuter rail, subway and light-rail, and fixed-route transit systems. Integrated planning and service levels of these connecting services will allow them and the CA HST to feed and complement each other. While commuter, intercity and interregional rail services are distinct travel markets, the proper coordination of their schedules will further increase the region's rail and transit ridership by attracting crossover passengers to these different markets. It will also significantly relieve capacity constraints of the existing air and highway transportation system as increases in intercity travel demand in California occur. By attracting a large number of trips from current auto and air travel markets, a significant decrease in GHG emissions will be achieved in our region. In addition, the CA HST system could provide a much cheaper alternative to building additional airport and highway capacity to serve intrastate aviation and auto trips.

Airport Ground Access

The SCAG region is served by LAX and several other regional airports. Only one: Burbank (BUR), is directly connected to rail. Three other airports: LAX, Ontario (ONT) and Palmdale (PMD) are very close to rail lines, roughly 2.5 to 3.5 miles, and only one of those, LAX, has a bus connection to the Metro Green Line. Long Beach (LGB) and John Wayne (SNA) airports are even farther from rail.

Given this, transit's mode share to airports is extremely low. At LAX and BUR, the transit mode share is approximately 1% to 2%, with even lower shares at ONT, SNA and LGB.[6] Shared-ride vans, long-distance shuttles, taxis, and limousines provide 33% of passenger trips to and from LAX, which demonstrates the potential for transit to increase its share.

ONT is between two Metrolink corridors, the San Bernardino Line and the Riverside Line; and Amtrak's Sunset Limited/Texas Eagle Line runs on the northern border of ONT's short-term parking lot, within walking distance to the terminals. (The proposed Coachella Valley daily passenger rail service that would operate on this ROW could provide a stop at ONT.) The Riverside Line runs just south of the airport and its East Ontario station is about one and a half miles from the terminals, but currently there are no bus connections between ONT and any of the nearby stations on these three lines.[7]

BUR's Regional Intermodal Transportation Center (RITC) is currently under construction with an estimated completion date of 2014. Phase 1 consists of a consolidated rental car facility, long-term parking, a bus layover center, and a grade-separated moving walkway between the terminal and the RITC. Phase 2 of the project would extend the moving walkway over West Empire Ave. to link directly with the rail station. In the future, BUR will be served by a second rail station on its eastern border along Hollywood Way. This station will be served by Metrolink's Antelope Valley Line and the CA HST.

PMD currently offers no commercial air service, but is configured for a significant commercial operation presence, especially as the Antelope Valley grows. It will have the benefit of being within three miles of two HSR corridors: CA HST and XpressWest, and the Metrolink Antelope Valley Line which is planned for future speed and service improvements. All three of these rail services will serve the Palmdale Transportation Center, which could connect to PMD via a people mover. XpressWest will run along the High-Desert Corridor, providing access to the Victor Valley and Las Vegas, and the High-Desert Corridor will provide new freeway access to PMD.

First Mile / Last Mile

First Mile / Last Mile strategies are designed to increase the range and desirability of passenger rail station access by removing barriers around transit stations and providing alternatives to access rail stations. Strategies include adequate sidewalk facilities, bike facilities such as bike

[6] PMD currently has no commercial service; however, it has had it in the past and is expected to in the future.
[7] The Metro Gold Line Foothill Extension 2C would extend the Metro Gold Line eight miles from Montclair to ONT, but no funding has been programmed for this extension.

lanes and lockers, bike sharing and car sharing. These strategies can increase the effective catchment areas of rail stations from less than ¼ mile to ranges considerably greater. Many cities with Metrolink stations are looking at first mile / last mile strategies. In 2012, SCAG began a partnership with Metro to develop recommendations geared towards specific rail and transit station types. The result is that the most effective strategies can then be implemented where they are the most appropriate.

Other

Additional strategies to increase passenger rail ridership are TOD and implementing BRT services to connect with passenger rail. Many cities have built TOD around rail stations or are planning such developments. The cities of Fullerton, Santa Ana, Claremont and Los Angeles are good examples.

BRT has been shown to attract new transit riders. Connecting new BRT services with rail stations expands the "premium" transit network. BRT routes are in the planning stations in Orange, Riverside and San Bernardino counties that would connect with Metrolink and the Pacific Surfliner.

CONCLUSION

This report will be updated on a regular basis to provide information on how the region's passenger rail system is performing, a status of rail planning efforts in progress, and an inventory of capital and operational improvements to the rail network. It will be updated with input and collaboration from the region's transportation and rail agency professionals, and with direction from SCAG's policy-making committees. It will also provide the foundation for development of a coordinated regional rail vision for the 2016 RTP/SCS update.

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High Speed Rail & Transit Subcommittee

Staff Recommendations

Goals and guiding policies were included in the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). In order to assist in meeting the goals and guiding policies, six subcommittees were convened to help guide SCAG as it implements the 2012-2035 RTP/SCS and begins to lay the foundation for the 2016 RTP/SCS. These six subcommittees focus on different components that were strongly advocated for during the development of the last RTP/SCS.

Over the course of five meetings held from October 2012 to February 2013, the High Speed Rail & Transit (HSR&T) Subcommittee considered and discussed issues that included: new requirements under Moving Ahead for Progress in the 21st Century (MAP-21); ongoing state rail efforts such as the High Speed Rail Program and State Rail Plan; and regional efforts to implement smart fare media, address first mile/last mile needs, and support transit investments and economic development with transit-oriented land uses.

The following recommendations represent the output of comments and discussions held at the first five meetings of the HSR&T Subcommittee along with input provided by ex-officio members and stakeholders. These recommendations are intended to strengthen the implementation of the 2012-2035 RTP/SCS and development of the 2016-2040 RTP/SCS. These recommendations are not final, but rather will be taken to the Transportation Committee, and eventually to the Regional Council for deliberation and potentially for adoption.

Regional Rail Vision

- Develop and refine a coordinated regional rail vision element for inclusion in the 2016 RTP/SCS update. The regional rail vision will build upon current and future statewide and regional efforts as follows.
- Continue coordination with the California High Speed Rail Authority and the county transportation commissions on California High Speed Rail planning efforts, including the Southern California Memorandum of Understanding projects to be funded by Prop. 1A funds, and the Authority's upcoming 2014 Business Plan update. Also continue participating in other high speed rail planning efforts including Xpress West and High Desert Corridor.
- Continue coordination with the Caltrans Division of Rail on the State Rail Plan to support the expansion, integration, connectivity, and coordination of rail services and policies to provide travelers with seamless and efficient regional and inter-regional passenger rail transportation. The Draft State Rail Plan will be released on February 8, 2013 for public review and comments, and is expected to be finalized by May 2013.
- Continue to support the ongoing process to facilitate local control of the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Corridor Pacific Surfliner passenger rail service by

the LOSSAN Corridor Rail Agency. The Agency is authorized to enter into an Interagency Transfer Agreement with the State as early as June 30, 2014.

Next Steps: Continue coordination with CTCs, Caltrans, and local jurisdictions on planning and programming of 2012 RTP/SCS projects and strategies, as appropriate, and continue to provide regular updates to Transportation Committee.

Transit Best Practices

- Identify, evaluate, and refine potential transit best practices and strategies for inclusion in the 2016 RTP/SCS update. This effort will build upon the issues discussed by the HSR&T Subcommittee as follows.
- Support ongoing efforts to facilitate seamless travel on the region's transit system, including the development of smart fare media and coordinated fare policies.
- Continue to work with Metro to complete the First Mile/Last Mile Strategic Plan and incorporate recommended strategies into the RTP/SCS update as appropriate.
- Review and update the Regional Intelligent Transportation Systems (ITS) Architecture to ensure that it continues to support the development and implementation of real-time traveler information systems.
- Build upon current understanding and research to identify and evaluate cost-effective ways to improve transit service frequency and reliability and improve fare policy and pricing strategies.
- Review the Safety and Security element of the RTP/SCS and revise as appropriate for the 2016 RTP update to further address transit/rail emergency preparedness.
- Continue to work with the Regional Transit Technical Advisory Committee on developing and refining an annual transit and rail system performance report to provide a technical foundation for RTP/SCS performance analysis.

Next Steps: Identify potential research areas and resource needs for inclusion in a future Overall Work Program (OWP).

Finance Strategies

- The HSR&T Subcommittee held a joint meeting with the Transportation Finance Subcommittee to discuss financing options related to transit and high speed rail. The Transportation Finance Subcommittee will develop recommendations pertaining to multiple modes, including transit and high speed rail.

Next Steps: Pursue strategies and recommendations identified by the Transportation Finance Subcommittee.