MEETING NOTICE
AND AGENDA

CITIES/COUNTY TRANSPORTATION ADVISORY COMMITTEE (CTAC)
The CTAC may take action on any item appearing on this agenda.

Thursday, May 6, 2010
9:30 to 11:00 a.m.

SANDAG, Conference Room 7
401 B Street, Suite 800
San Diego, CA 92101-4231

Chair: Maryam Babaki, City of National City
Vice Chair: Zoubir Ouadah, City of Poway

Staff Contact: Dan Martin
(619) 699-6987
dma@sandag.org

AGENDA HIGHLIGHTS

- BENEFITS OF THE USE OF RUBBERIZED ASPHALT CONCRETE (RAC) AND THE CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CalRecycle) RAC GRANT PROGRAM
- 2050 REGIONAL TRANSPORTATION PLAN: PROPOSED PLAN PERFORMANCE MEASURES
- RAIL GRADE SEPARATION NOMINATION UPDATE

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**1. INTRODUCTIONS**

**2. MEETING SUMMARY OF APRIL 15, 2010**

The CTAC is asked to review and approve the meeting summary from the joint meeting held with the Regional Planning Technical Working Group (TWG) and CTAC on April 15, 2010.

**3. PUBLIC COMMENTS**

Members of the public will have the opportunity to address the Working Group during this time.

**4. BENEFITS OF THE USE OF RUBBERIZED ASPHALT CONCRETE (RAC) AND THE CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CalRecycle) RAC GRANT PROGRAM (Douglas Carlson, Rubber Pavements Association; Calvin Young, CalRecycle)**

Staff from the Rubber Pavements Association and CalRecycle will present detailed information on the use of rubberized asphalt and available grant programs, as well as answer questions from CTAC members.

**5. 2050 REGIONAL TRANSPORTATION PLAN: PROPOSED PLAN PERFORMANCE MEASURES (Scott Strelecki, SANDAG)**

SANDAG staff will provide a report on the proposed plan performance measures. This will include refinements that have been made by the Transportation Project Evaluation Criteria (TPEC) Ad Hoc Working Group. CTAC members will be asked to discuss and provide feedback on the proposed plan performance measures.

**6. RAIL GRADE SEPARATION NOMINATIONS (John Dorow, SANDAG)**

SANDAG staff will provide an update on the status of rail grade separation nominations submitted by the local jurisdictions. Staff will also provide recommended guidance to clarify the treatment of traffic volumes at the grade crossings for consideration by CTAC.

**7. CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) UPDATES**

Caltrans will provide an update on various local programs, funding program deadlines, and announcements regarding upcoming conferences.
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| 8.    | CTAC UTILITY UNDERGROUNDING AD HOC SUBCOMMITTEE UPDATE  
       (Frank Rivera, Chula Vista) | INFORMATION |

An update will be provided on the CTAC Utility Undergrounding Ad Hoc Subcommittee meeting held on May 4, 2010.

| 9.    | ADJOURNMENT AND NEXT MEETING | INFORMATION |

The next CTAC meeting will be held on Thursday, June 3, 2010, from 9:30 to 11 a.m. in Conference Room 7 of the SANDAG offices located at 401 B Street, Suite 800, in San Diego.

+ next to an item indicates an attachment
MEETING SUMMARY OF THE APRIL 15, 2010, JOINT MEETING BETWEEN THE REGIONAL PLANNING TECHNICAL WORKING GROUP (TWG) AND THE CITIES/COUNTY TRANSPORTATION ADVISORY COMMITTEE (CTAC)  File Number 3000200

Please note: Audio file of meeting is available on the SANDAG Web site (www.sandag.org) on both the TWG and CTAC Home Pages.

Agenda Item #1: Welcome and Introductions
Vice Chair Bill Chopyk (La Mesa) called to order the Regional Planning TWG meeting and Chair Maryam Babaki (National City) called to order the Cities/County Transportation Advisory Committee (CTAC) at 9:30 a.m. Self-introductions were conducted.

Agenda Item #2: Public Comments and Communications
There were no public comments.

CONSENT ITEM (ITEM 3)

Agenda Item #3: Meeting Summaries (Approve)
The Working Groups were asked to approve the March 4, 2010, meeting summary (CTAC) and the March 11, 2010, meeting summary (TWG).

Action: Frank Rivera (Chula Vista) motioned and Zoubir Ouadah (Poway) seconded to approve the CTAC meeting minutes. The meeting minutes were approved unanimously.

Action: Andy Hamilton (Air Pollution Control District [APCD]) motioned and Ed Batchelder (Chula Vista) seconded to approve the TWG meeting minutes. The meeting minutes were approved unanimously.

Agenda Item #4: Electric Vehicles in the San Diego Region (Information)
Joel Pointon (SDG&E) provided an overview of electric vehicle (EV) activities in the region and the utility's role. Keiichi Kitahara (Nissan) provided information about the Leaf, its new all-electric vehicle that will be available in the San Diego region before 2011. Andy Hoskinson (e-Tec) discussed "The EV Project," the largest EV undertaking in U.S. history, and the region's role.
Keiichi Kitahara (Nissan) explained that the Leaf is a zero emissions electric vehicle that will be available in eight months (December 2010), it can be reserved on-line through the Nissan website, and the listed price is $32,700, but after rebates and tax credits it will be available for $20,000.

Jay Petrek (Escondido) asked about the life span of the battery.

Melissa Ayres (El Cajon) asked for an explanation on photovoltaic bumpers.

Keiichi Kitahara provided responses to questions regarding estimated battery life and the use of photovoltaic bumpers on the vehicle.

Greg Wade (Imperial Beach) asked about permit fees, timing, and how many electric vehicles can plug into a workplace charge device at one time? Responses were provided in the additional presentation provided by SDG&E and e-Tec.

Bill Chopyk (La Mesa) asked if there were any limits on the federal tax credit. Keiichi Kitahara responded that he was not aware of any limits.

Joel Pointon (SDG&E) provided information regarding permit support for infrastructure, price elasticity, and the challenges for incorporating charging stations in multi-unit dwellings.

Andy Hoskinson (e-Tec) provided information about the overall project in terms of what, where, how, and when the vehicles would be deployed.

Agenda Item #7: Regional Bike Plan (Information)

The San Diego Regional Bicycle Plan (Plan) is being developed to support implementation of both the Regional Comprehensive Plan and the Regional Transportation Plan. This report, presented to the Transportation Committee at its March 19, 2010, meeting, presented an overview of the key elements to the Plan. The draft Bike Plan and its Preliminary Draft Initial Study/Mitigated Negative Declaration is out for a 30-day public review and comment period through April 24, 2010. The revised draft plan will be submitted to the Transportation Committee on May 21, 2010, and then to the SANDAG Board of Directors on May 28, 2010. Chris Kluth (SANDAG) made the presentation on the Plan.

Action: This item was presented for information only.

Bill Anderson (City of San Diego) asked about including an analysis of the maintenance cost per bike rider versus the maintenance cost per car.

Agenda Item #5: Planning for Healthy Communities (Information)

SANDAG has an opportunity to support the County Health and Human Services Agency over the next two years in a region-wide effort to combat obesity under a $16 million economic stimulus grant from the Centers for Disease Control and Prevention. A portion of this initiative will provide pass-through grants to local agencies for efforts to address public health issues in local plans, for
active community transportation plans, and for safe routes to school plans and programs. The scope of work for SANDAG’s component of the grant envisions local agency participation on an ad hoc working group for planning and public health. Stephan Vance (SANDAG) presented the information for this item.

**Action:** This item was presented for information only.

Pat Murphy (Encinitas) asked about a timeline for developing health impact assessment tools, and if it was too late for cities that are developing general plan updates to obtain grants for health elements. He suggested that the program focus on cities that are currently working on their general plans.

**Agenda Item #6: Complete Streets/Livable Streets: Rethinking Street Design (Information)**

Fundamental to encouraging more people to walk, bike, and use transit is creating street environments where people feel safe and welcome. Andy Hamilton (APCD) presented examples of new approaches to street design, from New York to Seattle. New modal performance criteria coming in the 2010 Highway Capacity Manual were also discussed.

**Agenda Item #8: Urban Area Transit Strategy: Draft Regional Transit Networks and Revised Performance Measures (Discussion)**

As part of the development of the 2050 Regional Transportation Plan (RTP), staff has developed initial transit concepts and associated draft transit networks for the Urban Area Transit Strategy (UATS). The draft networks and revised performance measures were presented for input and discussion. The draft networks will also be presented at the upcoming RTP workshops in late April and early May, providing additional opportunities for public input. Carolina Gregor (SANDAG) and Dave Schumacher (SANDAG) provided the presentation. Carolina Gregor (SANDAG) also thanked TWG and CTAC members for attending the workshop on the UATS co-hosted by the San Diego Council of Design Professionals and SANDAG earlier that week.

**Action:** This item was presented for information only.

TWG Chair Bill Anderson (City of San Diego) asked about comparing cost competitiveness between the three strategies as well as compared to roads expansions.

Jay Petrek (Escondido) commented on the connection between Riverside and I-15.

**Agenda Item #9: 2050 Regional Transportation Plan: Transportation Project Evaluation Criteria Weightings and Proposed Plan Performance Measures (Discussion)**

Scott Strelecki (SANDAG) provided a report on the transportation project evaluation criteria weightings and proposed plan performance measures. This report includes refinements that have been made by the Transportation Project Evaluation Criteria (TPEC) Ad Hoc Working Group. Due to time constraints, RPTWG and CTAC members were asked to e-mail any comments on the transportation project evaluation criteria weightings and proposed plan performance measures to Scott Strelecki by the close of business day.
Agenda Item #10: Adjournment and Next Meetings (Information)

The next CTAC meeting will be held Thursday, May 6, 2010, from 9:30 to 11:00 a.m. The next RPTWG meeting will be held Thursday, May 13, 2010, from 1:15 to 3:15 p.m.

Action: CTAC Chair Maryam Babaki (National City) adjourned the meeting.

Greg Wade (Imperial Beach) announced that a workshop on climate change coastal adaptation will be held at the Tijuana International Estuary on May 14, 2010, at 8:30 a.m.

Andy Hamilton (APCD) announced the Walk San Diego awards banquet gala on April 22, 2010.
BENEFITS OF THE USE OF RUBBERIZED ASPHALT CONCRETE (RAC) AND CALRECYCLE RAC GRANT PROGRAM

The Rubber Pavement Association’s Doug Carlson will present recent Caltrans and FHWA research which has shown that scrap tire rubber can be used to create a rubberized asphalt hot-mix material that can be placed in thinner layers than conventional asphalt materials and also provide a longer-lasting, crack-resistant surface and other engineering benefits. Cost issues will be discussed as asphalt prices (tied to oil prices) continue to increase, scrap tire rubber can reduce the cost of the material. A pound of crumb rubber costs less than asphalt and is the most cost-effective asphalt modifier compared to virgin asphalt modifiers.

The California Department of Resources Recycling and Recovery (CalRecycle) offers several competitive rubberized asphalt concrete (RAC) grant programs to provide assistance to local governments to fund RAC projects. These programs include:

- **Targeted RAC Incentive (TRI) grants**, which provide funding to first-time or limited-experience users of RAC. This grant program is set up to cover the additional costs of using RAC. The TRI grant award is based on the differential cost of using RAC vs. conventional asphalt concrete (AC), tonnage of RAC used, and testing costs associated with constructing the project based on the specific conditions in each jurisdiction. Funding is budgeted at $3.5 million and $3.6 million for FY 2010-11 and 2011-12, respectively.

- **RAC Chip Seal Grant Program** provides funding for rubberized chip seal projects for road repair and maintenance. The grant program is designed for new users as well as ongoing users of the RAC chip seal. Funding is based on a per-square-yard “reimbursement rate” for use of the RAC chip seal material. Funding is budgeted at $2 million for FY 2010-11 and 2011-12.

In addition to the financial support afforded by the grants, CalRecycle can provide no-cost RAC technical assistance and technology transfer to agencies. CalRecycle can also provide financial support and technical assistance to agencies for using tire-derived aggregate (TDA) in several engineered applications, including: landslide repair, lightweight fill, retaining wall backfill, and vibration mitigation.
Staff from the Rubber Pavements Association and CalRecycle will present detailed information on the use of rubberized asphalt and available grant programs, as well as answer questions from CTAC members.

**Presenters**
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Executive Director  
Rubber Pavements Association  
1801 S. Jentilly Lane, Ste A-2  
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(480) 517-9944  
(480) 517-9959 fax  
dougc@rubberpavements.org  
www.rubberpavements.org

Calvin Young  
Grant Supervisor  
Financial Assistance Division  
California Department of Resources Recycling and Recovery (CalRecycle)  
(916) 341-6670  
Calvin.young@calrecycle.ca.gov  
www.calrecycle.ca.gov
2050 REGIONAL TRANSPORTATION PLAN: PROPOSED PLAN PERFORMANCE MEASURES

File Number 3100500

Introduction

As part of the development of the 2050 Regional Transportation Plan (RTP), the Executive Director and Chair of the SANDAG Board of Directors established the Transportation Project Evaluation Criteria (TPEC) Ad Hoc Working Group. The TPEC provides input on transportation project evaluation criteria and plan performance measures, which will support the goals and objectives for the 2050 RTP. At the April 15 joint meeting, SANDAG staff provided an update on the transportation project evaluation criteria weightings. For this meeting, SANDAG staff will provide an update on the proposed plan performance measures.

In fall 2009, the Board of Directors established six policy goals for the 2050 RTP. These goals are structured into two overarching themes: Quality of Travel & Livability, and Sustainability. Quality of Travel & Livability relates to how the transportation system functions from the individual customer perspective (Mobility, Reliability, and System Preservation & Safety). Sustainability relates to making progress simultaneously in each of the Three “Es” (Social Equity, Healthy Environment, and Prosperous Economy) from a regional perspective.

The Board also discussed policy objectives to help reach these goals. The next step is to establish performance measures to measure how well the 2050 RTP is projected to perform. Once established, performance measures will be used to aid decision-makers in developing a preferable transportation network alternative for the 2050 RTP revenue constrained funding scenario and to compare the preferred transportation network alternative to other transportation network alternatives such as a current, future no build, and land use alternative.

Discussion

The TPEC members include representatives from the Bicycle-Pedestrian Working Group, Cities/Counties Transportation Advisory Committee, Regional Planning Stakeholders Working Group, Regional Planning Technical Working Group, Tribal Transportation Technical Working Group, Caltrans, Metropolitan Transit System, North County Transit District, Port of San Diego, and San Diego County Regional Airport Authority.
The TPEC has met nine times since September 2009 and has provided initial refinements to the proposed plan performance measures included in the 2030 RTP (Attachment 1).

Plan performance measures from the 2030 RTP have been refined to take into account the 2050 RTP goals and policy objectives. Refinements also have incorporated metrics from the environmental justice and economic analysis work efforts.

CTAC members are asked to review and provide input on the proposed plan performance measures.

**Next Steps**

Staff will present the proposed plan performance measures to additional working groups for input. The 2050 RTP proposed plan performance measures are expected to be presented to the Transportation Committee in May 2010.

Attachment: 1. 2050 Regional Transportation Plan (RTP) Proposed Plan Performance Measures

Key Staff Contact: Scott Strelecki, (619) 699-6954, sstr@sandag.org
### QUALITY OF TRAVEL & LIVABILITY

<table>
<thead>
<tr>
<th>Goal</th>
<th>Policy Objectives</th>
<th>Potential Plan Performance Measure(s)</th>
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<tbody>
<tr>
<td><strong>Mobility</strong> - The transportation system should provide for convenient travel options for people and goods and maximize its productivity. The system should reduce both the time it takes to travel as well as the total costs of travel.</td>
<td>Tailor transportation improvements to better connect people with jobs and other activities</td>
<td>Average work trip travel time (in minutes)</td>
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<td>Average work trip travel speed by mode (in m.p.h.)</td>
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<td>Percent of work and higher education trips accessible in 30 minutes in peak periods by mode</td>
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<td>Percent of non work-related trips accessible in 15 minutes by mode</td>
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<td>Travel time (by mode) in key travel corridors</td>
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<td>Peak-period mode share in key travel corridors</td>
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<td>Number of interregional transit routes</td>
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<td>Freight network enhancements - freight capacity (rail yards, port terminals, and ports of entry in acres and rail mainline, highway connectors to terminals, and highway truck routes in miles)</td>
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<td></td>
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<td>Bikeability measure (methodology TBD)</td>
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<td>Walkability measure (methodology TBD)</td>
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<td></td>
<td>Provide convenient travel choices including transit, intercity and high-speed trains, driving, ridesharing, walking and biking</td>
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<td>Preserve and expand options for regional freight movement</td>
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<td>Increase the use of transit, ridesharing, walking and biking in major corridors and communities</td>
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<td>Provide transportation choices to better connect the San Diego region with Mexico, neighboring counties, and tribal nations</td>
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<td><strong>Reliability</strong> - The transportation system should be reliable so that travelers can expect relatively consistent travel times from day-to-day for the same trip by mode(s).</td>
<td>Employ new technologies to make travel more reliable and convenient</td>
<td>Percent of total travel in congested conditions (peak periods)</td>
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<td>Percent of total travel in congested conditions (all day)</td>
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<td>Daily vehicle delay per capita</td>
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<td>Daily truck hours of delay on the regional freight network (hours per 1,000 VMT)</td>
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<td>VMT by travel speed (measured in 10 m.p.h. increments)</td>
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<td>Manage the efficiency of the transportation system to improve traffic flow</td>
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<td>Keep the region’s transportation system in a good state of repair</td>
<td>Annual weekday projected number of crashes/fatalities per capita</td>
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<td>Reduce bottlenecks and increase safety by improving operations</td>
<td>Percent of transportation investments towards maintenance and rehabilitation</td>
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<td>Improve emergency preparedness within the regional transportation system</td>
<td>Percent of transportation investments towards operational improvements</td>
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<td>Emergency preparedness measure (methodology TBD)</td>
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<td><strong>System Preservation &amp; Safety</strong> - The public’s investment in transportation should be protected by maintaining the transportation system. It is critical to preserve and ensure a safe regional transportation system.</td>
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Note: Bold performance measures were used in the 2030 RTP and non-bold performance measures represent potential new measures. Performance measures that compare metrics of different modes include the following: auto, transit, and carpool, unless otherwise noted.
<table>
<thead>
<tr>
<th>SUSTAINABILITY</th>
<th>Policy Objectives</th>
<th>Potential Plan Performance Measure(s)</th>
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<tr>
<td><strong>Goal</strong></td>
<td>Create equitable transportation opportunities for all populations regardless of age, ability, race, ethnicity or income</td>
<td><strong>Environmental Justice (EJ) and Non-EJ Populations</strong> (These measures will be estimated for “low-income and minority” “mobility” and “community engagement:” community types as identified in the environmental justice work effort) <strong>Average travel time per person trip (in minutes) by mode</strong> <strong>Percent of work trips accessible in 30 minutes by mode</strong> <strong>Percent of homes within 1/2 mile of a transit stop</strong></td>
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<tr>
<td><strong>Social Equity</strong> - The transportation system should be designed to provide an equitable level of transportation services for all populations.</td>
<td>Ensure access to jobs, services and recreation for populations with fewer transportation choices</td>
<td><strong>Gross acres of constrained lands consumed for transit and highway infrastructure</strong></td>
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<td><strong>Healthy Environment</strong> - The transportation system should lead to environmental sustainability and foster efficient development patterns that optimize travel, housing, and employment choices and encourage future growth away from rural areas and closer to existing and planned development.</td>
<td>Develop transportation improvements that respect and enhance the environment</td>
<td><strong>Total on-road fuel consumption (all day) per capita</strong></td>
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<td>Reduce greenhouse gas emissions from vehicles and continue to improve air quality in the region</td>
<td><strong>Smog forming pollutants (tons/year) per capita</strong></td>
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<td>Make transportation investments that result in healthy and sustainable communities</td>
<td><strong>Systemwide VMT (all day) per capita</strong></td>
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<td><strong>Percent of peak-period and daily trips within 1/4 mile of a transit stop</strong></td>
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<td><strong>Work trip mode share (peak periods including bike/walk)</strong></td>
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<td><strong>Average trip distance</strong></td>
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<td><strong>CO2 emissions</strong></td>
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<td><strong>Prosperous Economy</strong> - The transportation system should play a significant role in raising the region’s standard of living.</td>
<td>Maximize the economic benefits of transportation investments</td>
<td><strong>Net benefits</strong></td>
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<td>Enhance the goods movement system to support economic prosperity</td>
<td><strong>Return on investment</strong></td>
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Note: Bold potential performance measures are from the 2030 RTP and non-bold potential performance measures represent newly proposed measures. Performance measures that compare metrics of different modes include the following: auto, transit, and carpool, unless otherwise noted.
RAIL GRADE SEPARATION NOMINATIONS File Number 3100500

Introduction

At the request of the Transportation Committee (TC), nominations for rail grade separation were requested from all SANDAG jurisdictions on December 31, 2009. Each crossing nominated will be evaluated and ranked in accordance with the Rail Grade Separation Evaluation Criteria (Criteria) approved by the TC on October 16, 2009 (Attachment 1). The evaluations will be used to develop a regional priority list for rail grade separation projects to be included in the 2050 Regional Transportation Plan. Nomination forms were due on February 26, 2010, and several forms have been received by SANDAG staff. Attached is a draft list of the nominated crossings (Attachment 2). A staff review of the nomination data submitted to date has been performed and the following discussion and recommendations are submitted to the Cities/County Transportation Advisory Committee (CTAC) for review and comment.

Discussion

A review of the nomination data submitted has raised a concern that the method in which traffic volumes are reported may not be consistent from one jurisdiction to the other. The Criteria states that traffic volumes will include all traffic impacted by the operation of the train. SANDAG staff recommends that the following points of clarification be sent to each jurisdiction, and that each jurisdiction be allowed to revise the nomination data as required.

1. If a traffic signal is interconnected to the grade crossing mechanism, then the traffic volume for the intersecting street should be included in the total traffic volume reported.
2. If a traffic study shows that vehicles queue into an adjacent intersection during the operation of the train, then the traffic volume for the intersecting street should be included in the total traffic volume reported.

CTAC is asked to review and comment on the recommended clarifications.

The review of nomination data also identified that submitted data for some of the nominated crossings is incomplete. SANDAG staff has contacted the jurisdictions affected and the additional information is currently being collected.
In addition, some jurisdictions did not respond to the request for nominations. SANDAG staff will verify that these jurisdictions do not wish to nominate crossings.

The draft list of nominated crossings (Attachment 2) will be submitted to the Metropolitan Transit System (MTS) and the North County Transit District (NCTD) for review and comment.

A recommended list of the nominated rail grade separation projects with evaluation scores will be presented to CTAC at the June 2010 meeting.

Attachments: 1. Rail Grade Separation Evaluation Criteria  
               2. Draft Rail Grade Separation Nominations

Key Staff Contact: John Dorow, (619) 699-1915, jdo@sandag.org
RAIL GRADE SEPARATION EVALUATION CRITERIA

The Cities/County Transportation Advisory Committee (CTAC) developed regional rail grade separation prioritization criteria that stress congestion relief, safety, and funding needs as the primary elements with additional consideration of other factors, including effects on pedestrian traffic, bus transit operations, emergency services, truck freight operations, and noise.

In preparation for the development of the criteria, staff conducted a literature search of other rail grade separation prioritization criteria. These included the California Public Utilities Commission criteria, other states’ criteria, the federal government, as well as articles published in research journals. The findings formed the basis for the initial discussions within CTAC.

The intent of the implementation of a regional rail grade separation program is to provide funding for construction of significant traffic congestion relief projects through the implementation of rail grade separations where other more economical alternatives are demonstrably not feasible or practical. Elimination of crossings is considered a potentially practical alternative. Program allocations will need to be considered in conjunction with other regional transportation funding priorities and needs, and will be dependent on the availability of funding from federal, state, and local sources.

The rail grade separation prioritization criteria were accepted by the San Diego Association of Governments (SANDAG) Board of Directors for inclusion in the 2030 Regional Transportation Plan (RTP) on October 13, 2006. This document has incorporated minor revisions to the criteria after a review was conducted by a working group formed by the San Diego Regional Traffic Engineers Council and was approved by the SANDAG Transportation Committee on October 16, 2009. To date, a regional list of potential grade separations has not been created or prioritized.

Projects will be prioritized based on two criteria categories: project-specific criteria and Regional Housing Needs Assessment (RHNA) housing production. The project-specific criteria will be worth 75 percent, and the RHNA housing production criteria will comprise 25 percent of the total project score.

**Project-Specific Criteria**

These criteria take into account existing vehicular and train traffic, accident history, cost, noise, access to emergency services, and other factors.

**Step 1: Warrants**

The following criteria and point system will be implemented with a potential maximum of 100 points. The total project-specific criteria score will be multiplied by 0.75 to produce a scaled, 75-point score for the total regional rail grade separation project score.
1. **Peak-Period Exposure Index (PPEI) Factor**, measured as the product of the existing high directional traffic and the total measured blocking delay during the same three hours of the day experiencing the highest congestion at the crossing.

\[ \text{PPEI} = \text{VT3} \times \text{BD3} \times C3 \]

Where the score is the product of the above formula, rounded to the next whole number, up to a maximum of 20; and, where

- **VT3**: Vehicular traffic in high direction during selected three-hour period
- **BD3**: Total blocking delay during same three-hour period selected
- **C3**: 1/1,350,000, a mathematical constant used for the three-hour peak-period calculation

**Notes**

a. For crossings where two or more streets that are adjacent to each other that are affected simultaneously by the operation of the train, the vehicular traffic volume on those streets is cumulative for purposes of the calculation of this congestion relief factor.

b. Selected three-hour period consists of three one-hour periods which may be consecutive. However, the selected three-hour period shall be the same when counting vehicular and train traffic.

c. Blocking delay shall be measured as the time period beginning when the warning devices are activated to the time when the warning devices are de-activated.

**Example**

At a crossing, there are 5,400 total cars in the high direction counted between 6:30 and 7:30 a.m., 8 and 9 a.m., and 5 and 6 p.m., with eight trains per hour during those same hours and a 60-second delay time per train during those same hours.

\[ \begin{align*}
\text{VT3} &= 5400 \text{ cars in high direction-selected, three-hour period} \\
\text{BD3} &= 8 \text{ trains} \times 2 \text{ directions} \times 3 \text{ hours} \times 60\text{-second delay} = 2880 \\
\text{PPEI} &= 5400 \times 2880 \times \left[\frac{1}{1,350,000}\right] = 11.52
\end{align*} \]

Rounding up to the next whole number: PPEI score = 12

2. **Peak-Day Total Delay Exposure Index (PDEI) Factor**, measured as the product of the existing average daily traffic (ADT), the total number of trains, and an average train crossing delay time factor.

\[ \text{PDEI} = \text{PD–ADT} \times \text{PD–NT} \times \text{ATCDF} \times \text{PD–C} \]

**Maximum Points = 20**
Where the score is the product of the above formula, rounded to the next whole number, up to a maximum of 20; and, where

PD-ADT = Peak-Day Average Daily Traffic
PD-NT = Peak-Day Total Number of Trains
ATCDF = Average Train Crossing Delay Factor, corresponds to point scale as shown in table below
PD-C = 1/1,000,000, a mathematical constant used for peak-day period calculation

<table>
<thead>
<tr>
<th>ATCDF Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>From (minutes)</td>
</tr>
<tr>
<td>0.00</td>
</tr>
<tr>
<td>0.75</td>
</tr>
<tr>
<td>1.00</td>
</tr>
<tr>
<td>1.25</td>
</tr>
<tr>
<td>1.50</td>
</tr>
<tr>
<td>2.00</td>
</tr>
<tr>
<td>3.00</td>
</tr>
<tr>
<td>4.00</td>
</tr>
<tr>
<td>6.00</td>
</tr>
<tr>
<td>8.00</td>
</tr>
</tbody>
</table>

Notes

a. For crossings where two or more streets that are adjacent to each other that are affected simultaneously by the operation of the train, the vehicular traffic volume on those streets is cumulative for purposes of the calculation of this congestion relief factor

b. Average annual daily traffic can be used for peak-day, but ADT for weekday or weekend day may be used as appropriate, if available. However, the selected day period shall be the same when counting vehicular and train traffic. As an example, if ADT for weekday is available, the highest train traffic of any day between Monday and Friday can be used for the calculations, and not the weekend day train traffic

c. Blocking delay shall be measured as the time period beginning when the warning devices are activated to the time when the warning devices are de-activated

Example

At a crossing, there is an arterial with an ADT of 30,000 vehicles on weekdays, 144 daily trains in both directions also on weekdays, averaging 55 seconds per crossing.

PDEI = PD-ADT x PD-NT x ATCDF x PD-C
PD-ADT = 30,000 vehicles on weekdays
PD-NT = 144 trains in both directions, on weekdays
ATCDF = 2 points
PD-C = 1/1,000,000
PDEI = 30,000 x 144 x 2 x [1/1,000,000] = 8.64

Rounding up to the next whole number: PDEI score = 9
3. **Accident History**: accident history in the past five years involving vehicles, pedestrians, and bicycles with trains, not including accidents involved in attempted suicides.  

MAXIMUM POINTS = 25

Assign points according to the following schedule:

<table>
<thead>
<tr>
<th>Number of Qualifying Accidents</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td>14</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fatal Accidents</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1+</td>
<td>5</td>
</tr>
</tbody>
</table>

**Special Conditions (maximum 2 points)**

- More than one traffic signal is pre-empted: 1 point
- More than two tracks cross the roadway: 1 point
- The crossing is skewed more than 20 degrees: 1 point
- Offset roadway intersections are present: 1 point

4. **Funding Request**: The funding request criterion awards points for the percentage of total project costs contributed by the local agency including funds already committed from state, federal, or other sources.

MAXIMUM POINTS = 15

Assign points according to the following schedule:

<table>
<thead>
<tr>
<th>Local Contribution</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10%</td>
<td>0</td>
</tr>
<tr>
<td>10% to 25%</td>
<td>5</td>
</tr>
<tr>
<td>More than 25% to less than 50%</td>
<td>10</td>
</tr>
<tr>
<td>50% or more</td>
<td>15</td>
</tr>
</tbody>
</table>

5. **Pedestrian Benefits**

MAXIMUM POINTS = 4

Assign points according to the following criteria:

- a. Grade separation will serve 1-50 pedestrians during top four hours: 1 point
- b. Grade separation will serve 51-100 pedestrians during top four hours: 2 points
- c. Grade separation will serve 101-150 pedestrians during top four hours: 3 points
- d. Grade separation will serve more than 150 pedestrians during top four hours: 4 points
6. **Bus Operations Effects**  
MAXIMUM POINTS = 4

Assign points according to the following criteria:

- a. Grade separation will serve up to four buses an hour: 1 point
- b. Grade separation will serve from four to eight buses an hour: 2 points
- c. Grade separation will serve from eight to sixteen buses an hour: 3 points
- d. Grade crossing is adjacent to a transit center: 1 point

7. **Noise Reduction**  
MAXIMUM POINTS = 4

Assign points according to the following criteria:

- a. Rail crossing area located within 200 feet of sensitive receptors: 4 points
- b. Rail crossing area located between 200-500 feet of sensitive receptors: 2 points
- c. Rail crossing area located more than 500 feet away from sensitive receptors: 0 points

Sensitive receptors include: residential areas, hospitals, schools, and houses of worship. Rail crossing area includes crossing plus 200 feet along track in either direction away from crossing.

8. **Benefit to Emergency Services**  
MAXIMUM POINTS = 4

Assign points according to the following criteria:

- a. Rail crossing located within ½ mile of emergency service provider and no alternative grade-separated crossing exists within ½ half mile: 4 points
- b. Rail crossing located between ½ and 1 mile of emergency service provider and no alternate grade-separated crossing exists within ½ mile: 2 points
- c. Rail crossing located between 1 and 1½ miles of emergency service provider and no alternate grade-separated crossing exists within ½ mile: 1 point
- d. Rail crossing located further than 1½ miles of emergency service provider and no alternate grade-separated crossing exists within ½ mile: 0 points

Emergency service providers include services such as police, fire, paramedic, ambulance, and hospital services. Distance is measured as driven distance from crossing.

9. **Impact to Truck Freight Operations**  
MAXIMUM POINTS = 4

Assign points according to the following table:

<table>
<thead>
<tr>
<th>% Trucks</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater than 5</td>
<td>4</td>
</tr>
<tr>
<td>2 to 5</td>
<td>2</td>
</tr>
<tr>
<td>Less than 2</td>
<td>0</td>
</tr>
</tbody>
</table>
Trucks shall include Class 4 to Class 13 as defined by the Federal Highway Administration.

**Step 2: Once the projects have been prioritized according to the criteria above, consideration for funding would include the following project readiness elements**

a. Project feasibility (e.g., physical constraints and reliability of cost estimate)
b. Environmental document status
c. Right-of-Way acquisition status
d. Permits (e.g., Public Utilities Commission, Coastal Commission, or the Department of Fish and Game)

**RHNA Criteria**

Please refer to SANDAG Board Policy No. 033. Regional rail grade separation projects must include incentive points (a minimum of 25 points out of 100 possible) based on the number of lower income housing units produced in accordance with RHNA Alternative 3. SANDAG staff will calculate the incentive points for each jurisdiction on an annual basis in accordance with the Board Policy.
## DRAFT RAIL GRADE SEPARATION NOMINATIONS

<table>
<thead>
<tr>
<th>CITY</th>
<th>STREET RAIL CROSSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlsbad</td>
<td>Grand Avenue</td>
</tr>
<tr>
<td>Carlsbad</td>
<td>Carlsbad Village Drive</td>
</tr>
<tr>
<td>Carlsbad</td>
<td>Tamarack Avenue</td>
</tr>
<tr>
<td>Carlsbad</td>
<td>Cannon Road</td>
</tr>
<tr>
<td>Chula Vista</td>
<td>E Street</td>
</tr>
<tr>
<td>Chula Vista</td>
<td>H Street</td>
</tr>
<tr>
<td>Chula Vista</td>
<td>Palomar Street</td>
</tr>
<tr>
<td>La Mesa</td>
<td>Severin Drive</td>
</tr>
<tr>
<td>La Mesa</td>
<td>Allison Avenue</td>
</tr>
<tr>
<td>Lemon Grove</td>
<td>Broadway</td>
</tr>
<tr>
<td>San Diego</td>
<td>Taylor Street</td>
</tr>
<tr>
<td>San Diego</td>
<td>Sorrento Valley Blvd</td>
</tr>
<tr>
<td>San Diego</td>
<td>Washington Street</td>
</tr>
<tr>
<td>San Diego</td>
<td>28th Street</td>
</tr>
<tr>
<td>San Diego</td>
<td>Euclid Avenue</td>
</tr>
<tr>
<td>San Diego</td>
<td>Laurel Street</td>
</tr>
<tr>
<td>San Diego</td>
<td>32nd Street</td>
</tr>
<tr>
<td>San Diego</td>
<td>Hawthorn Street</td>
</tr>
<tr>
<td>San Diego</td>
<td>Ash Street</td>
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<tr>
<td>San Diego</td>
<td>Broadway</td>
</tr>
<tr>
<td>San Diego</td>
<td>Grape Street</td>
</tr>
<tr>
<td>Vista</td>
<td>Escondido Avenue</td>
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<td>Vista</td>
<td>Guajome Street</td>
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<td>Vista</td>
<td>Los Angeles Drive</td>
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<td>Vista</td>
<td>Mar Vista Drive</td>
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<td>Vista</td>
<td>Melrose Drive</td>
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<tr>
<td>Vista</td>
<td>North Drive</td>
</tr>
<tr>
<td>Vista</td>
<td>Vista Village Drive</td>
</tr>
</tbody>
</table>