TRANSPORTATION COMMITTEE AGENDA

Thursday, August 8, 2002
12:15 p.m.
SANDAG Board Room
401 B Street, 7th Floor
San Diego, CA 92101-4231

AGENDA HIGHLIGHTS

- REGIONAL HIGH OCCUPANCY VEHICLE/MANAGED LANES STUDY
- REGIONALLY SIGNIFICANT TRANSPORTATION NETWORK

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<table>
<thead>
<tr>
<th>ITEM #</th>
<th>RECOMMENDATION</th>
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<tbody>
<tr>
<td>1.</td>
<td>PUBLIC COMMENTS/COMMUNICATIONS</td>
</tr>
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<td>(Speakers limited to three minutes each.)</td>
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</tbody>
</table>

**REPORTS**

+ 2. REGIONAL HIGH OCCUPANCY VEHICLE (HOV) /MANAGED LANES (ML) STUDY (Heather Werdick)  
APPROVE

The Regional High Occupancy Vehicle (HOV)/Managed Lanes (ML) Study evaluates HOV demand in the San Diego region through the year 2020. Conducted with the assistance of a technical working group, the Study includes recommendations for HOV/ML facilities on the regional highway network. The Transportation Committee is asked to approve the use of the study for the development of the Draft 2030 Regional Transportation Plan, scheduled for release in September/October 2002.

+ 3. REGIONALLY SIGNIFICANT TRANSPORTATION NETWORK (Richard Chavez/Linda Culp)  
REVIEW AND COMMENT

The Board has supported defining a Regionally Significant Transportation (RST) Network as part of the 2030 Regional Transportation Plan (RTP). This Network will include major highway corridors, regional transit services, and regional arterials. The Transportation Committee is asked to review and comment on the highway corridors and regional transit services recommended for the Network. Recommendations for the Network’s regional arterials will be presented at the September 12, 2002 Transportation Committee meeting. The full Network will be incorporated into the Draft 2030 RTP.

+ 4. MOBILITY 2030: REGIONAL TRANSPORTATION PLAN FOR THE SAN DIEGO REGION - PRELIMINARY DRAFT  
INFORMATION

Staff will make a presentation on the preliminary draft report that was accepted for distribution at the August 2 Board meeting. Attached is the Board report (Item #18). The report, Mobility 2030, was provided as part of the Board agenda mail out.

THE NEXT TRANSPORTATION COMMITTEE MEETING IS TENTATIVELY SCHEDULED FOR THURSDAY, SEPTEMBER 12, 2002.

The Transportation Committee may take action on any item appearing on this agenda.

This agenda is sent to all members of the SANDAG/RTC Board of Directors and alternates for informational purposes.

+ next to an agenda item indicates an attachment
REGIONAL HIGH OCCUPANCY
VEHICLE (HOV)/MANAGED LANES (ML) STUDY

Introduction

As part of the FY 2002 Overall Work Program, the Board of Directors directed staff to update the region’s HOV plan. The Regional HOV/ML Study is evaluating the demand for carpool and managed lanes facilities on the freeways and state highways in the San Diego region. The objective of the study is to systematically identify a cost-effective regional system of HOV/managed lane facilities that would accommodate existing and projected HOV demand, maximize the person-carrying capacity of the system and/or corridors, and provide travel time savings and reliability to HOVs and transit.

With the assistance of a technical working group, draft recommendations for HOV/ML facilities have been developed. These recommendations have been considered in the development of the preliminary draft 2030 Regional Transportation Plan (RTP) presented to the Board at their August 2, 2002 meeting.

At the December 13, 2001 meeting, the Transportation Committee was briefed on the progress of the HOV/ML Study. The HOV/ML system proposed in the study includes:

- Four managed lanes facilities on I-5, I-15, and I-805 with value pricing
- One HOV lane in each direction on SR 54, SR 56, SR 94, and SR 125
- Two lane HOV reversible facility on SR 52
- HOV to HOV connectors located at I-5/I-805 and SR 52/I-805

Attachment 1 lists the detailed HOV and managed lane facilities. Attachment 2 is the Introduction and Summary/Recommendations sections of the draft report.

Recommendation

The Transportation Committee is asked to approve the Regional HOV/ML Study for use in the development of the Draft 2030 Regional Transportation Plan scheduled for release in September/October 2002.
Discussion

Development of the HOV/ML Study

In 2001, SANDAG hired Parsons Brinkerhoff Quade & Douglas to conduct the HOV/ML Study. Their work has been assisted by a technical working group, consisting of staff from SANDAG, the San Diego Metropolitan Transit Development Board (MTDB), North County Transit District (NCTD), Caltrans, Federal Highway Administration, City of San Diego, County of San Diego, Automobile Club of Southern California, Air Pollution Control District, and a representative from the Cities/County Transportation Advisory Committee (CTAC).

The purpose of the study is to update the regional HOV plan included in the 2020 RTP by systematically identifying a cost-effective regional system of HOV/managed lane facilities that would accommodate HOV demand and provide travel time savings and reliability to HOVs and transit.

The screening process to identify potential HOV/ML facilities was undertaken in three steps. In the first screening the entire San Diego region freeway system was evaluated for potential HOV/ML facilities based on two criteria: forecast HOV demand and forecast congestion. This analysis used 2020 forecasts from the SANDAG model with only existing HOV facilities included in the network. Second, the potential HOV corridors resulting from this process were further screened based on a simplified HOV demand forecasting model and the use of qualitative and quantitative evaluation criteria. The evaluation criteria considered factors such as travel time savings, total person travel, and cost-effectiveness. Consistency with Regional Transit Vision routes, project readiness (e.g. included in a MIS/Corridor Study, RTIP, or RTP), and service to major employment areas also were evaluated. Finally, the preliminary 2020 HOV/ML system was analyzed and evaluated using SANDAG’s transportation model.

There are currently 28 lane miles of HOV/ML facilities in the San Diego region. The Regional HOV/ML Study recommends approximately 499 lane miles of new (or improved) HOV/ML facilities on 179 route miles of freeways. Figure 8-2 (page 15) of Attachment 2 summarizes specific study recommendations.

The recommended HOV/ML system accommodates HOV demand and provides travel time savings to HOVs and transit as well as general purpose lane users.

Next Steps

The recommendations from the draft HOV/ML Study have been incorporated in the development of the preliminary draft 2030 RTP. Comments on the draft study have been received from Caltrans, MTDB, NCTD, and the County of San Diego and will be responded to/addressed in the final study report. The study will be finalized in conjunction with release of the Draft 2030 RTP in September/October 2002.

Attachments
### REGIONAL HOV/ML STUDY

**HOV and Managed Lane Facilities**

<table>
<thead>
<tr>
<th>Freeway</th>
<th>From</th>
<th>To</th>
<th>Recommendation</th>
</tr>
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<tr>
<td>I-5</td>
<td>I-8</td>
<td>SR 76</td>
<td>4 ML</td>
</tr>
<tr>
<td>I-5</td>
<td>SR 76</td>
<td>Orange Co.</td>
<td>2 HOV</td>
</tr>
<tr>
<td>I-15</td>
<td>I-8</td>
<td>SR 163</td>
<td>2 HOV</td>
</tr>
<tr>
<td>I-15</td>
<td>SR 163</td>
<td>SR 78</td>
<td>4 ML/MB</td>
</tr>
<tr>
<td>I-15</td>
<td>SR 78</td>
<td>Riverside Co.</td>
<td>2 HOV</td>
</tr>
<tr>
<td>SR 52</td>
<td>I-805</td>
<td>SR 125</td>
<td>2 ML (Reversible)</td>
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<td>SR 54/SR 125</td>
<td>I-5</td>
<td>SR 52</td>
<td>2 HOV</td>
</tr>
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<td>SR 56</td>
<td>I-5</td>
<td>I-15</td>
<td>2 HOV</td>
</tr>
<tr>
<td>SR 94</td>
<td>I-5</td>
<td>Avocado Blvd.</td>
<td>2 HOV</td>
</tr>
<tr>
<td>I-805</td>
<td>SR 905</td>
<td>I-5</td>
<td>4 ML/MB</td>
</tr>
</tbody>
</table>

**Key:**  
HOV = High Occupancy Vehicle Lanes  
ML = Managed Lanes (HOV & Value Pricing)  
MB = Movable Barrier
HIGH OCCUPANCY VEHICLE/ MANAGED LANE STUDY

Prepared for SANDAG
By Parsons Brinckerhoff Quade & Douglas
With the assistance of
Katz, Okitsu & Associates

DRAFT
July 2002
INTRODUCTION

This report is the result of a decision in June 2001 by the San Diego Association of Governments (SANDAG) to commission an update of the region’s high occupancy vehicle (HOV) plan. The overall objective of this report is to recommend revisions to the HOV plan as it currently exists in SANDAG’s 2020 Regional Transportation Plan (RTP). The updated plan is intended to identify a cost-effective regional system of HOV and managed lane (ML) facilities to accommodate existing and projected HOV and transit demand, maximize the person-carrying capacity of the system, and provide travel-time savings and reliability to HOV and transit trips.

Adopted by SANDAG in February 2000, the 2020 RTP includes approximately 138 route-miles (300 lane-miles) of new HOV facilities. Except for a four-lane HOV/ML facility on I-15, the new HOV facilities were nominally designated as one lane each direction concurrent flow HOV roadways.

The HOV component of the 2020 RTP was based on earlier studies and did not reflect a comprehensive system-wide analysis of HOV needs based on the most recent land use and transportation forecasts. At the present time (June 2002) there are about 17 route-miles (27.7 lane-miles) of HOV/ML facilities in the San Diego region. These include a two-lane reversible facility on I-15 between State Route (SR) 163 and Ted Williams Parkway; a northbound HOV lane on I-5 between I-805 and Villa de la Valle; and a concurrent flow HOV lanes on SR 54 east of I-805. Planning and/or design studies are underway for HOV/ML facilities on I-5 and I-15.

Report Organization

Chapters 2 and 3 provide background information for this report. Chapter 2 explains the four major techniques for managing lanes and presents a brief discussion of operating and design considerations for HOV/ML facilities. Chapter 3 provides an overview of existing and proposed HOV/ML facilities to aid in understanding the project recommendations described later in this report.

Chapters 4 and 5 describe the process of screening the entire regional freeway system to determine potential HOV/ML facilities. Chapter 4 outlines the preliminary screening process, which uses forecast freeway congestion and forecast HOV demand to identify potential HOV corridors. In Chapter 5, the potential HOV corridors recommended by the preliminary screening process are subjected to further evaluation based on a simplified HOV demand model as well as eight quantitative and five qualitative evaluation criteria.
The more refined HOV/ML system developed in Chapter 5 is then evaluated using SANDAG’s transportation modeling system. This process is described in Chapter 6, which also includes specific recommendations for a system of HOV/ML facilities including freeway-to-freeway direct HOV ramps or connectors. Chapter 6 includes a discussion of estimated travel time savings resulting from the proposed HOV/ML system as well as cost estimates for the recommended HOV/ML system components.

Chapter 7 provides a discussion of potential HOV applications to major arterial streets and an evaluation of use by buses of freeway shoulders on two freeway segments. The section on major arterial streets provides an overview of potential HOV treatments including a discussion of the potential suitability of these applications to four arterial streets. The discussion of buses using freeway shoulders evaluates the feasibility of this technique for sections of I-5 and SR 163.

Finally, Chapter 8 contains a concise summary of the report and its recommendations.

**Technical Memoranda**

In addition to this report, four technical memoranda have been produced. Technical Memorandum for Task 2, entitled *Overview of Existing and Proposed High Occupancy Vehicle and Managed Lane Facilities*, is summarized in Chapter 3. An abbreviated version of Technical Memorandum for Task 3, *HOV Demand for the Regional System and Individual Corridors*, is the subject of Chapter 4. The Technical Memorandum for Task 4, *Literature Review of HOV/Managed Lane Projects in North America*, is covered in part in Chapter 2, as part of the discussion of managed lanes. Finally, the Technical Memorandum for Task 5, *Evaluation of Potential HOV/Managed Lane Facilities*, is summarized in Chapter 5.

**Technical Advisory Committee**

The study process was guided by a Technical Advisory Committee that included representatives from the City of San Diego, County of San Diego, North County Transit District, Metropolitan Transit Development Board, the Air Pollution Control District, and a representative from the Cities/County Transportation Advisory Committee (CTAC). Also participating were representatives of Caltrans, the Federal Highway Administration, and the Automobile Club of Southern California. The Technical Advisory Committee met in September 2001 to review the technical memoranda for Task 2, *Overview of Existing and Proposed Facilities*, and Task 3, *HOV Demand*. Two workshops were held, in October and November 2001, to develop the evaluation criteria, review interim findings, and recommend an HOV/ML system. Following the workshops, committee members were asked to review additional technical memoranda.
Terminology

Throughout this report, the term *HOV lane* is used to describe a facility for which the primary management technique is the limitation of the use of the facility to carpools, vanpools, and buses. For most HOV lanes, eligibility is limited to vehicles carrying two or more (2+) persons. The Technical Advisory Committee recommended a 2+ occupancy standard for all San Diego freeway HOV facilities. A 2+ occupancy standard is consistent with most California HOV facilities.

The term *HOV/ML facility* is used to describe a lane or lanes that are managed through multiple techniques. The I-15 Express Lanes, for example, are considered an HOV/ML facility because they are managed by restricting eligibility to HOVs, by reversing the lanes, by charging a toll for use by single occupant vehicles, and by limiting access. The term *HOV/ML facility* also is used in a general sense to refer to both HOV and HOV/ML facilities.
SUMMARY AND RECOMMENDATIONS

Purpose

The 2020 Regional Transportation Plan (RTP) includes approximately 138 freeway route-miles of high occupancy vehicle (HOV) facilities. The HOV element of the RTP was largely based on a 1988 Express Lane Plan as well as recent studies of the managed lane facility on I-15 and the work done for the I-5 North Coast Transportation Study. The purpose of the HOV/Managed Lanes Study is to update the HOV plan included in the 2020 RTP. The updated plan is intended to identify a cost-effective regional system of HOV/managed lane facilities to accommodate existing and projected HOV and transit demand, maximize the person-carrying capacity of the system, and provide travel-time savings and reliability to HOV and transit trips.

The plan update process was assisted by a Technical Advisory Committee consisting of staff representatives of SANDAG member agencies, Caltrans, the Federal Highway Administration, and others. The Technical Committee held two workshops to review interim products and make recommendations.

Managed Lanes

A managed lane may be defined as a lane (or system of lanes) designed and operated to provide unimpeded, high-speed, efficient travel during periods when the remainder of the freeway or arterial street is congested. Four major techniques for managing lanes include limiting eligibility, controlling access, pricing, and providing reversible lanes. The I-15 Express Lanes use all four methods: eligibility to use the facility is limited to HOVs, motorcycles and certain low emission vehicles; pricing of single occupant vehicles (SOVs) is used to make full use of the Express Lanes’ capacity and generate revenue; access to the Express Lanes is provided only at the two ends; and the facility is reversible to provide additional capacity in the peak direction.

Operating Policies

Managed lanes may be operated as two-way, or concurrent flow, facilities or as reversible facilities. The hours of operation may be continuous, as on the I-5 HOV lane, or variable as on the I-15 Express Lanes and the SR 54 HOV lanes.

Vehicle occupancy requirements may be set at two or more persons per vehicle (2+) or higher, or can be limited to buses only. For this study, the Technical Advi-
sory Committee recommended a uniform vehicle occupancy requirement of 2+ persons per vehicle.

Pricing has introduced yet another set of policies related to HOV/managed lane facilities. Pricing policy alternatives include fixed schedules, schedules that vary with the time of day, and schedules that vary with the excess capacity on the HOV lanes.

**Design Considerations**

The three major types of HOV/ML configurations are barrier-separated, buffer-separated, and contiguous. Barrier-separated facilities, such as the I-15 Express Lanes, provide unimpeded operation without interference from the mixed-flow lanes. They offer a high degree of user comfort and typically have low violations rates, but they cost more than other types of HOV/ML facilities. For safety reasons, barrier separation is required for reversible facilities.

A buffer-separated facility, such as the I-5 HOV lane, is separated from the mixed-flow lanes by a painted buffer of variable width, usually four feet or less. Buffer-separated facilities offer a lower degree of driver comfort, but cost less than barrier separated facilities.

In a contiguous facility, such as the SR 54 HOV lanes, the HOV lanes are directly adjacent to the mixed-flow lanes, and traffic is allowed to move freely between the two types of lanes. This type of facility requires the least amount of right-of-way and has the lowest cost of the three facility types. Due to the lack of access control, enforcement on contiguous facilities can be a problem.

**Existing and Proposed HOV/ML Facilities**

There are currently 27.5 lane-miles of HOV facilities in the San Diego region. These include:

- a 6.1-mile northbound HOV lane on I-5, from just south of the I-805 junction (on I-805) to Via de la Valle
- a 7.5-mile, two-lane, reversible HOV/managed lane facility on I-15
- a 3.2-mile, two-lane HOV facility on SR 54, east of I-805
- other smaller facilities

The 2020 RTP includes approximately 138 route-miles of planned HOV facilities, as shown in Figure 8-1. The plan includes HOV facilities on I-5, I-805, I-15/SR 15, SR 52, SR 54, and SR 125. Except for the four-lane I-15 project, all facilities are assumed to be two-lane, buffer-separated facilities. In addition, arterial HOV facilities accessing downtown San Diego are recommended for Pacific Highway and Harbor Drive. Studies are underway for HOV/managed lanes on I-5 and I-15,
Figure 8-1. 2020 Highway Plan.
and a corridor study is in progress for the central portion of the I-5 corridor between I-8 and SR 54.

**Screening for HOV/ML Facilities**

The screening process to identify potential candidates for the recommended HOV/ML system was undertaken in two phases. In the first phase the entire San Diego Region freeway system was evaluated for potential HOV/ML facilities based on two criteria: forecast HOV demand and forecast congestion. This analysis used forecasts from SANDAG’s 2020 Revenue-Constrained Transportation Plan, with only the existing HOV facilities included in the 2020 transportation network. The potential HOV corridors resulting from this process were further screened based on a simplified HOV demand forecasting model and the use of eight quantitative and five qualitative criteria discussed by the workshop participants. The quantitative criteria considered factors such as travel-time savings with HOV lanes, total person-travel on the HOV lanes, and cost-effectiveness. Transit enhancement, project readiness, and service to major employment areas were some of the qualitative criteria evaluated. A meeting of the Technical Advisory Committee and two workshops resulted in a set of recommended HOV/ML facilities for final evaluation.

**Final Evaluation**

A special computer simulation of the recommended year 2020 HOV/ML facilities resulting from both screening processes was undertaken and the results were evaluated. For comparison purposes, the projections of recommended HOV/ML plan were contrasted with a “do nothing” scenario, or Revenue-Constrained Plan forecast, without the proposed HOV/ML facilities.

**Recommended 2020 HOV/ML Plan**

The recommended HOV/ML Plan is shown in Figure 8-2. The 2020 plan includes approximately 346 lane-miles of new (or improved) HOV/ML facilities on 101 route-miles of freeways. In addition, this plan recommends freeway-to-freeway direct HOV connectors on I-5, at the interchange with I-805, and at the I-805/SR 52 interchange, connecting north I-805 with east SR 52.

**Interstate 805 (I-5 to SR 905)**

A four-lane, buffer-separated HOV/ML facility is recommended for the I-805 corridor between I-5 and SR 905. This facility would taper to a two-lane HOV/ML facility north of Mira Mesa Boulevard and south of Orange Avenue/Olympic Parkway. The four-lane portion would be reversible, with three lanes operating in the northbound a.m. and southbound p.m. directions. Value pricing would be used
Figure 8-2.

Recommended HOV/Managed Lane System
to optimize use of the HOV/ML facility and help relieve congestion in the mixed-flow lanes.

The forecast benefits of the proposed I-805 HOV/ML facility are significant. As shown in Table 8-1, compared to the Revenue-Constrained Plan “no-build” option, peak-hour users of the general-purpose lanes would save 14.5 minutes over the 27-mile facility, and HOV/ML users would cut their peak-hour travel time by an estimated 21 minutes.

### Table 8-1. Peak-Hour/Peak-Direction Travel-Time Comparisons.
(All times in minutes.)

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<thead>
<tr>
<th>Freeway Segment</th>
<th>Revenue-Constrained Plan</th>
<th>Recommended HOV/ML Plan</th>
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<td>General-Purpose Lanes</td>
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</tr>
<tr>
<td></td>
<td>Travel Time</td>
<td>Time Savings</td>
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<tr>
<td>I-805 (I-5 to SR 905)</td>
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<td>31.6</td>
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<tr>
<td>I-5 (I-8 to SR 76)</td>
<td>46.8</td>
<td>29.8</td>
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<tr>
<td>SR 52 (I-805 to SR 125)</td>
<td>21.8</td>
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<tr>
<td>I-15 (SR 163 to SR 78)</td>
<td>29</td>
<td>18.1</td>
</tr>
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</table>

### Interstate 5 (I-8 to SR 76)

A four-lane, buffer-separated HOV/ML facility is recommended for I-5 between I-8 and SR 76, with value pricing for SOVs. On its south end this facility would connect to an improved Pacific Highway overcrossing, just north of I-8, via a pair of one-lane drop ramps. Pacific Highway is assumed to have an HOV lane providing access to the Old Town Transit Center and downtown San Diego. Just north of the Pacific Highway overcrossing the facility would widen to four HOV/managed lanes. As it approaches I-805 to the north, it would narrow to two HOV/managed lanes just beyond Genesee Avenue and connect to the I-5/I-805 interchange with two single-lane, freeway-to-freeway direct HOV connectors. At that point it would combine with I-805 traffic and continue north as a four-lane HOV/ML facility to SR 78. Two lanes would be dropped north of SR 78, and the facility would end at SR 76.

Significant travel-time savings are expected with the construction of this facility (see Table 8-1). Over its 33-mile total length between I-8 and SR 76, users of the general-purpose lanes can expect a peak-hour travel-time savings of approximately 17 minutes and HOV/ML users a savings of 19.4 minutes.
**State Route 52 (I-805 to SR 125)**

A two-lane HOV/ML facility is recommended for SR 52 between I-805 and SR 125. Between I-805 and I-15, SR 52 would have six general-purpose lanes and two buffer-separated lanes for 2+ HOVs.

The I-15 to SR 125 segment of SR 52 has a very high projected HOV demand and a significant (76/24) peak-hour directional split. Consequently, a two-lane, barrier-separated, reversible facility with value pricing is recommended for this section. This proposed facility would be similar to the configuration of the current I-15 Express Lanes. Six general-purpose lanes are planned for this portion of SR 52.

For the full 11-mile HOV/ML facility, estimated peak-hour travel-time savings for users of the general-purpose lanes is 8.7 minutes, and for users of the HOV/ML facility it is 11.5 minutes (Table 8-1).

**Interstate 15 (SR 163 to SR 78)**

No changes are proposed to the planned 19.4-mile, four-lane, barrier-separated, HOV/ML facility on I-15. South of Citracado Parkway, this facility will be reversible, as planned, with three lanes operating in the southbound a.m. and northbound p.m. directions. North of Citracado Parkway, the forecast travel drops sufficiently to permit a non-reversible, four-lane HOV/ML facility.

For users of the general-purpose lanes, peak-hour travel-time savings over this 19.4-mile facility is estimated to be 10.9 minutes (Table 8-1). For users of the HOV/managed lanes the travel-time savings will be less—11.1 minutes—because the existing I-15 HOV/ML facility between SR 163 and SR 56 already provides substantial travel-time savings along a major portion of this route.

**State Routes 54 and 125 (I-805 to SR 94)**

An 8.7-mile managed lane facility, with six general-purpose lanes and two buffer-separated HOV lanes, is currently planned for SR 54 and SR 125 between I-805 and SR 94. Year 2020 peak-hour forecasts from the HOV/ML Plan indicate that these HOV lanes will function within the desired operating thresholds and the general-purpose lane speeds will be in the 60-mph range. This study recommends no change to the 2020 RTP configuration.

**Mid-City Transitway**

The portion of SR 15 between SR 94 and I-8 is planned as a freeway median bus transitway, with on-line stations at University Avenue and El Cajon Boulevard. This facility will use right-of-way that could otherwise be used for an HOV facility. As a consequence, the Technical Advisory Committee recommended that a
transitway be shown on this portion of SR 15 in the recommended 2020 HOV/ML system.

**Freeway-to-Freeway Direct HOV Connectors**

Freeway-to-freeway direct HOV connectors generally require relatively high peak-hour volumes to justify their high costs. Based on an evaluation of all possible freeway-to-freeway HOV connections, two locations met the criteria supported by the Technical Advisory Committee. These are I-5 at the I-805 interchange and the south-to-east and west-to-north connectors at the I-805/SR 52 interchange. Caltrans has estimated the cost of these facilities to be $200 million for the connectors at I-5 and $150 million for the connectors at I-805 and SR 52 (Table 8-2).

### Table 8-2. Recommended 2020 HOV/ML Plan Costs.

<table>
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<tr>
<th>Freeway Segment</th>
<th>Length (mi)</th>
<th>Cost (in millions of 2001 dollars)</th>
<th>Cost per Mile</th>
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<td>I-5 HOV Direct Connectors (2)</td>
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<td><strong>Total Cost</strong></td>
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<td><strong>$2,426</strong></td>
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**Other Technical Advisory Committee Recommendations**

In addition to its freeway-specific recommendations described above, the Technical Advisory Committee recommended that, from a regional priority perspective, potential HOV/ML projects should be evaluated as part of a comprehensive evaluation that looks at all major transportation projects. The information generated from the HOV/ML study would provide the basis for this evaluation. The Technical Committee further recommended that interim two-lane HOV projects be considered in congested corridors.

**Recommended 2020 HOV/ML Plan Costs**

As shown on Table 8-2, the estimated total cost of the recommended 2020 HOV/ML Plan is $2.426 billion, including the costs for the freeway-to-freeway direct HOV connectors. The costs reflect the basic HOV/ML facilities and do not include the costs of additional facilities such as drop ramps and transit centers. The costs are expressed in 2001 dollars.
Future HOV/ML Facilities

The screening processes for HOV/ML facilities described in this study identified many freeway facilities that did not show a need for HOV facilities by the year 2020. However, many of these freeways were sufficiently close to their capacities that they could warrant HOV lanes shortly beyond the 2020 time frame. Some of these HOV lanes would be needed for the Regional Transit Vision transit system. Workshop participants recommended 76.6 route miles of future freeway HOV lanes beyond 2020, as shown on Figure 8-2.

The workshop participants recommended that the feasibility of HOV lanes on I-5 between SR 54 and Centre City San Diego be evaluated as part of SANDAG’s Central I-5 Corridor Study, now underway. They further recommended that proposed arterial street HOV facilities on Harbor Drive from National City to downtown and Pacific Highway between the I-8 overcrossing at Mission Bay and downtown be considered as part of that study. The boundary of the study area is shown on Figure 8-2.

Other Potential HOV Applications

Other potential HOV applications evaluated included HOV treatments to arterial streets and use of freeway shoulders by buses during peak periods.

Arterial HOV treatments include busways, HOV/transit lanes, bus stop design considerations, and spot treatments to enhance bus usage. Many of these treatments could be appropriate for San Diego regional arterial streets as the level of bus service increases. Even with the implementation of the Regional Transit Vision, such localized improvements as bus signal priority, bus stop improvements, and other bus-preferential treatments will likely be more feasible than major arterial busways and arterial HOV facilities.

Use of freeway shoulders by buses to bypass freeway congestion has generated considerable controversy due to potential safety problems and liability concerns. Experience indicates that approval is more likely where freeway interchanges are widely spaced and freeway ingress and egress movements are low. Even then, such facilities should be approved only on an interim basis. The workshop participants recommended that Caltrans and the MTDB evaluate the feasibility of bus use of the right shoulder on southbound SR 163 between Genesee Avenue and Friars Road.
REGIONALLY SIGNIFICANT TRANSPORTATION NETWORK

Introduction

The SANDAG Board of Directors has supported defining a Regionally Significant Transportation Network (“Network”) as part of the 2030 Regional Transportation Plan (RTP). This Network should include SANDAG’s highest priority projects for funding. The Network also would be the focus of SANDAG’s regional performance monitoring and congestion management programs. Funding of projects would still be based upon Board adopted criteria and project rankings.

The Regionally Significant Transportation Network will include existing and planned regional transit services, major highway corridors, and selected regional arterials that provide basic mobility throughout the region. Proposed highway corridors and regional transit services recommended for the Network are presented below. Recommendations for the Network’s regional arterials are being developed with the Cities/County Transportation Advisory Committee (CTAC) and will be presented at the September 12, 2002 Transportation Committee meeting. The full Network will be incorporated into the Draft 2030 RTP scheduled for release in September/October 2002.

Recommendation

The Transportation Committee is asked to review and comment on the highway corridors and regional transit services recommended for the Regionally Significant Transportation Network. Staff recommends that the Network include all highway corridors in the region (Attachment 1) and all Regional¹ and Corridor² Transit Services shown in Attachments 2 and 3. These corridors/services are consistent with the Mobility Network proposed in the preliminary draft RTP, MOBILITY 2030, presented to the Board at their August 2, 2002 meeting.

Options

- Include only freeways and conventional highways in the western portion of the region
- Include only freeways (and not conventional highways) in the Network
- Include only Regional Transit Services (and not Corridor Transit Services) in the Network
- Refer item back to staff with direction

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¹ Regional Transit Services are the highest speed, most limited stop services. These were defined as “Yellow Car” services in the Regional Transit Vision. The Coaster is a current example of Regional Transit Services.
² Corridor Transit Services are high speed services with slightly more frequent stops. These were defined as “Red Car” services in the Regional Transit Vision. The Trolley is a current example of Corridor Transit Services.
Discussion

Highway Corridors Proposed for the Network

Major highway corridors in the region include freeways and conventional highways, which are owned and operated by Caltrans. These major highway corridors currently carry about 27 million of the 67 million vehicle miles traveled in the region each day. The Mobility Network included in the preliminary draft RTP, MOBILITY 2030 includes an integrated network of Managed/High Occupancy Vehicle (HOV) Lanes and other improvements along these major highway corridors designed to improve system performance and accommodate high quality transit service throughout the region.

Staff recommends including all of the region’s freeways and conventional highways in the Regionally Significant Transportation Network (Attachment 1). This recommendation is consistent with the Congestion Management Program. Freeways include bridge and ramp interchanges with arterials, and include Interstates 5, 8, 15, and 805 as well as State Routes 11, 52, 54, 56, 67, 75, 76, 78, 94, 125, 163, 282, and 905 in the urban/suburban areas of the region. Conventional highways have traffic signal and stop sign controlled intersections with other streets, and include portions of State Routes 67, 76, 78, 79, 94, and 188 in the outlying, rural areas of the region.

An alternative to staff’s recommendation would be to only include freeways and not conventional highways in the Network, as these generally carry much higher traffic volumes than the conventional highways. Another alternative would be to only include freeways and conventional highways in the western portion of the region. These options are not recommended as the region’s conventional highways and highways in the eastern portion of the region provide basic mobility and connectivity throughout the region.

Major Transit Services Proposed for the Network

The Regional Transit Vision (RTV) approved by the SANDAG Board in November 2001 includes a number of Regional Transit Services (“Yellow Car”) and Corridor Transit Services (“Red Car”) that serve different market segments and provide fast and frequent services across the region. Yellow Car services generally operate on the region’s freeways or separate right-of-way and connect the major origins to the major destinations. Speeds for Yellow Car routes average 40 miles per hour because stops are limited and transit operates in Managed/HOV lanes to get around congested areas. An example of Yellow Car service in operation is the Coaster commuter rail.

Red Car services average 25 miles per hour, may operate on freeways or separate right-of-way, and rely on transit priority measures on major arterials to bypass congestion. An example of Red Car service in operation is the San Diego Trolley. Yellow and Red Car services are augmented with a network of local bus and shuttle routes, each serving different market needs but working together as an integrated transit network.

To develop the 2030 RTP, transit services in the RTV conceptual network were ranked using the transit evaluation criteria approved by the SANDAG Board in March 2002. Based on Board direction at the June 14, 2002 policy meeting on the 2030 RTP and working with staff from MTDB, NCTD, Caltrans, and various local jurisdictions, staff developed the Mobility Network for the August 2002 preliminary draft 2030 RTP. The Mobility Network achieves the Board’s policy objective of a double
digit mode share for transit for peak period home to work trips, and includes 18 new or improved Yellow and Red Car routes.

Staff recommends that all Yellow and Red Car services included in the 2030 Mobility Network be considered part of the Regionally Significant Transportation Network (Attachments 2 and 3). These services represent a rich network of high-end transit routes that serve our major employment areas, is focused around transit supportive land uses, provides for cross jurisdiction/community trip making, and provides good geographic coverage.

An alternative option to staff’s recommendation is to include only Yellow Car services (Attachment 2) in the Network. These are generally the fastest, most premium services that serve our major employment areas. This is not recommended because Red Car services also provide needed connectivity to Yellow Car services and provides for greater high-end transit coverage in the urban/suburban areas of the region. In addition, many Red Car services have higher ridership and/or better productivity and would require the same infrastructure as Yellow Car services to operate effectively, such as Managed/HOV lanes or dedicated transitways.

Regional Arterials Proposed for the Network

The 2020 RTP has a defined Regional Arterial System (RAS) that includes more than 120 arterials that cover more than 700 miles. The current Congestion Management Program (CMP) roadway network includes only 11 CMP arterials that cover over 100 miles. The arterial system included in the Regionally Significant Transportation Network should probably be less inclusive than those in the RAS, but a richer system than CMP network.

On July 25, 2002, CTAC first discussed regional arterials proposed for the Network. CTAC is looking to expand upon the Board approved criteria for identifying the RAS, based upon direction provided by the Board at the June 14, 2002 Policy Development Board meeting. This discussion will continue at CTAC’s August 22, 2002 meeting, and recommendations for the arterial component of the Regionally Significant Transportation Network will be presented at the Transportation Committee’s September 12, 2002 meeting.
Highway Corridors*
August 2002

- Freeways
- Future Freeways
- Conventional Highways

* Includes all freeways and conventional highways in east county

MILES

KILOMETERS

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0 3.18 9.6

PACIFIC OCEAN

SAN DIEGO REGION

MAP AREA

San Diego Region

Camp Pendleton

San Marcos

Vista

Oceanside

Carlsbad

Solana Beach

Encinitas

Del Mar

Poway

National City

La Mesa

Santee

El Cajon

Lemon Grove

La Jolla

Coronado

National City

Chula Vista

Imperial Beach

Tijuana, B.C.

UNITED STATES

MEXICO

SAN DIEGO

ATTACHMENT 1
2030 TRANSIT NETWORK
Regional Services
August 2002

All Day Service
Peak Period Only

MILES
0 3.18 6
KILOMETERS
0 3.18 9.6

SANDAG
San Diego Region
MAP AREA
UNITED STATES
MEXICO
PACIFIC OCEAN

Oceanside
Carlsbad
Encinitas
Del Mar
Solana Beach
Poway
San Diego
Coronado
Imperial Beach
Lemon Grove
La Mesa
Santee
El Cajon
Chula Vista
National City
Imperial Beach
Tijuana, B.C.
Camp Pendleton

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MOBILITY 2030: REGIONAL TRANSPORTATION PLAN FOR THE SAN DIEGO REGION - PRELIMINARY DRAFT

Introduction

The Regional Transportation Plan (RTP) is a forward-thinking blueprint designed to address the mobility challenges created by our region’s growing population. Required by state and federal regulations, this long-range plan contains an integrated set of public policies, strategies, and investments to maintain, manage, and improve the surface transportation system in the San Diego region through the year 2030. This latest version of the RTP is entitled MOBILITY 2030. This preliminary draft is based on the Reasonably Expected Revenue scenario, which includes $41 billion of projected revenues to fund the recommended improvements.

Under development for about one year, MOBILITY 2030 is the product of collaboration between SANDAG and its transportation partners: local jurisdictions, the San Diego Metropolitan Transit Development Board (MTDB), the North San Diego County Transit District (NCTD), and Caltrans. A 2030 RTP Working Group also assisted in the Plan’s development, providing input to SANDAG’s Transportation Committee. Created in October 2001, the 2030 RTP Working Group consists of diverse representatives from community, environmental, economic development, and building interest groups, as well as staff from local agencies.

Discussion

A Plan for Better Mobility

SANDAG last updated the RTP in 2000. Since then, the Plan has undergone significant changes. The new plan, MOBILITY 2030, was developed around four main components: Land Use, Systems Development, Systems Management, and Demand Management. Each component has a unique role in improving mobility and travel in the San Diego region through the year 2030. Various sections in MOBILITY 2030 highlight the projects, programs, and strategies included in the Plan that address each component.

In developing MOBILITY 2030, past guidance from the SANDAG Board on a variety of land use and transportation issues was considered, including Board policy direction on the 2030 RTP provided at the November 2001 and June 2002 policy development meetings. At the core of MOBILITY 2030 are the seven RTP goals and related policy objectives that will help achieve the goals (see Attachment 1).

Highlights from the Plan include:

- **Integrates Land Use and Transportation** – MOBILITY 2030 is based on the 2030 Smart Growth land use distribution scenario. To help strengthen the land use-transportation connection, the Plan calls for offering regional transportation funding as an incentive – or “carrot” – to achieve smarter, more sustainable land use. For the first time, it proposes an innovative, 25 million five-year pilot program to
provide grants to local jurisdictions for small-scale transportation improvements or incentives that encourage compatible development near transit stations and enhance community livability.

• **Incorporates the Regional Transit Vision** – Per the Board’s direction in November 2001, the Regional Transit Vision (RTV) is used as a framework for MOBILITY 2030. The RTV is a 21st century strategy to develop a seamless public transportation system for the region – one that is integrated with our growing communities and that ultimately is competitive with driving a car during rush hours. By implementing the projects in the Plan, the region would achieve a double-digit transit mode share during peak periods, and would improve transit travel times to major job centers such as Sorrento Valley/Sorrento Mesa, downtown San Diego, Kearny Mesa, Palomar Airport Road, and Otay Mesa. By realizing these goals, the San Diego region’s transit system would rival those of major metropolitan areas like San Francisco, Boston, and Philadelphia.

• **Provides Viable Travel Choices** – MOBILITY 2030 shifts the focus of the Regional Transportation Plan from trying to build our way out of congestion to providing viable travel choices during peak periods when most of our congestion occurs. This includes making it more convenient, safe, and fast to take transit, carpool, or vanpool during peak periods, or bike or walk to work. In our fast-paced world, the Plan recognizes that saving time is a very real and powerful incentive for encouraging alternative, more sustainable travel choices. MOBILITY 2030 improves travel times for transit and high occupancy vehicles (HOVs) to major job centers to make these modes competitive.

Next Steps

Following Board acceptance for distribution, the preliminary draft will be circulated to local jurisdictions, MTDB, NCTD, Caltrans, and the 2030 RTP Working Group, and posted on the SANDAG Web site. The Draft 2030 RTP as well as the Draft Environmental Impact Report (EIR) for the 2030 RTP would be issued for public review and comment in September/October 2002.

The Draft 2030 RTP will include two additional financial plans: (1) the Revenue Constrained plan required by state and federal law, and (2) an Unconstrained Revenue scenario that will identify the total funding needed to fully implement all of the programs, projects, and services envisioned. The final 2030 RTP would be presented to the Board for adoption in February/March 2003.

Keep San Diego Moving Campaign

Public outreach is a vital component of MOBILITY 2030. In June 2002, an aggressive campaign under the overall theme – Keep San Diego Moving – was launched to raise awareness and solicit feedback on MOBILITY 2030. Outreach activities will continue through 2002. The 2030 RTP public outreach program is described in more detail in a related Board report (agenda item no. 22) on SANDAG’s transportation marketing, public outreach, and involvement program.

GARY L. GALLEGOS
Executive Director

Attachment and Endorse

Key Staff Contact: Kim Kawada
(619) 595-5394; kka@sandag.org

Funds are budgeted in Work Element #3.01
### MOBILITY 2030

**MAJOR GOALS AND POLICY OBJECTIVES**

<table>
<thead>
<tr>
<th>GOAL</th>
<th>POLICY OBJECTIVES</th>
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<tbody>
<tr>
<td>Mobility</td>
<td>No One Size Fits All - Tailor transportation modal improvements to reflect supporting land uses in major travel corridors.</td>
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<td>The Most Bang for the Buck - Make the Regionally Significant Transportation Network the highest priority for regional transportation funding.</td>
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<td>Move People, not Just Vehicles - Minimize drive alone travel by making it fast, convenient, and safe to carpool, vanpool, ride transit, walk, and bike.</td>
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<td>Better Manage Congestion - Better respond to traffic congestion through greater emphasis on the Congestion Management Program.</td>
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<td>Accessibility</td>
<td>Boost Transit Ridership - Achieve a double-digit transit mode share during peak periods, with competitive transit travel times to major job centers.</td>
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<td>Let's Walk and Bike - Encourage walkability and better bicycle access within our local communities.</td>
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<td>Reliability</td>
<td>Inform Travelers - Apply new technologies and management strategies to make travel services more reliable and convenient and to reduce non-recurrent congestion.</td>
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<td>Efficiency</td>
<td>What Gets Measured Gets Managed - Measure the performance of the regional transportation system on a regular basis and manage its efficiency.</td>
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<td>Relieve the Pressure - Develop cost-effective, voluntary incentive programs for major employers, schools, and residential areas with a goal of reducing peak period travel demand by at least five percent by 2030.</td>
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<td>Livability</td>
<td>Put Transit Where It Works - Focus transit improvements in areas with compatible land uses that support an efficient transit system.</td>
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<td>Smart Growth Carrots - Use regional transportation funding as an incentive for smarter land uses.</td>
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<td>Sustainability</td>
<td>Discourage Sprawl - Focus roadway and transit improvements in urban/suburban areas, and away from the region’s rural areas.</td>
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<td>Think Before You Build - Evaluate all reasonable non-capital transportation improvement strategies before pursuing major expansions to roadway or fixed guideway capacity.</td>
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<tr>
<td>Equity</td>
<td>Play Fair - Provide equitable levels of transportation services for low-income, minority, and elderly and disabled persons.</td>
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