AGENDA HIGHLIGHTS

- AMENDMENT TO THE FY 2010 BUDGET: DESTINATION LINDBERGH PLAN IMPLEMENTATION
- PROPOSED FUND EXCHANGE WITH NORTH COUNTY TRANSIT DISTRICT TO PROVIDE OPERATING SUPPORT
- TransNet ENVIRONMENTAL MITIGATION PROGRAM FUNDING
Welcome to SANDAG. Members of the public may speak to the Board of Directors on any item at the time the Board is considering the item. Please complete a Speaker’s Slip, which is located in the rear of the room, and then present the slip to the Clerk of the Board seated at the front table. Also, members of the public are invited to address the Board on any issue under the agenda item entitled Public Comments/Communications/Member Comments. Speakers are limited to three minutes. The Board of Directors may take action on any item appearing on the agenda.

This agenda and related staff reports can be accessed at www.sandag.org under Meetings on the SANDAG Web site. Public comments regarding the agenda can be forwarded to SANDAG via the e-mail comment form also available on the Web site. E-mail comments should be received no later than 12 noon, two working days prior to the Board of Directors meeting.

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## BOARD OF DIRECTORS AGENDA
Friday, September 25, 2009

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>RECOMMENDATION</th>
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</thead>
<tbody>
<tr>
<td>+1.</td>
<td>APPROVAL OF MEETING MINUTES</td>
</tr>
<tr>
<td>+A.</td>
<td>JULY 10, 2009, BOARD POLICY MEETING MINUTES</td>
</tr>
<tr>
<td>+B.</td>
<td>JULY 24, 2009, MEETING MINUTES</td>
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<tr>
<td>2.</td>
<td>PUBLIC COMMENTS/COMMUNICATIONS/MEMBER COMMENTS</td>
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<tr>
<td></td>
<td>Members of the public shall have the opportunity to address the Board on any issue within the jurisdiction of SANDAG that is not on this agenda. Anyone desiring to speak shall reserve time by completing a &quot;Request to Speak&quot; form and giving it to the Clerk of the Board prior to speaking. Public speakers should notify the Clerk of the Board if they have a handout for distribution to Board members. Speakers are limited to three minutes. Board members also may provide information and announcements under this agenda item.</td>
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<tr>
<td>+3.</td>
<td>ACTIONS FROM POLICY ADVISORY COMMITTEES</td>
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<td></td>
<td>This item summarizes the actions taken by the Borders Committee on July 24, the Transportation and Regional Planning Committees on July 31, the Executive Committee on September 11, and the Transportation and Public Safety Committees on September 18, 2009.</td>
</tr>
<tr>
<td>4 through 11</td>
<td>CONSENT ITEMS (4 through 11)</td>
</tr>
<tr>
<td>+4.</td>
<td>TransNet ENVIRONMENTAL MITIGATION PROGRAM (EMP) STATUS REPORT (Keith Greer)*</td>
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<tr>
<td></td>
<td>This item outlines the status, successes, and challenges of implementing the TransNet Environmental Mitigation Program under the Memorandum of Agreement signed in March 2008 by the Board of Directors. This report has been presented to the EMP Working Group, Independent Taxpayer Oversight Committee, and the Regional Planning and Transportation Committees as an information item.</td>
</tr>
<tr>
<td>+5.</td>
<td>SANDAG FEDERAL FFY 2009-2010 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM GOAL FOR FTA ASSISTED CONTRACTS AND ANNUAL ANTICIPATED DBE PARTICIPATION LEVEL FOR FHWA ASSISTED (VIA CALTRANS) PROCUREMENTS (Elaine Richardson)</td>
</tr>
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<td></td>
<td>As recipients of U.S. Department of Transportation funds through Caltrans and the Federal Transit Administration (FTA), SANDAG is required to develop and submit annual Disadvantaged Business Enterprise (DBE) goals. The Board of Directors is asked to approve the FY 2010 Annual Anticipated DBE Participation Level for Federal Highway Administration-assisted projects and an Overall Annual DBE Goal for FTA-assisted projects, as no comments were received during the 45-day public comment period.</td>
</tr>
</tbody>
</table>
+6. SOUTHERN CALIFORNIA DISADVANTAGED BUSINESS ENTERPRISE DISPARITY STUDY (Elaine Richardson)*

SANDAG must implement the Federal Disadvantaged Business Enterprise (DBE) Program to receive U.S. Department of Transportation (USDOT) funds from the Federal Transit Administration (FTA). Recent court decisions and guidance from USDOT have led SANDAG to reexamine how it implements its DBE Program. Using the disparity study conducted by Caltrans, SANDAG has completed its reevaluation of the DBE Program for Federal Highway Administration-funded projects as described in the previous agenda item. SANDAG has joined four Southern California public transportation agencies in a joint DBE disparity study to reevaluate its DBE Program for FTA funded projects. The Board of Directors is asked to accept the Southern California DBE Disparity Study relating to FTA assisted projects for distribution for purposes of a 45-day public comment period.

+7. ANNUAL RIDESHARE WEEK (Thomas Bruccoleri) APPROVE

Each year, SANDAG sponsors Rideshare Week in the San Diego region as a way of highlighting alternative modes to the solo commute. The Board of Directors is asked to approve Resolution No. 2010-03, proclaiming the week of October 5–9, 2009, as Rideshare Week and to encourage member agencies to approve similar proclamations. The report also includes information on the region’s transportation demand management strategies included in the new iCommute Program.

+8. QUARTERLY INVESTMENT REPORT FOR PERIOD ENDING JUNE 30, 2009, AND ANNUAL INTEREST RATE SWAP EVALUATION (Lauren Warrem)*

The SANDAG Investment Policy requires that the Board of Directors be provided a quarterly report of investments held by SANDAG. This report includes all money under the direction or care of SANDAG as of June 30, 2009. Board Policy No. 032: San Diego County Regional Transportation Commission Interest Rate Swap Policy also requires an annual report and evaluation of all outstanding interest rate swaps.

+9. QUARTERLY PROGRESS REPORT ON TRANSPORTATION PROJECTS – APRIL TO JUNE 2009 (José A. Nuncio)*

This quarterly report summarizes the current status of major highway, transit, arterial, traffic management, and transportation demand management (TDM) projects in SANDAG’s five-year Regional Transportation Improvement Program (RTIP) for the period April to June 2009.

+10. REPORT SUMMARIZING DELEGATED ACTIONS TAKEN BY EXECUTIVE DIRECTOR (Lauren Warrem)

In accordance with SANDAG Board Policy Nos. 003 (Investment Policy), 017 (Delegation of Authority), and 024 (Procurement and Contracting-Construction), this report summarizes certain delegated actions taken by the Executive Director since the last Board meeting.
11. **REPORTS ON MEETINGS AND EVENTS ATTENDED ON BEHALF OF SANDAG (Kim Kawada)**

Board members will provide brief reports orally or in writing on external meetings and events attended on behalf of SANDAG since the last Board of Directors meeting. There are no external meetings or events to report this month.

**CHAIR’S REPORT (12 through 13)**

12. **AMERICAN PLANNING ASSOCIATION CALIFORNIA: 2009 DISTINGUISHED LEADERSHIP AWARD**

At its September 2009 annual conference, the California Chapter of the American Planning Association awarded the 2009 Distinguished Leadership Award to Jane Clough-Riquelme, SANDAG Tribal Liaison. The Reservation Transportation Authority nominated Ms. Clough-Riquelme for this award, commending her ability to facilitate dialogue between tribal nations and public agencies and her high level of respect for tribal people, customs, and institutions.

13. **APPOINTMENT OF NOMINATING COMMITTEE FOR SANDAG BOARD OFFICERS**

In accordance with the SANDAG Bylaws, the Chair will appoint up to a six-person nominating committee for Board officers, made up of Board members from each of the four subregions and a member from the City of San Diego and the County of San Diego. However, the nominating committee shall not include Board members from jurisdictions that have applicants for the Chair or a Vice Chair position on the Board of Directors. The nominating committee will submit its slate nominees, in writing, for mailing to Board members in or around November.

**REPORTS (14 through 23)**

14. **AMENDMENT TO THE FY 2010 BUDGET: DESTINATION LINDBERGH PLAN IMPLEMENTATION (Second Vice Chair Jack Dale; Dave Schumacher)**

The San Diego County Regional Airport Authority is moving ahead with advanced planning for the consolidated rental car facility and other on-airport improvements for Phase 1 of the Destination Lindbergh Plan. It is important for SANDAG to start advanced planning work for Phase 1 intermodal transportation center, and for Caltrans to begin developing capital cost estimates for the freeway connecting ramps. The Board of Directors is asked to: (1) approve a budget amendment in the amount of $1,132,137 for OWP #31011, Destination Lindbergh Master Plan for FY 2010 and FY 2011 to allow for advanced planning work on Destination Lindbergh Phase 1 improvements and developing capital costs for the freeway ramps (see Attachment 1); (2) authorize the Executive Director to negotiate and execute an agreement with the City of San Diego to accept the $200,000 contribution; and (3) approve the programming of contingency reserve in the amount of $138,799, in accordance with Board Policy No. 030.
+15.  PROPOSED FUND EXCHANGE WITH NORTH COUNTY TRANSIT DISTRICT TO PROVIDE OPERATING SUPPORT (Second Vice Chair Jack Dale, Transportation Committee Chair; Sookyung Kim)*

At its April 29, 2009, meeting, the Board of Directors received a report that discussed possible short-term alternatives that could provide “bridge funding” for public transit operations to meet operating shortfalls. The North County Transit District (NCTD) has requested to exchange its federal funding with more flexible TransNet funds. The Transportation Committee recommends that the Board of Directors approve the request by the NCTD Board of Directors for an exchange of FTA Section 5307 funding in the amount of $1,313,000 with a like amount of TransNet funds.

+16.  INTERSTATE 15 CORRIDOR EXPRESS LANES, STATE ROUTE 78 – NORDAHL ROAD BRIDGE REPLACEMENT (Second Vice Chair Jack Dale, Transportation Committee Chair; Gustavo Dallarda and Richard Chavez)*

The Nordahl Road Bridge over State Route 78 (SR 78), located just west of the SR 78 interchange with Interstate 15 (I-15), ultimately requires full reconstruction in order to bring it to full design standards. The cities of Escondido and San Marcos have agreed to contribute to the construction of the new bridge as part of a development agreement that requires the addition of capacity to the structure. To avoid widening a bridge that ultimately needs to be replaced, the Transportation Committee recommends that the Board of Directors authorize the Executive Director: (1) to execute an agreement that provides a commitment of $10 million from the cities of Escondido and San Marcos to the Nordahl Road bridge project and a transfer by SANDAG of $2 million in savings from favorable bids received on the I-15 Express Lanes North segment to the design of the proposed Nordahl Road bridge replacement project; and (2) execute a transfer of $1 million in savings from favorable bids received on the I-15 Express Lanes North segment to Caltrans under a separate agreement for the design of the westbound auxiliary lane between I-15 and Nordahl Road.

+17.  2010 ANNUAL SANDAG BOARD SUMMIT (First Vice Chair Jerome Stocks; Colleen Windsor)

The 2010 SANDAG Board of Directors Summit is scheduled from January 28 to January 29. A contract is being negotiated to hold the Summit in the community of Lakeside. The primary objective of this public meeting is to afford participants the opportunity to discuss strategies for some of the agency’s more important regional policies and programs, and develop ideas for the future direction of the agency. The Executive Committee recommends that the Board of Directors approve the topics listed under the Discussion section of the report as the basis for developing the Summit agenda and format for the 2010 SANDAG Board of Directors Summit.
+18. TransNet EMP FIVE-YEAR FUNDING STRATEGY UPDATE, FY 2010 FUNDING ALLOCATION, AND FY 2010 LAND MANAGEMENT GRANT CRITERIA (Imperial Beach Mayor Jim Janney, Regional Planning Committee Chair; Keith Greer)*

The Regional Planning and Transportation Committees recommend that the Board of Directors: (1) approve the updated Five-Year Conceptual Funding Strategic Plan, the proposed management and monitoring activities and budget for FY 2010 totaling $4 million, and, subject to Board Policy No. 017, authorize staff to solicit proposals and enter into contracts or amend existing contracts accordingly; and (2) approve the modifications to the submittal and evaluation criteria for FY 2010 land management grants as described in the report.

+19. FINAL REGIONAL ALTERNATIVE FUELS, VEHICLES, AND INFRASTRUCTURE REPORT (Imperial Beach Mayor Jim Janney, Regional Planning Committee Chair; Andrew Martin)

The Board of Directors approved distribution of the draft Regional Alternative Fuels, Vehicles, and Infrastructure Report at its June 12, 2009, meeting. SANDAG has received public comments and stakeholder input, and staff has prepared a final report. The Regional Planning Committee recommends that the Board of Directors accept, in substantially the same form as attached, the Final Regional Alternative Fuels, Vehicles, and Infrastructure Report.

+20. THE CONNECT INNOVATION REPORT (Duane Roth, CONNECT Chief Executive Officer)

This item includes a presentation on the CONNECT Innovation Report (CIR), an economic indicator of the economic strength and impact of the innovation economy in San Diego. Published each quarter by CONNECT, the CIR includes new innovation start-ups, angel and venture capital investment, new patent applications and patents granted, research grants, research employment, and business survival rates. Data also is gathered on new innovation business creation in key regions across the state for comparative purposes.

+21. FINANCIAL MARKET STATUS (Lauren Warrem and Marney Cox)

This monthly briefing is designed to keep the Board of Directors informed about the latest developments in the financial markets, the economy, and revenue forecasts, and the strategies we are exploring and implementing to minimize possible impacts to SANDAG.

+22. COMPASS CARD STATUS UPDATE (James Dreisbach-Towle)

Staff will provide the Board of Directors with an update on recent Compass Card project activities and the status of the planned public launch.

+23. CLOSED SESSION-CONFERENCE WITH LEGAL COUNSEL IN ANTICIPATION OF LITIGATION PURSUANT TO GOVERNMENT CODE SECTION 54956.9(b)(3)(C) -THREE POTENTIAL CASES
24. UPCOMING MEETINGS

The next Policy meeting is scheduled for Friday, October 9, 2009, at 10 a.m. The next Business meeting is scheduled for Friday, October 23, 2008, at 9 a.m.

25. ADJOURNMENT

+ next to an agenda item indicates an attachment
* next to an agenda item indicates a San Diego Regional Transportation Commission item
BOARD OF DIRECTORS DISCUSSION AND ACTIONS

JULY 10, 2009

Chair Lori Holt Pfeiler (Escondido) called the meeting of the SANDAG Board of Directors to order at 10:13 a.m. The attendance sheet for the meeting is attached.

1. PUBLIC COMMENTS/COMMUNICATIONS/MEMBER COMMENTS

Joyce Hackley-Smith, a member of the public, provided comments related to bus service, and the difficulty she had recently with purchasing a bus pass. She also noted the absence of transportation kiosks in downtown San Diego, and the lack of direct transportation options from the airport or train station to the cruise terminal.

Pedro Orso-Delgado mentioned that the Caltrans District 11 office would be closed the first, second, and third Fridays of the month until the state budget is approved.

CHAIR’S REPORT (2)

2. RECOGNITION OF DIANE EIDAM, RETIRED SANDAG CHIEF DEPUTY EXECUTIVE DIRECTOR

Chair Pfeiler recognized Diane C. Eidam, former Chief Deputy Executive Director, and presented her with a plaque honoring her service and commitment to SANDAG.

REPORT (3)

3. 2050 REGIONAL GROWTH FORECAST (ACCEPT)

In preparation for the 2050 Regional Transportation Plan (RTP), work is underway to develop the 2050 Regional Growth Forecast. On June 12, 2009, the Board of Directors reviewed the draft land use scenarios that were developed in collaboration with the Regional Planning Technical Working Group. The Board directed staff to return with additional information about possible transportation, transportation demand management (TDM), and technology measures that could be considered in the 2050 RTP as well as more information about the format and materials to be presented in the public workshops.

Lemon Grove Councilmember Jerry Jones, Regional Planning Committee Vice Chair, introduced the item.
Beth Jarosz, Associate Research Analyst, provided the staff report.

Chair Pfeiler noted there was one request to speak on this item.

Duncan McFetridge, representing Save Our Forests and Ranchlands (SOFAR), expressed concern about the “toolbox” approach being presented by staff. He suggested that the Board approve a resolution of intent that the transit-based infill scenario is preferable.

Board discussion followed.

**Action:** Upon a motion by Council President Ben Hueso (City of San Diego) and second by Councilmember Lesa Heebner (Solana Beach), the SANDAG Board of Directors accepted the revised 2050 Regional Growth Forecast outreach plan. The Board directed staff to contact each jurisdiction individually and schedule briefings on the 2050 Regional Growth Forecast with the respective council/board (or by other means if preferred by the jurisdiction), whereby each jurisdiction would have the option to select a preferred 2050 land use scenario. Staff also was directed to report back at the July 24, 2009, Board of Directors meeting on the status of the briefings scheduled to date. Yes – 16 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent – National City, Poway, and Santee.

4. **UPCOMING MEETINGS**

The August 14 and August 28 Board of Directors meetings have been cancelled. The next Policy meeting is scheduled for Friday, September 11, 2009, at 10 a.m., and the next Board of Directors Business meeting is scheduled for Friday, September 25, 2009, at 9 a.m.

5. **ADJOURNMENT**

The meeting was adjourned at 11:58 a.m.

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<thead>
<tr>
<th>JURISDICTION/ ORGANIZATION</th>
<th>NAME</th>
<th>ATTENDING</th>
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<tbody>
<tr>
<td>City of Carlsbad</td>
<td>Matt Hall (Member)</td>
<td>Yes</td>
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<tr>
<td>City of Chula Vista</td>
<td>Cheryl Cox (Primary)</td>
<td>Yes</td>
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<td>City of Coronado</td>
<td>Carrie Downey (Primary)</td>
<td>Yes</td>
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<td>City of Del Mar</td>
<td>Crystal Crawford (Primary)</td>
<td>Yes</td>
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<td>City of El Cajon</td>
<td>Mark Lewis (Primary)</td>
<td>Yes</td>
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<tr>
<td>City of Encinitas</td>
<td>Jerome Stocks, 1st Vice Chair (Primary)</td>
<td>Yes</td>
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<tr>
<td>City of Escondido</td>
<td>Lori Holt Pfeiler, Chair (Primary)</td>
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<tr>
<td>City of Imperial Beach</td>
<td>Patricia McCoy (1st Alt.)</td>
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<tr>
<td>City of La Mesa</td>
<td>Art Madrid (Member)</td>
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<tr>
<td>City of Lemon Grove</td>
<td>Jerry Jones (1st Alt.)</td>
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<td>City of National City</td>
<td>Ron Morrison (Member)</td>
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<td>City of Oceanside</td>
<td>James Wood (Member)</td>
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<td>Don Higginson (Primary)</td>
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<td>City of San Diego - A</td>
<td>Anthony Young (1st Alt.)</td>
<td>Yes</td>
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<tr>
<td>City of San Diego - B</td>
<td>Ben Hueso (Primary, Seat B)</td>
<td>Yes</td>
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<tr>
<td>City of San Marcos</td>
<td>Jim Desmond (Member)</td>
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<td>City of Santee</td>
<td>Jack Dale (2nd Vice Chair)</td>
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<tr>
<td>City of Solana Beach</td>
<td>Lesa Heebner (Primary)</td>
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<tr>
<td>City of Vista</td>
<td>Bob Campbell (1st Alt.)</td>
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<td>County of San Diego - A</td>
<td>Dianne Jacob (Primary, Seat A)</td>
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<tr>
<td>County of San Diego - B</td>
<td>Pam Slater-Price (Primary, Seat B)</td>
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<td>Caltrans</td>
<td>Pedro Orso-Delgado (1st. Alt.)</td>
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<td>MTS</td>
<td>Ron Roberts (1st. Alt.)</td>
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<td>NCTD</td>
<td>Bob Campbell (Primary)</td>
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<td>Imperial County</td>
<td>Victor Carrillo (Member)</td>
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<td>US Dept. of Defense</td>
<td>CAPT Steve Wirshing (Member)</td>
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<td>SD Unified Port District</td>
<td>Scott Peters (Member)</td>
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<td>SD County Water Authority</td>
<td>Mark Muir (Primary)</td>
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<td>Baja California/Mexico</td>
<td>Remedios Gómez-Arama (Member)</td>
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<tr>
<td>Southern California Tribal Chairmen's Association</td>
<td>Robert H. Smith (Member)</td>
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Chair Lori Holt Pfeiler (Escondido) called the meeting of the SANDAG Board of Directors to order at 9:07 a.m. The attendance sheet for the meeting is attached.

1. **APPROVAL OF MEETING MINUTES (APPROVE)**

   **Action**: Upon a motion by Mayor Mark Lewis (El Cajon), and a second by Mayor Don Higginson (Poway), the Board of Directors approved the minutes from the June 12 and June 26, 2009, meetings.

2. **PUBLIC COMMENTS/COMMUNICATIONS/MEMBER COMMENTS**

   Chair Pfeiler provided a status on the meetings that have been scheduled with area city councils and the Board of Supervisors regarding the 2050 Regional Growth Forecast.

   Mayor Jim Wood (Oceanside) mentioned the tour to Camp Pendleton on Friday, August 8, 2009, and encouraged Board members to attend.

   Pedro Orso-Delgado, Caltrans District 11, announced that a new State Route (SR) 52 eastbound lane would be opened in August.

   Richard Eckfield, a member of the public, provided an option to consider with regard to the Del Mar seasonal rail platform and San Dieguito Bridge projects.

   Clive Richard, a member of the public, commented on a recent appellate court decision that the State Legislature's take of funds from the public transportation account violated the State Constitution.

   Helen Nielsen-Eckfield, a member of the public, referred to an article in the Del Mar Village Voice, Racing Special Session, July 16-19, 2009, regarding the Del Mar rail platform project.

   Nampet Michelsen, US Census Bureau, said that the 2010 Census effort has brought close to 1,000 jobs to San Diego. Many of the region's cities have strongly collaborated with them on this effort. They will now move forward with a Regional Complete Count Committee (CCC) strategy. The State of California has scheduled a statewide CCC meeting on August 19, 2009, at the Jacob Center. She encouraged each SANDAG jurisdiction to have its staff add this event to their calendars.
Bob Campbell, Chair of the North County Transit District (NCTD), stated that $5 million-$10 million has been spent over the past four years making repairs on the San Dieguito bridge trestles in Del Mar. Most of the trestles need to be replaced. He asked the Board of Directors to keep in mind future funding for trestle replacement.

3. ACTIONS FROM POLICY ADVISORY COMMITTEES (APPROVE)

This item summarizes the actions taken by the Executive Committee on July 10, and the Transportation and Public Safety Committees on July 17, 2009.

Action: Upon a motion by Supervisor Pam Slater-Price (County of San Diego) and second by Mayor Mary Sessom (Lemon Grove), the Board of Directors approved the actions taken by the Policy Advisory Committees at the meetings noted above. Yes – 18 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent – Coronado.

CONSENT ITEMS (4 through 9)

Chair Pfeiler announced that Item No. 6 would be pulled from the Consent Calendar.

4. ANNUAL REVIEW AND PROPOSED AMENDMENTS TO BOARD POLICY NO. 003: INVESTMENT POLICY, AND ANNUAL REVIEW OF BOARD POLICY NO. 032: SAN DIEGO COUNTY REGIONAL TRANSPORTATION COMMISSION INTEREST RATE SWAP POLICY (APPROVE)

The required annual review of Board Policy Nos. 003: Investment Policy, and 032: San Diego County Regional Transportation Commission Interest Rate Swap Policy has been conducted by the Director of Finance and the SANDAG investment advisor, Public Financial Management (PFM). There are two recommended changes to Policy No. 003, and no recommended changes to Policy No. 032. The Executive Committee recommends that the Board of Directors approve the proposed changes to SANDAG Board Policy No. 003 (Investment Policy), as shown in Attachment 2 of this agenda report.

5. SANDAG FEDERAL FY 2009-2010 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM GOAL FOR FTA-ASSISTED CONTRACTS AND ANNUAL ANTICIPATED DBE PARTICIPATION LEVEL FOR FHWA-ASSISTED (VIA CALTRANS) PROCUREMENTS (APPROVE)

As recipients of U.S. Department of Transportation (USDOT) funds through Caltrans and the Federal Transit Administration (FTA), SANDAG is required to develop and submit annual Disadvantaged Business Enterprise (DBE) goals. The Board of Directors is asked to accept and release the Federal Fiscal Year 2009/2010 Annual Anticipated DBE Participation Level and Overall Annual DBE Goal for a 45-day public comment period as follows: (1) for FTA-assisted Projects: Overall Annual DBE Goal: 6 percent; and for Federal Highway Administration (FHWA)-assisted Projects: Annual Anticipated DBE Participation Level: 5 percent.
UNIVERSITY TOWNE CENTRE TRANSIT CENTER/SUPERLOOP PROJECT FUNDING EXCHANGE (APPROVE)

The Transportation Committee and the Independent Taxpayer Oversight Committee recommend that the Board of Directors: (1) direct staff to take the necessary programming actions to exchange $5.7 million in Federal Transit Administration Section 5309 New Starts funds, approved for use by the UTC Transit Center Project, with TransNet funds programmed for the SuperLoop Project; and (2) authorize the Executive Director to initiate all required actions to negotiate and execute one or more agreements between SANDAG and the developer in support of implementation of the UTC Transit Center.

REPORT SUMMARIZING DELEGATED ACTIONS TAKEN BY EXECUTIVE DIRECTOR (INFORMATION)

In accordance with SANDAG Board Policy Nos. 003 (Investment Policy), 017 (Delegation of Authority), and 024 (Procurement and Contracting-Construction), this report summarizes certain delegated actions taken by the Executive Director since the last Board meeting.

REPORTS ON MEETINGS AND EVENTS ATTENDED ON BEHALF OF SANDAG (INFORMATION)

Board members will provide brief reports orally or in writing on external meetings and events attended on behalf of SANDAG since the last Board of Directors meeting.

MID-COAST CORRIDOR TRANSIT PROJECT WORKING GROUP (APPROVE)

The Transportation Committee recommends that the Board of Directors approve the selected candidates to serve on the Mid-Coast Corridor Transit Project Working Group.

Supervisor Slater-Price asked that Lani Lutar, representing the San Diego County Taxpayers Association, be added to this Working Group.

CHAIR’S REPORT (10 through 11)

PERFORMANCE EVALUATION OF EXECUTIVE DIRECTOR (APPROVE)

Pursuant to the employment agreement with the Executive Director, the Board of Directors shall annually review his performance. If the Executive Director’s performance is determined
to be satisfactory, the Board of Directors shall adjust his base salary in accordance with the employment agreement provisions. The Executive Committee recommends that the Board of Directors approve the Executive Director’s Performance Evaluation for the period July 2008 to June 2009 and Performance Objectives for the period July 2009 to June 2010.

**Action:** Upon a motion by Chair Pfeiler and second by Mayor Cheryl Cox (Chula Vista), the Board of Directors approved the Executive Director’s Performance Evaluation for the period July 2008 to June 2009 and Performance Objectives for the period July 2009 to June 2010. Yes - 18 (weighted vote, 100%). No - 0 (weighted vote, 0%). Abstain - 0 (weighted vote, 0%). Absent - Coronado.

11. **QUALITY OF LIFE FUNDING STRATEGY UPDATE (DISCUSSION/POSSIBLE ACTION)**

Since summer 2008, the Quality of Life Ad Hoc Steering Committee has been discussing efforts to meet the funding needs for regional habitat preservation, shoreline management, water quality enhancement, and transit operations. Chair Lori Pfeiler, who chairs the Ad Hoc Steering Committee, provided the Board of Directors with an update on the status of those efforts and an overview of what is being proposed in FY 2010. The Quality of Life Ad Hoc Steering Committee recommends that the Board of Directors amend the TransNet Extension Ordinance to extend the deadline for acting on additional regional funding measures to meet the long-term requirements for implementing habitat conservation plans in the San Diego region from six to eight years. If the Board agrees with this recommendation, it should request staff to return with a draft Ordinance amendment for consideration by the Board at a future meeting.

Kathy Viatella, The Nature Conservancy, provided a status report.

**Public comments:**

Michael Beck, Endangered Habitats League, commented on the issue of self-sufficiency for our region and voiced support for the recommendation to extend the deadline to act on a regional measure.

Craig Benedetto, Alliance for Habitat Conservation, agreed with the recommendation to amend the TransNet Ordinance to extend the deadline to 2012 for acting on a regional funding measure, and emphasized the need to educate the public on why this is needed.

Gary Gallegos, Executive Director, referred to a handout about how we can organize this effort to allow for public outreach and education for a ballot measure that would occur in 2010.

Board members provided comments.

**Action:** Upon a motion by Mayor Crystal Crawford (Del Mar) and second by Supervisor Slater-Price, the Board of Directors directed staff to return with a draft Ordinance amendment to extend the deadline for acting on additional regional funding measures to meet the long-term requirements for implementing habitat conservation plans in the San Diego region from six to eight years for consideration by the Board at a future meeting.
Yes – 19 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent - None.

REPORTS (12 through 20)

18. NAVY METRO TRANSPORTATION DEMAND MANAGEMENT INITIATIVE (INFORMATION) –9:30 A.M. TIME CERTAIN

The United States Navy, as one of the largest employers in the San Diego region, has partnered with RideLink and the Metropolitan Transit System (MTS) to provide an analysis of commuter travel activity between the major naval housing areas and naval bases/facilities in the San Diego metropolitan area. A survey to measure interest and define transportation demand management (TDM) alternatives specific to the Navy's Murphy Canyon Housing has been completed. Staff will provide an overview of the survey results, discuss the logistics of customizing the service to maximize ridership based on the survey, and present next steps to the development of the TDM alternatives for a pilot service in support of the initiative.

Chair Lori Pfeiler introduced this item and welcomed Rear Admiral Len Hering.

Rear Admiral Len Hering, Commander, Navy Region Southwest, provided a status report on this initiative.

Dan Martin, Principal Planner, provided the staff report.

Board members provided comments.

Action: This item was presented for information only.

12. SECOND READING OF PROPOSED AMENDMENT TO THE TransNet EXTENSION ORDINANCE 04-01 REGARDING AUDIT REPORTING FOR THE REGIONAL TRANSPORTATION CONGESTION IMPROVEMENT PROGRAM (APPROVE subject to a 2/3rds vote)

The TransNet Extension Ordinance (Commission Ordinance CO-04-01) includes language requiring that all local jurisdictions have their Regional Transportation Congestion Improvement Program (RTCIP) financial records available for audit by July 1 of each calendar year. It is proposed that the audit requirements for the RTCIP be aligned with the annual fiscal and compliance audit requirements for the TransNet program. The Transportation Committee and the Independent Taxpayer Oversight Committee recommended that the Board of Directors conduct the second reading and approve CO-09-01, which would amend CO-04-01 to align the timeline for the RTCIP audits with the TransNet annual fiscal and compliance audit requirements.

Action: Upon a motion by Mayor Sessom and second by Mayor Morrison, the Board of Directors waived further reading of the proposed amendment to the TransNet Extension Ordinance. Yes – 17 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent – Imperial Beach and Oceanside.
Action: Upon a motion by Second Vice Chair Dale and second by Mayor Sessom, the Board of Directors conducted the second reading and approved CO-09-01, which would amend CO-04-01 to align the timeline for the RTCIP audits with the TransNet annual fiscal and compliance audit requirements. Yes - 17 (weighted vote, 93%). No - 0 (weighted vote, 0%). Abstain - 0 (weighted vote, 0%). Absent - Imperial Beach and Oceanside (weighted vote, 7%).

13. PROPOSED AMENDMENT TO POLICY NO. 031: TransNet EXTENSION ORDINANCE AND EXPENDITURE PLAN RULES (APPROVE)

SANDAG Board Policy No. 031 provides administrative guidance for implementing the TransNet Extension Ordinance, including guidance for conducting the annual fiscal audits for TransNet recipients. The proposed amendments to three Rules of Board Policy No. 031 would provide additional clarification for various practices associated with the annual TransNet fiscal audits and the Regional Transportation Congestion Improvement Program. On June 10, 2009, the Independent Taxpayer Oversight Committee, which has the overall responsibility to conduct the annual fiscal audits, reviewed this proposal and recommended its approval. The Executive Committee recommended that the Board of Directors approve the proposed changes to Rules 17, 18, and 23 in SANDAG Board Policy No. 031 (TransNet Ordinance and Expenditure Plan Rules).

Second Vice Chair and Transportation Committee Chair Dale introduced the item.

Lauren Warrem, Acting Finance Director, provided the staff report.

Action: Upon a motion by Second Vice Chair Dale and second by Councilmember Mark Arapostathis (La Mesa), the Board of Directors approved the proposed changes to Rules 17, 18, and 23 in SANDAG Board Policy No. 031 (TransNet Ordinance and Expenditure Plan Rules). Yes – 19 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent - None.

14. AMERICAN RECOVERY AND REINVESTMENT ACT: TIGER DISCRETIONARY GRANT PROGRAM SUBMITTALS (APPROVE)

The American Recovery and Reinvestment Act of 2009 included a $1.5 billion Supplemental Discretionary Grant program for capital investments in surface transportation infrastructure. The U.S. Department of Transportation has named the program “Transportation Investment Generating Economic Recovery Discretionary Grants” (TIGER Discretionary Grants), and applications are due by September 15, 2009. This item summarizes the federal program and includes a list of proposed regional project submittals. The Transportation Committee recommended that the Board of Directors approve the list of proposed regional project submittals for the TIGER Discretionary Grants program, and authorize the Executive Director to provide support letters for other local agency projects that are consistent with SANDAG policies and programs.

Second Vice Chair and Transportation Committee Chair Dale introduced the item.

Victoria Stackwick, Associate Legislative Analyst, provided the staff report.
Action: Upon a motion by Council President Ben Hueso (City of San Diego) and second by Mayor Morrison, the Board of Directors approved the list of proposed regional project submittals for the TIGER Discretionary Grants program and authorized the Executive Director to provide support letters for other local agency projects that are consistent with SANDAG policies and programs. Yes – 19 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent - None.

15. SAN DIEGO INTERSTATE 5 CORRIDOR SYSTEM MANAGEMENT PLAN – LOSSAN RAIL CORRIDOR PRIORITIZATION ANALYSIS AND FEDERAL RAIL STIMULUS FUNDS (ACCEPT)

In June 2009, SANDAG, the North County Transit District, Amtrak, the Burlington Northern Santa Fe Railway, and Caltrans, completed a detailed evaluation of 40 individual rail projects along the San Diego portion of the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor. These projects include double tracking, bridge replacements, and station improvements. Evaluation criteria were developed and detailed rail modeling simulations were completed in order to determine project rankings. In August 2009, project applications are due to the Federal Railroad Administration for consideration for a share of the $8 billion identified for high-speed/intercity rail projects under the American Recovery and Reinvestment Act. The prioritized list of rail projects is being used to determine which projects are considered for both local and federal stimulus funds. The Transportation Committee recommended that the Board of Directors accept the LOSSAN Rail Corridor Prioritization Analysis for the purpose of submitting rail projects to the Federal Railroad Administration for federal stimulus fund consideration as identified in Attachment 2 to the agenda report.

Second Vice Chair and Transportation Committee Chair Dale introduced the item.

Linda Culp, Senior Planner, provided the staff report.

Board members provided comments.

Action: Upon a motion by Mayor Wood and second by Mayor Sessom, the Board of Directors accepted the LOSSAN Rail Corridor Prioritization Analysis for the purpose of submitting rail projects to the Federal Railroad Administration for federal stimulus fund consideration as identified in Attachment 2 of the agenda report. Yes – 19 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent - None.

16. PROPOSED ADDITION OF DESIGN PROJECTS TO THE TransNet CAPITAL IMPROVEMENT PROGRAM (APPROVE)

With the recent successful competition for various federal and state transportation funds through programs such as the federal American Recovery and Reinvestment Act and the Proposition 1B state bonds, much of the TransNet project design work that was made ready for the competition has been depleted. Therefore, a proposal has been developed to continue forward on the design work for a series of transit, rail, and highway projects throughout the region in order to be prepared for future competition for transportation funds. The Transportation Committee recommended that the Board of Directors approve programming TransNet funds totaling $70.4 million as shown in Attachment 1 to the
agenda report for the design of phased improvements on: the Coastal Rail (LOSSAN), Interstate 5 (I-5) North Coast, and South Bay Bus Rapid Transit (BRT). In addition, the Board is asked to authorize the Executive Director to enter into an agreement with Caltrans as necessary to enable Caltrans to assist with the highway design components related to the South Bay BRT.

Second Vice Chair and Transportation Committee Chair Dale introduced the item.

Richard Chavez, Principal Engineer, provided the staff report.

Chair Pfeiler noted that there were several requests to speak on this item.

John Chalker, California Transportation Commission, spoke in support of this item.

Gerald Sedomka, a member of the public, spoke against the MacKinnon Bridge. He asked that the Board not approve this project and to spend the money in other areas.

Donna Westbrook, a member of the public, spoke against the MacKinnon Bridge as it is not part of the I-5 high-occupancy-vehicle (HOV) lanes project.

Angelika Villagrana, San Diego Regional Chamber of Commerce, expressed support for the staff recommendation.

Action: Upon a motion by Mayor Wood and second by Councilmember Carrie Downey (Coronado), the Board of Directors approved programming TransNet funds totaling $70.4 million as shown in Attachment 1 to the agenda report for the design of phased improvements on: the Coastal Rail (LOSSAN), I-5 North Coast, and South Bay Bus Rapid Transit (BRT). The Board also authorized the Executive Director to enter into an agreement with Caltrans as necessary to enable Caltrans to assist with the highway design components related to the South Bay BRT. Yes – 18 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent – National City.

17. MARINE LIFE PROTECTION ACT INITIATIVE COMMENT LETTER (APPROVE)

The Marine Life Protection Act Initiative has been working on designating Marine Protection Areas (MPA) within the Southern California region which includes San Diego County. Certain MPA designations have the potential to affect the ability of local coastal jurisdictions to carry out shoreline management and other activities along the coastline. The Executive Committee recommended that the Board of Directors approve submittal of a letter, in substantially the same form as attached to the agenda report, outlining concerns on the Marine Life Protection Act initiative consistent with the SANDAG Shoreline Preservation Strategy and Regional Comprehensive Plan.

Chair Pfeiler introduced this item.

Rob Rundle, Principal Planner, provided the staff report.

Action: Upon a motion by Mayor Sessom and second by Councilmember Downey, the Board of Directors approved submittal of a letter, in substantially the same form as attached to the
agenda report, outlining concerns on the Marine Life Protection Act initiative consistent with the SANDAG Shoreline Preservation Strategy and Regional Comprehensive Plan. Yes – 17 (weighted vote, 100%). No – 0 (weighted vote, 0%). Abstain – 0 (weighted vote, 0%). Absent – National City and Santee.

19. FINANCIAL MARKET STATUS (INFORMATION)

This monthly briefing is designed to keep the Board of Directors informed about the latest developments in the financial markets, the economy, and revenue forecasts, and the strategies we are exploring and implementing to minimize possible impacts to SANDAG.

Marney Cox, Chief Economist, provided a status report on the economic climate.

Lauren Warrem, Acting Finance Director, provided a debt program update.

Action: This item was presented for information only.

20. PRESENTATION BY BUILDING INDUSTRY ASSOCIATION OF SAN DIEGO COUNTY (INFORMATION)

Borre Winckel, Chief Executive Officer, Building Industry Association of San Diego County (BIA) provided a presentation of its JOIN (Jumpstart Our Industry Now) campaign to promote local economic stimulus measures designed to reinvigorate the local construction industry, which has suffered more than 30,000 job losses in the region. The BIA also briefed the Board of Directors on the state of the local construction industry and its outlook for the remainder of 2009 and beyond.

Mayor Sessom suggested that the BIA talk with special districts that have levied extraordinary fees on municipalities negatively affecting the construction of housing projects.

Action: This item was presented for information only.

21. UPCOMING MEETINGS

The August 14 and August 28 Board of Directors meetings have been cancelled. The next Policy meeting is scheduled for Friday, September 11, 2009, at 10 a.m. The next Business meeting is scheduled for Friday, September 25, 2008, at 9 a.m.

22. ADJOURNMENT

The meeting was adjourned at 11:53 a.m.

DGunn/M/DGU
## ATTENDANCE
### SANDAG BOARD OF DIRECTORS MEETING
### JULY 24, 2009

<table>
<thead>
<tr>
<th>JURISDICTION/ORGANIZATION</th>
<th>NAME</th>
<th>ATTENDING</th>
<th>IN</th>
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<tbody>
<tr>
<td>City of Carlsbad</td>
<td>Matt Hall (Member)</td>
<td>Yes</td>
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<tr>
<td>City of Chula Vista</td>
<td>Cheryl Cox (Primary)</td>
<td>Yes</td>
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<td>City of Coronado</td>
<td>Carrie Downey (Primary)</td>
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<tr>
<td>City of Del Mar</td>
<td>Crystal Crawford (Primary)</td>
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<tr>
<td>City of El Cajon</td>
<td>Mark Lewis (Primary)</td>
<td>Yes</td>
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<tr>
<td>City of Encinitas</td>
<td>Teresa Barth (1st Alt.)</td>
<td>Yes</td>
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<tr>
<td>City of Escondido</td>
<td>Lori Holt Pfeiler, Chair (Primary)</td>
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<td>City of Imperial Beach</td>
<td>Jim Janney (Primary)</td>
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<tr>
<td>City of La Mesa</td>
<td>Mark Arapostathis (2nd. Alt.)</td>
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<tr>
<td>City of Lemon Grove</td>
<td>Mary Sessom (Primary)</td>
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<td>City of National City</td>
<td>Ron Morrison (Member)</td>
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<tr>
<td>City of Oceanside</td>
<td>James Wood (Member)</td>
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<tr>
<td>City of Poway</td>
<td>Don Higginson (Primary)</td>
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<tr>
<td>City of San Diego - A</td>
<td>Jerry Sanders (Primary, Seat A)/Anthony Young (Alternate)</td>
<td>Yes/Yes</td>
<td>Sanders 8:50-10:30 a.m./Anthony Young @ 9:12-9:31 a.m., sat as second City seat, then sat as first City seat from 10:42-11:53 a.m.</td>
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<tr>
<td>City of San Diego - B</td>
<td>Ben Hueso (Primary, Seat B)</td>
<td>Yes</td>
<td>9:31-11:35 a.m.</td>
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<td>City of San Marcos</td>
<td>Rebecca Jones (2nd. Alt.)</td>
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<tr>
<td>City of Santee</td>
<td>Jack Dale (2nd Vice Chair)</td>
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<tr>
<td>City of Solana Beach</td>
<td>Lesa Heebner (Primary)</td>
<td>Yes</td>
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<td>City of Vista</td>
<td>Judy Ritter (Primary)</td>
<td>Yes</td>
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<tr>
<td>County of San Diego - A</td>
<td>Dianne Jacob (Primary, Seat A)</td>
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<tr>
<td>County of San Diego - B</td>
<td>Pam Slater-Price (Primary, Seat B)</td>
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<td>Caltrans</td>
<td>Pedro Orso-Delgado (1st. Alt.)</td>
<td>Yes</td>
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<td>MTS</td>
<td>Ron Roberts (1st. Alt.)</td>
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<tr>
<td>NCTD</td>
<td>Bob Campbell (Primary)</td>
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<td>Imperial County</td>
<td>Victor Carrillo (Member)</td>
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<td>US Dept. of Defense</td>
<td>CAPT James Wink (Alternate)</td>
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<td>SD Unified Port District</td>
<td>Bill Hall (Alternate)</td>
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<td>SD County Water Authority</td>
<td>Mark Muir (Primary)</td>
<td>Yes</td>
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<td>Baja California/Mexico</td>
<td>Lydia Antonio (Alternate)</td>
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<tr>
<td>Southern California Tribal Chairmen’s Association</td>
<td>Robert H. Smith (Member)</td>
<td>No</td>
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</table>
ACTIONS FROM POLICY ADVISORY COMMITTEES

The following actions were taken by the Policy Advisory Committees since the last Board of Directors meeting.

JOINT MEETING OF THE BORDERS COMMITTEE, COMMITTEE ON BINATIONAL REGIONAL OPPORTUNITIES (COBRO), AND THE CITY OF TIJUANA (July 24, 2009)

There were no actions taken at this meeting.

TRANSPORTATION COMMITTEE MEETING (July 31, 2009)

The Transportation Committee took the following actions or recommended the following approvals:

- Concurred with the scores for the 17 eligible projects awarded by the Local Review Committee for the FY 2008-2009 federal 49 U.S.C. 5310 program funding, and found that: (1) the applications are in conformance with the Coordinated Plan, and (2) the requirements of 49 U.S.C. 5310 have been met by all applicants recommended for funding.

- Approved the reappointment of six members to the Social Services Transportation Advisory Council for three-year terms.

- Recommended that the Board of Directors approve the slate of members and alternates indicated in Tables 1 and 2 of the report to serve as at-large citizen representatives on the Regional Planning Stakeholders Working Group.

- Recommended that the Board of Directors: (1) approve the updated Five-Year Conceptual Funding Strategic Plan for the TransNet Environmental Mitigation Program (EMP), the proposed management and monitoring activities and budget for FY 2010 totaling $4 million, and, subject to Board Policy No. 017, authorize staff to solicit proposals and enter into contracts or amend existing contracts accordingly; and (2) adopt the modifications to the submittal and evaluation criteria for FY 2010 land management grants.

REGIONAL PLANNING COMMITTEE MEETING (July 31, 2009)

The Regional Planning Committee took the following actions or recommended the following approvals:

- Recommended that the Board of Directors approve the slate of members and alternates indicated in Tables 1 and 2 of the report to serve as at-large citizen representatives on the Regional Planning Stakeholders Working Group.
• Recommended that the Board of Directors: (1) approve the updated Five-Year Conceptual Funding Strategic Plan for the TransNet EMP, the proposed management and monitoring activities and budget for FY 2010 totaling $4 million, and, subject to Board Policy No. 017, authorize staff to solicit proposals and enter into contracts or amend existing contracts accordingly; and (2) adopt the modifications to the submittal and evaluation criteria for FY 2010 land management grants.

• Recommended that the Board of Directors accept the final version of the Alternative Fuels, Vehicles, and Infrastructure Report for distribution.

• Accepted the preliminary draft Regional Energy Strategy for public distribution and comment.

EXECUTIVE COMMITTEE MEETING (September 11, 2009)

The Executive Committee took the following actions or recommended the following approvals:

• Recommended that the Board of Directors approve the 2010 SANDAG Board Summit agenda.

• Recommended the Board of Directors consider a budget amendment for Destination Lindbergh Plan Implementation.

• Approved an oppose position on Senate Bill 802 (Leno) Public Contracts: Retention Proceeds.

• Approved a support position on Assembly Bill 672 (Bass) Transportation Bond-Funded Projects: Letter of No Prejudice.

• Approved the agenda for the September 25, 2009, Board of Directors meeting, as revised.

TRANSPORTATION COMMITTEE MEETING (September 18, 2009)

The Transportation Committee took the following actions or recommended the following approvals:

• Approved a budget amendment for the FY 2010 Capital Improvement Program (CIP) to add $450,000 in Traffic Congestion Relief Program funds for Phase 2 of the Encinitas Grade Separation Pedestrian Crossing Project as reflected in Attachment 1 to the agenda report. Phase 2 of the Project will include the completion of the Final Plans and Specifications.

• Approved three recommended transportation alternatives for the Interstate 5 South Multimodal Corridor Study for additional study.

• Approved Resolution No. 2010-02, revising amendments to FY 2001-FY 2003 Transportation Development Act claims.

• Approved authorizing the Executive Director to execute Amendment 4 to Addendum 2 to the Master Memorandum of Understanding with North County Transit District (NCTD) in the amount of $25,000, and to add the SPRINTER Project Manager Assistance Project (1115200) into the FY 2010 Budget.
• Approved CIP budget actions to: (1) authorize the Executive Director to execute a Memorandum of Understanding with Metropolitan Transit System (MTS) allowing the transfer of $195,000 from MTS Substation Transformer Rehabilitation project to SANDAG Substation Standardization project; (2) approve the transfer of an additional $195,000 from completed capital projects to the Substation Standardization project as shown in Table 1 to the agenda report; and (3) approve an increase of $390,000 to the Substation Standardization project budget.

• Recommended that the Board of Directors approve the request by the NCTD Board of Directors for an exchange of Federal Transit Administration Section 5307 funding in the amount of $1,313,000 with a like amount of TransNet funds.

• Recommended that the Board of Directors authorize the Executive Director to: (1) execute an agreement with the cities of Escondido and San Marcos that provides that the cities will collectively commit to a $10 million contribution to the Nordahl Road bridge project, and that SANDAG will transfer $2 million in savings from favorable bids received on the I-15 North segment to the design of the proposed Nordahl Road bridge replacement project; and (2) execute a transfer with Caltrans for an additional $1 million in TransNet funds under a separate existing agreement from the I-15 North segment budget to fund the design of a westbound auxiliary lane on SR 78 between I-5 and Nordahl Road.

• Recommended that the Board consider approving the proposed Destination Lindbergh implementation efforts.

PUBLIC SAFETY COMMITTEE MEETING (September 18, 2009)

The Public Safety Committee took the following actions or recommended the following approvals:

• Approved an amendment to FY 2010 Budget and Overall Work Program to accept $114,000 in additional funding for Work Element 34008 to build a regional server that will link data from License Plate Recognition (LPR) units throughout the region.

• Requested that the Board of Directors direct staff to report back on regional efforts to address graffiti, including cost estimates and feasibility of regional implementation.

GARY L. GALLEGOS
Executive Director
**TransNet ENVIRONMENTAL MITIGATION PROGRAM: STATUS REPORT**

**Introduction**

The TransNet Extension Ordinance and Expenditure Plan, approved by voters in November 2004, include an Environmental Mitigation Program (EMP), which is a funding allocation category for the cost to “create a reliable approach for funding required mitigation for future transportation improvements thereby reducing costs and accelerating project delivery.” (TransNet Extension Ordinance Section D.) The EMP established two funds: (1) the Transportation Mitigation Fund for direct mitigation, management, and monitoring for transportation-related impacts; and (2) the Regional Habitat Conservation Fund for efforts related to regional land acquisition, management, and monitoring for implementation of the regional habitat conservation plans.

On February 22, 2008, the Board of Directors authorized a Memorandum of Agreement (MOA) with Caltrans, the California Department of Fish and Game, and the United States Fish and Wildlife Service to establish the process to implement the goals of the TransNet EMP. The MOA, executed on March 19, 2008, memorialized a Plan of Finance (POF) strategy of $440 million over ten years for the Transportation Mitigation Fund and $40 million for the Regional Habitat Conservation Fund.

The MOA states, “Starting in 2010, and then once every two years thereafter, SANDAG will develop a report card to analyze the status and progress of the MOA implementing the goals of the TransNet EMP for presentation to the SANDAG Board as part of the update to the Regional Transportation Improvement Program (RTIP).” The intent of this report is to provide a brief update on the progress of the EMP since inception as an interim yardstick to measure progress until the 2010 report. This status report was presented to the Independent Taxpayer Oversight Committee, EMP Working Group, and Transportation and Regional Planning Committees.

**Discussion**

Attachment 1 summarizes the progress of the Transportation Mitigation Fund. Since January 2008, nine properties have been acquired with a focus on the mitigation for State Route 76, Interstate 5, and advanced mitigation for other Regional Transportation Plan (RTP) projects and local streets and roads. A total of 697 acres have been acquired, and corresponding letters have been obtained from the California Department of Fish and Game (Wildlife Agencies) and the United States Fish and Wildlife Service stating that these lands can be used as mitigation for project-related impacts. Two of the properties acquired under the EMP already have received subsequent federal permits showing that the process of advanced acquisition of mitigation is working as envisioned. The focus for acquisitions has been to satisfy the biological mitigation needs of the SANDAG TransNet Early Action Program (EAP), as identified by the Board of Directors in the RTP. SANDAG, through its acquisition agent, Caltrans, is underway with more than a dozen additional appraisals for future
acquisitions of key parcels approved by the Wildlife Agencies across western San Diego County. It is expected that within one year staff will have identified all of the biological mitigation for the TransNet EAP, and will be in the process of securing the opportunities accordingly.

Attachment 2 summarizes the progress of the Regional Habitat Conservation Fund. Since FY 2006, 30 land management grants have been awarded throughout the western San Diego region to help implement the efforts of San Diego region land managers under regional habitat conservation plans to preserve and enhance habitat and endangered species. The grants have been awarded through a competitive program, which has resulted in a wide range of applicants, from large agencies to small nonprofit organizations, across a large geographic area. In addition, 12 multi-year projects for regional biological monitoring and management have been funded to establish the existing conditions of species and habitat within the regional preserve system. These contracts include the succession of plants and animals resulting from the 2003 and 2007 wildfires, the status and distribution of the California gnatcatcher, the conditions and monitoring of the habitat within the preserve, and the establishment of monitoring protocols and the status of rare plants.

A final effort under the Regional Habitat Conservation Fund is the development of a regional entity to coordinate among land managers and biological monitoring efforts to maximize efficiency and reduce the cost of maintaining and monitoring these preserve systems. This includes using a scientific framework to review the data on land management and biological monitoring, combined with an assessment of the cost and effectiveness of actions to produce a strategic approach on how to best utilize limited funding. This assessment is scheduled to be brought to the Board of Directors in fall 2010.

Challenges

The TransNet EMP is a unique approach that is being discussed as framework for other parts of California and the United States. While staff has overcome many hurdles in its implementation, several challenges still exist.

Securing opportunities for wetlands remains a challenge. As shown on Attachment 2, there remains a large need for securing opportunities for coastal and freshwater wetlands. Wetland mitigation is significantly more challenging to secure due to the federal and state regulations to create new wetlands to achieve a “no-net-loss” of wetland acreage. These stringent requirements, combined with the desire of the regulatory agencies to have the mitigation occur within the same watershed as the impact, limit opportunities. SANDAG and Caltrans staffs have employed a three-pronged approach to identifying and securing more lands for wetland mitigation. This includes focused efforts to target properties by staff, use of a consultant to model and validate opportunities unknown to staff, and a Request for Proposals to private and public land owners. These efforts are showing results, and it is expected over the next year the amount of lands identified and secured for wetland mitigation will significantly increase towards the estimated need of the transportation projects.

Both the public and SANDAG leadership have requested a transparent, up-to-date system to depict the status of the EMP and to be able to track expenditures. Building off the existing TransNet Dashboard concept, staff has been working with a consultant to create an EMP Dashboard that will enable online access to the status of efforts under both the Transportation Mitigation Fund and the Regional Habitat Conservation Fund. The EMP Dashboard is expected to be completed in four to six months.
Finally, the question of how much cost saving has accrued under the EMP since the start of its implementation has been raised. Cost saving is measured by determining the ability for the early acquisition of mitigation land to be completed within the estimated budget. Land acquisition under the EMP has occurred only since January 2008. Many properties need to have restoration and management costs determined as well as obtain various permits. The TransNet EMP MOA provides for a 10-year evaluation period, with reporting every two years to establish opportunities for review. For the nine properties acquired to date, the total acquisition cost was $7.3 million (17.2 percent lower than the 2002 acquisition budget). This reflects the downturn in the real estate market. A complete picture of cost savings cannot be determined with such limited data; however, SANDAG will continue to monitor the budgets.

**Next Steps**

This report is intended to be a status update of the program. In June 2010, a more detailed report on the TransNet EMP will be provided to the Transportation and Regional Planning Committees for their consideration.

GARY L. GALLEGOS  
Executive Director

Attachments: 1. CIP Project Number: 1200200 Biological Mitigation Fund  
               2. CIP Project Number: 1200300 Regional Habitat Conservation Fund

Key Staff Contact: Keith Greer, (619) 699-7390, kgr@sandag.org
CIP Project Number: 1200200 Biological Mitigation Fund

**Purpose:** Environmental Mitigation Program (EMP), Biological Mitigation Fund. To secure mitigation for projects in the Regional Transportation Plan and local streets and roads pursuant to the TransNet Extension Ordinance and the subsequent TransNet Implementation Memorandum of Agreement.

**TransNet Environmental Mitigation Program**
**Mitigation Costs as of July 2009**

<table>
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<tr>
<th>Type</th>
<th>Cost (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition</td>
<td>$35,008,633</td>
</tr>
<tr>
<td>Restoration</td>
<td>$870,000</td>
</tr>
<tr>
<td>Management</td>
<td>$770,000</td>
</tr>
</tbody>
</table>

**Estimated Remaining Mitigation Needs:**
**Regional Transportation Plan Projects as of July 2009**

- Coastal Wetlands (4.1 ac): 220.9 acres
- Freshwater Wetlands (83.4 ac): 411.6 acres
- Uplands (526.2 ac): 988.0 acres

**Status:**
As of July 2009, 697.5 acres of land have been acquired for mitigation under the TransNet EMP for regional and local transportation projects. The focus has been on properties for the TransNet Early Action projects, including State Route 76 expansion and the Interstate 5 corridor. Several properties will require the future restoration of habitat. The identification and acquisition of wetland mitigation opportunities is a significant challenge which staff actively is working to resolve.

An additional 83.8 acres of uplands acquired for local streets not included in chart.
CIP Project Number: 1200300 Regional Habitat Conservation Fund

**Purpose:** Environmental Mitigation Program, Regional Habitat Conservation Fund. In December 2006 and again in March 2008, the SANDAG Board of Directors authorized funding pursuant to the TransNet Extension Ordinance to maintain and enhance the habitat values of the regional conservation preserve system pursuant to a five-year funding strategy.

### Conservation Fund Encumbrances by Category as of July 2009

- **$6,175,000**
  - Coordination
- **$3,775,000**
  - Management
- **$1,050,000**
  - Monitoring

### Encumbrances by Fiscal Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Monitoring</th>
<th>Management</th>
<th>Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>$1,000,000</td>
<td>$2,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>2007</td>
<td>$0</td>
<td>$3,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>2008</td>
<td>$2,000,000</td>
<td>$3,000,000</td>
<td>$0</td>
</tr>
<tr>
<td>2009</td>
<td>$3,000,000</td>
<td>$4,000,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

**Status:** Currently SANDAG has granted 30 projects for land management activities, and has funded twelve other regional management and monitoring projects ranging from post wildfire recovery to status monitoring of endangered species. In 2009, an effort to coordinate all the land management and monitoring activities started to achieve better efficiency of and effectiveness of efforts across the region.
SANDAG FEDERAL FFY 2009-2010 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM GOAL FOR FTA ASSISTED CONTRACTS AND ANNUAL ANTICIPATED DBE PARTICIPATION LEVEL FOR FHWA ASSISTED (VIA CALTRANS) PROCUREMENTS

Introduction

SANDAG has an established Disadvantaged Business Enterprise (DBE) Program in accordance with Title 49 Code of Federal Regulations (CFR) Part 26 provisions: Participation by DBEs in United States Department of Transportation (DOT) Programs and Guidance, issued by Caltrans dated March 4, 2009. SANDAG receives federal financial assistance from the DOT, and as a condition of receiving this assistance, SANDAG is required to sign an assurance that it will comply with the DBE regulations. As a recipient of DOT federally assisted funds through Caltrans and the Federal Transit Administration (FTA), SANDAG is required to develop and submit an Annual Anticipated DBE Participation Level (AADPL) for its Federal Highway Administration (FHWA) assisted projects through Caltrans and an Overall Annual DBE Goal for its FTA assisted projects (Attachment 1).

The Board of Directors accepted and released to the public its proposed Federal Fiscal Year (FFY) 2009-2010 Annual Anticipated DBE Participation Level and Overall Annual DBE Goal at its July 24, 2009, meeting. FFY 2009-2010 covers the time between October 1, 2009, and September 30, 2010. SANDAG released the FFY 2009-2010 DBE Program Goals for a 45-day comment period. SANDAG did not receive any questions or comments on the proposed DBE goal methodology or goals during the 45-day comment period. As a result, there is no adjustment recommended to the proposed SANDAG overall annual DBE goals or goal methodology at this time.

Discussion

Disparity Study Requirements

SANDAG is required to develop and submit a DBE Overall Annual Goal for DBE participation as a condition of receiving federal assistance, pursuant to Section 1101 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU); 49 CFR Part 26; the FTA Master Agreement, and the American Recovery and Reinvestment Act of 2009 (i.e. economic stimulus package), which includes DBE provisions and requirements. Following the 2006 ruling in
Western States Paving Co. v. Washington State Department of Transportation (Ninth Circuit Court of Appeals case), U.S. DOT and FHWA, and all DOT recipients in the jurisdiction of the Ninth Circuit received a Notice/Guidance from FTA (Docket No. FTA-2006-24063 dated March 23, 2006), which directed recipients to implement a wholly Race Neutral DBE Program if they did not have sufficient evidence readily available to satisfy the evidentiary standards established in this ruling to request a waiver from the DOT to implement a Race Conscious DBE Program. A Race Neutral DBE Program is proposed for SANDAG FTA assisted contracts because the necessary disparity study has not yet been completed. A disparity study has been completed by Caltrans for FHWA assisted projects. Therefore, a Race Conscious DBE Program is proposed for SANDAG FHWA assisted contracts using race neutral measures to the greatest extent possible.

Part I  FTA

Southern California Regional Consortium Disparity Study

SANDAG, in response to the DOT Notice/Guidance, became a funding/participating member of the Southern California Regional Disparity Study Consortium. FTA assisted agencies participating in the Consortium are all located in southern California and include SANDAG, Metropolitan Transit System, Los Angeles County Metropolitan Transportation Authority, Orange County Transportation Authority, and the Southern California Regional Rail Authority (Metrolink). The Consortium hired a consultant to conduct a disparity study to assist the Consortium members in making decisions concerning their compliance with the FTA DBE program. The disparity study is anticipated to be completed by late December 2009. At its September 25, 2009, meeting, the SANDAG Board of Directors also will be asked to accept the draft disparity study relating to FTA funding prepared for the Consortium (FTA Disparity Study) for a 45-day public comment period (Agenda Item No. 6). For purposes of this agenda item, however, staff is seeking the Board’s approval of a Race Neutral DBE Program goal of 6 percent for FTA assisted projects. The race neutral goal will be submitted to FTA for approval and use until the Consortium completes its work on the disparity study.

Race Neutral Overall Annual DBE Goal Calculation Methodology

The race neutral Overall Annual DBE Goal for FTA funded projects was established utilizing the federal two-step goal setting methodology. Step 1 included establishing a base figure utilizing quantifiable evidence to determine the relative availability of DBEs within specified industries identified as a part of SANDAG U.S. DOT assisted contracting projects anticipated to be awarded within FFY 2009-2010. SANDAG utilized the California Unified Certification Program (CUCP) Directory of Certified DBE firms and United States Census Bureau: County Business Patterns North American Industrial Classification System (NAICS) database to complete Step 1.

Upon establishing the Overall Annual DBE Goal Base Figure, Step 2 of the process required SANDAG to survey and assess other known relevant evidence to determine what additional adjustments, if any, were needed to narrowly tailor the Base Figure to the SANDAG market area. Factors considered in the adjustment of the Base Figure included SANDAG historical DBE data and current capacity of DBEs measured by actual attainments, Caltrans disparity study results for FHWA assisted projects (discussed further below), and other evidence within the SANDAG market area.

In order to meet the required FTA assisted public participation process, a public notice regarding the proposed Overall Annual DBE Goal was published in several general circulation, minority, and trade association publications. The proposed Overall Annual DBE Goal and the methodology used to derive the proposed goal were made available for a 45-day comment period. Additionally, the
particular notice was posted on the SANDAG Web site and was made available to community-based organizations.

**Part II - FHWA**

**Caltrans Disparity Study Update**

In June 2006, Caltrans commissioned a Disparity Study (Study) to determine whether discrimination exists in the conduct of the Caltrans transportation program. The Study was completed and accepted by Caltrans in July 2007. Results of the Study found disparity in four of the six disadvantaged groups: African American, Asian Pacific American, Native American, and Women. The Study identifies these groups as Underutilized Disadvantaged Business Enterprises (UDBEs). The Hispanic and Subcontinent Asian males were not identified as UDBEs.

Based on the outcome of the Study, Caltrans has taken steps to transition from a Race Neutral DBE Program to a new Race Conscious DBE Program. The race conscious measures of the DBE Program will only be applied to the UDBEs. As such, Caltrans requested a waiver from FHWA and U.S. DOT to implement a race-conscious DBE Program with limited application to the four identified UDBEs.

Caltrans has received approval from FHWA of its Overall Annual DBE Goal for FFY 2008-2009 with a Race-Conscious Program of limited application to the four (4) UDBE groups. As a result of FHWA approval, Caltrans issued a directive to local subrecipients agencies, including SANDAG, to transition to a Race-Conscious Program designed to increase the participation of UDBEs, groups defined as: African American, Asian Pacific American, Native American, and Women. Race-Conscious Measures include: consideration of Contract Specific UDBE goals and Good Faith Effort requirements.

**AADPL Calculation Methodology**

The AADPL for FHWA funded projects was established consistent with the Caltrans March 4, 2009, directives and in accordance with Title 49 CFR Part 26. To determine the race conscious component projection of its AADPL, SANDAG refined the numerator to exclusively represent the ratio of ready, willing and able UDBE firms (African American, Asian Pacific American, Native American, and Women owned firms) by using the NAICS within the SANDAG defined market area, and divided this number by the denominator representing all firms (DBEs and non-DBEs) available by each work category within the defined market area. SANDAG further refined its race conscious projection analysis by applying weight to each work category relative to its estimated dollar share of the project/contract.

In order to obtain public input regarding the AADPL for FHWA funded projects, the methodology used to derive the proposed goal was made available for 45 days for review and public comment on July 24, 2009. A public notice regarding the proposed AADPL was published in several general circulation, minority, and trade association publications and also was posted on the SANDAG Web site and made available to community-based organizations.

**Race Neutral Measures Planned for Both DBE Programs**

SANDAG will attempt to meet the maximum feasible portion of its AADPL and Overall Annual DBE Goal by utilizing race neutral means of facilitating DBE participation. Therefore, SANDAG plans to implement the following race neutral measures for FFY 2009-2010:
• SANDAG will arrange solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitate participation by DBE and other small businesses (e.g., unbundling large contracts to make them more accessible to small businesses, requiring or encouraging prime contractors to subcontract portions of work that they might otherwise perform with their own forces). Planned race neutral measures include holding prebid conferences for the SANDAG federally aided projects, which include a networking component to promote teaming opportunities between prospective prime contractors and the DBE and small business contracting community.

• Providing assistance in overcoming limitations such as inability to obtain bonding or financing (e.g., by such means as simplifying the bonding process, reducing bonding requirements and providing services to help DBEs and other small businesses, obtain bonding and financing). Planned race neutral measures include referring the DBE and small business contracting community through the SANDAG Web site to the Small Business Administration (SBA) bonding assistance program, via the California Construction Contracting Program (CCCP) and its technical counselors.

• Providing technical assistance and other services;

• Carrying out information and communication programs on contracting procedures and specific contract opportunities (e.g., ensuring the inclusion of DBEs and other small businesses, on recipient mailing lists of bidders; ensuring the dissemination to bidders on prime contracts of lists of potential subcontractors). Planned race neutral measures include soliciting DBEs and small businesses within the SANDAG defined market area utilizing any or all of the following means: issuing solicitation flyers/letters to promote upcoming bid opportunities through email blasts, postcards, Web site posting, fax blasts, and electronic vendor database system, etc.

• Implementing a supportive services program to develop and improve immediate and long-term business management, record keeping, and financial and accounting capability for DBEs and other small businesses. Planned race neutral measures include co-sponsoring the CalMentor Program with Caltrans for Architecture and Engineering small disadvantaged businesses, and providing educational and technical assistance through the San Diego Contracting Opportunity Center.

• Providing services to help DBEs and other small businesses, improve long-term development, increase opportunities to participate in a variety of types of work, handle increasingly significant projects, and achieve eventual self-sufficiency. Planned race neutral measures include holding prebid conferences that will include a networking component to promote teaming opportunities between prospective prime contractors and the DBE and small business contracting community, and co-sponsoring Caltrans District 11 Mentor Protégé Program/CalMentor Program.

• Ensuring distribution of the Caltrans DBE directory, through print and electronic means, to the widest feasible universe of potential prime contractors. Planned race neutral measures include advising the contracting community of the availability of the CUCP database (directory of Certified DBEs) Web site at http://www.californiaucp.com/index.html. SANDAG also has established an on-line electronic vendor registration and procurement management system that indicates firms with DBE certification as well as other small certifications to interested primes.
• Assisting DBEs, and other small businesses, to develop their capability to utilize emerging technology and conduct business through electronic media. SANDAG has launched an on-line vendor requisition system through Planetbids. By utilizing this system, the list of consultants, contractors, and vendors may be accessed by numerous public agencies. The consultants, contractors, and vendors themselves also can access information on upcoming training classes and upcoming business opportunities.

Additionally, SANDAG has participated in and/or co-sponsored the following events during FFY 2008-2009:

<table>
<thead>
<tr>
<th>EVENT</th>
<th># OF ATTENDEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Profitable Relationships 2009</td>
<td>More than 350</td>
</tr>
<tr>
<td>Caltrans Procurement Fair</td>
<td>More than 400</td>
</tr>
<tr>
<td>San Diego Regional Operation Opportunity for Small Businesses</td>
<td>More than 300</td>
</tr>
<tr>
<td>Submarine Sandwiches for Subcontractors (Subs 4 Subs)</td>
<td>More than 500</td>
</tr>
<tr>
<td>Paths for Partnerships</td>
<td>More than 800</td>
</tr>
<tr>
<td>Cal Mentor – A&amp;E Small Business Mentor Protégé Program, over 30 pairings</td>
<td>More than 100</td>
</tr>
</tbody>
</table>

SANDAG also attends many other small business outreach events to promote its DOT assisted contracting program.

**Next Steps**

If approved, the recommended goals for both FTA and FHWA assisted contracts will be implemented immediately and the outreach methods discussed in this report will continue. In the next agenda item, the Board of Directors will be asked to accept and release the FTA Disparity Study Draft Report for a 45-day public comment period. If necessary, based on the FTA Disparity Study results, adjustments to the FFY 2009-2010 FTA DBE goals will be brought back to the Board of Directors for approval in February/March 2010.

GARY L. GALLEGOS  
Executive Director


Key Staff Contact: Elaine Richardson, (619) 699-6956, eri@sandag.org
SAN DIEGO ASSOCIATION OF GOVERNMENTS

Proposed Federal Transit Administration (FTA) - Overall Annual DBE Goal Setting Methodology

for

FFY 2009/10

Submitted in fulfillment of:

Section 1101 of the Transportation Equity Act for the 21st Century
49 Code of Federal Regulations Part 26
and
Caltrans Local Assistance Procedures Manual

This analysis is prepared exclusively for SANDAG; it is non-transferable and is not to be duplicated.
I. INTRODUCTION

The San Diego Association of Governments (SANDAG) herein sets forth its Overall Annual Disadvantaged Business Enterprise (DBE) Goal and corresponding federally prescribed methodology for Federal Fiscal Year (FFY) 2009/10, pursuant to Section 1101 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users; (SAFETEA-LU), 49 CFR Part 26 “Participation by Disadvantaged Business Enterprises in U.S. Department of Transportation (DOT) Programs”; and the Federal Transportation Administration (FTA) Master Agreement.

II. BACKGROUND

The San Diego Association of Governments (SANDAG) is required to develop and submit a Disadvantaged Business Enterprise (DBE) Overall Annual Goal for DBE participation as a condition of receiving federal assistance, pursuant to Section 1101 of the Transportation Equity Act for the 21st Century; 49 CFR Part 26; Federal Transportation Administration (FTA) Master Agreement and the American Recovery and Reinvestment Act of 2009 (i.e. Economic Stimulus Package), which includes DBE provisions and requirements. Following the 2006 ruling in Western States Paving Co. v. United States & Washington State Department of Transportation, all DOT recipients in the jurisdiction of the Ninth Circuit Court of Appeals received a Notice/Guidance from the Federal Transit Administration (Docket No. FTA-2006-24063, dated March 23, 2006), which directed recipients to implement a wholly race-neutral DBE Program if they did not have sufficient evidence to satisfy the evidentiary standards, established in this ruling, to request a waiver from the U.S. DOT to implement a Race-Conscious DBE Program. SANDAG, in response to this Notice, became a funding/participating member of the Southern California Disparity Study Consortium. The Consortium hired a consultant to conduct a disparity study to assist the Consortium members in making decisions concerning their compliance with the Federal DBE Program. It is anticipated that the results of the Disparity Study will be finalized in January 2010. The results of the Disparity Study will be considered by SANDAG in determining if an amended FFY 2009/10 Overall Annual DBE Goal will be required. In the interim, SANDAG is currently proposing to meet its FFY 2009/10 Overall Annual DBE Goal by utilizing only race-neutral measures. Pertinent aspects of the Western States Paving ruling and the Notice/Guidance are discussed below:
PERTINENT ASPECTS OF THE NOTICE/GUIDANCE:

- If a recipient does not currently have sufficient evidence of discrimination or its effects, then the recipient submits an all Race-Neutral Overall Annual DBE goal.
- The recipient submission shall include a statement concerning the absence of adequate evidence of discrimination and its effects and a description of plans to either conduct a disparity/availability study or other appropriate evidence gathering process to determine the existence of discrimination or its effects on the recipient’s marketplace.
- An action plan describing the study and timeline for its completion should also be included.
- Recipients will be required to continue to monitor, collect and report participation and utilization of DBE’s on Federal-aid contracts.
- All DOT federal-aid procurements shall contain Race-Neutral DBE solicitation and contract language.
- Recipients may no longer advertise and award contracts with DOT Federal-aid funds containing Race-Conscious DBE goals.
Accordingly, SANDAG herein presents its Overall Annual DBE Goal Methodology for FFY 2009/10.

III. DOT-ASSISTED CONTRACTING PROGRAM FOR FFY 2009/10

Table 1 represents SANDAG’s U.S. DOT-assisted (FTA) contracting program, which includes eight (8) projects considered in preparing its Overall Annual DBE Goal-Setting Methodology. The scopes or work of the 8 projects include both Construction and Professional Services procurements, which have viable subcontracting possibilities, a required criterion for Overall Annual Goal consideration, and are anticipated to be awarded within FFY 2009/10:

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Total Estimated Project Cost</th>
<th>Estimated Federal Dollar Share of Construction</th>
<th>Estimated Federal Dollar Share of Professional Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1142000</td>
<td>Catenary Contact Wire</td>
<td>$9,100,000.00</td>
<td>$7,466,000.00</td>
<td>$0.00</td>
</tr>
<tr>
<td></td>
<td>TBD Job Order Contracts</td>
<td>$15,000,000.00</td>
<td>$15,000,000.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>1128600</td>
<td>LRV Carwash Replacement (Phase 2)</td>
<td>$110,000.00</td>
<td>$80,000.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>1129200</td>
<td>Catenary Catch Cable Restoration</td>
<td>$389,000.00</td>
<td>$312,000.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>23011</td>
<td>Transportation Studies</td>
<td>$673,486.00</td>
<td>$0.00</td>
<td>$270,615.00</td>
</tr>
<tr>
<td>31000</td>
<td>Regional Comprehensive Plan (RCP) and Sustainable Communities Strategy Planning</td>
<td>$1,087,576.00</td>
<td>$0.00</td>
<td>$76,138.00</td>
</tr>
<tr>
<td>31003</td>
<td>Urban Core Transit Network Strategy</td>
<td>$770,177.00</td>
<td>$0.00</td>
<td>$416,917.00</td>
</tr>
<tr>
<td>31013</td>
<td>Airport Multimodal Accessibility Plan (AMAP)</td>
<td>$472,744.00</td>
<td>$0.00</td>
<td>$100,000.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$27,602,983.00</td>
<td>$22,858,000.00</td>
<td>$863,670.00</td>
</tr>
</tbody>
</table>
Table 2 provides a summary of work grouped by two (2) primary categories: Construction & Professional Services, utilizing the North American Industry Classification System (NAICS) primary work categories. Table 2 also serves to identify the estimated Federal Dollar Share and the Percent of Federal funding, as follows:

<table>
<thead>
<tr>
<th>CONTRACT CATEGORY</th>
<th>NAICS Works Categories</th>
<th>ESTIMATED FEDERAL DOLLAR SHARE</th>
<th>% OF FEDERAL FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>237310</td>
<td>$22,858,000.00</td>
<td>96%</td>
</tr>
<tr>
<td>Professional Services</td>
<td>541330</td>
<td>$863,670.00</td>
<td>4%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$23,721,670.00</td>
<td>100%</td>
</tr>
</tbody>
</table>

IV. GOAL METHODOLOGY

Step 1: Determination of a Base Figure (26.45)

To establish SANDAG’s Base Figure of the relative availability of DBEs to all comparable firms (DBE and Non-DBEs) available to propose on SANDAG’s FFY 2009/10 DOT-assisted contracting opportunities projected to be solicited SANDAG followed the prescribed federal goal-setting methodology in accordance with 49 CFR Part 26.45. This was accomplished by accessing the California Unified Certification Program (CUCP) Directory of Certified DBE Firms and the 2006 U.S. Census Bureau County Business Patterns (CBP) Database. Comparisons were made within SANDAG’s market area (defined as Imperial, Riverside and San Diego Counties) and by specified industries and types of businesses identified in Table 2. SANDAG’s local market area represents where the substantial majority of SANDAG’s contracting dollars are expended and/or where the substantial majority of contractors and subcontractors bids or quotes are received.

SANDAG made a concerted effort to ensure that the scope of businesses included in the numerator was as close as possible to the scope included in the denominator. For corresponding detail of all work category classifications grouped, refer to Attachments I and II.

✦ For the numerator: California UCP DBE Database of Certified Firms
✦ For the denominator: 2006 U.S. Census Bureau’s Business Pattern Database (CBP)

1 For a complete listing of NIACS codes, refer to Attachment I & II
2 Title 49 CFR Part 26 §26.45.
To determine the relative availability of DBEs, SANDAG divided the numerator representing the number of ready, willing and able DBE firms, by the denominator representing all firms (DBE and Non-DBEs) available in each work category. Application of this formula yielded the following baseline information:

\[
\frac{\text{Number of Ready, Willing and Able DBEs}}{\text{Number of All Available Firms}} = \text{BASE FIGURE}
\]

\[
\text{BASE FIGURE} = \text{(DBEs in NAICS 237310*)} + \text{(DBEs in NAICS 541330*)}
\]

The Base Figure was further weighted by contract type and corresponding contract value. The Base Figure resulting from this weighted calculation is as follows:

**Step 1: Base Figure (weighted by type of work to be performed and corresponding contracting dollars)**

<table>
<thead>
<tr>
<th>Construction</th>
<th>Professional Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Figure = [ \left( \frac{96% \text{ (DBEs in NAICS 237310*)}}{\text{CBPs in NAICS 237310**}} + \frac{4% \text{ (DBEs in NAICS 541330*)}}{\text{CBPs in NAICS 541330**}} \right) ]</td>
<td>Base Figure = [ \left( \frac{.96 (214)}{3,695} + \frac{.04 (148)}{2,463} \right) ]</td>
</tr>
<tr>
<td>Base Figure = [ \frac{.96 (.0579)}{3,695} + \frac{.04 (.0601)}{2,463} ]</td>
<td>Base Figure = [ .0556 + .0024 ]</td>
</tr>
<tr>
<td>Base Figure = [ (.0580) \times 100 = 5.80 = 6%*** ]</td>
<td>Base Figure = [ ]</td>
</tr>
</tbody>
</table>

* For additional NAICS codes from the CUCP DBE Directory, refer to Attachment I.  
** For additional NAICS codes, refer to Attachment II.  
*** Rounded to the nearest whole number.

---

3 Numerator represents all DBE firms established within SANDAG’s market area.  
4 Denominator represents all comparable available established firms.
Step 2: Adjusting the Base Figure

Upon establishing the Base Figure, SANDAG reviewed and assessed other known evidence potentially impacting the relative availability of DBEs within SANDAG’s market area, in accordance with prescribed narrow tailoring provisions set forth under 49 CFR Part 26.45 Step 2; DBE Goal Adjustment guidelines.

Evidence considered in making an adjustment to the Base Figure included SANDAG’s Past DBE Goal Attainments, Bidders List, Disparity Studies, and Other Evidence, as follows:

A. Past DBE Goal Attainments

SANDAG considered an adjustment to the Base Figure based on historical DBE goal attainments. However, SANDAG lacks sufficient historical DBE goal attainments on similar projects/contracts to those identified in its FFY 2009/10 contracting program to ascertain an attainment trend. As a result, SANDAG’s past DBE goal attainment data did not merit an adjustment to the Base Figure.

B. SANDAG’s Bidders List

SANDAG’s Bidders List was considered in further adjusting the Base Figure. The percentage of DBEs on SANDAG’s Bidders List ranged from 5% to 7%, which is consistent with SANDAG’s Base Figure. Since SANDAG’s Bidders List data is in line with the 6% Base Figure, no further adjustments will be made at this time based on this factor.

C. Evidence from Disparity Studies

SANDAG is a funding member/partner of the Southern California Regional Disparity Study Consortium which hired a consultant to conduct a disparity study to assist the Consortium members in making decisions concerning their compliance with the Federal DBE Program. The Southern California Regional Disparity Study Consortium Study is anticipated to be completed in December 2009. The results of the Disparity Study will be considered by SANDAG to determine if an amended FFY 2009/10 Overall Annual DBE Goal Analysis will need to be issued. Accordingly, this factor does not merit an adjustment to SANDAG’s Step 1 Base Figure at this time.

D. Other Evidence

SANDAG did not receive any anecdotal evidence nor is aware of any other factors or adverse considerations that would have had a material affect on DBEs availability within SANDAG’s marketplace, or on DBEs’ ability to participate (meeting bonding, insurance and financial requirements) in SANDAG’s FTA-assisted contracting programs. Therefore, no goal adjustment was made in consideration of this factor. However, SANDAG will continue to explore and consider all available evidence that would materially affect the opportunities for DBEs to form, grow, and compete in SANDAG’s FTA-assisted contracting programs.
OVERALL ANNUAL DBE GOAL AND PROJECTION OF RACE-NEUTRAL AND
RACE-CONSCIOUS PARTICIPATION:

The Overall Annual DBE Goal for FFY 2009/10 for SANDAG’s FTA-assisted contracts is 6%. The Overall Annual Goal is expressed as a percentage of all DOT-assisted funds that SANDAG will expend in applicable DOT-assisted contracts in the given federal fiscal year.

The goal further serves to identify the relative availability of DBE’s based on evidence of ready willing, and able DBE’s to all comparable firms, which are known to be available to compete for and perform on SANDAG’s DOT-assisted contracts.

V. RACE-NEUTRAL MEASURES

In conformance with Title 49 CFR Part 26; “Participation by Disadvantaged Business Enterprises in Department of Transportation Programs” and in further response to FTA Notices issued to Public Transportation Providers regarding DOT’s DBE Program and Race-Neutral Policy Implementation Guidance, SANDAG is required to submit and implement a strictly Race-Neutral Overall Annual DBE Goal for FFY 2009/10, due to the absence of readily available evidence of discrimination and its effects in its marketplace.

SANDAG will implement Race-Neutral measures to meet its Overall Annual DBE Goal objectives in accordance with 49 CFR Part 26.51, including but not limited to:

- Arranging timely solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitate DBEs and other small business firms’ participation.
- Unbundling large contracts to make them more accessible to small businesses, requiring or encouraging prime contractors to subcontract portions of work that they might otherwise perform with their own work forces.
- Providing technical assistance and other services to small businesses, including DBE firms.
- Providing information and communications programs on contracting procedures and specific contract opportunities.
- Providing assistance to small businesses in overcoming limitations in obtaining bonding, lines of credit and building financing capital.

VI. PUBLIC PARTICIPATION AND FACILITATION

In accordance with Public Participation Regulatory Requirements of Title 49 CFR Part 26, minority, women, local business chambers, and community organizations within SANDAG’s market area will be consulted and provided an opportunity to review the goal analysis and provide input. SANDAG will prepare Outreach Consultation Letters advising the aforementioned business community of the proposed DBE goal analysis and its availability for review and comment.
SANDAG will also issue a Public Notice in a general circulation media and in at least one other minority focused media publishing SANDAG’s proposed Overall Annual Goal for the FFY 2009/10 FTA-assisted contracts. Such Notice will inform the public that the proposed goal and rationale are available for inspection at SANDAG’s principal office during normal business hours for 30 days following the date of the Public Notice and that SANDAG will accept comments on the goal analysis for 45 days from the date of the Public Notice. SANDAG will give full consideration to all comments and input and assess its impact on the proposed Overall Annual DBE Goal. If no impact and/or comments are received during the public participation process, the Goal will be considered final.
ATTACHMENT I

SAN DIEGO ASSOCIATION OF GOVERNMENTS (SANDAG)
OVERALL ANNUAL DBE GOAL - FEDERAL TRANSIT ADMINISTRATION (FTA)
FEDERAL FISCAL YEAR 2009/10

ESTABLISHMENT OF THE NUMERATOR:

# OF ESTABLISHED DBE FIRMS BY NAICS WORK CATEGORIES WITHIN SANDAG’s MARKET AREA
(DEFINED AS IMPERIAL, RIVERSIDE & SAN DIEGO COUNTIES)1

<table>
<thead>
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<th>NAICS DESCRIPTION</th>
<th>919</th>
<th>920</th>
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<th>922</th>
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<tr>
<td>237310</td>
<td>Highway, Street, and Bridge Construction</td>
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<tr>
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<td>Plumbing, Heating, and Air-Conditioning Contractors</td>
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<td>6</td>
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<td>0</td>
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<td>31</td>
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<td>4</td>
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<tr>
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<td>0</td>
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<th>925</th>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
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<tr>
<td>541620</td>
<td>Environmental Consulting Services</td>
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<td>12</td>
<td>3</td>
<td>5</td>
<td>11</td>
<td>40</td>
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<tr>
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<td>2</td>
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<td>0</td>
<td>2</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>6</td>
<td>25</td>
<td>55</td>
<td>8</td>
<td>11</td>
<td>43</td>
<td>148</td>
</tr>
</tbody>
</table>

1 DATA SOURCE: California UCP DBE Database of Certified Firms.
ATTACHMENT II

SAN DIEGO ASSOCIATION OF GOVERNMENTS (SANDAG)
OVERALL ANNUAL DBE GOAL - FEDERAL TRANSIT ADMINISTRATION (FTA)
FEDERAL FISCAL YEAR 2009/10

ESTABLISHMENT OF THE DENOMINATOR:

# OF ALL ESTABLISHED FIRMS (DBEs and Non-DBEs) BY NAICS WORK CATEGORIES
WITHIN SANDAG's MARKET AREA (DEFINED AS IMPERIAL, RIVERSIDE & SAN DIEGO COUNTIES)\(^1\)

<table>
<thead>
<tr>
<th>NAICS CODE</th>
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<tr>
<td>237310</td>
<td>Highway, Street, and Bridge Construction</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
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<td>Other Heavy and Civil Engineering Construction</td>
<td>4</td>
<td>35</td>
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<td>238210</td>
<td>Electrical Contractors</td>
<td>20</td>
<td>507</td>
</tr>
<tr>
<td>238220</td>
<td>Plumbing, Heating, and Air-Conditioning Contractors</td>
<td>25</td>
<td>535</td>
</tr>
<tr>
<td>238390</td>
<td>Other Building Finishing Contractors</td>
<td>3</td>
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<td>All Other Specialty Trade Contractors</td>
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<td>423850</td>
<td>Service Establishment Equipment and Supplies Merchant Wholesalers</td>
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<td>TOTAL NUMBER OF ESTABLISHED FIRMS</td>
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<table>
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<th>NAICS CODE</th>
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<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IMPERIAL</td>
<td>RIVERSIDE</td>
</tr>
<tr>
<td>485111</td>
<td>Urban Transit Systems</td>
<td>1</td>
<td>0</td>
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<td>541330</td>
<td>Engineering Services</td>
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<td>541611</td>
<td>Administrative Management and General Management Consulting Services</td>
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<tr>
<td>541614</td>
<td>Process, Physical Distribution, and Logistics Consulting Services</td>
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<td>Environmental Consulting Services</td>
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<td>541910</td>
<td>Other Professional, Scientific, and Technical Services</td>
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<tr>
<td>TOTAL NUMBER OF ESTABLISHED FIRMS</td>
<td>26</td>
<td>479</td>
<td>1,958</td>
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</table>

\(^1\) DATA SOURCE: 2006 U.S. Census Bureau: County Business Patterns, NAICS Work Category Codes.
Exhibit 9-B  Local Agency DBE Annual Submittal Form

TO:      CALTRANS DISTRICT  11
       District Local Assistance Engineer – Mr. Erwin Gojuangco

The amount of the Annual Anticipated DBE Participation Level (AADPL) and methodology are presented herein, in accordance with Title 49 of the Code of Federal Regulations (CFR), Part 26, and the State of California, Department of Transportation Disadvantaged Business Enterprise (DBE) Program Plan.

The San Diego Association of Governments (SANDAG) submits our AADPL information. We have established an AADPL of 5% (1% Race Neutral; 4% Race Conscious) for the Federal Fiscal Year 2009/10, beginning on October 1, 2009 and ending on September 30, 2010.

Methodology

Refer to the attached AADPL Methodology Enclosure.

Disadvantaged Business Enterprise Liaison Officer (DBELO)

Director of Administration
401 B. Street, Suite 800, San Diego, CA 92101-4231
Phone:  (619) 699-1900
Fax:      (619) 699-1995
E-mail:   spa@sandag.org

Planned Race-Neutral Measures

The San Diego Association of Governments (SANDAG) plans to implement the following race-neutral measures to comply with 49 CFR Part 26.51 and Section V of the California Department of Transportation Race-Conscious DBE Program Implementation Agreement for Local Agencies.

- SANDAG will arrange solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitate DBE, and other small businesses, participation (e.g., unbundling large contracts to make them more accessible to small businesses, requiring or encouraging prime contractors to subcontract portions of work that they might otherwise perform with their own forces). Planned race-neutral measures by SANDAG will include holding pre-bid conferences for the SANDAG’s federally-aided projects, which include a networking component to promote teaming opportunities between prospective Primes and the DBE and Small Business contracting community.
• Provide assistance in overcoming limitations such as inability to obtain bonding or financing (e.g., by such means as simplifying the bonding process, reducing bonding requirements, and providing services to help DBEs, and other small businesses, obtain bonding and financing). Planned race-neutral measures by SANDAG will include SANDAG using its website to refer the DBE and Small Business Contracting Community to the SBA bonding assistance program, via the California Construction Contracting Program (CCCP) and its technical counselors.

• Provide technical assistance and other services;

• Carry out information and communication programs on contracting procedures and specific contract opportunities (e.g., ensuring the inclusion of DBEs, and other small businesses, on recipient mailing lists of bidders; ensuring the dissemination to bidders on prime contracts of lists of potential subcontractors, where appropriate). Planned race-neutral measures by SANDAG will include solicitation of DBEs and Small Businesses within SANDAG’s defined market area utilizing any or all of the following means: Issue solicitation flyers/letters to promote upcoming bid opportunities through, email blasts, postcards, website posting, fax blasts, and electronic vendor database system, etc.

• Implementing a supportive services program to develop and improve immediate and long-term business management, record keeping, and financial and accounting capability for DBEs and other small businesses. Planned Race-Neutral Measures by SANDAG will include co-sponsoring the Calmentor Program with Caltrans for Architecture and Engineering small disadvantaged businesses, and providing educational and technical assistance through the San Diego Contracting Opportunity Center.

• Provide services to help DBEs, and other small businesses, improve long-term development, increase opportunities to participate in a variety of types of work, handle increasingly significant projects, and achieve eventual self-sufficiency. Planned race-neutral measures by SANDAG will include holding pre-bid conferences that will include a networking component to promote teaming opportunities between prospective primes and the DBE and Small Business contracting community, and co-sponsoring District’s Mentor Protégé Program/Calmentor Program.

• Ensure distribution of your DBE directory, through print and electronic means, to the widest feasible universe of potential prime contractors. Planned Race-Neutral Measures by SANDAG will include SANDAG advising its Contracting Community of the availability of the California Unified Certification Program (CUCP) database (directory of Certified DBEs) website at www.californiaucp.com/index.html.

• Assist DBEs, and other small businesses, to develop their capability to utilize emerging technology and conduct business through electronic media. SANDAG has launched an on-line vendor requisition system through PlanetBids. By utilizing this system, the Consultants, Contractors and Vendors may be accessed by numerous public agencies. The Consultants, Contractors and Vendors can also assess information on upcoming training classes and upcoming business opportunities.
Prompt Pay

Federal regulation (49 CFR 26.29) requires one of three methods be used in federal-aid contracts to ensure prompt and full payment of any retainage, kept by the prime contractor or subcontractor, to a subcontractor. (Attached is a listing of the three methods. On the attachment, SANDAG has designated which prompt payment provision it will use.)

49 CFR Part 26.29(d) requires providing appropriate means to enforce prompt payment. These means may include appropriate penalties for failure to comply with the terms and conditions of the contract. The means may also provide that any delay or postponement of payment among the parties may take place only for good cause, with the local agency’s prior written approval. Please briefly describe the monitoring and enforcement mechanisms in place to ensure that all subcontractors, including DBEs, are promptly paid.

Prompt Payment Mechanism

SANDAG collects and reviews “Disadvantaged Business Enterprises (DBE) Monthly Participation Progress Report” forms as well as issue payment confirmations to a sampling of subcontractors to effectuate compliance.

(Signature ) Date
Ms. Susan Paez
Acting Director of Administration
(619) 699-1900 Phone Number

(Print Name and Title) Phone Number
ADMINISTERING AGENCY
(Authorized Governing Body Representative)

Distribution: (1) Original - DLAE
(2) Signed copy by the DLAE – Local Agency
DBE Annual Submittal Form (04/01/08)
(Attachment)

Prompt Payment of Withheld Funds to Subcontractors

Federal regulation (49 CFR 26.29) requires one of the following three methods be used in federal-aid contracts to ensure prompt and full payment of any retainage kept by the prime contractor or subcontractor to a subcontractor.

Please check the box of the method chosen by the local agency to ensure prompt and full payment of any retainage.

☐ **Method 1:** No retainage will be held by the agency from progress payments due to the prime contractor. Prime contractors and subcontractors are prohibited from holding retainage from subcontractors. Any delay or postponement of payment may take place only for good cause and with the agency’s prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies, otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance, and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

☐ **Method 2:** No retainage will be held by the agency from progress payments due the prime contractor. Any retainage kept by the prime contractor or by a subcontractor must be paid in full to the earning subcontractor in 30 days after the subcontractor’s work is satisfactorily completed. Any delay or postponement of payment may take place only for good cause and with the agency’s prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and remedies specified in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies, otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance, and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

☒ **Method 3:** The agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the agency of the contract work and pay retainage to the prime contractor based on these acceptances. The prime contractor or subcontractor shall return all monies withheld in retention from all subcontractors within 30 days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the agency. Any delay or postponement of payment may take place only for good cause and with the agency’s prior written approval. Any violation of these provisions shall subject
the violating prime contractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the contractor or subcontractor in the event of: a dispute involving late payment or nonpayment by the contractor; deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.
San Diego Association of Governments (SANDAG)

Annual Anticipated DBE Participation Level (AADPL) for

Federal Highway Administration (FHWA)

FFY 2009/10

Submitted in fulfillment of:

Section 1101 of the Transportation Equity Act for the 21st Century
49 Code of Federal Regulations Part 26
and
Caltrans Local Assistance Procedures Manual

This AADPL methodology is prepared exclusively for SANDAG; it is non-transferable and is not to be duplicated.
I. INTRODUCTION

The San Diego Association of Governments (SANDAG), a subrecipient of federal funds through Caltrans, herein sets forth its Annual Anticipated DBE Participation Level (AADPL) and corresponding methodology for Federal Fiscal Year (FFY) 2009/10. The AADPL submitted for consideration includes Race-Neutral and Race-Conscious projections on how SANDAG anticipates achieving its AADPL. The Race-Conscious component of SANDAG’s DBE program is limited to the four (4) Underutilized Disadvantaged Business Enterprise (UDBE) groups (African American, Asian Pacific, Native American and Women), in conformance with Title 49 CFR Part 26 and directives and guidance issued by the California Department of Transportation (Caltrans) dated March 4, 2009, which required the implementation of a Race-Conscious Program of limited application to the four UDBE groups noted above.

II. U.S. DEPARTMENT OF TRANSPORTATION (DOT) -ASSISTED CONTRACTING PROGRAM FOR FFY 2009/10

Table 1 serves to identify SANDAG’s DOT-assisted contracting program for FFY 2009/10 considered in preparing its Annual Anticipated DBE Participation Level (AADPL), consistent with the requirements outlined in Chapter 9 of the Local Assistance Procedures Manual (LAPM). The projects listed in Table 1 below have viable contracting and subcontracting possibilities, a required criterion for AADPL consideration, and are anticipated to be awarded by SANDAG within FFY 2009/10.

Table 2 provides a summary of the categories of work scopes of the defined Contracts/Projects identified in Table 1 by various North American Industry Classification System (NAICS) work codes for purposes of weighing the categories of work based on their estimated dollar value and the corresponding relative availability of DBEs in contrast to all firms available in the following “Base Figure” analysis.
<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Total Estimated Project Cost</th>
<th>Estimated Federal Dollar Share of Construction</th>
<th>Estimated Federal Dollar Share of Professional Services</th>
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<td>$76,183.00</td>
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<td>New Border Crossing/State Route (SR) 11</td>
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<td><strong>$8,715,925.00</strong></td>
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<td><strong>$2,982,296.00</strong></td>
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Table 2

<table>
<thead>
<tr>
<th>CATEGORY OF WORK</th>
<th>NAICS CODES</th>
<th>ESTIMATED % OF CONTRACT</th>
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</thead>
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<tr>
<td>International Trade Financing</td>
<td>522293</td>
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<td>Investment Advice</td>
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<tr>
<td>Engineering Services</td>
<td>541330</td>
<td>21.68%</td>
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<td>Custom Computer Programming Services</td>
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</tr>
<tr>
<td>Computer Systems Design Services</td>
<td>541512</td>
<td>10.29%</td>
</tr>
<tr>
<td>Administrative Management and General Management Consulting Services</td>
<td>541611</td>
<td>14.31%</td>
</tr>
<tr>
<td>Human Resources and Executive Search Consulting Services</td>
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<td>2.05%</td>
</tr>
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<td>Marketing Consulting Services</td>
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<td>Public Relations Agencies</td>
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<td>Temporary Help Services</td>
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<td>12.14%</td>
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<tr>
<td>Administration of Public Health Programs</td>
<td>923120</td>
<td>0.85%</td>
</tr>
<tr>
<td>International Affairs</td>
<td>928120</td>
<td>1.63%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100% (100% of Federal $)</td>
</tr>
</tbody>
</table>
III. AADPL - METHODOLOGY

Step 1: Determination of a Base Figure (26.45)5

To establish SANDAG’s Base Figure of the relative availability of DBEs to all comparable firms (DBEs and Non-DBEs) available to bid or propose on SANDAG’s FFY 2009/10 DOT-assisted contracting opportunities projected to be solicited, SANDAG followed the prescribed federal methodology to determine relative availability. This was accomplished by accessing the California Unified Certification Program (CUCP) DBE Database of Certified Firms and the 2006 U.S. Census Bureau County Business Patterns (CBP) Database, sorted by corresponding zip codes within SANDAG’s market area (defined as Imperial, Riverside and San Diego Counties), for each of the specific industries and types of businesses for the work categories to be awarded by NAICS Code. SANDAG’s local market area represents where the substantial majority of SANDAG’s dollars are intended to be expended and/or where the substantial majority of SANDAG’s bids, quotes, proposals or statements of qualifications are received from for similar types of work.

SANDAG made a concerted effort to ensure that the type of businesses included in the numerator was as close as possible to the types of businesses included in the denominator. For corresponding detail of all work category classifications grouped, refer to Attachments I and II.

- For the numerator: California UCP DBE Database of Certified Firms
- For the denominator: 2006 U.S. Census Bureau Business Pattern Database (CBP)

To determine the relative availability of DBEs, SANDAG divided the numerator representing the number of ready, willing and able DBE firms by NAICS codes within SANDAG’s defined market area, by the denominator representing all firms (DBEs and Non-DBEs) available by each work category within the defined market area. SANDAG further refined its analysis by applying weight to each individual work category relative to its estimated contracting dollar share.

The AADPL Base Figure resulting from this weighted calculation is as follows:

\[
\text{AADPL BASE FIGURE} = \left( \frac{\text{Number of Ready, Willing, and Able DBEs (in a work category)}}{\text{Number of All Available Firms (in the same work category) (Including DBEs and Non-DBEs)}} \right) \times \text{Weight} \times 100
\]

1 26.45 represents Title 49 CFR Part 26 regulatory goal setting methodology reference.
### Step 1: AADPL Base Figure (weighted by type of work to be performed (NAICS Categories) and estimated corresponding contracting dollars)

<table>
<thead>
<tr>
<th>International Trade Financing 522293</th>
<th>Investment Advice 523930</th>
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</thead>
<tbody>
<tr>
<td>Base Figure = ( \frac{1.63% \text{ (DBEs in NAICS 522293)}}{\text{(CBPs in NAICS 522293)}} )</td>
<td>Base Figure = ( \frac{1.63% \text{ (DBEs in NAICS 523930)}}{\text{(CBPs in NAICS 523930)}} )</td>
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<table>
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<tr>
<th>Engineering Services 541330</th>
<th>Custom Computer Programming Services 541511</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Figure = ( \frac{21.68% \text{ (DBEs in NAICS 541330)}}{\text{(CBPs in NAICS 541330)}} )</td>
<td>Base Figure = ( \frac{10.29% \text{ (DBEs in NAICS 541511)}}{\text{(CBPs in NAICS 541511)}} )</td>
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### Public Relations Agencies (541820)

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<td>0.85% (DBEs in NAICS 541820) (CBPs in NAICS 541820)</td>
<td>12.14% (DBEs in NAICS 561320) (CBPs in NAICS 561320)</td>
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Based on this analysis, SANDAG determined its AADPL to be **5%** for FFY 2009/10. The AADPL is expressed as a percentage of all DOT-assisted funds that SANDAG anticipates to expend in FFY 2009/10.

The AADPL further serves to identify the relative availability of DBEs based on evidence of ready, willing, and able DBEs to all comparable firms, which are known to be available to compete for and perform on SANDAG’s DOT-assisted contracts. The AADPL reflects a determination of the level of DBE participation which would be expected absent the effects of discrimination.

**RACE-CONSCIOUS PROJECTION**

To determine the Race-Conscious component projection of its AADPL, SANDAG refined the numerator in the base figure formula to exclusively represent the ratio of ready, willing and able UDBE firms (African American, Asian Pacific American, Native American and Women owned firms) by NAICS codes within SANDAG’s defined market area and divided this number by the denominator representing all firms (DBEs and Non-DBEs) available by each work category within the defined market area. SANDAG further refined its Race-Conscious projection analysis by applying weight to each work category relative to its estimated dollar share of the Project/Contract. For corresponding detail of all defined work category classifications, refer to Attachments I-RC and Attachment II.
$\text{No. of UDBEs in a Work Category} \times \text{Weight} \times 100 = \text{RACE-CONSCIOUS PROJECTION}$

### International Trade Financing (522293)

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<thead>
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### Engineering Services (541330)

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### Custom Computer Programming Services (541511)

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### Computer Systems Design Services (541512)

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<tr>
<td></td>
<td>(CBPs in NAICS 541512)</td>
</tr>
<tr>
<td>Base Figure</td>
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<td>Base Figure</td>
<td>.1029 (.0387)</td>
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<td>Base Figure</td>
<td>.0040</td>
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### Administrative Management and General Management Consulting Services (541611)

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<tbody>
<tr>
<td></td>
<td>(CBPs in NAICS 541611)</td>
</tr>
<tr>
<td>Base Figure</td>
<td>.1431 17 ( \frac{1}{874} )</td>
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(Continued)

<table>
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<td>Base Figure = [0.85% (UDBEs in NAICS 541613)] (\text{CBPs in NAICS 541613})</td>
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<tr>
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<th>Environmental Consulting Services 541620</th>
</tr>
</thead>
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<tr>
<td>Base Figure = [17.55% (UDBEs in NAICS 541614)] (\text{CBPs in NAICS 541614})</td>
<td>Base Figure = [4.25% (UDBEs in NAICS 541620)] (\text{CBPs in NAICS 541620})</td>
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<th>Temporary Help Services 561320</th>
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<td>Base Figure = [12.14% (UDBEs in NAICS 561320)] (\text{CBPs in NAICS 561320})</td>
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<td>Base Figure = [0.0085 \ 22] (\text{123})</td>
<td>Base Figure = [0.1214 \ 10] (\text{466})</td>
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(Continued)

<table>
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<tr>
<th>Administration of Public Health Programs 923120</th>
<th>International Affairs 928120</th>
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<td>Base Figure = 0.85% (UDBEs in NAICS 923120)</td>
<td>Base Figure = 1.63% (UDBEs in NAICS 928120)</td>
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<tr>
<td>Base Figure = .0085 (.0000)</td>
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</tr>
<tr>
<td>Base Figure = .0000</td>
<td>Base Figure = .0000</td>
</tr>
</tbody>
</table>

**RACE-CONSCIOUS PROJECTION**

Base Figure = 0.0000 + 0.0000 + 0.0082 + 0.0025 + 0.0040 + 0.0028 + 0.0000 + 0.0002 + 0.0092 + 0.0104 + 0.0015 + 0.0026 + 0.0000 + 0.0000

Race-Conscious Projection = (0.0414) 100 = 4.14 = 4%*

* Rounded to the nearest whole number

**RACE-NEUTRAL PROJECTION**

To determine the Race-Neutral component projection of its AADPL, SANDAG subtracted the established AADPL Base Figure (5%) by the Race-Conscious Projection (4%). The Race-Neutral component of SANDAG’s DBE program is limited to two groups – Hispanic and Subcontinent Asian males. The Race-Neutral component projection for SANDAG’s AADPL was determined by applying the following formula:

**AADPL Base Figure (5%) – Race-Conscious Projection (4%) = Race-Neutral (%) Projection**

**Formula**

\[
\text{AADPL Base Figure} \quad 5\% \\
\text{Race-Conscious Component Projection} \quad 4\% \\
\frac{1\%}{-} \\
\text{Race-Neutral Projection} = 1\%
\]
RACE-NEUTRAL & RACE-CONSCIOUS PROJECTIONS

Accordingly, SANDAG projects to meet 4% of the 5% AADPL for FFY 2009/10 utilizing race-conscious measures, including establishing and utilizing contract specific UDBE numeric goals, as necessary to achieve the AADPL. 1% of the 5% AADPL is projected to be achieved utilizing race-neutral methods in accordance with Title 49 CFR Part 26.51. The application of race-conscious goals on SANDAG’s DOT-assisted contracts will continue to be used only to the extent necessary to achieve SANDAG’s AADPL. Should the initial contract’s actual DBE commitments exceed projections, adjustments will be made accordingly.

IV. RACE-NEUTRAL IMPLEMENTATION MEASURES

In accordance with Title 49 CFR Part 26.51, SANDAG understands it must meet the maximum feasible portion of its AADPL by utilizing race-neutral means of facilitating DBE participation. Therefore, SANDAG plans to implement the following race-neutral measures for FFY 2009/10:

- SANDAG will arrange solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitate DBE, and other small businesses’ participation (e.g., unbundling large contracts to make them more accessible to small businesses, requiring or encouraging prime contractors to subcontract portions of work that they might otherwise perform with their own forces). Planned race-neutral measures by SANDAG will also include holding pre-bid conferences for SANDAG’s federally-aided projects, which include a networking component to promote teaming opportunities between prospective Primes and the DBE and Small Business contracting community.

- Providing assistance in overcoming limitations such as inability to obtain bonding or financing (e.g., by such means as simplifying the bonding process, reducing bonding requirements and providing services to help DBEs, and other small businesses, obtain bonding and financing). Planned race-neutral measures by SANDAG will include SANDAG using its website refer the DBE and Small Business Contracting Community to the SBA bonding assistance program, via the California Construction Contracting Program (CCCP) and its technical counselors.

- Providing technical assistance and other services;

- Carrying out information and communication programs on contracting procedures and specific contract opportunities (e.g., ensuring the inclusion of DBEs, and other small businesses, on recipient mailing lists of bidders; ensuring the dissemination to bidders on prime contracts of lists of potential subcontractors. Planned race-neutral measures by SANDAG will include SANDAG soliciting DBEs and Small Businesses within SANDAG’s defined market area utilizing any or all of the following means: Issue solicitation flyers/letters to promote upcoming bid opportunities through, email blasts, postcards, website posting, fax blasts, and electronic vendor database system, etc.
Implementing a supportive services program to develop and improve immediate and long-term business management, record keeping, and financial and accounting capability for DBEs and other small businesses. Planned race-neutral measures by SANDAG will include SANDAG co-sponsoring the Calmentor Program with Caltrans for Architecture and Engineering small disadvantaged businesses, and providing educational and technical assistance through the San Diego Contracting Opportunity Center.

Providing services to help DBEs, and other small businesses, improve long-term development, increase opportunities to participate in a variety of types of work, handle increasingly significant projects, and achieve eventual self-sufficiency. Planned race-neutral measures by SANDAG will include holding pre-bid conferences that will include a networking component to promote teaming opportunities between prospective primes and the DBE and Small Business contracting community, and co-sponsoring District’s Mentor Protégé Program/Calmentor Program.

Ensuring distribution of your DBE directory, through print and electronic means, to the widest feasible universe of potential prime contractors. Planned Race-Neutral Measures by SANDAG will include SANDAG advising its Contracting Community of the availability of the California Unified Certification Program (CUCP) database (directory of Certified DBEs) website at www.dot.ca.gov/ucp/GetLicenseForm.do

Assisting DBEs, and other small businesses, to develop their capability to utilize emerging technology and conduct business through electronic media. SANDAG has launched an online vendor requisition system through Planetbids. By utilizing this system, Consultants, Contractors and Vendors may be accessed by numerous public agencies. The Consultants/Contractors and Vendors can also access information on upcoming training classes and upcoming business opportunities.
SAN DIEGO ASSOCIATION OF GOVERNMENTS (SANDAG)
ANNUAL ANTICIPATED DBE PARTICIPATION LEVEL (AADPL)
FEDERAL FISCAL YEAR 2009/10

ESTABLISHMENT OF THE NUMERATOR (DBE):

# OF ESTABLISHED DBE FIRMS BY NAICS WORK CATEGORIES WITHIN SANDAG’s MARKET AREA
(DEFINED AS IMPERIAL, RIVERSIDE & SAN DIEGO COUNTIES)\(^1\)

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\(1\) **DATA SOURCE**: California UCP DBE Database of Certified Firms.
ATTACHMENT I - RC

SAN DIEGO ASSOCIATION OF GOVERNMENTS (SANDAG)
ANNUAL ANTICIPATED DBE PARTICIPATION LEVEL (AADPL)
RACE-CONSCIOUS PROJECTION
FEDERAL FISCAL YEAR 2009/10

ESTABLISHMENT OF THE NUMERATOR (UDBE):

# OF ESTABLISHED UDBE FIRMS BY NAICS WORK CATEGORIES WITHIN SANDAG’s MARKET AREA (DEFINED AS IMPERIAL, RIVERSIDE & SAN DIEGO COUNTIES)\(^1\)

<table>
<thead>
<tr>
<th>WORK CATEGORIES:</th>
<th>BY CORRESPONDING ZIP CODE</th>
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<tbody>
<tr>
<td>NAICS CODE</td>
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<tr>
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<td>International Trade Financing</td>
</tr>
<tr>
<td>523930</td>
<td>Investment Advice</td>
</tr>
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<td>541512</td>
<td>Computer Systems Design Services</td>
</tr>
<tr>
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<td>Administrative Management and General Management Consulting Services</td>
</tr>
<tr>
<td>541612</td>
<td>Human Resources and Executive Search Consulting Services</td>
</tr>
<tr>
<td>541613</td>
<td>Marketing Consulting Services</td>
</tr>
<tr>
<td>541614</td>
<td>Process, Physical Distribution, and Logistics Consulting Services</td>
</tr>
<tr>
<td>541620</td>
<td>Environmental Consulting Services</td>
</tr>
<tr>
<td>541820</td>
<td>Public Relations Agencies</td>
</tr>
<tr>
<td>561320</td>
<td>Temporary Help Services</td>
</tr>
<tr>
<td>923120</td>
<td>Administration of Public Health Programs</td>
</tr>
<tr>
<td>928120</td>
<td>International Affairs</td>
</tr>
<tr>
<td><strong>TOTAL NUMBER OF ESTABLISHED UDBE FIRMS</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

\(^1\) DATA SOURCE: California UCP DBE Database of Certified Firms.
## ATTACHMENT II

SAN DIEGO ASSOCIATION OF GOVERNMENTS (SANDAG) ANNUAL ANTICIPATED DBE PARTICIPATION LEVEL (AADPL) FEDERAL FISCAL YEAR 2009/10

### ESTABLISHMENT OF THE DENOMINATOR:

# OF ALL ESTABLISHED FIRMS (DBEs and Non-DBEs) BY NAICS WORK CATEGORIES WITHIN SANDAG’s MARKET AREA (DEFINED AS IMPERIAL, RIVERSIDE & SAN DIEGO COUNTIES)\(^1\)

<table>
<thead>
<tr>
<th>NAICS CODE</th>
<th>NAICS DESCRIPTION</th>
<th>IMPERIAL</th>
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<th>SAN DIEGO</th>
<th>Total</th>
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<tr>
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<td><strong>1,057</strong></td>
<td><strong>4,701</strong></td>
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\(^1\) **DATA SOURCE:** 2006 U.S. Census Bureau: County Business Patterns, NAICS Work Category Codes.
SOUTHERN CALIFORNIA DISADVANTAGED BUSINESS ENTERPRISE DISPARITY STUDY

Introduction

SANDAG must implement the Federal Disadvantaged Business Enterprise (DBE) Program to receive U.S. Department of Transportation (USDOT) funds. Recent court decisions and guidance from USDOT have led SANDAG to reexamine how it implements the Program. On May 1, 2006, SANDAG discontinued the use of DBE contract goals/good faith efforts for contracts funded by the Federal Transit Administration (FTA) and implemented a wholly race neutral program.

Discussion

Disparity Study Requirement

SANDAG is required to develop and submit a DBE Overall Annual Goal for DBE participation as a condition of receiving federal assistance, pursuant to Section 1101 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU); 49 CFR Part 26; the FTA Master Agreement, and the American Recovery and Reinvestment Act of 2009 (i.e. economic stimulus package), which includes DBE provisions and requirements. Following the 2006 ruling in Western States Paving Co. v. Washington State Department of Transportation (Ninth Circuit Court of Appeals case), U.S. DOT and all DOT recipients in the jurisdiction of the Ninth Circuit received a Notice/Guidance from FTA (Docket No. FTA-2006-24063 dated March 23, 2006), which directed recipients to implement a wholly Race Neutral DBE Program if they did not have sufficient evidence readily available to satisfy the evidentiary standards established in this ruling to request a waiver from the DOT to implement a Race-Conscious DBE Program.

Southern California Regional Consortium Disparity Study Update

SANDAG, in response to the DOT Notice/Guidance, became a funding and participating member of the Southern California Regional Disparity Study Consortium. As discussed in the previous agenda item report, FTA funded agencies participating in the Consortium are all located in southern California and include SANDAG, Metropolitan Transit System (MTS), Los Angeles County Metropolitan Transportation Authority, Orange County Transportation Authority, and the Southern California Regional Rail Authority (Metrolink). The Consortium hired a consultant to conduct a disparity study to assist the Consortium members in making decisions concerning their compliance with the FTA DBE Program.

Recommendation

The Board of Directors is asked to accept the Southern California DBE Disparity Study relating to FTA assisted projects for distribution for purposes of a 45-day public comment period.
SANDAG Disparity Study Summary

SANDAG, as a participating member of the Consortium, selected BBC Research & Consulting to conduct the Disparity Study to assist SANDAG in making decisions concerning compliance with the FTA DBE Program. Some of the issues addressed in the Disparity Study include the following:

1. Setting an overall annual aspirational goal for DBE participation in FTA funded contracts;
2. Determining achievement of the annual aspirational goal through race neutral means;
3. Identifying specific measures to be used in implementing the FTA DBE Program; and
4. Considering initiatives applicable to SANDAG locally funded contracts.

The Executive Summary of the SANDAG Disparity Study Draft Report (Attachment 1) examines these issues in detail. The complete SANDAG Disparity Study Draft Report has been provided on the enclosed CD. Printed copies of the Disparity Study report may be obtained from the SANDAG Web site at www.sandag.org/disparitystudy or by contacting the SANDAG Public Information Office at (619) 699-1950.

SANDAG Public Forum

SANDAG will be hosting a “Southern California Regional Disparity Study Public Forum” on Wednesday, October 21, 2009, from 3 to 7:30 p.m. at the SANDAG Board Room on the 7th floor of the Wells Fargo building, 401 B Street, San Diego, CA 92101-4231. The Public Forum will offer vendors, contractors, industry representatives, and others the opportunity to share personal experiences and other information related to implementation of the DBE Program, including whether there is discrimination affecting contracting in the transportation industry. Relevant experiences could include testimony regarding issues in starting and expanding businesses; obtaining financing, insurance and bonding; outreach efforts and assistance programs; obtaining work with agencies and other local establishments; subcontracting; and other topics. Testimony will become part of the public record for the Disparity Study. Persons unable to attend the Public Forum may submit written testimony to SANDAG by U.S. Mail at 401 B Street, Suite 800, San Diego, CA 92101, Attention: Marla Burke and via e-mail to: dbedisparity@sandag.org and Web site: www.sandag.org/disparitystudy.

Next Steps

If accepted by the Board of Directors, the draft Disparity Study will be released for a 45-day public comment period. Following the 45-day comment period, SANDAG will submit all public comments it receives on the Disparity Study to the Consortium’s consultant for incorporation into the final version of the Disparity Study. The final version of the Disparity Study is scheduled to be presented for Board of Directors approval in January/February 2010.

GARY L. GALLEGOS
Executive Director

Attachments: 1. Section ES Executive Summary (BBC Research & Consulting SANDAG Draft report) 
               2. SANDAG Disparity Study Draft Report; Sections I - X and Appendices A - J (CD included) as prepared by BBC Research & Consulting

Key Staff Contact: Elaine Richardson, (619) 699-6956, eri@sandag.org
SECTION ES.

Executive Summary

The San Diego Association of Governments (SANDAG) must implement the Federal Disadvantaged Business Enterprise (DBE) Program to receive U.S. Department of Transportation (USDOT) funds. Recent court decisions and guidance from USDOT have led SANDAG to reexamine how it implements the Program. On May 1, 2006, SANDAG discontinued the use of DBE contract goals/good faith efforts for contracts funded by the Federal Transit Administration (FTA).

BBC Research & Consulting conducted this disparity study to assist SANDAG in making decisions concerning compliance with the Federal DBE Program:

1. Setting an overall annual aspirational goal for DBE participation in FTA-funded contracts;
2. Determining achievement of the annual aspirational goal through neutral means;
3. Identifying specific measures to be used in implementing the Federal DBE Program; and
4. Considering initiatives applicable to its locally-funded contracts (contracts for which the Federal DBE Program does not apply).

1. Overall Annual Aspirational DBE Goal

SANDAG must develop an overall annual aspirational goal for DBE participation in FTA-funded contracts. The Federal DBE Program requires a “base figure analysis” and consideration of any “step 2” adjustments in deriving this annual goal.

Base figure analysis. SANDAG should consider 16.2 percent as the base figure for its overall annual aspirational goal for DBE participation, which exceeds SANDAG’s 6 percent overall annual aspirational DBE goal for FFY 2009. SANDAG included certified DBEs in its calculations (a USDOT-approved approach). BBC also counted in the base figure minority- and women-owned firms that possibly could be certified as DBEs but are not currently certified, which is recommended by USDOT if such information can be developed. (Only counting certified DBEs, BBC’s approach produces a base figure of 9.4%.)

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1 SANDAG joined four Southern California public transportation agencies in this joint study (the Los Angeles County Metropolitan Transportation Authority, Southern California Regional Rail Authority, Orange County Transportation Authority, and San Diego Metropolitan Transit System). The study began in December 2007 and will be completed in late 2009 once public transportation agencies and the public have the opportunity to review and comment on the draft report.

2 Note that the annual aspirational goal differs from the process SANDAG might use to set any individual contract-specific goals, which would consider the unique aspects of that contract and the availability of DBEs for potential subcontracted work.

3 Minority- and women-owned firms comprise 38 percent of the 2,480 businesses BBC examined as available for specific types of Consortium agency transportation prime contracts and subcontracts. Because BBC performed the availability analysis on a dollar-weighted basis given the sizes, types and other characteristics of individual contracts, calculation of MBE/WBE availability differs from a simple counting of firms.

4 Based on information on race/ethnicity/gender ownership and the annual revenue of the firms. The base figure does not include firms that have graduated from the DBE Program or have otherwise had recent certification denials.
Note that the annual aspirational goal could change based on changes in the actual contract opportunities that are available in any given year. Section III of the report describes the base figure analysis.

**Consideration of possible step 2 adjustments.** SANDAG must consider specific types of information regarding the relative availability of DBEs before finalizing its overall annual aspirational DBE goal. This process is referred to as consideration of a “step 2” adjustment. The adjustment can be downward or upward. BBC’s in-depth analysis of each factor outlined in the Federal DBE Program suggests that SANDAG consider one of the following options concerning a step 2 adjustment.

**Option 1 – making an upward adjustment at this time.** Over the long-term, there are reasons that SANDAG might consider a higher overall annual aspirational goal than the 16.2 percent base figure.

- If SANDAG were to make an upward adjustment, it could consider the 21.9 percent figure for DBE participation after adjusting for disparities in business ownership rates for women and certain minority groups in the Southern California construction and engineering industries (discussed in Section VI of the report).
- Evidence of disparities in access to capital and other factors also supports an overall annual aspirational goal higher than 16.2 percent.

**Option 2 – making no step 2 adjustment.** SANDAG might adopt the 16.2 percent base figure for its overall annual aspirational goal for DBE participation without making a step 2 adjustment. The Federal DBE Program does not require agencies to make a step 2 adjustment in the goal-setting process as long as the agency can explain this decision.

**Option 3 – making a downward adjustment at this time.** There are also reasons for a downward step 2 adjustment from the 16.2 percent base figure:

- BBC’s estimate of certified DBE participation on FTA-funded contracts for 2003 through 2007 was 12.2 percent (see Section VI of the report). This level of participation may represent a minimum demonstration of “current capacity of DBEs to perform work.”

SANDAG might conclude that the 16.2 percent base figure for DBE participation is much higher than the current annual aspirational goal of 6 percent and DBE participation of 12.2 percent and that it should make a downward adjustment from the base figure. One approach would be to calculate an average of the 16.2 percent base figure and 12.2 percent past DBE participation, which is 14.2 percent. This methodology is consistent with some other Consortium agencies’ past approaches to step 2 adjustments that were approved by FTA.

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5 See 49 CFR Section 26.45 (d) and Section VI of the disparity study report for a discussion of each factor.

6 Per 49 CFR Section 26.45 (d)(1)(i).
2. Percentage of the Annual Goal to be Achieved through Neutral Means

USDOT requires agencies to meet the maximum feasible portion of the overall annual goal using race-neutral means. Agencies should examine questions listed below when projecting the portion of their overall annual goal to be met through race- and gender-neutral means:

a. What is the participation of DBEs in the recipient’s contracts that do not have contract goals?

b. There may be information about state, local, or private contracting in analogous areas where contract goals are not used (e.g., in situations where a prior state/local affirmative action program was ended). What is the extent of participation of minority- or women-owned businesses in programs without goals?

c. What is the extent of race-neutral efforts that the recipient will have in place for the next fiscal year?

d. Are there firm, written, detailed commitments in place from contractors to take concrete steps sufficient to generate a certain amount of DBE participation through race-neutral means?

e. To what extent have DBE primes participated in the recipient’s programs in the past?

f. To what extent has the recipient oversubscribed its DBE goals in the past?

The following summarizes BBC’s analysis of each question (see Section VI for more details.)

a. Participation on SANDAG contracts without goals/good faith efforts program.

SANDAG discontinued its use of a DBE contract goals/good faith efforts program on May 1, 2006. After May 1, 2006, SANDAG set “advisory goals” for DBE participation on FTA-funded contracts, but did not require bidders to meet those goals or show good faith efforts. In early 2007, SANDAG discontinued setting “advisory goals” on contracts.

There were 30 FTA-funded contracts from May 2006 through December 2007 within the procurement areas BBC examined in the SANDAG disparity study. Including subcontracts, BBC analyzed 77 FTA-funded contract elements during this time period.

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8 BBC identified 434 SANDAG procurements that were FTA-funded within the study period. These procurements represented $180 million. Only a portion of these procurements were suitable for analysis in the disparity study, as described in Section III of the report. BBC also analyzed 333 SANDAG procurements totaling $113 million that were locally-funded, of which a portion were suitable for further examination in the study. Race/ethnicity/gender ownership of utilized firms was determined through multiple sources in addition to certification records, including telephone interviews with individual firms. Section II and Appendix C of the report discuss the methodology for the utilization analysis. Appendix E of the report provides a detailed breakdown of utilization by group for specific types and time periods of SANDAG contracts and subcontracts.
Overall utilization of minority- and women-owned firms. Minority- and women-owned firms (MBE/WBEs) obtained 21 percent of the FTA-funded contract dollars for May 2006 through December 2007, about the same as MBE/WBE utilization for FTA-funded contracts from 2003 to April 2006 when the DBE contract goals/good faith efforts program was in place. As shown in Figure ES-1, nearly all of the FTA-funded contract dollars that MBE/WBEs received for May 2006–December 2007 went to firms that were certified as DBEs. Asian-Pacific American-owned firms accounted for most of the MBE/WBE utilization on FTA-funded contracts.

BBC also examined MBE/WBE participation as prime contractors and subcontractors on locally-funded contracts for 2003 through 2007 (SANDAG has not applied subcontracting goals to these contracts). MBE/WBE utilization was about 13 percent, substantially below MBE/WBE utilization on FTA-funded contracts. (Sections IV and V of the report discuss results in more detail.)

Figure ES-1.
MBE/WBE share of prime/subcontract dollars for FTA-funded transportation contracts, before and after May 1, 2006, and for locally-funded contracts, 2003–2007

Note:
Certified DBE utilization.
For more detail and results by group, see Figures E-2, E-3 and E-4 in Appendix E.

Source:
BBC Research & Consulting from data on SANDAG contracts.

9 This analysis counts firms as MBE/WBEs if they are certified as MBE/WBEs and/or as DBEs and when they indicate minority or female ownership and are not certified (because they are too large to meet certification criteria, have let certification lapse, have chosen not to be certified, or for other reasons).
Figure ES-2 provides utilization results for MBE/WBEs, and separately for certified DBEs, for the 330 SANDAG FTA- and locally-funded contracts and subcontracts examined in the study.

**Figure ES-2.**
**DBE and MBE/WBE share of prime/subcontract dollars for transportation contracts, by race/ethnicity/gender**

<table>
<thead>
<tr>
<th></th>
<th>Federally-funded contracts</th>
<th>Locally-funded contracts</th>
<th>Total 2003-2007</th>
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</thead>
<tbody>
<tr>
<td>MBE/WBEs</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>African American-owned</td>
<td>0.8%</td>
<td>2.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Asian-Pacific American-owned</td>
<td>12.9</td>
<td>17.2</td>
<td>9.6</td>
</tr>
<tr>
<td>Subcontinent Asian American-owned</td>
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<td>0.0</td>
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<tr>
<td>Hispanic American-owned</td>
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<td>Native American-owned</td>
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<tr>
<td><strong>Total MBE</strong></td>
<td><strong>20.7%</strong></td>
<td><strong>20.2%</strong></td>
<td><strong>11.7%</strong></td>
</tr>
<tr>
<td>WBE (white women-owned)</td>
<td>1.0</td>
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<td><strong>Total MBE/WBE</strong></td>
<td><strong>21.6%</strong></td>
<td><strong>20.8%</strong></td>
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<tr>
<td>DBEs</td>
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<td>African American-owned</td>
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<td>Asian-Pacific American-owned</td>
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<td>3.2</td>
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<td>Subcontinent Asian American-owned</td>
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<tr>
<td>Hispanic American-owned</td>
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<tr>
<td>WBE (white women-owned)</td>
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<td>1.0</td>
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<tr>
<td>White male-owned DBE</td>
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<tr>
<td><strong>Total DBE</strong></td>
<td><strong>7.9%</strong></td>
<td><strong>20.6%</strong></td>
<td><strong>5.9%</strong></td>
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</tbody>
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Note: Numbers rounded to nearest tenth of 1 percent. Numbers may not add to totals due to rounding.
For more detail, see Figures E-2, E-3, E-4 and E-38 in Appendix E.
Source: BBC Research & Consulting from data on SANDAG contracts.
**Participation of minority- and women-owned firms as subcontractors.** Figure ES-3 examines the share of subcontract dollars going to MBE/WBEs and certified DBEs on FTA-funded contracts before and after the change in implementation of the program, and for subcontracts on locally-funded contracts for 2003 through 2007. For FTA-funded contracts, the percentage of subcontract dollars going to MBE/WBEs dropped considerably for May 2006 through December 2007. About 37 percent of subcontract dollars on FTA-funded contracts went to MBE/WBEs prior to the change in program. After the change, 10 percent of the subcontract dollars went to MBE/WBEs.

**Figure ES-3.**
MBE/WBE share of subcontract dollars for FTA-funded transportation contracts, before and after May 1, 2006, and for locally-funded contracts, 2003-2007

Discontinuing the DBE contract goals/good faith efforts program may have also resulted in a smaller share of contract dollars being subcontracted out (and more retained by the prime).

**Disparity analysis.** Report sections IV and V and supporting appendices explain disparity analyses in considerable detail. Key results include the following:

- MBE/WBE utilization for FTA-funded contracts from May 2006 through December 2007 of 21 percent was slightly less than what would be expected given MBE/WBE availability for these contracts (24%). There was no evidence of substantial disparities, overall, on FTA-funded contracts after the change in program.

- Because much of the overall MBE/WBE utilization for May 2006–December 2007 FTA-funded contracts only involved Asian-Pacific American-owned firms, analysis of utilization and availability by group showed evidence of substantial disparities for each other MBE/WBE group.

- A similar pattern of disparities was found for FTA-funded contracts from 2003 through April 2006 when DBE subcontracting goals/good faith efforts were in place.

- MBE/WBE utilization on locally-funded contracts (13%) was about one-half of what would be expected based on MBE/WBE availability for these contracts. There were disparities for each MBE/WBE group for locally-funded contracts except for Asian-Pacific American-owned firms.
b. Information about state, local, or private contracting in analogous areas where contract goals are not used. What is the extent of participation of minority or women-owned businesses in programs without goals? The five Consortium agencies participating in the Southern California Regional Disparity Study make purchases within the same local transportation contracting market, and operated and then discontinued DBE contract goals/good faith efforts programs. A combined utilization and disparity analysis from BBC's studies for the five non-SANDAG Consortium agencies (LACMTA, OCTA, SCRRA, SANDAG and MTS) is presented here. (SANDAG comprises a very small portion of the total Consortium dollars examined.)

Overall utilization of minority- and women-owned firms. Figure ES-4 combines utilization from each of the five Consortium agencies.

- Minority- and women-owned firms obtained 16.7 percent of Consortium agency FTA-funded contract dollars from 2003 through the time that agencies discontinued use of DBE contract goals/good faith efforts programs (which varied from March/April to September 2006).
- After the change in the program, MBE/WBE utilization on FTA-funded contracts was 29.7 percent.
- MBE/WBE utilization for 2003–2007 locally-funded Consortium contracts was 15.4 percent.

**Figure ES-4.**
MBE/WBE share of Consortium agency prime/subcontract dollars for FTA-funded transportation contracts, before and after change in DBE contract goals, and for locally-funded contracts, 2003–2007

**Disparity analysis.** BBC compared combined MBE/WBE utilization for Consortium agencies (by group) with the level of utilization expected based on a combined availability analysis for Consortium contracts (see Section VI). There was no disparity in Consortium utilization of MBE/WBEs, overall, for FTA-funded contracts during the time when the DBE contract goals/good faith efforts program was in place at each agency. However, there were disparities for WBEs and African American- and Subcontinent Asian American-owned firms.
When examining FTA-funded contracts from the period in 2006 when agencies discontinued DBE contract goals/good faith efforts to the end of 2007, there were no overall disparities for MBE/WBEs but substantial disparities for WBEs and African American- and Native American-owned firms.

For locally-funded Consortium contracts, utilization of MBE/WBEs was about 60 percent of what would be expected based on MBE/WBE availability for these contracts. Disparities were identified for each MBE/WBE group except for African American-owned firms.

c. Race- and gender-neutral remedies available to SANDAG. SANDAG has implemented a number of race- and gender-neutral remedies and partners with other organizations serving small businesses in Southern California. BBC suggests that SANDAG continue ongoing activities and consider additional race- and gender-neutral remedies (see Section VI), four of which are highlighted below.

Subcontracting minimum. Compared with its experience for FTA-funded contracts for 2003–April 2006, subcontracting accounted for a somewhat smaller percentage of total SANDAG FTA-funded contract dollars after May 1, 2006 (20%). After SANDAG’s change in program, prime contractors may have retained somewhat more of the contract amount and reduced their overall use of subcontractors.10

SANDAG could consider an initiative similar to the Mandatory Subcontracting Minimum (MSM) program operated by the City of Los Angeles:

- For each contract above a certain dollar amount, SANDAG would set a percentage to be subcontracted based on analysis of the work to be performed and experience from similar contracts (different types of projects involve relatively greater or smaller amounts of subcontracting). For some contracts, SANDAG would set a 0 percent MSM (or just no MSM).

- Prime contractors bidding on the contract would need to subcontract a percentage of the work equal to or exceeding the minimum for their bids to be deemed responsive.

- If an MSM program is adopted, SANDAG should include flexibility in the program, including the opportunity for the prime contractor to request a waiver (preferably before time of bid so that the waiver would apply to each prime).

Availability of minority- and women-owned firms is relatively high for small to medium subcontracts. A subcontracting minimum program corresponds to a neutral remedy listed in the Federal DBE Program (“requiring or encouraging prime contractors to subcontract portions of work that they might otherwise perform with their own forces”).11

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10 From interviews with business owners and others in the local industry, the economic downturn in 2008 and 2009 may have further reduced the amount of contracts that are subcontracted out.

11 49 CFR Section 26.51 (b)(1).
Small business subcontracting program. SANDAG could consider expanding its small business program to include subcontracting goals for certified small businesses. SANDAG might set goals and evaluate contractor compliance using the same processes provided for in the Federal DBE Program.

SANDAG might consider a number of options for determining eligibility of small businesses for the program, including:

- Use of the same eligibility criteria for certification as found in the Federal DBE Program except that race/ethnicity/gender ownership would not be considered (this approach is currently used by LACMTA). SANDAG could partner with other agencies in Southern California to certify small businesses.

- Application of the same eligibility criteria as the State of California small business program, except that SANDAG would not limit the program to California-based firms because the program applied to FTA-funded contracts.

Small business prime contractor program. SANDAG might also evaluate whether its small business program could include measures to assist certified small businesses obtain prime contracts. Similar to the State of California’s program, SANDAG might be able to award small business preferences for certain types of contracts. For example, when evaluating proposals for professional services contracts, SANDAG might include 5 evaluation points out of 100 to be awarded based on the certified small business status of a proposer. In addition to the State of California program, the City of Los Angeles operates a small business programs that SANDAG could evaluate.

Review and possible improvement of certain contracting procedures. If allowable by the FTA, SANDAG may wish to review the frequency of its use of sole source procurement methods and whether or not it can further open opportunities for small prime contractors including MBE/WBEs on its construction contracts, as explained in Section VI of the report.

d. Are there firm, written, detailed commitments in place from contractors to take concrete steps sufficient to generate a certain amount of DBE participation through race-neutral means? When SANDAG changed its implementation of the goals program, it no longer required contractors to commit to a certain amount of DBE participation.

e. To what extent have DBE primes participated in the recipient’s programs in the past? MBE/WBEs accounted for 19 percent of prime contract dollars on the 94 FTA-funded contracts examined from 2003 through 2007. Participation of certified DBEs was 12 percent of FTA-funded prime contract dollars.

f. To what extent has the recipient oversubscribed its DBE goals in the past? BBC independently examined contract and subcontract awards for SANDAG’s FTA-funded contractors for the period from May 2006 through December 2007. DBEs received 21 percent of contract dollars, substantially more than the 5.3 percent annual aspirational DBE goal SANDAG set for FFY 2007.
Overall percentage to be achieved through neutral means. For October 2006 through December 2007, SANDAG’s overall utilization of minority- and women-owned firms for FTA-funded contracts was 92 percent of what it would be expected given MBE/WBE availability for these contracts. With additional neutral efforts, SANDAG may be able to meet its annual aspirational DBE goal solely through neutral efforts.

However, much of this MBE utilization was one group — Asian-Pacific American-owned firms — and substantial disparities persisted for other MBE/WBEs. SANDAG should consider how it might meet more (or all) of its annual aspirational goal through neutral means, in accordance with federal regulations in 49 CFR Section 26.51, and also address disparities for non-Asian-Pacific American-owned firms. Additional neutral efforts include:

- **Subcontracting programs.** A minimum subcontracting program might have a small positive impact on overall participation of minority- and women-owned firms in SANDAG’s FTA-funded contracts. A small business subcontracting goals program could also have an impact — there was little utilization of MBE/WBE subcontractors among May 2006–December 2007 FTA-funded contracts, which might improve with a program encouraging use of certified small businesses as subcontractors.

- **Other programs.** SANDAG could consider implementing a small business program for prime contracts. A pilot implementation of the program could provide SANDAG more information to gauge its effectiveness.

### 3. Implementation of the Federal DBE Program

The Federal DBE Program requires SANDAG to meet the maximum feasible portion of its overall goal by using race-neutral means of facilitating DBE participation. In making any policy decision to engage in a remedy that targets DBEs, if it determines such a remedy is needed, SANDAG should consider this disparity study and additional pertinent information per 49 CFR Part 26.

**Additional neutral efforts.** Additional race- and gender-neutral efforts are discussed above and in Section VI of the report.

**DBE goals/good faith efforts.** If after tracking the effectiveness of neutral remedies SANDAG considers reinstating DBE contract goals/good faith efforts, it will want to carefully examine which groups exhibit disparities in contracts without the DBE subcontracting goals/good faith efforts program (for example, all groups of DBEs except for Asian-Pacific American-owned firms showed disparities for both FTA-funded and locally-funded contracts for 2003 through 2007).

Guidance from the FTA indicates how local transportation agencies would operate any future DBE contract goals program in which eligibility is limited to certain race/ethnic/gender DBE groups. Only DBEs owned by those groups would count toward meeting a DBE contract goal. Other DBEs would still participate in SANDAG contracting in other ways (e.g., meeting a mandatory subcontracting minimum or potentially participating in a small business prime contractor program). SANDAG would include all DBE groups when preparing DBE participation reports to FTA. If SANDAG were to adopt an approach similar to the above example, it would need to request a waiver from USDOT to limit participation in this program component to certain groups.

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SANDAG needs metrics to track success in addition to those suggested in the Federal DBE Program, including careful tracking of MBE/WBEs (by group) as well as DBE participation in both FTA-funded and locally-funded contracts.

If SANDAG chooses to pursue a solely race- and gender-neutral implementation of the Federal DBE Program for the immediate future, it should monitor utilization and availability of minority- and women-owned firms, by group. SANDAG may need to consider adding certain race- and gender-conscious remedies if a solely neutral program is not effective in addressing any disparities in its utilization of minority- and women-owned firms on FTA-funded contracts.

4. Programs Applicable to Locally-funded Contracts

Neutral remedies. SANDAG could consider applying the neutral remedies explored here to its locally-funded contracts as well as FTA-funded contracts. For example, small business subcontracting and prime contractor programs might be applied, as needed, across areas of SANDAG contracts.

Race- and gender-based remedies. At present, Proposition 209 (Article I, Section 31 of the California Constitution) prohibits SANDAG from implementing programs including race, ethnic or gender preferences related to its locally-funded contracts. However, SANDAG should monitor developments in a case involving San Francisco’s implementation of a race- and gender-conscious program for its locally-funded contracts. At the time of this disparity study report, the issues raised in this case were under review by the California Supreme Court.

Summary

SANDAG maintained relatively high overall levels of minority and female business participation in its FTA-funded contracts after it discontinued use of a DBE contract goals/good faith efforts program — about 21 percent of contract dollars. However, this participation primarily involved one MBE group with large disparities persisting for WBEs and firms owned by other minority groups.

Because the Federal DBE Program requires agencies to meet the maximum feasible portion of the overall annual goal using race-neutral means, one course of action for SANDAG to consider is (a) immediately implementing new small business programs for its subcontracts and prime contracts, (b) reviewing success of new programs in addressing disparities for currently underutilized DBE groups, and (c) evaluating whether DBE contract goals for any specific DBE groups are then needed.

SANDAG should also consider a higher overall annual aspirational goal for future DBE participation than the 6 percent level used for FFY 2009.

ANNUAL RIDESHARE WEEK

Introduction

SANDAG administers the San Diego Regional Commuting Assistance Program, currently known as RideLink. RideLink is being transitioned to the new name iCommute, and this change will be actively promoted during Rideshare Week. The iCommute name better encompasses all the services offered and provides a fresh and contemporary look and feel. "Rideshare Week" is an annual event that is scheduled for October 5-9, 2009. The purposes of Rideshare Week are to: (1) increase public awareness of alternatives to solo commuting such as, carpooling, vanpooling, riding transit, teleworking, biking, or walking to work; (2) increase awareness of the rebranded iCommute program and its new tools and services to help both employers and commuters; and (3) create a call to action for the general public.

Recommendation

The Board of Directors is asked to approve Resolution No. 2010-03 (Attachment 1), proclaiming the week of October 5-9, 2009, as Rideshare Week and to encourage member agencies to approve similar proclamations.

Discussion

Transportation Demand Management (TDM) is one of the four major components identified in the 2030 Regional Transportation Plan for increasing mobility in the San Diego region. SANDAG has administered the Regional TDM Program since 1995. SANDAG coordinates a number of free commuter services to promote alternatives to driving alone to work or school through the program and offers customized employer assistance service through staff outreach. These services focus on ways to manage demand on current transportation facilities, particularly during the peak travel periods, for more efficient use.

The Regional TDM Program offers many services through the iCommute program commonly found at rideshare agencies across the country as well as a few services not found anywhere else. In FY 2010, the Regional TDM Program will focus on building awareness of the new iCommute program, employer outreach, and raising awareness of the new tools and services offered. Current programs and services include assistance to employers and schools, ridematching, regional vanpool, guaranteed ride home, and bike lockers. New services and products being launched in FY 2010 include the introduction of a new tool called ‘Ride Matcher,’ which helps commuters find carpool and vanpool partners and bike buddies, another tool called ‘Trip Tracker’ that tracks financial and environmental savings, and new functionality to make it easier for parents to sign up for SchoolPool. In addition, the TDM program will be working on innovative projects like carsharing, short distance vanpools, on-demand bicycle lockers, and a strategic partnership with the U.S. Department of Labor Women’s Bureau and with the U.S. Department of Navy on a TDM program. The programs and services currently offered and those new services proposed for FY 2010 are summarized below.
Current TDM Services

511 System – 511 is a free phone, Web, and TV service that consolidates the San Diego region's transportation information into a one-stop resource. 511 provides up-to-the-minute information on traffic conditions, incidents and driving times, schedule, route and fare information for San Diego public transportation services, carpool and vanpool referrals, bicycling information, and more. 511 is managed by a partnership of public agencies led by SANDAG, California Highway Patrol, Caltrans, Metropolitan Transit System (MTS), North County Transit District (NCTD), and San Diego SAFE. As of July 2009, 511 has received approximately 1.8 million callers and nearly 1 million visitors to www.511sd.com. In addition, 511 now allows for advertising opportunities on the Web site. It also features other SANDAG projects such as Compass Card and the Smart Parking Research Pilot Project known as QuickPark.

Regional Vanpool Program – The Regional Vanpool Program is designed to provide long-distance commuters with an alternative to driving alone. SANDAG contracts with two vanpool vendors to provide the vehicles, maintenance, and insurance. Drivers lease the vans on a month-to-month basis. SANDAG contributes $400 per van per month to assist the passengers with the lease costs. As of July 2009, there were 646 vanpools and 5,030 passengers in the Regional Vanpool Program. This represents a growth rate of 6 percent when compared to the same time period last year. Due to the economy, downsizing, and deployments, vanpool recruitment slowed a bit in FY 2009.

Employer Outreach – SANDAG assists employers in developing value-added commuting programs for their employees. Staff educates employers on federal and state tax incentives, free survey services, iCommute services including ridematching and trip tracking, and new commuting programs. By educating and promoting TDM programs to employers, staff is able to reach the region’s employees more effectively with a message from a trusted source. An educational employee rideshare fair is scheduled during Rideshare Week on October 7, 2009, to provide the latest information on commuting along the Interstate 5 (I-5) corridor, including the new SuperLoop service, and all other services available to them through SANDAG. The fair will be followed by an employer forum to teach human resource managers and professionals from local companies how to start their own commuter program or enhance their existing one. Other outreach efforts include recognition of employers that offer commuting programs via the SANDAG Diamond Awards. SANDAG also has been working on a strategic partnership with the Women’s Bureau at a local level to focus on telecommuting and other flexible workplace programs and policies.

Carpool/Vanpool Partner Matching - A new online ridematching application was launched in 2009. The application is a user friendly, self-service application which features high precision trip matching, interactive maps and overlays of geographic information system (GIS) data. The application has privacy safeguards, the ability to cater to commute and noncommute trips, and an integrated multimodal trip calendar to log commute alternatives, and it supports various modes including carpool, vanpool, transit, and bike. It also lets users register for programs such as the Guaranteed Ride Home program and bike lockers. The application also tracks emission savings and costs for using alternative transportation, and generates turn-by-turn directions for travel options. The upgrades for FY 2010 breaks out specific tools such as ‘Ride Matcher’ and ‘Trip Tracker’ to make it easier for the end user, while also upgrading the entire look and feel of these services.

Guaranteed Ride Home (GRH) Program – The GRH Program provides a free taxicab ride or 24-hour car rental to those who use a commute alternative at least three days per week. Registered participants can use this service in the event of an emergency, illness, or unscheduled overtime up to three times per year. The system allows users to sign-up online, self-validate online, and print out their voucher in their office 24/7. As of August 2009, there were 872 active registrants in the GRH Program. (This number is lower than last year because the program switched to a new online registration and commuters had to sign up on the Web site in order to be eligible in 2009.)
SchoolPool Services – iCommute offers a SchoolPool program that helps parents whose children attend the same schools to form carpools. The new system allows schools to form individual networks to provide an extra level of security to help parents and students find carpool partners they will be able to rely on for their commute.

Regional Bike Locker and Biking Program – Bike lockers provide cyclists a secure place to store their bike at key commute locations. As of July 2009, there were 940 lockers in the program, at 63 transit stations, including the SPRINTER and I-15 Bus Rapid Transit stations. The bike program is in the process of converting mechanical lockers to on-demand electronic lockers. Electronic lockers will allow for increased utilization, improved security, and will have reservation capabilities.

Freeway Service Patrol – The Freeway Service Patrol (FSP) is the regional program that provides for the rapid removal of disabled vehicles, assisting with traffic accidents and providing motorist assistance. The goal of the program is to reduce nonrecurring congestion by taking stranded motorists to a safe haven or assisting motorists so they can go on their way. In FY 2009, the FSP assisted 53,460 motorists on 13 beats covering 225 miles in the region.

New Directions

First and Last Mile Transit Connections – First and last mile connections are a critical aspect to delivering door-to-door solutions for transit users. These connections bridge the gap between home and transit (the First Mile) and transit and work (the Last Mile) and support transit dependent commuters. In FY 2009, SANDAG completed two studies regarding first and last mile solutions. The Phase II carsharing project also was completed and identified 14 potential carsharing locations. SANDAG plans to work with the City of San Diego to bring carsharing to downtown San Diego. The Short Distance Vanpool project, a larger station vehicle study, which was intended to investigate transit connections at Sorrento Valley, Old Town, and Kearny Mesa, was limited in scope due to the economy. In lieu of this, a short distance vanpool pilot program was started. This pilot program will be kept in the plan as part of first and last mile solutions. Results of both studies, available on the Web site, are intended to be used to help support long-term carsharing and short distance vanpool projects. Funds for the project were awarded to SANDAG by Caltrans.

Increased Program Awareness – A major rebranding campaign, switching to iCommute from RideLink, along with incorporating a new look and feel, will be unveiled during Rideshare Week. This campaign will help to ensure a consistent, cohesive message is delivered to both employers and commuters. A new Web site, posters, brochures, and mailing and marketing materials have been developed. Increased outreach to human resources and facilities managers’ trade associations will provide employers with additional exposure.

iCommute, formerly known as RideLink, respectfully requests that SANDAG Board Members and other elected officials participate in the week’s activities by encouraging their employees and local residents to take the challenge during Rideshare Week 2009. Local jurisdictions also are encouraged to approve their own proclamations and celebrate Rideshare Week in their own communities.

GARY L. GALLEGOS
Executive Director

Attachment: 1. Resolution No. 2010-03, Rideshare Week Proclamation

Key Staff Contact: Thomas Bruccoleri, (619) 699-7381, tbr@sandag.org
RIDESHAKE WEEK PROCLAMATION

October 5-9, 2009

WHEREAS, reducing peak period traffic congestion and providing alternatives to driving alone are key components to the region’s quality of life; and

WHEREAS, SANDAG is committed to increasing awareness of transportation choices for the region’s commuters and employers; and

WHEREAS, Rideshare Week 2009 is a week-long event to promote carpooling, vanpooling, public transit use, teleworking, walking, and biking to work; and

WHEREAS, Rideshare Week will launch SANDAG’s newly renamed Regional Commuting Assistance Program, iCommute, formerly known as RideLink, to highlight all the different commuter services and programs available; and

WHEREAS, SANDAG is sponsoring Rideshare Week 2009, from October 5-9, 2009;

NOW THEREFORE

BE IT RESOLVED that SANDAG is proclaiming October 5-9, 2009, to be Rideshare Week 2009, encouraging employers to offer alternatives to driving alone by providing employees transportation choices via a commuting program, and encouraging commuters to do their part to help reduce traffic congestion and greenhouse gas emissions in the San Diego region.

PASSED AND ADOPTED this 25th day of September 2009.

________________________________________           ATTEST: ________________________________________
CHAIRPERSON                   SECRETARY

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista, and County of San Diego.

ADVISORY MEMBERS: California Department of Transportation, Metropolitan Transit System, North County Transit District, Imperial County, U.S. Department of Defense, San Diego Unified Port District, San Diego County Water Authority, Southern California Tribal Chairman’s Association, and Mexico.
QUARTERLY INVESTMENT REPORT FOR PERIOD
ENDING JUNE 30, 2009, AND ANNUAL
INTEREST RATE SWAP EVALUATION

Introduction

The SANDAG Investment Policy requires that the Board of Directors be provided a quarterly report of investments held by SANDAG. This report includes all money under the direction or care of SANDAG as of June 30, 2009, including funds of the San Diego County Regional Transportation Commission (RTC), SourcePoint, and the Automated Regional Justice Information System (ARJIS).

In addition, Board Policy No. 032 is required to be reviewed and updated at least annually and presented to the Board for approval, along with an annual written description of the swaps and an evaluation of the risks associated with outstanding interest rate swaps. The Board reviewed and approved Board Policy No. 032 with no updates or changes at its meeting on July 24, 2009. The annual review of the outstanding swaps is presented in this report.

Discussion

Quarterly Investment Report - Period Ending June 30, 2009

The attached report shows, as of June 30, 2009, a summary of portfolio balances by institution (Attachment 1), a detail of portfolio balances by account (Attachment 2), and a detail of portfolio balances by investment type (Attachment 3).

As of June 30, 2009, a total of $569.3 million was held by SANDAG in a number of investment accounts, in comparison to $602.2 million held in the previous quarter. The $32.9 million decrease during the quarter is primarily due to the timing of TransNet sales tax receipts, TransNet debt service payments, TransNet allocation payments to other local governmental agencies, and the use of 2008 Bond proceeds to fund current projects.

Approximately $3.4 million was held in six Bank of America accounts at the end of the quarter. Funds in these accounts are used for operating purposes. Approximately $566.0 million was invested in seven institutions, as follows:

1. State of California Local Agency Investment Fund (LAIF) – State law allows local agencies (RTC and SANDAG) to invest up to $40 million per agency in LAIF. These funds hold excess operating funds for RTC and SANDAG. A total of approximately $50.4 million was invested in LAIF, of which RTC held approximately $39.8 million of sales tax funds, and SANDAG held approximately $10.6 million. These funds are highly liquid, and funds may be accessed easily for immediate operating needs.
2. California Asset Management Program (CAMP) – These are funds administered by the SANDAG financial advisor, Public Financial Management, Inc. (PFM). The Cash Reserve Portfolio, totaling $166.3 million, is used for the investment of excess operating funds for Interstate 15 FasTrak®, ARJIS, and TransNet funds not yet paid to other local governmental agencies. In addition, CAMP uses the Individual Portfolio, totaling $311.0 million, for the investment of the 2008 TransNet Bond proceeds.

3. US Bank – These funds, totaling approximately $36.3 million, were held by US Bank, trustee for bond debt service payments and payment of interest on the short-term Commercial Paper (CP) program, as part of the TransNet program. Of this balance, $34.1 million of the investments held by US Bank is invested in North County Transit District (NCTD) auction rate securities purchased with the issuance of $34.0 million in CP.

4. San Diego County Treasurer’s Pooled Money Fund – These funds, totaling $1.4 million, were held by the San Diego’s County Treasurer’s Pooled Money Fund, which consist of RTC unspent bond proceeds from the 2008 Bond issuance.

5. Columbia Funds – These funds are invested in government treasury obligation mutual funds managed by Bank of America. These also are highly liquid and may be used for immediate cash needs. Approximately $286,000 for Coronado Bridge Toll Funds held in trust by SANDAG was invested in this mutual fund.

6. DWS Scudder Institutional Management Funds – These are a series of high quality money market instruments, including AAA-rated U.S. treasury funds. This institution holds the funds received by SANDAG from the California Department of Boating and Waterways. Approximately $299,000 was invested in this mutual fund.

7. California Bank and Trust – Approximately $18,000 was on deposit with California Bank and Trust pursuant to a capital project escrow retention agreement with the contractor, West Coast General Corporation.

As of June 30, 2009, the yield on cost of the portfolio was 1.82 percent with a weighted average maturity of 379 days, in comparison to 1.83 percent and 478 days in the prior quarter.

The Finance Department has continued to implement the Board’s investment activity objectives of safety, liquidity, and return on investment for the SANDAG investment portfolio. These will continue to be important investment objectives for the future.

**Description and Evaluation of Risks for Outstanding Interest Rate Swaps**

The following describes the interest rate swaps and evaluates the risk for the interest rate swaps in which RTC currently participates.

**2008 Interest Rate Swaps**

1. Objective of the interest rate swaps. On November 22, 2005, RTC entered into three forward interest rate swaps for $200,000,000 each in order to hedge the interest rate risk associated with future variable-rate revenue bonds expected to be issued in 2008 by “locking in” a fixed interest rate. The intention of RTC in entering into the swap was to lock in a relatively low cost of funds on a substantial portion of the TransNet Early Action Program. The variable rate bonds were issued March 27, 2008.
2. **Terms.** The initial notional amounts of the swaps were $200,000,000 each. The current notional amounts of the swaps are $196,400,000 each. Under two of the swaps, RTC pays the counterparties a fixed payment of 3.8165 percent and receives a variable payment based on 65 percent of one-month London Interbank Offered Rate (LIBOR) for 10 years. In the tenth year, the swaps will convert to the SIFMA Municipal Bond Index for the remaining 20 years, paid monthly. Under the third swap, RTC pays the counterparty a fixed payment of 3.41 percent and receives a variable payment based on 65 percent of LIBOR for the 30-year period. The notional amounts and maturity dates of the swaps match the notional amounts and the maturity dates of the bonds that were issued in March 2008. The variable rates paid on the 2008 bonds are expected to closely match the variable rates received on the swaps over the term of the bonds and swaps.

3. **Fair Values.** Because interest rates have declined since execution of the swaps, the swaps had a total negative fair value of $54,759,467 as of June 30, 2009. The Bank of America swap had a negative fair value of $20,046,725, the Merrill Lynch Capital Services swap had a negative fair value of $17,356,371, and the Goldman Sachs Mitsui Marine Derivative Products had a negative fair value of $17,356,371. The fair values of the derivatives were estimated by an independent third-party based on mid-market levels as of the close of business on June 30, 2009. The fair values take into consideration the prevailing interest rate environment and the specific terms and conditions of the swaps.

4. **Credit Risk.** This is the risk that the counterparty will fail to perform under the terms of the agreement. As of June 30, 2009, RTC was not exposed to credit risk on these swaps because they had negative fair values. However, should interest rates change and the fair values of the swaps become positive, RTC would be exposed to credit risk in the amount of the swaps' fair values. Favorable credit ratings of the counterparties (Bank of America, Merrill Lynch Capital Services, and Goldman Sachs Mitsui Marine Derivative Products) mitigate this risk. As of June 30, 2009, Bank of America was rated Aa3 by Moody's and A+ by Standard & Poor's, Merrill Lynch Capital Services was rated A2 by Moody's and A by Standard & Poor's, and Goldman Sachs Mitsui Marine Derivative Products was rated Aa1 by Moody's and AAA by Standard and Poor's. Bank of America, Merrill Lynch Capital Services, and Goldman Sachs Mitsui Marine Derivative Products were all downgraded during the fiscal year, however all still possessed favorable ratings at June 30, 2009. The ratings are monitored on a weekly basis. In addition, the fair value of the swaps will be fully collateralized by the counterparty with cash or United States government securities if the counterparty's credit quality falls below a rating of Baa2 by Moody's or BBB by Standard & Poor's. Collateral would be posted with a third-party custodian.

5. **Basis Risk.** This is the risk of a mismatch between the variable rate received from the counterparty and the variable rate paid on the variable rate debt issued in 2008. RTC is exposed to basis risk should the floating rate that it receives on a swap be less than the actual variable rate RTC pays on the bonds. Depending on the magnitude and duration of any basis risk shortfall, the effective fixed rate on the debt will vary. Based on historical experience, staff expects the payments received under the agreements to approximate the expected bond payments over the 30-year term of the swaps. Due to the unprecedented market occurrences over the last year, RTC has been exposed to basis risk since the variable rate received from the counterparty, which is 65 percent of LIBOR, was less than the variable rate RTC paid on the bonds. As the market returns to a more normal state, this gap is expected to be reduced.
6. **Termination Risk and Termination Payments.** This is the risk that the transaction is terminated in a market dictating a termination payment by RTC. RTC can terminate the swap at the fair value by providing notice to the counterparty, while the counterparty may only terminate the swap upon certain termination events under the terms of the agreement. RTC or the counterparties may terminate the swap if the other party fails to perform under the terms of the contracts, such as the failure to make swap payments. If the swap is terminated, the expected variable-rate bonds would no longer be hedged. Given the negative fair value of June 30, 2009, RTC was not in a favorable termination position relative to the market.

7. **SANDAG Board Policy No. 032.** The San Diego Regional Transportation Commission Interest Rate Swap Policy requires a contingency plan to either replace the swaps or fund the termination payments, if any, in the event one or more outstanding swaps are terminated. Should a swap be terminated, the excellent credit rating of SANDAG would allow it to assign the swap to another counterparty. Alternatively, RTC can use TransNet sales tax receipts to fund the termination payment.

8. **Reset Rates Paid and Received by RTC.** In May 2008, RTC was notified that UBS Securities, LLC, which was responsible for remarketing the Series D Bonds, was exiting the institutional municipal securities market. As a result, RTC selected E.J. De La Rosa & Company to replace UBS Securities, LLC, and E.J. De La Rosa & Company replaced UBS Securities, LLC, on August 13, 2008. On September 24, 2008, Barclays Capital Inc. acquired certain assets of Lehman Brothers, Inc., relating to Lehman Brothers, Inc., investment banking and capital markets businesses. As such, RTC agreed to the assignment of the Series A remarketing responsibilities from Lehman Brothers, Inc., to Barclays Capital Inc. The weekly variable interest rates paid on the 2008 TransNet Bonds by RTC to the bondholders for the period July 1, 2008, through June 30, 2009, ranged from 0.100 percent to 7.75 percent for Lehman Brothers, Inc./Barclays Bank, 0.13 percent to 7.25 percent for Goldman, Sachs & Co., 0.6 percent to 7.9 percent for J.P. Morgan Securities, Inc., and 0.5 percent to 6.5 percent for UBS/EJ De La Rosa. Fixed rates paid by RTC to the swap provider counterparties were 3.41 percent to Bank of America and 3.8165 percent to Merrill Lynch Capital Services and Goldman Sachs Mitsui Marine Derivative Products. Sixty-five percent (65 percent) of LIBOR received by RTC from the swap provider counterparties ranged from 0.208 percent to 2.418 percent during the same time period.

9. **Actual Debt Service Requirements versus the Projected Debt Service on the Swap Transaction.** For the fiscal year ending June 30, 2009, Bank of America actual debt service was $8,092,761 versus projected debt service of $6,789,310, Merrill Lynch Capital Services actual debt service was $7,612,262 versus projected debt service of $7,598,651, and Goldman Sachs Mitsui Marine Derivative Products actual debt service was $8,150,343 versus projected debt service of $7,598,652. In total, actual debt service was $23,855,366 versus projected debt service of $21,986,613, which resulted in an unfavorable position of an excess of variable rate payments made on the bonds as compared to the variable rate payments received from the swap counterparties in the amount of $1,868,753 for the fiscal year ending June 30, 2009. Over the life of the swaps from the issuance of the bonds through June 30, 2009, cumulatively RTC is in an unfavorable position of $1,780,197. This means that the net variable rates RTC is paying on the 2008 bonds is more than the variable rate RTC is receiving, and these rates were originally intended to offset and net to zero. The total net cost of the program includes the liquidity facilities with Dexia and JP Morgan. The Dexia Standby Bond Purchase Agreement (SBPA) has a cost of 22.5 basis points. The JP Morgan SBPA carried a cost for the initial one-year term of 20 basis points. At the time of renewal in March 2009, the financial market was still experiencing a significant credit crunch. As a result, the renewal fee was 105 basis points.
for another one-year term through March 2010. RTC continues to explore opportunities to lower the cost of the liquidity facility and will again aggressively pursue favorable renewal bids as we near the renewal term of March 2010. Although the total net cost of the program is higher than originally anticipated, the interest rate swaps still have proven beneficial to RTC as the total net cost of the program has been less than if RTC had issued fixed rate bonds in April 2008.

2018 Basis Rate Swaps Overlay to the 2008 Interest Rate Swaps

1. Objective of the Basis Rate Swaps. On March 19, 2009, RTC entered into a SIFMA versus LIBOR floating-to-floating or “basis” swap. The combination of the Basis Swaps and the existing 2008 Interest Rate Swaps effectively amended the existing swaps without having to change the existing floating-to-fixed interest rate swaps. This overlay allowed RTC to bid out the new transaction to a group of potential counterparties without changing the existing 2008 Interest Rate Swaps. RTC was able to enter into a new transaction with Barclays Bank PLC to overlay the terms under two of the 2008 Interest Rate Swaps, with an expected benefit to RTC of a substantial reduction in the cost of debt after 2018.

2. Terms. The initial notional amounts of the swaps are $156,600,000 each. Under two of the 2008 Interest Rate Swaps, RTC pays the counterparties a fixed payment of 3.8165 percent and receives 65 percent of LIBOR (through April 2018) and thereafter receives the SIFMA index. The 2018 Basis Rate Swaps overlay these two 2008 Interest Rate Swaps with a payment of the SIFMA index and a receipt of 98.3 percent of LIBOR for the last 20 years of the swap (April 2018 to April 2038).

3. Fair Values. The swaps had a total combined positive fair value of $12,363,018 as of June 30, 2009. The fair values of the derivatives were estimated by an independent third-party based on mid-market levels as of the close of business on June 30, 2009. The fair values take into consideration the prevailing interest rate environment and the specific terms and conditions of the swaps.

4. Credit Risk. This is the risk that the counterparty will fail to perform under the terms of the agreements. As of June 30, 2009, RTC was exposed to credit risk on these swaps in the amount of $12,363,018, which is the derivatives' fair value. However, should interest rates change and the fair value of the swaps become negative, RTC would not be exposed to any credit risk. The favorable credit rating of the counterparty mitigates this risk. As of June 30, 2009, the swap counterparty, Barclays Bank PLC, was rated Aa3 by Moody's and AA- by Standard & Poor’s.

5. Basis Risk. This is the risk of a mismatch between the variable rate received from the counterparty and the variable rate paid on the variable rate debt issued in 2008. RTC is exposed to basis risk should the floating rate that it receives on a swap be less than the actual variable rate RTC pays on the bonds. Depending on the magnitude and duration of any basis risk shortfall, the effective fixed rate on the debt will vary. Based on current and historical experience, staff expects the overlay of the SIFMA to LIBOR Basis Rate Swaps to significantly reduce the cost of financing after 2018, assuming a return to normal, or even near to normal trading relationships.
6. Termination Risk and Termination Payments. This is the risk that the transaction is terminated in a market dictating a termination payment by RTC. RTC can terminate a swap at the fair market value by providing notice to the counterparty, while the counterparty may only terminate the swap upon certain termination events under the terms of the agreement. Given the positive fair value at June 30, 2009, RTC was in a favorable termination position relative to the market.

SANDAG Board Policy No. 032. The San Diego County Regional Transportation Commission Interest Rate Swap Policy requires a contingency plan to either replace the swaps or fund the termination payments, if any, in the event one or more outstanding swaps are terminated. Should a swap be terminated, the excellent credit rating of SANDAG would allow it to assign the swap to another counterparty. Alternatively, if a swap is terminated and it has a negative fair value, RTC can use TransNet sales tax receipts to fund the termination payment.

Certifications

The Director of Finance reports that this investment portfolio, together with the authorized short-term commercial paper program, will provide the necessary liquidity to meet the expenditure requirements of SANDAG, RTC, ARJIS, and SourcePoint for the next six months.

This portfolio is in compliance with state law and the SANDAG Investment Policy.

The Director of Finance reports that there has not been any material event involving outstanding swap agreements, nor has there been any default by a swap counterparty or counterparty termination.

GARY L. GALLEGOS
Executive Director

Attachments: 1. SANDAG Summary of Portfolio Balances (by Institution) as of June 30, 2009
           2. SANDAG Detail of Portfolio Balances (by Account) as of June 30, 2009
           3. SANDAG Detail of Portfolio Balances (by Investment Type) as of June 30, 2009

Key Staff Contact: Lisa Kondrat-Dauphin, (619) 699-1942, lko@sandag.org
<table>
<thead>
<tr>
<th>Institution</th>
<th>BOOK VALUE</th>
<th>PERCENT OF PORTFOLIO</th>
<th>MARKET VALUE</th>
<th>MARKET PRICE</th>
<th>UNREALIZED GAIN/(LOSS)</th>
<th>YIELD ON COST</th>
<th>WTD. AVG. DAYS TO MATURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BANK OF AMERICA</strong></td>
<td>$ 3,359,518</td>
<td>0.59%</td>
<td>$ 3,359,518</td>
<td>100.00%</td>
<td>-</td>
<td>0.20%</td>
<td>1</td>
</tr>
<tr>
<td><strong>STATE OF CALIF. LOCAL AGENCY INVEST. FUND (LAIF)</strong></td>
<td>50,400,143</td>
<td>8.88%</td>
<td>50,465,902</td>
<td>100.00%</td>
<td>65,759</td>
<td>1.53%</td>
<td>186 **</td>
</tr>
<tr>
<td><strong>CALIFORNIA ASSET MANAGEMENT PROGRAM (CAMP)</strong></td>
<td>475,538,952</td>
<td>83.79%</td>
<td>477,284,114</td>
<td>100.37%</td>
<td>1,745,162</td>
<td>1.90%</td>
<td>431 **</td>
</tr>
<tr>
<td><strong>US BANK</strong></td>
<td>36,253,553</td>
<td>6.39%</td>
<td>36,253,553</td>
<td>100.00%</td>
<td>-</td>
<td>1.21%</td>
<td>2</td>
</tr>
<tr>
<td><strong>SAN DIEGO COUNTY POOLED FUND</strong></td>
<td>1,376,259</td>
<td>0.24%</td>
<td>1,383,259</td>
<td>100.00%</td>
<td>7,000</td>
<td>1.53%</td>
<td>332</td>
</tr>
<tr>
<td><strong>COLUMBIA FUNDS</strong></td>
<td>286,203</td>
<td>0.05%</td>
<td>286,203</td>
<td>100.00%</td>
<td>-</td>
<td>0.02%</td>
<td>26 **</td>
</tr>
<tr>
<td><strong>DWS SCUDDER INSTITUTIONAL MANAGEMENT FUNDS</strong></td>
<td>298,503</td>
<td>0.05%</td>
<td>298,503</td>
<td>100.00%</td>
<td>-</td>
<td>0.33%</td>
<td>59 **</td>
</tr>
<tr>
<td><strong>CALIFORNIA BANK AND TRUST</strong></td>
<td>18,304</td>
<td>0.00%</td>
<td>18,304</td>
<td>100.00%</td>
<td>-</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$ 567,531,435</td>
<td>100.00%</td>
<td>$ 569,349,356</td>
<td>100.32%</td>
<td>$ 1,817,921</td>
<td>1.82%</td>
<td>379</td>
</tr>
</tbody>
</table>

** Although average days to maturity is greater than one day, funds are available at par the same day.

---

**SUMMARY OF PORTFOLIO BALANCES (by Agency)**

<table>
<thead>
<tr>
<th>Agency</th>
<th>BOOK VALUE</th>
<th>PERCENT OF PORTFOLIO</th>
<th>MARKET VALUE</th>
<th>MARKET PRICE</th>
<th>UNREALIZED GAIN/(LOSS)</th>
<th>YIELD ON COST</th>
<th>WTD. AVG. DAYS TO MATURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SANDAG FUNDS</strong></td>
<td>$ 14,314,658</td>
<td>2.52%</td>
<td>$ 14,328,501</td>
<td>100.10%</td>
<td>$ 13,843</td>
<td>1.37%</td>
<td>146</td>
</tr>
<tr>
<td><strong>ARJIS FUNDS</strong></td>
<td>11,957,308</td>
<td>2.11%</td>
<td>11,957,308</td>
<td>100.00%</td>
<td>-</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td><strong>SOURCEPOINT FUNDS</strong></td>
<td>223,870</td>
<td>0.04%</td>
<td>223,870</td>
<td>100.00%</td>
<td>-</td>
<td>0.20%</td>
<td>1</td>
</tr>
<tr>
<td><strong>CORONADO BRIDGE TOLL FUNDS</strong></td>
<td>286,203</td>
<td>0.05%</td>
<td>286,203</td>
<td>100.00%</td>
<td>-</td>
<td>0.02%</td>
<td>26</td>
</tr>
<tr>
<td><strong>RTC FUNDS</strong></td>
<td>540,749,396</td>
<td>95.28%</td>
<td>542,553,474</td>
<td>100.33%</td>
<td>1,804,078</td>
<td>1.86%</td>
<td>393</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$ 567,531,435</td>
<td>100.00%</td>
<td>$ 569,349,356</td>
<td>100.32%</td>
<td>$ 1,817,921</td>
<td>1.82%</td>
<td>379</td>
</tr>
</tbody>
</table>

**Legend:**
Automated Regional Justice Information System (ARJIS)
San Diego County Regional Transportation Commission (RTC)
<table>
<thead>
<tr>
<th>BANK OF AMERICA:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checking - TransNet Sales Tax (RTC)</td>
</tr>
<tr>
<td>Checking - SANDAG General</td>
</tr>
<tr>
<td>Checking - SANDAG Interstate 15 (I-15) Fastrak®</td>
</tr>
<tr>
<td>Checking - SourcePoint</td>
</tr>
<tr>
<td>Money Market - SourcePoint</td>
</tr>
<tr>
<td><strong>TOTAL BANK OF AMERICA</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STATE OF CA LOCAL AGENCY INVESTMENT FUND (LAIF):</th>
</tr>
</thead>
<tbody>
<tr>
<td>TransNet Sales Tax (RTC)</td>
</tr>
<tr>
<td>SANDAG (General)</td>
</tr>
<tr>
<td><strong>TOTAL LAIF</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SAN DIEGO COUNTY TREASURER’S POOLED MONEY FUND:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TransNet 2008 Bond Proceeds (RTC)</td>
</tr>
<tr>
<td><strong>TOTAL SAN DIEGO COUNTY TREASURER’S POOLED MONEY FUND</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIFORNIA ASSET MANAGEMENT PROGRAM (CAMP):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INDIVIDUAL PORTFOLIO:</strong></td>
</tr>
<tr>
<td>TransNet 2008 Bond Proceeds (RTC)</td>
</tr>
<tr>
<td><strong>TOTAL INDIVIDUAL PORTFOLIO</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CASH RESERVE PORTFOLIO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-15 Fastrak</td>
</tr>
<tr>
<td>ARJIS</td>
</tr>
<tr>
<td>California Coastal Commission</td>
</tr>
<tr>
<td>TransNet Sales Tax (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series A Interest (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series B Interest (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series C Interest (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series D Interest (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series A/B/C/D Project Fund (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series A/B/C/D Reserve Fund (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series A - Principal (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series B - Principal (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series C - Principal (RTC)</td>
</tr>
<tr>
<td>2008 Bond Series D - Principal (RTC)</td>
</tr>
<tr>
<td>2008 Sales Tax Account - TransNet Extension (RTC)</td>
</tr>
<tr>
<td>Wetland Mitigation TransNet Sales Tax (RTC)</td>
</tr>
<tr>
<td>Sage Hill Endowment (RTC)</td>
</tr>
<tr>
<td><strong>TOTAL CASH RESERVE PORTFOLIO</strong></td>
</tr>
</tbody>
</table>

| **TOTAL CAMP** | $475,538,952 | 83.79% | $477,284,114 | 100.37% | $1,745,162 | 1.90% | 431 |
### Detail of Portfolio Balances (by Account)

**as of June 30, 2009**

<table>
<thead>
<tr>
<th>US BANK:</th>
<th>BOOK VALUE</th>
<th>PERCENT OF PORTFOLIO</th>
<th>MARKET VALUE</th>
<th>MARKET PRICE</th>
<th>UNREALIZED GAIN/(LOSS)</th>
<th>YIELD ON COST</th>
<th>WTD. AVG. DAYS TO MATURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008 Bond Series A/B/C/D Revenue Fund (RTC)</td>
<td>$369,242</td>
<td>0.07%</td>
<td>$369,242</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
<td>0.22%</td>
</tr>
<tr>
<td>2008 Bond Series A Principal Account (RTC)</td>
<td>6</td>
<td>0.00%</td>
<td>6</td>
<td>100.00%</td>
<td>-</td>
<td>0.16%</td>
<td>1</td>
</tr>
<tr>
<td>2008 Bond Series B Principal Account (RTC)</td>
<td>5</td>
<td>0.00%</td>
<td>5</td>
<td>100.00%</td>
<td>-</td>
<td>0.18%</td>
<td>1</td>
</tr>
<tr>
<td>2008 Bond Series C Principal Account (RTC)</td>
<td>5</td>
<td>0.00%</td>
<td>5</td>
<td>100.00%</td>
<td>-</td>
<td>0.18%</td>
<td>1</td>
</tr>
<tr>
<td>2008 Bond Series D Principal Account (RTC)</td>
<td>5</td>
<td>0.00%</td>
<td>5</td>
<td>100.00%</td>
<td>-</td>
<td>0.18%</td>
<td>1</td>
</tr>
<tr>
<td>2008 Bond Series A/B/C/D Project Fund (RTC)</td>
<td>18</td>
<td>0.00%</td>
<td>18</td>
<td>100.00%</td>
<td>-</td>
<td>0.22%</td>
<td>1</td>
</tr>
<tr>
<td>2008 Bond Series A/B/C/D Main Interest (RTC)</td>
<td>1,585,657</td>
<td>0.28%</td>
<td>1,585,657</td>
<td>100.00%</td>
<td>-</td>
<td>0.22%</td>
<td>1</td>
</tr>
<tr>
<td>2008 Bond Series B Revenue CP (RTC)</td>
<td>171,983</td>
<td>0.03%</td>
<td>171,983</td>
<td>100.00%</td>
<td>-</td>
<td>0.22%</td>
<td>1</td>
</tr>
<tr>
<td>NCTD Certificates of Participation</td>
<td>25,581,321</td>
<td>4.51%</td>
<td>25,581,321</td>
<td>100.00%</td>
<td>-</td>
<td>1.25%</td>
<td>1</td>
</tr>
<tr>
<td>NCTD Certificates of Participation</td>
<td>8,528,120</td>
<td>1.50%</td>
<td>8,528,120</td>
<td>100.00%</td>
<td>-</td>
<td>1.30%</td>
<td>6</td>
</tr>
<tr>
<td>Subordinate Sales Tax Revenue CP Notes Series B Project (RTC)</td>
<td>17,101</td>
<td>0.00%</td>
<td>17,101</td>
<td>100.00%</td>
<td>-</td>
<td>0.02%</td>
<td>1</td>
</tr>
<tr>
<td>Subordinate Sales Tax Revenue CP Notes Series B Interest (RTC)</td>
<td>91</td>
<td>0.00%</td>
<td>91</td>
<td>100.00%</td>
<td>-</td>
<td>0.02%</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL US BANK</strong></td>
<td>$36,253,553</td>
<td>6.39%</td>
<td>$36,253,553</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
<td>1.21%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COLUMBIA FUNDS (BANK OF AMERICA):</th>
<th>BOOK VALUE</th>
<th>PERCENT OF PORTFOLIO</th>
<th>MARKET VALUE</th>
<th>MARKET PRICE</th>
<th>UNREALIZED GAIN/(LOSS)</th>
<th>YIELD ON COST</th>
<th>WTD. AVG. DAYS TO MATURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREASURY RESERVES CAPITAL SHARES FUND:</td>
<td>Coronado Bridge Toll Funds</td>
<td>$286,203</td>
<td>0.05%</td>
<td>$286,203</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL COLUMBIA FUNDS (BANK OF AMERICA)</strong></td>
<td>$286,203</td>
<td>0.05%</td>
<td>$286,203</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
<td>0.02%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DWS SCUDDER INSTITUTIONAL MANAGEMENT FUNDS:</th>
<th>BOOK VALUE</th>
<th>PERCENT OF PORTFOLIO</th>
<th>MARKET VALUE</th>
<th>MARKET PRICE</th>
<th>UNREALIZED GAIN/(LOSS)</th>
<th>YIELD ON COST</th>
<th>WTD. AVG. DAYS TO MATURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Boating &amp; Waterways</td>
<td>$298,503</td>
<td>0.05%</td>
<td>$298,503</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
<td>0.33%</td>
</tr>
<tr>
<td><strong>TOTAL DWS SCUDDER INSTITUTIONAL MANAGEMENT FUNDS</strong></td>
<td>$298,503</td>
<td>0.05%</td>
<td>$298,503</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
<td>0.33%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIFORNIA BANK AND TRUST</th>
<th>BOOK VALUE</th>
<th>PERCENT OF PORTFOLIO</th>
<th>MARKET VALUE</th>
<th>MARKET PRICE</th>
<th>UNREALIZED GAIN/(LOSS)</th>
<th>YIELD ON COST</th>
<th>WTD. AVG. DAYS TO MATURITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Project Retention Accounts</td>
<td>$18,304</td>
<td>0.00%</td>
<td>$18,304</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>TOTAL OF CALIFORNIA BANK AND TRUST</strong></td>
<td>$18,304</td>
<td>0.00%</td>
<td>$18,304</td>
<td>100.00%</td>
<td>$</td>
<td>-</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$567,531,435</td>
<td>100.00%</td>
<td>$569,349,356</td>
<td>100.32%</td>
<td>$1,817,921</td>
<td>1.82%</td>
<td>379</td>
</tr>
</tbody>
</table>

**Legend:**

- Automated Regional Justice Information System (ARJIS)
- Commercial Paper (CP)
- State of California Local Agency Investment Fund (LAIF)
- North County Transit District (NCTD)
- San Diego County Regional Transportation Commission (RTC)
## SANDAG
### Detail of Portfolio Balances (by Investment Type)
#### as of June 30, 2009

<table>
<thead>
<tr>
<th>Investment</th>
<th>Purchase Date</th>
<th>Maturity Date</th>
<th>Book Value</th>
<th>Market Value</th>
<th>Unrealized Gain / (Loss)</th>
<th>Par Value</th>
<th>Yield on Cost</th>
<th>Weighted Average Days to Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash and cash equivalents:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Demand deposits:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking - TransNet (RTC)</td>
<td>N/A</td>
<td>N/A</td>
<td>$1,472,813</td>
<td>$1,472,813</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Checking - SANDAG General</td>
<td>N/A</td>
<td>N/A</td>
<td>1,328,575</td>
<td>1,328,575</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Checking - SANDAG Interstate 15 (I-15) FastTrak®</td>
<td>N/A</td>
<td>N/A</td>
<td>280,530</td>
<td>280,530</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Checking - SourcePoint</td>
<td>N/A</td>
<td>N/A</td>
<td>53,730</td>
<td>53,730</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>CA Bank and Trust - Capital Project Retention Acct</td>
<td>N/A</td>
<td>N/A</td>
<td>18,304</td>
<td>18,304</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total demand deposits</strong></td>
<td></td>
<td></td>
<td>$3,154,132</td>
<td>$3,154,132</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td><strong>Money market accounts and funds:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Money Market - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>$369,242</td>
<td>$369,242</td>
<td>-</td>
<td>N/A</td>
<td>0.22%</td>
<td>1</td>
</tr>
<tr>
<td>Money Market - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>6</td>
<td>6</td>
<td>-</td>
<td>N/A</td>
<td>0.16%</td>
<td>1</td>
</tr>
<tr>
<td>Money Market - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>N/A</td>
<td>0.18%</td>
<td>1</td>
</tr>
<tr>
<td>Money Market - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>N/A</td>
<td>0.18%</td>
<td>1</td>
</tr>
<tr>
<td>Money Market - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>18</td>
<td>18</td>
<td>-</td>
<td>N/A</td>
<td>0.22%</td>
<td>1</td>
</tr>
<tr>
<td>San Diego County Treasurer's Pooled Fund</td>
<td>N/A</td>
<td>N/A</td>
<td>1,376,259</td>
<td>1,383,259</td>
<td>7,000</td>
<td>N/A</td>
<td>1.53%</td>
<td>332</td>
</tr>
<tr>
<td>Money Market - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>1,585,657</td>
<td>1,585,657</td>
<td>-</td>
<td>N/A</td>
<td>0.22%</td>
<td>1</td>
</tr>
<tr>
<td>Money Market - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>171,983</td>
<td>171,983</td>
<td>-</td>
<td>N/A</td>
<td>0.22%</td>
<td>1</td>
</tr>
<tr>
<td>First Amer Govt Obligation - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>17,101</td>
<td>17,101</td>
<td>-</td>
<td>N/A</td>
<td>0.02%</td>
<td>1</td>
</tr>
<tr>
<td>First Amer Govt Obligation - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>91</td>
<td>91</td>
<td>-</td>
<td>N/A</td>
<td>0.02%</td>
<td>1</td>
</tr>
<tr>
<td>Money Market - SourcePoint</td>
<td>N/A</td>
<td>N/A</td>
<td>223,690</td>
<td>223,690</td>
<td>-</td>
<td>N/A</td>
<td>0.20%</td>
<td>1</td>
</tr>
<tr>
<td>Columbia Treasury Res Cap Shares - Coronado Toll</td>
<td>N/A</td>
<td>N/A</td>
<td>286,203</td>
<td>286,203</td>
<td>-</td>
<td>N/A</td>
<td>0.02%</td>
<td>26</td>
</tr>
<tr>
<td>DWS Money Mkt Srs Institution</td>
<td>N/A</td>
<td>N/A</td>
<td>298,503</td>
<td>298,503</td>
<td>-</td>
<td>N/A</td>
<td>0.33%</td>
<td>59</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - ARJHS</td>
<td>N/A</td>
<td>N/A</td>
<td>11,903,578</td>
<td>11,903,578</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Res Portf - CA Coastal Commission</td>
<td>N/A</td>
<td>N/A</td>
<td>1,215,611</td>
<td>1,215,611</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - I-15 Fastrak</td>
<td>N/A</td>
<td>N/A</td>
<td>563,692</td>
<td>563,692</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>47,013,596</td>
<td>47,013,596</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>1,930</td>
<td>1,930</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>2,185</td>
<td>2,185</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>1,910</td>
<td>1,910</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>1,902</td>
<td>1,902</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>48,108,093</td>
<td>48,108,093</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>203,053</td>
<td>203,053</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>714,810</td>
<td>714,810</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - Wetland Mitigation - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>54,132,504</td>
<td>54,132,504</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td>CAMP Cash Reserve Portf - Sage Hill Endowment - RTC</td>
<td>N/A</td>
<td>N/A</td>
<td>288,212</td>
<td>288,212</td>
<td>-</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
<tr>
<td><strong>Total money market accounts and funds</strong></td>
<td></td>
<td></td>
<td>$170,630,612</td>
<td>$170,637,612</td>
<td>7,000</td>
<td>N/A</td>
<td>0.56%</td>
<td>58</td>
</tr>
<tr>
<td><strong>Total cash and cash equivalents</strong></td>
<td></td>
<td></td>
<td>$173,784,744</td>
<td>$173,791,744</td>
<td>7,000</td>
<td>N/A</td>
<td>0.56%</td>
<td>57</td>
</tr>
</tbody>
</table>
SANDAG
Detail of Portfolio Balances (by Investment Type)
as of June 30, 2009

Investment

Investments:
State of CA Local Agency Investment Fund:
LAIF - TransNet - RTC
LAIF - SANDAG

Purchase
Date

Maturity
Date

N/A
N/A

N/A
N/A

Total State of CA Local Agency Investment Fund
U.S. Agencies:
FNMA Global Bonds
FNMA Global Benchmark Notes
FHLMC Global Bonds
FNMA Global Notes
FNMA Global Notes
FHLB Global Unsecured
FHLMC Global Notes
FHLB Tap Bonds
FHLMC Global Reference Notes
FHLMC Global Reference Notes
FHLB Tap Bonds
FHLMC Global Reference Notes
FHLMC Global Reference Notes
FHLB Global Bonds
FHLB Bonds
FNMA Global Benchmark Notes
FNMA Global Benchmark Notes
FHLB Bonds
FHLMC Global Reference Notes
FHLMC Global Reference Notes
FNMA Global Benchmark Notes
FHLB Tap Bonds
FNMA Global Benchmark Notes
FNMA Global Benchmark Notes
FHLMC Global Reference Notes
FHLB Global Bonds
FHLMC Global Reference Notes
FHLB Global Bonds
FHLMC Global Notes
US Treasury Notes
FHLMC Global Reference Notes
FNMA Global Benchmark Notes
FHLMC Floating Mtn
FNMA Notes (Callable)
FHLMC Global Notes
FHLB Global Bonds
FNMA Global Notes
FHLMC Global Notes

04/07/2008
04/07/2008
04/07/2008
04/07/2008
06/11/2008
04/07/2008
04/07/2008
04/07/2008
04/07/2008
04/18/2008
04/07/2008
04/07/2008
06/11/2008
09/26/2008
04/07/2008
04/21/2008
04/07/2008
04/21/2008
04/07/2008
04/21/2008
04/07/2008
04/07/2008
04/07/2008
04/07/2008
04/07/2008
04/07/2008
04/07/2008
04/07/2008
05/11/2009
04/14/2009
04/07/2009
04/07/2009
04/07/2009
04/15/2009
04/07/2009
04/07/2009
04/07/2009
04/21/2009

12/15/2009
01/15/2010
02/09/2010
03/12/2010
03/12/2010
04/30/2010
05/28/2010
06/11/2010
07/12/2010
07/12/2010
09/10/2010
10/18/2010
10/18/2010
10/20/2010
11/02/2010
11/15/2010
12/15/2010
12/27/2010
01/18/2011
01/18/2011
02/15/2011
03/11/2011
04/15/2011
05/15/2011
07/18/2011
08/19/2011
09/15/2011
11/18/2011
08/11/2011
03/15/2012
07/12/2010
10/12/2010
09/09/2011
04/15/2011
04/26/2011
09/16/2011
01/09/2012
04/21/2014

Total U.S. Agencies
Certificates of Participation:
North County Transit District Certificates of Partn
North County Transit District Certificates of Partn
Total Certificates of Participation
Total investments

06/29/2009
06/24/2009

06/30/2009
06/30/2009

Book Value

Unrealized
Gain / (Loss)

Market Value

Par Value

Yield
on Cost

Weighted
Average Days
to Maturity

$

39,790,700
10,609,443

$

39,842,616
10,623,286

$

51,916
13,843

N/A
N/A

1.53%
1.53%

186
186

$

50,400,143

$

50,465,902

$

65,759

N/A

1.53%

186

$

6,421,377
2,623,520
2,329,509
6,456,822
2,043,710
2,193,899
6,174,537
6,542,029
6,405,394
2,056,214
6,545,594
6,416,076
2,025,406
2,138,309
6,426,771
2,074,078
6,527,056
2,166,780
16,211,364
4,915,554
16,110,263
16,276,291
16,374,065
16,762,099
16,451,882
16,559,173
16,612,827
32,683,174
16,971,950
4,490,779
4,464,131
4,438,813
9,000,000
9,000,000
4,514,310
4,496,089
4,472,695
864,568

$

6,322,063
2,515,938
2,295,066
6,393,750
2,062,500
2,234,375
6,306,563
6,477,062
6,442,188
2,078,125
6,546,813
6,482,875
2,091,250
2,212,894
6,479,000
2,056,209
6,558,438
2,216,641
16,299,938
4,985,241
16,285,500
16,348,063
16,492,438
16,737,875
16,612,750
16,632,000
16,781,188
33,225,500
16,986,723
4,461,270
4,467,969
4,447,722
9,028,557
9,030,938
4,533,750
4,502,906
4,494,500
855,692

$

(99,314)
(107,582)
(34,443)
(63,072)
18,790
40,476
132,026
(64,967)
36,794
21,911
1,219
66,799
65,844
74,585
52,229
(17,869)
31,382
49,861
88,574
69,687
175,237
71,772
118,373
(24,224)
160,868
72,827
168,361
542,326
14,773
(29,509)
3,838
8,909
28,557
30,938
19,440
6,817
21,805
(8,876)

6,200,000
2,425,000
2,235,000
6,200,000
2,000,000
2,200,000
6,200,000
6,200,000
6,200,000
2,000,000
6,200,000
6,200,000
2,000,000
2,140,000
6,200,000
1,905,000
6,200,000
2,125,000
15,400,000
4,710,000
15,400,000
15,400,000
15,400,000
15,400,000
15,400,000
15,400,000
15,400,000
30,800,000
17,000,000
4,470,000
4,300,000
4,330,000
9,000,000
9,000,000
4,500,000
4,300,000
4,450,000
865,000.00

2.45%
2.50%
2.51%
2.54%
3.45%
2.51%
2.57%
2.63%
2.61%
2.82%
2.73%
2.69%
3.56%
3.41%
2.76%
3.00%
2.70%
3.05%
2.77%
3.08%
2.81%
2.96%
2.92%
2.99%
3.04%
3.01%
3.07%
3.07%
1.70%
1.21%
1.08%
1.19%
1.35%
1.75%
1.47%
1.71%
1.81%
3.01%

168
199
224
255
255
304
332
346
377
377
437
475
475
477
490
503
533
545
567
567
595
619
654
684
748
780
807
871
772
989
377
468
617
654
665
808
923
1,756

$

309,237,108

$

310,982,270

$

1,745,162

$

295,755,000

2.62%

632

$

25,581,321
8,528,120

$

25,581,321
8,528,120

$

-

$

25,500,000
8,500,000

1.25%
1.30%

1
6

$

34,109,440

$

34,109,440

$

-

$

34,000,000

1.26%

2

$

393,746,691

$

395,557,612

$

1,810,921

N/A

2.36%

521

11

$


### SANDAG
Detail of Portfolio Balances (by Investment Type)
as of June 30, 2009

<table>
<thead>
<tr>
<th>Investment</th>
<th>Purchase Date</th>
<th>Maturity Date</th>
<th>Book Value</th>
<th>Market Value</th>
<th>Unrealized Gain / (Loss)</th>
<th>Par Value</th>
<th>Yield on Cost</th>
<th>Weighted Average Days to Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Portfolio:</td>
<td></td>
<td></td>
<td>$567,531,435</td>
<td>$569,349,356</td>
<td>$1,817,921</td>
<td>N/A</td>
<td>1.82%</td>
<td>379</td>
</tr>
</tbody>
</table>

**Legend:**
- Automated Regional Justice Information System (ARJIS)
- Commercial Paper (CP)
- State of California Local Agency Investment Fund (LAIF)
- North County Transit District (NCTD)
- San Diego County Regional Transportation Commission (RTC)
QUARTERLY PROGRESS REPORT ON TRANSPORTATION PROJECTS – APRIL TO JUNE 2009

Introduction

This quarterly report summarizes the current status of major highway, transit, arterial, traffic management, and transportation demand management (TDM) projects in the SANDAG five-year Regional Transportation Improvement Program (RTIP). The TransNet one-half cent local sales tax and other local, state, and federal revenue sources fund the projects. The projects contained in this report have been previously prioritized and are included in the 2030 Regional Transportation Plan (RTP). This item is presented to the Board of Directors for information.

Discussion

TransNet Program

Attachment 1 – TransNet Program – indicates sales tax revenue available for allocation was $47.8 million in the fourth quarter of FY 2009. Revenue for the final quarter of the fiscal year was 18.4 percent lower compared to the fourth quarter of last fiscal year. The total amount of TransNet revenue for FY 2009 was approximately $222.0 million. Revenue for FY 2009 was 9.2 percent lower than last fiscal year. Attachment 1 has been modified from the last quarter to add more in-depth information regarding the commercial paper program.

Highway Projects

Attachment 2 – Highway Projects – provides cost and schedule information on the major highway projects in the San Diego region. The accompanying map (Attachment 3 – Major Highway Projects) locates these projects.

The Interstate 5 (I-5) HOV Lanes - North Coast design projects (Project Nos. 6 and 7) were approved by the Board of Directors to be added to the TransNet EAP program in July 2009. These projects will complete the design phase to extend the I-5 HOV lanes 13 miles from Manchester Avenue to State Route 78 (SR 78). When constructed, this project will include noise barriers along the length of the project to mitigate freeway noise impacts. Completion of this phase is anticipated for September 2012. The cost to design these improvements in the I-5 North Coast Corridor is estimated at $32.5 million.

Caltrans has started construction on the I-8 Widening (eastbound) between Second Street and Greenfield Drive project (Project No. 9) in the City of El Cajon. This project will provide an auxiliary lane in the eastbound direction and improve operations and traffic flow in the area. The project is scheduled to be open to users by spring 2011.
Construction has been completed on the SR 52 Widening between Santo Road and Mast Boulevard project (Project No. 14). This TransNet-funded project added one more through-lane on SR 52 in each direction between the cities of San Diego and Santee to the existing two lanes. The opening ceremony occurred in August 2009, and this project is now open to users.

The advertisement for the construction contract for the SR 76 Widening between Melrose Drive and Mission Road project (Project No. 16) is scheduled to conclude in fall 2009. This project, which is funded by TransNet and federal American Recovery and Reinvestment Act (ARRA) monies, will widen the highway to two lanes in each direction between the City of Oceanside and Bonsall. The project is scheduled to open to users by 2012. The work to complete the environmental document for SR 76 between Mission Road and I-15 (Project No. 17) also is continuing. This effort is scheduled to finish in spring 2010.

Caltrans has completed the SR 94 Noise Barrier project (Project No. 18). This project, part of the regional noise retrofit program, was implemented to build noise walls in the City of La Mesa, in the vicinity of the Massachusetts Avenue Interchange.

The addition of federal ARRA funds is allowing Caltrans to move forward with the I-805 Widening (between SR 54 and E Street (Southbound)) project (Project No. 22) in Chula Vista. This project will add two auxiliary lanes between the interchanges to improve southbound traffic flow as well as the merge of traffic from the SR 54 connector ramps to I-805. Construction for this project is scheduled to begin shortly and be open to users by summer 2010.

The design and right-of-way acquisition for the Proposition 1B Corridor Mobility Improvement Account (CMIA) program, TransNet, and ARRA funded, I-805 Widening between Carroll Canyon Road and I-5 project (Project No. 23) was completed in July 2009. Advertisement is contingent on the state’s ability to issue additional bonds, currently scheduled for fall 2009. This project will add two high-occupancy-vehicle (HOV) lanes, a direct access ramp at Carroll Canyon Road, and extend Carroll Canyon Road westerly to connect to Sorrento Valley Road.

Construction of Phase 1B of the SR 905 Freeway between Britannia Boulevard and I-805 project (Project No. 25) began in July 2009. This project, funded by ARRA and TransNet, will provide uninterrupted freeway access to the Otay Mesa Port of Entry. This project is scheduled to be open to traffic by summer 2012.

In support of the South Bay BRT transit project, the South Bay Bus Rapid Transit (BRT) HOV Lanes and Connector projects (Project Nos. 26 and 27) design phase was approved by the Board of Directors to be included in the TransNet EAP. The South Bay BRT is designed to provide premium transit service between the Otay Mesa border crossing and downtown San Diego. This segment includes HOV lanes on I-805 between Palomar Street and SR 94, direct connectors at I-805 and SR 94, and HOV lanes on SR 94 between I-805 and downtown San Diego. The design phase is scheduled to be completed by November 2011.

Transit and Bikeway Projects

Attachment 4 – Transit and Bikeway Projects – provides cost and schedule information on the major transit and bikeway projects in the San Diego region. The accompanying map (Attachment 5 – Major Transit and Bikeway Projects) locates these projects.

In reference to the above South Bay BRT Highway projects, two additional South Bay Bus Rapid Transit Projects (Project Nos. 31 and 32) were added into the TransNet EAP. This segment includes a
direct access ramp and station at I-805 and Palomar Street. The design phase of these projects is estimated to be completed by December 2011.

SANDAG is now advertising the construction contract of the Grossmont Station Pedestrian Enhancements project (Project No. 35). This project, funded with Transportation Enhancement (TE) and ARRA TE funds, will improve access to and from the station, including commercial, business, and residential. It also will improve access to disabled users with a new elevator to the station. Construction is scheduled to begin by October 2009, and be open to users by fall 2011.

As a result of the state’s sale of bonds earlier this year, the award of the construction contract for the Santa Margarita River Bridge Replacement and Second Main Track project (Project No. 41) is moving forward again. SANDAG is scheduled to award a construction contract on this Proposition 1B Intercity Rail-funded project by September 2009. This project will replace a single-track bridge with a double-track concrete structure and be completed by early 2011.

SANDAG, Caltrans, North County Transit District (NCTD), Burlington Northern Santa Fe Railway (BNSF), and Amtrak recently completed a study to evaluate and prioritize 40 rail improvement projects to meet the goal of double-tracking the coastal corridor, as identified in the 2030 RTP. The Coastal Rail Corridor projects (Project Nos. 50 – 56), include the first tier of these projects, which include track improvements at bottleneck locations and consist of crossover tracks, double track, and stub and run-through tracks at various locations. These projects were approved by the Board of Directors in July 2009 to be added to the TransNet EAP project listing. All of these projects are currently in the design phase, which is scheduled to conclude between July 2010 and June 2013.

**Arterial and Freeway Interchange Projects**

Attachment 6 – Arterial and Freeway Interchange Projects – provides cost and schedule information on the major arterial and interchange projects in the San Diego region. The accompanying map (Attachment 7 – Major Arterial and Interchange Projects) locates these projects.

The City of National City has completed the design of the various elements associated with the Plaza Boulevard Widening project (Project No. 62). As funding becomes available, the City of National City is acquiring right-of-way for completion for this Regional Arterial System project; this phase is estimated to be completed in fall 2009. Funding for the construction phase has not yet been identified. When completed, Plaza Boulevard will be widened between Highland Avenue and Euclid Avenue.

**Traffic and Demand Management**

Attachment 8 – Traffic Management and Intelligent Transportation System Projects – provides cost and schedule information on the major traffic management and intelligent transportation system projects in the San Diego region. The accompanying map (Attachment 9 – Major Traffic Management Projects) locates some of these projects, as applicable.

Construction of the I-805 Ramp Meters project (Project No. 70) in Chula Vista has been completed, and the ramp meters have begun operation. This project also included capital improvements on the northbound I-805 freeway entrance ramps at Telegraph Canyon Road and H Street, which were completed in the spring.
The official roll out of the Compass Card project (Project No. 72) began in April 2009. The Compass Card is an innovative, plastic “smart card” designed to streamline and expedite fare collection. The embedded smart card technology allows riders to have their pass or fare validated by touching the card to a specially designed validator or farebox. Compass Cards are designed to decrease transaction times and allow buses and trains to keep better schedules. COASTER and Premium Express Bus customers purchasing their May passes were the first in line to use the latest in smart card technology for transit.

Attachment 10 – Transportation Demand and Incident Management – summarizes monthly activities in those functional areas. Attachment 11 – Freeway Service Patrol Assists – summarizes the number of assists by the Freeway Service Patrol. Attachment 12 – Vanpool Program – summarizes the number of daily vanpools by major area of origination.

Transportation Demand Management (TDM) programs reduced an estimated 95,000 pounds of smog-forming pollution during the fourth quarter of FY 2009 (last quarter 94,000).

SANDAG’s Vanpool Program: The Regional Vanpool Program is designed to provide long-distance commuters with an alternative to driving alone. SANDAG contracts with two vanpool vendors to provide the vehicles, maintenance, and insurance. Drivers lease the vans on a month-to-month basis. SANDAG contributes $400 per van per month to assist the passengers with the lease costs. As of July 2009, there were 643 vanpools and 5,267 passengers in the Regional Vanpool Program. This represents a growth rate of 9 percent for the last fiscal year. Vanpools originating in Riverside County continue to be a large component of the program, accounting for 42 percent of the regional vanpools.

Employer Programs: During the fourth quarter, staff contacted 141 employers, a 23 percent decrease from the previous quarter (182 contacts). There were 22 formal presentations delivered to employers, compared to the seven conducted last quarter. A total of 1,592 matchlists were completed during the quarter, which is a 57 percent increase from last quarter (1,015).

511 Services: During the fourth quarter of FY 2009, the 511 system received approximately 187,000 calls. This raised the cumulative call volume to more than 1.6 million calls. Average daily calls rose by nearly 10 percent from the previous quarter amounting to 2,057 callers a day. “Compass Card” calls more than tripled from the previous quarter. The Web site also has seen an increase in visits, which averaged 881 daily page views, while the traffic site averaged 2,300.

Outreach: SANDAG continued leading a coordinated effort with the Service Bureau to provide the US Navy with more TDM options for their active duty and civilian work force commuting from the metropolitan San Diego area. This effort included a Navy housing outreach event to talk about commuter options and the Navy buspool pilot survey.

SANDAG RideLink staff kept a busy outreach event schedule during this quarter attending various corporate green events and health/benefit fairs and delivering 22 employer presentations. Staff also distributed 1,825 pieces of marketing material at various outreach events. There was a total of 34,719 pieces of marketing material handed out during FY 2009. RideLink also partnered with the California Department of Conservation on an effort entitled “Stand for Less,” and staff participated in an event in downtown San Diego to kickoff the program.
Bike to Work Day was held in May with approximately 5,000 cyclists using pedal power to get to work in our region. Staff set up a record 56 pit stops to provide bicycle commuters breaks along the various routes. One highlight during the month of April included Earth Day Fair events conducted at various employer locations. Also, during the quarter, staff integrated the SchoolPool program into the iCommute system with five major schools enrolling in the program.

GARY L. GALLEGOS
Executive Director

Attachments: 1. TransNet Program
2. Highway Projects
3. Major Highway Projects (map)
4. Transit and Bikeway Projects
5. Major Transit and Bikeway Projects (map)
6. Arterial and Freeway Interchange Projects
7. Major Arterial and Interchange Projects (map)
8. Traffic Management and Intelligent Transportation System Projects
9. Major Traffic Management Projects (map)
10. Transportation Demand and Incident Management
11. Freeway Service Patrol Assists (map)
12. Vanpool Program (map)

Key Staff Contact: José A. Nuncio, (619) 699-1908, jnu@sandag.org

Funds are budgeted in the TransNet, STIP-RIP, RSTP, and CMAQ Programs
## TransNet Allocations

<table>
<thead>
<tr>
<th>Program &amp; Recipient</th>
<th>Fiscal Year FY 2009</th>
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<td></td>
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<td>$2,199,914</td>
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<td></td>
<td>$2,348,322</td>
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<tr>
<td>Other Income</td>
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<tr>
<td>Total Allocation</td>
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<tr>
<td>Fund Disbursements</td>
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## Program & Recipient Summary

### SANDAG Admin
- This Quarter: $477,525
- FY to Date: $2,219,914
- Program to Date: $128,408
- Total Allocation: $2,348,322

### ITOC
- This Quarter: $80,983
- FY to Date: $323,930
- Program to Date: $684
- Total Allocation: $324,614

### Bicycle/Pedestrian/Neighborhood Safety
- This Quarter: $955,050
- FY to Date: $4,439,827
- Program to Date: $3,023,819
- Total Allocation: $7,463,646

### Major Corridor Capital Projects
- This Quarter: $17,570,790
- FY to Date: $81,702,922
- Program to Date: $(50,537,377)
- Total Allocation: $31,165,455

### Major Corridor Project EMP
- This Quarter: $2,034,513
- FY to Date: $9,460,338
- Program to Date: $1,154
- Total Allocation: $9,461,492

### Local Project EMP
- This Quarter: $832,301
- FY to Date: $3,870,138
- Program to Date: $22,087
- Total Allocation: $3,892,225

### Smart Growth Incentive Program
- This Quarter: $971,017
- FY to Date: $4,515,161
- Program to Date: $25,726
- Total Allocation: $4,540,887

### Local Streets and Roads
- City of Carlsbad:
  - This Quarter: $463,729
  - FY to Date: $2,153,453
  - Program to Date: $7,078,059
  - Total Allocation: $9,231,512

- City of Chula Vista:
  - This Quarter: $887,316
  - FY to Date: $4,128,049
  - Program to Date: $7,714,306
  - Total Allocation: $10,842,455

- City of Coronado:
  - This Quarter: $102,999
  - FY to Date: $471,867
  - Program to Date: $410,918
  - Total Allocation: $882,785

- City of Del Mar:
  - This Quarter: $38,729
  - FY to Date: $172,266
  - Program to Date: $158,491
  - Total Allocation: $330,757

- City of El Cajon:
  - This Quarter: $402,664
  - FY to Date: $1,868,789
  - Program to Date: $1,870,176
  - Total Allocation: $3,738,969

- City of Encinitas:
  - This Quarter: $288,726
  - FY to Date: $1,337,857
  - Program to Date: $1,337,857
  - Total Allocation: $3,313,717

- City of Escondido:
  - This Quarter: $586,813
  - FY to Date: $2,727,220
  - Program to Date: $3,395,153
  - Total Allocation: $6,662,373

- City of Imperial Beach:
  - This Quarter: $124,916
  - FY to Date: $574,036
  - Program to Date: $516,890
  - Total Allocation: $1,090,926

- City of La Mesa:
  - This Quarter: $262,500
  - FY to Date: $1,215,404
  - Program to Date: $1,215,404
  - Total Allocation: $2,323,226

- City of Lemon Grove:
  - This Quarter: $123,034
  - FY to Date: $565,270
  - Program to Date: $468,119
  - Total Allocation: $1,033,389

- City of National City:
  - This Quarter: $246,034
  - FY to Date: $1,138,643
  - Program to Date: $1,138,643
  - Total Allocation: $2,319,363

- City of Oceanside:
  - This Quarter: $766,520
  - FY to Date: $3,564,944
  - Program to Date: $4,829,865
  - Total Allocation: $8,394,809

- City of Poway:
  - This Quarter: $264,060
  - FY to Date: $1,222,674
  - Program to Date: $1,114,258
  - Total Allocation: $2,336,932

- City of San Diego:
  - This Quarter: $5,335,324
  - FY to Date: $24,862,913
  - Program to Date: $22,053,239
  - Total Allocation: $46,916,152

- City of San Marcos:
  - This Quarter: $341,853
  - FY to Date: $1,585,316
  - Program to Date: $2,233,195
  - Total Allocation: $4,318,511

- City of Santee:
  - This Quarter: $241,886
  - FY to Date: $1,119,224
  - Program to Date: $953,556
  - Total Allocation: $2,072,780

- City of Solana Beach:
  - This Quarter: $79,087
  - FY to Date: $360,404
  - Program to Date: $378,354
  - Total Allocation: $738,758

---

**Page 1 of 3**

04/01/09 - 06/30/09
<table>
<thead>
<tr>
<th>PROGRAM &amp; RECIPIENT</th>
<th>TransNet Allocations</th>
<th>Fund Disbursements</th>
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<tbody>
<tr>
<td></td>
<td>Sales Tax Allocations</td>
<td>Other Income ¹</td>
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<tr>
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<td>This Quarter</td>
<td>FY to Date</td>
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<td>City of Vista</td>
<td>$385,743</td>
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<td>Total Local Streets and Roads</td>
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<td>Transit Services</td>
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<td>MTS</td>
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<td>New Major Corridor Transit Operations</td>
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<td>TOTAL TRANSNET EXTENSION</td>
<td>$47,752,479</td>
<td>$221,991,358</td>
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</table>
FOOTNOTES:
1. Other income includes interest revenue, transfers from TransNet I, other non-sales tax revenue, and the one-time swap of Major Corridor Sales Tax Revenue (to LSI Cities and County) for ARRA funds.
2. Program Disbursements include payments to TransNet recipient agencies and program costs, including payments made for Early Action Projects in prior years, and return of funds.
3. Debt Service includes principal and interest payments, including debt payments beginning in March 2008 upon issuance of the 2008 ABCD Sales Tax Revenue Bond, and other debt service costs net of interest earnings.
4. Amounts are not final and subject to annual fiscal year-end audit.
<table>
<thead>
<tr>
<th>Project Title</th>
<th>Sponsor Agency</th>
<th>Current Phase</th>
<th>Total Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Interstate 5 (I-5) Realignment Virginia Avenue Port of Entry (POE) Relocation in San Ysidro</td>
<td>US GSA/CaliTrans</td>
<td>Environmental May-11</td>
<td><strong>Approved Budget ($1,000's):</strong> $45,000  <strong>Funded Budget ($1,000's):</strong> $12,273  <strong>Cost to Complete ($1,000's):</strong> $45,000  <strong>Current Completion:</strong> 2016 Behind</td>
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<td>2 I-5/I-8 Interchange Connector Widening</td>
<td>Caltrans Environmental Apr-10</td>
<td><strong>Approved Budget ($1,000's):</strong> $16,235  <strong>Funded Budget ($1,000's):</strong> $3,170  <strong>Cost to Complete ($1,000's):</strong> $16,235  <strong>Current Completion:</strong> 2018 On Schedule</td>
<td></td>
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<tr>
<td>3 I-5 Widening (Southbound) Genesee Avenue to Sorrento Valley Overhead</td>
<td>Caltrans Design Mar-11</td>
<td><strong>Approved Budget ($1,000's):</strong> $8,000  <strong>Funded Budget ($1,000's):</strong> $8,000  <strong>Cost to Complete ($1,000's):</strong> $8,000  <strong>Current Completion:</strong> 2012 On Schedule</td>
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<tr>
<td>4 I-5 High Occupancy Vehicle (HOV)/Managed Lanes La Jolla Village Drive to Vandegrift Boulevard</td>
<td>Caltrans Draft Sep-09</td>
<td><strong>Approved Budget ($1,000's):</strong> $2,400,000  <strong>Funded Budget ($1,000's):</strong> $50,677  <strong>Cost to Complete ($1,000's):</strong> $2,400,000  <strong>Current Completion:</strong> TBD</td>
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<tr>
<td>5 I-5 HOV Lanes San Dieguito River to San Elijo Lagoon Lomas Santa Fe Interchange Reconstruction</td>
<td>Caltrans Complete</td>
<td><strong>Approved Budget ($1,000's):</strong> $61,716  <strong>Funded Budget ($1,000's):</strong> $61,716  <strong>Cost to Complete ($1,000's):</strong> $61,716  <strong>Current Completion:</strong> Complete</td>
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<tr>
<td>6 I-5 HOV Lanes North Coast - Poinsettia Blvd to SR 78 2 HOV Lanes and Noise Barriers</td>
<td>Caltrans Design Sep-12</td>
<td><strong>Approved Budget ($1,000's):</strong> $16,000  <strong>Funded Budget ($1,000's):</strong> $16,000  <strong>Cost to Complete ($1,000's):</strong> $186,000  <strong>Current Completion:</strong> TBD</td>
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<td>7 I-5 HOV Lanes North Coast - Manchester Road to Poinsettia Blvd(McKinnon) 2 HOV Lanes and Noise Barriers</td>
<td>Caltrans Design Sep-12</td>
<td><strong>Approved Budget ($1,000's):</strong> $16,500  <strong>Funded Budget ($1,000's):</strong> $16,500  <strong>Cost to Complete ($1,000's):</strong> $192,500  <strong>Current Completion:</strong> TBD</td>
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<td>8 I-5/SR 78 Connectors South to East Connector and West to South</td>
<td>Caltrans Feasibility Study Apr-10</td>
<td><strong>Approved Budget ($1,000's):</strong> $200,000  <strong>Funded Budget ($1,000's):</strong> $1,000  <strong>Cost to Complete ($1,000's):</strong> $200,000  <strong>Current Completion:</strong> N/A</td>
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<td>9 I-8 Widening (Eastbound) 2nd Street to Greenfield Drive</td>
<td>Caltrans Construction Apr-11</td>
<td><strong>Approved Budget ($1,000's):</strong> $19,751  <strong>Funded Budget ($1,000's):</strong> $19,751  <strong>Cost to Complete ($1,000's):</strong> $19,751  <strong>Current Completion:</strong> 2011 Ahead</td>
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<tr>
<td>10 SR 11 4-Lane Freeway and East Otay Mesa Border Crossing Freeway Access to New Border Crossing</td>
<td>Caltrans Tier II EIR/EIS Mar-10</td>
<td><strong>Approved Budget ($1,000's):</strong> $715,000  <strong>Funded Budget ($1,000's):</strong> $88,800  <strong>Cost to Complete ($1,000's):</strong> $715,000  <strong>Current Completion:</strong> 2015 On Schedule</td>
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<tr>
<td>11 I-15 Express Lanes South Segment SR 163 to SR 56</td>
<td>Caltrans Construction Dec-12</td>
<td><strong>Approved Budget ($1,000's):</strong> $467,000  <strong>Funded Budget ($1,000's):</strong> $467,000  <strong>Cost to Complete ($1,000's):</strong> $467,000  <strong>Current Completion:</strong> 2012 On Schedule</td>
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<td>12 I-15 Express Lanes North Segment Centre City Parkway to SR 78</td>
<td>Caltrans Construction Dec-11</td>
<td><strong>Approved Budget ($1,000's):</strong> $224,019  <strong>Funded Budget ($1,000's):</strong> $224,019  <strong>Cost to Complete ($1,000's):</strong> $224,019  <strong>Current Completion:</strong> 2011 On Schedule</td>
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<tr>
<td>13 I-15 Widening Citracado Parkway to Valley Parkway</td>
<td>Caltrans Construction Dec-11</td>
<td><strong>Approved Budget ($1,000's):</strong> $25,196  <strong>Funded Budget ($1,000's):</strong> $25,196  <strong>Cost to Complete ($1,000's):</strong> $25,196  <strong>Current Completion:</strong> 2011 On Schedule</td>
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<td>14 SR 52 Widening I-15 to Mast Boulevard</td>
<td>Caltrans Complete</td>
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<td>15 SR 52 4-Lane Freeway SR 125 to SR 67</td>
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<td>Project Title</td>
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<td>Current Phase</td>
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<td><strong>Highway Projects</strong></td>
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<td><strong>16</strong> SR 76 Widening Middle Melrose Drive to Mission Road</td>
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<td>Advertisement</td>
<td>Sep-09</td>
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<td><strong>17</strong> SR 76 Widening East Mission Road to I-15</td>
<td>Caltrans</td>
<td>Draft</td>
<td>Mar-10</td>
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<tr>
<td><strong>18</strong> SR 94 Noise Barriers City of La Mesa</td>
<td>SANDAG</td>
<td>Complete</td>
<td>Aug-12</td>
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<tr>
<td><strong>19</strong> SR 94/SR 125 Interchange Add North to East and West to South Connectors</td>
<td>Caltrans</td>
<td>Environmental</td>
<td>Aug-12</td>
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<td><strong>20</strong> I-805 Managed Lanes - North SR 52 to Mira Mesa North</td>
<td>Caltrans</td>
<td>Environmental</td>
<td>Apr-10</td>
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<td><strong>21</strong> I-805 Managed Lanes - South Palomar to SR 94</td>
<td>Caltrans</td>
<td>Environmental</td>
<td>Nov-09</td>
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<tr>
<td><strong>22</strong> I-805 Widening SR 54 to E Street (Southbound)</td>
<td>Caltrans</td>
<td>Construction</td>
<td>Jul-10</td>
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<tr>
<td><strong>23</strong> I-805 HOV Lanes and Carroll Canyon Road Extension</td>
<td>Caltrans</td>
<td>Advertisement</td>
<td>On Hold</td>
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<td><strong>24</strong> SR 905 4-Lane Freeway Britannia Boulevard to United States/Mexico Border</td>
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<td>Construction</td>
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<td><strong>25</strong> SR 905 4-Lane Freeway I-805 to Britannia Boulevard</td>
<td>Caltrans</td>
<td>Construction</td>
<td>Jul-12</td>
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<tr>
<td><strong>26</strong> South Bay Bus Rapid Transit I-805 Palomar to SR 94 2 HOV Lanes</td>
<td>Caltrans</td>
<td>Design</td>
<td>Nov-11</td>
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<td><strong>27</strong> South Bay Bus Rapid Transit SR 94 I-5 to I-805 2 HOV Lanes &amp; Connectors ar SR 94/I-805</td>
<td>Caltrans</td>
<td>Design</td>
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**Totals**

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<th>Approved Budget ($1,000's)</th>
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<th>Cost to Complete ($1,000's)</th>
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<td>$2,487,387</td>
<td>$8,147,375</td>
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TransNet funded projects in bold
Underlined items changed from last report

September 2009
### MAJOR HIGHWAY PROJECTS

**April - June 2009**

- **Project Under Development**
- **Project Under Construction**

---

**MAJOR HIGHWAY PROJECTS**

1. **I-5 HOV Lanes and Noise Barriers**
   - July – September 2003
   - Projects: I-5 / SR 78 Connectors, I-5 HOV/General Purpose Lanes, I-5 HOV Lanes and Noise Barriers
2. **I-8 Widening**
   - SR 11
   - New Freeway Project Under Construction
3. **I-5 / SR 78 Connectors**
4. **I-805 Widening**
   - SR 94 to E Street
5. **New Connectors**
   - I-5 / SR 56
6. **I-805 HOV / Managed Lanes North**
   - Carroll Canyon Extension I-15 / HOV / Managed Lanes South Segment
7. **New Freeway**
   - SR 52
8. **I-15 / HOV / Managed Lanes**
   - North Segment
9. **South Bay BRT**
   - Connector at 94/805
10. **I-805 HOV Lanes**
11. **I-15 / HOV / Managed Lanes**
    - South Segment
12. **I-5 HOV/General Purpose Lanes**
13. **I-805 HOV / Managed Lanes North**
14. **I-15 / HOV / Managed Lanes South**
15. **I-8 Widening**
    - SR 11
    - New Freeway
<table>
<thead>
<tr>
<th>Project Title</th>
<th>Sponsor Agency</th>
<th>Description/Limits</th>
<th>Current Phase</th>
<th>Total Project</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>28 Mid-Coast Light Rail Transit (LRT)</td>
<td>SANDAG</td>
<td>Environmental</td>
<td>Sep-11</td>
<td>$1,246,292 $1,246,292 $1,210,000</td>
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<td>30 South Bay BRT</td>
<td>SANDAG</td>
<td>Environmental</td>
<td>Nov-09</td>
<td>$109,627 $109,627 $109,627</td>
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<td>31 South Bay Bus Rapid Transit</td>
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<td>$4,000 $4,000 $45,000</td>
<td>TBD TBD</td>
</tr>
<tr>
<td>33 South Bay Maintenance Facility</td>
<td>MMO</td>
<td>Right-of-Way</td>
<td>Dec-09</td>
<td>$43,433 $11,433 $10,433</td>
<td>2009 On Schedule</td>
</tr>
<tr>
<td>34 East County Maintenance Facility</td>
<td>MMO</td>
<td>Right-of-Way</td>
<td>Dec-09</td>
<td>$45,725 $11,553 $45,725</td>
<td>2010 On Schedule</td>
</tr>
<tr>
<td>35 Grossmont Station</td>
<td>La Mesa</td>
<td>Advertisement</td>
<td>Oct-09</td>
<td>$7,900 $7,900 $7,900</td>
<td>2011 Behind</td>
</tr>
<tr>
<td>36 San Ysidro Intermodal Facility</td>
<td>SANDAG</td>
<td>Environmental</td>
<td>Jan-11</td>
<td>$40,460 $40,460 $40,460</td>
<td>2014 On Schedule</td>
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<tr>
<td>37 Catenary Contact Wire</td>
<td>MTS</td>
<td>Advertisement</td>
<td>Sep-09</td>
<td>$17,643 $17,643 $18,200</td>
<td>2013 Behind</td>
</tr>
<tr>
<td>38 Coastal Rail Trail</td>
<td>SANDAG</td>
<td>Advertisement</td>
<td>On Hold</td>
<td>$12,833 $12,833 $25,456</td>
<td>TBD</td>
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<tr>
<td>39 Del Mar Bluffs</td>
<td>SANDAG</td>
<td>Environmental</td>
<td>May-10</td>
<td>$5,002 $5,002 $5,002</td>
<td>2013 On Schedule</td>
</tr>
<tr>
<td>Project Title</td>
<td>Sponsor Agency</td>
<td>Current Phase</td>
<td>Total Project</td>
<td></td>
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<tr>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
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<tr>
<td><strong>Transit and Bikeway Projects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description/Limits</strong></td>
<td><strong>Sponsor Agency</strong></td>
<td><strong>Phase</strong></td>
<td><strong>Completion</strong></td>
<td><strong>Approved Budget ($1,000's)</strong></td>
<td><strong>Cost and Budget Funded Budget ($1,000's)</strong></td>
</tr>
<tr>
<td>40 East Division Maintenance Facility</td>
<td>SANDAG</td>
<td>Construction</td>
<td>Sep-09</td>
<td>$7,375</td>
<td>$7,375</td>
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<td>41 Santa Margarita River Bridge Replacement &amp; 2nd Track</td>
<td>SANDAG</td>
<td>Construction Contract Award</td>
<td>Sep-09</td>
<td>$40,630</td>
<td>$40,630</td>
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<tr>
<td>42 Sorrento-Miramar Curve Realignment &amp; 2nd Track - Phase I</td>
<td>SANDAG</td>
<td>Design</td>
<td>Jun-10</td>
<td>$23,700</td>
<td>$23,700</td>
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<tr>
<td>43 Blue Line LRV Acquisition Low-Floor Vehicles</td>
<td>MTS</td>
<td>Specifications</td>
<td>Nov-09</td>
<td>$240,168</td>
<td>$240,168</td>
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<td>44 Blue Line Station Improvements</td>
<td>MTS</td>
<td>Environmental</td>
<td>Nov-09</td>
<td>$114,695</td>
<td>$114,695</td>
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<tr>
<td>45 Sorrento Valley Station Platform Extension</td>
<td>NCTD</td>
<td>Advertisement</td>
<td>Feb-10</td>
<td>$1,230</td>
<td>$1,230</td>
</tr>
<tr>
<td>46 Centralized Train Control</td>
<td>SANDAG</td>
<td>Implementation</td>
<td>Jan-10</td>
<td>$12,950</td>
<td>$12,950</td>
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<tr>
<td>47 Escondido Bus Rapid Transit Phase I</td>
<td>SANDAG</td>
<td>Design</td>
<td>Sep-09</td>
<td>$6,865</td>
<td>$2,800</td>
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<tr>
<td>48 Pacific Surfliner Double Tracking - Oceanside Vista Way to Oceanside Boulevard</td>
<td>Caltrans</td>
<td>Complete</td>
<td></td>
<td>$13,500</td>
<td>$13,500</td>
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<tr>
<td>49 Mid City Rapid Bus Downtown to SDSU</td>
<td>SANDAG</td>
<td>Design</td>
<td>Dec-09</td>
<td>$44,526</td>
<td>$44,526</td>
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<tr>
<td>50 Coastal Rail Corridor Camp Pendleton/San Onofre Double Tracking</td>
<td>SANDAG</td>
<td>Design</td>
<td>Jun-12</td>
<td>$5,400</td>
<td>$5,400</td>
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<tr>
<td>51 Coastal Rail Corridor Oceanside Station Stub Traks and Crossover</td>
<td>SANDAG</td>
<td>Design</td>
<td>Dec-11</td>
<td>$1,100</td>
<td>$1,100</td>
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<tr>
<td>52 Coastal Rail Corridor Carlsbad Double Tracking</td>
<td>SANDAG</td>
<td>Design</td>
<td>Aug-11</td>
<td>$1,600</td>
<td>$1,600</td>
</tr>
</tbody>
</table>

TransNet funded projects in bold
Underlined items changed from last report
Baseline established when construction is funded

September 2009
## Transit and Bikeway Projects

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Sponsor Agency</th>
<th>Current Phase</th>
<th>Total Project</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Approved Budget ($1,000's)</td>
<td>Funded Budget ($1,000's)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$1,000's</td>
<td>$1,000's</td>
</tr>
<tr>
<td>53 Coastal Rail Corridor</td>
<td>SANDAG</td>
<td>Design</td>
<td>Dec-11</td>
<td>$1,700</td>
</tr>
<tr>
<td>Poinsettia Station/Carlsbad Run-Through Track</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54 Coastal Rail Corridor</td>
<td>SANDAG</td>
<td>Design</td>
<td>Jun-13</td>
<td>$4,600</td>
</tr>
<tr>
<td>San Elijo Lagoon Double Tracking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 Coastal Rail Corridor</td>
<td>SANDAG</td>
<td>Design</td>
<td>Dec-11</td>
<td>$3,700</td>
</tr>
<tr>
<td>Sorrento Valley Double Tracking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56 Coastal Rail Corridor</td>
<td>SANDAG</td>
<td>Design</td>
<td>Jul-10</td>
<td>$1,000</td>
</tr>
<tr>
<td>Tecolote - Washington St/SD Crossovers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57 Inland Rail Trail</td>
<td>Vista</td>
<td>Design</td>
<td>Dec-10</td>
<td></td>
</tr>
</tbody>
</table>

### Totals

<table>
<thead>
<tr>
<th>Approved Budget ($1,000's)</th>
<th>Funded Budget ($1,000's)</th>
<th>Cost to Complete ($1,000's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,099,641</td>
<td>$2,029,404</td>
<td>$2,230,412</td>
</tr>
</tbody>
</table>
MAJOR TRANSIT AND BIKEWAY PROJECTS
April - June 2009

- Project Under Construction
- Bus Rapid Transit Center (BRTC) Under Construction
- LRT: Light Rail Transit

MILES
0 3 6 9 12
KILOMETERS

SANDAG

TRANSIT AND BIKEWAY PROJECTS

28. Mid-Coast LRT Old Town-UTC
29. SuperLoop
30. South Bay BRT
32. South Bay BRT Direct Access Ramp and BRT Station
33. South Bay Maintenance Facility
34. East County Bus Maintenance Facility
35. Grossmont Station Pedestrian Enhancements
36. San Ysidro Intermodal Freight Facility and Mainline Kearny Mesa Transit Center
38. Coastal Rail Trail
39. Del Mar Bluffs - Project 3
41. Santa Margarita River Bridge
42. Sorrento-Miramar Curve
44. Blue Line Station Improvements
45. Sorrento Valley Station Platform Extension
47. Escondido Bus Rapid Transit
49. Mid City Rapid Bus
50. Camp Pendleton/San Onofre Double Track
51. Oceanside Station Stub Tracks & Crossover
52. Carlsbad Double Track
53. Poinsettia Station/Carlsbad Run-Through Track
54. San Elijo Lagoon Double Track
55. Sorrento Valley Double Track
56. Tecolote-Washington St/SD Crossovers
57. Inland Rail Trail

Project number refers to Project ID in Attachment 4
<table>
<thead>
<tr>
<th>Project Title</th>
<th>Description/Limits</th>
<th>Sponsor Agency</th>
<th>Current Phase</th>
<th>Total Project</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phase</td>
<td>Cost and Budget</td>
<td>On Schedule</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Completion</td>
<td>Approved Budget ($1,000's)</td>
<td>Funded Budget ($1,000's)</td>
</tr>
<tr>
<td>60 Coronado Tunnel</td>
<td>Construct new tunnel</td>
<td>Coronado</td>
<td>Environmental</td>
<td>Apr-11</td>
<td>N/A</td>
</tr>
<tr>
<td>61 Nordahl Road/State Route (SR) 78 Interchange</td>
<td>Widening, Mission Avenue to Montiel Road</td>
<td>Escondido</td>
<td>Design</td>
<td>Oct-10</td>
<td>$10,300</td>
</tr>
<tr>
<td>62 Widen Plaza Boulevard</td>
<td>Highland Avenue to Euclid Avenue</td>
<td>National City</td>
<td>Design &amp; Right of Way</td>
<td>Oct-09</td>
<td>$14,140</td>
</tr>
<tr>
<td>63 Widen Espola Road</td>
<td>Twin Peaks Road to 900 feet South of Titan Way</td>
<td>Poway</td>
<td>Environmental</td>
<td>Nov-09</td>
<td>$5,941</td>
</tr>
<tr>
<td>64 Friars Road/SR 163 Interchange</td>
<td>Fashion Valley Road to Frazee Road</td>
<td>San Diego</td>
<td>Environmental</td>
<td>Jun-10</td>
<td>$136,000</td>
</tr>
<tr>
<td>65 El Camino Real</td>
<td>Via de la Valle to San Dieguito Road</td>
<td>San Diego</td>
<td>Environmental</td>
<td>May-10</td>
<td>$20,000</td>
</tr>
<tr>
<td>66 Widen West Vista Way</td>
<td>Thunder Drive to Melrose Drive</td>
<td>Vista</td>
<td>Right of Way</td>
<td>Dec-09</td>
<td>$16,900</td>
</tr>
<tr>
<td>67 South Santa Fe Avenue</td>
<td>Phase I: Montgomery Drive to York Drive</td>
<td>Co. of San Diego</td>
<td>Design &amp; Right of Way</td>
<td>Dec-09</td>
<td>$27,731</td>
</tr>
<tr>
<td>68 Bradley Avenue/SR 67 Interchange</td>
<td>Reconstruct and widen interchange</td>
<td>Co. of San Diego</td>
<td>Design &amp; Right of Way</td>
<td>Feb-11</td>
<td>$37,000</td>
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</table>

<table>
<thead>
<tr>
<th>Totals</th>
<th>Approved Budget ($1,000's)</th>
<th>Funded Budget ($1,000's)</th>
<th>Cost to Complete ($1,000's)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>$268,012</td>
<td>$87,921</td>
<td>$722,012</td>
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</table>

TransNet funded projects in **bold**
Underlined items changed from last report
<table>
<thead>
<tr>
<th>Project Title</th>
<th>Sponsor Agency</th>
<th>Current Phase</th>
<th>Total Project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phase</td>
<td>Budget ($1,000's)</td>
</tr>
<tr>
<td>70 Ramp Meters (Northbound) I-805: Telegraph Canyon Road to Bonita Road</td>
<td>Caltrans</td>
<td>Complete</td>
<td>$7,373</td>
</tr>
<tr>
<td>71 Intermodal Transportation Management System</td>
<td>SANDAG</td>
<td>Implementation Jun-10</td>
<td>$7,000</td>
</tr>
<tr>
<td>Phase III</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>72 Compass Card Project</td>
<td>SANDAG</td>
<td>Launch</td>
<td>$42,876</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nov-09</td>
<td></td>
</tr>
<tr>
<td>73 Regional Arterial Management System</td>
<td>SANDAG</td>
<td>Implementation Jun-10</td>
<td>$1,000</td>
</tr>
<tr>
<td>Arterial System - Phase II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td>$58,249</td>
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Transportation Demand and Incident Management
April – June 2009 Progress Report

<table>
<thead>
<tr>
<th>DEMAND MANAGEMENT</th>
<th>This Quarter</th>
<th>Last Quarter</th>
<th>Fiscal Year To Date</th>
<th>Last Fiscal Year To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reduced Travel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person Trips Reduced</td>
<td>607,174</td>
<td>602,396</td>
<td>2,406,054</td>
<td>2,153,218</td>
</tr>
<tr>
<td>Vehicle Miles Traveled (VMT) Reduced</td>
<td>34,077,607</td>
<td>33,847,304</td>
<td>134,914,952</td>
<td>120,974,724</td>
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<tr>
<td><strong>Reduced Emissions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pounds of Smog-Forming Pollution Reduced</td>
<td>94,657</td>
<td>94,019</td>
<td>374,754</td>
<td>336,031</td>
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<tr>
<td><strong>Reduced Fuel Consumption</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Gallons of Fuel</td>
<td>1,857,597</td>
<td>1,845,043</td>
<td>7,354,318</td>
<td>6,594,425</td>
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<tr>
<td><strong>Reduced Costs</strong></td>
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<tr>
<td>Reduced Auto Fees</td>
<td>$16,629,872</td>
<td>$16,517,484</td>
<td>$65,838,495</td>
<td>$59,035,664</td>
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<tr>
<td><strong>Program Activity</strong></td>
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<td></td>
</tr>
<tr>
<td>Number of Vanpools</td>
<td>643</td>
<td>655</td>
<td>643</td>
<td>585</td>
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<tr>
<td>Vanpool Passengers</td>
<td>5,267</td>
<td>5,347</td>
<td>5,267</td>
<td>4,820</td>
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<tr>
<td>Bike Lockers in Service</td>
<td>835</td>
<td>835</td>
<td>835</td>
<td>668</td>
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<tr>
<td>Bike Locker Members</td>
<td>445</td>
<td>432</td>
<td>445</td>
<td>479</td>
</tr>
<tr>
<td>Guaranteed Ride Home Participants</td>
<td>1,447</td>
<td>1,217</td>
<td>1,447</td>
<td>1,353</td>
</tr>
<tr>
<td>Total Phone Calls Received</td>
<td>3,322</td>
<td>3,362</td>
<td>13,300</td>
<td>7,573</td>
</tr>
<tr>
<td>Carpool Matchlists Distributed</td>
<td>1,592</td>
<td>1,015</td>
<td>9,218</td>
<td>3,821</td>
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</table>

**511 SYSTEM**

<table>
<thead>
<tr>
<th>Program Activity</th>
<th>This Quarter</th>
<th>Last Quarter</th>
<th>Fiscal Year To Date</th>
<th>Last Fiscal Year To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Web Site Hits</td>
<td>61,377</td>
<td>56,936</td>
<td>239,938</td>
<td>263,022</td>
</tr>
<tr>
<td>Total Phone Calls Received</td>
<td>187,176</td>
<td>176,382</td>
<td>740,706</td>
<td>795,137</td>
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</tbody>
</table>

**INCIDENT MANAGEMENT**

<table>
<thead>
<tr>
<th>Freeway Service Patrol (FSP)</th>
<th>This Quarter</th>
<th>Last Quarter</th>
<th>Fiscal Year To Date</th>
<th>Last Fiscal Year To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assists</td>
<td>11,127</td>
<td>12,362</td>
<td>53,247</td>
<td>56,840</td>
</tr>
<tr>
<td>(Includes FSP for Traffic Management Plans on Interstate 5 [I-5], I-15)</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Freeway Incident Advisories</th>
<th>This Quarter</th>
<th>Last Quarter</th>
<th>Fiscal Year To Date</th>
<th>Last Fiscal Year To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig Alerts</td>
<td>158</td>
<td>114</td>
<td>519</td>
<td>373</td>
</tr>
<tr>
<td>Sig Alert Duration (total minutes)</td>
<td>3,817</td>
<td>3,078</td>
<td>34,466</td>
<td>43,190</td>
</tr>
</tbody>
</table>
Vanpool program

Number of Vanpool Origins by Major Area

April - June 2009

- CENTRAL: 29 Vanpools
- NORTH CITY: 60 Vanpools
- SOUTH SUBURBAN: 47 Vanpools
- EAST SUBURBAN: 66 Vanpools
- NORTH COUNTY WEST: 60 Vanpools
- NORTH COUNTY EAST: 60 Vanpools
- EAST COUNTY: 9 Vanpools

Vanpools from Other Counties:
- Imperial: 27
- Los Angeles: 3
- Orange: 8
- Riverside: 273
- San Bernardino: 1
REPORT SUMMARIZING DELEGATED ACTIONS
TAKEN BY EXECUTIVE DIRECTOR

Introduction

Board Policy Nos. 003, 017, and 024 require the Executive Director to report certain actions to the Board of Directors on a monthly basis.

Discussion

Board Policy No. 003

Board Policy No. 003, “Investment Policy,” requires the submittal of a monthly report of investment transactions to the Board. There were no reportable investment transactions for June 2009. Attachment 1 contains the reportable investment transactions for July 2009.

Board Policy No. 017

Board Policy No. 017, “Delegation of Authority,” requires the Executive Director to report to the Board certain actions taken at the next regular meeting.

Section 4.1 of the policy authorizes the Executive Director to enter into agreements not currently incorporated in the budget and make other modifications to the budget in an amount up to $100,000 per transaction so long as the overall budget remains in balance. Attachment 2 contains the reportable actions since the report made at the last meeting.

Section 4.6 of the policy authorizes the Executive Director to provide the final determination to persons or firms filing a protest regarding SANDAG procurement or contracting processes or procedures. A protest was submitted by Chandler Asset Management regarding SANDAG’s Request for Proposals 5000838, Investment Management, Advisory, and Reporting Services. The protest was rejected on September 3, 2009, on the grounds that the protestor failed to demonstrate or establish a clear violation of a specific law or regulation as required by the SANDAG protest procedures.

In addition, SANDAG was named in a Writ Petition filed on August 24, 2009, in which the petitioner, B&C Transit Consultants, Inc., alleged that the experience requirements for the signal hardware subcontractor on the Santa Margarita Bridge Project were unduly restrictive in violation of FTA regulations and California law. A hearing was held on August 25, 2009, and the judge denied petitioner’s request that the bid opening scheduled for that day be ordered postponed.
Board Policy No. 024

Board Policy No. 024, “Procurement and Contracting-Construction,” requires the Executive Director to report to the Board the granting of (1) Relief from Maintenance and Responsibility, and (2) Acceptance of Work for construction contracts. In a letter dated July 17, 2009, Golden Acquisition Company, doing business as Energy Fueling Systems West, was granted Contract Acceptance for the KMD CNG Fuel Facility Expansion Project (CIP 1097200, Contract 5000243), effective June 10, 2009. Additionally, in a letter dated August 7, 2009, West Coast General Corporation was granted Contract Acceptance for the Park-to-Bay Link (Phase II) Project (CIP 1049400, Contract 5000487), effective November 24, 2008.

GARY L. GALLEGOS
Executive Director

Attachments: 1. Reportable Investment Transactions for July 2009
              2. Budget Transfers and Amendments

Key Staff Contact: Lauren Warrem, (619) 699-6931, lwa@sandag.org
### MONTHLY ACTIVITY FOR INVESTMENT SECURITIES TRANSACTIONS FOR JULY 1 THROUGH JULY 31, 2009

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Maturity Date</th>
<th>Security</th>
<th>Par Value</th>
<th>Amount (Cost)</th>
<th>Yield on Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOUGHT</strong></td>
<td>07/31/2009</td>
<td>CITIBANK NA (FDIC) NOTE</td>
<td>$10,000,000.00</td>
<td>$10,024,300.00</td>
<td>1.37%</td>
</tr>
<tr>
<td></td>
<td>07/31/2009</td>
<td>SUNTRUST BANK (FDIC) GLOBAL BANK NOTE</td>
<td>$10,000,000.00</td>
<td>$10,325,300.00</td>
<td>1.55%</td>
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<td>$20,349,600.00</td>
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<tr>
<td><strong>SOLD</strong></td>
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<td>FEDERAL HOME LN BKS GLOBAL BONDS</td>
<td>$10,000,000.00</td>
<td>$10,776,500.00</td>
<td>3.07%</td>
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<tr>
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<td>07/31/2009</td>
<td>FEDERAL HOME LN MTG CORP GLOBAL REFERENCE NOTES</td>
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<td></td>
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<td>PROJECT NAME</td>
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<td>NEW BUDGET (in '000s)</td>
<td>CHANGE (in '000s)</td>
<td></td>
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<td>----------------</td>
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<td>---------------------------</td>
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<tr>
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<td>Service Bureau - Main Project FY 2010</td>
<td>$315.9</td>
<td>$285.8</td>
<td>($30.1)</td>
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<td></td>
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<tr>
<td>7507600</td>
<td>Service Bureau - South Bay Transportation Model</td>
<td>$12.5</td>
<td>$15.0</td>
<td>$2.5</td>
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<tr>
<td>7508300</td>
<td>Service Bureau - 211 Data Analysis and Evaluation</td>
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<td>$15.3</td>
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<tr>
<td>7508400</td>
<td>Service Bureau - South County Food Processing Industry Analysis</td>
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<td>$12.3</td>
<td>$12.3</td>
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</table>

- **7500000**: Transferred funds from Service Bureau project (#7500000) to increase one of the existing projects or establish new projects.

- **7507600**: This budget change is to increase the project budget for South Bay Transportation Model.

- **7508300**: This budget change is to establish a new Service Bureau project for analyzing 211 data in context of historical, current, and future demographic and economic trends and assessment of the program's ability to meet needs.

- **7508400**: This budget change is to establish a new Service Bureau project to study the food processing industry in the South San Diego region.

<table>
<thead>
<tr>
<th>PROJECT NUMBER</th>
<th>PROJECT NAME</th>
<th>CURRENT BUDGET (in '000s)</th>
<th>NEW BUDGET (in '000s)</th>
<th>CHANGE (in '000s)</th>
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</thead>
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<tr>
<td>1145700</td>
<td>Automated Fare Technology</td>
<td>$49,047.5</td>
<td>$49,127.5</td>
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- **1145700**: This budget change is to add $80k received from MTS for additional construction work required at Qualcomm station.

<table>
<thead>
<tr>
<th>PROJECT NUMBER</th>
<th>PROJECT NAME</th>
<th>CURRENT BUDGET (in '000s)</th>
<th>NEW BUDGET (in '000s)</th>
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<td>2301200</td>
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<td>2001100</td>
<td>Regional Economic and Municipal Finance Services</td>
<td>$562.0</td>
<td>$537.0</td>
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- **2301200**: Carried over grant funds and contractual commitments from FY 2009 that were not completed by the end of the previous fiscal year.

- **2001100**: Reduced year end budget for contractual commitment to be completed in FY 2010. This was an annual project with annual funding.

<table>
<thead>
<tr>
<th>PROJECT NUMBER</th>
<th>PROJECT NAME</th>
<th>CURRENT BUDGET (in '000s)</th>
<th>NEW BUDGET (in '000s)</th>
<th>CHANGE (in '000s)</th>
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<td>2350700</td>
<td>Title V/DMC – Truancy Reduction Project (Criminal Justice)</td>
<td>$0.0</td>
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- **2350700**: New funding received to continue this effort in FY 2010.

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<th>PROJECT NAME</th>
<th>CURRENT BUDGET (in '000s)</th>
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<td>2358400</td>
<td>HIV MP owerment Evaluation</td>
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- **2358400**: New funding received to continue this effort in FY 2010.

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<th>PROJECT NAME</th>
<th>CURRENT BUDGET (in '000s)</th>
<th>NEW BUDGET (in '000s)</th>
<th>CHANGE (in '000s)</th>
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<tbody>
<tr>
<td>3311000</td>
<td>ITS Operations</td>
<td>$2,061.2</td>
<td>$2,161.2</td>
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- **3311000**: Added $100K in new revenue to be able to accept advertising revenue from various SANDAG websites including 511SD.com

<table>
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<tr>
<th>PROJECT NUMBER</th>
<th>PROJECT NAME</th>
<th>CURRENT BUDGET (in '000s)</th>
<th>NEW BUDGET (in '000s)</th>
<th>CHANGE (in '000s)</th>
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</thead>
<tbody>
<tr>
<td>3400401</td>
<td>I-15 Interregional Vanpool and Buspool Study</td>
<td>$0.0</td>
<td>$61.1</td>
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</table>

- **3400401**: Project intended to be complete in FY 2009 has been extended into FY 2010 using existing grant funds.
APPOINTMENT OF NOMINATING COMMITTEE
FOR SANDAG BOARD OFFICERS

Introduction

Article V, Section 3 of the SANDAG Bylaws sets forth the annual nomination and election process for SANDAG Board Officers. The process calls for an application form for the Chair, First Vice Chair, and Second Vice Chair positions to be made available on the SANDAG Web site in or around July and for applications to be submitted within 30 days. The following applications for 2010 Board Officer positions were received:

- Chair – Escondido Mayor Lori Holt Pfeiler
- First Vice Chair – Encinitas Councilmember Jerome Stocks
- Second Vice Chair – Santee Councilmember Jack Dale

In accordance with the Bylaws, each September the SANDAG Chair appoints up to a six-person Nominating Committee that includes representatives from the six subregions. The Nominating Committee is responsible for reviewing the applicants for the Board Officer positions and recommending a slate of nominees to the Board of Directors in or around November. In accordance with the Bylaws, Chair Pfeiler has appointed the following Nominating Committee:

- National City Mayor Ron Morrison (South County), Nominating Committee Chair
- San Diego Council President Ben Hueso
- San Diego County Supervisor Dianne Jacob
- El Cajon Mayor Mark Lewis (East County)
- Oceanside Mayor Jim Wood (North County Coastal)
- San Marcos Mayor Jim Desmond (North County Inland)
AMENDMENT TO THE FY 2010 BUDGET:
DESTINATION LINDBERGH PLAN IMPLEMENTATION

Introduction

The Destination Lindbergh Plan, which was completed earlier this year, includes a 2015 Phase 1 improvement plan and long-term plans for direct freeway connecting ramps to a north side airport terminal. The San Diego County Regional Airport Authority (SDCRAA) is already moving ahead with advanced planning for the on-airport improvements for the Phase 1 plan. Therefore, it is important for SANDAG to start advanced planning work for Phase 1 improvements for the intermodal transportation center. In addition, developing detailed capital costs for the freeway ramps also is proposed.

There is currently $169,863 budgeted in FY 2010 OWP #81011, Destination Lindbergh Master Plan. This amendment would increase the project budget by $257,137 for a total of $427,000 in FY 2010 and $875,000 in FY 2011. Caltrans would fund an additional $250,000 in its FY 2010 budget to conduct initial freeway ramp analysis. The budget increase would be funded by carryover planning funds recently approved by Caltrans, a contribution from the City of San Diego, an FY 2010 Caltrans planning grant, and contingency reserve funds.

At its September 11, 2009, meeting, the Executive Committee recommended that the Board of Directors consider a budget amendment for the efforts described in this report. At its September 18, meeting, the Transportation Committee recommended that the Board consider approving the proposed Destination Lindbergh implementation efforts.

Discussion

The Destination Lindbergh Plan, a collaborative effort among SDCRAA, City of San Diego, and SANDAG, was completed this past spring. In addition to the long-range vision plan, which would likely require 20 to 25 years to complete, a Phase 1 - Initial Opening Day (2015) plan also was outlined. The Phase 1 improvements would include development of an intermodal transportation center (ITC) on the north side of Lindbergh Field adjacent to the existing Trolley and COASTER corridor. The ITC Phase 1 improvements would include development of rail platforms, track work, bus bays, and a grade-separated pedestrian crossing from the ITC to the airport. On-airport
improvements in Phase 1 would include creation of a consolidated rental car facility (CONRAC), parking, and a shuttle bus service connecting the ITC and CONRAC facilities with the passenger terminals on the south side of the airport.

With the SDCRAA moving ahead with advanced planning for the CONRAC facility, it is critical that SANDAG undertake a similar advanced planning effort for the ITC Phase 1 improvements. This advanced planning work would entail developing and evaluating alternatives for the ITC station layout, developing capital cost estimates (including right-of-way needs), outlining a ground access plan, refining transit ridership estimates, evaluating opening day traffic level of service impacts, developing a preliminary environmental assessment, and outlining a financial funding plan and implementation schedule. This advanced planning study would be completed by October 2010, and would set the stage for the formal environmental studies.

The Destination Lindbergh Plan also includes long-term plans for direct freeway connecting ramps to the proposed north side airport terminal. Developing detailed capital costs for the freeway connecting ramps at this time will enable us to seek federal funding in the future multi-year transportation reauthorization bill and future annual appropriations processes. This study effort will require conceptual level engineering, and could be completed by June 2011.

The current FY 2010 budget for OWP #31011, Destination Lindbergh Master Plan of $169,863, includes budget for overall coordination with SDCRAA on ground access planning related activities for the Destination Lindbergh plan, and for beginning the ITC Phase 1 advanced planning study. The additional cost to undertake the advanced planning work for the ITC Phase 1 improvements is $257,137 for FY 2010 for a total SANDAG commitment of $427,000 this year. Separately, Caltrans will contribute $250,000 of its own funding and resources this year toward the development of capital cost estimates for the proposed freeway ramps. The balance of the budget ($875,000) would be used in FY 2011 to complete the advanced planning work and the freeway ramp conceptual level engineering needed to develop the capital cost estimate. Funding for the $1,132,137 budget amendment would come from $493,338 in carryover consolidated planning grant funds from Caltrans, $300,000 from an FY 2010 Caltrans planning grant, a contribution of $200,000 from the City of San Diego, and $138,799 from contingency reserves (in FY 2011).

Board Policy No. 030 (Contingency Reserve Policy), which governs the use of contingency reserve funds, permits the use of the reserve for “opportunities to advance urgent, high-priority needs.” The projected balance of the contingency reserve at the end of FY 2010 is approximately $4.5 million. The proposed use of $138,799 would bring the balance to approximately $4.36 million, or 7.5 percent of the FY 2010 OWP budget, exceeding the requirement of 5 percent as set forth in Board Policy No. 030.

GARY L. GALLEGOS
Executive Director

Attachment: 1. Program Work Element 31011 - Destination Lindbergh

Key Staff Contacts:  Dave Schumacher, (619) 699-6906, dsc@sandag.org
Tim Watson, (619) 699-1966, twa@sandag.org
PROGRAM WORK ELEMENT: 31011.1
TITLE: DESTINATION LINDBERGH MASTER PLAN

FY 2010 BUDGET: $169,863-5427,000  MULTI-YEAR PROJECT  AREA OF EMPHASIS:  LONG RANGE PLANNING

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<th>FY 2010</th>
<th>FY 2011</th>
<th>TOTAL</th>
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<td>FTA MPO Planning (5303) – Ad. Carry</td>
<td>$0</td>
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<td>FHWA Metropolitan Planning – Ad.</td>
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<tr>
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<tr>
<td>Local Other – City of San Diego MOU</td>
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<td>$200,000</td>
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<tr>
<td>TOTAL</td>
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<td>$875,000</td>
<td>$1,302,000</td>
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<tr>
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<th>FY 2011</th>
<th>TOTAL</th>
</tr>
</thead>
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<td>Salaries, Benefits, Indirect</td>
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<td>$29,000</td>
<td>$166,000</td>
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<tr>
<td>Other Direct Costs</td>
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<td>$0</td>
<td>$2,000</td>
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<tr>
<td>Contracted Services</td>
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<td>$384,000</td>
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<tr>
<td>Pass through/In-kind Services</td>
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<td>$750,000</td>
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<tr>
<td>TOTAL</td>
<td>$427,000</td>
<td>$875,000</td>
<td>$1,302,000</td>
</tr>
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OBJECTIVE

The objective of this work element is to provide a long-range master plan for maximizing the carrying capacity of Lindbergh Field, including development of an intermodal transportation center (ITC) along the north side of the airport to improve and maximize transit mode share potential. The proposed ITC also would improve connectivity for the regional transit system and operational flexibility for rail and bus services serving downtown San Diego. While the long-range master plan is expected to be completed by the San Diego County Regional Airport Authority in FY 2009, SANDAG will continue to be involved in the planning and design of the Terminal 2 expansion and planning for the 2015 Opening Day phase of the Destination Lindbergh plan. Emphasis in FY 2010 will be further work on detailing the ground access plan/ITC site advanced planning studies for the Phase 1 2010-2015 phasing plan ITC improvements.
PREVIOUS AND ONGOING WORK

SANDAG was a key player in the formulation of the ground transportation plan for the 2030 Destination Lindbergh Master Plan in FY 2009 and ensuring continuity between that plan and the short-term Terminal 2 expansion plans. A recommendation on the long-range Destination Lindbergh Master Plan is expected to be completed in spring 2009.

Project Manager: Linda Culp, Dave Schumacher, Planning Dept.
Committee(s): Transportation Committee
Working Groups: None

PRODUCTS, TASKS, AND SCHEDULES

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<thead>
<tr>
<th>Task No.</th>
<th>% of Effort</th>
<th>Task Description / Product / Schedule</th>
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</thead>
<tbody>
<tr>
<td>1.0</td>
<td>100%</td>
<td>Task Description: Provide overall coordination with the San Diego County Regional Airport Authority on planning-related activities, assistance on ground access for Destination Lindbergh phasing plans. Product: Status reports Completion Date: 6/30/2010</td>
</tr>
<tr>
<td>2.0</td>
<td>90%</td>
<td>Task Description: Conduct advanced planning studies on the Phase 1 - 2015 Destination Lindbergh improvements. Product: Phase 1 Destination Lindbergh Advanced Planning Study Final Report Completion Date: 10/31/2010</td>
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FUTURE ACTIVITIES

Future activities include developing the ground access plan; exact work tasks will depend upon the next-step plans for implementation of the 2015 Opening Day phase, which would include undertaking programmatic environmental studies for the long-range Destination Lindbergh Master Plan for the ITC, and project-level environmental studies for the Phase 1 - 2015 ITC improvements.
PROPOSED FUND EXCHANGE WITH NORTH COUNTY TRANSIT DISTRICT TO PROVIDE OPERATING SUPPORT

Introduction

At its April 24, 2009, meeting, the SANDAG Board of Directors received a presentation that among other things provided an avenue for ‘bridge’ funding for the transit operators struggling with their operating budgets. Since then, the North County Transit District (NCTD) has proposed to exchange approximately $1.3 million of its Federal Transit Administration (FTA) Section 5307 funds for more flexible TransNet funding.

Recommendation

The Transportation Committee recommends that the Board of Directors approve the request by the North County Transit District Board of Directors for an exchange of FTA Section 5307 funding in the amount of $1,313,000 with a like amount of TransNet funds.

Discussion

The region’s transit operators, like many public transit systems around the country, have seen a significant decline in revenues resulting in operating deficits. In response, SANDAG presented funding alternatives, both short-term and long-term, to support both NCTD and the Metropolitan Transit System (MTS) at the April 24, 2009, Board of Directors meeting. Although the long-term proposals discussed would take time to develop, two short-term options were presented. In response, NCTD has proposed to exchange its FTA Section 5307 funds in the amount of $1,313,000 with a like amount of TransNet funds in order to help bridge the gap in its operating budget. The NCTD Board of Directors approved this item at its September 17, 2009, meeting.

SANDAG would exchange the funding currently programmed for the Blue Line Rehabilitation project, which currently has both FTA and TransNet funding. As reported back in April, the Blue Line project was identified as the vehicle in which fund exchanges would be processed. SANDAG staff is scheduled to present a status update including the funding plan for the Blue Line project at a future Transportation Committee meeting in October.

GARY L. GALLEGOS
Executive Director

Key Staff Contact: Sookyung Kim, (619) 699-6909, ski@sandag.org
INTERSTATE 15 CORRIDOR EXPRESS LANES:
STATE ROUTE 78 – NORDAHL ROAD BRIDGE REPLACEMENT

Introduction

On July 18, 2008, the Transportation Committee authorized staff to begin working with the cities of Escondido and San Marcos, and Caltrans to develop a strategy to replace the Nordahl Road bridge over State Route 78 (SR 78) and improve access to and from the Interstate 15 (I-15) Express Lanes. This issue also was presented to the Independent Taxpayer Oversight Committee (ITOC) at its July 16, 2008, meeting. Preliminary engineering has been completed, and the recommended improvements include the replacement of the Nordahl Road bridge, realignment of the on- and off-ramps at the SR 78 Nordahl Road interchange, and the addition of a westbound auxiliary lane between I-15 and Nordahl Road at a total estimated cost of $41 million (Attachment 1). This strategy would avoid widening the existing Nordahl Road bridge, which is in need of replacement to accommodate the future widening of SR 78 and to address a height clearance restriction. The project team is ready to begin design work on the proposed projects.

Recommendation

The Transportation Committee recommends that the Board of Directors authorize the Executive Director to:

1. Execute an agreement with the cities of Escondido and San Marcos that provides that the cities will collectively commit to a $10 million contribution to the Nordahl Road bridge project, and that SANDAG will transfer $2 million in savings from favorable bids received on the I-15 North segment to the design of the proposed Nordahl Road bridge replacement project; and

2. Execute a transfer with Caltrans for an additional $1 million in TransNet funds under a separate agreement from the I-15 North segment budget to fund the design of a westbound auxiliary lane on SR 78 between I-15 and Nordahl Road.

Discussion

Bids were opened on June 19 and October 23, 2008, for the construction of the I-15 North segment between Centre City Parkway and SR 78. Two contracts were awarded for the construction of the I-15 North segment. In the current economic climate, favorable bids are being received for the region’s transportation infrastructure projects, including the winning bids for the I-15 North segment, which were 12 and 3 percent under the engineer’s estimate. Construction is scheduled to be completed in December 2011.

The cities of Escondido and San Marcos have been investigating modifications to the Nordahl Road bridge for some time. Bridge widening is needed to support traffic from an adjacent new hospital under construction in the city of Escondido. From both a taxpayer’s and engineering perspective, it would be more cost-effective to replace and widen the Nordahl Road bridge in lieu of widening it alone. A bridge replacement strategy avoids costly re-work as the bridge will need to be replaced during the future planned TransNet project to widen SR 78. Bridge replacement also would fix an
existing height clearance problem. This bridge has been struck numerous times by over-height vehicles resulting in the need for emergency repairs.

Earlier this year, Caltrans completed a traffic operations analysis on SR 78 between I-15 and Nordahl Road. High volumes from the northbound and southbound connector ramps to westbound SR 78 cause congestion during the morning and afternoon commutes. The resulting bottleneck backs up traffic onto I-15 (see Attachment 1). Eliminating this bottleneck will provide for a more efficient transition from the new improvements on the I-15 corridor. The average delay per vehicle is up to 14 minutes and is projected to increase to more than 30 minutes in 2030 if no improvements are made.

The proposed improvements include the replacement of the Nordahl Road bridge, realignment of the on- and off-ramps at the SR 78 Nordahl Road interchange, and the addition of a westbound auxiliary lane between I-15 and Nordahl Road. These improvements are estimated to cost $41 million. The cities of Escondido and San Marcos have committed to pledge $10 million collectively toward the project, which represents the cost of widening the bridge (Attachments 2 and 3).

The Transportation Committee reviewed this item at its September 18, 2009, meeting and recommends that the Executive Director be given the authority to execute an agreement with the cities of Escondido and San Marcos that provides that the cities will commit a $10 million collective contribution to the Nordahl Road bridge replacement project, and that SANDAG will transfer $2 million of TransNet funds made available due to the favorable bids received from the I-15 North segment project budget to the Nordahl Road bridge replacement project.

The Transportation Committee further recommends that the Executive Director be given the authority to execute a transfer with Caltrans under a separate agreement of an additional $1 million in TransNet funds from the I-15 North segment budget to fund the design of a westbound auxiliary lane on SR 78 between I-15 and Nordahl Road. This action to develop the design plans for the projects will get them shovel-ready for construction, which could start in early 2011.

Assuming $13 million is secured for the project as outlined above, an estimated $28 million shortfall would remain from the total $41 million estimated cost. Once the design of the projects has advanced, a construction funding plan would be developed and brought forward for approval, which could include the use of construction bid savings in the corridor and/or other funding opportunities that may become available.

GARY L. GALLEGOS
Executive Director

Attachments: 1. Nordahl Road Bridge and SR 78 Auxiliary Lane Location Map
2. September 1, 2009, letter from Escondido City Manager Clay Phillips
3. September 1, 2009, letter from San Marcos City Manager Paul Malone

Key Staff Contact: Gustavo Dallarda, Caltrans Corridor Project Director, (619) 688-6738, gustavo.dallarda@dot.ca.gov
September 1, 2009

San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101
Attn: Mr. Gary Gallegos, Executive Director

Subject: SR 78 Bridge Replacement at Nordahl Road Project

Dear Mr. Gallegos:

As a follow-up to the telephone conference call held this morning between the City of Escondido, the City of San Marcos, and SANDAG, this letter is confirmation of our commitment to fund our $5,000,000 share of the cost towards the SR 78 Bridge Replacement at Nordahl Road Project. This commitment is in response to SANDAG’s proposal to transfer $2,000,000 for the design work on the project. We truly appreciate your efforts and cooperation in identifying the necessary funding to keep this regionally significant project moving forward.

Sincerely,

Clay Phillips
City Manager

cc: Paul Malone, San Marcos City Manager
Charles Grimm, Assistant City Manager
Edward Domingue, Director of Engineering Services
Robert Zaino, Deputy Director of Engineering Services
September 1, 2009

Mr. Gary Gallegos, Executive Director
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

RE: San Marcos funding Commitment for the Nordahl Road Bridge Replacement at SR 78

Dear Gary,

It is my understanding that SANDAG staff will be proposing a $2,000,000 TransNet funding request to the Board of Directors at their September 25th meeting for design work on the Nordahl Road-SR 78 bridge replacement. I appreciate your efforts to keep this vital project moving forward.

This letter is to confirm the City of San Marcos commitment to participate in the amount of $5,000,000 towards the completion of the project.

Please let me know if you have any questions in this regard.

Sincerely,

Paul Malone
City Manager

Cc: Clay Phillips, Escondido City Manager
    Gustavo Dallarda, Caltrans District 11
    Charles "Muggs" Stoll, SANDAG
    Mike Edwards, City Engineer
2010 ANNUAL SANDAG BOARD SUMMIT

Introduction

The SANDAG annual Summit is scheduled to start on Thursday, January 28, 2010, and conclude on Friday morning, January 29, 2010. A contract is being negotiated for the venue to be the Barona Resort in the community of Lakeside.

The primary objective of the Summit is to afford participants the opportunity to strategize about regional public policies and programs. From these Summit discussions, participants can develop ideas for the future direction of SANDAG. Board members also may want to consider some of these issues during the ensuing months as they develop the FY 2011 Overall Work Program and associated Budget.

Discussion

To date, individual Board members and staff have suggested the following topics as potential Summit agenda items:

- Discuss the progress made on the quality of life funding effort and public education needs;
- Discuss the 2050 Regional Transportation Plan (RTP), including the Sustainable Communities Strategy, the RTP goals, and evaluation criteria for RTP projects;
- Receive status of airport planning efforts and discuss future SANDAG involvement;
- Hold forum with state and federal elected officials to receive and discuss legislative and budget updates, including federal economic stimulus spending and opportunities for the region to garner additional infrastructure dollars;
- Discuss the Southern California region’s effort on high speed rail; and
- Review work conducted and discuss additional work needed on the third border crossing.

Format

It has been suggested that the entire Summit be conducted in one group setting, instead of using break out sessions for a portion as in previous years.
Why Have a Summit?

A Summit provides the opportunity for Board members and alternates to collaborate on critical regional issues of great importance in a relaxed and informal atmosphere to allow time for more in-depth discussions. Clear goals will be established for the Summit to make implementation more effective. A well-planned, well-executed summit provides the time for reflection on and evaluation of the worthiness of existing programs as well as the development of new initiatives. For example, initiatives from past gatherings have resulted in the development of the Regional Comprehensive Plan, the Regional Economic Prosperity Strategy, and the creation of the Public Safety Committee. In addition, a well-organized Summit enhances team building, program planning, commitment to goal accomplishment, and organizational development.

Where Is the Best Location?

The key to any Summit is to get participation. It is important to afford participants a different physical setting from the routine and pressures of their daily workplaces. The best location is a place that lends itself to clear, creative thought. After a competitive procurement process, Barona Resort, located in the community of Lakeside, has been selected as the SANDAG Summit venue, and contract negotiations are underway.

What’s the Proper Duration for the Summit?

A one and one-half to two-day Summit offers the best opportunity to incorporate work time and team building, according to the California Association of Chambers of Commerce. A two-day session may allow time for a presentation by an outside speaker, reports on various committees and projects, brainstorming, and development of annual priorities.

Conclusion

The annual Summit has been of immense value for SANDAG to help set the direction of the agency. Based on the discussion and action during the Board meeting, staff will finalize the Summit agenda and associated support materials. A letter of invitation will be mailed to each SANDAG Board member and alternate by mid-December. The final agenda, background materials, and Summit logistics will be mailed to participants by mid-January 2010. Directors are asked to encourage their colleagues to participate in the Summit because of the inherent value this type of public forum provides regional policymakers.

GARY L. GALLEGOS
Executive Director

Key Staff Contact: Colleen Windsor, (619) 699-1960, cwi@sandag.org
TransNet EMP FIVE-YEAR FUNDING STRATEGY UPDATE, FY 2010 FUNDING ALLOCATION, AND FY 2010 LAND MANAGEMENT GRANT CRITERIA

Introduction

The TransNet Extension Ordinance and Expenditure Plan, approved by the voters in November 2004, include the Environmental Mitigation Program (EMP), which provides funding to mitigate habitat impacts from regional and local transportation projects, and provides funding for regional land management and biological monitoring. The EMP is a unique component of the TransNet Extension Ordinance in that it goes beyond traditional mitigation for transportation projects by including a funding allocation for habitat acquisition, management, and monitoring activities to help implement the regional habitat conservation plans. This funding allocation is tied to mitigation requirements and the environmental clearance approval process for projects outlined in the Regional Transportation Plan.

The purpose of this report is to recommend an update to the approved five-year EMP funding strategy, the allocation of FY 2010 funding, and modifications to land management grant criteria for FY 2010.

Discussion

Five-Year Funding Strategy and FY 2010 Allocations

On December 15, 2006, the Board of Directors approved a conceptual five-year funding strategy for the TransNet EMP Regional Conservation Fund for regional management and monitoring efforts. On September 26, 2008, the Board updated the five-year funding strategy. This conceptual funding strategy was designed to chart a course for the funding of land management and monitoring activities under the EMP. Annual allocations to implement this strategy are reviewed annually by the Board and approved accordingly.
The Transportation and Regional Planning Committees have reviewed the existing five-year funding strategy and have proposed minor changes as shown in Attachment 1 to address the current needs of regional management and monitoring. The only new activity proposed is the standardization of management plans around the region to provide for more consistency among plans to increase the efficiency and cost-effectiveness of their implementation. The activities included in the five-year funding strategy can be reviewed at www.sandag.org/2009EMP. (These activities have previously been discussed by the Transportation and Regional Planning Committees and approved by the Board of Directors during the previous adoption of the five-year funding strategy.) The proposed funding levels are consistent with the TransNet EMP Memorandum of Agreement adopted on February 22, 2008, and the TransNet Extension Ordinance. Attachment 2 summarizes the recommended distribution of the funds for FY 2010 and the recommended approach for implementation of the proposed activities consistent with Board Policy No. 017 (Delegation of Authority to the Executive Director).

TransNet EMP FY 2010 Land Management Grant Criteria

The Regional Planning Committee and the Environmental Mitigation Program Working Group reviewed the FY 2009 land management grant criteria, to consider modifications to the existing eligibility and evaluation criteria.

The Regional Planning Committee found that as a whole the eligible activities and the criteria for evaluation were still valid to address the management needs of the region. To assist in the review of grant applications, the Regional Planning Committee recommends that applicants provide additional information on the allocation of the requested funding and any proposed matching funds, and indicate how the applicant will secure the matching funds.

Grant projects in urban areas that promote habitat management are eligible projects under the proposed grant guidelines. To promote greater awareness of land management activities by the public, the Regional Planning Committee is recommending that all applicants provide the following information, which will be used when evaluating the proposed land management grants:

1. Estimated population that would directly benefit from the project (e.g., people living in the immediate vicinity of the project, recreational users of the project, etc.);
2. Number and proposed volunteer hours proposed on project;
3. Use of signage and interpretative features to educate the public on the purpose of project and the funding source(s) used; and
4. An access plan for public use, if applicable.

These additions would enable future evaluation panels the opportunity to better rate the grantee's ability to provide outreach to the public both in urban and nonurban areas.

The Regional Planning Committee also recommends that SANDAG create standardized signage that will denote the use of TransNet funds to fund the grant project. SANDAG staff plans to send out a press release after any approval by the Board of Directors on grant projects, and the grantees should be required to send out a press release once the project has been completed.
Finally, SANDAG staff is proposing to make the application easier to complete by developing a “fill-in-the-blank” form that will either be online or sent out with the call for projects. This will allow standardization in the grant applications making it easier for applicants, evaluators, and staff.

The revised grant criteria proposed for FY 2010 are shown in Attachment 3.

**Next Steps**

If approved by the Board of Directors, staff will take the necessary actions to implement the FY 2010 activities identified in the five-year funding strategy (Attachment 2), and to initiate a call for projects for proposed land management grants using the criteria as shown in Attachment 3.

GARY L. GALLEGOS  
Executive Director

Attachments: 1. TransNet Environmental Mitigation Program Five-Year Conceptual Funding Strategy (Updated 2009)  
2. Summary of Recommended FY 2010 Funding Allocation  
3. Environmental Mitigation Program (EMP) FY 2010 Land Management Grants - Program Overview and Instructions

Key Staff Contact: Keith Greer, (619) 699-7390, kgr@sandag.org
## TransNet Environmental Mitigation Program
### Conceptual Five-Year Funding Strategy
**Updated 2009**
changes shown in italic

### Prior FYs

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<tr>
<th>REGIONAL COORDINATION</th>
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### REGIONAL MANAGEMENT

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### REGIONAL MONITORING

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<tr>
<td>Subtotal Regional Monitoring</td>
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### TOTAL FUNDING STRATEGY

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Note: Some activities will require implementation over multiple years.

1 Funds encumbered in FY09 are available in FY 2010
### Summary of Recommended FY 2010 Funding Allocation

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<th>Activity</th>
<th>Funding Allocated Prior Years FY 06-09</th>
<th>Proposed Funding FY 2010</th>
<th>Recommended Approach</th>
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<td>Fund through existing contract</td>
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<td>Monitoring Coordinator</td>
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<td>Management Coordinator</td>
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<td>Fund through contract</td>
</tr>
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<td>GIS Specialist</td>
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<tr>
<td>Administrative Support</td>
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<td><strong>Regional Management</strong></td>
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<tr>
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<td>Solicit proposals from land managers through competitive grant program.</td>
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<td>Fund through contract.</td>
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<tr>
<td>Updated Vegetation Mapping</td>
<td>$300,000</td>
<td>$300,000</td>
<td>Fund through existing contract</td>
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<tr>
<td>Enforcement</td>
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<td>$150,000</td>
<td>Fund through Memorandum of Understanding with Sheriff Department and CDFG; both have enforcement capability on native open space lands.</td>
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<td>Preserve Management Plan Standardization</td>
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<td>$6,175,000</td>
<td>$2,760,000</td>
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<td><strong>Regional Monitoring</strong></td>
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</tr>
<tr>
<td>Post Fire Monitoring</td>
<td>$1,725,000</td>
<td>$0</td>
<td>Fund through existing contract.</td>
</tr>
<tr>
<td>Vegetation Monitoring</td>
<td>$295,000</td>
<td>$0</td>
<td>Fund through existing contract</td>
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<tr>
<td>Rare and Endemic Plant Monitoring</td>
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<td>$0</td>
<td>Fund through existing contract</td>
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<tr>
<td>California Gnatcatcher Monitoring</td>
<td>$740,000</td>
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<td>Fund through existing contract</td>
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<td>Burrowing Owl Monitoring</td>
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<td><strong>TOTAL FUNDING STRATEGY</strong></td>
<td>$11,000,000</td>
<td>$4,000,000</td>
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Note: Some activities will require implementation over multiple years.

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1 Funds encumbered in FY 2009 are available for this activity in FY 2010.
ENVIRONMENTAL MITIGATION PROGRAM (EMP)  
FY 2010 LAND MANAGEMENT GRANTS -  
PROGRAM OVERVIEW AND INSTRUCTIONS

Program Description

The TransNet Extension Ordinance and Expenditure Plan, as approved by the voters on November 2, 2004, includes an Environmental Mitigation Program (EMP). The EMP is a funding allocation category for the costs to mitigate habitat impacts for regional transportation projects. The EMP is a unique component of the TransNet Extension in that it goes beyond traditional mitigation for transportation projects by including a funding allocation for habitat acquisition, management, and monitoring activities as needed to help implement regional habitat conservation plans.

On September 25, 2009, the SANDAG Board of Directors approved land management and monitoring activities and a budget for FY 2010. The Board approved $2.085 million for land management projects related to (1) Invasive Control, (2) Fire Recovery, (3) Habitat Restoration, and (4) Access Control/Management and Garbage Removal.

Eligible Activities

SANDAG has allocated $2.085 million to address invasive species control, recovery and protection of resources damaged by the recent wildland fires, restoration of degraded habitat areas, and management to preclude unintended damage caused by recreation use. This is especially critical due to the potential for the establishment of invasive species in areas burned by the 2007 wildland fires, and the need for recovery and protection of areas until they naturally recover from the burns. It is envisioned that the $2.085 million would be part of a multi-year strategic approach to: (1) control key exotic species, (2) promote fire recovery, (3) provide habitat restoration, and (4) provide access control/management and garbage removal in the regional preserve system. The proposed activities could include active land management efforts that include one or more of the following activities:

1. **Invasive Control** – Projects that reduce existing or emerging invasive species that threaten endangered and/or other sensitive species.

2. **Fire Recovery** – Projects that promote natural recovery of post-burn areas such as erosion control features (e.g., silt fences), fiber rolls or straw wattles, straw or wood chip mulching, hydro-seeding and hydro-mulching, the strategic identification of potential target areas for restoration efforts, and sources of plant materials for current and future restoration activities.

3. **Habitat Restoration** – Projects that engage in active habitat restoration on post-burn and other degraded habitat lands to promote recovery of native vegetation communities and/or threatened, endangered, and other sensitive species habitat.

4. **Access Control/Management and Garbage Removal** – Projects that control access to managed trails and enforce legal use of the open space areas to allow these areas to recover as soon as possible to their pre-burn conditions. This includes signage (both interpretive and cautionary), education, patrolling public use, and law enforcement. In addition, efforts to
remove garbage in existing preserve systems to allow habitat areas to recover would also be eligible activities.

Land management activities will be determined based on the needs of each property within the preserve. Projects that are not ready to start within 12 months of submission of the application to SANDAG would not be eligible for this funding cycle. A resolution from the applicant authorizing the grant application and committing to the proposed level of matching funds will be required or the proposed grant project will be dropped from consideration. Projects not started within 12 months of submission of the application will also lose funding.

How Much Funding Is Available?

On September 25, 2009, the SANDAG Board of Directors approved $2,085,000 for FY 2010 land management activities. Additional funding may be available in FY 2011 pending approval by the SANDAG Board.

Process for Allocating the Funds

SANDAG will accept project proposals from land managers in San Diego County that will benefit regional conservation planning under the Natural Communities Conservation Planning Program. The applicant must own the land, or be designated to manage the land by the land owner by contract or other written form of legal documentation. The land must be conserved as open space for natural resources. Representatives of the land owner and land manager must be identified on the application form and be authorized in writing to enter into a contract agreement with SANDAG.

Applicants must complete a project submission form that will be posted on the SANDAG website and/or mailed with the Call for Projects. The form will provide uniformed applications length and format when submitted to SANDAG.

All project proposals will be reviewed for eligibility, ranked, and prioritized using the criteria listed below. A list of recommended projects will be submitted for consideration to the EMP Working Group and the Regional Planning Committee (RPC), and the projects are subject to approval by the SANDAG Board of Directors.

Successful applicants will then be eligible to enter into a contract with SANDAG for grant funding. Successful applicants would be required to submit quarterly reports on their progress and a final summary report of the project’s contribution to promote habitat conservation in the region along with the final invoice.

Who Will Score The Projects?

An evaluation committee will be made up of EMP Working Group members and/or other qualified individuals who do not have an affiliation with any of the proposed projects. The committee will include people with knowledge of the regional preserve system and land management.
Proposed Schedule

October 15, 2009 - A call for projects is provided to EMP Working Group members and other interested stakeholders. A call for projects also will be posted on the SANDAG Web site.

January 15, 2010 - Applications are due to SANDAG.

February 2010 - The evaluation committee will review and rank projects following the criteria in Attachments 3 and 4, and forward the proposals to the EMP Working Group for consideration.

April 2010 - The Environmental Mitigation Program Working Group will be providing a recommendation to Regional Planning Committee who will be asked to recommend a list of land management projects. The list of projects will be subject to approval by the SANDAG Board of Directors.
PROJECT SUBMISSION FORM
For Consideration for TransNet Environmental Mitigation Program (EMP) Funding for Land Management
(FY 2010 Funding Only)

General Information on the Property (Click on the fields below to begin typing. Please use as much space as is needed. Attach to front of Proposal).

Applicant Name:
Address:
Name of Property:
General Location:
Jurisdiction:
Total Acres:
Acres Requiring Management:
Owner(s) of Property:

Land Manager(s) of Property (include name(s), years of experience managing habitat lands, existing land management responsibilities, and references):

** If the applicant is not the landowner, please submit a letter or right-of-entry permit from the land owner granting permission to perform the land management duties as outlined in the application. Failure to provide the letter or right-of-entry permit will lead to disqualification of the application.
Funding Needs

1. How much money is being requested for this funding cycle? $

<table>
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<tr>
<th>Budget Item</th>
<th>Requested Funding Amount</th>
<th>Description</th>
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</thead>
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<tr>
<td>Non-personnel Expenses</td>
<td>$</td>
<td>Includes all equipment and supplies.</td>
</tr>
<tr>
<td>Personnel Expenses Staff</td>
<td>$</td>
<td>Includes all staff time for work on the project</td>
</tr>
<tr>
<td>Consultant Expenses</td>
<td>$</td>
<td>Includes all cost for consultant services</td>
</tr>
<tr>
<td>Administrative Expenses</td>
<td>$</td>
<td>All cost to administer the contract</td>
</tr>
<tr>
<td>Overhead</td>
<td>$</td>
<td>All indirect charges for overhead on the project</td>
</tr>
</tbody>
</table>

2. Are there matching funds available? ☐ Yes or ☐ No
   If yes, please provide the source of funds and dollar amount: $
   If yes, how are the matching funds assured?

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<thead>
<tr>
<th>Budget Item</th>
<th>Proposed Matching Funding</th>
<th>Description</th>
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</thead>
<tbody>
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<td>Non-personnel Expenses</td>
<td>$</td>
<td>Includes all equipment and supplies.</td>
</tr>
<tr>
<td>Personnel Expenses Staff</td>
<td>$</td>
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<tr>
<td>Administrative Expenses</td>
<td>$</td>
<td>All cost to administer the contract</td>
</tr>
<tr>
<td>Overhead</td>
<td>$</td>
<td>All indirect charges for overhead on the project</td>
</tr>
</tbody>
</table>

3. What management activities will be done on the property? Please list each activity and its associated cost, and an implementation schedule including time frames for each activity (you may reference the project’s scope of work):

4. Are there any federal or state permits required for these activities? ☐ Yes or ☐ No
   If so, are there associated costs for these permits? ☐ Yes or ☐ No
   If so, are the permit costs included in the request? ☐ Yes or ☐ No

Biological Significance

1. Does the property support or did it support natural vegetation in a core area? ☐ Yes or ☐ No
   If yes, list the habitats contained on the property:

2. Does the property contribute to the Natural Communities Conservation Program regional preserve system? ☐ Yes or ☐ No
3. Is the property a linkage or regional wildlife corridor? □ Yes or □ No

4. Are there, or were there, significant populations of covered species or species proposed for coverage by a habitat conservation plan? □ Yes or □ No
   If yes, please list the species:

Risk

1. Does the site suffer from natural, human, or domestic animal disturbance (e.g., off-road vehicle use, grazing, fire, flooding, and/or feral cats)? □ Yes or □ No
   If yes, list the type(s) of disturbance:

2. Do exotic, invasive species threaten the preserve? □ Yes or □ No
   If yes, list the species:

3. Is there uncontrolled erosion? Uncontrolled access? □ Yes or □ No
   If yes, identify the source if possible:

4. Is immediate action needed to address a problem, or else the site would degrade further? Would the further degradation potential affect covered species? □ Yes or □ No
   If yes, explain:

Cost-Effectiveness

1. Does the proposal use efficient and proven methods and/or strategies to address the land management needs that would result in a high likelihood of success and reduce future land management costs? (e.g., control of small outbreak of aggressive exotic species, fencing to prevent damage to rare plant populations) □ Yes or □ No
   If yes, explain:

2. Does the proposal implement a strategic approach which covers large geographic areas (e.g., watershed or subwatershed extent) involving multiple partners and providing multiple benefits (e.g., part of a larger coordinated effort) (i.e., High Economy-of-Scale)? □ Yes or □ No
   If yes, explain:

3. How would the project result in measurable biological success to implement the Natural Communities Conservation Program regional preserve system? What measurable results would be used to determine success of the project? explain:

Outreach and Public Education

4. Would the project involve public outreach/public participation to identify the land management activities being funded and promote awareness of grant funded project? □ Yes or □ No
   If yes, please explain and include the following in your explanation
a. Estimated number of public to benefit from the project,

b. Number and proposed volunteer hours proposed on project,

c. Use of signage and interpretation features to be use to educate public on purpose of project and the funding source(s) used,

d. A trail/public access plan to show the public legal access through the property, if applicable.

PROJECT PROPOSAL (not to exceed 10 pages when combined with (Project Submission Form)

The proposal will include the purpose of the project, the scope of work, timeline, and costs. Applicants must clearly identify their proposed tasks in the scope of work, funding requested for each task (please identify staff hours and cost separately from consultant costs), start and end dates of the tasks, and deliverables. The first page of the proposal needs to include an Executive Summary of the project. Applicants are encouraged to identify phasing in their proposal in case full-funding for the project is not available.

REVIEW OF THE CONSERVED LANDS DATABASE

All proposed projects should be on lands that are conserved for the primary purpose of protecting open space and natural resources. Lands not conserved as open space for natural resources are not eligible for this grant funding.

Applicants should ensure that their property(ies) are in the conserved lands database and are accurately portrayed. This database can be accessed at http://gis.sandag.org/ConservedLand. If your property is not included in the database or is not accurately shown in the database, please contact SANDAG to add, correct, or update the information. SANDAG will use this database (including any revisions by applicants) to determine if the land is conserved as open space and is warranted consideration to receive grant funds. Projects proposed for consideration that are not in the conserved lands database will not be eligible to receive grant funds.
EMP Criteria for Eligible Management Projects (FY 2008 Funding)

Is the project biologically significant?
For example:
- Does it, or did it, support natural vegetation in a core area?
- Is the project important? Does it contribute to the Natural Community Conservation Planning regional preserve system?
- Is it a linkage or regional wildlife corridor?
- Are there, or were there, significant populations of covered species or species proposed for coverage by a habitat conservation plan?

Yes

Is the project area at risk of further degradation if no management is provided?
For example:
- Was the site affected by the 2003 and/or 2007 wildfires and requires land management to recover?
- Does the site suffer from human or domestic animal disturbance (e.g., off-road vehicle use, grazing)?
- Do exotic, invasive species threaten the preserve?
- Uncontrolled erosion? Uncontrolled access?

No -> STOP PROJECT INELIGIBLE

Yes

Is funding necessary to complete the project as verified by the Wildlife Agency?

No

Yes

ELIGIBLE PROJECT: Prioritization of eligible projects. Factors for consideration:

- Sites that support rare vegetation types, narrow endemics, or cover species at risk of extirpation (e.g., Tier 1 habitats, vernal pools, cactus wren).
- Critical linkage parcels or regional wildlife corridor.
- Success of management activities is likely with clear measurable positive results (e.g., Arundo removal at the top of a watershed will receive higher priority than a site in the middle).
- Lack of management on the site may affect continued coverage of species.
- Dedicated staff (agency, jurisdiction, non-governmental organization) willing to assume long-term management.
- Percentage of matching contributions available to complete the project.
- Urgent action is needed to address a problem, or else the area would degrade further.
- Projects that propose to implement a strategic approach which covers large geographic areas involving multiple partners and multiple benefits (e.g., watershed approach for exotic species removal).
- Projects that promote public awareness of grant activity through public outreach and participation.
**Project Eligibility Evaluation and Ranking**

Note: Do not fill out this section. This section is to be used by the project evaluation committee. The total scores for all the submitted projects will be converted to a rank value for each of the evaluation members.

Name of Property: 

Name of Reviewer: 

<table>
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<tr>
<th>Project Evaluation Criteria</th>
<th>Point Range</th>
<th>Weight</th>
<th>Maximum Score Possible</th>
<th>Total Score</th>
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<tr>
<td>Lack of management on site may affect coverage of species.</td>
<td>0-5</td>
<td>5</td>
<td>25</td>
<td></td>
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<tr>
<td>Site supports rare vegetation types, populations of narrow endemics or species at risk of extirpation (e.g., Tier 1 habitat, vernal pools, cactus wren).</td>
<td>0-5</td>
<td>4</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Critical linkage parcels or in regional wildlife corridor.</td>
<td>0-5</td>
<td>4</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Long term success of management activities is likely with clear measurable positive results which will reduce future land management costs. High Cost-Effectiveness</td>
<td>0-5</td>
<td>4</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Urgent action is needed to address a problem or else the site would degrade further.</td>
<td>0-5</td>
<td>4</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Dedicated staff (agency, jurisdiction, non-government organization) willing to assume long-term management.</td>
<td>0-5</td>
<td>3</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Project part of a larger strategic effort which covers a large area with multiple partners and multiple benefits? High Economy-of-Scale.</td>
<td>0-5</td>
<td>3</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Sufficient matching funds available to complete the project.</td>
<td>0-5</td>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Project promotes public awareness of sustainable land management through public outreach and participation.</td>
<td>0-5</td>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>155</strong></td>
<td></td>
</tr>
</tbody>
</table>
FINIAL REGIONAL ALTERNATIVE FUELS, VEHICLES, AND INFRASTRUCTURE REPORT

Introduction

By taking advantage of existing and proven alternative fuels and vehicle technologies, the region can decrease reliance on petroleum-based transportation fuels, promote clean economic development, improve air quality, and reduce greenhouse gas (GHG) emissions. Moreover, increasing use of alternative fuels and vehicles is identified by the draft Regional Energy Strategy Update and Regional Climate Action Plan as a core strategy for achieving regional goals to reduce petroleum consumption and GHG emissions in the transportation sector.

Recommendation

The Regional Planning Committee recommends that the Board of Directors accept, in substantially the same form as attached, the Final Regional Alternative Fuels, Vehicles, and Infrastructure Report.

Developed as part of the SANDAG partnership with the California Energy Commission, the Final Regional Alternative Fuels, Vehicles, and Infrastructure Report primarily addresses increasing alternative fuel and vehicle use in fleets, particularly for local governments and their franchisees (e.g., refuse haulers). Alternative fuel and vehicle technologies are described and analyzed to help fleet operators determine potential benefits and costs of choosing to increase alternative fuel and vehicle use. The report also examines how a strategic regional approach to fleet vehicle deployment and installation of public access fueling and charging infrastructure can support alternative fuel vehicle rollout to the general public. In addition, the report discusses existing efforts to increase use of alternative fuels, such as the recently announced federal stimulus project between eTec and Nissan North America to deploy up to 1,000 all-electric vehicles and establish charging infrastructure in the San Diego region as part of the largest transportation electrification project in U.S. history. SANDAG has been asked to partner in this project.

This item presents an overview of the final report (Attachment 1), which reflects the input of multiple stakeholders including the Regional Energy Working Group, local planning directors on the Regional Planning Technical Working Group, the Regional Planning and Transportation Committees, Board of Directors, and technical staff at the Energy Commission. At its June 12, 2009, meeting the Board accepted the draft report for public distribution and comment, after which the report was made available on the SANDAG Web site and presented to the San Diego Regional Fuels Coalition (member of the U.S. Department of Energy Clean Cities Coalition) for input at its June 24, 2009, meeting. At its July 31, 2009, meeting, the Regional Planning Committee recommended that the Board of Directors accept the final report.

Discussion

Alternative fuel vehicles include biofuels (i.e., ethanol and biodiesel), electricity, hydrogen, natural gas, and liquefied petroleum gas (LPG or propane). These fuels can be used in a variety of fleet applications that range from light-duty passenger cars and trucks to heavy-duty vehicles like refuse
haulers and sweepers to nonroad applications such as forklifts. The report identifies and recommends regional and local government actions to increase the deployment of alternative fuels and vehicles in the region. While primarily focused on helping to identify opportunities for local government fleets and their franchisees, the report also provides analysis, tools, and recommendations to support a wider rollout of alternative fuels, vehicles, and infrastructure to private fleets and to the general public. Major components of the report include:

- Federal and state policies and funding opportunities;
- Detailed assessment and comparison of alternative fuels and vehicle technologies, including key assessment criteria, such as potential for petroleum and GHG reduction, fuel economy, fuel price, and availability and cost of vehicles and infrastructure;
- Analysis of opportunities to integrate alternative fuel vehicle and infrastructure considerations with the core SANDAG function of regional transportation planning; and
- Additional information and tools to help local governments, including sample fleet and procurement policies, alternative fuel and vehicle cost calculators, and alternative fuel vehicle case studies for government fleets.

The report concludes with four sets of recommendations to increase the use of alternative fuels and vehicles and develop the supportive infrastructure:

1. Alternative fuel and vehicle priorities by vehicle class based on the assessment criteria, funding opportunities and unique regional characteristics to support informed decision-making;
2. Transportation project types that could potentially include an alternative fuels component;
3. Possible collaborative approaches to support alternative fuel and vehicle rollout to the general public; and
4. Potential measures SANDAG could undertake as follow-up to this report, particularly identification of locations for alternative fueling and charging infrastructure integrated with the regional transportation network and development patterns.

**Next Steps**

If accepted for distribution by the Board, the final report will be submitted to the Energy Commission, which will use it as an example for how other metropolitan planning organizations in California can support deployment of alternative fuels, vehicles, and infrastructure. The final report also will be used by staff to support development of other plans and programs addressing issues related to transportation fuels, including but not limited to the Regional Energy Strategy Update, the Regional Climate Action Plan, Sustainable Region Program, and the Regional Transportation Plan.

GARY L. GALLEGOS  
Executive Director

Attachment: 1. Final Regional Alternative Fuels, Vehicles, and Infrastructure Report

Key Staff Contact: Andrew Martin (619) 699-7319, ama@sandag.org
ACKNOWLEDGEMENTS

This Final Report was prepared by SANDAG staff with the assistance of the SANDAG Regional Energy Working Group and the San Diego Regional Clean Cities Coalition. It was developed with assistance from the California Energy Commission, as part of a regional energy strategies partnership.
The 18 cities and county government are SANDAG serving as the forum for regional decision-making. SANDAG builds consensus; plans, engineers, and builds public transit; makes strategic plans; obtains and allocates resources; and provides information on a broad range of topics pertinent to the region’s quality of life.

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Southwest Division Naval Facilities Engineering Command
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Hon. Remedios Gómez-Arnau
Consul General of Mexico
Hon. Martha E. Rosas, Deputy Consul General of Mexico

As of May 1, 2009
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Executive Summary

Section 1. Introduction

Like the rest of the United States, the San Diego region’s vehicles are almost entirely powered by finite petroleum resources -- gasoline and diesel. Increasingly, these transportation fuels are imported from foreign nations and are responsible for nearly half of the region’s contribution to greenhouse gas (GHG) emissions causing global climate change. By taking advantage of opportunities to implement existing and proven alternative fuels and vehicle technologies, the San Diego region can realize the significant benefits of decreasing its reliance on petroleum-based transportation fuels.1

Benefits of Alternative Fuels
- Protection against petroleum price volatility and supply uncertainty;
- Less dependence on foreign petroleum imports;
- Reduction of GHG emissions causing global climate change;
- Reduction of local air pollution that results in adverse public health impacts;
- Development of “clean energy” jobs associated with the development and deployment of alternative fuel and vehicle technologies; and
- Creation of indirect economic benefits to the extent that money currently spent on largely-imported petroleum fuels can be redirected to alternative fuels and vehicle technologies or other economic sectors in the San Diego region or the state.

Report Objectives

With assistance from a partnership with the California Energy Commission, the San Diego Association of Governments (SANDAG) developed this report with two objectives in mind: (1) help local governments and other regional stakeholders make informed decisions regarding appropriate alternative fuel and vehicle technologies for a variety of fleet applications and (2) identify and recommend regional and local government actions that can initially support the rollout of alternative fuel vehicles to local fleets and eventually support alternative fuel use by the general public. In addition to the importance of local governments and their franchisees leading by example through their choice of fuels and vehicles in their fleets, publicly accessible alternative fueling stations, electric charging points, vehicle maintenance facilities, and other infrastructure are critical to provide the private sector (e.g., fleet owners and citizens) with a level of certainty and dependability to support their investment in an alternative fuel vehicle.

The report uses the Energy Commission’s full fuel cycle (“well-to-wheels”) analysis to evaluate the petroleum and GHG reductions associated with different alternative fuels. Because the long-term development of alternative fuels and technologies is characterized by a fair amount of uncertainty and unpredictability, the report utilizes currently available information to make recommendations for near-term (i.e., approximately 3-5 years) decision-making. The viability, limitations, and costs of alternative fuels and vehicle technologies are expected to become increasingly apparent as time goes on, and the recommendations of this report should be re-evaluated and revised accordingly.

Regional Efforts on Alternative Fuels

As a result of this report, SANDAG has developed relationships with a variety of regional stakeholders regarding alternative fuels, including the San Diego Regional Clean Fuels Coalition and the Clean Transportation Program at San Diego Gas & Electric. Perhaps most significant is the request of SANDAG to partner in the recently-announced American Recovery and Reinvestment Act of 2009 (ARRA) funded project between eTec and Nissan North America.

---

1 In addition to increased use of alternative fuels, research demonstrates and state policy supports simultaneous implementation of vehicle fuel efficiency improvements and measures to reduce the total amount of driving to realize significant petroleum and GHG emission reduction. While vehicle fuel efficiency requirements are set at the state level, SANDAG will analyze measures to reduce the total amount of driving through the forthcoming Regional Climate Action Plan (final plan expected in early 2010).
(eTec-Nissan project) to deploy up to 1,000 all-electric vehicles and establish charging infrastructure in the San Diego region as part of the largest transportation electrification project in U.S. history. In addition, there are an increasing number of alternative fuel- and vehicle-related businesses in the San Diego region.

Section 2. Federal and State Resources

In addition to the ARRA (federal stimulus) project described above, state and federal energy policy provides significant funding opportunities and resources to increase the deployment of alternative fuel vehicles, fueling stations, and electric charging infrastructure. Funding opportunities and resources that the region can take advantage of to increase the use of alternative fuels include ARRA Energy Efficiency and Conservation Block Grants, federal tax incentives for alternative fuel production, sale, vehicle purchase, and infrastructure installation, and the Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act (Assembly Bill 118, Statutes of 2007), which provides approximately $200 million in annual incentive funding to promote alternative fuels through 2015, including vehicle purchase, infrastructure installation, vehicle manufacturing, and fuel production and distribution. The funding opportunities can partially or fully cover the cost premiums for alternative fuels and vehicle technologies discussed in Section 4.

Section 3. Alternative Fuels Overview

The alternative fuels addressed in this report include electricity, biofuels (biomass-based diesels and ethanol), hydrogen, natural gas, and propane. They can be used in a variety of fleet applications that range from light-duty passenger cars to heavy-duty vehicles like refuse haulers and sweepers, and even off-road applications like forklifts and low-speed vehicles. Battery electric vehicles (BEVs) run on electric motors powered entirely by rechargeable batteries, while plug-in hybrid electric vehicles (PHEVs) are powered by a conventional gasoline or diesel engine and a rechargeable battery, which displaces the need for some or all of the liquid fuel.

Biomass-based diesels are a category of biofuels that include biodiesel and renewable diesel, as well as diesel derived from algae or biomass. Biodiesel is made from vegetable oils or animal fats, and is the only of the biomass-based fuels commercially available today, and is produced in the region. It is often blended with petroleum in concentrations ranging from 5 percent (B5) to 20 percent (B20), and up to 100 percent. Only blends of B20 and above are typically considered an alternative fuel. Ethanol is another type of biofuel based on biomass feedstocks like corn and sugar cane. It is most commonly blended with gasoline to make E85 (85% ethanol) for use in flexible fuel vehicles (FFVs) capable of operating on gasoline or ethanol. Hydrogen is not a naturally occurring fuel that must be produced from an energy source like natural gas or water. Fuel cell vehicles then use hydrogen as a fuel to generate electricity to power an electric motor.

Natural gas is a non-renewable fossil fuel extracted almost entirely from gas and oil wells, with small amounts derived from sources like landfill gas. It is currently a large source of electricity generation in the region and elsewhere. While current demand is met with domestic supplies, the Energy Information Administration predicts that increasing demand will lead to the import of more than 15 percent of U.S. natural gas by 2025. Because of its gaseous nature, natural gas must either be compressed (CNG) or liquefied (LNG) in order to be stored on a vehicle and used for transportation purposes. Propane, or liquefied petroleum gas, is a gaseous fuel produced as a part of natural gas processing and crude oil refining that can be used for transportation purposes.

Section 4. Vehicle Availability and Fleet Applications

Alternative fuel vehicles are potentially available for use in light-duty, medium/heavy-duty, and non-road applications. However, alternative fuels and vehicle technologies currently vary significantly in level of commercial readiness and availability and incremental costs compared to standard gasoline and diesel vehicles.

Production and deployment of battery electric and plug-in hybrid electric passenger vehicles is expected to grow in the near-term by several automakers, including the eTec-Nissan project beginning in 2009. Retrofit of standard hybrid electric vehicles to plug-in hybrid electric vehicles (PHEVs) is an existing option. Currently, incremental
purchase price for new battery electric vehicles (BEVs) and PHEVs are not known but expected to initially be $6,000 to $15,000 more than their gasoline counterparts on average, while in some cases they may be cost-competitive. Retrofits have a similar cost range that varies by battery type. The Energy Commission reports that high volume production of about 50,000 to 100,000 electric vehicles per year is needed before prices are affordable enough to achieve significant market share. And while not considered alternative fuels, hybrid electric and hydraulic applications are viable options for petroleum reduction in refuse haulers, transit and school buses, and utility trucks.

In contrast to the many manufacturers offering flex-fuel vehicles (FFVs) (mostly light-duty trucks like SUVs and pick-up trucks) capable of running on E85, there is only one producing a CNG vehicle. FFV purchase price is cost-competitive with gasoline-only competitors, while CNG vehicles carry a cost-premium of about $7,000. In addition to passenger cars, CNG applications include vanpools, taxicabs, and traffic checkers. Retrofits are also available to convert standard gasoline engines to run on CNG. Several manufacturers offer CNG or LNG in heavy-duty applications like refuse haulers and sweepers, but current purchase price premiums range from $40,000 to $50,000 (and up to $80,000 for class 8 vehicles). Forthcoming additional requirements for diesel trucks in 2010 are expected to decrease these cost differentials. E85 is not a viable option for medium- or heavy-duty vehicles.

As of this writing, light-duty diesel manufacturers do not accept blends greater than B5, but most heavy-duty diesel engines can accept blends of up to B20 – potentially one million vehicles in California today used in applications like work trucks, refuse haulers, and buses. Light-duty propane vehicles are only available through $4,000 to $12,000 retrofits, and are commonly used for light-duty truck and taxicab applications. Propane use in medium- and heavy-duty applications like school buses and sweepers is a cost-competitive option.

Hydrogen fuel cell vehicles (FCVs) are significantly more expensive than other vehicles, and only available in a few demonstration fleets. Fuel cells are currently very expensive to manufacture and costs must decrease sizably in order to be cost-effective for mass production and competitive with other fuels and vehicle technologies.

Section 5. Fuel and Vehicle Characteristics and Performance

Important characteristics influencing the alternative fuel and vehicle technology performance include fuel energy content, fuel economy, and fuel price. Energy content refers to the heat content per a given quantity of fuel, and is best suited for comparison of liquid fuels. Using gasoline as a baseline, an equal quantity of most alternative fuels has less heat energy, while biodiesel blends have more. Lower heat content means more fuel is required to perform the same amount of work (e.g., about 1.4 gallons of E85 equal the heat content of one gallon of gasoline).

Related to energy content is fuel economy, which for alternative fuels is measured as miles per gallon of gasoline of gasoline equivalent (MPGGE). MPGGE is essentially a measure that allows for fair comparison of the distance vehicles can travel on an equal amount of heat energy (from conventional or alternative fuels). Using this metric, BEVs and PHEVs are significantly more fuel efficient than conventional and other alternative fuels, with hydrogen fuel cells being the next most fuel efficient option on an MPGGE basis. Electric motors – whether powered by batteries or hydrogen fuel cells – are inherently about four times more efficient at converting fuel into energy to power a vehicle. Fuel efficiency for other alternative vehicle technologies is generally comparable to standard gasoline and diesel cars.

Driving range is another important characteristic for alternative fuel vehicles, primarily for vehicles making long-distance trips. Notably, BEVs have a more limited range of 50-130 miles compared to 300-400 miles for a conventional passenger vehicle. The Nissan Leaf to be introduced in the region in 2010, is expected to have a range of 100 miles per charge. The combination of an internal combustion engine with a rechargeable electric battery affords PHEVs comparable or even superior range than a conventional vehicle, as opposed to the more limited range of a BEV. For heavy-duty vehicles, LNG provides longer-range due to its higher storage density than CNG. These characteristics make LNG a more viable alternative to diesel fuel than CNG for long-haul heavy-duty applications. B20 will provide range similar but slightly lower than standard diesel fuel, while fuels like E85 and propane feature lower driving range than their gasoline counterparts.
Although many characteristics are critical to the success of alternative fuels and vehicles, price is perhaps the most significant, particularly as it relates to the price of gasoline and diesel. To facilitate comparison, prices are reported in gallons of gasoline or diesel equivalent (GGE and DGE, respectively). As of this writing, CNG is lower than both gasoline and diesel, while the cost of other liquid alternative fuels is greater (and LNG price could not be obtained). Of all the alternative or conventional options, BEVs are the cheapest to fuel as long as the price of gasoline remains at or above about $1.25 per gallon. PHEVs also offer significant fuel cost savings relative to both standard hybrid electric vehicles and gasoline vehicles. There is limited information on the cost of hydrogen as a transportation fuel, but it is presently considered uneconomically high relative to all other transportation fuel options.


Alternative fuels and vehicle technologies will be needed to achieve the state’s goals for GHG emission reduction, petroleum reduction, and climate stabilization. The state’s full fuel cycle analysis takes into account lifecycle emissions and petroleum inputs, demonstrating that BEVs and PHEV retrofits provide the greatest viable near-term options for GHG emissions and petroleum reduction. Natural gas also provides significant petroleum savings, but more modest GHG emissions reductions. Other fuels like hydrogen and E85 derived from sources like California corn or cellulose offer GHG and petroleum reduction benefits comparable to electricity. However, it does not appear these options will be viable options for the region in the same time frame as BEVs, PHEV retrofits, and natural gas vehicles.

Section 7. Alternative Fuel Availability and Infrastructure

While fuel properties like energy and carbon content and other characteristics like driving range are important, equally so are other considerations like the source and total available supply of the fuel, capability to produce the fuel at a large, commercial scale, as well as infrastructure to produce and distribute the fuel to end-users and facilitate vehicle fueling and charging. A significant amount of gasoline and diesel infrastructure supports current transportation fuel needs, and comparable infrastructure at a similar scale and level of investment would be needed to support widespread use of alternative transportation fuels. Existing fueling and charging infrastructure exists, but at a relatively small scale. In the near-term, electric, natural gas, and propane vehicles have an advantage over other alternatives in that the existing electricity grid and pipeline network can be used to deliver fuel to transportation end-users; only fueling and charging stations requiring relatively modest investment would need to be constructed. However, widespread use of these fuels over a longer-term would likely require a more significant level of infrastructure investments.

Relative to electricity and natural gas, significantly greater investment of capital and time would be needed to support deployment of other alternative fuels. For example, hydrogen would require its own production, distribution pipeline and fueling station network, while biofuels require investment in storage and blending terminals, port infrastructure, and distribution facilities. In addition, electricity has another advantage in that charging stations are significantly less expensive than most fueling stations. Charging station costs range from less than $1,000 to $5,000, while most alternative fueling stations are priced in the hundreds of thousands to even millions of dollars. Notable exceptions are CNG home refueling at about $5,000 and propane stations at about $65,000.

Section 8. Alternative Fuel Considerations for Regional Transportation Projects

One way in which SANDAG can promote a transition to alternative fuels and vehicles is by integrating alternative fuel considerations into regional transportation planning. This section analyses planned regional transportation project types that could accommodate an alternative fuel vehicle (e.g., transit buses) or supporting infrastructure (e.g., electric charging stations). The results of this preliminary analysis are provided in Section 9. Recommendations.
Section 9. Recommendations

The report concludes with four sets of recommendations to increase the use of alternative fuels and vehicles and develop the supportive infrastructure:

1. Priorities for alternative fuels by vehicle class: electricity and natural gas are the top passenger vehicle priorities, respectively, while biodiesel, natural gas, propane, and hybrid technologies are recommended (but not prioritized) for medium- and heavy-duty vehicles like vans, shuttle buses, refuse haulers, and sweepers.

2. Potential project types resulting from this preliminary analysis and recommended for further study include: transit stations along bus-rapid-transit routes; integrating electric charging station siting with the regional transportation network; vehicle purchases including buses and vanpools; maintenance facilities; and truck stop electrification.

3. Possible collaborative approaches to support alternative fuel vehicle rollout to the general public: such as continuing development of a regional strategic alliance; supporting development of a regional electric charging network; and measures to support clean energy economic development.

4. Potential measures SANDAG could undertake as follow-up to this report: such as developing a regional electric vehicle charging plan; conduct an inventory of local jurisdiction vehicle fleets; use this report to inform other regional planning documents and programs; integrate alternative fuels into the SANDAG fleet; identify permit streamlining for charger and fueling station installation; support electricity and natural gas tariffs that encourage their use as transportation fuels; and identify locations for alternative fueling and charging infrastructure integrated with the regional transportation network and development patterns.
SECTION 1. Introduction

The region’s primary transportation fuels (gasoline and diesel) are derived from petroleum, a finite natural resource used in transportation and many other applications throughout the world. With U.S. domestic oil production in a state of continual decline following maximum production in the 1970s, imported oil – currently about 58% of U.S. consumption – is required to satisfy both existing and future growth in demand.

California has adopted aggressive policies to increase the use of alternative fuels to power vehicles and off-road equipment, as well as address air quality and climate change concerns. The San Diego region is well-positioned to establish a robust alternative fueling network that will enable local fleet operators, and the general public, to select alternative fuel vehicles to replace traditional gasoline or diesel-fueled vehicles.

The choice of which alternative fuel will vary based on vehicle class and customer needs. The region will utilize alternative fuels that meet the state’s low carbon fuel standard (LCFS), which is determined by a full fuel cycle analysis (“well to wheels”). Fuels with lower carbon intensities than conventional gasoline and diesel qualify for the LCFS and are eligible for state aid to increase their deployment. The significant financial and technical resources of the state and federal government will be critical to increasing alternative fuels, vehicles and infrastructure in the San Diego region. The state has enacted several laws that create a framework for lessening consumption of petroleum-based transportation fuels and reducing greenhouse gas emissions from the transportation sector. In general, California employs a three-pronged approach to implement this framework:

- Improve the fuel efficiency and lower greenhouse gas emissions from passenger vehicles (e.g., Pavley Standards, zero-emission vehicle [ZEV] program)
- Reduce the carbon intensity of transportation fuels (Low Carbon Fuel Standard); and
- Integrate regional land use and transportation planning to reduce emissions from vehicle travel (Senate Bill 375).

This report focuses on the first two approaches by examining how SANDAG can help local governments in the region accelerate the deployment of highly fuel efficient alternative fuel vehicles and develop the supportive infrastructure (as further discussed in this section, the third approach will be addressed by SANDAG through the Regional Energy Strategy, Regional Climate Action Plan, and the next update of the Regional Transportation Plan). SANDAG recognizes the critical importance of siting fueling stations, charging points, vehicle maintenance facilities, and other infrastructure necessary to support alternative fuel vehicles in coordination with vehicle purchases. Such regional coordination is needed to provide customers (e.g., fleet managers and the general public) with a level of certainty and dependability that infrastructure will be available to support their investment in an alternative fuel vehicle. Deployment of alternative fuel vehicles and development of supportive infrastructure, initially for local government fleets, will help the region lay the groundwork for a wider rollout of alternative fuel vehicles to the general public.

State and federal energy policy provides significant opportunities for the San Diego region to increase the deployment of alternative fuel vehicles and infrastructure. Although petroleum fuels will play a decreasing but significant role in the region’s transportation fuel portfolio for the foreseeable future, a move away from petroleum to alternative fuels would provide the following benefits to the region and state:

<table>
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<tr>
<th>Table 1. Regional Alternative Fuels-Related Businesses</th>
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<tr>
<td><strong>Aptera Motors</strong> – Two-wheel electric cars</td>
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<td><strong>New Leaf Biofuel</strong> – Biodiesel production from restaurant waste oil</td>
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<tr>
<td><strong>ISE Corporation</strong> – Hybrid electric system manufacturing</td>
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<tr>
<td><strong>Synthetic Genomics</strong> – Biofuel research using photosynthetic algae</td>
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<td><strong>General Atomics</strong> – Algae-based biodiesel production</td>
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<tr>
<td><strong>Kai BioEnergy Corp</strong> – Bio Crude Oil from microalgae</td>
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<tr>
<td><strong>Carbon Capture Corporation</strong> – Algae derived from CO₂ capture to development biofuels</td>
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<tr>
<td><strong>Sapphire Energy</strong> – Renewable gasoline from microorganisms</td>
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<tr>
<td><strong>Flux Propulsion</strong> – battery and drive systems</td>
</tr>
<tr>
<td><strong>Predator Motorsports</strong> – Biodiesel conversion for Hummers</td>
</tr>
<tr>
<td><strong>Voisen Motors</strong> – electric and hybrid scooters and motorcycles</td>
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• Protection against petroleum price volatility and supply uncertainty,
• Reduction of greenhouse gas emissions causing global climate change,
• Reduction of local air pollutant emissions that cause adverse public health impacts,
• Lessening of dependence on foreign petroleum imports,
• Creation of economic benefits in California by replacing imported petroleum fuels with alternative fuels and vehicle technologies produced in the state, and
• Economic and workforce development in the clean energy sector by building new infrastructure to accommodate the development, production, and use alternative fuels.

Accelerating the transition of local government fleets to alternative fuel vehicles is an important initial step to achieving these benefits in the San Diego region. Table 2 identifies key quantitative policy objectives for climate change, petroleum reduction, and alternative fuel use in the state and the San Diego region’s estimated per-capita portion based on forecasts of population and fuel consumption.

<table>
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<tr>
<th>Table 2. California Objectives for Transportation Fuels and Climate Change and the San Diego Region’s Share</th>
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<tr>
<td><strong>Objective</strong></td>
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<tr>
<td>Greenhouse Gas Reduction</td>
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<td>Petroleum Reduction</td>
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<td>Alternative Fuel Use</td>
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<td>In-State Biofuels Use</td>
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<td>In-State Biofuels Production</td>
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Notes:
*There are no requirements for the San Diego region to reduce petroleum consumption or increase the production or consumption of alternative fuels. The transportation fuel numbers presented in this column are theoretical values illustrating the region’s share of the state objectives based on the size of the region’s population. Unlike the nonbinding nature of the transportation fuel objectives, SB 375 establishes requirements for the San Diego region related to the reduction of GHG emissions from passenger cars and light-duty trucks.
**2050 totals are tbd since a final regional population forecast for 2050 is not yet available.

Over the course of developing this report, SANDAG has worked with the California Energy Commission (Energy Commission), local governments and public agencies, and other regional stakeholders including the San Diego Regional Clean Cities Coalition, the Air Pollution Control District, San Diego Gas and Electric (SDG&E), the Regional Airport Authority, Port Authority, regional transit agencies, universities, and private sector entities. Several positive results have accrued from the undertaking of this report. For example, SANDAG has:

• Been asked to partner in the federal stimulus project between eTec and Nissan North America to deploy up to 1,000 all-electric vehicles and establish private and public-access charging infrastructure in the San Diego region as part of the largest transportation electrification project in U.S. history.
• Facilitated the development of a regional strategic alliance on alternative fuels;
• Met with the Energy Commission to discuss potential AB 118-funded regional alternative fuel projects;
• Accepted an invitation to join the Board of the San Diego Regional Fuels Coalition and coordinate with them to implement the report recommendations; and
• Served as lead applicant and coordinator for a comprehensive public-private alternative fuel funding proposal to the U.S. Department of Energy and Energy Commission.
Regional Planning Efforts

As the region’s Metropolitan Planning Organization (MPO), SANDAG is a logical entity for identifying locations for alternative fuel infrastructure that meets regional needs. Also serving as the regional transportation planning agency, SANDAG can ensure that alternative fuel, vehicle, and infrastructure considerations are integrated with development of the regional transportation network. SANDAG can recommend specific alternative fuel and vehicle technologies to local governments and regional stakeholders that are tailored to the unique characteristics of the San Diego region. Lastly, SANDAG can facilitate a regional alternative fuel deployment by local governments and regional stakeholders through development of a unified regional vision, consistent programs, coordination of funding applications, and development of standardized guidelines for infrastructure siting, permitting, and education.

Over the course of developing this assessment, SANDAG has become identified as a leading source for information on policies, programs, funding opportunities, public and private partnerships, and other aspects related to alternative fuels. The agency also has facilitated several regional clean transportation efforts. As a result, SANDAG has been asked to help facilitate the introduction of battery electric vehicles to public fleets and support a regional recharging network. The agency also has been asked to serve on several clean transportation committees including the San Diego Clean Cities Coalition Board, the San Diego County Regional Airport Authority’s Fly Green Task Force, and the San Diego Regional Sustainability Partnership.

Two plans currently under development in partnership with the Energy Commission address transportation energy issues: the Regional Energy Strategy (RES) Update and the Regional Climate Action Plan (RCAP). These documents are scheduled for consideration by the SANDAG Board of Directors in late 2009/early 2010. These plans, among others, will serve as foundations for addressing greenhouse gas reductions in the next update of the Regional Transportation Plan (RTP), which is scheduled for adoption in fall 2011.

The RES Update and RCAP recognize that energy use is responsible for more than 90 percent of GHG emissions in the San Diego Region. The largest contributors are on-road transportation (46 percent), electricity generation (25 percent) and natural gas end use (9 percent). Adopting energy efficiency measures for buildings, accelerating the deployment of alternative fuel vehicles, and considering the energy impacts of land use and transportation planning decisions, all contribute to meeting the state law to reduce GHG emissions economy-wide to 1990 levels by 2020 and the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. As of this writing, supporting the deployment of alternative fuel vehicles is central to the 2030 vision of the RES Update.

The RCAP will provide a framework in which the region can make decisions regarding greenhouse gas emission reductions and adapting to climate change. The primary purpose of the plan is to analyze and recommend policies that can help the next update of the RTP achieve the soon to be established regional targets for GHG emission reductions from passenger cars and light trucks required by SB 375. In addition to improving land use and transportation planning coordination, SANDAG will examine the acceleration of alternative fuel vehicle deployment above and beyond state mandates as part of the climate change strategy for the region.

Transportation Fuels: Petroleum and Alternatives

The following section briefly explains the reasons for focusing on alternative fuels in the context of existing petroleum-based transportation fuels, expansion of alternatives, regional impacts and opportunities. Petroleum is a fossil fuel derived from the remains of plants and animals that died millions of years ago, were buried, and compressed. Petroleum is a nonrenewable energy source because it takes millions of years to form. Oil is the raw material that petroleum products are made from and petroleum generally refers to crude oil or the refined products obtained from the processing of crude oil (gasoline, diesel fuel, heating oil, etc.). After crude oil is removed from the ground, it is sent to a refinery by pipeline, ship or barge. At a refinery, different parts of the crude oil are separated into useable petroleum products. Crude oil is measured in barrels. A 42-U.S. gallon barrel of crude oil provides slightly more than 44 gallons of petroleum products including 20 gallons of motor gasoline and 7 gallons of diesel.
The amount of crude oil produced domestically in the United States has been decreasing each year since the 1970s. However, the use of products made from crude oil has been growing, making it necessary to bring more oil from other countries. According to the Energy Information Administration (EIA), about 58 percent of the crude oil and petroleum products used in the United States are imported from other countries. The world's top five crude oil-producing countries are Saudi Arabia, Russia, Iran, China and the United States. As of this writing, the top five sources of U.S. Oil Imports are Canada, Saudi Arabia, Mexico, Nigeria, and Venezuela. Domestic offshore drilling accounts for about 24 percent of the nation's oil production.

Gasoline and diesel are nonrenewable fuels made from petroleum. Gasoline is used in most U.S. passenger vehicles with internal combustion engines. According to EIA, Americans use about 385 million gallons of gasoline every day. Diesel can only be used in a diesel engine, a type of internal combustion engine used in many cars, boats, trucks, trains, buses, and farm and construction vehicles. Diesel fuel contains about 14 percent more energy per gallon than gasoline. Diesel technology also offers a greater power density than other fuels, which is discussed in Section 5. When petroleum products are burned as fuel, they give off carbon dioxide (CO2), the primary greenhouse gas causing global climate change. The use of petroleum products also emits other pollutants - carbon monoxide, nitrogen oxides, particulate matter, and unburned hydrocarbons - that help form air pollution and at certain concentrations are harmful to human health.

According to the 2007 RTP, daily travel demand in the region was about 16.7 million daily trips and 85 million vehicles miles traveled (VMT) as of 2006. Nearly 100 percent of these trips and vehicle miles are made with gasoline and diesel vehicles, and account for about 1.5 billion gallons of gasoline and diesel consumption. The RTP forecasts that under a business-as-usual scenario, there will be 111 million VMT daily in 2030. Without efforts to increase deployment of alternative fuel or more fuel efficient vehicles, forecasted regional travel demand equates to annual gasoline and diesel consumption of 2.4 billion gallons by 2030. Avoiding the outcomes of this business-as-usual scenario and achieving petroleum reduction, climate stabilization, air quality, and green economy goals require the region to quickly and carefully undertake a new approach to transportation planning, which includes the deployment of alternative fuels, vehicles, and infrastructure.
SECTION 2. Federal and State Resources

Significant resources exist at the federal and state levels to help direct the increased development and deployment of alternative fuels across California. California is a leader in this area and several laws are key policy drivers for the growth in alternative fuels, vehicles and infrastructure. This section summarizes the main policies, programs and financial and technical assistance. For a more substantial list of federal and state tax incentives and programs, see Appendix A.

Due to the current economic recession, most governments are facing serious economic constraints. Even so, a window of opportunity exists for the region to take advantage of financial resources offered by the federal government (primarily through the American Recovery and Reinvestment Act of 2009) and state government (through the Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007).

By adopting a strategic regional approach, the San Diego region can promote a comprehensive approach to investment and deployment in alternative fuels, vehicles, and infrastructure. SANDAG identified regional projects and opportunities to potentially take advantage of new federal, state, and local funding sources, and public-private partnerships. SANDAG also investigated its existing local, state and federal funding and resources to identify what might be leveraged. In particular, the Regional Transportation Investment Plan (RTIP) – budgeted transportation-related capital improvements projects for the next five years (2009-2013) – was reviewed to identify project types that could potentially be augmented with an alternative fuel vehicle and/or infrastructure component. The RTIP includes projects to be undertaken by the California Department of Transportation (CALTRANS), SANDAG, the region’s transit agencies, and local jurisdictions.

Funding Allocations for Alternative Fuels in the United States

As part of the AB 118 Investment Plan, the Energy Commission performed a gap analysis to help determine where best to apply state funding for alternative fuels. They found that overall funding from federal, state and private sources totaled about $35 billion per year and that biofuels was the most funded fuel category. Of the $35 billion, research and development (R&D) expenditures totaled about $11 billion per year with most funding focused on biofuels, followed by fuel cells and batteries.

Overall, federal funding for alternative fuels has focused on three primary areas: next generation biofuels processes and pilot-plant construction; energy storage; and plug-in hybrid electric vehicles. The American Recovery and Reinvestment Act of 2009 (federal stimulus bill) allocates $3 billion for transportation programs and an additional $2 billion to transportation-related tax incentives. The Energy Commission has stated it will work with the Department of Energy (DOE) to leverage AB 118 funds and support projects in the clean energy sector that provide long-term economic benefits and promote sustainability.

The American Recovery and Reinvestment Act of 2009

The American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) was signed into law by President Obama on February 17, 2009. The stated purposes of the law include the following:

1. To preserve and create jobs and promote economic recovery.
2. To assist those most impacted by the recession.
3. To provide investments needed to increase economic efficiency by spurring technological advances in science and health.
4. To invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits.
5. To stabilize state and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive state and local tax increases.
Energy provisions are a featured part of ARRA. More than $42 billion is provided in appropriations for energy programs, mainly for energy efficiency and renewable energy. ARRA also provides more than $21 billion in energy tax incentives, primarily for energy efficiency and renewable energy. More than $11 billion is provided in grants for state and local governments through three DOE programs:

- The Weatherization Assistance Program (WAP);
- The State Energy Program (SEP), which provides states with discretionary funding for various energy efficiency and renewable energy purposes; and
- The new Energy Efficiency and Conservation Block Grant Program (EECBG), which helps reduce energy use and greenhouse gas emissions.

New transportation-related grant programs support state and local government and transit agency purchases of alternative fuel and advanced technology vehicles, multi-modal use of transportation electrification, and manufacturers’ development of facilities for advanced battery production. DOE ARRA funds for alternative transportation fuels include:

- $1.5 billion in grants for U.S. manufacturers to produce high-efficiency batteries and their components;
- $500 million in grants for U.S. manufacturers to produce other components needed for electric vehicles, such as electric motors; and
- $400 million for projects that demonstrate and evaluate plug-in hybrids and other electric infrastructure concepts.

Of the $21 billion in tax incentives, $14.1 billion is directed to renewable energy, $2.3 billion to energy efficiency, $2.2 billion for transportation, $1.6 billion for manufacturing, and $1.4 billion for state and local government energy bonds. When electric vehicles are purchased by U.S. residents, they can claim a tax credit of up to $7,500. Federal tax incentives are further addressed after the ARRA discussion.

ARRA’s Energy Efficiency and Conservation Block Grants

On March 26, 2009, the DOE released guidelines and funding allocations for the EECBG segment of ARRA. DOE allocated $351.5 million to the State of California for local governments to use for projects and programs to reduce total energy use.

The purpose of the EECBG Program is to assist local governments in creating and implementing strategies to:

- Reduce fossil fuel emissions in a manner that is environmentally sustainable and, to the maximum extent practicable, maximizes benefits for local and regional communities;
- Reduce the total energy use of the eligible entities; and
- Improve energy efficiency in the building, transportation, and other appropriate sectors.

In keeping with the agenda of the ARRA, and supporting the goal of immediate investment in the economy, funding recipients are required to commit all funds within eighteen (18) months from the effective date of the award. One EECBG area of emphasis is the development and implementation of transportation programs including:

- State, local and regionally-integrated planning activities like that in Senate Bill 375 (Statutes of 2008), that coordinates transportation, housing, environmental, energy, and land use planning with the goal of reducing greenhouse gas emissions and vehicle miles traveled.
- Idle-reduction technologies and/or facilities to conserve energy, reduce harmful air pollutants, and reduce greenhouse gas emissions from freight movement.
The Energy Commission will distribute EECBG funds for smaller cities and counties. Large municipalities (i.e., Cities with populations greater than 35,000 and Counties populations greater than 200,000) apply directly to DOE for block grant funding. For the San Diego region, the following cities will need to apply for funding directly through the Energy Commission:

- City of Del Mar
- City of Solana Beach
- City of Coronado
- City of Lemon Grove
- City of Imperial Beach

The Energy Commission anticipates receiving at least $33.6 million through the federal ARRA EECBG program and is waiting for guidelines from DOE for qualification requirements. They will hold workshops and conduct outreach on program requirements and the application process. Small cities and counties can sign up for updates and developments through the Energy Commission Block Grant Listserv.

Federal Tax Incentives for Alternative Fuels

The federal government provides tax incentives for alternative fuels, vehicles, and infrastructure. There are three key tax credits for the retail sale of alternative fuels:

- Conventional ethanol: $0.45 per gallon,
- Biodiesel and renewable diesel: $1.00 per gallon, and
- Alternative fuels other than ethanol and biodiesel (e.g., LPG): $0.50 per gallon.

In addition, there are tax credits for small ethanol and biodiesel producers ($0.10 per gallon), and a tax credit for the production of cellulosic biofuels (up to $1.01 per gallon, depending on the fuel). There also is a vehicle purchase tax incentive, established through the Emergency Economic Stabilization Act of 2008. The act established a tax credit for the purchase of plug-in vehicles, including battery-electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). For passenger vehicles, the credit is a maximum of $7,500, depending on the vehicle’s battery capacity. After 250,000 vehicles are sold, the credit is to be phased out.

Tax credits are also available for natural gas vehicles, the value of which varies depending on vehicle characteristics including size, incremental cost, and emissions performance. If a natural gas vehicle is sold to a tax-exempt entity, the seller may claim the credit or pass along savings from the credit to the purchases, although the latter option is not required. Incentives are also available to certain mix-fuel or dual-fuel vehicles with a gross vehicle weight rating of more than 14,000 pounds that operate on at least 90 percent alternative fuels and those that operate on at least 75 percent alternative fuel. In general, the tax credit values range from a low of $2,500 to a high of $32,000. More information on incentives for natural gas vehicles is available on the website for Natural Gas Vehicles for America.

An alternative fuel infrastructure tax credit is available for the cost of installing alternative fueling equipment placed into service after December 31, 2005. Qualified alternative fuels are natural gas, liquefied petroleum gas (propane), hydrogen, electricity, E85, or biodiesel blends containing a minimum of 20% biodiesel. The tax credit amount is 30 percent, not to exceed $30,000 for equipment placed into service before January 1, 2009; and a maximum of 50 percent, not to exceed $50,000, for equipment placed into service on or after January 1, 2009. Consumers who purchase residential fueling equipment may receive a tax credit of up to $2,000 for equipment placed into service after December 31, 2008. The maximum credit amount for hydrogen fueling equipment placed into service after December 31, 2008, and before January 1, 2015, is $200,000. The credit expires December 31, 2010, for all other eligible fuel types.
State Resources for Local and Regional Governments

In addition to federal policies and programs that provide financial assistance, California is dedicating significant resources to accelerate deployment of alternative fuels across the state. Key policy drivers related to transportation-energy include:

- Global Warming Solutions Act of 2006 (AB 32)
  - Reduce GHG emissions to the 1990 level by 2020
- Motor Vehicle Greenhouse Gas Emission Regulations (AB 1493)
  - Reduce GHG emissions from light-duty vehicles by 18% by 2020 and 27% by 2030
- Reduce Petroleum Dependency (AB 2076)
  - Reduce on-road gasoline and diesel demand To 15% Below 2003 levels by 2020
  - Increase Use of Non Non-Petroleum Fuels To 20% of On Road Fuel Consumption by 2020 and 30% by 2030
- State Alternative Fuels Plan (AB 1007)
  - Increase the use of alternative fuels in 2012, 2017 and 2022
- Bioenergy Action Plan (Executive Order)
  - Increase in-state biofuel production to 20% by 2010, 40% by 2020 and 75% by 2050
- Carl Moyer Program and Proposition 1B incentives for Clean Diesel and Alternative Fuels and Technologies
- Low Carbon Fuel Standard
  - Reduce carbon intensity of California’s transportation fuels by at least 10% by 2020
- Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act (AB 118), which is detailed below.

**Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007**

The Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act, also known as Assembly Bill (AB) 118, provides approximately $200 million in annual incentive funding to promote alternative fuel and vehicle technologies and infrastructure. The purpose is to help develop and deploy innovative technologies that transform California’s fuel and vehicle types to help reduce petroleum demand and attain state air quality and climate change policies. AB 118 should help create the impetus for the long-term transition to alternative fuels. The incentive funding will be provided by three state agencies: the Energy Commission, the California Air Resources Board (ARB) and the Bureau of Automotive Repair (Table 3).

<table>
<thead>
<tr>
<th>State Agency</th>
<th>Program Name</th>
<th>Annual Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy Commission</strong></td>
<td><strong>Alternative and Renewable Fuel and Vehicle Technology Program</strong></td>
<td><strong>$120 million</strong></td>
</tr>
<tr>
<td><strong>Air Resources Board</strong></td>
<td><strong>Air Quality Improvement Program</strong></td>
<td><strong>$50 million</strong></td>
</tr>
<tr>
<td><strong>Bureau of Automotive Repair</strong></td>
<td><strong>Enhanced Fleet Modernization Program</strong></td>
<td><strong>$30 million</strong></td>
</tr>
</tbody>
</table>

Energy Commission and ARB projects will be funded beginning in 2009 while the Bureau of Automotive Repair program will begin January 1, 2010. While furthering California’s petroleum reduction and climate change goals, the programs cannot hinder implementation of other regulations or interfere with efforts to achieve and maintain ambient air quality standards and reduce emissions of toxic air contaminants. There is an economic development component to these programs to ensure that education, outreach and workforce training is provided to:

- Attract and retain clean technology businesses;
- Fund financial incentives and private investment;
- Encourage market creation and informed consumer choice; and
- Leverage innovation and use renewable and waste resources.
The San Diego region is already taking steps to promote a clean energy sector. State and federal resources available could provide the extra leverage to cultivate this burgeoning economic cluster.

**California Sustainability Goals for Alternative Fuel Projects**

The Energy Commission established sustainability goals and criteria to ensure that alternative and renewable fuel and vehicle deployment projects, on a full fuel-cycle assessment basis (explained in Section 6 of this report) will not adversely impact natural resources, especially state and federal lands. The recommendations in this San Diego regional assessment are consistent with the state’s sustainability goals and criteria, as shown in Table 4. Local alternative fuel projects in the San Diego region seeking state funding will use the criteria and the full fuel-cycle analysis as guides.

<table>
<thead>
<tr>
<th>Table 4. Sustainability Criteria for Funding Alternative Fuel Projects Through AB 118</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Strong preference for projects with substantial reductions in GHG emissions</td>
</tr>
<tr>
<td>• Strong preference to projects demonstrating environmental protection, natural resource preservation and superior environmental performance</td>
</tr>
<tr>
<td>o Projects that maximize use of waste streams as feedstocks</td>
</tr>
<tr>
<td>o Use of existing best management practices (BMPs) from natural resource and pollution control agencies</td>
</tr>
<tr>
<td>o For purpose-grown energy crops:</td>
</tr>
<tr>
<td>• Sustainability best management practices plan for specific bio-energy crops</td>
</tr>
<tr>
<td>• Use of lands historically used for agricultural purposes</td>
</tr>
<tr>
<td>• Use of marginal crop lands not used for food and that do not displace food crops</td>
</tr>
<tr>
<td>• Use of crops uniquely suited to climate, water and natural resource constraints in California</td>
</tr>
<tr>
<td>o Projects that 1) use water efficiency and water use reduction measures, 2) use recycled or reclaimed water, and 3) reduce / eliminate point and nonpoint source wastewater discharge</td>
</tr>
<tr>
<td>o Projects that use 1) renewable energy or 2) cogeneration in production, processing or distribution</td>
</tr>
<tr>
<td>o Projects that use forest biomass resources collected or harvested in a manner that does not diminish ecological values &amp; that are consistent with restoration, fire risk management &amp; ecosystem management goals</td>
</tr>
<tr>
<td>o Projects that create benefits to state natural resources or ameliorate degraded resources</td>
</tr>
<tr>
<td>o Alternative fuel infrastructure projects that use 1) low carbon intensity fuels, 2) fuels produced in accordance with natural resource and superior environmental performance goals, or 3) fuels produced in accordance with a certified sustainability protocol</td>
</tr>
<tr>
<td>• Preference to projects that 1) produce certified sustainable feedstocks, or 2) produce or distribute alternative fuels, in accordance sustainability certification standards</td>
</tr>
</tbody>
</table>

Source: CEC Investment Plan, Sustainability Evaluation Criteria for Funding Projects through AB 118

**The Energy Commission Alternative and Renewable Fuel and Vehicle Technology Program**

The Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) will award approximately $120 million per year through 2015 to develop innovative technologies and alternative fuels and to deploy them into the marketplace. Eligible project types include:

- Improvements to the characteristics of alternative and renewable low-carbon fuels,
- In-state production and infrastructure for alternative and renewable low-carbon fuels,
- Improvements to light-duty, medium-duty, and heavy-duty vehicle technologies to lower greenhouse gas emissions,
- Acceleration of the commercialization of vehicles and alternative and renewable fuels, and
- Related workforce training, and program promotion and education.
The program will provide grants, loans, loan guarantees, revolving loans, and other appropriate measures to further the goals of AB 118. The Energy Commission will provide funding to entities, including public agencies, private businesses, public-private partnerships, vehicle and technology consortia, workforce training programs, fleet owners, consumers, recreational boaters, and academic institutions. On April 22, 2009, the Energy Commission adopted the Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program. The Investment Plan set funding allocations for alternative fuel types that will be re-evaluated on an annual basis. Allocations are based on a scenario of alternative and renewable fuels and advanced vehicle technology deployment, potential greenhouse gas reductions, the level of current public and private funding, and feedback received from stakeholders. The first funding allocations total $176 million for fiscal year (FY) 2008-2009 and FY 2009-2010 as shown in Table 5.

<table>
<thead>
<tr>
<th>Category</th>
<th>Investments</th>
<th>Total</th>
</tr>
</thead>
</table>
| Electric Drive         | ■ Convert hybrid electric vehicles to plug-in hybrid vehicles  
                        ■ Electrify operations at the state’s major ports and truck stops  
                        ■ Develop & demonstrate advanced hybrid electric technologies for medium- and heavy-duty trucks  
                        ■ Increase the number of electric charging stations  
                        ■ Provide incentives to locate manufacturing facilities for electric vehicles and components in the state | $ 46 million |
| Hydrogen               | ■ Increase the number of hydrogen fueling stations                                                                                                                                                             | $ 40 million |
| Ethanol                | ■ Develop fuel production facilities that use waste material as feed stocks  
                        ■ Increase the number of E-85 fueling stations                                                                                                                                                             | $ 12 million |
| Renewable Diesel/Biodiesel | ■ Develop fuel production facilities that use waste material as feed stocks  
                                      ■ Construct blending and storage terminal facilities                                                                                                                                                   | $ 6 million |
| Natural Gas            | ■ Purchase medium- and heavy-duty vehicles for ports, school districts, and public fleets  
                        ■ Purchase light-duty vehicles for public fleets  
                        ■ Increase the number of fueling stations  
                        ■ Develop biomethane production plants                                                                                                                                                               | $43 million |
| Propane                | ■ Purchase school buses and light-duty vehicles for public fleets                                                                                                                                              | $ 2 million |
| Non-GHG                | ■ Establish workforce training programs  
                        ■ Continue research into sustainability issues  
                        ■ Conduct a public outreach and education  
                        ■ Provide program technical assistance  
                        ■ Conduct environmental/market/technology assessments  
                        ■ Develop standards and certifications                                                                                                                                                                | $ 27 million |
| TOTAL for FY 2008-09 and FY 2009-10 allocations: |                                                                                                                                                                                                               | $ 176 million |
Air Quality Improvement Program

The Air Quality Improvement Program (AQIP), a voluntary incentive program to implement AB 118, is administered by the ARB to fund clean vehicle and equipment projects, research on biofuels production and the air quality impacts of alternative fuels, and workforce training. The AQIP is funded through 2015 and the proposed budget for fiscal year (FY) 2009-10 is $42.3 million, as shown in Table 6. AQIP FY 2009-10 project solicitations are expected during Summer/Fall 2009. Project selection and funding is expected during Fall/Winter 2009 for the following areas:

- Vehicle and equipment projects (accelerated deployment, technology demonstration)
- Research to determine the air quality impacts of alternative fuels
- Advanced technology workforce training

The AQIP will compliment other ARB incentive programs, including the Carl Moyer Memorial Air Quality Standards Attainment Program, Goods Movement Emission Reduction Program and Lower-Emission School Bus Program. AQIP can provide incentives to projects that do not fit within the statutory framework of these existing incentive programs, which focus on reducing near-term ozone and particulate matter pollution and exposure to toxics.

<table>
<thead>
<tr>
<th>Table 6. Projects Proposed for AQIP Funding in FY 2009-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployment/Commercialization Projects</td>
</tr>
<tr>
<td>Hybrid Truck and Bus Voucher Incentive Project</td>
</tr>
<tr>
<td>Zero-Emission and Plug-In Hybrid Light-Duty Vehicle Rebate Project</td>
</tr>
<tr>
<td>Lawn and Garden Equipment Replacement Project</td>
</tr>
<tr>
<td>Zero-Emission All-Terrain Agricultural Work Vehicle Rebate Project</td>
</tr>
<tr>
<td>Advanced Technology Demonstration Projects</td>
</tr>
<tr>
<td>Locomotives</td>
</tr>
<tr>
<td>Marine Vessels</td>
</tr>
<tr>
<td>Transit and School Buses</td>
</tr>
<tr>
<td>Off-Road Equipment</td>
</tr>
<tr>
<td>Agricultural Equipment</td>
</tr>
<tr>
<td>TOTAL PROPOSED FUNDING</td>
</tr>
</tbody>
</table>

*Available AQIP funding based on the proposed FY 2009-10 State Budget.

The Bureau of Automotive Repair Enhanced Fleet Modernization Program

The third AB 118 incentive program is the Enhanced Fleet Modernization Program (EFMP), which will be administered by the Bureau of Automotive Repair (BAR) to provide approximately $30 million in annual funding to retire the highest polluting vehicles in the areas of the state with the greatest air quality problems. EFMP will expand the BAR Consumer Assistance Program (CAP). The state provides up to $1,000 per vehicle through CAP for the retirement or repair of vehicles that fail their most recent Smog Check. BAR will administer the EFMP when it begins January 2010, but first ARB is required to establish the guidelines for its implementation.
SECTION 3. Alternative Fuels Overview

Alternative Fuel Vehicles (AFV) can operate on fuel other than gasoline or petroleum-based diesel. The primary alternative transportation fuels include electricity, ethanol, hydrogen, natural gas, biomass-based diesels, and proton. Other potential transportation fuel sources, such as ammonia, may hold promise in the future but are not addressed in this report. These fuels can be used in a variety of fleet applications that range from light-duty passenger cars to heavy-duty vehicles like refuse haulers and sweepers. Alternative fuels can also be used in off-road applications such as forklifts, and agricultural and construction equipment. The various alternative fuels are briefly described below. The following section evaluates the origins and current use of fuel in the region and identifies existing distribution and fueling infrastructure.

Regional Gasoline and Diesel Consumption

Gasoline and diesel provide the vast majority of transportation energy in the region. In 2007, the region consumed approximately 1.5 billion gallons of gasoline and diesel fuel in on-road vehicle transportation. Under a business-as-usual scenario, annual gasoline and diesel consumption would increase to almost 2.4 billion gallons in 2030. Actual vehicle fuel consumption data and future projections for select years from 2000 to 2030 are provided below in Table 7.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gasoline</th>
<th>Diesel</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1,222,122,000</td>
<td>154,059,000</td>
<td>1,376,181,000</td>
</tr>
<tr>
<td>2003</td>
<td>1,283,877,000</td>
<td>170,721,600</td>
<td>1,454,598,600</td>
</tr>
<tr>
<td>2005</td>
<td>1,325,047,000</td>
<td>181,830,000</td>
<td>1,506,877,000</td>
</tr>
<tr>
<td>2006</td>
<td>1,301,605,000</td>
<td>180,726,000</td>
<td>1,482,331,000</td>
</tr>
<tr>
<td>2007</td>
<td>1,309,422,000</td>
<td>185,695,000</td>
<td>1,495,117,000</td>
</tr>
<tr>
<td>2010</td>
<td>1,401,166,000</td>
<td>200,479,000</td>
<td>1,601,645,000</td>
</tr>
<tr>
<td>2015</td>
<td>1,581,563,000</td>
<td>223,177,000</td>
<td>1,804,740,000</td>
</tr>
<tr>
<td>2020</td>
<td>1,745,982,000</td>
<td>246,121,000</td>
<td>1,992,103,000</td>
</tr>
<tr>
<td>2025</td>
<td>1,906,105,000</td>
<td>268,083,000</td>
<td>2,174,188,000</td>
</tr>
<tr>
<td>2030</td>
<td>2,082,980,000</td>
<td>294,032,000</td>
<td>2,377,012,000</td>
</tr>
</tbody>
</table>


Petroleum Origin and Distribution

United States petroleum production peaked in 1970 at around 11.6 million barrels per day (mmbd), and domestic production has since declined steadily, to approximately 8.3 mmbd in 2006. The gap between domestic supply and demand has been increasingly filled by imports. In 2005, approximately 60 percent of California’s supply was produced in the United States, with 20 percent of the total supply originating in Alaska and 40 percent in California. Of the remaining 40 percent that was imported from abroad, the most significant sources were Saudi Arabia (14 percent of total supply), Ecuador (10 percent), Iraq (5 percent), and Mexico (3 percent). The San Diego region does not produce any significant quantity of petroleum and, therefore, must rely on imports.

San Diego County is part of a larger fuel distribution region in the southwestern United States, centered on the Los Angeles refinery center. The region—which includes counties in Southern California, as well as exports to Arizona, New Mexico, and parts of Nevada—is supplied by refineries in Los Angeles and by imports of finished gasoline and blending components received at the Port of Los Angeles. Gasoline is imported from Washington State, Gulf of Mexico states, and foreign sources, predominately in East Asia and Western Europe. California is not connected by pipeline to other oil refining centers, so all imports must arrive by ship. Out-of-state imports account for approximately ten percent of gasoline consumed in California, with the remaining 90 percent refined in-state.
There are no refineries in the San Diego region. All gasoline delivered to the San Diego region arrives through one Kinder Morgan pipeline that originates in the Los Angeles refinery center and ends at the Kinder Morgan terminal in Mission Valley.

**Alternative Fuels Overview**

**Electricity**

Battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) are powered by a source of electricity external to the vehicle, such as the electricity grid or a distributed energy source. As opposed to conventional vehicles powered by the internal combustion engine (ICE), BEVs run on electric motors powered by rechargeable battery packs. The BEV stores electricity in an energy storage device such as rechargeable battery packs. Electricity powers the vehicle’s wheels via an electric motor. BEVs have a limited energy storage capacity, which must be replenished by plugging into an electrical source external to the vehicle.

PHEVs are powered by an ICE and a rechargeable battery, which displaces the need for some or all of the need for ICE power and gasoline consumption. In both BEV and PHEV technologies the batteries must be charged externally (i.e., plugged-in). A plug-in is similar to a standard hybrid but is equipped with a battery that can be recharged by connecting a plug to an electric power source. Most PHEVs are passenger cars, but commercial passenger vans, utility trucks, school buses, and motorcycles also are available in plug-in versions. Standard hybrids are considered a vehicle efficiency improvement rather than an alternative fuel vehicle technology. Medium- and heavy-duty trucks, buses, and non-road vehicles can saturate market niches earlier than passenger vehicles at a much lower level of manufacturing (3,000 to 5,000 vehicles per year) to achieve cost competitiveness with diesel vehicles. Hybrid hydraulic trucks use hydraulics, charged by the engine, to offer power boost to the engine and auxiliary functions. Electric hybrid trucks use the engine to recharge the batteries which assist the engine and auxiliary functions.

**Biofuels: Biomass-based Diesel**

Biomass-based diesel is a new broad term that includes biodiesel and renewable diesel, as well as specific feedstock- and process-based diesels such as algae-based diesel, biomass-to-diesel, and diesel from thermal depolymerization of industrial and processing waste. Of these fuels, only biodiesel is commercially available in California and the United States today. Biodiesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics.

Biodiesel refers to a non-petroleum-based diesel made from vegetable oils or animal fats using a process called transesterification, which produces a glycerol as a byproduct which remains mixed in with the biodiesel. Pure biodiesel contains no petroleum, but it can be blended at any level with petroleum diesel to create a biodiesel blend. Typical biodiesel blends range from 5 to 99 percent. Biodiesel can be legally blended with petroleum diesel in any percentage. Pure biodiesel (B100) or higher-level biodiesel blends with petroleum diesel can be used in a standard diesel engine. However, as discussed later in the report, blends greater than B20 are not typically recommended for use without at least some engine modifications, and may void the engine warranty. B100 and blends of B20 (20 percent biodiesel, 80 percent petroleum diesel) or higher are typically considered biodiesel fuel. Lower level blends (below B20) are considered diesel fuel.

Renewable diesel fuel can be made from similar feedstocks and can be used directly in an oil refinery, where the feedstocks are transformed into a diesel fuel through hydrocracking and hydrogenation. The refinery-based process produces no glycerol and the renewable diesel product is chemically identical to ideal diesel fuel, requiring no modifications for any diesel engine. Biodiesel works in any diesel engine with few or no modifications to the engine or the fuel system. All diesel vehicles, new and old, can use B5 blends. The United States Navy and Marine Corps are two of the largest users of biodiesel in the San Diego region. Biodiesel blends are used in the City of Carlsbad vehicle fleet, UCSD bus fleet, and Hornblower Cruises marine vessels. The City of Chula Vista is planning to switch its diesel-based fleet to biodiesel in the near term. UCSD imports approximately 10,000 gallons of biodiesel monthly from an Orange County distributor, while other fleets are served by Soco Group, which sells approximately 25,000 gallons monthly in the region. Biodiesel is locally produced by New Leaf Biofuels.
Biofuels: Ethanol

Ethanol is an alcohol-based fuel derived from various plant materials (i.e., biomass feedstocks) including corn, sugar cane, barley, and wheat. Ethanol is produced by fermenting and distilling starch crops that have been converted into simple sugars. Ethanol can also be produced from cellulosic biomass such as trees and grasses and is called bioethanol.

Ethanol is most commonly used to increase octane and improve the emissions quality of gasoline. More than 95 percent of the gasoline in California contains a low-level blend of ethanol (about 6%) to oxygenate the fuel and reduce air pollution. E85 (85% ethanol, 15% gasoline) is considered an alternative fuel that can be used in flexible fuel vehicles (FFVs). FFVs are capable of operating on gasoline, E85 (85% ethanol, 15% gasoline), or a mixture of both. Despite the limited availability of E85, the state features many flex-fuel vehicles, which are capable of running on either gasoline or E85. Energy Commission staff estimate that one to two percent of the California passenger vehicle fleet consists of FFVs, most of which are American-made light-duty trucks and sport utility vehicles.

Hydrogen

Hydrogen is not naturally occurring and must be produced from an energy source, such as natural gas or water. Hydrogen can be produced for use as a transportation fuel in fuel-cell vehicles, which generate electricity from hydrogen. Hydrogen fuel cell vehicles (FCVs) are zero-emission vehicles that produce no tailpipe GHG emissions. Fuel cells generate electricity through an electrochemical process, using hydrogen as the fuel, to power an electric motor which drives the vehicle. When the hydrogen is used in a fuel cell, only water and heat are produced. Hydrogen can be produced at a central station either through reforming hydrocarbon fuels like natural gas or electrolyzing water. In either case, the produced hydrogen is then delivered to fueling stations by truck or hydrogen pipeline to be pumped into vehicles’ hydrogen tanks. Hydrogen can also be produced by reforming or electrolysis at the fueling station itself.

Today, very little hydrogen is produced for use as a vehicle fuel, and hydrogen for industrial purposes is produced through the reformation of natural gas. Hydrogen has the potential to be produced from low-carbon renewable resources, providing significant GHG benefits from well to wheels when used in a fuel cell vehicle.

Natural Gas

Natural gas has a high octane rating and excellent properties for spark-ignited internal combustion engines. It is non-toxic, non-corrosive, and non-carcinogenic. It presents no threat to soil, surface water, or groundwater. More than 99 percent of the natural gas used in the U.S. comes from domestic or other North American sources. However, increasing demand for natural gas in power plants will require new supplies from non-North American countries, increasing our dependence on foreign sources of energy. The Energy Information Administration (EIA) predicts that by 2025, more than 15 percent U.S. natural gas supplies will be imported from countries other than Canada and Mexico.

The vast majority of natural gas is a non-renewable fossil fuel extracted from gas and oil wells. Much smaller amounts are derived from supplemental sources such as synthetic gas, landfill gas and other biogas resources, and coal-derived gas. Because of the gaseous nature of this fuel, it must be stored onboard a vehicle in either a compressed gaseous (compressed natural gas, or CNG) or liquefied (liquefied natural gas, or LNG) state. Compressed natural gas, or CNG, is a mixture of hydrocarbons, mainly methane. Found in gas wells or produced in conjunction with crude oil, natural gas is a clean-burning, domestically produced fuel that generates significantly fewer emissions than conventional gasoline or diesel when used to power vehicles. Although vehicles can use natural gas as either a liquid or a gas, most vehicles use the gaseous form. Compressed at pressures of 3,000 pounds to 3,600 pounds per square inch, the natural gas is stored on-board a vehicle in specially designed and constructed cylinders. Vehicles that run on CNG have engines and fuel systems that are optimized for gaseous fuel use.
To store more energy onboard a vehicle in a smaller volume, natural gas can be liquefied. To produce Liquefied Natural Gas (LNG), natural gas is purified and condensed into liquid by cooling to -260°F (-162°C). At atmospheric pressure, LNG occupies only 1/600 the volume of natural gas in compressed gaseous form. Because it must be kept at such cold temperatures, LNG is stored in double-wall, vacuum-insulated pressure vessels. LNG fuel systems typically are used only with heavy-duty vehicles. LNG is clear, colorless, odorless, non-corrosive, and non-toxic.

**Propane**

Propane, also known as liquefied petroleum gas (LPG), is produced as part of natural gas processing and crude oil refining. Propane can be turned into a liquid at a moderate pressure (160 pounds per square inch [psig]) and is stored in pressure tanks at about 200 psig at 100 degrees Fahrenheit. When propane is drawn from a tank, it changes to a gas before it is burned in the engine. It is non-toxic and presents no threat to soil, surface water, or groundwater. Dedicated propane vehicles are designed to run only on propane; bi-fuel propane vehicles have two separate fueling systems that allow the vehicle to be powered by either propane or gasoline.

**Definitions**

Definitions for alternative fuel vehicle and engine types are provided below.

**Biofuel:** A solid, liquid or gaseous fuel obtained from relatively recently lifeless biological material and is different from fossil fuels, which are derived from long dead biological material. Also, various plants and plant-derived materials are used for biofuel manufacturing. The two most common types of biofuels are ethanol and biodiesel.

**Flex-fuel:** A flexible fueled vehicle has a single fuel tank, fuel system, and engine. The vehicle is designed to run on unleaded gasoline and an alcohol fuel (usually ethanol) in any mixture. These engines have sensors to analyze the fuel mixture, and adjust the fuel injection and timing. Since fuel composition and engine controls vary widely from one car to the next, flex-fuel vehicles do not ensure fewer emissions than dedicated gas-powered vehicles.

**Bi-fuel:** A bi-fuel vehicle has two separate fuel systems, one for gasoline or diesel and another for propane, natural gas, or hydrogen. Because these fuels are stored in pressurized tanks, they cannot be simply pumped into the gasoline tank. Like flex-fuel vehicles, bi-fuel vehicle emissions vary from car to car depending on engine controls and the fuel chosen - making them not necessarily cleaner than a dedicated gas vehicle.

**Dedicated:** A dedicated alternative fuel vehicle has only one fuel system. Unlike flex-fuel or bi-fuel vehicles, the vehicle only uses the alternative fuel.
SECTION 4. Vehicle Availability and Fleet Applications

Alternative fuel vehicles are potentially available for use in light-duty, medium/heavy-duty, and non-road applications. This section describes vehicle availability and fleet applications for these vehicle classes. The commercial availability of factory-made alternative fuel vehicles or retrofit technologies and their incremental costs compared to standard gasoline and diesel vehicles are also discussed. A summary of potential alternative fuel fleet applications is provided in Table 8. A listing of websites providing information about alternative fuel vehicle availability is provided in Appendix B. Information regarding alternative fuel vehicles and standard hybrid electric vehicles purchased by the state of California, including purchase price, is provided in Appendix C. Appendix D provides information on state of California vehicle purchase contracts, including explanation of how local governments can use the contracts and take advantage of the negotiated purchase prices, sample local government alternative fuel vehicle policies, and a listing of case studies on alternative fuel vehicles in government fleets. Links to tools and calculators for alternative fuel vehicles are provided in Appendix E.

Table 8. Summary of Potential Alternative Fuel Fleet Applications

<table>
<thead>
<tr>
<th>Fleet Application</th>
<th>Biodiesel*</th>
<th>Electricity</th>
<th>Ethanol (E85)</th>
<th>Hydrogen</th>
<th>Natural Gas</th>
<th>Propane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Vehicle</td>
<td>--</td>
<td>PHEV, BEV</td>
<td>FFV</td>
<td>FCV</td>
<td>CNG</td>
<td>LPG</td>
</tr>
<tr>
<td>Taxicab</td>
<td>--</td>
<td>HEV</td>
<td>--</td>
<td>--</td>
<td>CNG</td>
<td>LPG</td>
</tr>
<tr>
<td>Vanpool-Shuttle</td>
<td>B20</td>
<td>n/a</td>
<td>FFV</td>
<td>--</td>
<td>CNG</td>
<td>--</td>
</tr>
<tr>
<td>Refuse Hauler</td>
<td>B20</td>
<td>HEV</td>
<td>--</td>
<td>--</td>
<td>CNG, LNG</td>
<td>--</td>
</tr>
<tr>
<td>Sweeper</td>
<td>B20</td>
<td>n/a</td>
<td>--</td>
<td>--</td>
<td>CNG, LNG</td>
<td>--</td>
</tr>
<tr>
<td>Other Medium/Heavy-Duty</td>
<td>B20</td>
<td>HEV</td>
<td>--</td>
<td>--</td>
<td>CNG, LNG</td>
<td>--</td>
</tr>
<tr>
<td>Forklift</td>
<td>--</td>
<td>BEV</td>
<td>--</td>
<td>--</td>
<td>CNG</td>
<td>LPG</td>
</tr>
<tr>
<td>Low-speed Vehicle**</td>
<td>--</td>
<td>NEV</td>
<td>--</td>
<td>--</td>
<td>CNG</td>
<td>LPG</td>
</tr>
</tbody>
</table>

*Blends up to B20
**E.g., traffic checker, neighborhood vehicle, other off-road vehicle

Light-Duty Vehicles

A variety of alternative fuel vehicles are available for light-duty fleet applications or will be in the near-future, including biodiesel (B5) passenger cars, battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV), flex-fuel vehicles (FFV), hydrogen fuel cell vehicles (FCV), compressed natural gas (CNG) vehicles, and propane vehicles using liquefied petroleum gas (LPG). Some of these vehicles are factory-made and available commercially or will be in the near-future while others are available through after-market retrofits or conversions. Potential fleet applications include light-duty passenger cars, pick-up trucks, and sport utility vehicles (SUVs), vanpools, and taxicabs. A brief discussion of alternative fuel vehicles for light-duty applications is provided below.

Only one Original Equipment Manufacturer (OEM) produces a factory-made light-duty natural gas passenger vehicle (NGV): the Honda Civic GX. Several European auto manufacturers are interested in introducing NGVs into the US market, and are seeking regulatory support for bringing Euro-certified vehicles to the US market. Two firms are certified by the California Air Resources Board (CARB) to provide dedicated NGV retrofits in California. Baytech Corporation retrofits many 2009 model year vehicles certified by CARB, and BAF Technologies retrofits two Ford 2006 model-year engine families that include the Crown Victoria, F-Series Pickup, E-350 Van, and E-450 Shuttle. Light-duty CNG applications include passenger cars, vanpools, taxicabs, and traffic checkers. These companies should be contacted to obtain information about the cost of NGV retrofits. The cost of the light-and heavy-duty vehicles is substantially more than their gasoline and diesel counterparts. Factory-made light-duty NGVs have a cost premium of about $7,000.
Several OEMs offer Flex Fuel Vehicles (FFVs) capable of running on E85, gasoline, or some combination thereof, in the light-duty vehicle category, primarily Chrysler, Ford, and GM. For model year 2009, there are approximately three dozen models available, including eight sedans, 14 SUVs, nine pick-up trucks, and five vans. OEMs typically offer FFVs at the same price as comparable gasoline vehicles. Manufacturers of light-duty passenger vehicles, of which there is only one in California in 2009, do not currently accept biodiesel blends of B6-B20.

With the exception of a small number of BEVs available from Tesla Motors for a price of over $100,000, BEVs and PHEVs are not currently available commercially in California or the United States, but several are expected to become available in the near future. Nissan plans to introduce its BEV in a small number of early markets, including the San Diego region, starting in 2010. Factory-made BEVs and PHEVs will be appropriate for many light-duty vehicle fleet applications once they become available. Retrofit of standard hybrid vehicles to PHEVs is an existing option for light-duty fleet applications. After-market companies employ existing technology to convert standard hybrid electric vehicles to PHEVs. In a typical conversion, a larger battery pack that can be charged by regular electrical outlets is added to the existing vehicle’s battery configuration.

Factory-made PHEVs are expected to provide greater efficiency than converted PHEVs. A number of automakers are planning to introduce PHEVs in California beginning in 2010, including Toyota, General Motors, Ford, Volkswagen, Chevrolet, and a couple of California startup companies. In the meantime, retrofit vehicles provide an opportunity for the region to secure early GHG reductions and prepare the market for the introduction of new production PHEVs. Plug-in hybrid electric vehicles are expected to cost between $6,000 and $12,000 more than comparable gasoline vehicles and battery electric vehicles and $8,000 to $15,000 more than gasoline vehicles. According to the Energy Commission, conversion costs for PHEVs are estimated at $11,000 per vehicle. Calcars.org estimates the following conversion costs by battery type: $6,000 to $10,000 for lead-acid, $8,000 and up for nickel-metal, and $10,000 and up for lithium chemistries.

According to the Energy Commission, mass market availability of light-duty electric drive passenger vehicles at affordable prices will require several automakers to manufacture vehicles in high volume assembly lines approaching 50,000 to 100,000 vehicles per year. It is likely that small commuter size battery electric vehicles, once produced in large volume, will be attractive in the market place and volume may grow to significant market share in this segment. Retrofitting hybrid vehicles as plug-in hybrids can help condition the market for future electric vehicle sales by familiarizing consumers with the technology, thereby creating demand for batteries and vehicle components that could lead to cost reductions, design improvements, and development of a skill base for the maintenance of these vehicles. One company, A123 Systems, has received a waiver from ARB to retrofit up to 500 Toyota Prius vehicles to plug-in hybrid configuration.

There are currently no new light-duty propane vehicles available in California. Most propane vehicles are retrofits. The Roush F-150 is certified for retrofit applications by the U.S. Environmental Protection Agency, Air Resources Board. Roush Industries is developing a dedicated propane pickup truck to meet OEM-like standards. The California state fleet operates nearly 1,600 bi-fuel propane Ford F-150 pickup trucks. Las Vegas, Nevada operates propane taxicabs.

The average cost of converting a light-duty gasoline vehicle to a dedicated propane fuel vehicle ranges from $4,000 to $12,000. Retrofits for medium-duty applications cost between $7,000 and $12,000. Converting diesel engines to propane operation is possible, but not economically practical. The cost of a propane forklift is usually between $16,000 and $24,000, which is comparable to a gasoline-powered forklift and approximately $10,000 less than a diesel forklift. The initial cost of a propane vehicle is significantly more than a gasoline vehicle. The upfront costs of propane fleet vehicles can be offset by lower operating and maintenance costs over vehicles’ lifespan. Payback period varies based on vehicle usage. Payback period will be the shortest for vehicles that travel long distances and have high fuel consumption.

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2 http://en.wikipedia.org/wiki/Plug-in_hybrid
3 http://www.afdc.energy.gov/afdc/vehicles/propane_availability.html
4 http://www.ystrans.com/profile.html
Hydrogen FCVs are significantly more expensive than other vehicles, and only available to a few demonstration fleets in the United States. Honda is leasing its fuel cell vehicle – the FCX Clarity – to customers for a price of $600 per month. However, the price of production of hydrogen fuel cell vehicles is not widely reported. Fuel cells are very expensive to manufacture and costs must decrease sizably in order to be cost-effective for mass production and competitive with other vehicle technologies. Since fuel cells contain water, they experience significant problems in cold weather (i.e., temperature at which water freezes).

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Purchase Price</th>
<th>Retrofit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiesel (B20 or above)</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Plug-in Hybrid</td>
<td>$6,000 to $12,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>Battery Electric*</td>
<td>$8,000 to $15,000</td>
<td>n/a</td>
</tr>
<tr>
<td>Flex Fuel</td>
<td>Comparable</td>
<td>n/a</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Significantly Higher</td>
<td>n/a</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>$7,000</td>
<td>Contact Retrofit Companies</td>
</tr>
<tr>
<td>Propane</td>
<td>Not for sale</td>
<td>$4,000 to $12,000</td>
</tr>
</tbody>
</table>

*The Nissan EV available to fleets in the San Diego region is expected to be available for an incremental cost of $10,000.

Medium- and Heavy-Duty Vehicles

Most major heavy-duty diesel engine vehicle manufacturers state that using biodiesel blends of up to B20 will not void their parts and workmanship warranties. A few heavy-duty manufacturers accept blends higher than B20. Several fleets in the Bay Area have been using B50 to B99 blends for over five years. If biodiesel fuels are standardized and accepted by all vehicle and engine manufacturers for all concentration levels and feedstocks, biodiesel blends could be used in up to one million diesel vehicles operating in California today. Heavy-duty fleet applications for biodiesel blends include diesel-powered work trucks, buses, refuse haulers, and non-road equipment.

The natural gas industry estimates that there are approximately 300 street sweepers and 1,900 refuse trucks fueled by natural gas in California. Medium- and heavy-duty vehicles powered by CNG or LNG are currently available from several manufacturers, including at least five refuse haulers and three sweepers. The most likely future markets for medium- and heavy-duty NGVs are short- and medium-haul applications. CNG will be the fuel choice for most applications – except for long-haul – when the price of CNG is competitive with diesel. LNG is preferable for long-haul applications (class 8 trucks). At least three to four companies producing natural gas engines abroad are expected to enter the California market with existing or new engines for heavy-duty applications. Medium/heavy-duty fleet applications for CNG include shuttle buses, refuse haulers, sweepers, and work trucks. LNG also is used for refuse haulers and sweepers. In the San Diego region, LNG currently fuels a large number of transit buses while LNG fuels refuse hauler fleets such as those of Waste Management (located in the City of El Cajon) and the City of San Diego. Incremental costs for heavy duty NGVs are about $40,000 to $50,000 (e.g., refuse haulers, transit buses) and up to $70,000 to $80,000 for class 8 vehicles. With diesel trucks likely requiring additional improvements (therefore costs) to achieve 2010 CARB emissions standards, the cost differential between CNG and diesel is expected to decrease.

Propane engines and fueling systems are available for medium- and heavy-duty vehicles like school buses and street sweepers. Propane is viewed as an economical retrofit option for such fleet applications. Three companies currently offer propane conversions for gasoline engines; all are retrofits to medium-duty GM engines (6.0 and 8.1 L models). Cummins offers a propane-fueled version of its 5.9 L engine (8 Propane Plus). This engine is available new vehicles from multiple manufacturers including El Dorado National, Elgin Sweeper Company, Ottawa Truck, and Freightliner Custom Chassis Corporation.

6 http://www.afdc.energy.gov/afdc/vehicles/natural_gas_availability.html
7 AB 118 Investment Plan. P. 28
Refuse haulers, transit and school buses, and utility trucks are all good candidates for hybrid electric and hydraulic hybrid applications. ISE Corporation, located in the City of Poway, produces both gasoline and fuel cell hybrid electric systems for heavy-duty applications. No factory-made battery electric or plug-in medium- or heavy-duty vehicles are currently available in California. E85 is not typically used in heavy- or medium-duty fleet applications, due in part to its relatively lower energy intensity compared to other fuels.

Non-Road Vehicles

Electricity has the potential to replace diesel fuel in a number of non-road markets, including neighborhood electric vehicles (NEVs) and fleet applications like forklifts. Currently, these vehicles are limited in number, but there is room for growth. Several factory-made low-speed NEVs are available for non-road applications, including passenger and cargo vans, crew and extended cab trucks, and passenger vehicles.\[^{3}\] Propane and CNG have also been successfully used in off-road applications like forklifts. There are currently several thousand propane forklifts in California. There is technical potential to use hydrogen in several non-road applications, but none are commercially produced or available today, and there is no available timeline for when such technologies may become available to fleets or commercially.

Maintenance Issues

Propane engines have up to twice the lifespan of gasoline engines due to the high octane rating and low carbon and oil contamination characteristics. For these reasons propane vehicles have relatively lower maintenance costs - a primary advantage of propane vehicles in fleet applications. Spark plugs in propane engines can last 80,000 to 100,000 miles, while spark plugs in unleaded gasoline engines last around 30,000 miles. Forklifts powered by propane require less maintenance than gasoline and diesel forklifts.

Biodiesel blends result in a marked improvement in lubricity compared to petroleum diesel. Blends as low as one percent can provide up to a 65 percent increase in lubricity, which means biodiesel results in less engine wear than petroleum diesel. In general, blends greater than B20 can impact fuel system components such as natural rubber compounds that are incompatible with biodiesel. Manufacturers recommend that natural or butyl rubbers not be allowed to come in contact with pure biodiesel. Blends of B20 or lower do not typically exhibit degradation or need changes. If a vehicle’s fuel system contains these materials and users wish to fuel with blends greater than B20, replacement with compatible components is recommended. Lower level biodiesel blends are recommended in very cold climates, but in most of California’s moderate climate regions higher blends (B20 and above) can be used year-round without the problems associated with low temperatures. Automakers and engine manufacturers will need to show widespread acceptance of all biodiesel/renewable diesel blend concentrations for use in all diesel vehicles.

Other than lower gas mileage, drivers see little difference when using E85 versus gasoline. When considering total costs for electric vehicles, include the cost battery replacement at about 20,000 miles ($1,000 or $2,000) against the cost of tune-ups, oil changes, mufflers, starters, water pumps, etc during the same 20,000 miles for a standard gasoline or diesel vehicle. Electric motors require less maintenance than gasoline engines.

\[^{3}\] http://www.afdc.energy.gov/afdc/progs/vehicles_search.php
SECTION 5. Fuel and Vehicle Characteristics and Performance

This section compares the performance of alternative fuels and vehicles to standard gasoline and diesel fuels and vehicles. Fuel energy content, fuel economy, and fuel prices for alternative fuels and vehicles are discussed in this section.

In general, alternative fuels and vehicles provide horsepower, acceleration, levels of safety and a cruising speed similar to gasoline and diesel vehicles. In some instances, BEVs have smoother operation and better acceleration than standard vehicles. Pure biodiesel and blends have somewhat less power than petroleum diesel fuel. Table 10 describes energy content of alternative fuels compared to the amount of energy in a gallon of a gasoline and diesel. Fuel energy content is an important determinant of vehicle performance measures such as fuel economy and driving range.

Generally, alternative fuels have lower energy contents than an equivalent amount of gasoline. Pure biodiesel and blends have higher energy content than gasoline, but lower energy content than petroleum diesel. Reformulated California gasoline (5.7% ethanol) has an energy content of about 111,836 British Thermal Units (BTUs) per gallon; one gallon of petroleum diesel contains about 129,000 BTUs. An alternative fuel, E85 for example, contains about 81,800 BTUs per gallon, about 72-77% of the energy in one gallon of gasoline. This means that approximately 1.39 gallons of E85 are needed to provide the same amount of energy as one gallon of gasoline. Thus, gallons of gasoline equivalent (GGE) for E85 would be 1.39. Please refer to the following table for the energy content for other alternative fuels.

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Energy Content (low or net value)</th>
<th>Energy Comparison (% of gasoline energy)</th>
<th>Gallons of Gasoline Equivalent (GGE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>115,000 BTU/gal</td>
<td>100%</td>
<td>1.0 gallon</td>
</tr>
<tr>
<td>Gasoline (reformulated, 5.7% ethanol)</td>
<td>111,800 BTU/gal</td>
<td>97%</td>
<td>1.03 gallons</td>
</tr>
<tr>
<td>Petroleum Diesel</td>
<td>129,000 BTU/gal</td>
<td>112%</td>
<td>0.89 gallons</td>
</tr>
<tr>
<td>B100</td>
<td>118,000 BTU/gal</td>
<td>103% (91% of diesel)</td>
<td>0.97 gallons</td>
</tr>
<tr>
<td>B20</td>
<td>127,000 BTU/gal</td>
<td>110% (98% of diesel)</td>
<td>0.91 gallons</td>
</tr>
<tr>
<td>CNG</td>
<td>112,000 BTU/gal</td>
<td>97% (87% of diesel)</td>
<td>1.03 gallons</td>
</tr>
<tr>
<td>Electricity</td>
<td>3,413 BTU/kwh</td>
<td>3% (1 kwh)</td>
<td>33.4 kwh</td>
</tr>
<tr>
<td>Ethanol (E85)</td>
<td>81,800 BTU/gal</td>
<td>71%</td>
<td>1.41 gallons</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>30,500 BTU/gal</td>
<td>27%</td>
<td>3.8 gallons</td>
</tr>
<tr>
<td>LNG</td>
<td>75,000 BTU/gal</td>
<td>65%</td>
<td>1.53 gallons</td>
</tr>
<tr>
<td>Propane</td>
<td>84,000 BTU/gal</td>
<td>73%</td>
<td>1.39 gallons</td>
</tr>
</tbody>
</table>


Notes: Kwh = kilowatt-hour, Ib(s) = pound(s), BTU = British Thermal Unit,

Energy content can be expressed in high (gross) or low (net) heating values. For the high heating value, the water produced by the combustion is assumed to be recondensed to a liquid. For the low heating value, the water remains as a gas. Since engines exhaust water as a gas, the low heating value is the appropriate value for comparing fuels.

**Fuel Economy**

Miles per gallon of gasoline equivalent (MPGGE) is a metric used to allow for fuel economy performance comparisons among various alternative fuels and vehicles. MPGGE is based on the amount of heat energy in one gallon of gasoline. The equivalent fuel economy of an alternative fuel is equal to the amount of that fuel required to produce the same amount of heat energy and the distance the vehicle can travel on that same amount of energy. MPGGE is a measure of the distance vehicles can travel on an equal amount of heat energy.
Standard gasoline passenger cars have a range of about 300-400 miles and fuel economy of 21-22 miles per gallon. As shown in Table 11 below, standard hybrids, plug-in hybrids, and battery electric vehicles can travel about 40 percent to 250 percent farther than standard gasoline passenger cars using the same amount of energy. These alternative fuel vehicle technologies are more energy efficient than standard gasoline cars. CNG, propane, and E85 provide fuel economy performance similar to a standard passenger car running on gasoline. B20 provides similar fuel economy to a standard diesel passenger car, while B100 provides somewhat lower fuel economy.

### Table 11. Passenger Car Fuel Economy

<table>
<thead>
<tr>
<th>Alternative Fuel/Vehicle Technology</th>
<th>Fuel Economy (mpgge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline internal combustion engine vehicle (ICEV), 2005 light-duty auto (LDA) mix</td>
<td>20.8</td>
</tr>
<tr>
<td>Gasoline, ICEV</td>
<td>22.33</td>
</tr>
<tr>
<td>CNG, ICEV</td>
<td>22.33*</td>
</tr>
<tr>
<td>Propane, ICEV</td>
<td>22.33</td>
</tr>
<tr>
<td>E85, Flex Fuel Vehicle (FFV)</td>
<td>23.00</td>
</tr>
<tr>
<td>E85, dedicated ICEV</td>
<td>23.89</td>
</tr>
<tr>
<td>B100, Diesel ICEV</td>
<td>26.31</td>
</tr>
<tr>
<td>ULSD, Diesel ICEV</td>
<td>28.80</td>
</tr>
<tr>
<td>B20, Diesel ICEV</td>
<td>28.80</td>
</tr>
<tr>
<td>Hydrogen, ICEV/Internal Combustion-Hybrid Electric Vehicle</td>
<td>29.02</td>
</tr>
<tr>
<td>Gasoline, hybrid electric vehicle (HEV)</td>
<td>30.14</td>
</tr>
<tr>
<td>Gasoline, plug-in hybrid electric vehicle (PHEV)</td>
<td>31.26</td>
</tr>
<tr>
<td>Hydrogen, Full Cell Vehicle (FCV) /Fuel Cell-Hybrid Electric</td>
<td>44.65</td>
</tr>
<tr>
<td>PHEV Grid Mode</td>
<td>80.38</td>
</tr>
<tr>
<td>Battery Electric Vehicle (BEV)</td>
<td>80.38</td>
</tr>
</tbody>
</table>


Notes:

*ACEEE reports that the Honda Civic GX, the only CNG passenger car for-sale in California, achieves 24 mpgge with city driving, and 36 mpgge with highway driving.

MPGGE = miles per gallon of gasoline equivalent

The lower fuel economy of E85 is due to the lower energy content of E85. As a result, about 1.39 gallons of ethanol are required to transport a vehicle the same distance as one gallon of gasoline. When accounting for the energy content of E85, costs are generally higher than gasoline on an energy equivalent basis. As a result, E85 will provide less range than the same FFV running on gasoline.

Internal combustion engines convert less than 20% of gasoline energy into power that moves the vehicles. Vehicles using electric motors powered by hydrogen fuel cells are much more energy efficient. The energy in 2.2 lb (1 kg) of hydrogen gas is about the same as the energy in 1 gallon of gasoline. A light-duty fuel cell vehicle must store 11-29 lb (5-13 kg) of hydrogen to enable an adequate driving range of 300 miles or more. Because hydrogen has a low volumetric energy density (a small amount of energy by volume compared with fuels such as gasoline), storing this much hydrogen on a vehicle using currently available technology would require a very large tank—larger than the trunk of a typical car. Advanced technologies are needed to reduce the required storage space and weight. Because of its low energy content, it is difficult to store enough hydrogen on a vehicle to get it to travel more than 200 miles.

A CNG-powered vehicle gets about the same fuel economy as a conventional gasoline vehicle on a gasoline gallon equivalent (GGE) basis. A GGE equals about 5.7 lb (2.6 kg) of CNG. The driving range of a Honda Civic GX dedicated CNG sedan with a full tank filled at a pressure of 3,600 pounds per square inch (psi) is 200 to 225 miles. Most CNG stations fill at 3,600 psi, but if filled at 3,000 psi the vehicle’s range will decrease proportionately. Natural gas

9[http://www.consumerenergycenter.org/transportation/afvs/ethanol.html](http://www.consumerenergycenter.org/transportation/afvs/ethanol.html)
10[http://www.afdc.energy.gov/afdc/ethanol/e85_specs.html](http://www.afdc.energy.gov/afdc/ethanol/e85_specs.html)
trucks, like many other alternative fueled vehicles, typically have a shorter driving range than their diesel counterparts. This shorter range is a result of natural gas having a lower energy content and difficulty in packaging the high-pressure storage cylinders on the truck. Adding additional storage cylinders can increase the truck's driving range, but the added weight will reduce the amount of weight the vehicle can carry. LNG has a higher storage density than CNG, and therefore provides longer-range than CNG, which makes it a more viable alternative to diesel fuel than CNG for long-haul heavy-duty vehicle applications.

An electric motor is much more efficient than an ICE. Electric motors convert about 75% of battery energy to power the vehicle; an ICE converts about 20% of gasoline energy to power the vehicle. Range for BEVs is more limited than for conventional vehicles, and spans from 50 to 130 miles. The Nissan BEV offers a range of about 100 miles. Although there are different PHEV formats, in general, a PHEV conversion can only run on battery power at lower speeds (e.g., below 35 miles per hour for a Prius conversion). At present, converted PHEVs can travel approximately 30-40 miles before the battery will be fully discharged. The combination of an electric battery with an ICE affords PHEVs comparable or even superior range to a standard gasoline vehicle, as opposed to the more limited range of a BEV. PHEVs feature higher fuel economy than standard hybrids because the vehicles use electricity to run in electric-mode longer and more often than standard hybrid cars, which offsets use of the ICE and gasoline consumption.

Dedicated propane engines typically have a shorter driving range than their gasoline and diesel counterparts. More propane is required to drive an equivalent range to a gasoline vehicle. Shorter range is the result of propane’s lower energy density and difficulty in packaging the high-pressure storage cylinders on the truck. A gallon of propane contains about 14-25\(^{11}\) percent less energy than a gallon of gasoline, and dedicated gas-injection propane vehicles have lower efficiency than gasoline engines. Hence the lower range than comparable gasoline engines. Bi-fuel propane engines offer similar range to gasoline engines. Driving range can be increased by adding additional storage tanks to the vehicle, but the extra weight will reduce the amount of weight the vehicle can carry.

Biodiesel blends perform very similar to low sulfur diesel in terms of power, torque, and fuel without major modification of engines or infrastructure. One of the major advantages of biodiesel is that it can be used in existing engines and fuel injection equipment with little impact to operating performance. Biodiesel shows similar horsepower, torque, and haulage rates as conventional diesel fuel. B20 has similar heat content to that of petroleum diesel fuel (about 98 percent), which means a vehicle fueled with B20 will have about 99 percent of the driving range as when fueled with petroleum diesel. A gallon of B100 has about 91 percent of the heat content as a gallon of petroleum diesel.

**Fuel Price**

In addition to characteristics like energy content and fuel efficiency, fuel price is an important consideration in an analysis of alternative fuels and vehicles. Table 12 below provides the average price for gasoline, petroleum diesel, and alternative fuels tracked in the Clean Cities Alternative Fuel Price Report. The data provided is based on data collected from the West Coast of the U.S. in January 2009, the most recent date for which the information is available. The data is reported in average price per gallon and converted to average price per gallon of gasoline (GGE) and diesel gallon equivalent (DGE). As of January 2009, the price of CNG was lower than both gasoline and petroleum diesel on a GGE and DGE basis. The cost of other fuels was greater than gasoline and petroleum diesel.

Prices of CNG fuel are generally less than gasoline and diesel fuel, on an equivalent energy basis. The average price of CNG on the west coast is $1.81 per GGE. Federal excise tax for CNG is $0.183 per GGE while state tax is $0.0875 per GGE, compared to the state tax of $0.18 per gallon for gasoline. Fleets can apply for a California Fuel Use Permit and receive an exemption from state tax on CNG for $168 per vehicle per year. CNG fuel is comparatively less expensive than gasoline and diesel. Only in a minimal number of high-mileage fleet vehicle applications are the fuel cost savings adequate to amortize the CNG vehicle capital costs. LNG Price information was not able to be obtained for this report.

\(^{11}\) [http://www.consumerenergycenter.org/transportation/afvs/lpg_propane.html](http://www.consumerenergycenter.org/transportation/afvs/lpg_propane.html)
On average, a gasoline gallon equivalent (GGE) of propane is more expensive than gasoline. Federal excise taxes for propane (13.6 cents per gallon) are lower than for gasoline (18.4 cents) and diesel fuel (24.4 cents per gallon). There is limited information available on the cost of hydrogen as a transportation fuel. However, the cost is considered uneconomically high at present relative to alternative and conventional transportation fuels.

There are significant cost savings when you evaluate the cost to charge an electric vehicle versus the cost of gasoline. Electric vehicles with direct current (DC) electric systems get about 0.4 kilowatt-hours (kWh) per mile, while those with more efficient alternating current (AC) systems get about 0.174 to 0.288 kWh per mile. At an electricity rate of $0.13 per kWh, it would cost about $0.05 per mile for DC operation and $0.03 cents per mile for AC operation. The per-mile costs of a gasoline vehicle with a fuel economy of 25 miles per gallon would vary depending on the price of gasoline:

- $0.04/mile when gasoline is $1.00/gallon;
- $0.08/mile when gasoline is $2.00/gallon;
- $0.12/mile when gasoline is $3.00/gallon; and
- $0.16/mile when gasoline is $4.00/gallon.

The cost of charging an electric vehicle is lower than the cost of fueling a standard gasoline vehicle when the price of gasoline remains above about $1.25 per gallon. A study by San Diego Gas & Electric (SDG&E) confirmed the advantages that PHEVs offer over standard hybrids and gasoline vehicles in terms of improved fuel economy and fuel costs, as well as tailpipe carbon dioxide (CO₂) emissions. SDG&E tested the performance of two 2007-model standard hybrid vehicles and then converted them into plug-in hybrid electric vehicles using a lithium-ion battery conversion kit. The results are shown in Table 13.

### Table 13. Advantages of Plug-in Hybrid Electric Vehicle Retrofits versus Standard Hybrid and Gasoline Vehicles

<table>
<thead>
<tr>
<th>Performance Measures</th>
<th>Advantages of Plug-in Hybrid Retrofit Compared to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard Hybrid¹</td>
</tr>
<tr>
<td>Fuel Economy</td>
<td>60% improvement</td>
</tr>
<tr>
<td>Tailpipe CO₂ Emissions¹</td>
<td>37% reduction</td>
</tr>
<tr>
<td>Fuel Costs</td>
<td>18% reduction</td>
</tr>
</tbody>
</table>

Source: [SDG&E Clean Transportation Program](https://www.sdgemc.com/)

Notes:
1. PHEVs also would indirectly generate GHG emissions associated with the generation of electricity used to charge the battery.
2. Standard hybrid represents performance by the same vehicle prior to the plug-in conversion.

¹ SDG&E time-of-use tariff for electric vehicles ranges from $0.12 - $0.15 per kWh during off-peak period.
Controlled experiments conducted by Recharge IT, an initiative of Google.org, also demonstrate that converted PHEVs achieve better fuel efficiency, lower CO₂ emissions, and cheaper fuel costs when compared with standard hybrid and gasoline vehicles.

The following table uses the average fuel price and fuel efficiency information to determine the price per distance and price differentials that alternative fuels require to cost-effectively compete with gasoline (Table 14). The analysis shows that per-mile costs for fuel are lower than standard gasoline vehicles for vehicles running on B20, CNG, standard hybrid and plug-in hybrid engines, and battery electric motors. The price differential column shows the price difference between a fuel and gasoline required for that fuel to be a cost-effective alternative. The price differential is provided as a percentage for gasoline at any price, and as the per-gallon cost at existing gasoline prices. For example, the results for E85 indicate that this fuel must be priced at least 27 percent lower than gasoline in order to be cost-effective. At the current gasoline price this translates into a maximum cost for E85 of $1.49 per gallon. The table also shows that battery electric vehicles are more cost-effective to fuel than standard gasoline vehicles as long as the price of electricity is at or below $0.22 per kilowatt-hour (kWh).

### Table 14. Alternative Fuel Passenger Car Cost Comparison to Gasoline

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Average Price (Per Unit/Per GGE)</th>
<th>Price Per Mile (Any Gasoline Price/Current Gasoline Price)</th>
<th>Price Differential to Compete with Gasoline (Any Gasoline Price/Current Gasoline Price)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per Unit</td>
<td>Per GGE</td>
<td>MPGGE</td>
</tr>
<tr>
<td>Gasoline</td>
<td>$2.04</td>
<td>$2.04</td>
<td>22.33</td>
</tr>
<tr>
<td>Petroleum Diesel</td>
<td>$2.36</td>
<td>$2.08</td>
<td>28.8</td>
</tr>
<tr>
<td>B100</td>
<td>$3.48</td>
<td>$3.45</td>
<td>26.31</td>
</tr>
<tr>
<td>B20</td>
<td>$2.72</td>
<td>$2.48</td>
<td>28.8</td>
</tr>
<tr>
<td>CNG</td>
<td>$1.81</td>
<td>$1.81</td>
<td>22.33</td>
</tr>
<tr>
<td>E85 (FFV)</td>
<td>$2.19</td>
<td>$3.09</td>
<td>23</td>
</tr>
<tr>
<td>Propane</td>
<td>$2.50</td>
<td>$3.45</td>
<td>22.33</td>
</tr>
<tr>
<td>HEV</td>
<td>$2.04</td>
<td>$2.04</td>
<td>30.14</td>
</tr>
<tr>
<td>PHEV, Gasoline Mode</td>
<td>$2.04</td>
<td>$2.04</td>
<td>31.26</td>
</tr>
<tr>
<td>Electric/PHEV Grid Mode</td>
<td>$0.13</td>
<td>$4.34</td>
<td>80.38</td>
</tr>
</tbody>
</table>

**Notes**
Based on average fuel prices as reported in the Clean Cities Alternative Fuels Price Report, January 2009.

Prices may not add due to rounding.

Alternative fuels and vehicle technologies will be needed to achieve the state’s goals for greenhouse gas (GHG) emissions reduction, petroleum reduction, and climate stabilization. The potential GHG emission reductions, and petroleum and fossil fuel savings of alternative fuels compared to standard gasoline and diesel vehicles on a full fuel cycle basis is discussed below and summarized in Table 15.

Table 15. Full Fuel Cycle Comparison of Alternative Fuels to Standard Gasoline Vehicles

<table>
<thead>
<tr>
<th>Alternative Fuel</th>
<th>Full Fuel Cycle Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GHG Reduction</td>
</tr>
<tr>
<td>Biomass-based Diesel</td>
<td></td>
</tr>
<tr>
<td>Biodiesel (B20)</td>
<td>10-13%</td>
</tr>
<tr>
<td>Renewable Diesel (RD30)</td>
<td>20%</td>
</tr>
<tr>
<td>Electricity</td>
<td></td>
</tr>
<tr>
<td>Hybrid Electric</td>
<td>25%</td>
</tr>
<tr>
<td>Plug-in Hybrid</td>
<td>48%</td>
</tr>
<tr>
<td>Battery Electric</td>
<td>72%</td>
</tr>
<tr>
<td>Ethanol (E85)</td>
<td></td>
</tr>
<tr>
<td>Midwest Corn</td>
<td>15-28%</td>
</tr>
<tr>
<td>California Corn</td>
<td>36%</td>
</tr>
<tr>
<td>Sugar Cane</td>
<td>68%</td>
</tr>
<tr>
<td>Cellulose</td>
<td>60-72%</td>
</tr>
<tr>
<td>Hydrogen</td>
<td></td>
</tr>
<tr>
<td>Electrolysis</td>
<td>26%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>54%</td>
</tr>
<tr>
<td>Biomass</td>
<td>91%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td></td>
</tr>
<tr>
<td>CNG – light-duty vehicle</td>
<td>20-30%</td>
</tr>
<tr>
<td>CNG – heavy-duty vehicle</td>
<td>11-23%</td>
</tr>
<tr>
<td>LNG – heavy-duty vehicle</td>
<td>11-16%</td>
</tr>
<tr>
<td>Propane</td>
<td></td>
</tr>
<tr>
<td>Light-duty</td>
<td>18-20%</td>
</tr>
<tr>
<td>Medium/Heavy-duty14</td>
<td>2.3% higher than diesel; 18.6% lower than gasoline</td>
</tr>
<tr>
<td>Non-road (forklift)14</td>
<td>2.7% lower than diesel; 19% lower than gasoline</td>
</tr>
</tbody>
</table>

Source:

Plug-in hybrid electric vehicle (PHEV) retrofits offer the opportunity to obtain approximately 40-70 percent GHG emission reductions (depending on the electricity mix) compared to a gasoline vehicle and 15-30 percent GHG emission reductions compared to a gasoline hybrid Toyota Prius. PHEVs demonstrate significant potential to reduce GHG emissions and petroleum and fossil fuel consumption.

BEVs do not produce any GHG or criteria air pollutant emissions at the tailpipe. Emissions attributed to the electricity powering the vehicle are those attributed to electricity generation or distributed energy sources. Full fuel-cycle emissions of BEVs using today’s electricity grid are as much as 70 percent lower than the emissions of conventional gasoline vehicles.

Electrification of non-road applications offers similar GHG emission reduction benefits to electric passenger vehicles: minimum 30 percent fuel savings, efficiency improvements, and GHG emission reductions. GHG emissions and petroleum consumption from medium- and heavy-duty truck applications can be reduced through hybrid electric and hydraulic hybrid technologies. Electric vehicles will become even cleaner on a full fuel-cycle basis as California continues to shift to renewable electricity generation systems and increases installation of renewable and clean non-renewable distributed generation.

Generally, the higher the biofuel concentration of the biofuel blend, the greater the potential GHG emission reductions. Depending on the feedstock, fuel production process; blend concentration and vehicle type, the various biodiesel and renewable diesel fuels could reduce greenhouse gas emissions by 61 to 94 percent compared to conventional diesel fuel.

Ethanol can achieve modest to substantial GHG emission reduction depending upon the type and location of the feedstock. According to the most recent analysis by the California Air Resources Board, the GHG emissions of corn-based ethanol produced in the Midwest and delivered to California, on average, slightly exceed the emissions of gasoline when indirect land use effects are taken into account. Corn-based ethanol produced in California can achieve GHG emissions reductions relative to gasoline, while alternate feedstocks like sugarcane and cellulosic ethanol can achieve much larger GHG emission reductions compared to corn-based ethanol and gasoline.

Vehicles operating on natural gas can reduce GHG emissions by as much as 30 percent compared to gasoline and diesel vehicles on a full fuel cycle basis. However, the use of biomethane in the same vehicles has a much greater greenhouse gas benefit, reducing emissions by as much as 97 percent.

Like BEVs, hydrogen fuel cell vehicles do not produce GHG emissions at the tailpipe. On a full fuel cycle basis, hydrogen can reduce GHG emissions by 26% to 91% depending on the method of producing hydrogen. Although on-site steam reformation of natural gas is not the ultimate goal, it does provide a number of near-term benefits such as a 50 percent “source-to-wheel” reduction in greenhouse gas emissions and a 40-90% reduction in emissions of smog forming and toxic emissions compared to today’s gasoline-powered cars. Hardly any petroleum is consumed in the full fuel cycle of hydrogen.

For the production of hydrogen by electrolysis, how the electricity is generated determines the amount of greenhouse gas emissions because it can be produced using fossil resources (i.e., natural gas and coal) or renewable resources like solar, wind, geothermal, hydroelectric, and, biomass. When using renewable resources the emissions can be zero. However, when hydrogen is produced using the current mix of sources on the California grid, particulate matter (PM) emissions and the greenhouse gas (GHG) emissions can be greater than those associated with gasoline on a well to wheels basis. The state has set goals to use renewable resources to produce hydrogen that exceed the state’s 20% Renewable Portfolio Standard (RPS) requirement. For electrolysis to be a viable and sustainable method of producing hydrogen, it must employ more clean renewable electricity than what the grid alone currently provides.

Propane offers moderate GHG emission reductions. When produced along with natural gas, propane reduces GHG emissions by 9 to 19 percent compared to gasoline, slightly better than propane derived from petroleum. Emissions reductions are substantial when an engine, such as in a forklift, is replaced by propane.15

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SECTION 7. Alternative Fuel Availability and Infrastructure

Widespread use of alternative fuels and deployment of alternative fuel vehicle technologies is contingent upon critical issues like the source and available supply of the fuel, capability to produce the fuel at a commercial scale, availability of infrastructure to distribute the fuel to the region, and facilities for vehicle fueling or charging. A discussion of these issues as they relate to the deployment of alternative fuels and vehicles in the San Diego region is provided below. The address and type of access for existing alternative fueling and charging infrastructure in the region is provided in Appendix F.

**Table 16. Summary of Alternative Fuel Availability and Infrastructure**

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Existing Fueling-Charging Infrastructure</th>
<th>Cost of Additional Fueling-Charging Infrastructure</th>
<th>Availability of Production-Distribution Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiesel Fueling</td>
<td>2 public, 5 private</td>
<td>Information not available</td>
<td>Storage and blending terminals, port off-loading sites needed</td>
</tr>
<tr>
<td>E85 Fueling</td>
<td>3 public</td>
<td>$100,000 to $250,000</td>
<td>Storage and distribution facilities needed in order to scale-up consumption</td>
</tr>
<tr>
<td>Electric Charging</td>
<td>19 public, 15 private or unknown*</td>
<td>Upgrade existing: $200 to $3,000 New Public: $2,500 to $5,000 New Residential: $1,300 to $1,500</td>
<td>Existing Electricity Grid and Distributed Energy Sources</td>
</tr>
<tr>
<td>CNG Fueling</td>
<td>7 public, 15 private</td>
<td>Home Refueling: $4,750 Small Station: $350,000 Medium Station: $500,000 Large Station: $950,000 Add Public Fast Fill Dispenser: $125,000</td>
<td>Existing Natural Gas Pipeline Network</td>
</tr>
<tr>
<td>LNG Fueling</td>
<td>2 private</td>
<td>Large Station: $1,200,000 Combined: LCNG and LNG Station: $1,600,000</td>
<td>Existing, but West Coast off-shore LNG terminals also needed</td>
</tr>
<tr>
<td>Hydrogen Fueling</td>
<td>1 public, 1 private</td>
<td>$500,000 to $5,000,000</td>
<td>Significant investment required</td>
</tr>
<tr>
<td>Propane Fueling</td>
<td>19 public</td>
<td>$65,000</td>
<td>Existing</td>
</tr>
</tbody>
</table>

**Notes:**
*All existing electric charging points must be upgraded for compliance with SAE standards; some existing charging points may have been removed or damaged or otherwise no longer exist as noted in Appendix F.*

**Biofuel: Biomass-based Diesel**

Biomass-based diesel refers to biodiesel and renewable diesel, including diesel derived from algae, biomass, and industrial and processing waste. Only biodiesel is commercially available today. Additional progress is needed to produce biomass-based diesel fuels from renewable feedstocks low in GHG emissions, including waste sources and algae, and to demonstrate the viability of these sources. Moving beyond these oils and into “second generation” feed sources and plants are necessary to reach higher blend levels and deeper GHG emission reductions. Biomass-based cellulose, waste, and algae are likely second generation feed sources.

California has 11 biodiesel plants with a combined 2009 theoretical capacity of 87 million gallons, although these plants will likely produce less than 25 million gallons in 2009 due to the relatively lower price of petroleum-based diesel. A change in the price disparity between biodiesel and petroleum diesel will be needed to improve the
economics of commercial biodiesel production and its availability to local government fleets in the San Diego region.

The region currently features one biodiesel production facility operated by New Leaf Biofuel, which collects waste oil from restaurants for processing into pure biodiesel (B100). According to the Energy Commission, recycled cooking oil is the lowest-cost feedstock for biodiesel production. As of 2008, production was approximately 13,000 gallons per month. The company is developing a new processing facility with maximum production capacity of 140,000 gallons per month, the equivalent of about 1.68 million gallons of B100 per year.

Longer-term, deployment of blending and storage terminals is needed to increase the availability of biodiesel and renewable diesel to customers in the region as well as the state. California lacks bulk terminal, bulk storage, and terminal blending facilities for biodiesel. Moreover, a minimum of two deepwater port access offloading sites are needed for the state to access foreign supplies at a competitive economic level with petroleum. The Energy Commission is providing funding for blending and storage terminal projects to facilitate infrastructure development in the state.

Buying directly from biodiesel producers is the most likely method of purchase for fuel distributors and bulk B100 purchasers of biodiesel. Some individual consumers may also buy biodiesel directly from producers by the drum. Distributors will typically deliver or fill large quantities of fuel in pure form (B100) or other common mixtures like B20. A list from the National Biodiesel Board (NBB) of NBB biodiesel producers and marketers is available online.

Development of new technology or new types of infrastructure is not required for biodiesel fueling. Existing petroleum diesel fueling stations can dispense biomass-based diesels and biodiesel. Where new fueling pumps or stations are required to support biodiesel use by local government fleets, installation costs would be comparable to those for petroleum diesel fueling infrastructure. In general, the standard storage and handling procedures used for petroleum diesel can be used for biodiesel. The fuel should be stored in a clean, dry, dark environment. Acceptable storage tank materials include aluminum, steel, fluorinated polyethylene, fluorinated polypropylene, and Teflon. Copper, brass, lead, tin, and zinc should be avoided.

Existing public fueling pumps or stations in the San Diego region are located at Pearson Fuels in the City Heights community of the City of San Diego and at the Soco Group petroleum distribution facility in the City of El Cajon. Private biodiesel fueling stations are located at military installations throughout the region. The statewide and local production of B100 provides a near-term opportunity for local governments in the San Diego region to employ blends of biodiesel in existing diesel vehicles and applications. Investments in biodiesel fueling infrastructure would be needed to support biodiesel use in fleet applications.

**Biofuel: Ethanol (E85)**

Over 90% of ethanol used in California is imported from outside the State. About 80% is produced from corn in the Midwest United States and transported to California by rail. Another 12% is comprised of foreign imports primarily from Brazil via marine transport. The approximately 8% produced in-state comes from three plants, none of which are located in the San Diego region. Two more plants are under construction and 14 are in the active development stages. California plants are idle as of April 2009 due to the relatively low price of oil and refined petroleum products like gasoline relative to ethanol blends of E85. A change in the price disparity between E85 and gasoline will be needed to improve the economics of commercial ethanol production and its availability to local government fleets in the San Diego region. Moreover, the Energy Commission reports that new storage and distribution facilities would be needed in the state to scale-up E85 consumption.

There are no fleet-based E85 fueling stations in the region, and public access to fueling stations is limited. E85 is currently available at Pearson Fuels in the City Heights community of the City of San Diego, Bressi Ranch Shell in the City of Carlsbad, and Oceanside Texaco in the City of Oceanside. New fueling stations would be needed to

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support the use of E85 in local government fleets in the region. The Energy Commission estimates the cost of new E85 fueling capacity at an existing or new station at $100,000 to $250,000. There are factors hindering a transition to E85 in California and the San Diego region. One is the limited number of facilities dispensing E85. In addition, it is difficult for local government fleets to justify investments in expansion of E85 infrastructure with the current price differential between E85 and gasoline. Because one gallon of E85 has roughly three-quarters the energy content of one gallon of gasoline, vehicles running on E85 achieve lower fuel economy than gasoline. Therefore, the price of E85 must be proportionately lower than gasoline in order for fleet managers to economically justify a transition.

In addition, the Energy Commission reports that the most recent calculations from the California Air Resources Board indicate that corn-based ethanol produced in the Midwest results, on average, in higher GHG emissions on a full fuel cycle basis than gasoline. As a result, it would appear that E85 will only help the region contribute to GHG reduction targets if derived from corn ethanol produced in California or ethanol from lower carbon feedstocks other than corn. Additional investment in the production and distribution infrastructure to support large-scale ethanol production from such lower carbon sources is likely needed before local government fleets in the San Diego region can justify commitment of resources to E85 fueling infrastructure and vehicles.

Electricity

Unlike some alternative fuels, the infrastructure for the production and distribution of electricity to power battery electric and plug-in hybrid vehicles is already in place in the form of the existing power grid and distributed energy sources like photovoltaic solar panels. According to the Electric Power Research Institute, California’s existing electricity capacity could recharge as many as 4-million plug-in hybrids if charged during off-peak hours when electricity use is relatively low. However, the existing electric charging infrastructure in the San Diego region is inadequate in numbers and will be incompatible with new charging connection formats to support forthcoming BEVs and PHEVs.

For some early release BEVs and PHEVs, recharging is as simple as plugging them into an electric outlet. Currently available converted plug-in hybrids can recharge their batteries through a standard household outlet (110/120-volt) and charge in five to six hours with a 5-kwh lithium-ion battery. OEM production plug-in hybrids are anticipated to recharge in as little as three hours using a 220/240-volt wall unit for an 8-kilowatt-hour battery. Nissan reports that the BEV they will introduce in the San Diego region in 2010 will charge in eight hours using a 220/240-volt wall unit and improvements by 2012 are expected to reduce the charge time to 4 hours by increasing the charging amperage.

There are approximately 32 existing electric charging stations remaining in the San Diego region. Most if not all of these facilities were constructed in the late 1990s and early 2000s when first generation electric vehicles were sold in California. Locations include San Diego International Airport, Saturn dealerships, UCSD, Scripps medical facilities, and regional shopping center locations (e.g., Costco stores). With the phase out of electric vehicles, these stations do not receive much use. These sites feature various types of charging technology and are in various states of disrepair. As noted in Appendix F, chargers have been removed at some locations. Existing sites will need to be upgraded or replaced to support the next generation of battery electric and plug-in hybrid vehicles. The sites must be upgraded and new sites installed to meet the standards established by the Society of Automotive Engineers (SAE) for electric vehicle connections. Existing public access charge points need to be upgraded to include Society of Automotive Engineers (SAE) 1772 Level I (110V) and Level II (220V) compliant connectors to charge new OEM battery electric and plug-in electric vehicles. The SAE standards have been crafted to be compatible with electric vehicles from all manufacturers.

In addition to upgrading existing charge points, a much larger, strategic and more comprehensive regional network of new electric charging stations will be needed to support the thousands of battery electric and plug-in hybrid vehicles expected in the next few years. Installation of new charging sites will need to reflect the amount and location of local government fleet purchases. Moreover, installation of electric charge infrastructure in the San Diego region also will need to keep up with the broader roll-out of electric drive vehicles to the general public. Level I and II connectors installed at fleet yards or locations where fleet vehicles are parked or stored when not in use should be adequate to support the integration of battery electric and plug-in hybrid vehicles into local...
government fleets. A comprehensive regional network of charging stations will need to consist of Level I and II17 connectors at residential and publicly accessible locations as well as infrastructure capable of quickly charging battery electric vehicles to facilitate longer-distance travel (i.e., trip distances equal to or greater than the approximately 100-mile range of battery electric vehicles). SAE Standards for Level III (440V) “fast-charging” are under-development and expected to be finalized in the near-future. Fast-chargers would charge battery electric vehicles to 80 percent capacity in an estimated 26 minutes in the case of the forthcoming Nissan EV.

In addition, companies like Better Place have proposed “battery exchange” stations in which, instead of re-charging a vehicle’s battery, a vehicle’s depleted battery is exchanged for a fully-charged battery. Whatever the means or technology, substantial deployment of electric vehicles in the San Diego region will require installation of re-charging infrastructure that is time-competitive with standard vehicle re-fueling at gasoline and diesel service stations. The following ratios are recommended for the initial installation of electric charging points to support the initial rollout of electric vehicles in the region:

- 1 charge point per vehicle to be installed at home base charging location
- 1 – 1.5 charge points per vehicle in a public access location (this ratio will decrease in the future as the number of installed chargers increases; recommended ratios for the mid- and long-term as still under review)
- Level III connectors, battery-exchange facilities, or a comparable technology to support long-distance battery electric vehicle travel should be sited along major regional and interregional corridors. At a minimum, such facilities will need to be sited at a ratio of one every 100 miles.

Although upgrade costs to existing infrastructure will range from $200 to $3,000 per site, future costs to expand the number of charge outlets at upgraded sites will be minimal.

**Table 17. Current Cost Estimates for Electric Charging Points**

<table>
<thead>
<tr>
<th>Type of Charging Point</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade Existing Charge Point</td>
<td>$200 - $3,000</td>
</tr>
<tr>
<td>Install New Public Charge Point</td>
<td>$2,500 - $3,500</td>
</tr>
<tr>
<td></td>
<td>$3,000 - $5,000 (SDG&amp;E)</td>
</tr>
<tr>
<td>Install New Residential Charge Point</td>
<td>$1,300-$1,500</td>
</tr>
</tbody>
</table>

Source: Draft AB 118 Investment Plan; SDG&E.

More detailed regional analysis of electric charging infrastructure to support the deployment of electric vehicles to the general public is outside the scope of this effort but will be performed by SANDAG at a future date.

**Natural Gas**

California produces 15.4 percent of its natural gas, and the rest is imported by pipeline from Canada and the Rocky Mountain and Southwestern states. To meet growing demand, California needs to develop additional supplies of natural gas. Because North American supply basins are maturing, additional reliance on imported supplies is needed, including liquefied natural gas (LNG). Since natural gas is already widely used in electricity generation and residential, commercial and industrial end-uses, substantial use of natural gas as a transportation fuel would create additional demand for new supplies of natural gas from imported or renewable sources, as discussed below.

Development of biomethane as a transportation fuel is a major part of the natural gas vehicle (NGV) industry’s long-term plan for viability. Biomethane from landfill gas has an extremely low carbon intensity compared to diesel, gasoline, and North American natural gas. Feasibly recoverable biogas from landfills, wastewater treatment,

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17 It is currently anticipated that the preferred level for charging on BEVs and PHEVs will be Level II (220V) charging due to the increased charging time for the larger sized batteries being proposed for these vehicles (battery sizes ranging from 16-30 kWh). Level I (110V) charging will also be compatible with larger sized batteries, but will provide relatively slower charging time. Level I charging may be preferred for vehicles with smaller battery sizes, such as electric scooters.
and dairy waste, if used to produce biomethane transportation fuel, could displace virtually all diesel used for transportation purposes and reduce GHG emissions by more than 24 million metric tons of carbon dioxide equivalent (MMTCO₂e) per year in California. The Energy Commission has allocated funding incentives to support up to ten biomethane production plants in California.

LNG is produced both world-wide and domestically at a relatively low cost. Existing use of LNG for transportation purposes is derived from domestic sources. However, a majority of the world's LNG supply comes from countries with the largest natural gas reserves: Algeria, Australia, Brunei, Indonesia, Libya, Malaysia, Nigeria, Oman, Qatar, Trinidad, and Tobago. LNG is transported in double-hulled ships specifically designed to handle the low temperature of LNG. These carriers are insulated to limit the amount of LNG that evaporates. LNG carriers are up to 1,000 feet long, and require a minimum water depth of 40 feet when fully loaded. Currently there are approximately 140 LNG ships world-wide. LNG terminals in the United States are located along the East Coast and Gulf of Mexico. There are plans to construct two offshore LNG terminals along the west coast of the United States.¹⁸ When LNG is received at most terminals, it is transferred to insulated storage tanks specifically built to hold LNG. These tanks can be found above or below ground and keep the liquid at low temperature to avoid evaporation. Clean Energy operates an LNG plant in Boron, California that can produce up to 160,000 gallons of LNG per day and is designed to be upgraded to a maximum production capacity of up to 240,000 gallons of LNG per day. In addition to the Boron plant, two plants in Arizona serve LNG vehicles in Southern California.

Natural gas is readily available to end users through existing utility infrastructure. San Diego Gas & Electric (SDG&E) distributes natural gas to end-use customers for various non-transportation purposes. Natural gas fueling infrastructure can be linked to this existing regional network to provide natural gas as a transportation fuel for potential local government fleet applications. Significant financial and time investments in infrastructure to transport and distribute natural gas to end users have already been made. This gives fuels like CNG an advantage over other alternatives such as hydrogen, ethanol, and biodiesel, which require significant time and financial investments in infrastructure that would be needed to scale up production and distribution of those fuels to end users.

With the consumption of CNG increasing nationwide 145 percent during the past six years, the fueling infrastructure has also grown. California has more than 200 CNG fueling stations. In Southern California alone, there are more than 100 public fueling stations in major metropolitan areas from Los Angeles to the Mexican border. Another 50 stations are now under construction. There are approximately 22 existing locations in the San Diego region offering CNG, with another two locations offering LNG. These facilities primarily support CNG and LNG use in public and private fleet applications including the region's two primary transit agencies, multiple school districts, military facilities, refuse hauler Waste Management (LNG), and the City of Chula Vista. In addition, UCSD has plans to construct a new CNG station and is actively seeking Federal Stimulus funding to support their efforts. Fueling infrastructure for natural gas consists of the following seven types of facilities:

- CNG home refueling appliances
- Small-capacity CNG stations
- Medium-capacity CNG stations
- Large-capacity CNG station
- Large-capacity LNG stations
- CNG dispensers added to existing gasoline stations
- Combined CNG and LNG stations (LCNG)

Large amounts of capital are required to expand infrastructure. For the fleet operator, the overall economics are favorable if the fuel cost savings can amortize the additional equipment costs. This equation favors high fuel use applications, which is one reason why heavy duty vehicles are the fastest growing natural gas vehicle segment in California. Current cost estimates for natural gas infrastructure are provided in Table 18.

¹⁸ [http://www.energy.ca.gov/lng/documents/4_WEST_COAST_PROJECTS_PROPOSALS_STATUS_UPDATE.PDF](http://www.energy.ca.gov/lng/documents/4_WEST_COAST_PROJECTS_PROPOSALS_STATUS_UPDATE.PDF)
Small, medium, and large CNG stations can be added to existing gasoline stations or built as “stand alone” CNG stations. It is also possible for a single station to dispense both CNG and LNG, and in fact LNG can be gasified to CNG with conventional pumps with less energy than it takes to compress pipeline gas to CNG, though CNG from LNG is more expensive than CNG from pipeline gas. The state of natural gas infrastructure and supply would appear adequate to support deployment of CNG and LNG as fuels in appropriate local government fleet applications. The potential for growth in the regional use of LNG over the longer-term may be contingent upon the construction of West Coast LNG terminals or additional in-state LNG plants.

**Connection with Hydrogen**

Natural gas could also play a role in a hydrogen fuel future. Because natural gas and hydrogen are similar fuels with similar properties, lessons learned with NGVs can be applied to the development of hydrogen transportation systems. Moreover, natural gas fueling infrastructure can be used to dispense hydrogen. Use of hydrogen enriched natural gas (e.g., 20% hydrogen and 80% natural gas) in heavy-duty vehicles can reduce emissions from pure natural gas by about 50 percent.

**Hydrogen**

There are a number of ways that hydrogen can be produced including electrolysis of water, steam reformation of natural gas, biomass gasification and coal gasification to name a few. The two most common ways to produce hydrogen are steam reformation of natural gas and electrolysis of water at a central station. It is important to note that unlike other fuels, hydrogen is not an energy source but an energy carrier. Energy is required to create hydrogen fuel. After hydrogen is produced, it would be delivered to fueling stations by truck or pipeline for pumping into vehicles’ hydrogen tanks. Another option is for hydrogen to be produced by reformation or electrolysis at the fueling station.

Currently, most hydrogen is produced by steam reformation of natural gas, one of the cheapest methods. This process lays a foundation for increasing the use of renewable feed stocks because hydrogen stations that are constructed initially using natural gas could be modified to accept fuels derived from renewable and other sources of energy as they become available. Additionally, the experience gained and improvements made at stations using natural gas reformation could be applied to new reformation stations sited where renewable fuels such as biomass, municipal solid waste, and landfill gas can be used as the fuel source.

In addition to the infrastructure investments required to produce hydrogen, delivery of hydrogen to end users would require the building of an extensive system for transporting, distributing, and storing hydrogen. Significant investment of money and time would be required to deliver hydrogen to end-users. Currently, very little hydrogen is produced for use as a transportation fuel. Moreover, the cost of production is currently expensive. With respect to fueling infrastructure, the San Diego region contains two hydrogen fueling stations: one publicly accessible station at the City of Chula Vista Corporation Yard and a private station located on the Camp Pendleton Marine...
Corps Base. The cost of additional hydrogen stations is estimated by the Energy Commission to range from $500,000 - $5,000,000 depending on the size.

**Propane**

The infrastructure of the propane distribution system is well-established. Propane is shipped from the point of production (natural gas or oil well) to bulk distribution terminals via pipeline, railroad, barge, truck, or tanker ship. Propane dealers fill trucks at terminals and distribute propane to end users, including retail fueling stations. Most propane consumed in the U.S. is produced domestically. Very little new infrastructure is needed to support propane forklifts; propane suppliers can maintain on-site storage tanks for fleets or have cylinder exchange programs.

Propane is widely available and its use could easily be expanded if demand for propane as a transportation fuel increases. There are currently 19 stations in the San Diego region that supply propane. There is potential to quickly expand the infrastructure for propane vehicle fueling, as existing propane stations can be used for vehicle fueling through the addition of fuel capacity, a tank pump, and metering equipment. Additional fueling infrastructure for propane can be installed at low cost at for publicly accessible stations, and upgrading existing propane infrastructure for vehicle fueling is cost effective as well. There is potential to quickly expand the infrastructure for propane vehicle fueling, as existing propane stations can be used for vehicle fueling through the addition of fuel capacity, a tank pump, and metering equipment.

Refueling of a propane vehicle involves filling the vehicle's on-board storage cylinder from a dispenser connected to a storage tank. Just as propane is stored in the engine fuel tank as a liquid, it is stored and handled as a liquid at the fuel dispenser. Propane is pumped from the dispenser storage tank into the vehicle tank. Propane refueling is comparable to the amount of time needed to refuel a gasoline or diesel vehicle (about 10-12 gallons per minute). The Energy Commission estimates that the average cost of a propane fueling station is $65,000.

New supplies of propane may become available with advancements in processes that derive propane from renewable sources. Bio-propane could give propane an additional advantage as a transitional fuel that will be beneficial economically and environmentally in the coming years. Although renewable sources of propane are not currently available commercially, they have potential as an alternative fuel option in the future. Renewable propane can be derived from several feedstocks such as algae, row crops, and wood. The derivation of renewable propane requires little additional energy use and results in a product that contains the same energy content as propane derived from petroleum. However, renewable sources of propane are not available in large quantities or commercially and would be unable to support a large vehicle population or fleet. At this time, renewable propane appears unlikely to play a large role as a transportation fuel in local government fleets in the San Diego region.
San Diego Region: Existing Alternative Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

Figure 1. San Diego Region: Existing Alternative Fuel Infrastructure
San Diego North Subregion: Existing Alternative Fuel Infrastructure

Infrastructure Type:
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

Figure 2. San Diego North Subregion: Existing Alternative Fuel Infrastructure
Figure 3. San Diego North City Subregion: Existing Alternative Fuel Infrastructure

San Diego North City Subregion: Existing Alternative Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

San Diego
North City Subregion:
Existing Alternative
Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

San Diego
North City Subregion:
Existing Alternative
Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

San Diego
North City Subregion:
Existing Alternative
Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

San Diego
North City Subregion:
Existing Alternative
Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

San Diego
North City Subregion:
Existing Alternative
Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging
Figure 4. San Diego Mid-City and East County Subregion: Existing Alternative Fuel Infrastructure

San Diego Mid-City and East County Subregion: Existing Alternative Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

County of San Diego

San Diego

El Cajon

La Mesa

Lemon Grove

Santee

See Inset Above

April 2009

San Diego Mid-City and East County Subregion: Existing Alternative Fuel Infrastructure

Figure 4. San Diego Mid-City and East County Subregion: Existing Alternative Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

County of San Diego

San Diego

El Cajon

La Mesa

Lemon Grove

Santee

See Inset Above

April 2009

San Diego Mid-City and East County Subregion: Existing Alternative Fuel Infrastructure

Infrastructure Type
- Biodiesel Production
- Biodiesel Fueling
- E85 Fueling
- CNG Fueling
- Propane Fueling
- LNG Fueling
- Hydrogen Fueling
- Electric Charging

County of San Diego

San Diego

El Cajon

La Mesa

Lemon Grove

See Inset Above

April 2009
Figure 5. San Diego South Subregion: Existing Alternative Fuel Infrastructure
SECTION 8. Alternative Fuel Considerations for Regional Transportation Projects

Regional Areas of Emphasis

One objective of this study was to identify how a Metropolitan Planning Organization (MPO) like SANDAG or other regional body can facilitate the increased use of alternative fuels and vehicles. One potential approach would involve the integration of alternative fuel vehicles and infrastructure considerations with the core SANDAG functions of regional transportation planning. This report takes a broad view of its core transportation planning and implementation areas to determine project types potentially suitable for integration of alternative fuel vehicle considerations. Importantly, increased use of alternative fuels would advance the goals of the San Diego Regional Transportation Plan (RTP) (Figure 6.). Further analysis was undertaken to determine how the increased use alternative fuels and vehicles could be integrated into the four main components of the RTP (Figure 7.).

RTP Components

Land Use – Transportation Connection
- Connecting land use and transportation
  - Smart growth concept map
  - Smart growth and public health
  - Air quality
  - Better urban design for a healthier lifestyle
- Using land use and transportation plans to guide other plans and investments
- Incentives and collaboration

Transportation Demand Management
- RideLink
  - Park and ride lots
  - Vanpools
  - Carpools
  - Transit
  - Guaranteed ride home

Transportation Systems Development
- Implementing the regional transit plan and network
- Flexible roadway system
- Goods movement and intermodal facilities
- Aviation and ground access
- Enhanced smart growth land use alternative
- Planning across borders

Transportation Systems Management
- Congestion management program
- High occupancy toll lanes
- Advanced technologies and innovative services (smart parking)

Using the four RTP components as a guide, a list of potential regional transportation program areas warranting further investigation was developed. The program area analysis focused on the identification of possible “shovel-ready” projects that could be enhanced with an alternative fuels or vehicles component and the identification of funding to support implementation of that enhancement. Focus areas for the San Diego region that could be analyzed further include:
Transit stations accessible from the managed lanes on Interstates 15, 805, and 5. Potential for priority parking, charging stations, fueling stations on-site or in the vicinity:
  - Bus Rapid Transit centers are under construction or planned every 3 miles on the I-15 corridor, then the I-805 and I-5 corridors.
  - Federal and state funds could enable alternative fuel infrastructure enhancements during construction.

Establishing public access electric charging stations in opportune locations throughout the region:
  - Partner with SDG&E to plan region-wide public charging network.
  - Address permitting or other municipal barriers to siting infrastructure in a regionally consistent manner.
  - Provide consistent outreach and information to local governments and regional stakeholders to integrate electric vehicles and infrastructure in local government fleets.

Bus rapid transit circulator routes, stations, infrastructure, vehicles:
  - Purchase of alternative fuel buses with performance above and beyond existing state requirements.
  - Projects under construction that could be augmented include: Super Loop, Mid-City Rapid Bus and Escondido Rapid Bus.

Vanpools and other rideshare options:
  - Retrofit vanpools from gasoline to CNG. SANDAG has over 650 vanpools and must purchase approximately 100 new vans annually due to new vanpool start-ups and turn-over of existing vans with high mileage.
  - In phases, converted compressed natural gas (CNG) vans can be purchased in public-private partnership through entities like the University of California San Diego (UCSD), Enterprise and VPSI (vanpool vendors) and natural gas-supplier Clean Energy.
  - Strategically identify vanpool vehicles for CNG conversion based on proximity of vanpool route to CNG fueling infrastructure.

Goods movement projects to reduce idling, petroleum consumption, and GHG emissions:
  - Truck stop electrification (TSE) at the US-Mexico Ports of Entry (POE).
  - Conduct feasibility study of TSE at Otay Mesa crossing and third border crossing under development. Concept developed with EPA Region 9.
  - Identify alternative fuel infrastructure (stations and maintenance facilities) that could be incorporated into or in vicinity of the San Ysidro-Tijuana POE under redevelopment.

Airport transportation coordination
  - Destination Lindbergh project to optimize San Diego International Airport.
  - Multi-modal transit station planned for airport reconfiguration.
  - Airport shuttle bus and taxi retrofits and new purchases.
  - Airport CNG fueling station and electric charging infrastructure.

Since many of these transportation areas are addressed by multiple regional, state, federal and even international entities, SANDAG considered a collaborative approach to benefit the region. Concurrently, state (such as AB 118) and federal (such as the stimulus) funding opportunities were under development. Regional discussions on alternative fuels transformed into strategies to fund and implement projects ready in the near-term. To aid in the identification of potential project types, near-term (i.e., in or before 2013) budgeted infrastructure projects included in SANDAG’s adopted 2008 Regional Transportation Improvement Plan (RTIP) were analyzed. RTIP projects include capital improvements, engineering and planning studies conducted by the California Department of Transportation (Caltrans), regional transit agencies, local governments and SANDAG. From these regional transportation program reviews, several project types have been identified and recommended for potential further study as described in Section 9. Report Recommendations.
SECTION 9. Recommendations

This section provides recommendations to maximize the economic, environmental, and social benefits of the transition to alternative fuels, vehicles, and supporting infrastructure in the San Diego region. Four types of recommendations are provided. In many cases, implementation of the recommendations and progress toward a regional transition to alternative fuels, vehicles, and infrastructure will be contingent upon the availability of funding to the region.

- The first recommendations prioritize alternative fuels and vehicles for different vehicle classes. This information can help local governments, public agencies and other fleet operators navigate the various alternative fuel and vehicle options and make decisions regarding new vehicle purchases, retrofits, and fuels that meet regional as well as their own objectives.
- The second set of recommendations identifies potential regional, near-term budgeted transportation projects that could be enhanced to include an alternative fuels component.
- The third set of report recommendations focus on preparing the region for a wider rollout of alternative fuel vehicles to the general public.
- The fourth series of recommendations are additional measures that SANDAG could undertake as follow-up to this report.

Part 1: Vehicle and Fuel Recommendations

Light-Duty Vehicle Applications: Passenger Cars and Light-Trucks

The following vehicle and fuel recommendations for light-duty vehicle applications are presented in order of priority.

Recommendation #1: Electricity

- For vehicles with limited range requirements (about 100 miles per day), battery-electric vehicles are recommended.
- For vehicles with longer range requirements (greater than 100 miles per day), use of plug-in hybrid electric vehicles (PHEV) is recommended. At present time, standard hybrid electric vehicles must be converted to PHEV, although PHEVs produced by OEMS are expected to become available in the marketplace in late 2010.
- Install Society of Automotive Engineers (SAE) Level I (110/120v) and Level II (220/240v) compliant electric charging points proportionate with vehicle conversions and purchases at a ratio of 1.5 charging points per vehicle to support initial introduction of BEV and PHEV vehicles (1 vehicle = 1 charging point at vehicle home base + 0.5 charging at public access location). The charging point-to-vehicle ratio can be lowered in the future as electric vehicles becomes more common.
- Coordinate vehicle conversions, purchases, and electric charging point installation with state and federal funding opportunities.

Pros

- At present, electricity is the best available option for GHG reductions at the tailpipe and on a full fuel cycle basis.
- Opportunity for even greater full fuel cycle GHG reductions with anticipated increases in the state renewable portfolio standard (RPS) and distributed generation at charging point.
- Nearly 100 percent petroleum reduction.
- Best available fuel economy rating of 80 miles per gallon of gasoline equivalent (mpgge) according to the Energy Commission (some BEVs achieve significantly higher mpgge).
- In general, electricity is cheaper fuel than gasoline as long as gasoline is priced above approximately $1.25 per gallon.
- Infrastructure to distribute electricity to end-users – the existing electric grid – is already in place.
Electric charging points are substantially less expensive to install than fueling stations for conventional and alternative fuels. Costs to expand the number of charge outlets at upgraded sites will be cost-effective.

Battery electric vehicles will be available to public fleets in the San Diego region in 2010 at a price of approximately $27-$30,000.

Battery electric vehicles will be available to the general public by 2012.

Government funding and incentives are available to cover the incremental costs of new and retrofitted battery electric and plug-in hybrid vehicles:
- Federal tax credit of $7,500 per vehicle for battery electric,
- A 10 percent federal tax credit is available for electric drive retrofits,
- For FY08-FY10, an average of $10,000 per plug-in hybrid retrofit from the Alternative and Renewable Fuel and Vehicle Technology Program administered by the Energy Commission,
- Up to $5,000 per vehicle rebate for battery electric vehicles (only $3,000 for battery electric vehicles with a range of 50 to 100 miles) and up to a $3,000 per vehicle rebate for plug-in hybrid vehicles from the Air Quality Improvement Program administered by the California Air Resources Board, and
- If federal ARRA awards are received, vehicle and infrastructure costs may be reduced further.

Cons
- Vehicle/retrofit cost is greater than the cost of a standard gasoline vehicle.
- Battery electric vehicles may have limited range of about 100 miles.
- Large-scale production and commercial availability of battery electric and plug-in hybrid vehicles does not exist at present (but is expected in the near-term [1-3 years] future).
- Without proper planning, a significant market penetration of battery electric and plug-in hybrid vehicles could negatively impact the region’s electricity grid, including increased peak demand and increased minimum load demand.

Recommendation #2: Compressed Natural Gas
- Where electric vehicles are not an option, purchase new compressed natural gas (CNG) passenger vehicles.
- Consider retrofitting standard passenger vehicles to CNG vehicles.
- Consider deploying CNG vehicles in taxicab fleets.
- Take advantage of existing CNG fueling infrastructure where available, and construct and/or support construction of new CNG fueling infrastructure when needed to support vehicle purchase and/or retrofit.
- Coordinate vehicle conversions, purchases, and fueling station installation with state and federal funding opportunities.

Pros
- Full fuel cycle GHG emission reductions of 20-30 percent relative to standard gasoline vehicles.
- Nearly 100 percent petroleum reduction.
- CNG is cheaper than gasoline on a per-gallon-equivalent basis.
- Regional infrastructure to distribute natural gas to end-users – the existing natural gas pipeline network – is already in place.
- Approximately 22 existing CNG fueling stations in the region.
- Biomethane, if and when commercially available in the region, provides opportunity to achieve further GHG emission reductions (up to 97 percent compared to gasoline) using the same natural gas infrastructure, fueling stations, and vehicles.
- Government funding and incentives are available:
  - For FY08-FY10, an average of $6,667 per vehicle for the purchase of light-duty vehicles (the Energy Commission will consider funding vehicle retrofits to CNG) and $400,000 per fueling station from the Alternative and Renewable Fuel and Vehicle Technology Program administered by the Energy Commission,
  - Federal ARRA funding available to further offset costs of vehicles and infrastructure
- Can serve as transitional fuel to achieve early GHG reductions until other lower-carbon fuel options become commercially viable.
Cons

- Natural gas supplies are finite and non-renewable.
- Natural gas is heavily relied upon in non-transportation sectors, particularly electricity generation.
- Only one Original Equipment Manufacturer (OEM) offers a light-duty CNG passenger vehicle in California, which is more expensive (about $10,000) than a comparable gasoline vehicle.
- Fueling infrastructure to support rollout of CNG passenger vehicles to the general public would involve significant financial investment.

Recommendation #3: Ethanol (E85)

- Where fleets own Flexible Fuel Vehicles (FFV) and E85 is available, establish policies that require fueling with E85.
- If previous recommendations are not achievable, purchase FFVs for light-truck and sport utility vehicle applications. As stated above, establish policies that require fueling with E85 when fueling infrastructure is available.
- Install E85 fueling infrastructure to support FFV and any dedicated E85 vehicles. Take advantage of state funding for E85 fueling stations.
- Improve regional access to E85 fueling stations by siting new fueling infrastructure in currently underserved areas.
- Routinely monitor the in-state ethanol production industry, including the types of feedstocks. E85 will provide substantial benefits when feedstocks from biomass waste streams and bioenergy crops within California are used to produce ethanol at a commercial scale.

Pros

- Vehicle purchase price is similar to a comparable gasoline vehicle.
- E85 fueling infrastructure and vehicles for current generation ethanol also will be able to accommodate next generation ethanol produced from feedstocks with greater benefits.
- Fueling stations already installed in the region.
- Full fuel cycle petroleum reduction of 70-75 percent relative to a standard gasoline vehicle.
- Government funding and incentives are available:
  - For FY08-FY10, an average of $100,000 per fueling station from the Alternative and Renewable Fuel and Vehicle Technology Program administered by the Energy Commission, and additional funds will be allocated to support low-carbon ethanol productions plant in California.

Cons

- Price of E85 is less economical than gasoline and other alternative fuels on a gallon of gasoline equivalent basis.
- Current generation of feedstocks has minimal or possibly negative GHG emissions performance, and the timing for commercial availability of next generation feedstocks is uncertain.
- Fueling infrastructure to support rollout of E85 to the general public would involve significant financial investment.
- FFVs are typically only available in the light-duty truck category (e.g., sport utility vehicles and pick-up trucks).

Recommendation #4: Propane

- Retrofit existing or newly purchased light-trucks
- Take advantage of existing propane fueling infrastructure in the region, where possible.
- Construct new fueling infrastructure to support vehicle retrofits.

Pros

- Infrastructure to support propane distribution to end-users is already in place.
- Potential for renewable propane to compete with other alternative fuels in future years.
- Full fuel cycle GHG reduction of 18-20 percent compared to standard gasoline vehicle.
- Nearly 100 percent of U.S. propane consumption is derived from domestic sources.
- Relatively lower fueling infrastructure costs ($65,000) than other alternative fuels.
Government funding and incentives are available:
  - For FY08-FY10, a total of $1 million for light-duty vehicles in public fleets from the Alternative and Renewable Fuel and Vehicle Technology Program administered by the Energy Commission.
  - Federal incentives available to support propane fueling stations.
- Can serve as transitional fuel to achieve early GHG reductions until other lower-carbon fuel options become commercially viable.

Cons
- New OEM propane passenger cars or light trucks are not available for-sale in California.
- Propane retrofits are not available for passenger cars in California.
- Minimal petroleum reduction (5 percent) when propane is derived from petroleum.
- Lower GHG reduction that other alternative fuel options.
- Price of propane is less economical than gasoline and other alternative fuels on a gallon of gasoline equivalent basis.

Recommendation #5: Biodiesel
Manufacturers of light-duty diesel vehicles do not currently except biodiesel blends greater than B5. Therefore, the purchase of light-duty diesel vehicles and fueling with B5 would provide relatively minimal benefit compared to other alternative fuels in terms of increasing alternative fuel use, lessening petroleum dependence, and reducing greenhouse gas emissions. If and when light-duty diesel vehicle manufacturers accept biodiesel blends of B20 and higher, this recommendation and the role of biodiesel in light-duty vehicles will be re-evaluated.

Recommendation #6: Hydrogen
The cost and availability of hydrogen fuel cell vehicles and infrastructure currently makes them uncompetitive. Regional investment in this technology is not recommended at this time. As the vehicles, production, distribution and fueling infrastructure become more available, this will be re-evaluated.

Medium and Heavy-Duty Vehicle Applications

Alternative fuel and vehicle selection is dependent on several factors including cost and availability of vehicles and fuel supply (including grant and tax credits available), whether franchisee is considering purchase of new vehicles or retrofits/conversions of existing fleet vehicles, and level of comfort with addressing maintenance and changing from standard practice. Therefore, recommendations are provided, but not prioritized, regarding each fuel.

Biodiesel
- Use biodiesel blends up to B20 in existing diesel vehicles and equipment (when consistent with manufacturer warranty). Make a priority of contracting with in-region and in-state biodiesel producers.

Natural Gas
- CNG is a recommended option for medium-duty applications such as vans and shuttle buses. Both CNG and LNG are recommended options for heavy-duty applications like refuse haulers and street sweepers. CNG is best suited to short- and medium-haul applications, while LNG is better suited for long-haul applications.
- In FY08-FY10, an allocation of $23 million will be made available for medium- and heavy-duty natural gas vehicle rebates through the Alternative and Renewable Fuel and Vehicle Technology Program administered by the Energy Commission.

Propane
- Propane retrofits are an option in the medium-duty vehicle class for application such as vans and cargo trucks (heavy-duty propane engines and vehicles are not available). Three companies in California provide propane retrofits for gasoline engines, and all apply to medium-duty GM engines (6.0 and 8.1 L models).
- Funding is available to support propane retrofits through the Alternative and Renewable Fuel and Vehicle Technology Program administered by the Energy Commission.
Hybrid Electric and Hydraulic Hybrid

- Although not alternative fuels, hybrid electric and hydraulic hybrid technologies are viable options for medium- and heavy-duty application such as refuse trucks, drayage trucks, utility trucks, as well as transit and school buses.
- Cost differentials compared to diesel trucks range from $35,000 for retrofits to $80,000 for new vehicles. The differential cost of a gasoline hybrid electric bus is about $150,000 compared to a CNG bus. In FY08-FY10, the ARB will offer $25 million in incentives for the purchase of new medium- and heavy-duty diesel hybrid vehicles through its Air Quality Improvement Program.

Non-Road Applications (Neighborhood electric vehicles, forklifts)

Electricity and propane are recommended as viable options to gasoline- and diesel-powered non-road vehicles as described below:

Electricity

- Battery electric non-road vehicles such as forklifts and neighborhood electric vehicles provide opportunities to reduce GHG emissions and petroleum consumption associated with non-road movement of people and cargo.
- Funding for non-road applications will be available through the Air Quality Improvement Program administered by the ARB.

Propane

- The purchase and maintenance costs of propane forklift are comparable to a gasoline-powered forklift.
- Fueling infrastructure costs are minimal to support propane forklifts.
- As described above, the full fuel cycle GHG and petroleum reduction benefits of propane are superior to gasoline.

Fueling Infrastructure

- Coordinate alternative fuel and/or vehicle purchase with fueling/charging infrastructure siting.
- When siting fueling infrastructure to support fleet vehicles, consider locations that can be leveraged or expanded to allow public access (at the same time or at a future date).
- Consider state and federal funding opportunities, public and private partnerships or private industry making entire investment to address infrastructure costs

Part 2: Transportation Project Recommendations

Using the approach described in Section 8, staff reviewed RTIP projects for the potential to accommodate an alternative fuels, vehicles, or infrastructure component. Nineteen potential projects were identified for further investigation, as shown in Table 19.

Additional meetings with regional stakeholders included local governments, alternative fuel distributors, a local refinery owner, fueling station owners, public agencies, transit agencies, APCD, goods movement and cross-border players, vanpool vendors, major universities, businesses, CCSE and SDG&E. These meetings generated strong interest in a coordinated regional approach for the expansion of alternative fuels, vehicles and infrastructure in the San Diego region.
<table>
<thead>
<tr>
<th>RTIP Project</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-15 BRT Transit Stations Project</td>
<td>From SR 163 to SR 78 - construct transit stations along the I-15 corridor including stations at Mira Mesa Blvd, SR 56, Rancho Bernardo Road, and Del Lago Blvd; modify Escondido Transit Station. [designated parking, charging potential and siting of alternative fueling infrastructure in vicinity]</td>
</tr>
<tr>
<td>Metropolitan Planning</td>
<td>Countywide - ongoing regional transportation planning including the regional vanpool program and survey and inventory of bridges [include alternative fuels and vehicles questions]</td>
</tr>
<tr>
<td>Mid-Coast Super Loop</td>
<td>University City in San Diego - design and construction of transit priority treatments queue jumper lanes, street modifications, new and modified transit stations, and acquisition of 12 expansion shuttles [designated parking, charging and potential alternative fuel shuttles]</td>
</tr>
<tr>
<td>Regional Rideshare Program</td>
<td>Countywide - Component of overall regional Transportation Demand Management [Integration of CNG retrofit vans for vanpool; EV or PHEV sedans for 1st/ last mile for rideshare program]</td>
</tr>
<tr>
<td>San Diego Smart Parking Pilot Project</td>
<td>Selected Coaster Stations - provide access to real-time parking availability, conduct evaluations, analysis of parking strategies and pricing [designated alternative fuel vehicle parking, charging, monitor smart parking results for GHG reductions]</td>
</tr>
<tr>
<td>I-5/805 Port of Entry</td>
<td>On I-5 US/Mexico Border to Willow Road and On I-805 from Border to San Ysidro Blvd - modify port of entry [plan for role of alternative fuels, stations, maintenance facilities]</td>
</tr>
<tr>
<td>San Ysidro Intermodal Freight Facility</td>
<td>From Commercial St. to International Border - SD&amp;AE Freight Yard &amp; South Line Mainline in San Ysidro- environmental studies, design, site planning, &amp; construction for an international freight facility; signal installation for track &amp; rail cars [Opportunity to include refueling for buses and trucks]</td>
</tr>
<tr>
<td>I-15 BRT Downtown Transit Stations</td>
<td>Downtown San Diego (East Village and financial core area) - construct transit stations and transit lanes [designated alternative fuel vehicle parking and charging]</td>
</tr>
<tr>
<td>I-15 BRT Mid-City Transit Stations</td>
<td>At University Avenue &amp; at El Cajon Blvd. (mid-city area of San Diego) - construct transit stations &amp; transit lanes [designated alternative fuel vehicles parking and charging]</td>
</tr>
<tr>
<td>Escondido Maintenance Facility</td>
<td>Escondido at Washington and Centre City - improvements to maintenance facility including electronic gates, surveillance systems, video cameras, security [Bus refueling option]</td>
</tr>
<tr>
<td>East County Bus Maintenance Facility</td>
<td>New bus facility in the City of El Cajon to provide capacity for operation and maintenance for 100-150 vehicles [Bus refueling option]</td>
</tr>
<tr>
<td>South Bay Bus Maintenance Facility</td>
<td>In City of Chula Vista – expand existing facility from 4 to 9 acres to permit up to 150 buses [Bus refueling option]</td>
</tr>
<tr>
<td>South Bay BRT</td>
<td>From Otay Ranch to downtown San Diego - plan, design, and construct transit stations, transit way, local street and road modifications, freeway modifications [designated alternative fuel vehicle parking and charging]</td>
</tr>
<tr>
<td>Oceanside-Escondido Rail Project</td>
<td>From Oceanside to Escondido - design &amp; construct 22 mile light rail (Sprinter) including 15 stations and maintenance facility –maybe completed [stations completed, but designate alternative fuel vehicle parking, add charging. Possible for maintenance facility to include alternative fuel component]</td>
</tr>
<tr>
<td>Solana Beach Inter-modal Transit Station</td>
<td>Solana Beach train station - construct parking structure, part of mixed-use transit oriented development [designated alternative fuel vehicle parking and charging]</td>
</tr>
<tr>
<td>San Luis Rey Transit Center</td>
<td>In Oceanside - construct new multi-modal transit center as a component of a transit-oriented, mixed-use development which would include retail, commercial, residential and office space [designated alternative fuel vehicle parking and charging]</td>
</tr>
<tr>
<td>I-15 BRT Operations and Vehicles</td>
<td>From Escondido to San Diego - planning, operations and vehicle acquisition for BRT service along I-15 corridor [include alternative fuel component to planning going forward]</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rail Vehicles &amp; Related Equipment</td>
<td>NCTD service area - locomotive purchase/overhaul, revenue vehicles, misc. support equipment including vehicles, spare components and signal equipment upgrade/replacement. Exempt Cat: Mass Transit - Purchase new buses and rail cars to replace existing vehicles or minor expansions of fleet. [SANDAG staff provided ARRA transit grant information for use (TIGGER)]</td>
</tr>
<tr>
<td>Bus &amp; Rail Rolling Stock</td>
<td>MTS service area - purchase replacement buses (9 mid-size CNG, 141 ADA small, 11 medium, 83 40-foot CNG, 10 high capacity) and Light Rail Vehicle rehabilitation, LRV Tires, rehabilitation of electronic control circuit for U2s and LRV HVAC retrofit [SANDAG staff provided ARRA transit grant information for use (TIGGER)]</td>
</tr>
</tbody>
</table>

**Part 3: Planning Recommendations**

The third set of report recommendations focus on preparing the region as a whole for alternative fuel vehicles. A concerted regional approach to addressing infrastructure needs for alternative fuels is one of the foundations to successfully implementing several interrelated state and regional goals including climate change, petroleum dependence, economic prosperity, and air quality. A coordinated infrastructure strategy, by a regional entity like an MPO or APCD, is necessary to provide customers (e.g., fleet managers and the general public) with a level of certainty that infrastructure will be available to support their investment in an alternative fuel or vehicle. Deployment of alternative fuel vehicles and development of supportive infrastructure, initially for local government and public agency fleets, will help the region lay the groundwork for a wider rollout of alternative fuel vehicles that the general public can embrace.

**Support a Regional Approach to Alternative Fuels Infrastructure Planning: Continue Development of a Regional Strategic Alliance**

SANDAG has proposed to the Energy Commission the idea of forming a regional strategic alliance consisting of a regionally-planned approach to increasing alternative fuel use, availability, and production. SANDAG could facilitate collaboration with other regional agencies and organizations working toward state and regional goals for reducing GHG emissions, lessening petroleum dependence, and advancing the use of alternative fuel sources. In a letter to the Energy Commission in November 2008, SANDAG provided the concept and framework for a regionally-coordinated approach. Early agency buy-in came from:

- San Diego Air Pollution Control District (APCD)
- Metropolitan Transit System (MTS)
- North County Transit District (NCTD)
- San Diego County Regional Airport Authority
- San Diego Gas and Electric (SDG&E)
- California Center for Sustainable Energy (CCSE)
- University of California, San Diego (UCSD)
- Other public agencies and private companies

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See Appendix G for a listing of regional alternative fuel resources.
The purpose of a strategic alliance is to ensure that regional infrastructure needs are identified and met in an orchestrated and timely manner that provides convenient and safe public access to refueling and recharging sites in line with demand. Whether for local government fleets or the general public use, the transition to alternative fuel vehicles will not reach a critical mass without a strong regional (as well as interregional) emphasis on providing for the necessary infrastructure. Regional coordination of the transition to alternative fuels from an agency like SANDAG communicates to the market (e.g., fuel producers and suppliers, vehicle manufacturers, potential customers, and others) that the San Diego region is committed to, and seeks to attract, investment in alternative fuels, vehicles, and infrastructure.

In response to early federal ARRA funding opportunities and state AB 118 opportunities, entities in the region have been coordinating efforts to submit regional, multi-stakeholder proposals. SANDAG is facilitating this effort with the San Diego Regional Strategic Alliance in mind. Additionally, the Alliance would be able to leverage existing regional partnerships, funding mechanisms and transportation investments. Possible actions include SANDAG regionally administering federal and/or state alternative transportation funds. This effort could be done in coordination with or similar to funds allocated through TransNet, a regional half-cent sales tax measure for transportation improvements and smart growth development. The San Diego Regional Strategic Alliance would utilize this report to find ways to accelerate the deployment of alternative fuels, vehicles and infrastructure in the region.

**Support Development of a Regional Electric Vehicle Charging Network**

The San Diego region will be one of a handful of US metropolitan regions in which Nissan will introduce all-electric vehicles (EV), which will be available to fleet operators in 2010 and the general public by 2012. Nissan and SDG&E have partnered on this project and SANDAG is taking internal steps to become a formal partner.

Dependent on funding assistance, SANDAG will assist SDG&E and Nissan in identifying appropriate sites for 220W – 4- to 8-hour charging, 26-minute fast-charging, and/or battery swapping areas. The focus for SANDAG is the establishment of a region-wide network of public access charging stations for battery electric vehicles (BEV) and plug-in hybrid vehicles (PHEV). Depending on what level of funding that Nissan and ETEC receive through a federal transportation electrification grant, or SANDAG through a federal Clean Cities application, the San Diego region will see between 100 and 1,000 BEVs available for purchase or lease in late 2010.

Nissan and SDG&E are seeking SANDAG assistance with:
- Identifying any permitting barriers for home, office and public recharging sites in the local jurisdictions.
- Developing and promoting a regionally consistent, standard approach to EV infrastructure permitting, training and installation.
- Adequate infrastructure siting across the region.

The Nissan EV has an anticipated range of 100 miles on a single charge and is expected to cost about $30,000. The San Diego region has committed to purchasing a minimum of 100 cars. SANDAG is working with SDG&E to introduce EV and PHEV information and resources to fleet operators from around the region and discuss opportunities to integrate these vehicles into fleets and install charging infrastructure. Siting of public access charging will be done cooperatively with SANDAG and the region’s local governments. SANDAG and SDG&E have provided letters of support to the federal ETEC-Nissan proposal to support EV deployment, coordination and installation of electric charging infrastructure, and training of local dealerships to service the vehicles. SANDAG is submitting federal and state proposals on behalf of the region to secure funding to implement this project in addition to other alternative fuel projects.

Further study the regional transportation project types in Table 19 to determine whether an alternative fuels component is feasible and beneficial.
SANDAG should further refine its list of potential projects from the RTIP. Working across the agency, staff should continue assessing the potential for each project and hold discussions with the appropriate lead agency if not SANDAG (e.g. Caltrans, transit agency, or local government).

**Support economic development mechanisms and measures for the clean energy sector**

SANDAG and local governments can leverage the transition to alternative fuels and vehicles to concurrently achieve environmental as well as clean economic development goals. Workforce training is necessary to ready the region for growth in the alternative transportation field. The region also should support the existing biotech cluster as it expands into research and development of alternative fuels.

- Provide training and education to existing construction workers and firms on clean energy materials and business practices.
- Local governments should enlist existing organizations like San Diego Workforce Partnership to explore new approaches to providing education and training opportunities to workers employed by temporary staffing agencies. The San Diego region has a large number residents employed in the temporary field.
- Utilize community colleges and university extension programs to provide programs to prepare workers for the opportunity to remain actively employed and transition to the Clean Energy Sector.
- Local governments can partner with regional schools, Workforce Investment Boards (WIBs), and community colleges to bring funding to the San Diego region to spur green economy knowledge and skills.
- Integrate green jobs initiatives into existing workforce systems.
- Leverage resources at universities, community and technical colleges, WIBs, community-based organizations, and economic development agencies:
  - Universities offer four-year degree programs and graduate degrees in business, engineering, and the sciences.
  - Community colleges offer both two-year business and technical degree programs and certification programs.
  - Many High Schools offer trade preparation with hands-on technical laboratories, apprenticeship programs and some certification programs.
  - The Department of Labor, partnering with community colleges, technical high schools, unions and business offer job skills training programs and apprenticeships.

**Part 4: Potential Recommendations as Follow-up to the Report**

- Use this report to inform development of its Regional Energy Strategy Update, Regional Climate Action Plan and Sustainable Region Program.
- Undertake an inventory of local government and member agency fleet vehicles, including factors such as the total number of vehicles by class and fuel type, and annual vehicle turnover.
- Develop an electric vehicle charging plan for the San Diego region. Potential elements could include but are not limited to:
  - Upgrade existing charge points to current SAE standards,
  - Develop criteria for public charging point siting,
  - Analysis of the impact to the region’s electricity grid,
  - Opportunities for charging with clean and renewable distributed generation
  - Electric vehicle charging tariffs,
  - “Fast-charging” considerations (i.e., SAE Level III vs. the battery exchange concept)
  - Guidelines and permit streamlining for residential installation (including both single- and multi-family dwellings),
  - Assistance with rebate applications for vehicle purchases.
- Create an action plan for the incorporation of alternative fuels and vehicles into SANDAG’s vehicle fleet, and the vehicle and equipment fleets of contractors, funding recipients, and the like, including vehicles used in the vanpool program. The plan should include the identification of fueling and/or charging infrastructure where necessary to support increased alternative fuel and vehicle use.
- Identify opportunities to integrate alternative fuels, vehicle, and infrastructure considerations into existing SANDAG funding programs for smart growth land use development.
- Streamline permitting for electric charger and alternative fueling infrastructure installation.
- Support in-region production of alternative fuels and vehicles, including research and development activities.
- Investigate joint procurement or aggregation options that would reduce the purchase cost of alternative fuels and vehicles for regional fleets.
- Identify ways to capture the economic benefits of the transition to alternative fuels and vehicles for the region and State.
- Identify region’s inventory of waste materials for potential use as biofuel feedstocks (biodiesel and ethanol) for production facilities.
- Incorporate the identification of fueling-charging infrastructure locations into local government planning processes such as the General Plan.
- Develop detailed standards for the siting of fueling-charging infrastructure.
- Continue the study of opportunities for truck stop electrification and vehicle retrofits at the international border.
- Support electrification in non-road applications at San Diego International Airport and other regional airports where applicable.
- Work with regional stakeholders such as the Energy Working Group, San Diego Clean Cities Coalition, and others to coordinate and support implementation of this report.
Appendix A. Federal and State Laws and Incentives

Federal

The 102nd Congress passed the Energy Policy Act of 1992 (EPAct 1992, P.L. 102-486). Among other provisions, this law requires the purchase of alternative fuel vehicles by federal agencies, state governments, and alternative fuel providers. Under EPAct 1992, a certain percentage— which varies by the type of fleet (i.e., federal, state, or fuel provider)—of new passenger vehicles must be capable of operating on alternative fuels, including ethanol, methanol, natural gas, or propane. EPAct 1992 established a tax credit for the purchase of electric vehicles, as well as tax deductions for the purchase of alternative fuel and hybrid vehicles.

Energy Policy Act of 2005
In light of high fuel prices in the early 2000s, continued growth in domestic and global petroleum demand, and other energy policy concerns, Congress began working on comprehensive energy legislation in 2001, which stalled in the legislature for several sessions until the 109th Congress passed the Energy Policy Act of 2005 (EPAct 2005, P.L. 109-58), which was signed by President Bush on August 8, 2005.

Energy Independence and Security Act of 2005
The Energy Independence and Security Act (EISA) of 2007 calls for improved vehicle fuel economy by tightening corporate average fuel economy (CAFÉ) standards. Passenger cars and light trucks must reach efficiency of 35 miles per gallon by the year 2020. EISA includes provisions to increase the supply of renewable alternative fuel sources by setting a mandatory Renewable Fuel Standard, requiring transportation fuel sold in the U.S. to include a minimum of 36 billion gallons of renewable fuels by 2022, including advanced and cellulosic biofuels as well as biomass-based diesel. In addition, EISA includes grant programs to encourage development of cellulosic biofuels, plug-in hybrid electric vehicles and other emerging electric technologies, and the inclusion of electric drive vehicles under EPAct 1992.

The 2008 Farm Bill
Recent Farm Bills, especially the 2002 and 2008 Farm Bills (P.L. 107-171 and P.L. 110-246, respectively), have included titles to promote biofuels and other farm-based energy supplies. The 2002 Farm Bill established programs to promote the development of biofuels and biorefineries; the 2008 Farm Bill expanded on these programs, and expanded existing biofuels tax credits to promote the development of cellulosic fuels—fuels produced from woody or fibrous materials such as perennial grasses, fast-growing trees, and agricultural and municipal wastes.

<table>
<thead>
<tr>
<th>Federal Alternative Fuels and Advanced Vehicles Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Advanced Technology Vehicle (ATV) Manufacturing Incentives</td>
</tr>
<tr>
<td>• Alternative Fuel Excise Tax Credit</td>
</tr>
<tr>
<td>• Alternative Fuel Infrastructure Tax Credit</td>
</tr>
<tr>
<td>• Alternative Fuel Mixture Excise Tax Credit</td>
</tr>
<tr>
<td>• Biobased Transportation Research Funding</td>
</tr>
<tr>
<td>• Biodiesel Income Tax Credit</td>
</tr>
<tr>
<td>• Biodiesel Mixture Excise Tax Credit</td>
</tr>
<tr>
<td>• Biomass Research and Development Initiative</td>
</tr>
<tr>
<td>• Cellulosic Biofuel Producer Tax Credit</td>
</tr>
<tr>
<td>• Fuel Cell Motor Vehicle Tax Credit</td>
</tr>
<tr>
<td>• Heavy-Duty Hybrid Electric Vehicle (HEV) Tax Credit</td>
</tr>
<tr>
<td>• Improved Energy Technology Loans</td>
</tr>
<tr>
<td>• Light-Duty Hybrid Electric Vehicle (HEV) and Advanced Lean Burn Vehicle Tax Credit</td>
</tr>
<tr>
<td>• Qualified Alternative Fuel Motor Vehicle (QAFMV) Tax Credit</td>
</tr>
<tr>
<td>• Qualified Plug-In Electric Drive Motor Vehicle Tax Credit</td>
</tr>
</tbody>
</table>
- **Renewable Energy Systems and Energy Efficiency Improvements Grant**
- **Small Agri-Biodiesel Producer Tax Credit**
- **Small Ethanol Producer Tax Credit**
- **Value-Added Producer Grants (VAPG)**
- **Volumetric Ethanol Excise Tax Credit (VEETC)**

### Federal Laws and Regulations
- Aftermarket Alternative Fuel Vehicle (AFV) Conversions
- Alternative Fuel Definition
- Alternative Fuel Definition - Internal Revenue Code
- Alternative Fuel Tax Exemption
- Clean Air Act Amendments of 1990
- Corporate Average Fuel Economy (CAFE)
- High Occupancy Vehicle (HOV) Lane Exemption
- Idle Reduction Equipment Excise Tax Exemption
- Idle Reduction Facilities Regulation
- Import Duty for Fuel Ethanol
- Renewable Fuel Standard (RFS) Program
- Tier 2 Vehicle and Gasoline Sulfur Program
- Updated Fuel Economy Test Procedures and Labeling
- Vehicle Acquisition and Fuel Use Requirements for Federal Fleets
- Vehicle Acquisition and Fuel Use Requirements for Private and Local Government Fleets
- Vehicle Acquisition and Fuel Use Requirements for State and Alternative Fuel Provider Fleets
- Vehicle Incremental Cost Allocation

### Federal Programs
- Air Pollution Control Program
- Alternative Transportation in Parks and Public Lands Program
- Biobased Products and Bioenergy Program
- Clean Agriculture USA
- Clean Cities
- Clean Construction USA
- Clean Fuel Fleet Program (CFFP)
- Clean Fuels Grant Program
- Clean Ports USA
- Clean School Bus USA
- Congestion Mitigation and Air Quality (CMAQ) Improvement Program
- National Clean Diesel Campaign (NCDC)
- National Fuel Cell Bus Technology Development Program (NFCBP)
- Pollution Prevention Grants Program
- SmartWay Transport Partnership
- State Energy Program (SEP) Funding
- Voluntary Airport Low Emission (VALE) Program

### California Incentives
- Alternative Fuel and Vehicle Research and Development Incentives
- Alternative Fuel Vehicle (AFV) Rebate Program
- High Occupancy Vehicle (HOV) Lane Exemption
- Alternative Fuel Vehicle (AFV) and Fueling Infrastructure Grants
- Alternative Fuel Incentive Development
- Emissions Reductions Grants
- Heavy-Duty Vehicle Emissions Reduction Grants
- Lower-Emission School Bus Grants
- Alternative Fuel and Advanced Technology Research and Development
- Vehicle Emission Reduction Grants - Sacramento
The American Council for an Energy Efficient Economy (ACEEE) conducts engineering and economic studies of the potential for efficiency improvement and provides advice regarding the development of programs and policies to realize this potential in the market. They take an integrated approach to the issue, addressing how fuel efficiency relates to emissions, safety, clean production, and renewable fuels and seek to encourage manufacturers to produce high-efficiency, low-pollution vehicles and also to motivate consumers to purchase them. A cornerstone of this effort is ACEEE's Green Book*: The Environmental Guide to Cars and Trucks and its Web site: www.Greenercars.com.

*Resources

California Laws and Regulations
- Regional Climate Change Initiative
- Alternative Fuel Vehicle Retrofit Regulations
- Alternative Fuel Tax
- Alternative Fuel and Advanced Vehicle Procurement Requirements
- Alternative Fuel and Vehicle Policy Development
- Hydrogen Energy Plan
- Heavy-Duty Truck Idle Reduction Requirements
- Low Emission Vehicle (LEV) Standards
- Mobile Source Emissions Reduction Requirements
- Fuel Efficient Tire Program Development
- Alternative Fuel Promotion - San Jose
- Fleet Fuel Use and Vehicle Acquisition Requirements - San Francisco
- Neighborhood Electric Vehicle (NEV) Access to Roadways - Placer and Orange Counties

California Utilities/Private
- Alternative Fuel Vehicle (AFV) and Hybrid Electric Vehicle (AFV) Insurance Discount
- Electric Vehicle (EV) Charging Rate Reduction - SMUD
- Electric Vehicle (EV) Charging Rate Reduction - LADWP
- Electric Vehicle (EV) Charging Rate Reduction - SCE
- Low-Emission Vehicle Electricity Rate Reduction - PG&E
- Natural Gas Vehicle Home Fueling Infrastructure Incentive - South Coast
- Low-Emission Taxi Incentives - San Francisco
- Employee Vehicle Purchase Incentives - Riverside

Electric Vehicle (EV) Parking Incentive - Sacramento
Employer Invested Emission Reduction Funding - South Coast
Technology Advancement Funding - South Coast
Low-Emission Vehicle Incentives and Technical Training - San Joaquin Valley
Air Quality Improvement Program Funding - Ventura County
Alternative Fuel and Advanced Technology Vehicle and Infrastructure Incentives - Vacaville
Clean Vehicle Parking Incentive - Hermosa Beach
Clean Vehicle Parking Incentive - San Jose
Alternative Fuel Vehicle (AFV) and Hybrid Electric Vehicle (HEV) Parking Incentive - Santa Monica
Electric Vehicle (EV) Parking Incentive - Los Angeles Airport

Low-Emission Vehicle Electricity Rate Reduction - PG&E
Natural Gas Vehicle Home Fueling Infrastructure Incentive - South Coast
Low-Emission Taxi Incentives - San Francisco
Employee Vehicle Purchase Incentives - Riverside

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- Alternative Fuel and Advanced Vehicle Procurement Requirements
- Alternative Fuel and Vehicle Policy Development
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- Low Emission Vehicle (LEV) Standards
- Mobile Source Emissions Reduction Requirements
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- Electric Vehicle (EV) Charging Rate Reduction - LADWP
- Electric Vehicle (EV) Charging Rate Reduction - SCE
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*Resources
Appendix B. Alternative Fuel Vehicle Availability

The following Web sites contain information about the availability of alternative fuel vehicles and retrofits:

**United States Department of Energy, Alternative Fuels Data Center**
Light-duty and Low-speed vehicle search
http://www.afdc.energy.gov/afdc/progs/vehicles_search.php
Heavy-duty vehicle search
Flexible Fuel Vehicle Availability
Natural Gas Vehicle Availability
Propane Vehicle Availability
http://www.afdc.energy.gov/afdc/vehicles/propane_availability.html
Plug-in Hybrid Availability
http://www.afdc.energy.gov/afdc/vehicles/plugin_hybrids_availability.html
Electric Vehicle Availability
http://www.afdc.energy.gov/afdc/vehicles/electric_availability.html
Hydrogen Fuel Cell Vehicle Availability
http://www.afdc.energy.gov/afdc/vehicles/fuel_cell_availability.html

**United States Environmental Protection Agency, Green Vehicle Guide**
http://www.epa.gov/greenvehicles/

**FuelEconomy.gov**
http://www.fueleconomy.gov/feg/byfueltype.htm

**California Air Resources Board, Drive Clean**

**California Energy Commission, Consumer Energy Center**
http://www.consumerenergycenter.org/transportation/buying_a_car/index.html

**California Department of General Services, Best Practices Manual, Vehicles/Transportation**
http://www.green.ca.gov/EPP/Vehicles/lightDV.html#types

**Automotive News Guide to Hybrid Vehicles and Advanced Technology Powertrains**
http://www.autonews.com/section/altfuels

**Union of Concerned Scientists, Hybrid Center**
http://www.hybridcenter.org/

**Union of Concerned Scientists – Buying a Greener Vehicle**

**Propane Vehicles and Conversions:**

**BAF Technologies, CNG Conversions**
http://www.baftechnologies.com/Home.html

**Baytech Corporation, Compressed Natural Gas and Propane Vehicle Conversions**
http://www.baytechcorp.com/
## Appendix C. State of California Alternative Fuel Vehicle Purchases

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Fleet Application</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compact Hybrid 4-Door Sedan</td>
<td>Passenger car</td>
<td>$24,720</td>
</tr>
<tr>
<td>Compact Hybrid 4-Door Sedan</td>
<td>Passenger car</td>
<td>$24,720</td>
</tr>
<tr>
<td>Group I Hybrid 2-Wheel Drive SUV</td>
<td>Light-truck</td>
<td>$31,894</td>
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<tr>
<td>Group I Hybrid 2-Wheel Drive SUV</td>
<td>Light-truck</td>
<td>$31,894</td>
</tr>
<tr>
<td>Group III Hybrid 4-Wheel Drive SUV</td>
<td>Light-truck</td>
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<tr>
<td>Group III Hybrid 4-Wheel Drive SUV</td>
<td>Light-truck</td>
<td>$47,590</td>
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<td>Group III Hybrid Pickup, Reg. Cab</td>
<td>Light-truck</td>
<td>$34,740</td>
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<td>Group III Hybrid Pickup, Reg. Cab</td>
<td>Light-truck</td>
<td>$34,890</td>
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<tr>
<td>Mid-Size Hybrid 4-Door Sedan</td>
<td>Passenger car</td>
<td>$25,840</td>
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<tr>
<td>Mid-Size Hybrid 4-Door Sedan</td>
<td>Passenger car</td>
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<tr>
<td>Mid-Size Hybrid 5-Door Hatchback</td>
<td>Passenger car</td>
<td>$22,953</td>
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<td>Mid-Size Hybrid 5-Door Hatchback</td>
<td>Passenger car</td>
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<tr>
<td>Ethanol (E85)</td>
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<tr>
<td>4-Door Large Sedan E-85</td>
<td>Passenger car</td>
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<td>4-Door Large Sedan E-85</td>
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<td>4-Door Midsize Sedan E85</td>
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<tr>
<td>4-Door Midsize Sedan E85</td>
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<td>Group III Pickup 2WD Extra Cab E-85</td>
<td>Light-truck</td>
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<td>Group III Pickup 2WD Extra Cab E-85</td>
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<td>$17,800</td>
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<tr>
<td>Group III Pickup 2WD Reg. Cab E-85</td>
<td>Light-truck</td>
<td>$15,594</td>
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<td>Group III Pickup 2WD Reg. Cab E-85</td>
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<td>Group III SUV 4WD E-85</td>
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<td>Group IV Minivan 7-Passenger E-85</td>
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<td>Group VI Cargo Van E085</td>
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<td>Van</td>
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<tr>
<td>Group II 8-Passenger Van E-85</td>
<td>Van</td>
<td>$19,585</td>
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<tr>
<td>Group II 8-Passenger Van E-85</td>
<td>Van</td>
<td>$19,785</td>
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<tr>
<td>Compressed Natural Gas (CNG)</td>
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<tr>
<td>Dedicated CNG Group I 2WD Cab &amp; Chassis Crew Cab Min 167&quot; WB</td>
<td>Cargo Truck</td>
<td>$53,309</td>
</tr>
<tr>
<td>Dedicated CNG Group I 2WD Cab &amp; Chassis Crew Cab Min 167&quot; WB</td>
<td>Cargo Truck</td>
<td>$53,909</td>
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<td>Dedicated CNG Group I 2WD Cab &amp; Chassis Extra Cab min 154&quot; WB</td>
<td>Cargo Truck</td>
<td>$52,367</td>
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<tr>
<td>Dedicated CNG Group I 2WD Cab &amp; Chassis Extra Cab min 154&quot; WB</td>
<td>Cargo Truck</td>
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<td>Dedicated CNG Group I 2WD Cab &amp; Chassis Reg. Cab</td>
<td>Cargo Truck</td>
<td>$50,918</td>
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<tr>
<td>Dedicated CNG Group I 2WD Cab &amp; Chassis Reg. Cab</td>
<td>Cargo Truck</td>
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<tr>
<td>Dedicated CNG Group I 4WD Cab &amp; Chassis Reg. Cab</td>
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<tr>
<td>Dedicated CNG Group I 4WD Cab &amp; Chassis Reg. Cab</td>
<td>Cargo Truck</td>
<td>$54,248</td>
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<td>Cargo Truck</td>
<td>$70,585</td>
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<tr>
<td>Dedicated CNG Group II 15K GVWR 2WD Cab &amp; Chassis Reg. Cab</td>
<td>Cargo Truck</td>
<td>$69,786</td>
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<tr>
<td>Dedicated CNG Group III 17.5K GVWR Cab &amp; Chassis Reg. Cab</td>
<td>Cargo Truck</td>
<td>$70,797</td>
</tr>
<tr>
<td>Dedicated CNG Group III 17.5K GVWR Cab &amp; Chassis Reg. Cab</td>
<td>Cargo Truck</td>
<td>$71,596</td>
</tr>
<tr>
<td>Dedicated CNG Group III Passenger Van</td>
<td>Van</td>
<td>$55,201</td>
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</table>
### Appendix C. State of California Alternative Fuel Vehicle Purchases

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Fleet Application</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>Dedicated CNG Group III Passenger Van</td>
<td>Van</td>
<td>$55,801</td>
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<tr>
<td>Dedicated CNG Group IV Extended Passenger Van</td>
<td>Van</td>
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<td>Dedicated CNG Group IV Extended Passenger Van</td>
<td>Van</td>
<td>$59,081</td>
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<tr>
<td>Dedicated CNG Group V 2WD Cab &amp; Chassis Reg. Cab</td>
<td>Light-truck</td>
<td>$46,363</td>
</tr>
<tr>
<td>Dedicated CNG Group V 2WD Cab &amp; Chassis Reg. Cab</td>
<td>Light-truck</td>
<td>$46,963</td>
</tr>
<tr>
<td>Dedicated CNG Group V 2WD Pickup Reg. Cab</td>
<td>Light-truck</td>
<td>$46,628</td>
</tr>
<tr>
<td>Dedicated CNG Group V 2WD Pickup Reg. Cab</td>
<td>Light-truck</td>
<td>$47,227</td>
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<tr>
<td>Dedicated CNG Group VII 4WD Cab &amp; chassis Reg. Cab</td>
<td>Cargo Truck</td>
<td>$49,030</td>
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<tr>
<td>Dedicated CNG Group VII 4WD Cab &amp; chassis Reg. Cab</td>
<td>Cargo Truck</td>
<td>$49,630</td>
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<tr>
<td>Dedicated CNG Group VII Cargo Van</td>
<td>Cargo Van</td>
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<td>Dedicated CNG Group VII Cargo Van</td>
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<tr>
<td>Dedicated CNG Group VII 4WD Pickup Reg. Cab</td>
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<tr>
<td>Dedicated CNG Group VII 4WD Pickup Reg. Cab</td>
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<td>$49,904</td>
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</table>

### Bi-fuel Gasoline and CNG

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Fleet Application</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>Group I Med. Duty Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$81,682</td>
</tr>
<tr>
<td>Group I Med. Duty Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$82,482</td>
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<tr>
<td>Group II Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$70,786</td>
</tr>
<tr>
<td>Group II Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$71,585</td>
</tr>
<tr>
<td>Group II Med. Duty Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$84,140</td>
</tr>
<tr>
<td>Group II Med. Duty Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$84,940</td>
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<tr>
<td>Group III Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$71,797</td>
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<td>Group III Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$72,596</td>
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<tr>
<td>Group III Med. Duty Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
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<tr>
<td>Group III Med. Duty Cab &amp; Chassis Bi-Fuel Gas &amp; CNG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
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### Propane (LPG)

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<tr>
<th>Vehicle Type</th>
<th>Fleet Application</th>
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<tbody>
<tr>
<td>Group I Med. Duty Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$59,032</td>
</tr>
<tr>
<td>Group I Med. Duty Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$59,832</td>
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<td>Group II Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$47,636</td>
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<tr>
<td>Group II Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$48,436</td>
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<tr>
<td>Group III Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$48,647</td>
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<tr>
<td>Group III Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$49,447</td>
</tr>
<tr>
<td>Group II Med. Duty Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$61,490</td>
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<tr>
<td>Group II Med. Duty Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$62,290</td>
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<tr>
<td>Group III Med. Duty Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
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<td>$62,111</td>
</tr>
<tr>
<td>Group III Med. Duty Cab &amp; Chassis Dedicated LPG Reg. Cab 2WD</td>
<td>Cargo Truck</td>
<td>$62,911</td>
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### Neighborhood Electric

<table>
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<th>Vehicle Type</th>
<th>Fleet Application</th>
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<tbody>
<tr>
<td>Short Utility NEV</td>
<td>Light-truck</td>
<td>$11,115</td>
</tr>
<tr>
<td>2-Passenger NEV</td>
<td>Passenger car</td>
<td>$10,230</td>
</tr>
<tr>
<td>2-Passenger NEV</td>
<td>Passenger car</td>
<td>$10,230</td>
</tr>
<tr>
<td>3-Door Hatchback NEV</td>
<td>Passenger car</td>
<td>$16,800</td>
</tr>
<tr>
<td>3-Door hatchback NEV</td>
<td>Passenger car</td>
<td>$16,300</td>
</tr>
<tr>
<td>4 -Passenger NEV</td>
<td>Passenger car</td>
<td>$13,475</td>
</tr>
<tr>
<td>4-Passenger NEV</td>
<td>Passenger car</td>
<td>$13,475</td>
</tr>
<tr>
<td>Long Utility NEV</td>
<td>Light-truck</td>
<td>$12,575</td>
</tr>
<tr>
<td>Long Utility NEV</td>
<td>Light-truck</td>
<td>$12,575</td>
</tr>
<tr>
<td>Short Utility NEV</td>
<td>Light-truck</td>
<td>$11,115</td>
</tr>
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</table>

Source: [http://www.bidsync.com/DPX?ac=agencycontview&contid=3695](http://www.bidsync.com/DPX?ac=agencycontview&contid=3695)
Appendix D. Sample Purchase Contracts, Policies, and Case Studies

State of California Vehicle Contracts

California Vehicle Purchase and Lease Policy  
http://www.documents.dgs.ca.gov/osp/sam/mmemos/mm06_03.pdf  
Hybrid Vehicle Purchase  
http://www.bidsync.com/DPX?ac=agencycontview&contid=3694  
Neighborhood Electric Vehicle Purchase  
http://www.bidsync.com/DPX?ac=agencycontview&contid=4243  
Alternative Fuel Vehicle Purchase  
http://www.bidsync.com/DPX?ac=agencycontview&contid=3695  
Trucks, Vans, and Utility Vehicles (Gasoline and Diesel)  
http://www.bidsync.com/DPX?ac=agencycontview&contid=3712

About Statewide Vehicle Contracts

The Department of General Services competitively bids and makes vehicle contracts available to California governmental entities helping to meet their vehicle fleet needs. These vehicle contracts leverage pricing based upon California government business volume enhanced by manufacturer and dealer incentive programs provided to government. They also provide a broad spectrum of vehicles at an 8 to 12 percent cost savings over volume commercial fleet pricing (based upon KBB dealer invoice pricing). Generally, contract ordering begins in October and extends through the following March to June timeframe of the Model Year, depending upon manufacturer production schedules. The contracts provide for a 30-day notice of production cut-off dates.

The State of California vehicle contracts are available to any California Governmental entity defined by the California Government Code section 10298, including: county and city governments, K-12 education, special districts, colleges and universities. Customer agencies order directly from the contract dealer; an additional copy of the order goes to the California Department of General Services (DGS) Procurement Division.

DGS charges an administrative fee for use of the contracts. The fee is minimal compared to the time spent and costs agencies would otherwise incur during the specification development, negotiation and the bid process. Contract notifications include contract terms, dealer contact information, and vehicle specifications. Customer agencies should contact the dealer(s) for help with model changes and pricing on options or deletions. All purchase orders must be complete, with all options, deletions, prices, colors, FOB points, etc., indicated before submittal to the dealer. Per the contract ordering procedures, all state and local agencies must submit a copy of purchase orders to Department of General Services, Procurement Division, Master Contracts.

We will post official ordering cut-off dates as the manufacturers make them available to us. Please submit orders as early as possible; dealers have the option of offering to roll-over contract pricing to the next model year after the manufacturer’s order cut-off date but they are not required to do so. Orders may be sent to the dealer either by mail or by fax. If you fax an order in, please do not mail the hard copy or a duplicate order may be issued.

Sample Local Government Policies and Ordinances

Ann Arbor, Michigan - Green Fleet Policy  
Seattle, Washington - Clean and Green Fleet  
City of San Diego - Alternative Fuel Policy  
Portland, Oregon - Biofuels Policy  
Sacramento Region, California - Model Low-Emission Vehicle & Fleet Ordinance  
San Francisco, California - Clean Vehicles and Alternative Fuels Ordinance  
San Jose, California - Green Fleet Policy
Case Studies

Santa Monica, California
- BiFuel (CNG-Diesel) transfer tractor and trailer truck, CNG refuse hauler, CNG traffic checker
- Bureau of Sanitation - Los Angeles, California
  - LNG (dual-fueled) refuse hauler
- Specialty Solid Waste and Recycling - Sunnyvale, California
  - CNG refuse hauler
- NorCal Waste - San Francisco, California
  - LNG (diesel ignition) refuse hauler
- Waste MGMT - Washington, PA
  - LNG Refuse Hauler
  - Fuel Cell passenger vehicles, Portland International Airport
  - CNG, HEV passenger vehicles, B20 sweepers, CNG shuttle buses/vans, CNG, Propane off-highway vehicles
- Seattle-Tacoma Airport
  - Electric airport ground support equipment, CNG shuttle buses/vans, CNG, Propane passenger vehicles
- San Jose Airport
  - CNG shuttle buses and vans
- Salt Lake City Airport
  - CNG, B20 shuttle buses, electric, hybrid light-duty vehicles, CNG heavy-duty trucks
- New York City, New York
  - HEV taxis
  - Yellow Cab - San Francisco
  - HEV, CNG taxis
- Las Vegas, Nevada
  - Propane taxis
- Iowa State Police
  - E85 police cars
- Lake Jackson, Texas
  - CNG passenger vehicles, refuse haulers, forklifts
- Hoover, Alabama
  - E85 police vehicle (Chevrolet Tahoe), B20 off-highway vehicle
- Redwood National & State Parks
  - HEV, Electric passenger vehicles, B20 medium/heavy-duty vehicles, Electric tractor
- Carnegie Mellon University
  - E85 police car, electric vehicles, B20 shuttle buses and vans
- Fayetteville, Arkansas
  - B-20 fire department vehicles
- City of Vacaville, California
  - CNG vehicles and electric vehicles
- Clean Cities Program, US Dept of Energy
  - Success stories: http://www1.eere.energy.gov/cleancities/accomplishments.html

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Appendix E. Tools and Calculators

Puget Sound Green Fleets
Green Fleets Calculator

Alternative Fuels and Advanced Vehicles Data Center, U.S. Department of Energy
Petroleum Reduction Planning Tool

Propane Calculator for fleets
http://www.propanecouncil.org/fleetcalculator/

Electric Vehicle Cost Calculator
http://www.ccds.charlotte.nc.us/~jarrett/EV/cost.php

Natural Gas Vehicle Cost Calculator

Flexible Fuel Vehicle Cost Calculator
http://www.afdc.energy.gov/afdc/progs/cost_anal.php?0/E85/

Cool Fleets (GHG emissions and lifecycle costs)
http://www.coolfleets.com/

Enhanced Efficiency Factor Costing Methodology
http://www.ofa.dgs.ca.gov/AFVP/EEFCM11.htm

Alternative Fuel Vehicles Incentives
http://www.driveclean.ca.gov/incentives_search.php

Alternative Fuel Prices
http://www.afdc.energy.gov/afdc/fuels/prices.html
## Appendix F. San Diego Regional Alternative Fuels Facility Locations

<table>
<thead>
<tr>
<th>Name</th>
<th>Facility Type</th>
<th>Address</th>
<th>City</th>
<th>Zip</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bressi Ranch Shell</td>
<td>E85</td>
<td>2740 Gateway Rd</td>
<td>Carlsbad</td>
<td>92076</td>
<td>Public</td>
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<tr>
<td>Oceanside Texaco</td>
<td>E85</td>
<td>1660 Oceanside Blvd</td>
<td>Oceanside</td>
<td>92054</td>
<td>Public</td>
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<tr>
<td>Pearson Fuels</td>
<td>E85</td>
<td>4001 El Cajon Blvd</td>
<td>San Diego</td>
<td>92105</td>
<td>Public</td>
</tr>
<tr>
<td>Pearson Fuels</td>
<td>Biodiesel</td>
<td>4001 El Cajon Blvd</td>
<td>San Diego</td>
<td>92105</td>
<td>Public</td>
</tr>
<tr>
<td>North Island Naval Air Station</td>
<td>Biodiesel</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Private</td>
</tr>
<tr>
<td>San Diego Naval Base</td>
<td>Biodiesel</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Private</td>
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<tr>
<td>Soco Group</td>
<td>Biodiesel</td>
<td>145 Vernon Way</td>
<td>El Cajon</td>
<td>92020</td>
<td>Public</td>
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<tr>
<td>Hornblower Cruises</td>
<td>Biodiesel</td>
<td>1066 N. Harbor Drive</td>
<td>San Diego</td>
<td>92101</td>
<td>Private</td>
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<tr>
<td>Miramar Marine Corps Air Station</td>
<td>Biodiesel</td>
<td>Miramar Way</td>
<td>San Diego</td>
<td>92145</td>
<td>Private</td>
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<td>Camp Pendleton Marine Corps Base</td>
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<td>n/a</td>
<td>Private</td>
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<td>New Leaf Biofuel</td>
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<td>2285 Newton Avenue</td>
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<tr>
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<td>4660 El Cajon Boulevard</td>
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<td>Ken Grody Ford Carlsbad</td>
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<td>5555 Paseo del Norte</td>
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<td>n/a</td>
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<td>859 N. Broadway</td>
<td>Escondido</td>
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<tr>
<td>Saturn of National City</td>
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<td>National City</td>
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<td>n/a</td>
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<td>Saturn of West 78</td>
<td>Electric Charging</td>
<td>2205 Vista Way</td>
<td>Oceanside</td>
<td>92054</td>
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<tr>
<td>Balboa Park Auto Museum (charger removed)</td>
<td>Electric Charging</td>
<td>n/a</td>
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<td>Costco - Rancho Bernardo</td>
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<td>12350 Carmel Mountain Road</td>
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<td>92128</td>
<td>n/a</td>
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<tr>
<td>Costco - Chula Vista</td>
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<td>895 East H Street</td>
<td>Chula Vista</td>
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<td>n/a</td>
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<tr>
<td>Costco - La Mesa</td>
<td>Electric Charging</td>
<td>8125 Fletcher Parkway</td>
<td>La Mesa</td>
<td>91941</td>
<td>n/a</td>
</tr>
<tr>
<td>Costco - Santee</td>
<td>Electric Charging</td>
<td>101 Town Center Parkway</td>
<td>Santee</td>
<td>92071</td>
<td>n/a</td>
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<tr>
<td>Costco - San Marcos</td>
<td>Electric Charging</td>
<td>725 Center Drive</td>
<td>San Marcos</td>
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<td>County of San Diego Administrations Building (charger removed)</td>
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<td>n/a</td>
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<td>Lindbergh Field – Operations (charger may have been removed)</td>
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<td>3165 Pacific Highway</td>
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<td>n/a</td>
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<td>Wells Fargo Plaza (charger removed)</td>
<td>Electric Charging</td>
<td>401 B Street</td>
<td>San Diego</td>
<td>92101</td>
<td>Public</td>
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<td>Gaslamp Quarter District (charger removed)</td>
<td>Electric Charging</td>
<td>614 Fifth Avenue</td>
<td>San Diego</td>
<td>92101</td>
<td>Public</td>
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<td>San Diego Convention Center (public access no longer available)</td>
<td>Electric Charging</td>
<td>111 W Harbor Drive</td>
<td>San Diego</td>
<td>92101</td>
<td>Public</td>
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<td>San Diego International Airport - Commuter Terminal</td>
<td>Electric Charging</td>
<td>3225 North Harbor Drive</td>
<td>San Diego</td>
<td>92101</td>
<td>Public</td>
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<td>San Diego International Airport - Terminal 1</td>
<td>Electric Charging</td>
<td>3665 North Harbor Drive</td>
<td>San Diego</td>
<td>92101</td>
<td>Public</td>
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<tr>
<td>Mercy Hospital</td>
<td>Electric Charging</td>
<td>4077 Fifth Avenue</td>
<td>San Diego</td>
<td>92103</td>
<td>Public</td>
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<tr>
<td>San Diego International Airport - Terminal 2</td>
<td>Electric Charging</td>
<td>3707 North Harbor Drive</td>
<td>San Diego</td>
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<td>Public</td>
</tr>
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<td>Mission Valley Mall</td>
<td>Electric Charging</td>
<td>1640 Camino Del Rio N</td>
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<td>92108</td>
<td>Public</td>
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<tr>
<td>Pearson Fuels - Clean Energy</td>
<td>Electric Charging</td>
<td>4001 El Cajon Blvd</td>
<td>San Diego</td>
<td>92105</td>
<td>Public</td>
</tr>
<tr>
<td>Grossmont Center (charger removed)</td>
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<td>5500 Grossmont Center Drive</td>
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<td>91942</td>
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<tr>
<td>Hyatt Regency La Jolla</td>
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<td>3777 La Jolla Village Drive</td>
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</table>
## Appendix F. San Diego Regional Alternative Fuels Facility Locations

<table>
<thead>
<tr>
<th>Name</th>
<th>Facility Type</th>
<th>Address</th>
<th>City</th>
<th>Zip</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSD - Thornton Medical Center</td>
<td>Electric Charging</td>
<td>Medical Center Drive</td>
<td>La Jolla</td>
<td>92093</td>
<td>Public</td>
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<tr>
<td>UCSD - Copy Center</td>
<td>Electric Charging</td>
<td>201 University Center</td>
<td>La Jolla</td>
<td>92093</td>
<td>Public</td>
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<tr>
<td>UCSD - School of Medicine</td>
<td>Electric Charging</td>
<td>Osler Lane</td>
<td>La Jolla</td>
<td>92093</td>
<td>Public</td>
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<tr>
<td>Scripps Memorial Hospital</td>
<td>Electric Charging</td>
<td>10666 N Torrey Pines Road</td>
<td>La Jolla</td>
<td>92037</td>
<td>Public</td>
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<tr>
<td>Scripps Memorial of La Jolla</td>
<td>Electric Charging</td>
<td>98888 Genesee Avenue</td>
<td>La Jolla</td>
<td>92037</td>
<td>Public</td>
</tr>
<tr>
<td>Scripps Memorial (Encinitas) (charger removed)</td>
<td>Electric Charging</td>
<td>354 Santa Fe Drive</td>
<td>Encinitas</td>
<td>92024</td>
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<td>Costco - Carlsbad</td>
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<td>Naval Air Station - North Island Coronado</td>
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<td>North County Transit District East</td>
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<td>North County Transit District West</td>
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<td>Naval Public Works Center - 32nd Street Station</td>
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<td>City of San Diego</td>
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<td>City of Chula Vista</td>
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<td>91911</td>
<td>Public*</td>
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<td>Camp Pendleton</td>
<td>Hydrogen</td>
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<td>92058</td>
<td>Private</td>
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<td>ProFlame Inc.</td>
<td>Propane</td>
<td>584 North Marshall Avenue</td>
<td>El Cajon</td>
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<tr>
<td>County Propane Service</td>
<td>Propane</td>
<td>12812 Jackson Hill Drive</td>
<td>El Cajon</td>
<td>92021</td>
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## Appendix F. San Diego Regional Alternative Fuels Facility Locations

<table>
<thead>
<tr>
<th>Name</th>
<th>Facility Type</th>
<th>Address</th>
<th>City</th>
<th>Zip</th>
<th>Access</th>
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<tr>
<td>Dick Rogers Shell</td>
<td>Propane</td>
<td>1699 East Main Street</td>
<td>El Cajon</td>
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<td>U-Haul</td>
<td>Propane</td>
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<td>Taylor Rental Corp.</td>
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<td>Alpine Shell</td>
<td>Propane</td>
<td>1340 Tavern Road</td>
<td>Alpine</td>
<td>91901</td>
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<td>San Diego - Pearson Ford</td>
<td>Propane</td>
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<td>U-Haul</td>
<td>Propane</td>
<td>4311 El Cajon Boulevard</td>
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<td>U-Haul</td>
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<td>99 North 4th Avenue</td>
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<td>U-Haul</td>
<td>Propane</td>
<td>1805 Massachusetts Avenue</td>
<td>Lemon Grove</td>
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<td>U-Haul</td>
<td>Propane</td>
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<td>U-Haul</td>
<td>Propane</td>
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<td>Ferrellgas</td>
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<td>Ferrellgas</td>
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<td>Ferrellgas</td>
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<td>Westmart</td>
<td>Propane</td>
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<td>92008</td>
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<tr>
<td>North County Welding Supply Incorpo</td>
<td>Propane</td>
<td>526 West Aviation Road #A</td>
<td>Fallbrook</td>
<td>92088</td>
<td>Public</td>
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</table>

Sources: [http://www.afdc.energy.gov/afdc/fuels/stations_locator.html](http://www.afdc.energy.gov/afdc/fuels/stations_locator.html); [www.evchargermaps.com](http://www.evchargermaps.com); [www.weststart.net/ccm](http://www.weststart.net/ccm); San Diego Gas & Electric.

Notes:
*Card access only
**Credit card required
### Appendix G. Regional Alternative Transportation Resources

<table>
<thead>
<tr>
<th><strong>San Diego Regional Clean Fuels Coalition</strong> (This is also the San Diego Regional Clean Cities Coalition)</th>
<th>Clean Fuels is a network of more than 80 volunteer, community-based coalitions, which develop public/private partnerships to increase use of alternative fuels &amp; alternative fuel vehicles; expand use of fuel blends; promote informed consumer choices; and advance use of idle reduction technologies in heavy-duty vehicles.</th>
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</thead>
<tbody>
<tr>
<td><strong>California Center for Sustainable Energy</strong> (CCSE)</td>
<td>CCSE manages the <a href="https://www.caair.org/who-we-serve/businesses/problems/alternative-fuels/">Fueling Alternatives Rebate program</a>, funded by the California Air Resources Board. This program provides rebates of up to $5,000 for consumers who purchase or lease new eligible modes of transportation, such as neighborhood electric, electric and compressed natural gas vehicles. CCSE also hosts the annual <a href="https://www.caair.org/who-we-serve/businesses/problems/alternative-fuels/">Street Smart</a> event where the public can learn about alternative transportation options.</td>
</tr>
<tr>
<td><strong>San Diego Gas and Electric</strong> (SDG&amp;E)</td>
<td>SDG&amp;E runs a <a href="https://www.sdge.com/about/district_programs/environmental_programs/clean_transportation_program">Clean Transportation Program</a> that focuses on three areas: (1) On-road and non-road electric vehicles, (2) Electric idling initiatives, and (3) Education and outreach.</td>
</tr>
<tr>
<td><strong>San Diego EcoCenter for Alternative Fuel Education</strong></td>
<td>The EcoCenter provides alternative fuel education to 4th-8th grade students in San Diego County. It operates from the 6,000-square-foot EcoCenter that contains a theater and exhibit hall. They provide an environmental field trip experience to about 26,000 middle school students each year.</td>
</tr>
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</table>
New Start-up Creation Better than Expected

The CONNECT Innovation Report (CIR) is the first to provide an economic indicator of the economic strength and impact of the innovation economy in San Diego. Published each quarter by CONNECT, San Diego’s technology and life sciences accelerator, the Report includes:

- New innovation start-ups
- Angel and venture capital investment
- New patent applications and patents granted
- Research grants
- Research employment, and
- Business survival rates.

Collection and analysis of the data is done in collaboration with the National University System Institute for Policy Research, the University of California, San Diego Extension, PricewaterhouseCoopers and the law firm Procopio. Data is also gathered on new innovation business creation in key regions across the state for comparative purposes.

Three Hundred San Diego New Start-ups in 2008 vs. 367 in 2007

Seventy-three technology companies were created in San Diego in the fourth quarter of 2008 - a significant achievement considering the nation’s financial turmoil and widening credit crunch. The number of technology start-ups created in the fourth quarter was down 29 percent from the previous quarter. It was less than one-half the number formed in the record setting fourth quarter of 2007. There were 23 new software start-ups formed. There were 22 new pharmaceuticals, biotechnology and medical devices companies this quarter. Communications was third in number with 13 start-ups. Computer and electronics had the largest decrease in number of start-ups.

“The VCs are taking care of their portfolios, and want a company that is there or almost there in terms of positive cash flow.”

- Dave Morash, CFO
ISE Corp.

Defense and transportation was the only category to increase. It doubled to four start-ups in the fourth quarter. The increase of defense-related firms was partly due to continued federal spending.

The number of new technology start-ups across California fell in the fourth quarter of 2008. However, a better than expected 580 new businesses were started throughout the state according to the latest CIR tally. Kelly Cunningham, Economist and Senior Fellow at the National University System Institute for Policy Research, commented, “Compared with the same quarter in 2007, the number is down 58 percent. For the year, the number is off some 26 percent from the pace set in 2007. Software companies accounted for the largest number of newly created tech businesses across the state in the fourth quarter. Pharmaceutical, biotechnology, and medical device companies were second in number, followed by communication companies. A considerable increase in the number of start-up engineering firms was noticeable in the fourth quarter. Apparently a large number of engineers, laid off and unable to find work with other established firms, are starting their own businesses in increasing numbers.”
San Diego Q4 VC Investment Up Five Percent vs. Q3

The melt down of national and international credit markets makes it especially difficult for new companies to find financing. Venture capital investments in San Diego in previous quarters had already contracted significantly over the past year, according to the PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ quarterly report. This quarter however, bucking the trend, there was a five percent increase in VC investments in San Diego. Twenty-four local companies received a total of $205 million in venture capital. Nevertheless, this was still a 53 percent decrease from the fourth quarter of 2007. For the entire year of 2008, VC investment totaled $1.2 billion in 126 deals, a decrease of 39 percent from $1.9 billion invested in 163 deals in 2007. Jim Ingraham, Partner at PricewaterhouseCoopers noted, “While these figures are not what we would have hoped for after a strong 2007, they were certainly expected given the state of the economy and credit markets.”

Percentage of investments was down 40 percent from 2007, with a total of 163 deals, compared to 283 deals in 2007. San Diego investments decreased from $25 million to $17.5 million, a 30 percent decrease from the fourth quarter of 2007. Merrill Lynch was in for $7.5 million that weekend, but the deal was backed out of the deal so we ended up with $17.5 million. That’s one million short of what we expected given the state of the economy and credit markets. “It’s a learning experience,” said Dave Morash, CFO of ISE Corp., said, “(We) had $25 million in financing arranged on a Friday in September. Merrill Lynch was in for $7.5 million. That’s one million short of what we expected given the state of the economy and credit markets.”

Summary of National Venture Capital Investments

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<td>United States</td>
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<td>Northern CA*</td>
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<td>$0.97</td>
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<td>$0.37</td>
<td>$0.20</td>
<td>$0.21</td>
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Ingraham commented, “As for 2009, VC funding is difficult to predict – there is a lot of uncertainty in the economy right now. However, there are still fabulous products and technologies being developed to address fundamental needs. Those will continue to get funding, as we saw with the sizeable venture funding of alternative energy companies that occurred in 2008.” Brian Caisman, Senior Manager at PricewaterhouseCoopers, noted, “With a non-existent IPO market, I would have hoped for after a strong 2007, they were certainly expected given the state of the economy and credit markets.”

Federal Research Grants Received for San Diego

Patent Applications Up by Ten Percent

Patent applications and federal grant awards are a valuable indicator of the volume of innovation in the San Diego knowledge economy. Patents granted give an indication of the potential innovation available for commercialization. Patent applications in San Diego for the fourth quarter of 2008 were on par with the previous quarter, and were up by 530 applications in 2008 compared to 2007. National Institute of Health (NIH) awards to San Diego institutions were down by over half in fourth quarter compared to third quarter. However, the average awarded per quarter for 2008 is only slightly lower than that of the previous year. National Science Foundation (NSF) awards for San Diego were up slightly in fourth quarter. Notably, National Oceanic and Atmospheric Administration (NOAA) awards for San Diego were up almost $2 million in 2008 ($19.9 million) compared to 2007 ($18 million).
COMPASS CARD STATUS UPDATE

Introduction

The Compass Card was launched in May 2009 for COASTER and Premium Express Bus pass holders. SANDAG, Metropolitan Transit System (MTS), and North County Transit District (NCTD) have been working with the system vendor, Cubic Transportation Systems (Cubic), to complete a comprehensive upgrade of the software to ensure the system was functioning properly prior to launching the Compass Card for Regional pass holders. The system upgrade has been completed, and the three agencies are continuing to conduct comprehensive testing to make certain the system is working well for customers and that the system properly accounts for revenue.

Based on the testing results to date, MTS and SANDAG are moving ahead with the launch of the Regional passes on Compass Card.

Discussion

The Compass Card has been in revenue operation since May 2009 with approximately 5,000 active cards in circulation. These Compass Cards are primarily used by COASTER monthly pass holders and the Premium Express bus riders in the Interstate 15 (I-15) corridor.

SANDAG, NCTD, MTS, and Cubic jointly agreed to complete a planned system upgrade before beginning the conversion of the Regional pass products, a population of approximately 70,000 transit users. The software upgrade was necessary to improve stability and reliability of the system; allow our patrons to self manage their Compass accounts online in similar fashion to online banking; and to provide us greater capacity and flexibility in managing our employer-based transit pass program.

The upgrade included three major aspects. First, SANDAG acquired new hardware and relocated all of the Compass Card central system servers to a managed co-location facility for increased system reliability in terms of power and communication. The second aspect consisted of an upgrade to all of the central system software comprised of databases, application software, and a system to process debit and credit transactions. The last aspect was the software upgrade to all of our approximately 1,200 field devices, including ticket vending machines, bus fareboxes, rail station smart card validators, and point-of-sale cash registers.

This upgrade was completed on August 21, 2009, and the three agencies have been conducting testing and contacting existing Compass Card users to assess the system's functioning. Indications are that the upgrade has improved the system and resolved previously identified issues. Based on the results of the testing and outreach and overall system status, MTS and SANDAG are moving ahead with increasing the number of the Regional passes on Compass Card. This limited distribution will include an additional 3,000-5,000 Compass users by making the smart card available at a few
VONS Stores. The gradual increase will aid staff and Cubic in identifying and addressing potential problems in a managed approach while moving the program forward. Paper fare media will continue to be used at the VONS Stores that are not part of the limited increase of VONS Stores with Compass Cards so that all fare types will be available at all locations; only the type of fare media will vary among the VONS Stores during the phased transition period.

VONS is currently the region's exclusive grocery store outlet for transit passes. In working with VONS we have identified key locations that will start the rollout for Regional passes. Staff will continue working with VONS to develop the schedule for launching the remaining stores and increasing the number of overall Compass Card Regional pass holders.

Staff anticipates the complete transition of the paper Regional pass and SPRINT/BREEZE pass to the Compass Card will occur over a three- to four-month timeframe. This will give both the transit agencies and SANDAG sufficient time to conduct marketing and education to the riding public as well as give patrons time to adjust to the new fare media before eliminating paper monthly passes.

GARY L. GALLEGOS
Executive Director

Key Staff Contact: James Dreisbach-Towle, (619) 699-1914, jdr@sandag.org
Steve Heminger, Executive Director
sheminger@mtc.ca.gov
510.817.5810

SANDAG Executive Director
Gary L. Gallegos

Subject: Request for MTC and SANDAG to Ask the State of California to Help Reform Car Parking Policies in California

Dear Executive Directors Heminger and Gallegos,

Please send this correspondence to your Board for its consideration.

The 25-page SB375 specifies that CARB will issue GHG targets that MPOs must meet (if feasible), within the implementation of their RTPs. Honest pricing, for both road use and car parking, is always feasible and so these key strategies will need to be pursued. This correspondence will only deal with car parking.

Please read the attached PDF file of the excellent letter from Nelson/Nygaard's Jeff Tumlin to MTC, "Regional Parking Reforms for Climate Protection".

The letter should be taken to heart by all the MPOs in our state. However, even though the local municipalities, through their off-street parking ordinances, currently control parking, the most efficient approach to reform parking policies would be for the state to take certain actions regarding parking. This would help all of California meet AB32.

I would like to thank MTC for having Nelson Nygaard (the best in the business, in my opinion) "develop an analysis that facilitates discussion on two key questions."

1. Should the Bay Area move toward universal application of market based pricing of parking? Should the Bay Area advance parking policy and pricing reforms to eliminate
the hidden subsidies for driving as a means of achieving state and regional goals for VMT and GHGe reduction and facilitating focused growth?

The answers are "yes" to both parts of this question, but the state government should help this happen, because all the MPOs are in the same boat regarding this question.

2a. What roles should the regional agencies play in this process?

It will be most efficient for the state to do the work, as I will describe below. If the state would do the work, the regional agencies should only have to model the resulting large GHG benefit, under a reasonable assumption of implementation schedule. (I will explain how local parking ordinances are made irrelevant to this process.)

The second part of the second question is well answered by Mr. Tumlin, assuming that the state will continue to be irresponsible (do nothing constructive) on car parking.

2b.) What are the appropriate ways for the regional agencies to facilitate smart parking policies and management practices?

MPOs should do all that is suggested in the Nelson/Nygaard letter, primarily because, to date, the state has been generally irresponsible regarding both the pricing of driving (no comprehensive road-use pricing system is being discussed) and the pricing of parking. (SB375 doesn't mention car parking even though it is a necessary ingredient to AB32 success.) At the same time, "regional agencies" (MPOs) need to request (lobby?) the state of California to do the work necessary to help reform parking policy throughout our state.

Please consider asking the state to do the following 3 steps, where Step 2 requires a successful Step 1 and likewise, Step 3 requires a Step 2 that is universally recognized as successful.

Step 1.) Produce legislation that will fund a study to determine the best way to universally (in all cases, in all locations, except for the case of people's driveways and garages in their single-family homes or parking behind garage doors and sure, anyone can have parking that is only for them, by paying for it, "24/7") unbundle the cost of parking in a way that at least includes the following features:

a.) fully supports the spontaneous sharing of all parking (few rules, such as time limits),
b.) protects marginally successful (or less successful than marginally successful) downtowns,
c.) protects neighborhoods,
d.) stops most "trolling for parking",
e.) ensures that parking occupancy rates never go above 85%  
f.) allows the vast majority of parkers to take no action other than parking  
g.) provides parkers parking locations for any price range, for any address, for any time duration, at a reasonable high probability, with the probability estimate also provided.

To save time, the state should hire a company like Nelson Nygaard to look at my "Intelligent Parking" methods (attached) and then improve it to their high standards. We don't need platitudes. We need a specific description of how to do ideal parking. The product document needs to be what a systems engineer would call a "requirements document". This means that is would be suitable for use in requesting proposals (RFP) to design and build the described system. (I was a system engineer at Lockheed Martin, where I worked for 36 years, retiring in 2007.) This step will cost the state several hundred thousand dollars, perhaps. I have also attached my "change file" that I submitted to SANDAG, regarding their "Smart Growth Design Guidelines" document. Its "Future Parking" section fills in some of the gaps in "Intelligent
Parking”. (SANDAG staff, under Mr. Bob Lieter, Director of Transportation and Land Use Planning, ble@sandag.org, has been very receptive to these ideas, in the general sense.)

**Step 2.** Creating and using a new state agency that would put the Step 1 requirements document out to bid to produce the full design and also to implement the design at a selected location. (This public/private partnership team will go on to perform Step 3, making it potentially bigger than Microsoft Inc. in terms of money it collects and distributes.) “Intelligent Parking” (what I call my vision, or idealized plan) requires both hardware and software development. However, I have found a vendor who has said that the design is not difficult, for a proposal that is a simplified version of “Intelligent Parking”, at a high school proposed in Carlsbad. See Chart 18 of the attached Power Point file. (The District is rewriting their EIR, as ordered by a judge. The new DEIR is due out in September.)

**Step 3.** Create law that requires "locations" (existing developments such as downtowns, shopping centers, schools, train stations, neighborhoods, and so on) to cooperate with the state’s implementation team and to allow them (and to fully cooperate with their requests) to install "Intelligent Parking". Under this new law, bundled parking cost is declared a public nuisance that cannot be allowed to persist, since a proven method to unbundle those costs exists. Step 3 will generate large sums of money for everyone because once the design is done, the savings on the reduced amount of parking needed will greatly exceed the cost to implement and to operate the program. Less parking will be needed and parking is always expensive. Less parking at an existing development creates new infill potential. Ultimately, a driver that parks in many regions of the state over a month (assuming a monthly billing period) should get a single monthly statement on their net charge and their net earnings on parking.

If the state continues to be irresponsible, then the first 2 steps above can be done by an MPO. For example, SANDAG has $270M to promote smart growth. However, only California or the municipal governments could outlaw bundled parking costs. It would be much easier for the state to do Step 3. Once it is shown that it is feasible and desirable for all stakeholders to unbundle parking costs (shown by a successful Step 2), then bundled parking cost can be seen as the unacceptable public nuisance that it is and legal steps (if needed) can be taken to eliminate it.

How can I help this discussion proceed towards initial fruition, which would be a plan to execute Step 1?

Thanks and regards to all,
Mike Bullock
760-754-8025
MEMORANDUM

To: Steve Heminger and Valerie Knepper
From: Jeffrey Tumlin and Kevin Shively
Date: July 8, 2009
Subject: Regional Parking Reforms for Climate Protection

Market based pricing of parking and other parking reforms are widely regarded as key strategies for reducing greenhouse emissions. This paper follows on the JPC decision to pursue parking reform as an essential part of the Bay Area’s approach to climate protection by outlining the issues around current parking policies, the benefits of pricing parking, the reasons why more local jurisdictions are not implementing these reforms, and a range of potential regional strategies for the Bay Area. At the JPC’s request, MTC commissioned Nelson Nygaard to develop an analysis that facilitates discussion on two key questions:

1. **Should the Bay Area move toward universal application of market based pricing of parking?**
   Should the Bay Area advance parking policy and pricing reforms to eliminate the hidden subsidies for driving as a means of achieving state and regional goals for VMT and GHGe reduction and facilitating focused growth?

2. **What roles should the regional agencies play in this process?**
   What are the appropriate ways for the regional agencies to facilitate smart parking policies and management practices?

**Issues of current parking policies**
Parking price and availability are key factors influencing travel mode choice, vehicle miles traveled (VMT), and consequent Greenhouse Gas Emissions (GHGe). Local government parking policies such as minimum off-street parking requirements on residential and commercial developments, the provision of free on-street parking, employer-paid, and retailer-paid parking create hidden subsidies for driving. Such policies are the standard practice throughout the United States, and are common in the Bay Area.

Standard local parking requirements and policies – particularly minimum off-street parking requirements – also favor development in suburban areas, where requirements can be fulfilled with less expensive surface parking, rather than in urban centers and the FOCUS priority development areas (PDAs), where the total cost of building structured or underground parking can reach $50,000 to $70,000 per space.

These hidden parking subsidies also tend to favor higher income households. Higher income households own more cars, drive their cars more often, and drive to work more frequently. Such subsidies, whether hidden in housing or retail costs or employee benefits, cost lower income households more on average than they receive.

**Benefits of Parking Reform**
Reforming such policies offers the potential to reduce VMT and consequent GHGe, to level the playing field for development in urban centers and PDAs, and to reduce the inequity of subsidized higher use of automobiles by higher income households. Benefits are further described in Attachment A.
Studies of pricing parking consistently demonstrate the strong impact on rates of driving. One major study of Southern California employers found that employees who receive employer paid parking as a tax-free fringe benefit drive 33% more miles per year than those who pay the cost of parking on their own (see Attachment A, Figure 1). Other parking policies such as off-street parking requirements also influence the cost of housing and the feasibility of development – especially in infill locations1.

Local jurisdictions’ parking policies
With the local interest in reducing VMT and GHGe in local climate actions plans, along with the potential for local financial and equity benefits, why aren’t local jurisdictions reforming their own local parking policies?

A number of communities, such as Redwood City, San Francisco, Berkeley, Portland and Santa Monica, have demonstrated the efficacy of parking management and innovation through reforms such as charging market prices for curb parking in high demand areas, removing minimum off-street parking requirements, and enforcing the state parking cashout law. However, widespread local adoption of such reforms are unlikely to occur sufficiently to provide substantially reduce greenhouse gas emissions without coordinated action at the regional level. Key reasons include professional inertia due to comfort with established practices of using outdated parking rates, lack of knowledge / personal experience with alternative practices that will stand up to public and professional scrutiny, lack of coordination between city public works staff who define required parking rates/policies and city planners working to reduce VMT/GHGe, cities’ concern that they need to compete for retail customers through the use of free parking, neighborhood concerns about the potential for “spillover” impacts, and the absence of local constituencies in favor of pricing parking and parking reform due to the largely hidden nature of existing parking subsidies.

There is also limited political initiative for pricing parking largely due to long standing traditions of subsidizing parking through housing costs, employee benefits, employer and retail overhead. For the most part, renters and condo buyers do not request rebates for not parking, employees do not ask for cash instead of free parking, and shoppers do not ask for price breaks instead of free parking. The reduction of costs due to a reduction in unnecessary parking could be passed on to each of these groups.

Rationale for regional action
Such local barriers can begin to be addressed with a regional approach to parking management that coordinates policies within the region, levels the playing field across city and county boundaries, supports and incentivizes local reforms, and facilitates coordination with other regional strategies to support climate friendly land use and transportation.

Discussion questions
In exploring a regional strategy for parking reform in the Bay Area, Nelson\Nygaard suggests the JPC address these broad questions:

(1) What role should the regional agency members of JPC play in parking reform?
(2) Should the Bay Area move towards universal market-based pricing of parking?

Attachment B describes the potential regional parking strategies that have been identified.

We look forward to discussion on these strategies and potential next steps at your meeting.

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Attachment A
Benefits of Parking Reform

Reforming parking policies offers the potential to reduce VMT and consequent GHGe, to level the playing field for development in urban centers and PDAs, and to reduce the inequity of subsidized higher use of automobiles by higher income households. Reforming parking policies offers significant opportunities for immediate and longer-term reductions in transportation-related GHGe for the following reasons:

- **Large impact.** Parking pricing can significantly reduce drive alone auto commute rates, and consequent rates of VMT, and GHGe (see Figure 1).

- **Quick results and long-term impacts.** Parking reform can help reduce vehicle trips immediately by influencing mode choice, and over the longer-term by facilitating smart growth and transit oriented development.

- **Low cost and revenue producing.** Reforms such as pricing of on-street parking and elimination of minimum off-street parking requirements are low-cost and/or free to implement and may earn significant revenue.

- **Pro-market and pro-smart growth.** Most cities require that developers build more parking than the market warrants; parking reforms can improve the efficiency of the regional economy in general by allowing the market to determine the parking supply, and in particular reduce the cost to build new housing and commercial buildings, especially in walkable, transit-served locations.

- **Region-wide applicability.** Reforms to parking policies can deliver results throughout the region, using different specific strategies to match different conditions.

- **Socially equitable.** Reforming parking policies can benefit low-income households. Auto ownership rates are positively correlated with higher income. Lower income households with significantly fewer automobiles benefit from the option of foregoing expenditure on unnecessary parking supply. Lower income individuals would additionally benefit if some of the revenue generated by pricing parking is used for transit service and/or bicycle or pedestrian facilities.

### Figure 1
**Employee Parking Pricing Effect on Auto Commute Rates**

<table>
<thead>
<tr>
<th>Case Study and Type</th>
<th>Autos Driven per 100 Employees</th>
<th>Employer Paid Parking</th>
<th>Driver Paid Parking</th>
<th>Decrease in Auto Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid Wilshire, Los Angeles (before/after)</td>
<td>48</td>
<td>30</td>
<td>-38%</td>
<td></td>
</tr>
<tr>
<td>Warner Center, Los Angeles (before/after)</td>
<td>92</td>
<td>64</td>
<td>-30%</td>
<td></td>
</tr>
<tr>
<td>Century City, Los Angeles (with/without)</td>
<td>94</td>
<td>80</td>
<td>-15%</td>
<td></td>
</tr>
<tr>
<td>Civic Center, Los Angeles (with/without)</td>
<td>78</td>
<td>50</td>
<td>-36%</td>
<td></td>
</tr>
<tr>
<td>Downtown Ottawa (before/after)</td>
<td>39</td>
<td>32</td>
<td>-18%</td>
<td></td>
</tr>
<tr>
<td>Average of Case Studies</td>
<td>70</td>
<td>51</td>
<td>-27%</td>
<td></td>
</tr>
</tbody>
</table>


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Attachment B

Potential Regional Parking Strategies (for discussion)

The following recommendations for consideration for regional action are based on Nelson\Nygaard’s interpretation of the existing and potential future authority of each regional agency. These policies would be developed in consultation with the JPC and in concert, where appropriate, with the Sustainable Community Strategy.

1. **Lead by example: (JPC)**
   
   **Short Term – requires staffing commitment**
   
   Implement all best practices in employer parking and transportation demand management, including full-cost/market-based parking pricing, parking cashout (in compliance with existing state law), and transportation demand management (TDM) programs for all regional agency employees.

2. **Incorporate parking policies into current and forthcoming regional grants for local jurisdictions with regional monitoring (ABAG, MTC, BAAQMD)**
   
   Expand technical guidance, develop grants to local jurisdictions to reform parking policies, and develop regional role as clearinghouse.
   
   **Short to Medium Term – requires staffing commitment and regional funding**
   
   - Revisit Station Area Planning: Incorporate more specific parking reforms and policies.
   - Run sub-regional workshops/ training sessions for local jurisdictions, provide technical support for implementation of parking policies that complement infill land use plans, such as parking cashout, unbundling of parking, TDM programs, and enforcement of state parking cashout law. Support reforms through a capital program TBD as a sub-element of the Climate Change Program
   - Develop a regional Green Parking Certification Program to reward local jurisdictions that implement a suite of parking reforms, similar to those incorporated in 2009 SB 518.

3. **Engage Congestion Management Agencies as partners for climate protection (MTC):**
   
   **Near term – incorporation into new regionally funded CMA Planning Agreements**
   
   MTC can include more specific tasks in the work agreements with each of the nine county CMAs (or substitute agencies) to monitor, evaluate and report on local governments’ implementation of smart parking reforms. This monitoring could be the basis for a regional “green parking certification,” could be used to highlight local parking management best practices and could be considered in the distribution of regional discretionary funds.

4. **Use or extend existing regulations to parking (BAAQMD)**
   
   **Medium term – requires interpretation of authority**
   
   As a part of the regulation of indirect sources of emissions, BAAQMD could levy an annual parking impact fee on property owners, based on the number of parking spaces they provide free of charge or with some level of subsidy:
   
   - Parking impact fee schedules could be graduated based on parking prices and location (e.g. lower in PDAs, and for property-owners that charge tenants separately for parking).
   - Fee revenue could be returned to local governments for expenditure on transportation projects that reduce per capita GHG emissions.
   - MTC could support the Air District by establishing the vehicle trip generation and consequent GHGe impacts of different classes of property by type, location, mix of uses, and accessibility by modes.

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3 The Air District does not currently regulate parking; however, Section 40716 of the California Health and Safety Code authorizes BAAQMD to regulate all “areawide” and “indirect” sources of emissions.
As an alternative to regulation under indirect source authority, seek new authority for the BAAQMD or MTC to levy a separate graduated "climate protection/action" fee on parking spaces.

5. **Condition distribution of regional discretionary transportation funding to local jurisdictions on implementation of specified parking management policies/practices (MTC)**
   
   *Medium term – would require negotiations with partners*
   
   This policy would be similar to MTC’s existing TOD Policy (Resolution 3434) in that MTC would establish policy reform requirements as a screen for receipt of regional discretionary funds. Performance could be assessed at a city or at a corridor-level, providing local governments with flexibility to comply or to pay other communities in the same travel corridor to enact the parking reforms necessary to achieve corridor and region-wide goals. The specific funding categories subject to conditional distribution remain to be defined.

6. **Fund parking programs with regional gas tax or GHGe cost-recovery fee (MTC/ABAG/BAAQMD)**
   
   *Medium/Long term – would require political campaign*
   
   Develop a new fund source to implement regional parking programs, including monitoring and enforcement, as well as direct investment in smart parking technology (e.g. smart parking meters) and alternative transportation and TDM programs in districts that have adopted parking reforms, through (a) seeking voter authorization for a regional gas tax for climate protection activities, to include defined uses for parking reform, or (b) seeking BAAQMD board approval for extension of the current GHG emissions cost recovery fee to mobile and/or indirect sources of emissions.

7. **Advocate for elimination of federal tax subsidy for employee parking (MTC/ABAG/BAAQMD):**
   
   *Near term – would require legislative reform*
   
   Free parking at work is the most common tax-exempt fringe benefit in the United States. Eliminating the existing tax exemption for employer paid parking will remove a massive hidden subsidy for driving, generate substantial revenue that could be reinvested in transportation and/or other climate protection programs, and level the playing field for property-owners and employers in urban centers and PDAs. Nationwide, the value of such tax-free parking subsidies has been estimated at $52 billion per year (nearly one percent of GNP)\(^4\).

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Intelligent Parking

*Free Market, Best Technology Plan to Make Parking Costs Visible and Optional to All*

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August 2, 2008
1.0 Preface

Intelligent urban planning reduces the need for parking and the total miles that are driven. It does this by having the following four characteristics:

1.) It clusters development around good transit stations or transit stops.

2.) It makes it safe and easy to use non-motorized modes of travel.

3.) It has a local balance between development that uses mostly night-time parking and development that uses mostly day-time parking. This balance should be no worse than 60%-40%.

4.) Parking is placed to support the sharing of parking.

However, intelligent urban planning will fall far short of minimizing the need for parking or minimizing the miles that are driven unless the following operational characteristics are adopted:

1.) Nearly all parking is shared. This means that it is almost always the case that anyone can park anywhere.

2.) Parking is operated so that the potential users of parking can escape the expense of parking by choosing not to use the parking. This characteristic is named “unbundled” to note that the cost of parking is unbundled from other costs.

3.) Parking is priced and marketed to reduce the need to drive around looking for parking. It is priced to ensure availability.

The Intelligent Parking technology that accomplishes the above three operational characteristics also does the following:

4.) Parking at any desired price is made as easy as possible, for most users.

5.) Records of the use of each parking space are kept. This will facilitate decisions to either add or subtract parking spaces.

This plan describes how the unbundling is accomplished. It describes both the hardware and software needed.

New understandings about energy and the environment will cause more people and companies to seek out cities that have embraced both sustainability and old-fashioned values of fairness and economic choice, implemented with the latest technology.

With the implementation of Intelligent Parking, cities can become more compact, functional, and successful.
2.0 Need for and Availability of Intelligent Parking Development Costs

Intelligent Parking has not been implemented in any city or development.

However, San Francisco is getting close. Their work is described in a July 12th article in the NYT by John Markoff, “Can’t Find a Parking Spot? Check Smartphone”

Despite San Francisco’s progress, the implementation of Intelligent Parking will require paying for development costs. Both hardware and software development is needed. New Parking Inc, founded by Thomas Janacek (tjanacek@new-parking.com), has the capability to provide some of the features of Intelligent Parking. However, its system requires users to call in on their cell phones when they park and when they leave. Streetline Industries makes the street sensors that transmit single space occupancy information into Wi Fi systems. However, these sensors only detect the presence of a car, without the capability of recognizing an RFID. New Parking Inc, Streetline Industries and other parking-innovation companies will need to be contacted to see if they will submit a bid to develop and supply the hardware and software needed for Intelligent Parking. Thankfully, the money to develop Intelligent Parking will be readily available to any city. This is true because parking is so expensive to supply and the primary features of Intelligent Parking (shared and unbundled) will allow less parking to be built.

As an Oceanside-specific example, the following information leading to funding is provided. “City Mark” is a developer of downtown property. Recently, a City Mark development was approved in downtown Oceanside. It is a mixed-use development that includes parking supplied at numerical levels that were computed without reductions for the unbundling of parking costs. Table 7 (shown below) shows that when users are given the choice of getting cash for not parking (the Intelligent Parking method of unbundling), over 20% will accept the cash and not drive. City Mark is building 904 parking spaces. This means that if they did Intelligent Parking, there would be \((20\%) \times 904 = 181\) parking spaces that can be used by non-City Mark users. The City Mark project will destroy 172 current, surface-parking spaces. The Coastal Commission therefore required that Oceanside and City Mark agree to supply 172 spaces to make up for the lost spaces. Oceanside plans to provide the land; City Mark has agreed to construct the surface parking. This new, surface-parking lot will be built on land that is west of the Oceanside railroad line, north of Wisconsin Avenue, and on land that is within easy walking distance from Oceanside’s major transit hub. This land is very valuable. Since it takes 1 acre of land to park 120 cars, the 172 spaces will require \(172/120 = 1.43\) acres of land. Since Intelligent Parking will eliminate the need for this parking lot (181 is greater than 172), the 1.42 acres can be sold by Oceanside, for millions of dollars. This may be more money than what would be required to both develop and implement Intelligent Parking. Since Oceanside would be funding the development of the hardware and software needed to implement Intelligent Parking, the City should attempt to retain all or part of the patents and/or ownership rights to these advancements. In that way, it is possible that the other cities that implement Intelligent Parking will need to pay Oceanside for the right to use some of the key
features of Intelligent Parking. Oceanside might therefore get its money back many times over. In any case, it would be better for Oceanside to not have to use 1.43 acres of land close to its core downtown area to park 172 cars. For example, the 1.43 acres could instead be used for up to (45 units per acre) * 1.43 acres = 64 condominiums or apartments.

3.0 How much parking? The goal is to have only marginally more parking than what is needed. Not having too much parking will minimize the “dead space” effect of parking. It will also minimize the economic burden of parking. This means that there will be less parking supplied than what has been required under the existing suburban ordinances. These ordinances often require enough parking to park one car for every potential driver. These ordinances also required enough parking to park all of these cars simultaneously, ignoring any possibility of sharing parking between different uses. This amount of parking is substantially more than is needed in a mixed-use downtown with above-average transit. However, the existing suburban ordinances supply a valuable, baseline amount of parking. This amount will be conservatively reduced so as to not discourage drivers from using downtown. Proximity of transit, proximity of mixed uses, sharing, and the unbundling of parking cost will each be conservatively used to compute appropriate reductions. It is expected that decision makers will be overly conservative in applying these reductions. If true, then this approach requires redeveloping excess parking into something else, when it is clear that there is too much parking. There is not enough parking when the amount of revenue generated by the parking exceeds what is a reasonable rate of return on the value of the parking. The revenue will be driven up by a shortage because with Intelligent Parking, the price is adjusted in real time to keep the vacancy rate from dropping below 15%. If there is a reasonable rate of return on the value of the parking, then the parking is correctly sized. A redevelopment example would be to convert a condominium parking space into an enclosed room that could be leased for storage or some other purpose. As another example, a corner of a ground-level parking garage could be converted into a coffee shop.

4.0 Specific Features of Intelligent Parking with Rationale & Implementation Details

4.1 Feature 1: Technology will make paying easy for most drivers. Please see http://www.sparkparking.com/howitworks.html and http://en.wikipedia.org/wiki/FasTrak. For credit-worthy drivers that are willing to ID their car, pay parking will not require any actions other than parking. Paying for all parking fees over a month is then done in response to a monthly billing statement. Parking will feel to the consumer like a service provided by a municipality, such as water, energy, or garbage. One important difference is that users belonging to a “beneficiary group” will get an earnings amount in their monthly statement. Those that earn more than what they are charged will receive a check for the difference. This ease of use will make driving to downtown a stress-free experience.
4.2 Feature 2: Having shared parking, to support mixed uses. Shared parking for mixed uses means that less parking is needed. Also, since very little parking will be off limits to anyone, drivers will be more likely to park one time per downtown visit, even though they would often make use of several downtown locations. This means more pedestrian activity, adding to the attractions offered in downtown. Parking is to be generally shared with all downtown drivers. If there is an exception, the reserved nature of the parking is for specific hours and signs will alert drivers of these hours.

4.3 Feature 3: Unbundling the cost of parking in a way that usually supports the sharing of parking. To the extent possible, the cost of car parking is unbundled from non-parking costs. This is done by charging for parking but giving all the revenue to all those that fall into the following types of “beneficiary groups”.

1.) Those that have already paid for the capital cost of parking. An example of this type of beneficiary group would be the owners of condominiums, where parking has been built and the cost is included in the price of the condominium. Note that although they have technically already paid for the parking, if they borrowed money to pay for some portion of the price, the cost is built into their monthly payment. This illustrates why the value of parking and the cost of borrowing money (rate of return on money) are the correct parameters to use to compute the appropriate base, hourly charge for parking.

2.) Those that are incurring on-going costs of parking. An example of this type of beneficiary group is a set of office workers, where the cost of the parking is contained in either the building lease or the cost of the building. Either way, the parking costs are reducing the wages that can be paid to the employees. Such parking is often said to be “for the benefit of the employees”. Defining this beneficiary group will ensure that the statement is strictly true, instead of the common situation where the employees benefit only in proportion to their use of the parking.

3.) Those that are purchasing or renting something and the cost of the parking is built into the price. Examples of this beneficiary group are people that rent hotel rooms, rent an apartment, buy items, or dine in establishments that are paying for parking. This is often the case, but it is not necessarily true. The cost and revenue of the parking built with hotel rooms, apartments, retail, or restaurants could be separated out so that the patrons are not paying for parking (unless they park). If this is the case, then the only beneficiary groups are the owners of the parking. However, if unbundling is accomplished in this way, it must be made public so everyone can see that the parking is not being subsidized by the patrons.

4.) Those that are said to benefit from parking, even though the money has been supplied by some source of money that is in no way dependent on those that are said to benefit. An example of this group would be train riders that depart from a station that has parking that is said to be “for riders”. In order that all riders from the station benefit equally from the parking, they will pay the normal fare, minus an earnings amount from the parking. This will have the effect of optimizing the use of the parking.
Those riders that really need the parking will always find parking. Those that could, with little inconvenience, get to the station without driving, will do so, to avoid the charge. Sharing will no longer be prohibited because anyone that parks will be benefiting riders by contributing to their earnings.

5.) Those that are understood by tradition to be the beneficiaries of on-street parking. Owners of single-family homes are the beneficiaries of the parking that is along the boundaries of their property. They will get 100% of the earnings generated by such parking. All other land owners will split the earnings of such on-street parking with the city.

Note that pricing is described in Features 4 and 5, below; Feature 6 gives more details about how groups benefit. Note again that unbundling results in substantially less car trips and less car ownership.

Unbundling for a condominium means that although the parking will add to the initial cost, an assigned amount of parking will earn money for the owners. Unbundling for a condominium could also mean that an owner can choose to have control over a single or several parking places. Such parking spaces will be equipped with a red light and a green light. If the red light is lit, this will mean that the space is not available for parking, except for the person who is controlling the spot. If the green light is lit it will mean that the space is available to anyone. A space that is being reserved with a red light is charged at the full price to the condominium owner that has control over the space. The owner that controls these spaces can change the state of the parking space (available or not available) by either a phone call, on line, or at any pay station. After condominium owners experience the cost of reserving a space for themselves, they might give up on the idea of having their own personal, unshared parking space. Especially since Intelligent Parking will give most owners all the flexibility they need in terms of parking their cars and their guest's cars.

People often think that condominium parking should be gated, for security reasons. However, parking within parking garages needs to be patrolled at the same frequency level as on-street parking, which is enough to make crime around either types of parking very rare. Cameras can help make parking garages that are open to the public the absolute last place for criminal activity. We should not need gated communities in our downtown areas.

For renters, unbundling means that “rent” (traditional rent minus earnings) is reduced by the money earned by charging for the number of parking spaces allocated to them.

For employees, it means that “wages” (now a sum of traditional wage and parking lot earnings) are no longer reduced to provide parking. Companies will probably want the option of offering “free parking” to their employees so as to be able to compete with traditional job sites. However, employees that request no “free parking” should be appropriately rewarded since employees that don’t drive to work are, on average, just as valuable as employees that do drive to work. Companies should not be required to
lease parking for their employees. Providing “free parking” under the conditions of this report really means giving employees that drive every single day an “Add-In” amount of pay so that the sum of the Add-In and the earnings equals their charge, for any given monthly statement. The city (or other operator of the parking), which sends out statements, can add in the “Add In” amount, per the company’s instructions. The company will then be billed for these amounts. Note that this is a choice for the company so that the company can provide “free” parking. Note also that there would be no requirement for the company to provide any such “add-in” amount to the employees that don’t drive every day. The net result is that the company will be treating drivers better than non-drivers. However, this economic discrimination will be substantially less than the status quo economic discrimination, where drivers get parking and non-drivers get nothing.

Finally, it means that the cost of goods and services (traditional price minus earnings) are increased less to provide parking.

4.4 Feature 4: For occupancy rates that do not threaten to go higher than desired, prices are computed from the value of the parking and an agreed-upon rate of return. Parking-garage or parking-lot parking is priced so that even if demand does not threaten to fill the parking beyond 85% (the amount that equates to just over one space vacant per city block), the money generated will equate to an agree-upon return on the parking value. An example is shown in Table 1. This accomplishes the goal of unbundling the cost of parking from other costs and the goal of less car trips and less car ownership by providing a true economic choice.

The value of on-street parking is controversial to compute. Therefore, the following, somewhat arbitrary approach to the pricing of on-street parking is offered. On-street parking that has an occupancy that is less than 50% is free. However, after it is 50% full, it is priced at 50 cents per hour. As the occupancy increases beyond 70%, price is increased as shown in Table 2 below.

4.5 Feature 5: Price is increased to guarantees availability. The hourly rate price of parking is dynamically set on each city block or on a block of off-street parking, to one that nearly always prevents the occupancy rate from exceeding 85%. An 85% occupancy rate (15% vacancy) is the amount that results in just over one space vacant per city block. Tables 2 and 3 show how this can be done. This feature will reduce driving around to look for parking. If price is not a concern, a user can simply go to the most desirable block for their visit. This feature will almost always guarantee at least one vacant spot on every block. Parking garage spaces are grouped into effective blocks. These blocks are considered to be nearly equal in desirability. This feature is referred to as “Protected Vacancy Pricing”. It is similar to “congestion pricing” that could be implemented on PAYD (pay as you drive) highway lanes. “Congestion Pricing” really means “congestion-prevention pricing” since its implementation works to prevent the likelihood of congestion. Similarly, “Protected Vacancy Pricing” prevents vacancy from dropping too low.
4.6 Feature 6: Traditional groups benefit. Parking beneficiaries are identified to encourage developments to provide enough parking and to support traditional ideas about who should benefit from allocations of parking. Beneficiaries are paid the revenue that has been generated by the parking spaces allocated to them. This will offset any parking costs they might incur. This “pay but benefit” approach is the primary method of unbundling. This will reduce the political difficulties of adopting pay parking in a democracy where the high cost of parking is often hidden and rarely discussed or understood. The revenue from on-street parking in front of apartments or businesses will be split between the city and the business owners. The revenue from on-street parking in front of single family homes will be given to the home owners. Note that “revenue” means the amount after collection costs are subtracted.

4.7 Feature 7: Technology will help drivers find parking. Technology will be used to help drivers select the best possible parking space for their situation. Any time occupancy rates are high or there are reasons that it might be high, users will be encouraged to go to a website that will give current and predicted hourly rates for all locations. The website will also direct a user to a given block of parking if the user gives the visit location or locations, the time and date, and the hourly rate they wish to pay. This will make driving to downtown easier. It will also reduce driving around looking for parking. The hourly rate of parking will be available at an “on line” web site, at a phone number, and at Pay Stations. The “base-price” (before occupancy-rate-driven increases), hourly rate, for any section of parking garage or any city block will be stable and shown on signs. However, since Feature 5 requires that price be increased when occupancy on a block (or garage section) gets high, many users will want to be able to see the hourly rate before they chose parking. This should be made as easy as possible to reduce driving around to get acceptable parking. Parking garage entrances will have large video screens showing both predicted and existing availability and price.

4.8 Feature 8: Pay stations will help all users. To be inclusive, Pay Stations will support drivers with poor credit or drivers with concerns about the potential loss of privacy inherent in getting billed for all parking. Pay Stations will take payments from users that do not want to ID their car (or can’t due to a poor credit rating) or do not want a specific parking charge to appear on a monthly bill. Pay station transactions start with the user typing in the parking spot where they have parked their car. Such users could pay with cash or credit card. They will pay enough to cover their time to be parked. If they stay less time than they paid for, they can go back to the pay station and get change. If they stay longer, they can extend their time with a phone call, if they have a credit card. This method of parking is less convenient but will equate to the experience in many cities (Berkeley, for example), where a driver parks and then must visit a Pay Station at least once. These features make the system inclusive to all.

4.9 Feature 9: Getting a Car ID will be easy. Pay stations will dispense car ID units (which will cost less than $5), so that someone visiting downtown Oceanside for the first time will only be inconvenienced once, with a need to go to a pay station after parking. The easiest way to get an ID unit will be to swipe a credit or debit card,
providing billing information. If a user does not have a credit card or does not want to use a credit or debit card, they can type in their name and billing address and hope that the resulting credit check supports getting a car ID. If not, they will need to pay at the Pay Station each time they park. Giving pay stations the capability to dispense a car ID unit will make driving to downtown (after the first time) a stress-free experience for credit-worthy citizens.

4.10 Feature 10: Accommodating Handicapped Drivers ID numbers of handicapped drivers will allow these drivers to park free or at greatly reduced prices, at most locations. Data will be kept to allow for integrating this need into the pricing equations. These records will show where these drivers go most often. Specially designated spots may or may not be required. The handicapped allocations can be modified as needed.

4.11 Feature 11: Good reporting will support good decision making. The computer that controls all parking transactions will provide reports showing where additional parking would be a good investment and where it would be wise to convert existing parking to some other use. When new parking is to be built, individual investor money can be used. These individual investors will be drawn by the fact that adjacent parking is in short supply, earning exceptional returns, due to Feature 5.

4.12 Feature 12: Privacy rules and safeguards will be used so that with very few exceptions the information about who is parking where is never released except to the car owner that gets the monthly statement.

5.0 Further Discussion of Unbundling, Which Will Lead to Less Car Use and Less Car Ownership:

Unbundling is a key feature of this parking plan. It is also a crucial application of the free market principle that people should only pay for what they use. Whether people are shoppers, residents, or employees, they deserve the choice of saving themselves the cost of parking, if they would rather not use the parking. Business should not be conducted in a way that, in effect, assumes that everyone wants to drive and own cars at some average rate. It is not true that no one minds having their rent or home-ownership costs increased, the cost of their purchases increased, or their wage decreased, to pay for parking. Most Americans agree that the free market should be our baseline approach to how business is conducted. Individuals should have a broad range of economic choices. If a condominium owner wants to use 5 parking spaces, so be it. If another condominium owner wants to use no parking spaces, so be it. If a renter wants to rent a lot of parking or no parking at all, those choices need to be available. Shoppers and shop owners should also be given new choices regarding parking, to reduce the amount of parking cost that is hidden within the cost of goods and services.
More specifically for a given development, parking cost should be unbundled from the cost of everything else offered at the development. This will result in less car ownership and less car use at the development compared to the level if parking costs were built in to the cost of what is offered at the development. The excess parking that might result from the unbundling should be offered to the general public, at a price that provides a reasonable rate of return on the cost to build the parking. If there is insufficient demand for the excess parking, it should be used or redeveloped in some non-parking way to make as much money as possible. The view is taken that the parking or its replacement, if it is not sufficiently needed, should benefit traditional groups that own or are otherwise economically linked to the development. The unbundling is accomplished by issuing a monthly statement to all the members of the traditional groups. These statements will potentially show both a charge for parking and a parking lot benefit payment. Employers, if they choose, can add in an amount so that their employees that drive every day will break even, as described in Feature 3.

Besides providing basic fairness, relative to the unfortunate status-quo way of handling parking, unbundling parking will favor transit, walking (living close), biking, car pooling, etc. It will also favor owning fewer cars. In other words, unbundling will reduce car ownership and car trips.

These methods will help any city attract the best employers, who would like their employees to get extra money if they don’t drive, since this will be done at very little cost to the company. It will attract the best condominium owners, who will appreciate the range of choices not offered in other cities. It will help our transit systems be successful. The world will know that cites that implement Intelligent Parking are ready for the best development and the best companies. Because over utilization of cars is at the heart of our environmental and economic problems, cites that implement Intelligent Parking will be recognized as the “greenest” and “smartest” cities in America.

With air pollution, 42 thousand yearly roadway fatalities, peak oil, obesity, urban sprawl, air pollution, congestion, and climate change, this is a patriotic and moral, as well as an economic-fairness issue. Each gallon of gasoline burned results in 20 pounds of CO2.

From the Deputy Attorney General Sandy Goldberg’s letter of January 8, 2008, to the City of Petaluma:

According to NASA’s James Hansen, proceeding at the emissions rate of the past decade will result in “disastrous effects, including increasingly rapid sea level rise, and increased frequency of droughts.

Also:
The need to make substantial cuts in emissions drives the global targets embodied in the Kyoto Protocol and the State’s targets established by Governor Schwarzenegger’s Executive Order S-3-05, and AB 32, California’s Global Warming Solution Act of 2006. In California, by these authorities, we are committed to reducing emissions to 1990 levels by 2020, and 80% below 1990 levels by 2050. Achieving the 2020 target will require California to reduce emissions by 29% below projected levels.

In short, our past and current GHG emissions have pushed us to a climatic “tipping point.” If we continue our business-as-usual emissions trajectory, dangerous climate change will become unavoidable. The recent Bali accord recognized that we must cut greenhouse gas emissions from 25 to 40% below 1990 levels by 2020 to avoid the most catastrophic impacts of climate change, which is even more aggressive than the reductions required in California under AB 32. And, the experts tell us, we have very little time to take decisive action. Rajendra Pachauri, Chairman of the United Nations Intergovernmental Panel on Climate Change (“IPCC”) recently declared: “If there’s no action before 2012, that’s too late. What we do in the next two to three years will determine our future. This is the defining moment.”

Tables 6 and 7 show that if employees are offered the choice of earning money by not driving, they will drive substantially less. Table 6 shows that bus ridership increased by 1600%. If many adjacent employers adopted Intelligent Parking, transit service providers would need less subsidy and be motivated to increase transit service frequency.

6.0 Implementation Details, Variable Definitions, Sample Calculations

6.1 Development Parking (DP) Development Parking is all of the parking built within a development or set of developments. This does not include the on-street parking that is adjoining or across the street from the development or set of developments. Any parking that is privately owned by individuals, within the development, would have to be excluded from this set of parking. (If the owners of such privately owned parking wanted, their parking could be offered for rent at the same price as the Development Parking (DP), with the money raised going to the private owner.) It is hoped that such privately owned parking is minimized. Development Parking (DP) is owned jointly according to the rules of the development or set of developments. It is operated in accordance with this plan. Often but not always, developments could be mixed use. Different developments can have their parking put into a single DP if the cost of the parking is the similar and the locations are adjacent.

6.2 Number of Parking Spaces in the DP (N_DP) This is the number of parking spaces in the Development Parking (DP).

6.3 Beneficiary Group (BG) This is a defined set of potential Development Parking (DP) users. They are closely associated with the development.
example, if the development has condominiums and offices, one BG would be the condominium owners and another BG would be the workers. All those living in a single condominium constitute one unit of the condominium BG. Hotel guests are another example of a Beneficiary Group (BG). It is possible for a user to be in more than one group. For example, an individual could own a condominium (or live in a condominium) and work at the development and therefore be a member of both BGs. Beneficiary Groups (BGs) are sets of people that are grouped and assigned parking places that will earn money for these people. These groups are those that might have had the privilege of using the parking for free if there was no unbundling. Therefore, according to traditional views, these are the people that should benefit from the parking. Most Beneficiary Groups (BGs) are associated with a Development Parking (DP). However there is one additional set of units (households) that are BGs. They are the households of single family homes that have on-street parking adjacent to their properties. They will benefit economically from the use of that on-street parking. Therefore, a single-family resident is handled like a development. Its on-street parking is its Development Parking (DP). The household is a Beneficiary Group (BG) with a single element. Criteria will be defined which determine when a single family’s on-street parking is brought into the parking plan. It is done either at the family’s request or when the impact of adjacent, charged parking is sufficient so it is unfair to the family to suffer the intrusion of parked cars with no economic benefit.

Every Development Parking (DP) has the potential for users that are from no BG associated with the development or set of developments. They are referred to as members of the general public. Since unbundling parking reduces parking demand, there will often be parking available to the general public. If so, this will be a good thing because the revenue from these “outsiders” (the general public) plays a vital role in keeping the net parking cost (charge minus earnings) close to zero for members of the Beneficiary Group (BG) that park close to the maximum time possible.

Finally, it may be desirable to sell parking spaces to condominium owners. This should be very expensive so as to be unlikely because parking spaces sold are removed from the pool of Development Parking (DP), violating the goal of shared parking. Sold parking spots will only be shared at the whim of the owner. If the owner wants to share their spot or spots with others, this can be done so as to generate payments to the owner. Since the parking is to be priced to guarantee vacant parking, the only advantage to the owner, of having privately owned parking is to be able to always use the same spot. Since this is a small advantage, few if any condominium owners will want to buy any parking.

6.4 Number of Units in the Beneficiary Group (N_BG) This is the number of units in the BG.

6.5 Fraction Built (FB) This is N_FB (amount of parking built) divided by the amount of parking that would have been required for the Development Parking
(DP) under the traditional parking ordinance. For example, if Development Parking (DP) is built for 100 condominiums and 30,000 square feet of office space, the traditional amount of parking required might be two per condominium and 4 for every one-thousand square feet of office space, for a total of 2*100 + 4*30 = 320 spaces. If the Number of Parking Spaces in the DP (N_DP) happened to be 250, then the FB for the development would be 250/320.

6.6 BG Parking (BGP) This is the parking assigned (allocated) to benefit a Beneficiary Group (BG). They are not specific parking places. Rather, they are some portion of the DP.

6.7 Number of Parking Spaces in a BGP (N_BGP) This is the number of parking spaces assigned to a Beneficiary Group (BG). N_UGP is computed by multiplying the amount of parking required by the traditional off-street parking ordinance by the development Fraction Built (FB). For the FB example above, the Number of Parking Spaces in a BGP (N_BGP) for the condominium owners Beneficiary Group (BG) would be 2*100 * (250/320) = 156.25 parking spaces.

6.8 Parking Cost (PC) This is the cost to provide the parking. If parking is underground or otherwise built into the overall building, then it is the difference between the cost of the building with the parking minus the estimated cost of the building if no parking were built. If the parking increased the amount of land needed to build the development, then the cost of the additional land is added to the construction cost to compute the Parking Cost (PC). The cost of surface parking is the cost of the land plus the cost of the construction (surface, striping, metering, landscaping, lighting and any other similar cost). The cost of on-street parking is only the cost of striping and metering the parking plus the cost of required signs. For the purpose of supporting the example calculations to follow, it is assumed that the 250 assumed number of spaces cost $40,000 each for a total cost of $10 M (10 million dollars).

6.9 Return on Investment (RI) This is an agreed-upon number which is used in the calculation of base parking price. It is the percent return on the capital cost of parking. For example, it may be agreed upon that 6% is the Return on Investment (RI) to be used in the calculations of the price to be charged for parking.

6.10 Percent Full (PF) This is the estimated yearly average of the occupancy rate of the Development Parking (DP). For example if the actual, time averaged, occupancy rate of a Development Parking (DP) is .7 (it is, on average, 70% full), then the Percent Full (PF), which is an estimate, should be close to .7. The Percent Full (PF) is given an initial estimate. That estimate is then continually updated by the computer which keeps hourly records of Development Parking (DP) population. Therefore, after a sufficient time has past, this estimate will have sufficient accuracy to support its use in the calculation of price. As conditions change, the true value and the estimated value of PF will both change. However,
the estimated value should track the true value with enough accuracy to make it reasonable to use this estimate \((PF)\) in the calculation of parking price.

### 6.11 Hourly Rate \((HR)\)
This is the hourly rate charged to park. To conform with Feature 5 it will be computed so as to increase during times of high demand.

### 6.12 Full Cost Pricing \((FCP)\)
This is a method of computing the Hourly Rate \((HR)\) so that the Return on Investment \((RI)\) is realized given the Parking Cost \((PC)\), even if there is no reason to raise the rate to limit usage. As an example, if the Parking Cost \((PC)\) of a Development Parking \((DP)\) is $10 M, meaning that the cost of an individual parking space is \(PC/N_{DP} = 10M/250 = 40,000\), the Return on Investment \((RI)\) is 6%, and there is no need to raise the rate to limit usage, then the rate per hour is set to earn \(.06 * 10M/250 = 2,400\) per year, from each spot in the Development Parking \((DP)\). If the Percent Full \((PF)\) is .6, then, using 365 days per year and 24 hours per day yields a price floor of

\[
HR = (RI) \times \frac{(PC)/(N_{DP})}{(24) \times (365) \times (PF)}.
\]

Using the example values from above yields

\[
HR = (0.06) \times \frac{10M/250}{(24) \times (365) \times (0.6)} = 45.662 \text{ cents per hour.}
\]

This amount, which happens to be $3.65 for an 8 hour day, could be described as the full cost price of the parking since it generates the desired return on the investment required to build the parking. This is also shown in Table 1.

### 6.13 Full-Cost, Protected Vacancy Pricing \((FCPVP)\)
The significance of a vacancy rate of 15% was explained in the description of Feature 6. If demand is high due to some special event or if parking was undersized at a development, it may happen that during certain hours of the day, vacancy rates may fall below the 15%, unless increases in price are applied. The “Preserved Vacancy” portion of the name means that the price is then increased as needed to support Feature 6. Steep, geometric increases will probably be needed, applied as multiplication factors to the Full Cost Pricing \((FCP)\) derived price, as the vacancy range drops below, 30%, in 5% increments. Until these diurnal, hourly effects or special event effects are well understood, the geometric base value of 2 could be used. Using this logic, since a vacancy rate of 15% is to be avoided, as soon as vacancy drops below 30%, the hourly rate would double. If the vacancy rate continues to decline to less than 25%, this method would double the rate again. If, in spite of this quadrupling of the base price, the vacancy rate continues to decline to less than 20%, the rate would double again, for an 8 fold increase in the price. For our example, this hourly rate would be \(8 \times (0.45662) = 3.65\) per hour. If in spite of this, the rate dropped below 15%, the rate would double again, to be $7.31 per hour. This is shown on the left side of Table 2, for the base multiplier of 2.
If the base multiplier value of 2 resulted in increases that were too small to preserve a vacancy rate of 15%, the computer would learn this lesson and the next time the vacancy rate dropped below 30%, the base factor would be selected to be some value larger than 2, such as 2.5. Table 2 shows the hourly rates for base factors of 2 and 2.5, given a baseline, full cost price.

The time and date of events must be known, data for them must be kept, and they must be then be anticipated with appropriate price increases. Feature 6 requires that the price be increase to preserve a vacancy rate of at least 15%. Table 3 shows multiplication factors which can be computed for any value of vacancy, “V”, without the stair stepping of Table 2. This means that every time a car parked or left the parking block, the hourly rate would change. The charge would be the time-weighted average of the various rates that were being applied during the time a car was parked.

6.14 Set of Assumptions For Sample Calculation of Cost & Benefit, 4 Groups

The following numbers are from the Belvedere application approved by the City Council on April 16th, 2008. There are 8,000 square feet of retail/office, 65 condominiums, and 28 live-work lofts. Under a traditional parking ordinance, the requirement would be 32 spaces for the retail/office, 130 spaces for the condominiums, and 28 for the live-work spaces, for a total of 190 spaces. It is assumed that there will be 150 spaces actually built. Table 4 shows the beneficiary groups and the calculations leading to Number of Parking Spaces in each BGP (each \( N_{BGP} \)).

6.15 Sample Calculation of Benefits and Costs

Table 5 uses the assumption that there are 150 parking spaces; each one is worth $40,000; leading to the base price hourly rate of 46 cents. In Table 5 it is also assumed that during the day there are 24 workers, 20 lofts owners, 40 condo owners parked, and these groups of people benefit equally from the allocated number of parking. The name of the groups and the allocations are shown in Table 4.

7.0 Supporting Tables
**Table 1**

<table>
<thead>
<tr>
<th>Name</th>
<th>Variable Name &amp; Description</th>
<th>Example</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N_DP</td>
<td>Number of parking places in a development Parking lot</td>
<td></td>
<td>175</td>
</tr>
<tr>
<td>PC</td>
<td>Parking Cost</td>
<td></td>
<td>$7,000,000.00</td>
</tr>
<tr>
<td>Space</td>
<td>Cost of single parking space</td>
<td></td>
<td>$40,000.00</td>
</tr>
<tr>
<td>RI</td>
<td>Return on Investment</td>
<td></td>
<td>.06</td>
</tr>
<tr>
<td>PF</td>
<td>Time Averaged Percent Full</td>
<td></td>
<td>.60</td>
</tr>
</tbody>
</table>

**Calculation of Full Cost**

**Base Price Hourly Rate, "HR"**

\[
HR = \frac{RI \times PC}{N\_DP} / (24 \times 365) \times PF
\]

Using Example Values above: \( HR = \$0.46 \)

**Full Cost (or Value) Pricing Example**
Table 2

Base Rate Multiplication Factors and Stair-Step Hourly Rates, (HR’s) for Two Base Multiplier Values and a Base HR = $0.46

<table>
<thead>
<tr>
<th>Vacancy Rate</th>
<th>Base Multiplier = 2</th>
<th>Hourly Rate (HR)</th>
<th>Base Multiplier = 2.5</th>
<th>Hourly Rate (HR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base Multiplier</td>
<td>Value</td>
<td></td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td>Formulas</td>
<td>Value</td>
<td></td>
<td>Formulas</td>
</tr>
<tr>
<td>Above 35%</td>
<td>$2^0$</td>
<td>1</td>
<td>$0.46</td>
<td>$2^0$</td>
</tr>
<tr>
<td>35% to 30%</td>
<td>$2^0$</td>
<td>1</td>
<td>$0.46</td>
<td>$2.5^1$</td>
</tr>
<tr>
<td>30% to 25%</td>
<td>$2^1$</td>
<td>2</td>
<td>$0.91</td>
<td>$2.5^1$</td>
</tr>
<tr>
<td>25% to 20%</td>
<td>$2^2$</td>
<td>4</td>
<td>$1.83</td>
<td>$2.5^2$</td>
</tr>
<tr>
<td>15% to 20%</td>
<td>$2^3$</td>
<td>8</td>
<td>$3.65</td>
<td>$2.5^3$</td>
</tr>
<tr>
<td>10% to 15%</td>
<td>$2^4$</td>
<td>16</td>
<td>$7.31</td>
<td>$2.5^4$</td>
</tr>
<tr>
<td>5% to 10%</td>
<td>$2^5$</td>
<td>32</td>
<td>$14.61</td>
<td>$2.5^5$</td>
</tr>
</tbody>
</table>

Stair-Step Price Multiplication to Achieve Protected Vacancy Pricing

Table 3

Base Rate Multiplication Factors for Ramping Hourly Rates, (HR’s) for Two Base Multiplier Values and Base HR = $0.46

<table>
<thead>
<tr>
<th>Vacancy Rate</th>
<th>Base of Multiplier = &quot;B&quot; = 2</th>
<th>Hourly Rate (HR)</th>
<th>Base of Multiplier = &quot;B&quot; = 2.5</th>
<th>Hourly Rate (HR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Formulas</td>
<td>Value</td>
<td></td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td>Formulas</td>
<td>Value</td>
<td></td>
<td>Formulas</td>
</tr>
<tr>
<td>Above 35%</td>
<td>$1$</td>
<td>1</td>
<td>$0.46</td>
<td>1</td>
</tr>
<tr>
<td>35% to 30%</td>
<td>$1$</td>
<td>1</td>
<td>$0.46</td>
<td>1</td>
</tr>
<tr>
<td>30% to 25%</td>
<td>$B(30 - V)/5$</td>
<td>1.414213562</td>
<td>$0.65</td>
<td>$1.58113883</td>
</tr>
<tr>
<td>25% to 20%</td>
<td>$2^2$</td>
<td>2.828427125</td>
<td>$1.29</td>
<td>3.952847075</td>
</tr>
<tr>
<td>15% to 20%</td>
<td>$5.656854249$</td>
<td>5.952847075</td>
<td>$1.80</td>
<td>9.882117688</td>
</tr>
<tr>
<td>10% to 15%</td>
<td>$11.3137085$</td>
<td>11.3137085</td>
<td>$5.17</td>
<td>24.70529422</td>
</tr>
<tr>
<td>5% to 10%</td>
<td>$22.627417$</td>
<td>22.627417</td>
<td>$10.33</td>
<td>61.76323555</td>
</tr>
</tbody>
</table>

Continuous Price Multiplication to Achieve Protected Vacancy Pricing
### Table 4

**Calculation of Parking Spaces Allocated to Each Beneficiary Group if Total Parking Supplied = 150**

<table>
<thead>
<tr>
<th>Beneficiary Group</th>
<th>Number</th>
<th>Traditional Amount of Parking Required</th>
<th>Fraction Built = $\frac{150}{190} = 0.7895$</th>
<th>Beneficiary Group Parking Allocation &quot;N_BGP&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condo Owners¹</td>
<td>65</td>
<td>130</td>
<td></td>
<td>102.63</td>
</tr>
<tr>
<td>Loft Owners¹</td>
<td>28</td>
<td>28</td>
<td></td>
<td>22.11</td>
</tr>
<tr>
<td>Workers</td>
<td>32</td>
<td>32</td>
<td></td>
<td>25.26</td>
</tr>
<tr>
<td><strong>Sum:</strong></td>
<td><strong>190</strong></td>
<td><strong>190</strong></td>
<td></td>
<td><strong>150.00</strong></td>
</tr>
</tbody>
</table>

Example of Computing Beneficiary Group Parking Allocations
### Table 5

<table>
<thead>
<tr>
<th>Total Parking Supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;N_DP&quot; =</td>
</tr>
<tr>
<td>150</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collection Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Base Price</th>
<th>Condo owners</th>
<th>Loft owners</th>
<th>Workers</th>
<th>General Public</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Hour</td>
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<td>40</td>
<td>20</td>
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<td>104</td>
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<tr>
<td>80</td>
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<td>0</td>
<td>10</td>
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<th>Hourly Rate</th>
<th>Condo owners</th>
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<th>Workers</th>
<th>General Public</th>
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<tr>
<td>Multiplier</td>
<td>$0.46</td>
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<td></td>
<td></td>
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<tr>
<td>HR</td>
<td>$0.46</td>
<td>$1.05</td>
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<table>
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<th>Hours duration</th>
<th>Condo owners</th>
<th>Loft owners</th>
<th>Workers</th>
<th>General Public</th>
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<td>12.00</td>
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<td>$109.59</td>
<td>$131.51</td>
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<td>$569.86</td>
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<thead>
<tr>
<th>Total Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,371.81</td>
</tr>
<tr>
<td>$1,371.81</td>
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<tr>
<td>$295.47</td>
</tr>
<tr>
<td>$337.68</td>
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<tr>
<td>$2,004.95</td>
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<table>
<thead>
<tr>
<th>Spacing Calculations</th>
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<tr>
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</tr>
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<table>
<thead>
<tr>
<th>Earning Calculations</th>
</tr>
</thead>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condo owners</th>
<th>Loft owners</th>
<th>Workers</th>
<th>General Public</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocated Parking</td>
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<td>$131.51</td>
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<td>Total &quot;N_DP&quot; Multiplied by N_BGP / N_DP</td>
<td>102.63</td>
<td>22.11</td>
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<tr>
<td>Total Collection</td>
<td>$1,371.81</td>
<td>$295.47</td>
<td>$337.68</td>
<td>$2,004.95</td>
</tr>
</tbody>
</table>

| Each worker that parked paid $5.48 |
| Worker that parked netted $5.07 |

| Condo & Loft Owners that parked in the day paid $5.48 |
| Condo & Loft Owners that parked in the night paid $12.59 |
| Condo & Loft Owners that parked 24 hours paid $18.07 |
| However, all Condo Owners earned $21.10 |
| Condo Owners that parked 24 hours netted $3.04 |
| However, all Loft Owners earned $10.55 |
| Loft Owners that parked 24 hours netted $7.52 |

<p>| The general public that parked all day paid $5.48 |
| The general public that parked all night paid $12.59 |</p>
<table>
<thead>
<tr>
<th>Mode</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive Alone</td>
<td>89%</td>
<td>54%</td>
</tr>
<tr>
<td>Carpool</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Bus</td>
<td>1%</td>
<td>17%</td>
</tr>
<tr>
<td>Bike, Walk</td>
<td>1%</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

What $54/month (1995 $’s) for Not Driving Did at CH2M Hill, an Engineering Firm in Bellevue, Washington, Near Seattle
Reference: *How to Get Paid to Bike to Work* by Patrick Siegman
<table>
<thead>
<tr>
<th>Location</th>
<th>Scope</th>
<th>Employees, Assumed No.</th>
<th>Financial Incentive per mo. (1995 $’s)</th>
<th>Parking Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group A: Areas with little or no public transportation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Century City District, West Los Angeles</td>
<td>3500 employees surveyed at 100+ firms</td>
<td>3500</td>
<td>$81</td>
<td>15%</td>
</tr>
<tr>
<td>Cornell University Ithaca, NY</td>
<td>9000 faculty &amp; staff</td>
<td>9000</td>
<td>$34</td>
<td>26%</td>
</tr>
<tr>
<td>San Fernando Valley, Los Angeles</td>
<td>1 large employer (850 employees)</td>
<td>850</td>
<td>$37</td>
<td>30%</td>
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<tr>
<td>Bellevue, WA</td>
<td>1 medium-sized firm (430 employees)</td>
<td>430</td>
<td>$54</td>
<td>39%</td>
</tr>
<tr>
<td><strong>Weighted Average of Group</strong></td>
<td>Sum 13780</td>
<td></td>
<td>$46.75</td>
<td>23.9%</td>
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<tr>
<td><strong>Group B: Areas with fair public transportation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Los Angeles Civic Center</td>
<td>10000+ employees at several organizations</td>
<td>10000</td>
<td>$125</td>
<td>36%</td>
</tr>
<tr>
<td>Mid-Wilshire Blvd., Los Angeles</td>
<td>1 mid-size firm</td>
<td>430</td>
<td>$89</td>
<td>38%</td>
</tr>
<tr>
<td>Washington DC Suburbs</td>
<td>5500 employees at 3 worksites</td>
<td>5500</td>
<td>$68</td>
<td>26%</td>
</tr>
<tr>
<td>Downtown Los Angeles</td>
<td>5000 employees surveyed at 118 firms</td>
<td>5000</td>
<td>$126</td>
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<tr>
<td><strong>Weighted Average of Group</strong></td>
<td>Sum 20930</td>
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<td>$109.52</td>
<td>30.8%</td>
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<tr>
<td><strong>Group C: Areas with good public transportation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Washington, Seattle</td>
<td>50,000 faculty, staff &amp; students</td>
<td>50000</td>
<td>$18</td>
<td>24%</td>
</tr>
<tr>
<td>Downtown Ottawa, Canada</td>
<td>3500+ government staff</td>
<td>3500</td>
<td>$72</td>
<td>18%</td>
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<tr>
<td><strong>Weighted Average of Group</strong></td>
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<tr>
<td><strong>Weighted Average Over 3 Groups</strong></td>
<td>Sum 13530</td>
<td></td>
<td>$46.35</td>
<td>25.3%</td>
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</tbody>
</table>

Ten Cases of Cashout, from *How to Get Paid to Bike to Work: A Guide to Low-traffic, High-profit Development.* Published in *Bicycle Pedestrian Federation of America, 1995*
Mike Bullock’s proposed improvements to the first draft of

DESIGNING FOR
SMART GROWTH
CREATING GREAT PLACES,
MORE CHOICES AND LESS DRIVING
IN THE SAN DIEGO REGION


Highlights:

1.) Traffic reduction and saving money on parking, by adopting good parking policies are identified as ways to help get projects built (it's not just about great design)

2.) New Parking subsection (Section 9.1) to cover the cost, value, and pricing of parking

3.) Throughout “Guidelines”, the phrase “Parking Demand Management” is replaced by neutral words.

4.) Current, draft sub-sections on parking are renamed so as to identify them as what they are: Best Practice

5.) A new parking subsection (Section 9.8) is added to cover the future of parking.
   a.) Unbundled Cost and Spontaneous Sharing
   b.) The RFID Age, Examples and the Vendor Role
   c.) Features of Future Parking (“Intelligent Parking”)
   d.) Train Station Applications
   e.) Legal Reach
   f.) Conclusion

6.) Scorecard to more heavily weigh reducing VMT

7.) 14 Additional references: CTC Amended Guidelines, 12 on Cashout, Intelligent Parking

Michael Bullock
mike_bullock@earthlink.net
1800 Bayberry Drive
Oceanside, CA 92054
760-754-8025
March 12, 2009
Ground rules: “Should be” means that I am saying that the “Is” wording should be changed to the “Should be” words. All changes are shown in blue, except those made in the extra time given for comments (to March 26th) which are shown in violet. My comments are in green.

On the Title Page, the picture is fine.

Is:

creating great places
in the san diego region

Should be:

creating more choices and less driving
in the san diego region

Or perhaps,

Should be:

creating great places, more choices, and less driving
in the san diego region

Chapter 1 has a 2-paragraph introduction. That is fine. However, the 2nd paragraph, which is:

SANDAG’s Regional Comprehensive Plan (RCP), adopted in 2004, offers a vision for change in the San Diego region that strongly emphasizes sustainability and smart growth. It also underscores the importance of high-quality urban design, acknowledging that higher-intensity infill development can win acceptance with members of the public only if it is designed well. The RCP notes that good design “can be the difference between a sense of overcrowding and a feeling of vibrancy.” To ensure that new infill development has high-quality design, the RCP calls for SANDAG to prepare a set of smart growth design guidelines.

needs to be balanced by the following paragraph:

However, winning acceptance from members of the public is not the only hurdle. There is always a need to balance good design with acceptable cost. A failure to reduce car-parking cost could prevent a project from getting built. Chapter 9 gives cost estimates for surface, structure, and underground parking. It also defines and details operational methods to reduce the need for parking by reducing driving. These methods give potential drivers a free choice they often lack. Since a primary goal of Smart Growth is to reduce driving, these operational considerations are of paramount importance. Finally, these methods are important because less traffic can also help a project win acceptance from members of the public.

1.1 Purpose of the guideline
**Is:**

*Designing for Smart Growth* fulfills the RCP’s vision by providing design guidelines for infill development throughout the San Diego region. It is a key part of SANDAG’s Smart Growth Tool Box, which includes both planning and financing tools. The guidelines in *Designing for Smart Growth* are based on best practices from communities throughout the San Diego region, as well as other cities in California and throughout the United States. Many of these guidelines have been illustrated by showing examples from the San Diego region; however, *Designing for Smart Growth* also provides examples from other cities in California and throughout the United States.

**Should be:**

The purpose of *Designing for Smart Growth* is to reduce driving. It also fulfills the RCP’s vision by providing design guidelines for infill development throughout the San Diego region. It is a key part of SANDAG’s Smart Growth Tool Box, which includes both planning and financing tools. The guidelines in *Designing for Smart Growth* are generally based on best practices from communities throughout the San Diego region, as well as other cities in California and throughout the United States. Many of these guidelines have been illustrated by showing examples from the San Diego region; however, *Designing for Smart Growth* also provides examples from other cities in California and throughout the United States. Since reformed car-parking policies have a significant potential to reduce driving, their descriptions could go beyond current practice. Such descriptions could result in vendors coming forward with proposals to help cities and developers pioneer these new methods.

**Is:**

1.3.2 Local Plans and Policies

*Designing for Smart Growth* is intended to serve as an inspiration for developers, designers, local governments and citizens throughout the San Diego region. It does not replace the Specific Plans, design guidelines, engineering standards and zoning ordinances that local jurisdictions have already adopted to regulate design in their communities. However, local jurisdictions in the San Diego region are encouraged to use *Designing for Smart Growth* as a starting point for their own planning efforts, as well as a reference to help them understand the key principles of creating great places.

**Should be:**

1.3.2 Local Plans and Policies

*Designing for Smart Growth* is intended to serve as an inspiration for developers, designers, local governments and citizens throughout the San Diego region. It does not replace the Specific Plans, design guidelines, engineering standards and zoning ordinances that local jurisdictions have already adopted to regulate design in their communities. However, local jurisdictions in the San Diego region are encouraged to use *Designing for Smart Growth* as a starting point for their own planning efforts, as well as a reference to help them understand the key principles of creating great places that will reduce driving. Often, local governments will want to improve their parking ordinances and add conditions to their approvals of new developments so that the economic discrimination against those that drive less will be eliminated.

**Is:**

6.1.5 Vehicle and Bicycle Parking
Adequate parking must be available at transit stations for people who arrive at the station by car or bicycle.

- Provide secure bicycle parking in the form of bike lockers or “bike stations” with valet parking. Use bike lockers that clearly indicate when they are occupied, so station patrons can see they are being used.
- Locate unsecured bicycle parking such as bike racks in places with high foot traffic, so that they receive natural surveillance from passersby.
- Design transit stations to provide for increased bicycle parking in the future as mode share increases.
- Incorporate an appropriate amount of vehicle parking, using parking structures wherever possible. Manage demand by charging a fee for parking where appropriate.
- Place surface parking lots in clusters that are large enough to be developed in the future with mixed-use buildings, offices, townhouses, multi-family dwellings or parking structures.

**Should be:**

**6.1.5 Vehicle and Bicycle Parking**

Adequate bicycle parking must be available at transit stations. Car parking supply and car parking policies should be adopted to maximize the use of transit.

- Provide secure bicycle parking in the form of bike lockers or “bike stations” with valet parking. Use bike lockers that clearly indicate when they are occupied, so station patrons can see they are being used.
- Locate unsecured bicycle parking such as bike racks in places with high foot traffic, so that they receive natural surveillance from passersby.
- Design transit stations to provide for increased bicycle parking in the future as mode share increases.
- Incorporate an appropriate amount of vehicle parking, using parking structures wherever possible. Manage demand by charging a fee for parking where appropriate.
- Place surface parking lots in clusters that are large enough to be developed in the future with mixed-use buildings, offices, townhouses, multi-family dwellings or parking structures.
- The methods described in Section 9.8.4 should be used. It is likely that at least some, if not all, of the parking will have been provided for the riders of the train, LRT, or BRT, which is the focus of the transit station. More specifically, it will have been built for those riders that originate their trips at the station and, in general, return to the station. If so, these riders constitute a beneficiary group at the station, as explained in Section 9.8.1. This means that the transit-portion of the parking should be priced using the full-cost pricing methods described in Section 9.1 and the earnings achieved should be distributed to the riders, again, as described in Chapter 9.8.

**Chapter 9, Parking**

Introductory words:
Is:

A primary goal of smart growth is to enable people to modify their travel behavior by using alternate modes of travel, reducing trip length and combining trips. As a result, communities that reflect the principles of smart growth will have a reduced number of vehicle trips and vehicle miles traveled. However, not all vehicle trips will be replaced by transit, walking or bicycling trips. A well-designed place must accommodate all modes of travel, including the automobile. The challenge for designers is to provide a parking supply that is slightly constrained but does not deter customers, frustrate tenants or create problems for nearby residents. It is also essential to accommodate parking while still creating walkable, pedestrian-oriented streets.

Should be:

One of the best metrics of smart growth is how well it enables people to modify their travel behavior by using alternate modes of travel, reducing trip length and combining trips. Smart growth will generate less vehicle miles traveled (VMT), compared to our general, current standards of development. One of the primary ways it can do this is by making parking costs visible and optional. This feature is often referred to as “unbundling the cost of parking”. It is our most cost-effective means of reducing driving.

Reducing driving helps get a project built, in two ways. First, it supports reducing the amount of parking required. The cost of parking can make a project economically unfeasible. Second, less driving will make the project less objectionable to those living close to it.

However, not all vehicle trips will be replaced by transit, walking or bicycling trips. For the foreseeable future, a well-designed place must accommodate automobiles. The challenge is to require a parking supply and a parking policy that does not deter developers, businesses, or those looking to buy real estate or; after the development is in operation, does not deter customers, frustrate tenants, or create problems for nearby residents. It is also essential that the parking is physically situated to minimize its harm to the goal of creating walkable, pedestrian-oriented streets.

***********************

Cost and Pricing are left out. This is unacceptable. The following is a new section that is needed. I suggest that it be placed as the first section, so that the numbers of the following sections are advanced by 1. Both the current Section 9.3 (which will become Section 9.4) and the new Section 9.8 will benefit from this information.

Should be added:

9.1 Cost, Value, Pricing, and the Use of Each

On September 23, 2008, a panel of experts reviewed the Oceanside, Ca. “Coast Highway Vision”. Parts of this plan were described as smart growth.

At the review, developer Tom Wiegel said, “Parking is the number 1 reason to do nothing.”

Developers must estimate the cost of parking when they assess the economic feasibility of projects. Planners need to also be able to do the same thing. Requiring less parking can help reduce the cost. In order to responsibly do that, the parking cost needs to be unbundled from the cost of other transactions. A cost cannot be unbundled if it is unknown. For example, the best way to unbundle parking cost is to put a fair price on parking. However, a fair price cannot be determined without knowledge of the cost.

While cost estimates support economic feasibility assessments, actual, as-built cost is the best basis for determining the fair, “full-cost” or “full-value” price. Actual cost will differ from estimated cost and will depend
on the sale price of land, the cost of materials, and cost of labor. As projects are built, it is important to have a record of the actual, as-built cost of the parking.

9.1.1 Estimated and Actual Cost

9.1.1.1 Surface Parking

One acre of surface parking will accommodate 120 cars. Coastal land, zoned for mixed use could be expensive. For example, at $1.2 million per acre, the land for a single parking space costs $10,000. Construction cost should be added to this to get the actual, as-built cost of each parking space. Estimated cost can be determined by using appraised land value and construction estimates. After the parking is developed, it is important to get the true, as-built cost put into a permanent data file.

9.1.1.2 Parking-Garage Parking

One acre of parking-garage parking will accommodate considerably more than 120 cars. The construction cost of the garage and the value of its land can be added together to get the total cost. Dividing that total cost by the number of parking spaces yields the total, as-built cost of each parking space. Although adding levels to a parking garage may seem like a way to cut the cost of each parking space, for the case of expensive land, there is a limit to the usefulness of this strategy because the taller the parking garage, the more massive the supporting structural members must be on the lower levels, which increases total cost. Parking-garage parking spaces are often said to cost between $20,000 and $40,000. It is important to get the true, as-built cost put into a permanent data file.

9.1.1.3 Underground Parking

In order to compute an estimate for the cost of a parking space that is under a building, it is necessary to get an estimate of the building with and without the underground parking. The difference, divided by the number of parking spaces, yields the cost of each parking space. The cost or value of land plays no role in the cost of this parking. However, it does not follow that this parking is cheap. Underground parking spaces are often said to cost between $60,000 and $90,000 dollars each. Although there will be an “as built” cost of the building with the parking, there will never be an “as built” cost of the building without the parking. However, after the construction is done, the estimate for the cost of the underground parking should be reconsidered and re-estimated if that is needed. It is important to get the final, best-estimate cost put into a permanent data file.

9.1.2 Value

Initially, value and cost are the same. For surface parking and parking-garage parking, the value would initially be the same as the as-built cost. For underground parking, the value would initially be the same as the best-estimate cost. However, over time the value must be updated. Both construction costs and land-value costs will change. The value assigned to a parking place should always be based on the current conditions.

9.1.3 Pricing

Parking space “values”, as describe above, must be converted to a yearly price by using a reasonable conversion factor. This conversion factor could be based on either the “cost of money” or the “earnings potential of money”. It is expected that this conversion factor would be 2% to 5% during times of low interest rates and slow growth; but could be over 10% during times of high-interest and high growth. For example, if surface parking value is $12,000 and it is agreed upon to use 5% as the conversion factor, then each parking spot should generate $600 per year for “profit” plus the amount needed for operations and maintenance.
These amounts of money, that are required to be generated in a year, need to be re-calculated every year or so, since both the values and the conversion factors will, in general, change each year.

Once the amount generated per year is known, the base price per unit year can be computed by dividing it (the amount generated per year) by the expected fraction of time that the space will be occupied, over a year. For example, if a parking space needs to generate $900 per year but it will only be occupied 50% of the time, the time rate charge is $1800 per year. This time rate can then be converted to an hourly or even a “per minute” base, time rate. There is no reason for any significant round off when time rates are applied. In general, each second of parking should increase the total charge.

Is:

9.1 Surface Parking

Should be:

9.2 Surface Parking

Is:

9.2 Parking Garages

Should be:

9.3 Parking Garages

Is:

9.3 Parking Demand Management

Most parking regulations seek to ensure that people who want to visit a site are not turned away by a lack of parking, and do not spill over onto other streets or parking lots. Traditional parking requirements typically meet these goals by requiring an excessive number of vehicle parking spaces for each land use. However, when the demand for parking is carefully managed, the amount of parking can be reduced, potentially by as much as 25 percent, while still meeting the needs of drivers.

Regarding the change in section title: Charging the full price for a loaf of bread does not “manage the demand” of bread. These measures are more about removing an inequity that increases demand. “Demand Management” is a phrase that helps propagate the myth that we have to manage people’s natural tendencies.

Should be:

9.4 Best-Practices to Reduce Numerical Requirements
Most parking regulations seek to ensure that people who want to visit a site are not turned away by a lack of parking, and do not spill over onto other streets or parking lots. Traditional parking requirements typically meet these goals by requiring an excessive number of vehicle parking spaces for each land use. However, when the demand for parking is not being increased by hiding the cost of parking and forcing everyone to pay, regardless of whether or not they drive, the amount of parking can be reduced while still meeting the needs of drivers. One study of employee and student parking indicated that by introducing an economic reward for not driving, driving decreased by about 25 percent.

Is:

9.3.1 Unbundled Parking Costs and Cash-Out Programs

Should be:

9.4.1 Unbundled Parking Costs and Cash-Out Programs

Is:

9.3.2 Shared Parking

Should be:

9.4.2 Shared Parking

Is:

9.3.3 Parking Technologies

Should be:

9.4.3 Parking Technologies

Is:

9.3.4 Vehicles that Reduce Demand

Should be:

9.4.4 Vehicles that Reduce Demand
Is:

9.4 Bicycle Parking

Bicyclists require safe, secure places to park their bikes, just as drivers require space for their cars.

- Include bicycle parking in all parking lots as well as in above ground parking structures.
- Provide secure bicycle parking in limited-access garages or storage areas where practical.
- Locate bicycle parking areas near building entrances, and provide a clear pedestrian path between the parking area and the entrance.
- Provide durable, permanently-anchored bicycle racks that allow bikes to be secured with U-locks or cable locks. Use racks that can support the frame at two points, such as inverted U racks.
- In large bicycle parking areas, include spaces that are long enough to accommodate a bicycle that is towing a trailer.

Should be:

9.5 Bicycle Parking

Bicyclists require safe, secure places to park their bikes, just as drivers require space for their cars.

- Include bicycle parking in all parking lots as well as in above ground parking structures.
- Provide secure bicycle parking in limited-access garages or storage areas where practical.
- Locate bicycle parking areas near building entrances, and provide a clear pedestrian path between the parking area and the entrance.
- Provide durable, permanently-anchored bicycle racks that allow bikes to be secured with U-locks or cable locks. Use racks that can support the frame at two points, such as inverted U racks.
- In large bicycle parking areas, include spaces that are long enough to accommodate a bicycle that is towing a trailer.
- Amend off-street parking ordinances to include a requirement for numerically and functionally sufficient bicycle parking. For places of employment, Class 1 (lockers or inside parking) should be required.

Is:

9.6 Parking Standards and Policies

Planners, urban designers and architects can ensure that vehicle parking is incorporated into new projects as thoughtfully as possible. However, local jurisdictions set the basic requirements for vehicle parking, such as the minimum number of spaces to be provided and the provisions for shared parking between multiple land uses. Cities and counties can use the following guidelines as a starting point to write parking ordinances that support the principles of smart growth.

9.6.1 Minimum and Maximum Requirements

Parking requirements are often drawn from parking generation rates published by the Institute of Transportation Engineers. These rates typically reflect a small number of studies that measure peak parking demand at suburban locations. The maximum parking demand in these studies often becomes the minimum
parking standard in local zoning ordinances, which encourages more people to drive. To support alternatives to the automobile, parking requirements must be more carefully tailored to local needs.

- Reduce minimum parking requirements so that the market can determine how much parking is needed on a site.
- Reduce or eliminate parking requirements where there are shared parking areas that can accommodate peak parking demand.
- Set maximum parking standards in areas where public transit is well established, frequent and convenient.
- Allow for reduced parking requirements if a project includes transportation demand management (TDM) strategies, such as providing on-site car-sharing vehicles, van pool parking and discounted transit passes.
- Allow projects to reserve landscaped areas for future use as surface parking lots, if warranted by demand.

9.6.2 Parking Management Districts
Local jurisdictions can create parking management districts in which the amount and cost of parking is regulated, so that the area meets its parking needs while promoting transit use, ridesharing and other alternatives to the single-occupancy vehicle.

- Provide publicly-owned, centralized parking facilities by collecting impact fees, in-lieu fees and other assessments from developers.
- Manage the price of on-street parking so that no more than 85 percent of visible spaces are occupied at a given time. This ensures that drivers who are willing to pay for a convenient, on-street parking space can find one as quickly as possible, rather than increasing congestion as they search for a space.
- Increase parking fees at times of day when parking demand is highest.
- Provide discounted parking rates in locations that are less convenient.
- Use revenues from parking fees to finance streetscape improvements, enhanced transit and day-to-day maintenance.
- Establish district-wide parking caps in places with frequent transit service.

9.6.3 Shared Parking
Different land uses often experience peak parking demand at different times of the day or week. In addition, businesses are often located so close to one another that people can park once and walk between them. As a result, many jurisdictions allow multiple land uses to provide shared parking areas, which reduces the total amount of parking that must be provided.

If a parking lot is shared between two separately-owned properties, it is essential for both property owners to sign a legally binding agreement that guarantees access to the parking spaces. The local jurisdiction should have the power to enforce this agreement. Most cities and counties that allow shared parking, such as the City of San Diego, have developed model agreements that must be signed by the property owners as well as the local jurisdiction’s attorney.

- Reduce the total parking requirement for multiple land uses that can be visited in a single trip, or that experience peak demand at different times of the day.
- Allow parking facilities to be located on separate sites from the land uses they serve.
- Set a maximum distance, typically no more than 1,000 feet, between an off-site parking facility and the land uses that it serves.
- If a parking lot has a different property owner than the businesses that use the parking lot, require a legally binding agreement between the property owners. Give the local jurisdiction the power to enforce this agreement.

9.6.4 Parking Configuration
Developers can often make more efficient use of a site when they have flexibility to configure vehicle parking spaces in nontraditional ways.
• For residential uses, allow tandem parking spaces, where one car parks behind another, as well as stacked parking spaces, where two or three cars park above one another on a hydraulic lift.
• Allow large commercial and institutional uses to meet their peak parking demand by temporarily converting regular parking areas to higher-capacity valet parking areas.

Should be:

9.7 Best Practice Standards and Policies

Planners, urban designers and architects can ensure that vehicle parking is incorporated into new projects as thoughtfully as possible. However, local jurisdictions set the basic requirements for vehicle parking, such as the minimum number of spaces to be provided and the provisions for shared parking between multiple land uses. Cities and counties can use the following best-practice guidelines as a starting point to write parking ordinances that support the principles of smart growth.

9.7.1 Minimum and Maximum Requirements
Parking requirements are often drawn from parking generation rates published by the Institute of Transportation Engineers. These rates typically reflect a small number of studies that measure peak parking demand at suburban locations. The maximum parking demand in these studies often becomes the minimum parking standard in local zoning ordinances, which encourages more people to drive. To support alternatives to the automobile, parking requirements must be more carefully tailored to local needs.

• Reduce minimum parking requirements so that the market can determine how much parking is needed on a site.
• Reduce or eliminate parking requirements where there are shared parking areas that can accommodate peak parking demand.
• Set maximum parking standards in areas where public transit is well established, frequent and convenient.
• Allow for reduced parking requirements if a project includes transportation demand management (TDM) strategies, such as paying car parking cashout to employees or providing on-site car-sharing vehicles, van pool parking and discounted transit passes.
• Allow projects to reserve landscaped areas for future use as surface parking lots, if warranted by demand.

9.7.2 Parking Management Districts
Local jurisdictions can create parking management districts in which the amount and cost of parking is regulated, so that the area meets its parking needs while promoting transit use, ridesharing and other alternatives to the single-occupancy vehicle.

• Provide publicly-owned, centralized parking facilities by collecting impact fees, in-lieu fees and other assessments from developers.
• Manage the price of on-street parking so that no more than 85 percent of visible spaces are occupied at a given time. This ensures that drivers who are willing to pay for a convenient, on-street parking space can find one as quickly as possible, rather than increasing congestion as they search for a space.
• Increase parking fees at times of day when parking demand is highest.
• Provide discounted parking rates in locations that are less convenient.
• Use revenues from parking fees to finance streetscape improvements, enhanced transit and day-to-day maintenance.
• Establish district-wide parking caps in places with frequent transit service.
• Establish parking accounts and automatic payment systems. Coral Gables, Florida has a system where drivers register their cell phones, credit cards, and license plates and then pay by calling in. Establishing parking accounts is the future of parking.
9.7.3 Shared Parking

Different land uses often experience peak parking demand at different times of the day or week. In addition, businesses are often located so close to one another that people can park once and walk between them. As a result, many jurisdictions allow multiple land uses to provide shared parking areas, which reduces the total amount of parking that must be provided.

If a parking lot is shared between two separately-owned properties, it is essential for both property owners to sign a legally binding agreement that guarantees access to the parking spaces. The local jurisdiction should have the power to enforce this agreement. Most cities and counties that allow shared parking, such as the City of San Diego, have developed model agreements that must be signed by the property owners as well as the local jurisdiction’s attorney.

- Reduce the total parking requirement for multiple land uses that can be visited in a single trip, or that experience peak demand at different times of the day.
- Allow parking facilities to be located on separate sites from the land uses they serve.
- Set a maximum distance, typically no more than 1,000 feet, between an off-site parking facility and the land uses that it serves.
- If a parking lot has a different property owner than the businesses that use the parking lot, require a legally binding agreement between the property owners. Give the local jurisdiction the power to enforce this agreement.

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Developers can often make more efficient use of a site when they have flexibility to configure vehicle parking spaces in nontraditional ways.

- For residential uses, allow tandem parking spaces, where one car parks behind another, as well as stacked parking spaces, where two or three cars park above one another on a hydraulic lift.
- Allow large commercial and institutional uses to meet their peak parking demand by temporarily converting regular parking areas to higher-capacity valet parking areas.

The following additional section is needed to describe the future of parking. The SGDG cannot just be about “best practice”. How could Coral Gable, Florida develop a system where “drivers register their cell phones, credit cards, and license plates and then pay by calling in”, if they were afraid to go beyond best practice? If SANDAG sticks to best practice, they reinforce the idea that innovation is too risky. Besides inform, SANDAG needs to challenge and inspire.

9.8 The Future of Parking

Sections 9.2 through 9.7 describe the best current parking practices. However, planners need to also be aware of possibilities that go beyond best practices. Government is not always the best at recognizing new technology that could enable significant improvements in methods. Successful businesses are those that innovate and automate. This section is meant to inspire governments to do the same thing for parking policies.

SANDAG has a special responsibility to consider the future of both road-use pricing and pricing for parking. This is because these strategies are specifically identified in our Regional Transportation Plan (RTP) Guidelines, issued by Caltrans. As found in SANDAG modeling so far, the pricing of parking appears to have a particularly large potential to reduce driving. SANDAG therefore has a responsibility to encourage pricing in the guidelines that it generates for local governments. Unless efficient methods and strong rationale for pricing is sufficiently described, it may be unlikely that local governments will implement the best-possible methods to put a price on parking and thereby unbundle its cost.
9.8.1 Unbundled Cost and Spontaneous Sharing

“Unbundled cost” means that people that use parking can see exactly what it costs and people that don’t use the parking will escape its cost entirely. In other words, parking cost is visible and optional. This conforms to the usual rule of the free market where a person only pays for what they choose to use. So it is fair. Letting consumers escape the cost of parking if they choose not to park will reduce driving. One study of eleven cases indicated that employees and students might, on average, drive 25% less if they were given a clear, economic incentive.

The most effective form of sharing would be a system that allows anyone to park anywhere at any time and for any length of time. Proper pricing could make this feasible. For mixed use, the sharing of parking means that less parking will be needed because, for example, it could be used mostly by employees during the day and mostly by residents at night.

Although most experts agree that unbundled cost and sharing are the keys to efficient use of parking, there are no current best practices that accomplish both.

However, there is a method of fully unbundling the cost of parking that encourages sharing. It is applicable in all cases and it is described in an unpublished draft report, called *Intelligent Parking*. The method benefits from spontaneous sharing between all drivers. It is described as follows.

If parking has, in effect, been gifted to a group, such as those using a train from a train station or the students of a school, then that group becomes the “parking beneficiary group”. If parking has been paid for by a group or is, either directly or indirectly, being paid for by a group, then that group becomes the parking beneficiary group. Note that in both cases, the members of the group must have the choice to drive or not drive. For example, an office development is required to provide parking. This cost is passed down until it necessarily lowers the wages of the employees. So, for this case, the employees are the beneficiary group. Retail customers and residents are two other obvious beneficiary groups. The method of unbundling can now be simply stated. The full and fair price for the parking is charged. This money, minus the collection cost, is given to the members of the beneficiary group.

How the monthly earnings are divided up among the members of the beneficiary group depends on the type of beneficiary group. For each member, the total monthly earnings dollar amount is always multiplied by a quantity and divided by the sum (the sum is the denominator) of that quantity, taken over all members. For example, for employees, the multiplier is the number of hours that the employee worked over the month while the denominator is the total number of hours worked by all employees over the month. At a school, for the students, the numerator is the total time spent at the school, over the month, while the denominator is the sum of the same quantity, for all the students. At a transit station, the numerator is all of the passenger’s monthly hours on the round trips taken, over the month, while the denominator is the total number of hours spent by all passengers on round trips over the month. At a shopping center, the numerator is the sum of the money spent by the shopper, over the month, while the denominator is the total amount of money spent by all shoppers over the month. (This could be adjusted, if the shopping center management wanted to reward for time spent at the shopping center. This might require that shoppers have RFID on their person, as would be true for train passengers, to efficiently charge them for their fares.) At a condominium, the numerator is the number of parking places that were paid for (directly or indirectly) by the resident family and the denominator is the total number of parking places at the condominium project; similarly, for apartment complexes.

More details are in *Intelligent Parking*, [http://moderntransit.org/sdc/IntelligentParking6](http://moderntransit.org/sdc/IntelligentParking6) and are also described below.

9.8.2 The Radio Frequency Identification (RFID) Age, Examples and Vendor Role

Government will eventually enter into an RFID (radio frequency identification) age. Organizers of large athletic events already have. For example, over 20,000 people ran the 2008 Bay-to-Breakers foot race in San Francisco. Each runner had a “chip” in their shoe lace. Each runner’s start time and finish time were recorded...
and all results were available as soon as the last runner crossed the finish line. Organizers that put on large open-water swims, foot races, and bike rides have routinely used RFID for many years. An RFID vendor in San Diego states that passive RFID units cost less than $5, are reliable, are durable, and they could be used to identify cars as well as people.

Certainly, government and in particular transit agencies and parking districts could use this technology. For example, when a person that has an RFID unit which is tied to a billable address with an open account gets on a bus or a train, they should not have to pay at that time, visit a pay station, or "swipe a card" that has a positive balance. SDGE customers that pay their bills are not required to pre-pay. The same courtesy should be extended to most transit riders, people that drive on roads, and people that park cars. There should be one monthly bill for all three activities.

The RFID “chips", the frequency scanners that detect the RFIDs and the computer software that prepares the invoices can all be implemented in the private sector. Government’s job is to define the ideal system and let vendors bid on the right to develop, prototype, install, test, debug, assume all liability for, change ordinances, and operate the described system. In return, they will probably want “p” percent of charges, for “n” years; then “q” percent.

9.8.3 Features of Future Parking ("Intelligent Parking")

*Intelligent Parking* has one billing agency for all parking, public and private; on-street and off-street. Generally, credit-worthy drivers get billed monthly for their parking and also receive earnings if they belong to a beneficiary group. Ultimately, these invoices should also include charges for transit use and highway use. (See Page 3 of [http://www.catc.ca.gov/programs/rtp/Adopted_Addendum_2007_RTP_Guidelines.pdf](http://www.catc.ca.gov/programs/rtp/Adopted_Addendum_2007_RTP_Guidelines.pdf).) Credit-worthy drivers have parking accounts and are able to “park and go”, with no action needed. *Intelligent Parking* is “user friendly”.

*Intelligent Parking* is fully shared. The cost of parking is fully unbundled from other transactions, such as getting a wage, paying rent, owning a condominium, or purchasing goods or services. If someone doesn’t park, they don’t pay, either directly or indirectly, because the earnings that they get balance out their losses.

*Intelligent Parking* must be rigorous in specifying who gets earnings, where “earnings” are defined to be revenue minus collection cost.

Data collection is by car detectors, frequency scanners, RFID units (transponders) in or on the vehicle, pixel collection for cars with no RFID, and pay stations for customers with no RFID.

Pay stations will often have the capability of setting up an account and dispensing an RFID unit to a person that has good credit.

*Intelligent Parking* has instantaneous, congestion pricing for each “block”, with a “block” being about 40 parking spots, for off-street parking. This means that pricing is determined by an algorithm, as a function of block occupancy, to preserve the minimum vacancy (15%) that has been suggested by Professor Donald Shoup. (Shoup authored of *The High Cost of Free Parking.*) This vacancy is preserved by having the computer set the price in real time, as a function of occupancy rate. When the occupancy goes above 70%, the price is increased by the application of a geometrically increasing multiplier. The multiplier increases with each 5% increase in occupancy. These algorithms are shown in Tables 2 and 3 of *Intelligent Parking*. A base 2 results in a multiplier of 16 when the occupancy goes above 85%; a base 3 results a multiplier of 81. The base is set to prevent occupancy from exceeding 85%. The base would not have to be an integer. People would pay the time-averaged rate, over the time that their car is parked.

Records of the use and earnings of every parking space are stored in the computer. Such data could be used to support decisions to either increase or decrease the supply of parking.

On-demand predictions of price and which spaces to use at a given price need to be available to users so that they can develop a plan for parking before they start their trip. Drivers planning a trip would specify the hours
of the trip, the address (or addresses) they will visit, and the maximum price rate they are willing to pay. The system will recommend a parking strategy and assign probabilities to the prices. This will decrease driving around looking for parking.

For on-street parking, the following (somewhat arbitrary) unique rules apply.

- In front of single-family homes, 100% of the earnings go to the residents. There is no permit parking.
- In front of duplexes and everything else, the earnings are evenly split between the city and the beneficiary groups associated with the building on the street.
- For blocks where parking is 0 – 50% full, the parking is free.
- Above 50% the pricing is the same as for off-street parking.

### 9.8.4 Train Station Application

The assumption is made that the train-station parking exists for the benefit of all of the train riders that make round trips on the train from the station. It is not just for train riders that park in the station. It is also not there to raise money for the agency running the train. Therefore the train riders are the beneficiary group, as defined above. For a train station, a parking base price (per unit time) needs to be established, as discussed in Section 9.1. All cars and all riders need to have accounts and be outfitted with RFID units. Instantaneous congestion pricing needs to be established, so that charges are, in general, time averages of the various parking rates that are applied during the time a car was parked. The congestion pricing algorithms are shown in the Tables 2 and 3 of *Intelligent Parking*. This will ensure that there is available parking throughout the parking lot.

Since the parking lot is there for the benefit of those that use the train, the following is true. Each month, every person that parks a car gets billed and each train rider gets parking-lot earnings and a bill for their use of the train. Bus riders get billed for their use of the bus, but get no parking lot earnings, since the parking lot is for the train riders. People that park cars that do not use the train benefit those that ride the train, because they increase their earnings. With instantaneous congestion pricing, there is literally no theoretical limit to how much money could be earned by the transit-station parking. The only limit is how much people want to park and want to pay; no one is forced to do anything. It is conceivable that train riders that do not use the parking lot would be able to ride round trip from a North County station to San Diego for almost no net money, when their parking-lot earnings are taken into account.

### 9.8.5 Legal Reach

Government can implement a parking plan at the train station, on the streets, and at new developments. However, it cannot implement a parking plan at existing developments. This should not cause a problem however. *Intelligent Parking* is so beneficial to all concerned that after it is understood by those running existing developments they will request that their developments be brought into the *Intelligent Parking* regime. Neighborhoods will also make this request.

### 9.8.6 Conclusion

With congestion pricing, *Intelligent Parking* creates the potential for multiple, new classes of consumers. Large amounts of revenue will sometimes be generated. There will always be vacancy. Enforcement and collection will be automatic. *Intelligent Parking* will stop the economic discrimination against those that drive less, which is good, because government has no reason to encourage driving. Less parking will be needed.

*The Smart Growth Scorecard needs to be changed so that reducing VMT is the primary metric. This may be impossible given our current knowledge. However, Smart Growth that is far from transit...*
“free parking” is not, as far as I know, a verified method of reducing VMT. Transit Access and unbundling the cost of parking needs outweigh the other considerations.

Is:

The Smart Growth Scorecard is a tool to help local jurisdictions and community organizations determine whether a project incorporates the most fundamental design issues that are addressed in Designing for Smart Growth. The Scorecard also provides a straightforward way to compare different projects with one another.

Should be:

The Smart Growth Scorecard is a tool to help local jurisdictions and community organizations determine whether a project incorporates the most fundamental design issues that are addressed in Designing for Smart Growth and how likely it is that it will reduce VMT. The importance of reducing VMT motivated increasing the weighting factors for Question 10, Transit Access, and for Question 14, “Parking Management”, which includes the unbundling of parking cost. Projects will have to score well on at least one of these questions in order to compare well with projects that score well on both of these two questions. The Scorecard provides a straightforward way to compare different projects with one another.

Is:

10. Transit Access 1 Scoring Weight

Should be:

10. Transit Access 8 Scoring Weight

Is:

14. Parking Demand Management 1 Scoring Weight

Should be:

14. Parking Management 8 Scoring Weight

On the Final Project Score sheet:

Is:

14. Does the project incorporate strategies to manage parking demand?
14. Does the project incorporate strategies to properly manage parking?

Add the following references:

Under General References:


Addendum to the 2007 Regional Transportation Plan, Guidelines Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process, Adopted by the California Transportation Commission on May 29, 2008.


Under Parking:


Parking Policy Proposal for the New Carlsbad High School

Significant, Feasible, Environmental Mitigation that is not considered in the FEIR:

Extend the Parking Lot Benefit to Each Student of Driving Age, Regardless of How Often The Student Uses the Parking

Likewise, for employees

Reasons For Change, 1 of 2

- Environmental mitigation
  - Pricing results in less driving
  - Less parking needed
- Fairness
  - Students that never drive are equal to those that always drive
  - Parking is expensive
    - Less than 120 cars per acre
    - An acre is expensive
      - Nearby land zoned multi-unit housing
      - Up to 25 units per acre

If an acre costs $1.2 million, the land per parking space is worth $1.2 million / 120 = $10,000!

Mike Bullock
Post Feb. 11, 2009 CUSD, Fixed Siegman Data
Reasons For Change, 1 of 2

- What it teaches students
  - Economics of parking
  - Outcomes of free choice, over time
  - Investment strategies
  - Your concern for the future
- Your concern for the future
- Less estranged, alienated students
- More school pride

Global Warming Requires Action

- The June *Scientific American* states that the warming caused by the level of equivalent CO2, expected (!) within a few decades, will result in a 5% chance of an increase of 14 Degrees Fahrenheit and that this poses a risk of “a devastating collapse of the human population, perhaps even to extinction.”
GHG From Driving
Source: Energy Policy Initiatives Center (epic)

  - In San Diego County, emissions from on-road vehicles are about 46% of regional GHG emissions.

- AB32 means we must drive less
  - 1990 levels by 2020
  - 80% less, by 2050

A High School on the edge of town needs mitigation to reduce driving.

Results of 3 Actions, Including Cashout
Case (#1), Reference Patrick Siegman’s article in Bicycle Pedestrian Federation

- Company: CH2M Hill
  - Location: Bellevue, WA (Seattle suburb)
  - Engineering Firm with 430 employees

- Actions
  - $54/month (1995 $’s), to not drive
  - Improved Transit
  - Improved Bike/Pedestrian facilities

<table>
<thead>
<tr>
<th>Mode</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive Alone</td>
<td>89%</td>
<td>54%</td>
</tr>
<tr>
<td>Carpool</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Bus</td>
<td>1%</td>
<td>17%</td>
</tr>
<tr>
<td>Bike, Walk</td>
<td>1%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Since these changes are brought about by more than just cashout, this case is not used in the tabulation of cashout results (next chart)
**Pricing Reduces Driving**

(10 Locations, 3 Groups, 1995 Dollars)

---

**Impact of Financial Incentives on Parking Demand**

<table>
<thead>
<tr>
<th>Location</th>
<th>Scope</th>
<th>1995 dollars per mo.</th>
<th>Parking Use Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group A: Areas with little or no public transportation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Century City District, West Los Angeles</td>
<td>3500 employees at 150+ firms</td>
<td>$81</td>
<td>15%</td>
</tr>
<tr>
<td>Cornell University, Ithaca, NY</td>
<td>3000+ faculty &amp; staff</td>
<td>$34</td>
<td>26%</td>
</tr>
<tr>
<td>San Fernando Valley, Los Angeles</td>
<td>1 employer, 850 employees</td>
<td>$37</td>
<td>30%</td>
</tr>
<tr>
<td>Costa Mesa, CA</td>
<td></td>
<td>$37</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Average for Group</strong></td>
<td></td>
<td>$47</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Group B: Areas with fair public transportation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Los Angeles Civic Center</td>
<td>10000+ employees, several firms</td>
<td>$125</td>
<td>36%</td>
</tr>
<tr>
<td>Mid-Wilshire Blvd, Los Angeles</td>
<td>1 firm</td>
<td>$55</td>
<td>39%</td>
</tr>
<tr>
<td>Washington DC Suburb</td>
<td>3500 employees at 3 worksites</td>
<td>$66</td>
<td>26%</td>
</tr>
<tr>
<td>Downtown Los Angeles</td>
<td>5500 employees, 118 firms</td>
<td>$102</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Average for Group</strong></td>
<td></td>
<td>$102</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Group C: Areas with good public transportation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Washington, Seattle WA</td>
<td>50,000 faculty, staff &amp; students</td>
<td>$58</td>
<td>24%</td>
</tr>
<tr>
<td>Northwest Offices, Canada</td>
<td>3000+ government staff</td>
<td>$72</td>
<td>18%</td>
</tr>
<tr>
<td>Bellevue, WA</td>
<td>1 firm with 400 employees</td>
<td>$54</td>
<td>39%</td>
</tr>
<tr>
<td><strong>Average for Group, but not Bellevue Washington</strong></td>
<td></td>
<td>$45</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Over All Average, Excluding Bellevue Washington</strong></td>
<td></td>
<td></td>
<td>25%</td>
</tr>
</tbody>
</table>

*Patrick Siegman, of Nelson Nygaard*

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### Cashout Results References

At [http://moderntransit.org/cashout/cashoutref.html](http://moderntransit.org/cashout/cashoutref.html)

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Above reference listed the following references:


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Mike Bullock  
Post Feb. 11, 2009 CUSD, Fixed Siegman Data
Addendum to the 2007 Regional Transportation Plan Guidelines

Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process

Adopted by the California Transportation Commission on May 29, 2008

The Future is Now, 1 of 2

The Future is Now, 2 of 2

These 3 bullets are taken verbatim from Page 3 of the 9 page document!

- Consider the use of alternative mode programs, congestion pricing, toll roads, and parking strategies. Examples include, but are not limited to the following:
  - Road pricing and High Occupancy Toll (HOT) lanes. To reduce VMT,
  - MPOs should model adding pricing to existing lanes, not just as a means for additional expansion. Variable/congestion pricing should be considered.
    - User fees such as fuel taxes and parking charges
    - Free or reduced fare transit fares
    - Expansion of Parking Cash-Out Programs
    - Strategies to reduce the impacts of pricing strategies on low-income individuals.
- Consider utilizing revenues from these pricing strategies for projects, such as mass transit, that improve mobility without increasing VMT or GHG emissions.
Set Up Description 1 of 2

- All students of driving age & employees are given accounts
- Cars to be parked are assigned an electronic ID (RFID or other)
- Parking data collection (scanners) units are set up in parking areas

Set Up Description 2 of 2

- Processing and statement-sending computers and software are established
- Data link between scanners and computer is established
- Full cost parking price rate (Charge per unit of time) is agreed upon
The Next 3 Charts show the calculations of student charges and earnings. Similar calculations would be done for employees.

Calculation of Student’s Time-in-School for Month

- For each student, the monthly hours at the school are accumulated, “$\Delta T_{\text{Student}}$”
  - Class time & extra curricular time
  - Adjusted upward if car is in the parking lot longer
  - Un-parked student’s extra time entered by staff
  - Absentee time deducted
- Total hours for all students is also computed for the month, “$\Delta T_{\text{AllStudents}}$”
Student Charge and Total Earnings are Computed

- For each student, the monthly charge for parking is accumulated
- The total amount charged, for all students, is also computed
- The administration fee is subtracted to yield total student-parking earnings, “E_{AllStudents}”

Student-Earnings Calculation

<table>
<thead>
<tr>
<th>Definitions to Compute A Student’s Monthly Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔT_{Student}</td>
</tr>
<tr>
<td>ΔT_{AllStudents}</td>
</tr>
<tr>
<td>E_{AllStudents}</td>
</tr>
</tbody>
</table>

\[
E_{Student} = E_{AllStudents} * \left( \frac{ΔT_{Student}}{ΔT_{AllStudents}} \right)
\]
Monthly Statements

- Monthly charge & earnings
- If charge is larger than earning, the student pays the difference
- If the earnings are larger than the charge, either
  - Check enclosed or, if Board prefers
  - Contribution to Student’s “401K”
    - The total “401K” is awarded to support college*
    - If no college, then the student can withdraw the money when they are 21 years of age

*Students accumulating money for college are more likely to go to college.

Can This Really Be Done?

- Vendor: read proposal; ready to go!

I reviewed your Intelligent Parking proposal and presentation in their entirety. The identification of vehicles which you suggest for student parking using commercially available RFID technologies is a fairly straightforward process. There are numerous, inexpensive passive (no battery required) RFID tags which have been specifically designed for use on cars and trucks. These tags are installed directly on license plates or windshields, can be read from up to 30 meters away, and can be read as cars drive up to 60 mph. Additionally, automatic license recognition systems, used in conjunction with RFID, can provide a high level of enforcement making it difficult to cheat the system, similar to the Fast Track system which allows tolls to be automatically collected.

This is not too tough - we probably would integrate with a service that already sends physical mail from an electronic submission instead of re-inventing this wheel.
Back up charts

Mike Bullock, 1 of 3

- Personal
  - 62 years old, married, two daughters, & two grand daughters
    - Daughter Laura Bullock (lives in Berkeley)
    - Heidi Franczyk (Parks/Rec Commission & OCNA founding board member)
  - Moved from Cupertino to Oceanside in April 2007
  - Oceanside home (1800 Bayberry Dr) and 4-plex (506 N. Ditmar)
  - Swims with and competes for Oceanside Swim Masters
- Education
  - BSEE, Lamar University
  - MSE, University of Texas at El Paso
- Professional
  - Lockheed Martin Systems Engineer, 1971 to 2007
    - Last 2 years, Space Based Infrared System (SBIRS, satellite to detect and track missiles)
    - 10 Years previous: Milstar (communication satellite)
      - Verification of antenna pointing accuracy
      - Antenna pointing calibration
Transportation Interest: Economics, especially car parking

- Surface parking: 120 cars/acre
- Freeway lane capacity: 1800 cars/hour (@ 35 mph)
- 4-lane freeway cost:
  - 26 acres/mile (?);
  - $55M/mile construction cost ($875M for 16 miles, proposed 241 extension Toll Road, from TCA)
- Transit capacity = (car or train capacity) / Headway

President, newsletter editor of Silicon Valley Bicycle Coalition (1970s and 80s)

- Authored position paper "Bicycle Parking": amend off-street car parking ordinances to include requirement for bike parking

Board Director of San Jose's Modern Transit Society (AGT, PRT) (1970s to current)

- In early 1980's, wrote position paper "How to Extend the Parking Lot Benefit to All Employees", which may have been used in the formulation of "Cashout"
Dear SANDAG Board Member:

In addition to the proposed topics of discussion for the annual summit, please suggest the following additional topics for consideration:

1. Develop a congestion relief plan for the freeways.

   Reason: the voter-approved ballot language for the 2004 TransNet tax extension begins with:
   
   To relieve traffic congestion, improve safety, and match state/federal funds by:
   

2. Research and publish the local cost per passenger-mile of all modes of ground transportation, public and private, including transit; freeways; tollways/hov/hot lanes; and railways. Provide separate costs for construction, operation, and maintenance for each mode researched.

   Reason: this will assist in identifying cost-effective transportation projects for the 2050 Regional Transportation Plan. Given current and projected fiscal constraints, cost-effective projects will be important in the future.

Thank you.

George Crissman
unclog@cox.net
Background

- BOD approved a Five-Year Funding Strategy for management and monitoring on Dec 15, 2006 and updated Sept 26, 2008
- Five-Year Funding Strategy consistent with BOD approved MOU

Five Year Funding Strategy

- Minor modifications are recommended to address the most current needs (Attachment 1)
- Specific funding for FY 10 activities proposed (Attachment 2) are consistent with funding strategy and overall budget in TransNet EMP MOU
Eligible Projects – Invasive Removal
Eligible Projects – Signage and Fencing
Additional Information on Distribution of Grant Funds

Additional Information on Public Outreach & Education
Recommendations

1) Approve the updated Five-Year Conceptual Funding Strategic Plan, the proposed management and monitoring activities and budget for FY 2010 totaling $4 million, and, subject to Board Policy No. 017, authorize staff to solicit proposals and enter into contracts or amend existing contracts accordingly; and

2) Adopt the modifications to the submittal and evaluation criteria for land management grants for FY 2010 as reflected in Attachment 2.
Final Regional Alternative Fuels, Vehicles and Infrastructure Report

September 25, 2009

Project Update

- Developed at Energy Working Group
- Transportation and Regional Planning committees provided input on draft
- Draft report distributed for public comment June 12
- Presented to San Diego Regional Clean Fuels Coalition
- Additional feedback from
  - California Energy Commission
  - Planning Directors on Technical Working Group
  - Regional Stakeholders and general public
Report Addresses
State Alternative Fuel Policies

- Reduce GHG emissions causing climate change
- Reduce reliance on petroleum
- Increase alternative fuel use
- Increase in-state biofuels use and production

Fleet Applications in the Report

- Wide range of vehicles
- Cars, SUVs, vans and pick-ups
- Trash trucks and street sweepers
- Light, medium, and heavy-duty applications
Federal and State Resources

- Grants, loans, rebates and tax credits available
- Large injection of funds to increase use of alternative fuel vehicles
  - Federal Economic Stimulus
  - eTec-Nissan Electric Vehicle Project in San Diego
  - Energy Commission Alternative Fuels Program
  - CARB Air Quality Improvement Program

Analyzing Fuels and Vehicles

- Assessments based on
  - New vehicle (or retrofit) price / availability
  - Infrastructure cost / availability
  - Fuel economy, fuel price and driving range
  - Petroleum and GHG savings based on a “well to wheels” analysis
- Analysis comparing conventional gasoline, diesel, and various alternative fuels
Report Recommendations

- Best fuels by vehicle class based on availability, cost, GHG reduction and fuel economy
- Implement regional approach
- Participate in planning for publicly accessible fueling/charging stations

Board Recommendation

The Regional Planning Committee recommends that the Board of Directors accept, in substantially the same form as attached, the Final Regional Alternative Fuels, Vehicles, and Infrastructure Report.
SANDAG
CONNECT Innovation Report

Duane Roth, CEO
September 25, 2009

San Diego Research Economy

- Research Institutes
- Technology Innovation/Manufacturing
- Convention/Tourism/Gaming
- Local Services
- Military
- Agriculture
The CONNECT Innovation Report tracks:

- CONNECT-track (new business start-ups)
- Venture Capital Investment
- Mergers and acquisition activity
- New Patent Applications & Issuance
- Federal & State Research Grant Awards
- Research employment and wages

In Partnership With:

California Newly Formed Innovation Company Sectors:

- Software
- Communications
- Bio/Pharma/Med
- Computer & Electronics
- Environmental Technology
- Defense & Transportation
- Recreational Goods
San Diego Innovation Start-ups Increased 55% in Q2 2009

Data
2007 Total = 367
2008 Total = 298
2009 YTD = 168

Quarter 2 Comparisons
Q2 2007 = 64
Q2 2008 = 76
Q1 2009 = 66
Q2 2009 = 102

San Diego 2008 – 298 New Companies – Sector Distribution

- Pharma/Bio/Medical: 85, 28%
- Defense and Transportation: 11, 4%
- Communications: 55, 19%
- Software: 84, 28%
- Computer & Electronics: 34, 11%
- Environmental Technology: 16, 5%
- Recreational Goods: 14, 5%
San Diego 1st Half 2009 – 168 New Companies – Sector Distribution

- **Environmental Technology**: 15 companies (9%)
- **Recreational Goods**: 16 companies (10%)
- **Software**: 44 companies (26%)
- **Computer & Electronics**: 16 companies (10%)
- **Defense and Transportation**: 5 companies (3%)
- **Communication**: 26 companies (15%)
- **Pharma/Bio/Medical Devices**: 56 companies (33%)
- **Environmental Technology**: 15 companies (9%)
- **Recreational Goods**: 16 companies (10%)
- **Software**: 44 companies (26%)
- **Computer & Electronics**: 16 companies (10%)
- **Defense and Transportation**: 5 companies (3%)
- **Communication**: 26 companies (15%)
- **Pharma/Bio/Medical Devices**: 56 companies (33%)

San Diego Patents

**2007 Totals**
- Total Applications = 5,045
- Total Granted = 2,900

**2008 Totals**
- Total Applications = 5,574
- Total Granted = 2,569
Federal Research Grants Received for San Diego

Data
2008 Total = 887.9 M

Quarter Comparisons
Q1 2008 = 216.0 M
Q1 2009 = 225.5 M
Q2 2009 = 329.9 M

*prior to Q3 2008, NIH data was not available on a quarterly basis

San Diego 1st Half 2009 – Start-ups
California Innovation Startups by Quarter

Data
- 2007 Total = 3,230
- 2008 Total = 2,370
- 2009 YTD = 1,205

Quarter 2 Comparisons
- Q2 2007 = 512
- Q2 2008 = 585
- Q1 2009 = 476
- Q2 2009 = 729

Top 10 Counties in CA – 1st Half 2009 - Start-ups

- Contra Costa: 31, 2%
- Sacramento: 31, 2%
- San Mateo: 44, 4%
- San Francisco: 59, 8%
- Alameda: 86, 8%
- Santa Clara: 170, 14%
- Ventura: 29, 2%
- Riverside: 29, 2%
- San Bernadino: 30, 3%
- Los Angeles: 236, 20%
- San Diego: 168, 14%
- Orange: 148, 13%
- Rest of CA: 118, 8%
California New Companies

2372 New Companies Established in California in 2008

VC Investments by Region

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<th>Region</th>
<th>2007</th>
<th>2008</th>
<th>2008 Q2</th>
<th>2008 Q1</th>
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San Diego 1st Half 2009 – VC Investments by Industry

- Consumer Products: $5M (2%)
- Electronics & Instrumentation: $3M (1%)
- Software: $7M (2%)
- IT Services: $6M (2%)
- Media & Entertainment: $0.8M (<1%)
- Industrial & Energy: $14M (5%)
- Pharma, Bio-, Medical Devices: $225M (86%)

Why is this Report Important?

- Documents San Diego Innovation Economy
- Allows comparison to other regions
- Recruiting and retention tool
- Planning workforce housing, transportation, etc.
For more Information:

- www.connect.org

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In the Beginning

The Scripps Institution of Oceanography (1903)
U.C. San Diego (1960)
Salk Institute (1963)

Today there are over 50 major research institutes in San Diego, with five founded in the last two years.
**Defense and Security**

Convair was formed in 1943 by a merger of Ruben H. Fleet’s Consair and Vultee.

Today there are more than 300 Defense and Security Companies operating in San Diego.

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**IT/Wireless/Software**

Linkabit was founded by UC San Diego professor Irwin M. Jacobs in 1968 as the first “high tech” communications company in San Diego.

Peter Preuss developed his first software package in 1969 and founded ISSCO in 1970.

Today there are more than 1000 IT, Wireless and Software Companies operating in San Diego.
Life Sciences

**Hybritech** was founded in 1978 by UC San Diego professors Ivor Royston and Howard Birndorf as the first “BioTech” Company in San Diego.

Today there are more than 600 Life Science Companies operating in San Diego.

Energy & Environment

**General Atomics** was founded in 1955 as San Diego’s first Energy Company by General Dynamics.

Today there are more than 250 Energy and Environmental Companies operating in San Diego.
San Diego’s Action Sports traces back to the founding of Gordon and Smith Surfboards in 1959.

Today there are more than 600 Action and Sports related Companies operating in San Diego.
SANDAG Variable Rate Bonds

- Interest rate
- SANDAG Swap Payment
- 30 Year Fixed Rate Bond Index
- SANDAG Total Cost, Net of LIBOR Receipt