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REGION 9 LOS ANGELES SECTION
San Bernardino & Riverside Counties Branch
FOUNDED 1953

Message from the Report Card Co-Chairs

Dear Friends,

Even though “infrastructure” has gotten more attention over the past few years, there are many citizens who still do not fully understand the meaning of the word and why we need to care about it. For the record, infrastructure is the large-scale public systems, services, and facilities of a region that are necessary to support economic activity and quality of life. The systems that are readily used and noticed by the general public are the highway and public transportation systems, airports, school facilities, and community parks. Other systems of infrastructure that are not readily seen by the public are the underground water, sewer, and utility pipes, flood control systems that protect us from storm water runoff, and solid waste facilities. These are the “unsung heroes” of infrastructure, and are only a concern when they do not work. For example, turning on the faucet and nothing coming out, flushing the toilet and having it back-up, or putting out your trash, and no one picks it up. For a civilized society, this would be disastrous!

For the past two years, over 100 volunteers from private and government sectors have joined forces to update the grades from the 2005 Report Card on the Inland Empire’s Infrastructure for Riverside and San Bernardino counties. We would like to take this time to thank them for their hard work and perseverance that produced the 2010 Report Card and Citizen’s Guide. Without their efforts, this document would not have been possible.

The goals of the Report Card continue from 2005, with a couple of modifications. First, we added two new infrastructure categories, Recycled Water and Energy. Both of these categories are very important to our region. Recycled Water infrastructure is highly needed to help us mitigate the continual fresh water shortage that our counties face. Energy infrastructure speaks for itself, as we are in a continual need to increase our energy output to sustain our growing population and service our electrical and natural gas needs. We also wanted to grade the new sub-category of Energy infrastructure,

Renewable Energy Sources, with Wind and Solar Energy becoming a large part of our counties resources.

As for the grading of our infrastructure, we still want to look at each sector's Condition, Capacity, and Maintenance needs. We also wanted to add a component for Safety and Security, and Sustainability. These latter components will become increasingly important in the years to come. Our ultimate goal remains the same: To inform and build support for dedicated and consistent sources of funding for the necessary infrastructure to support our growing population.

Back in 2005, the State of California was in a budget crisis. 2010 is no different. And with the country's economy in a recession, we have been given a chance to "catch up" to some of the accelerated growth and development that we have experienced in the past decade. Now is the perfect time to update, improve, and modernize our infrastructure so that we will be well prepared for the next burst in development. Likewise, these infrastructure projects, while very much needed to support the current population and position us for future growth, will act as a perfect stimulus to employ our work force, create jobs, and kick-start our region's economy so that we are moving in the right direction as we move into the next decade.

As co-chairs of this continuing effort, we would like to conclude by expressing our deepest appreciation and gratitude to all the leaders of the community and local agencies, chairpersons and members of the committees, and all of the rest of the support staff for devoting time out of their busy schedules to update the Report Card of the San Bernardino and Riverside counties for 2010.

Sincerely,

Christopher S. Turnage, PE
Co-Chair, 2010 Report Card
Branch Past President

Ron Moreno, PE
Co-Chair, 2010 Report Card
2005 Co-Chair Communications

Introduction

Our Region's Infrastructure – An Opportunity for a Promising Future or a Legacy in Peril?

Riverside and San Bernardino Counties are among California's fastest growing areas. New communities and developments are springing up, providing homes for families, jobs for workers and an economic optimism for a bright future.

Unfortunately, growth has come at an increasingly rapid pace that has often outstripped the infrastructure needed to support the area's population. As a result, highways and schools are overcrowded, water facilities are overtaxed, landfill capacity is being stressed and quality of life concerns such as parkland and open space are threatened. The question facing residents, business and the elected leadership of the Inland Empire is how to ensure ongoing investment in the region's infrastructure. A robust investment in building infrastructure is sure to reap dividends well into the future. Neglecting the area's needs will undoubtedly imperil the Inland Empire's bright economic future.

Infrastructure investment must be long-term and sustained. Improvements are funded through bond issues, general and sales taxes, fee programs and other mechanisms. As the ASCE National Report Card states, *"This places responsibility for infrastructure renewal and development squarely with individual voters, who must approve bond issues and elect political leaders who will make our infrastructure needs a priority."*

Who Pays for Infrastructure?

As stated in the ASCE National Report Card: "Our public works are public assets. We all have a stake in their upkeep and operation and we all share in the expense of construction and maintenance."

This means that infrastructure investments must be made at every level of government. The federal and state governments play a significant role in funding, however counties, cities and special districts share a very significant part of the funding through bond issues, general and sales taxes, fee programs and other mechanisms.

Renewing and Building the Inland Empire

Riverside and San Bernardino counties are comprised of numerous communities, some dating back more than a century, while others have been in existence for only a few years. Yet the infrastructure everywhere, even in the newer areas, requires continuous attention, maintenance and ongoing replacement and expansion. All too often, we take many of these public works systems for granted, despite the fact that we so heavily rely on them to maintain our economic prosperity and quality of life.

The 2010 Report Card and Citizens Guide for Riverside and San Bernardino counties is intended to serve as a vehicle to engage our community and civic leaders in a call to action for stronger investment in our region's vital infrastructure. This has never been more important as the region continues to draw residents who are attracted to this area to live, work and raise their families. Please use this guide to get involved in protecting our infrastructure investments and planning for the future. It's our community and we must act now to ensure that we can fulfill our dreams and expectations both personally and for our communities.

Grading of Our Infrastructure

Working groups and a review committee assigned letter grades to ten main categories of the Inland Empire's infrastructure to create the second annual Report Card and Citizens Guide. A summary for each of the categories is presented, followed by a more detailed discussion. The Report Card, reprinted on the following pages, shows how the Inland Empire's infrastructure fares.

Total investment needs, described in the following infrastructure sector summaries are based upon projected funds over the next ten years needed to improve committee findings by one letter grade or maintain the current level of service.

Report Card Summary

D+ | Transportation Infrastructure

Total Investment Needs: \$10 to \$12 Billion

Transportation infrastructure provides for the safe and efficient movement of people and goods. Despite the current, temporary recession, the Inland Empire continues on a path of new development, rapidly escalating movement of cargo via railroads and trucks, and rising construction operations, and maintenance costs. Over the past few years, residents have seen significant improvements to their transportation infrastructure due to the influx of additional funding. For example, in Riverside County, SR-91 was improved, the 91/60/215 interchange was completed, SR-60 was widened with HOV lanes, and operational improvements were made at many key interchanges. In San Bernardino County, the final segments of SR-210 were completed, I-10 was widened in the Redlands area, a truck climbing lane was completed near Yucaipa, and construction is currently underway to upgrade I-215 and to construct high speed connectors between the SR-210 and I-215. Many additional projects are currently in the design and environmental clearance stages. In 2002, Riverside County voters approved a 30-year extension of Measure A, a half-cent sales tax for transportation improvements. Similarly, San Bernardino County voters approved an extension of Measure I until 2040. Although significant improvements have been made, it is estimated that an additional \$10 to \$12 billion, above and beyond current transportation funding levels is required to raise the transportation grade to a C+.

B | School Facilities

Total Investment Needs: \$3 Billion

School facilities are an integral part of the overall infrastructure of the nation, and children deserve a safe, clean and healthy place in which to learn. Based on the results of the districts surveyed, and the success of districts to obtain state and local funding, the conclusion is that the school facilities in the IE are in an improved condition since the 2005 report card in which they received a grade of "C+". With nearly \$3 billion in local funding acquired by school districts to address school facility needs since 2005, it is clear that both the districts and their respective communities see the value in constructing and enhancing school facilities.

Report Card Summary

C+ | Aviation

Total Investment Needs: \$460 Million

The aviation infrastructure in San Bernardino and Riverside counties consists of only a few major airports, some mid-size reliever airports and numerous smaller general aviation airports. Due to changes in technology, the aviation committee expanded its report card to include all regional and community airports that are publicly assessable and non-private in operations. As a result of the expanded list of airports, the letter grade for 2010 is a C+ compared to the 2005 grade of A-. The grading policy was based on the utilization of past received funding, in proportion to the need for future funding which allow airports to meet the changing public need. The report follows the Federal Aviation Administration's designations of airport categories: primary, non-primary, reliever, and general aviation.

B | Energy Infrastructure

This is the inaugural year for the inclusion of an Energy section in the ASCE Infrastructure Report. Energy (electricity, renewables and natural gas for purposes of this report) is a vital component of the economic and social well being of any community and a critical piece of the infrastructure make-up of the Inland Empire. Energy does not have infrastructure challenges that are isolated to the Inland Empire because all energy supplies depend on transmission infrastructure that interconnect cities, counties and states. The "B" grade is based on a comprehensive assessment of supply transmission/maintenance and distribution in each industry.

C- | Flood Control and Urban Runoff

Total Investment Needs: \$630 Million

The Inland Empire's flood control systems have been constructed over the past 100 years. At least 50 percent of the existing systems were constructed prior to the 1960's and have either served their useful life, or were constructed of insufficient capacities. Master plans for both counties indicate that major portions of the system infrastructure required to provide desired flood protection must still be constructed. As such the existing systems are not providing the desired capacities. In addition, as communities develop, increasing runoff volumes further compromise the system capacities.

B | Parks, Recreation and Open Space

Total Investment Needs: \$167.5 Million

The IE, which includes portions of San Bernardino and Riverside Counties, is experiencing a tremendous amount of urbanized growth. Parks, Recreation and Open Space (PR&O) are not considered infrastructure, as such, PR&O is an optional amenity needed to address the quality of life issue. The stress of living in an urbanized environment must be balanced with common open space, parks and recreation opportunities. The growth rate of the IE causes concern as we become more aware of the need for PR&O. The current abundance of undeveloped open space is disappearing at an alarming rate. Open space once developed is generally lost forever.

C+ | Solid Waste

Total Investment Needs: \$0.8 Billion

The collection, processing, recycling, composting, energy conversion and disposal of solid waste in the IE are a complex integrated waste management system. The integrated system and its infrastructure provide an essential service to sustain the urban environment. The C+ grade for the 2010 report card represents an overall decline in the 2005 grade which is attributed to recent and/or pending changes in laws and regulations brought about by climate change initiatives and new mandated requirements from the California Integrated Waste Management Board, State Water Resources Control Board and the local air quality management districts.

B+ | Wastewater

Total Investment Needs: \$4 Billion

The wastewater collection and treatment systems in the Inland Empire are generally well run and comply with State and federal requirements. The regulatory requirements for wastewater treatment are anticipated to increase significantly over the next several years. The regional brine pipeline is a critical component necessary to meet regulatory requirements related to salinity control and should be fully maximized in use. Further expansions of treatment and collections will be needed to address anticipated population and development growth.

Report Card Summary

D+ | Water

Total Investment Needs: \$6.8 Billion

With a population growing faster than any other region of the State, the IE is dependent on a reliable, high quality water supply. Supplemental water imported from northern California is critical to meeting existing and future demands. Since the 2005 report card, several changes have impacted the water industry including, the Wanger decision, a court decision that restricts pumping from the Delta, the chronic and acute state budget deficits, the slowdown in construction, leading to a reduction in fees as well as changes in the regulatory climate which poses huge uncertainties for water agencies.

B | Recycled Water

Total Investment Needs: \$1 Billion

The use of recycled water as an alternative source of irrigation and groundwater recharge to potable water use is growing in the Inland Empire. Good progress has been made but more additional use of recycled water should occur before discharge for additional downstream reuse opportunities. The systems in place are still fairly new and are in excellent condition. More public outreach to communicate the high quality nature of recycled water along with more regionalized recycled water distribution systems throughout the Inland Empire is encouraged.

Transportation Infrastructure

Transportation infrastructure provides for the safe and efficient movement of people and goods. The 4.03 million people that currently reside within the Inland Empire, a vast geographic area consisting of Riverside and San Bernardino Counties, are impacted every day by the conditions, capacity, operations, and maintenance of the region's transportation infrastructure. The Inland Empire also continues to be one of the fastest growing regions in the United States, and the western portion of the Inland Empire, including the cities of Riverside, San Bernardino, and Ontario, is ranked as the 14th largest metropolitan area in the nation by the United States Census Bureau.

Despite the current, temporary recession, the Inland Empire continues on a path of new development, rapidly escalating movement of cargo through these counties via railroads and trucks, and rising construction, operations, and maintenance costs. Consequently, our level of commitment to plan for and invest higher levels of transportation funding is becoming increasingly critical to improve and maintain the quality of life for our communities into the future.

In the Inland Empire, transportation infrastructure is managed by a number of public agencies including the California Department of Transportation (Caltrans) District 8, the Riverside County Transportation Commission (RCTC), San Bernardino Associated Governments (SANBAG), Riverside County's Transportation Department, San Bernardino County's Public Works, Western Riverside Council of Governments (WRCOG), Coachella Valley Association of Governments (CVAG), and over 50 municipalities. A wealth of transportation studies, capital improvement plans, status of key projects, and other information can be readily found on these agency websites. In addition, the Southern California Association of Governments (SCAG) provides overall guidance and transportation planning for southern California, including the Inland Empire. SCAG's 2008-2035 Regional Transportation Plan (RTP) identifies hundreds of strategic transportation projects, including funded and financially-constrained projects, throughout the Inland Empire.

Existing transportation infrastructure in the Inland Empire includes an enormous network of highways, arterials, bridges, and transit systems, representing huge investment dollars of the past. However, ongoing rapid growth and increased movement of goods, coupled with years of deferred and under-funded maintenance, has taken its toll. The public demands and deserves high standards for transportation systems so that they are safe, reliable, and efficient. While transportation funding for the Inland Empire has increased significantly in recent years, still higher levels of investment will be needed to upgrade the existing infrastructure to meet current and future capacity needs, as well as to maintain the infrastructure at acceptable levels.

For this study, transportation infrastructure was divided into the following four components that were evaluated individually and conglomerated to arrive at an overall, combined grade: Highways and Arterials, Bridges, Transit, and Goods Movement. Within each component, Condition, Capacity, Operations, and Maintenance issues were evaluated, as applicable. Grading criteria and methodology is discussed below under “Transportation Assessment and Grading Methodology,” which follows an overview of transportation infrastructure “Funding Sources” and review of “Key Accomplishments” that have occurred since the 2005 Report Card.

Final Grade

Applying a weighting reflecting 40% for Highways and Arterials, 20% for Bridges, 20% for Transit, and 20% for Goods Movement, the overall grade for Transportation Infrastructure in the Inland Empire is a D+. Overall, transportation infrastructure in the Inland Empire remains status quo from the 2005 Report Card grade of D+. Significant investment dollars has resulted in numerous, critically important transportation improvements, however, there remains an overwhelming need to continue to implement critical projects to improve transportation systems throughout our communities.

Investment Needs

Through assessment of key transportation infrastructures, numerous conditional, operational, and capacity shortfalls were identified when it came to needed funding. Transportation infrastructure continues to require significant increases in funding to improve regional and local transportation deficiencies and to maintain the infrastructure at acceptable levels.

As a working committee, we were tasked to identify the required funding that would raise our resulting Transportation Infrastructure overall grade of D+ to a C+. Taking into consideration the dramatic increase in the cost to construct and maintain regional and local transportation improvements, and by comparing the needs with the anticipated funding being earmarked for Inland Empire transportation improvements, it is roughly estimated that it would require an additional \$10 to \$12 billion, above and beyond the funding identified in “Funding Sources” to raise the overall transportation infrastructure letter grade to a C+ within the next five years.

As goods movement is truly a demand created by private enterprise and has an effect on the overall way of life for Southern California, and especially for the Inland Empire, there is a growing need for public-private partnerships. Without the benefactors of an improved transportation system truly owning up to a share of the investment in some manner that creates a reward for them, funding will likely continue to fall short of the requirements in the area. The heavy commercial demand on the transportation infrastructure creates a burden that should not be borne solely by the citizens of the area, but of the financial benefactors and the nation at large.

Funding Sources

During the latter part of the 20th century, the Inland Empire's transportation system had nearly been neglected. Frustrated with deteriorated transportation infrastructure and inefficient movement of people and goods, voters in both "self-help" counties approved sales tax initiatives for county-wide transportation improvements. Specifically, in 2002, Riverside County voters approved a 30-year extension of Measure A, a half-cent sales tax for transportation improvements, which already raised over \$1 billion since 1989. Similarly, San Bernardino County voters approved the extension of Measure I until 2040. Measure I raised about \$1.8 billion since 1990. In addition, the Western Riverside County Transportation Uniform Mitigation Fee (TUMF) program was established in 2002 to fund an additional \$3 billion in transportation improvements over 20 years. A development mitigation program for regional transportation improvements was established in San Bernardino County in 2005.

In November 2006, Proposition 1B was passed at the state level to issue \$19.9 billion in bonds to assist county and local jurisdictions with transportation improvements.

To date, nearly \$2 billion of Proposition 1B funds, inclusive of Trade Corridor Improvement Funds (TCIF), have been earmarked for Inland Empire projects, and this amount may reach \$4 billion in total investment dollars. Funding is also obtained from an ongoing, but limited stream of federal and state funds and matching funds from local agencies and various other funding sources. New sources of revenue are also being explored, such as container fees at the Ports of Los Angeles and Long Beach, and other user fees (i.e. toll lanes). It is estimated that the Inland Empire could receive over \$10 billion for transportation improvements over the next 20 years. This increased funding level will go far to help create a more balanced multi-modal transportation system, provide near-term relief on clogged highways and arterials, upgrade obsolete bridges, and expand mass transit systems.

It is also essential that funding continue without interruption to maintain the vital transportation infrastructure in the Inland Empire. As we have seen in the past, without a continuing source of funds and resources dedicated for maintenance, there will be tremendous depreciation of transportation assets once again. For example, gridlock will tend to worsen along our highways and arterials, bridges will increasingly become deficient or obsolete, and mass transit systems will continue to be underutilized.

Key Accomplishments

Over the past few years, citizens of the Inland Empire have seen significant improvements to their transportation infrastructure due to the influx of additional funding. For example, in Riverside County, SR-91 was improved, the 91/60/215 interchange was completed, SR-60 was widened with HOV lanes, and operational improvements were made at many key interchanges.

In San Bernardino County, the final segments of SR-210 were completed, I-10 was widened in the Redlands area, a truck climbing lane was completed near Yucaipa, and construction is currently underway to upgrade I-215 and to construct high speed connectors between the SR-210 and I-215.

Many other major highway projects are currently in the design and environmental clearance stages. A representative sample of these projects include: adding continuous HOV lanes along SR-91, between south Riverside and Orange County, and along I-10, between Ontario and Redlands, upgrading the Devore Interchange (15/215), potentially adding toll lanes along I-15, widening I-215 in southern Riverside County, and planning for the new High Desert Corridor from US-395 in San Bernardino County westerly into Los Angeles County. In addition, multiple railroad/arterial grade separations are underway in both counties, which are funded by a combination of local, state, federal, railroad and development funds

Transit and rail expansion initiatives currently being planned include: the Perris Valley Line which will extend Metrolink commuter rail service into southern Riverside County, extending Los Angeles-based light rail service easterly to Montclair via the Gold Line Foothill Rail Extension, Bus Rapid Transit (BRT) corridors along E Street in San Bernardino and between Corona and Moreno Valley in Riverside, and developing passenger rail service from San Bernardino to Redlands. Major projects underway by the two major freight railroads, Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe Railway Company (BNSF), include the Sunset Route Project which will double track the UPRR mainline across the Inland Empire, and BNSF's Southern California Logistics Airport's Intermodal Yard in Victorville. While controversial in terms of funding, the proposed Colton Crossing, which will grade separate the UPRR and the BNSF tracks to eliminate southern California's most significant railroad bottleneck, will make goods movement by rail significantly more efficient.

If the Inland Empire Report Card had been issued in the mid 1990s, the grade for transportation infrastructure would undoubtedly have been failing. However today, with over ten years of improvements, the condition, operation, and capacity of our transportation system has gradually improved. There is still much work to be done, but most Inland Empire citizens have begun to witness their dollars at work.

Transportation Assessment and Grading Methodology

As stated above, transportation infrastructure was divided into four components that were evaluated individually to arrive at an overall, combined grade: Highways and Arterials, Bridges, Transit, and Goods Movement. Within each component, Condition, Capacity, and Operational issues were evaluated, as applicable.

In weighting the first three components, consideration was given to the relative person-trip and corresponding vehicle-miles traveled. The highway and bridge

system carries about 90% of all person-trips. The transit system also provides critical mobility to a segment of the population. This consideration resulted in the assignment of 40% weighting to Highways and Arterials, 20% to Bridges, and 20% to Transit. Within the Highway and Arterials and Transit components, the Condition, Capacity, Operations and Maintenance were weighted equally.

While the Goods Movement component is a new addition for this Report Card, it had the most significant impact on transportation infrastructure in the Inland Empire in recent years. Statistical analysis of the goods movement phenomenon is difficult to quantify or compare to an established industry standard. This may be because goods movement affects many inter-related transportation systems and quality of life issues including: railways and intermodal facilities, rail spurs into industrial developments, warehousing and logistics, traffic congestion, airport cargo, air quality, noise, emergency response, public safety, and others. An overall weighting of 20% was allocated to Goods Movement; however, this weighting should be reassessed in future reports.

For evaluation of highway and bridge conditions, information was collected from Caltrans and from a cross section of local agencies which is representative of the Inland Empire as a whole. Some data was objective because it was based on differing agency scoring criteria for acceptable pavement conditions, for example. The State's Pavement Condition Report was used to benchmark similar scoring systems used by the local agencies. The State's report also identified funding needs to maintain the State highway system.

For the capacity analysis, SCAG's 2008 Travel Demand Model was used to identify existing demand and future capacity for freeways, highways, and arterials. The Travel Demand Report identified traffic volumes in terms of total vehicle-miles traveled for various segments of roadway throughout the Inland Empire for the years 2003 and 2035. This evaluation assessed worst case peak AM or PM traffic volumes and compared them to the same segment's facility capacity. The facility capacity is a determination of the total number of vehicles on a particular segment of facility with a Volume to Capacity (V/C) ratio of 1.0. A V/C ratio of 1.0 or above was assigned a letter grade of F for this evaluation.

A. Highways and Arterials

In general, highways and arterials were designed at different times by different agencies using differing design criteria. The Inland Empire has experienced a steady increase in the number of vehicle-miles travelled over the past decades, but the transportation infrastructure network has not expanded accordingly. In fact, many of the existing freeways were completed between 1955 and the late 1970s and had an average design life of 20 years. With the exception of the recently completed Foothill Freeway (SR-210) between San Dimas and San Bernardino, the planned Mid-County Parkway between Corona and San Jacinto, and the proposed High Desert Corridor in west-central San Bernardino County, no new freeways or major highways are planned in the Inland Empire.

Another persistent problem in regards to highway and arterial congestion is the job location versus housing imbalance. In general, many higher paying jobs are located in Los Angeles and Orange Counties, but housing prices have historically been more affordable in the Inland Empire. Thus, workers commute daily using the existing network. As the population continues to increase, transportation problems are most certainly going to increase as well.

1. Condition.

Within the highway and arterials component, freeways, highways, and local arterials were rated based on their current pavement condition as well as the adequacy of existing, county-wide pavement management programs. The Inland Empire has an inordinately high number of lightly traveled roadway sections due to the large number of lane miles in outlying desert areas. Focusing on the more critical needs of the roadway network in the western portion of the Inland Empire and in the Coachella Valley, pavement condition reports were collected from a representative sample of cities, as well as from the counties, RCTC, SANBAG, and Caltrans. Specifically, survey data were collected from 14 agencies in the western Inland Empire area and from nine agencies in the Coachella Valley.

In 2008, Caltrans' records (District 8) showed that 2,153 miles of the 6,568 miles of highways in the Inland Empire were in disrepair. This represents nearly 33% of highway miles in disrepair, the largest percentage in the state of California. It is Caltrans' goal to have no more than 10% of its highway system in disrepair at any given time. Minor structural distress, such as cracks and deflections, are widely evident along highways throughout the Inland Empire; unless a significant amount of funding is allocated to resurfacing and maintenance this goal cannot be achieved.

Pavement condition grading reflects the relative number of vehicle-miles traveled on freeways compared to county highways, which resulted in 50% weightings for each. Numerous pavement management systems were assessed, and weighted Pavement Condition Indices (PCI) were evaluated. Our review of county and local agency pavement management programs focused on conditional values for each agencies arterial and collector networks and Capital Improvement Program (CIP) funding resources. Based on this methodology, the grade for highways is C, and the grade for county highways and city arterials is a D.

Taking into account the recent extensions of Measure A in Riverside County and Measure I in San Bernardino County which will provide some funding for municipal pavement management programs, as well as, the recent withholdings and funding delays at the State, County and local agency levels, the combined overall grade for pavement condition in the Inland Empire is D.

2. Operations.

A variety of studies and information were reviewed regarding the operations of the Inland Empire's highways and arterials. In 2008, Forbes Magazine ranked the Inland Empire first in its list of America's most unhealthy commutes due to the effect of pollution, beating out every other major metropolitan area in the country. Inland Empire drivers also have the highest rate of fatal auto accidents per capita.

In addition, Forbes.com ranked the Riverside-San Bernardino area first in the nation with the highest commuting costs per driver per day at \$7.61, taking into account gas prices, commuting distance, traffic congestion, and use of mass transit and carpools. By comparison, second-place Atlanta, Georgia drivers pay \$6.62/day, and seventh-place Los Angeles California drivers pay \$6.12/day.

Per the 2007 Urban Mobility Study, prepared by the Texas Transportation Institute (TTI), the annual hours of delay per traveler in the Riverside/San Bernardino area of the western Inland Empire increased from 5 hours of delay in 1982 to 28 hours in 1995 (560% increase) and up to 49 hours in 2005 (175% increase), for a ten-fold increase of delays over the past 23 years.

With operational burdens identified, positive regional efforts must be called to the table through the accomplishments of both county and regional transportation agencies over the last year. The recently published Caltrans Highway Congestion Monitoring Program Report (HICOMP, September 2009) identifies congestion reduction improvements in the San Bernardino and Riverside counties, largely due to completed Caltrans District 8, RCTC and SANBAG projects in 2008 totaling a \$1.2 billion investment. These types of investments and improvements are badly needed to keep up with the population increase and decaying infrastructure in the Inland Empire and without them, the transportation category would have received a lower grade.

While the diverse operational issues discussed above cannot be readily compared to a specific engineering standard nor precisely graded, it is clear that the Inland Empire has significant deficiencies in its highway and arterial operations. By comparing Inland Empire's highway and arterial operations with other California report cards, reflecting on the seriousness of factors cited by Forbes, TTI, and Caltrans, and based on the engineering judgment of the Transportation Committee, the overall grade of highway and arterial operations is D-.

3. Capacity.

According to SCAG, in 2006, workers in Riverside County had the longest average commute time in the SCAG region at 31 minutes, followed by San Bernardino County workers at 30 minutes. Also, the travel time index in Riverside and San Bernardino counties increased from 1.19 to 1.35 during the 10-year period between 1995 and 2005, an increase of 14%.

As described above in Transportation Assessment and Grading Methodology, capacity of the existing highway and arterial system was rated based on traffic demand relative to facility capacity. SCAG's 2008 Travel Demand Model includes a base traffic model for the Inland Empire utilizing 2003 traffic data. The evaluation criteria considered the V/C ratio for the various facility types. A V/C ratio is an expression of traffic volume on a roadway divided by its capacity. A V/C ratio of 1.0 indicates the roadway is at full capacity. For example, SR-91 through western Riverside County exceeds capacity since the V/C ratio is greater than 1.0 during peak hours. These ratios were then weighted to reflect vehicle-miles traveled and then totaled for each county. The weighted V/C ratios were then converted into letter grades.

Based on the model, for the Inland Empire as a whole, the 2003 traffic on the freeway system equates to a V/C ratio of 0.54 with corresponding grade of B. The arterial roadway system was calculated to a V/C ratio of 0.31 resulting in a letter grade of A. However, focusing only on the more populated western portions of the Inland Empire, the freeway system equates to a V/C ratio of approximately 0.80 with a corresponding grade of D, and the arterial system equates to a V/C ratio of approximately 0.44 with a corresponding grade of A.

The overall capacity grade is based on several factors including the grades shown above for year 2003 traffic for the Inland Empire highways and arterials overall, and for the western Inland Empire area in particular. The grade also reflects the worsening effects on capacity by an increase in population since 2003, the rapidly increasing volume of trucks due to the goods movement, and the projection of travel demand to 2009, and results in an overall capacity grade of C-.

Combining the three Highway and Arterial categories of Condition, Operation, and Capacity yields an overall grade of D for Highways and Arterials.

B. Bridges

The condition assessment for bridges in the Inland Empire was based on standards established by the Federal Highway Administration (FHWA) for inventory and appraisal of the nation's bridges. Caltrans follows FHWA standards and maintains a database of condition ratings for all structures in California meeting the National Bridge Inventory definition of a bridge.

Condition ratings for each bridge are based on biennial inspections and evaluated using a formula involving four factors. The resultant rating is a numerical percentage indicative of the bridge's sufficiency to remain in service. This Sufficiency Rating (SR) is a percentage in which 100% represents an entirely sufficient bridge and 0% represents an entirely deficient bridge.

FHWA bridge inspection and appraisal standards are also used to establish two key status flags for each bridge: structural adequacy and functional obsolescence. Bridges that do not meet current standards are classified as Structurally Deficient (SD) or Functionally Obsolete (FO). A bridge rated as SD has a load-carrying capacity less than current maximum loads due to deteriorated structural components. While not necessarily unsafe, SD bridges may have posted limitations on truck weights and vehicle speeds. A bridge rated as FO typically has older design features or substandard geometry that diminishes its level of service and increases the risk of accidents. While not unsafe for all vehicles, FO bridges cannot safely accommodate current traffic volumes, speeds, and/or vehicle sizes.

FHWA and Caltrans use sufficiency ratings and SD and FO status flags to establish eligibility for funding for either rehabilitation or replacement. Bridges flagged as SD or FO and with a SR of 80 or less are eligible for rehabilitation, and bridges with a SR of 50 or less are eligible for replacement. For the purposes of this report, bridges with an SR less than 80 are considered to be substandard.

In the Inland Empire, there are a total of 2,559 bridges, (1,110 in Riverside County and 1,449 in San Bernardino County). A total of 1,679 bridges (66%) are located on interstates or state highways, and 880 bridges (34%) are on county highways or city streets. In Riverside County, 47 (7%) of interstate and state highway bridges and 98 (24%) of county and local street bridges are deficient. Similarly, in San Bernardino County, 123 (13%) of the bridges on interstate and state highways and 197 (42%) of the bridges on the county and local streets are deficient.

Regarding seismic related upgrades to the Inland Empire bridges, the news is favorable. Over the past two decades, engineers have performed seismic upgrades on 2,189 state-owned bridges. However, city and county owned bridges have not fared so well, and upgrades are still needed to numerous locations within the Inland Empire. To tackle this issue within the Inland Empire, Proposition 1B will allocate considerable funds for seismic upgrades to city and county owned spans throughout California.

In the Inland Empire, a total of 465 bridges are deficient representing 18% of the total inventory. Therefore, our bridges warrant a grade of B-.

C. Transit

Transit plays a vital role in enhancing productivity and the quality of life in the Inland Empire. It provides basic mobility and expanded opportunities to people without the use of a car, and broader transportation choices to people with cars. It also facilitates economic growth and development, and helps to support environmentally sustainable communities.

The geographic expanse of the Inland Empire encompasses many municipal transit agencies, both large and small, providing primarily fixed-route and dial-a-ride bus service to the diverse population centers throughout San Bernardino and Riverside counties. The development of public transit is an evolutionary process. Transit alternatives and service networks change with technology and changing service priorities and markets. Reflecting this constant change, the Transportation Committee's goal was to assess the transit infrastructures throughout both counties to gain a solid understanding of today's transit condition, capacity and operation services and future demands.

Traffic congestion continues to increase with population growth, low-density development and a high reliance on Single Occupancy Vehicle (SOV) use. The *2005 Urban Mobility Report* ranked Riverside and San Bernardino counties ninth in the nation in terms of traveler delays due to congestion. Increasing traffic congestion poses two critical challenges for Inland Empire commuters: 1) increased bus running times, which have a negative impact on on-time performance, service reliability, and ridership; and 2) finding a practical and effective role for public transit in a strategic effort to move travelers from SOV to High Occupancy Vehicle (HOV) use. As of 2007, Riverside-San Bernardino ranked 26th in transit ridership out of the 50 largest urbanized areas in the United States. This can be compared to San Francisco which has been ranked at 12th, San Diego 15th and San Jose 24th. It should be noted, however, that compared to San Francisco and San Diego, the Inland Empire has a relatively low land use density and a more spread out pattern of development, which is not easily served by transit.

Traffic congestion will continue to be a critical issue in the Inland Empire service areas, resulting in longer regional commute times, increases in local travel times for work and non-work related trips, increases in parking capacity requirements, higher household travel costs, and a general deterioration of the quality of life. A significant mode shift to public transit will not be possible until land use development goals reflect an urban landscape that supports efficient and effective transit service.

Through this study we reviewed transit data from the following transit (bus and rail) providers within the Inland Empire:

- Amtrak
- Greyhound
- Mountain Area Regional Transit Authority

- Omnitrans
- Ontario International Airport
- Riverside Transit Agency
- San Bernardino International Airport
- Southern California Regional Rail Authority
- SunLine Transit Agency
- Victor Valley Transit Authority

The evaluation of the Inland Empire’s transit system considers the condition of the existing transit facilities including the quality of service provided, the capacity of the transit system to meet the needs of the current and projected population base, and the ability of transit agencies to provide adequate maintenance of equipment and facilities now and into the future.

1. Condition.

The overall condition of the Inland Empire transit system combines an evaluation of transit equipment, a qualitative assessment of customer perceptions based on recent data collected by regional planning associations, Omnitrans (which serves the valley subarea of San Bernardino County) Riverside Transit Agency (RTA) serving Western Riverside County and SunLine Transit Agency (SunLine) serving the Coachella Valley region of Riverside County.

Equipment condition considers such factors as fleet age and the condition, safety and user-friendliness of transit facilities. The major public bus fleet operators in the region have replaced either all or most of their diesel-fuel fixed and express route buses with alternative fuel vehicles, primarily natural gas.

Transit system facilities such as bus stops, maintenance yards, rail stations, and multimodal transportation centers are a mix of old and new. However, the transit agencies have implemented many recent programs to enhance and modernize these facilities. For example, RTA has a budgeted ongoing campaign aimed at improving the appearance and function of its bus stops including a community-involved bus stop cleanup program, innovative new rural area bus stops that use solar energy, new information kiosks at all bus stops, new automated electronic fare collection system, and four new first-class multimodal transit centers.

Over the past five years, Omnitrans has made improvements to its liquefied compressed natural gas fueling stations, inclusion of hybrid vehicles to its fleet, GPS technologies, and Transcenter expansions.

SunLine’s fleet of fixed route and dial-a-ride vehicles runs on natural gas and/or hydrogen.

Throughout RTA, Omnitrans and SunLine reports, riders were most impressed with the level of safety on buses, and the ease of getting schedule information;

the systems also earned high marks for reliable equipment and cleanliness. SunLine performed a passenger survey in 2005 which found that of its riders, the major concerns for ridership pertained to frequencies, time of service, on time performance and route alignment.

Overall, the condition of the transit system is very good. Still, considering the need to increase the number of new buses and to continue to enhance the facilities to better meet the customer needs, a grade of B was assigned to the condition of the Inland Empire transit system.

2. Capacity.

The evaluation of capacity combines effectiveness, such as ridership, of the current system relative to the area's population, as well as the efficiency of current operations.

Overall, the Inland Empire transit system is well below average in providing effective and efficient bus service to residents. The trend throughout the Inland Empire is one of decreasing ridership and increasing operational costs. A result of this trend is a current, strong focus on developing transit-oriented developments throughout each county.

Omnitrans

Omnitrans is a large and complex public agency. Using its 168 liquefied compressed natural gas powered buses, it provides 14.5 million rides to residents annually, and covers 465 square miles of the San Bernardino Valley. Omnitrans' annual operating budget is \$71 million.

Omnitrans has identified improvements to their operations through a 2008-2013 Short Range Transit Plan (SRTP). They provide annual updates to their SRTP which is used to identify how transit should operate, and whom it should serve. In addition to the annual SRTP process, Omnitrans will be updating its strategic plan, looking forward to 2030.

Prior to the onset of the current economic recession, Omnitrans' service area population was projected to grow from 1,342,465 in FY 2004/05 to 1,427,242 in FY 2009/10 (a 6% increase), and to 1,536,138 in FY 2014/15 (a 14% increase). During the same period, 150,191 new jobs were projected to be created in the Omnitrans' service area. The majority of jobs would be created in the trade, transportation and utilities industries (approximately 54%) and in the office and administrative support sectors (approximately 26%).

While this ultimately will be healthy growth for San Bernardino's economy, it does not necessarily translate to growth in Omnitrans' market. Much of this growth will occur at the periphery of Omnitrans' service area, in low density, geographically-dispersed business parks and subdivisions that are difficult to serve cost-effectively with transit. And while there will be an overall net increase in employment and population, the trends in some of Omnitrans' core service areas include losing jobs and people, which has contributed to the

current decline in systemwide ridership. Since 2004, Omnitrans ridership has decreased by 7%.

Nevertheless, Omnitrans has seen ridership increases in parts of its service area that are adding population and employment, and it is in such areas that future opportunities for growing ridership will come. Currently, high-density areas with over 7,500 people per square mile and over 5,000 jobs per square mile in the Omnitrans service area include:

- Southeast Upland, south of SR-66 and north of I-10
- Southern Montclair, along Holt
- Central Rialto, south of SR-66 along Riverside Avenue

By 2015, these three areas will be joined by four other areas with high population and job densities earlier specified. These additional areas are:

- San Bernardino, east of I-215 along Highland and Baseline
- Colton, North of I-10 along Mt. Vernon
- Chino, between SR-60 and Riverside Drive, east of Monte Vista and west of Mountain
- Ontario, along SR-83 near Holt

Riverside Transit Agency

RTA serves the western portion of Riverside County and is one of the major transit providers in the Inland Empire. The agency is distinguished as having the second largest service area in the United States. RTA has seen a positive increase in its ability to provide customer service to its riders; from 2006 to 2007, RTA has seen a 9% increase in its fleet of vehicles and is planning on purchasing 59 new vans and buses in 2008 to replace aging vehicles. RTA currently uses 256 total vehicles (127 buses) and operates its fixed route fleet on compressed natural gas. On an annual basis, bus mileage covers 11.6 million miles. RTA's annual operating budget is \$55 million.

The Inland Empire is a rapidly growing area in southern California. Since 2000, both population and employment in this region have increased by double digits. Because use of public transportation and employment levels are closely linked, Inland Empire ridership would be expected to grow by a correspondingly large amount. RTA, however, has been unable to capture the increase in commuter ridership. Although ridership grew by 2.84 percent between 2000 and 2005, when 2006 ridership data is factored in, RTA actually loses trips. Unlinked passenger trips fell by 4.26 percent between 2000 and 2006. In fiscal year 2005, RTA increased fares from \$1.00 to \$1.25 for flat rate fixed route service which helps to explain the drop in passenger trips between 2004 and 2006.

Continued decline in Inland Empire ridership is an ongoing problem. In 2006 RTA lost 6.91 percent of its 2005 unlinked passenger trips, bringing the total loss in ridership to 9.75 percent between 2004 and 2006. This decrease in unlinked

passenger trips for a second year places the agency's ridership outside the normal response to a fare hike, indicating that RTA's customers may be overly sensitive to price or other factors are responsible for this decline. RTA's ability to recover its former ridership is important.

As illustrated in the table below, preliminary data indicates that both RTA and SunLine are on the right track as ridership is increasing. Rising gas prices and a desire to leave the stress of driving to someone else prompted a growing number of people to ride RTA and SunLine during FY 2009.

Unlinked Passenger Trips	RTA	SunLine
FY 2006/07	7,067,636	3,502,911
FY 2007/08	7,403,682	3,488,026
FY 2008/09	8,326,764	3,690,117

The increase ridership was most apparent on RTA's CommuterLink routes, which saw a staggering increase of 41%. The agency's popular dial-a-ride service for senior and disabled riders increased 17%. Many individual routes performed exceptionally well. For example, Perris' Route 41 shot up 53% after RTA made adjustments to better meet school bell times and brought service to new communities. RTA recently added four buses to routes 23 and 24 in Temecula and Murrieta. Those two routes enjoyed a strong surge in popularity, especially among students, growing by 16% during the year.

Additionally, RTA and the University of California, Riverside formed a partnership during 2007 that allows students to ride any RTA fixed route bus for free. This has generated 70,000 boardings (17% of the schools' population). Furthermore, due to a partnership between the city of Riverside and RTA, city employees also qualified for free rides. Trolley services have been launched within downtown Riverside which now attracts visitors and governmental employees to a convenient transit option for commuting.

Metrolink

Southern California Regional Rail Authority's (SCRRA) commuter rail system is made possible by the Los Angeles County Metropolitan Transportation Authority, the Orange County Transportation Authority, the Riverside County Transportation Commission, the San Bernardino Associated Governments and the Ventura County Transportation Commission. In 1991, SCRRA, a Joint Powers Authority, consisting of the five county transportation planning agencies was formed to develop a regional transit service to reduce the congestion on highways and improve mobility throughout the Southern California region.

Today, Metrolink continues to provide the people of Southern California a safe, reliable and environmentally friendly commute option. In 1992, when the service started, there were three lines of service, 12 stations and a little over 5,000 daily passengers. Today, the system has grown to seven lines, 55 stations and 40,000 passengers per day.

Following is an overview of the passenger rail routes operating within the Inland Empire:

- San Bernardino Line – serving the cities of San Bernardino, Rialto, Fontana, Rancho Cucamonga, Upland and Montclair into Los Angeles’ Union Station. It is the busiest of the seven Metrolink lines. Because this line is fully owned by the member agencies, it is able to run the highest levels of frequency of any of the lines with 34 daily trains and 20 minute headways in the peak periods. The tracks along this line have been constantly upgraded to improve train speed, reliability and frequency. Future plans for the line include an extension of the San Bernardino terminal to E Street, and future service to Redlands. There is also the potential for double tracking of the line from Union Station to El Monte (along the median of the I-10 freeway).
- The Inland Empire-Orange County (IEOC) line is a commuter rail line that operates from San Bernardino through Orange County to Oceanside in Northern San Diego County. The IEOC Line is the only commuter rail line that does not terminate at Union Station in downtown Los Angeles. The IEOC Line shares stations with the Orange County Line, the 91 Line and the Riverside Line. The IEOC Line terminates at the San Bernardino station which is also served by the San Bernardino Line. The IEOC Line travels along the Burlington Northern Santa Fe Railway (BNSF) tracks and, as a result, is limited in the number of trains that can be run. There are currently 16 daily trains on this route with four peak period round trips. Future rail equipment and track rights will allow service to expand. For several years this line had the fastest growing ridership in the system.
- The Riverside Line is a commuter rail service running from Riverside to Los Angeles’ Union Station. It offers weekday service during peak commute hours with limited mid-day and reverse-commute service. Currently, there are 12 daily trains on this route with five peak period round trips. This service has shown steady ridership since it was added to the system in 1993 and continues to perform well.
- 91 Line is a regional rail line operated by Metrolink that runs from downtown Los Angeles to Riverside (some trains continue on to San Bernardino). The service parallels the SR-91 between Riverside and Santa Fe Springs. It operates on track owned by BNSF Railway. The 91 Line runs five days a week with peak hour and limited mid-day service.

In addition to the four lines currently operating in the Inland Empire, RCTC will extend the 91 Line approximately 24 miles further into Riverside County creating better access to popular commuter rail transportation destinations. The planned extension - Perris Valley Line – will include track rehabilitation with welded rails as well as new double track for a nine-mile segment. This Metrolink extension will take thousands of cars off I-215 reducing the need for highway lane additions.

Overall, the effectiveness and level of congestion of the transit system are poor. Considering the need to increase the number of new buses and enhance accessibility to Inland Empire customers in strategic regions will better meet the needs of each provider and customer; a grade of D was assigned to the capacity of the Inland Empire transit system.

3. Maintenance.

The effectiveness of maintenance performed within the regional/local Inland Empire transit providers and agencies was evaluated by comparing the data from similar agencies. In our review, we assessed current ridership in comparison to operational costs, transit line extension and service improvements. We reviewed Omnitrans, RTA and SunLine's annual reports to garner an understanding of the current operational, revenue and maintenance needs that reside within the agencies.

Additionally, we reviewed available funding sources at the local, state and federal level in order to identify when and where available funding will be applied. These funding sources included:

- Congestion Mitigation and Air Quality
- Federal Transit Administration (FTA) Formula Funds
- FTA Discretionary Funds
- Local Transportation Funds
- Measure A and Measure I Local Sales Tax for Transit
- Other Federal Grant Programs
- Proposition 1B State Infrastructure Bonds
- State Transportation Improvement Program
- State Transit Assistance Funds

Omnitrans

A number of key financial issues challenge the administration and delivery of Omnitrans services. These include:

- **Operating Cost Increases** – The systemwide operating cost per revenue hour is projected to increase by 36% between FY 2006/07 and FY 2012/13.
- **High Administrative Overhead Costs** – Administrative overhead costs are approximately 19% of the annual operating costs (based on FY 2006/07 budget figures).
- **Decreasing Farebox Recovery** – The systemwide farebox recovery ratio has dropped from 22% in FY 2001/02 to 20% in FY 2005/06. Decreasing farebox recovery is the result of rising operating costs and declining ridership.

Although fixed route ridership increased annually between FY 1992/93 and FY 2001/02, ridership has actually declined in recent years. Fixed route ridership

dropped from 16,925,613 in FY 2001/02 to 15,420,783 in FY 2005/06 (a 9% decrease). Although increasing operating costs have a significant impact on farebox recovery, declining ridership exacerbates the problem. Ridership declines may be the result of fixed route schedule adherence issues related to increasing traffic congestion problems, and an increasing reliance on private vehicles in a continuing pattern of low-density development that cannot be effectively served by public transit.

Rising operating and overhead costs, decreasing farebox recovery and declining ridership pose critical challenges to the delivery of public transit services within the initial years of the 2008-2013 Omnitrans SRTP. In order to help meet these challenges, it was assumed that Omnitrans will control its future administrative labor costs by limiting their annual increase to no more than inflation after FY 2008.

The Compass Blueprint 2% Strategy – Implications for San Bernardino Valley

In 2006, as part of SCAG's Compass Blueprint 2% Strategy, SANBAG began to examine in more detail how anticipated growth in San Bernardino County could be accommodated. Building on the initial SCAG efforts, the first phase of the study involves identifying "opportunity" areas in the San Bernardino Valley, where growth would likely occur. These opportunity areas include city centers, transit hubs or transcenters, and other high-density growth areas.

In addition to the SCAG/SANBAG 2% initiative, SANBAG is also examining the transit-oriented development of the proposed passenger rail service to Redlands. SANBAG is planning a 9.1 mile extension connecting the Santa Fe Depot to proposed station locations in Redlands. The plan calls for a station at a proposed Transcenter at E Street and Rialto Avenue and up to six additional stations along the alignment, ending at the University of Redlands.

The plan was released in November 2006 and has been presented to the three involved cities. Recommendations for transit-oriented zoning changes are set out for the proposed stations. Some aspects of the extension remain to be worked out, including the location of a station in downtown Redlands.

In April 2007 SANBAG decided to continue studying the extension. While the extension is still several years away, approval was given for more in-depth studies, and for SANBAG to prepare an application for \$75 million in federal funding. The agency also will contribute funds from the County's Measure I sales tax to pay for the \$250 million project. With approval of the plan, the cities of San Bernardino, Loma Linda, and Redlands will be asked to start considering land use changes around the proposed stations, such as denser housing, commercial development, pedestrian and bicycle paths and other amenities.

Riverside Transit Agency

In 2007, RTA received the good news that it qualified for a federal grant that earmarked \$1.2 million for transit centers in Riverside and Corona. The facilities are expected to include bus bays, covered plazas and park-and-ride areas. Once

constructed, the centers will improve connections between buses and trains. These projects will allow for RTA to keep up with the demand for more transit services within Riverside County.

RTA recently completed a federal audit in 2007 that found that the agency was in compliance with all 23 areas of inspection, including legal, financial, maintenance and safety and security. Additionally, throughout the 2007 fiscal year, RTA met or exceeded all required performance standards identified in RCTC's Productivity Improvement Program. This program requires the tracking over time of key performance measures related to revenues, expenses and passenger counts, which in turn assists RTA with maintaining efficient service by pinpointing areas for upgrade or modifications.

In 2007, RTA completed a study - the Comprehensive Operational Analysis (COA) - that outlines ways to meet the transit needs of the growing region. The COA is designed to be a guiding document for service upgrades over the next five to ten years. In order to meet future demands, the study has suggested that connectivity to transit centers, employment centers and schools be improved as well as increased service frequencies, expansion of bus services within growing areas and improved commuter services.

Overall, the maintenance and operation of the Inland Empire transit system is poor. Still, considering the need to increase the available funding (at all levels) to enhance how each transit system provides service as well as builds much needed facilities, a grade of D was assigned to the maintenance and operations of the Inland Empire transit system.

Combining the three Transit categories of Condition, Capacity, and Maintenance yields an overall grade of D+ for Transit.

D. Goods Movement

The 2005 Report Card included a brief discussion of goods movements, an emerging transportation challenge at that time. The report stated, "What could be the area's biggest transportation challenge is the issue of goods movement. Due to the growth of port traffic in Long Beach and Los Angeles, the Inland Empire is becoming seriously impacted by truck and rail freight traffic that clogs the region's freeways and railways."

Since that time, goods movement has become an extremely significant transportation issue to the Inland Empire, so much so that the Infrastructure Report Card Transportation Committee recommended that Goods Movement be a transportation infrastructure component comparable to infrastructure needs of the region's highways and arterials, bridges, and transit infrastructure. Goods movement has also been the subject of numerous media articles and local agency meetings across the Inland Empire, as it has influenced shifting priorities in transportation project programming to help mitigate goods movement impacts on highways and arterials, as well as on traffic congestion, air quality, noise, emergency response, public safety, and other quality of life issues.

According to SCAG's 2008 RTP, the SCAG region's goods movement system serves as the gateway for both international and domestic commerce. Supported in part by its geographical advantages such as deep-water ports, highly developed network of highways and railways, availability of transloading facilities, and its large internal market, goods movement is the fastest-growing segment of the region's transportation sector. The San Pedro Bay Ports (Ports), which include the Ports of Los Angeles and Long Beach, currently handle 40% of the container volume imported into the country and 24% of the nation's exports. Container volume processed by the Ports grew by almost 60 percent between the years 2000 and 2006, and is expected to nearly triple by 2035.

More than 60 percent of the containers processed by the Ports will involve a truck trip within the SCAG region, either to or from the Ports, rail inter-modal facilities, warehouses, or trans-load facilities. Between 1995 and 2006, the total number of international container traffic at the Ports increased from four million to 10.4 million 20-foot equivalent units (or containers). SCAG's Inland Empire Railroad Main Line Study suggests that the number of freight trains on most BNSF and UPRR lines will more than double between 2000 and 2025 in response to a tripling of container volume at the Ports. In addition, approximately 25% of all trucks that transport containers pass through the Inland Empire, raising the percentage of truck volumes on our highways and arterials throughout the Inland Empire.

Many of these trucks will transport containers to and from cargo hubs, such as existing major warehousing centers in Mira Loma, Ontario, and San Bernardino, as well as to proposed air cargo facilities, including the Southern California Logistics Center in Victorville, where a new major intermodal yard is planned. While airports are evaluated under the Aviation Section of the Report Card, it should be noted that all three major airports in the Inland Empire are converting operations to handle significantly greater cargo in the future. This will result in significant trucking impacts between the Ports, rail yards, warehouses, freeways, and airport facilities. The San Bernardino International Airport, formerly Norton Air Force Base, provides the optimal location for air cargo and logistics management for companies conducting businesses in Los Angeles, Southern California, Mexico, and United State's inter-mountain regions. A master plan was prepared to significantly increase air cargo capacity to and from the Los Angeles/Ontario International Airport. In addition, the former March Air Force Base land east of Riverside is no longer needed as a result of Air Force downsizing and was given to the March Joint Powers Authority, a commission that represents the county and the base's adjoining cities. This land is now called March GlobalPort and is currently being developed as a major air cargo center.

Capital improvement programs are being aggressively implemented by the freight railroads and the Ports to increase capacity to meet the increasing container volume demands. However, the Inland Empire has been suffering the consequences. For example, additional trains crossing arterials at-grade results

in increased travel delays, traffic congestion, and the inability for emergency vehicles to cross the tracks at that location while trains pass. Additional trains also create more noise by blowing their horns at crossings, and both locomotives and idling vehicles contribute to air pollution. Grade separations, wherein the intersecting roadway is raised above the railroad tracks or the roadway is depressed below the tracks, are currently being implemented by many agencies as a critical step to reduce goods movement impacts on local communities.

The RCTC, SANBAG, and other agencies have risen to the challenge to study the impacts of goods movements and assess the needs and funding required for minimizing adverse goods movement impacts. Furthermore, these planning efforts are being pro-actively coordinated on a regional basis. Several studies are available on SCAG, SANBAG, and the RCTC websites. The Trade Corridors Improvement Funds (TCIF) component of Proposition 1B has allocated much needed funding for goods movement and is being combined with other federal, state, local, railroad and development funds to deliver priority grade separation projects.

In addition to grade separations, which are needed to reduce the impact of goods movement, a variety of other infrastructure measures are being proposed for the Inland Empire's transportation system. These additional measures will help mitigate goods movement impacts as well as improve the overall transportation system in the Inland Empire. Measures being considered include:

- Additional highways
- Highway widening for additional general purpose and HOV lanes
- Truck climbing lanes
- Managed lanes
- Reversible lanes
- Dedicated truck toll lanes
- Additional interchanges
- Interchange reconstructions/upgrades and capacity improvements
- Signal interconnectivity along arterials
- Intelligent Transportation Systems (i.e. variable message boards)

At this time, it is difficult to quantify Goods Movement impacts on transportation infrastructure, to benchmark its impacts with other comparable regions of the country, or to compare to an established industry standard. However, it is most important to include Goods Movement into the Inland Empire's Infrastructure Report Card and to recognize the significant impacts that Goods Movement is having, and will continue to have, on the Inland Empire.

While Goods Movement impacts are very significant in the Inland Empire and will be for decades to come, it is acknowledged that local agencies have proactively studied the issues, programmed funding, and have already begun to implement dozens of mitigating projects, particularly grade separations.

Based on all factors discussed above, Goods Movement is assigned an overall grade of D.

Sources

Each component of the Transportation infrastructure – Highways and Arterials, Bridges, Transit, and Goods Movement – required unique data sources.

The condition category for Highways and Arterials was heavily dependent on local agency pavement management program reports completed between 2004 and 2008, Riverside and San Bernardino Counties' pavement management programs, and Caltrans' State and District 8 *Pavement Condition Reports*. CVAG's *Transportation Project Prioritization Study 2005* was also used to garner a solid understanding of pavement condition data from local agencies within CVAG's jurisdiction. The operations category for highways was dependent on *2008 Forbes Magazine*, Texas Transportation Institute and the Caltrans 2009 HICOMP report. The capacity category of Highways and Arterials utilized output data from SCAG's *2008 Travel Demand Model*.

Data for Bridges was gathered from Caltrans *Structure Maintenance and Investigations California Bridge Log Database*, which is maintained for all bridges in California.

Data for Transit was gathered from *2005 Urban Mobility Report*, Texas Transportation Institute, (May 2005), US DOT Bureau of Transportation Statistics, *2008 National Transit Database*, Omnitrans, *Omnitrans Short Range Transit Plan 2008-2013 Final Report*, RTA, *RTA 2007 Opportunities for Improving Ridership*, *Going the Distance Riverside Transit Agency 2007 Annual Report*, Metrolink, *2006 Status of the Nation's Highways, Bridges, Victor Valley Commuter Needs Study*, and *Federal Transit Administration*.

Information used for the Goods Movement discussion included: SCAG's *2008 Regional Transportation Plan*, Texas Transportation Institute's *2007 Urban Mobility Study*, SCAG's *Inland Empire Railroad Main Line Study*, *Forbes.com*, *Los Angeles Times*, *the Press Enterprise*, and information available on the websites of the RCTC and SANBAG.

School Facilities

School facilities are an integral part of the overall infrastructure of the nation, and children deserve a safe, clean, and healthy place in which to learn. In 2005, ASCE gave U.S. Schools a grade of “D” on its national infrastructure report card. Therefore, it is imperative that school districts are supported at both the state and federal levels in order to improve the physical condition of their facilities. California currently serves over 6.2 million K-12 students, and reports from the State Superintendent of Schools show that the condition of school facilities can affect student achievement, the retention of teachers, and the vitality of the community. Public school districts in the Inland Empire serve over 850,000 students, which represents 13.7% of California’s student population.

The Office of Public School Construction (OPSC), under the direction of the State Allocation Board, administers the School Facility Program (SFP). This program provides school districts and County Offices of Education with a New Construction Grant of 50% and a Modernization Grant of 60% of eligible school construction project costs. The SFP also provides funding for Charter Schools, Critically Overcrowded Schools, Joint Use Projects, Seismic Mitigation, Labor Compliance, Small High Schools, High Performance Schools, and Career Technical Education. In addition to the SFP, the OPSC also administers the Emergency Repair Program, the School Facility Needs Assessment Grant Program, the State Relocatable Classroom Program, and the Deferred Maintenance Program.

On May 23, 2007 the California Department of Education (CDE), in an effort to assess the adequacy of the grants provided under the SFP, released a report on Complete Schools in California. The goal of this report was to “determine if the complete school supports the world class academic standards to which students, teachers, administrators, and elected officials are held accountable.” The report compared the national median of space allocated per student with California, based on California Code of Regulations Title 5 standards, which the CDE uses to evaluate the standards under which a school is designed.

Since the 2005 Report Card, the voters of California passed Proposition 1D by 56.6% in November 2006, which authorized \$10.4 billion in additional school construction funding. In testimony to the House of Representatives Committee on Education and Labor in February 2008, the CDE reported that “California has a staggering \$9 billion need for new construction funds as well as \$3.4 billion in modernization needs”. This statewide demand translates into a need for the Inland Empire of \$1.78 billion for new construction and \$256 million for modernization, based on current school district eligibility representing un-housed students. California’s aging school buildings are in need of upgrades to bring them to current building code requirements. The modernization grants under the current SFP are

simply not adequate enough to address much more than American's with Disabilities Act (ADA) compliance upgrades, or basic system replacements. The buildings themselves, rarely receive a true modernization, unless a district has substantial local funding to augment the State grant.

Final Grade

The Schools Committee has determined that due to the increased availability of federal, state, and local funding for schools since 2005, along with the results of the districts surveyed, the final grade for school facilities in the Inland Empire is a "B". This improved from a "C+" as rated in the 2005 Report Card.

Recommendations

Legislative policy for public school construction is mandated under the Education Code and the SFP regulations. The State Allocation Board (SAB) is responsible for administration of the SFP and the disbursement of funding from State general obligation bonds for school construction. Under its direction, the OPSC acts as staff to the SAB, and makes policy recommendations that directly affect the SFP regulations. The ability to shape legislative and policy changes for school construction in California is a collaborative on-going effort. Various statewide coalitions regularly work with state agencies and legislators to assist school districts in navigating the current regulations, and propose new legislation that will improve the school construction and funding process. While the state funding model and adequacy of the per pupil grant is continually under review, there is ongoing support from the state legislature and the Governor for future statewide school facilities general obligation bonds. In addition there are efforts to provide California more funding for school facilities from the federal level. Federal grants and tax credits are targeting improvements for energy efficiency and the development of high performance schools. School districts in both Riverside and San Bernardino Counties should continue to support these efforts at both the state and federal levels.

Infrastructure Assessment Methodology

The objective of the report card is to foster an understanding of the importance of public infrastructure and its impact to the quality of life and economic vitality in the Inland Empire. To provide a quantifiable grading system for school infrastructure, the members of the Schools Committee surveyed facility planning administrators at school districts and County Office's of Education in Riverside and San Bernardino Counties to determine the following factors:

- ***Participation in SFP*** – Has your district received a SFP apportionment in the past 3 years? Was the apportionment for New Construction or Modernization? Has your district had Financial Hardship status in the past 3 years?

- ***School Funding*** – Has your district passed any local voter approved funding in the past five years (G/O Bonds, CFD's, Parcel Tax)? Has your district issued any COP's in the past three years? Does your district collect Level II Developer Fees? What is the approximate amount of Developer Fees collected in the past three years? Does your district have plans to pursue any voter approved local funding in the next three years?
- ***Ability to Complete School Construction Projects since 2005*** – Have you completed and occupied any new schools since 2005? Has your district had to reduce the scope or abandon any projects due to increased construction costs? Has your district been subject to additional city or county site development costs not covered by the SFP? Has your district been subject to excessive DTSC or California Environmental Quality Act environmental issues in the past 3 years?
- ***Overall Condition of School Facilities*** – Does the district participate in the State Deferred Maintenance Program? Has your district modernized any facilities in the past three years? Has your district received Emergency Repair Program funding in the past three years? Has your district had any Facility Hardship projects in the past three years?
- ***Future School Projects*** – Has your district completed a Facilities Master Plan in the past three years? Do you have new schools under design or construction that will be occupied in the next three years? Is your district in the process of acquiring any land for new school projects? Does your district have plans to modernize any facilities in the next three years?
- ***Demographic Information*** – What is your current district enrollment? Is your district enrollment growing, stable, or in decline? Does your district have plans to close any schools in the next three years?

Weighting Factors and Grading Criteria

Responses received from districts surveyed represent over 67% of the students in the Inland Empire. Grading criteria was based on the overall ability of districts to construct or improve their school facilities since 2005, and the ability to adequately maintain the condition of their current facilities. Also of importance was the district's anticipation of project needs for the next three years. In addition, the district's changing demographics and enrollment trends will have an impact on the future time line for constructing new schools, and the ability to acquire appropriate school sites under the CDE's regulations. The following table summarizes some of the results of the district's surveys received by the committee:

Survey Question	Percent of Districts
Participate in the SFP	85.7%
Collects Level II Developer Fees	75.0%
Constructed New Schools in the Past 3 Years	78.6%
Modernized Existing Schools in the Past 3 Years	67.8%
Has had Financial Hardship Status	25.0%
Passed Local Voter Approved Funding in the Past 5 Years	42.8%
Participates in the Deferred Maintenance Program	100%
Has Received Emergency Repair Program Funding	57.1%
Classify Current Condition of Facilities as Good or Excellent	78.6%
Plan to Construct or Modernize Facilities in the Next 3 Years	67.9%
In the Process of Acquiring Land for New School Sites	53.5%
Current Enrollment is Growing or Stable	67.9%
Current Enrollment is Declining	32.1%
Plans to Close Schools in the Next 3 Years	17.9%
Has Charter Schools Operating within their District Boundary	50.0%

Data for the 2010 Inland Empire infrastructure survey was compiled through a survey sent to all school districts in Riverside and San Bernardino Counties, as well as obtained through the OPSC, the CDE, and the Coalition for Adequate School Housing.

Results and Conclusions

Based on the results of the districts surveyed, and the success of districts to obtain state and local funding, the conclusion is that the school facilities in the Inland Empire are in an improved condition since the 2005 Report Card, in which they received a grade of "C". With nearly \$3 billion in local funding acquired by school districts to address school facility needs since 2005, it is clear that both the districts and their respective communities see the value in constructing and enhancing school facilities. School construction projects create jobs and infuse spending into the local economy. The CDE reports that every \$1 spent on school construction translates into \$3 spent in a reciprocal service to support that project. The Inland Empire can greatly benefit from school construction projects in this manner, and districts and communities benefit by providing the world-class school facilities that their students deserve.

In order to increase the final grade to an “A”, districts will need to adequately maintain or replace their aging school buildings in the future. This includes regular assessments and participation in the Deferred Maintenance Program, modernization, and upgrades to systems and operational components of schools. There also will need to be continued support for state and local school construction bonds, with local communities bearing the most financial support. Through various statewide coalitions and committees, school districts have the ability to impact school facility legislation at both the state and federal levels. It is imperative that they voice their concerns to their local legislators, which in turn will translate into increased funding opportunities for school construction and modernization.

Sources

Report on Complete Schools; California Department of Education; May, 2007; <http://www.cde.ca.gov/ls/fa/sf/documents/completeschool.doc>

An Overview of the State School Facility Programs; Office of Public School Construction; January 2008; http://www.documents.dgs.ca.gov/opsc/Publications/Other/SFP_Info.pdf

Testimony of Kathleen Moore to the U.S. House of Representatives, Committee on Education and Labor; <http://www.cde.ca.gov/ls/fa/sf/documents/congresstestimony.doc>

California's Coalition for Adequate School Housing; <http://www.cashnet.org/index.html>

Aviation Infrastructure System

Aviation infrastructure is immensely important to the Inland Empire. As the population in the Inland region continues to explode at a rate that will prove difficult to accommodate, new methods of transportation must emerge. It is evident that the expansion of freeways, commuter railways, and rapid-transit bus systems will not be able to grow rapidly enough to meet the projected necessity. The most accessible source location for accommodating increased travel volumes expected by the year 2015 is the Inland region portion of the skyways.

Aviation infrastructure in Riverside and San Bernardino counties consists of major airports, a few reliever airports, and numerous smaller general aviation airports. The Aviation Report Card Committee acknowledges the foregoing work performed for the 2005 Infrastructure Report Card as notable.

Due to changes in technology, the Aviation Infrastructure Committee chose to expand its section of the Infrastructure Report Card to include all regional and community airports that are publicly accessible and non-private in operations. In all, 32 airports were studied to determine their viable support to the Inland Empire. All 32 airports are located within Riverside and San Bernardino counties, providing aviation support services for the Inland Empire region.

Final Grade

The overall grade for the aviation infrastructure within the Inland Empire, consisting of Riverside and San Bernardino counties publicly accessible airports, has been given an averaged letter Grade of "C+". The Inland Empire is poised to meet the anticipated demand requirements for air transportation, particularly commercial, foreign and domestic travel, and air cargo. This demand is a result of consistent growth within the region.

Recommendations

The Aviation Review Committee's Infrastructure Report Card grading policy statement and recommendations are based on the utilization of past funding, in proportion to the need for future funding which allow airports to meet the needs of the public.

This report follows the Federal Aviation Administration's (FAA) designation of airport categories: primary, non-primary, reliever, and general aviation. Some liberty was taken in expanding the reliever category to include regional airports that may grow to serve as reliever airports in the near future.

- ***Primary Airports***

The primary airports are Ontario International Airport, Palm Springs International Airport, March Air Reserve Base, Southern California Logistics Airport, and San Bernardino International Airport. These airports are hubs

for travel and cargo transit, catering primarily to commercial operations (e.g., the airlines). The total number of annual operations at these airports is approximately 334,000 operations – defined as take-offs and landings - per year. It is anticipated that within the next five years, operations will increase to 460,000, representing a 38% growth.

The need to develop and maintain primary airport facilities to their maximum capabilities is clear as they are vital to the economy of the region. Funding them is imperative from a public and a commercial perspective. However, their ability to accommodate the expected growth of the area, utilizing existing technologies, is limited by available land and by other infrastructure limitations.

- ***Reliever and Regional Airports***

Reliever airports include Riverside Municipal, Chino, and Upland, plus the addition of regional airports, such as Jacqueline Cochran Regional and French Valley. These airports are intended to relieve congestion at primary airports and improve access to general aviation. Currently annual operations at reliever and regional airports are 534,000; however, operations are expected to reach 780,000 in five years, representing a growth of 46%.

The airports studied are in good condition, generally receiving funds, and have projects planned that will facilitate future needs. With the emergence of “on-demand air travel”, featuring newly developed “very light jets”, the future role of these airports may escalate to make them principal points of connection, or nodes of travel, for reaching large hub airports.

The Aviation Review Committee believes that current planning should accommodate the re-oriented needs of “on-demand air travel”, such as longer runways, parking, and terminals for the expected future use.

- ***General Aviation***

The general aviation airports are too numerous to mention by name. They are scattered throughout the Inland Empire and support emergency services, flight training operations, recreational and business flying, as well as fuel stops for pilots in transit. Annual operations at the eligible general aviation airports total approximately 480,000; that number is expected to increase to 778,000, representing a growth of 62%.

Many of the General Aviation airports are in danger of being lost due to the encroachment of residential and other non-compatible development as local governments succumb to the pressures of homeowners and developers. As air travel is sure to evolve, the loss of these resources would be detrimental to the future of aviation and transportation relief infrastructure. New airports will be near impossible to create within the congestion of urban Riverside and San Bernardino Counties.

Infrastructure Assessment Methodology

The Aviation Infrastructure Report Card Committee developed specific criteria for the Aviation Infrastructure System (AIS), which was based on the current funding allocations available to inland region airports from the various sources. The method used was to interview management at every publicly accessible airport, determine the sources of funding used in the past, and ascertain if the airport is sustaining public service based on the past funding received. Those airports in good serviceable condition and providing the expected services were given a high grade, while those in poor condition, or severely in need of additional new funding and funding sources, were given a lower grade indicating a deficiency in funding for attaining the desired public service.

The most notable source of funding comes from the FAA. State funding is also available through the California Department of Transportation (Caltrans) and county funding is available from both Riverside and San Bernardino counties. Smaller municipal airports are supported partially by the individual city. A few of the very small general aviation airports, accessible to the public, but privately owned, are funded by private grants or local businesses.

A source of funding for airport projects is the Airport Improvement Program (AIP), which was established by the Airport and Airway Improvement Act of 1982. Since then, the AIP has been amended several times; most recently with the passage of the Wendell H. Ford Aviation Investment and Reform Act for 21st Century (AIR-21). Funds obligated for the AIP are drawn from the Airport and Airway Trust fund, which is supported by user fees and fuel tax revenues.

The AIP provides grants to public agencies and, in some cases, to private owners and entities for the planning and development of public-use airports that are included in the *National Plan of Integrated Airport Systems (NPIAS)*.

The NPIAS identifies more than 3,300 airports that are significant to national air transportation and thus eligible to receive federal grants under the AIP. It also includes estimates of the amount of AIP money needed to fund infrastructure development projects that will bring these airports up to current design standards and add capacity to congested airports. The FAA is required to provide Congress with a five-year estimate of AIP eligible development every two years. The NPIAS comprises all commercial and reliever airports, and selected general aviation airports.

Eligible projects include those improvements related to enhancing airport safety, capacity, security, and environmental concerns. In general, airport sponsors can use AIP funds on most airfield capital improvements or repairs except those for terminals, hangars, and non-aviation development. Any professional services that are necessary for eligible projects such as planning, surveying, and design are eligible, as are runway, taxiway, and apron pavement maintenance. Aviation demand at the airport must justify the projects, which must also meet federal environmental and procurement requirements.

Projects related to airport operations and revenue-generating improvements are typically not eligible for funding. Operational costs such as salaries, maintenance services, equipment, and supplies are also not eligible for AIP grants.

In addition, airports can receive AIP funds under the Military Aid Program (MAP). The MAP allows the FAA to designate current (joint-use) or former military airports to receive grants from the AIP. The FAA is authorized to designate an airport only if the airport is a former military installation closed or realigned under the Base Closure and Realignment Acts, or if the airport is a military installation with both military and civil aircraft operations.

Another source of funding available to commercial service airports is the Passenger Facility Charge (PFC) Program. This program allows the collection of PFC fees up to \$4.50 for every enplaned passenger at commercial airports controlled by public agencies. Airports use these fees to fund FAA-approved projects that enhance safety, security, or capacity, reduce noise, or increase air carrier competition. The project eligibility rules for the PFC program closely follow the eligibility guidelines of the AIP.

Another source of funding to airports within California is the California Department of Transportation, Division of Aeronautics. Through this department, airports can receive either grants or loans for airport projects. In addition, the Division of Aeronautics can provide assistance to airports receiving grants under the AIP program from the FAA. The assistance provided by an AIP grant provides only a portion of the airport sponsor's funding share. FAA funding also does not provide for 100% funding of any project. As an example, the FAA currently provides 95% funding for an airport development project at a general aviation airport.

The California Aviation System Plan (CASP), a multi-element plan, is prepared by the California Department of Transportation, Division of Aeronautics, with the primary goal of developing and preserving a system of airports that would be responsive to the needs of the state inhabitants.

The State Aeronautics Act requires that the CASP include as one of its elements the Capital Improvement Plan (CIP). The CIP is a ten-year plan, based predominantly on the state's general aviation airports' master plan or other comparable long-range planning document, and submitted for inclusion in the CASP.

The CIP contains 1,985 airport development and Airport Land Use Compatibility Plan (ALUCP) projects desired by airport sponsors with a fiscally unconstrained cost estimate of \$3.58 billion. This year, Regional Transportation Planning Agencies and Airport Land Use Commissions, were encouraged to coordinate with airport sponsors to update ALUCP documents.

National Connection

The National Plan of Integrated Airport Systems (NPIAS) is a federal document that identifies airports that are significant to national air transportation, and are eligible to receive grants under the FAA's Airport Improvement Program.

Federal AIP, CAAP AIP, and local funds will fund many of the projects listed in the CIP. The state contribution is 2.5% of the federal grant amount. The broad aim of the AIP is to assist in the development of the nationwide system of public-use airports; the CIP represents California's participation in the nationwide effort. For more information and details of the AIP refer to the FAA Order 5100.38C entitled "Airport Improvement Program Handbook."

California Aid to Airports Program

The purpose of the California Aid to Airports Program (CAAP) is to assist in establishing and improving a statewide system of safe and environmentally compatible airports whose primary benefit is for general aviation. The department recently undertook efforts to synchronize the CAAP process with the federal programming process, and to create a unified federal/state application form. This coordination with the FAA prevents duplicate efforts, and provides better service to the department's customers, who are local airport sponsors, Airport Land Use Commissions, Regional Transportation Planning Agencies, the FAA, the aviation community, and the public. All projects in the CIP are subject to the provisions of the State Aeronautics Act and the CAAP.

The inclusion of an airport development project or an airport land use compatibility plan in the CIP does not imply promise of funding. It also does not mean that the project complies with the National Environmental Policy Act or the California Environmental Quality Act. Federal, state and local sources fund airport capital improvement projects. Information on Federal Airport Capital Improvement Plan funding can be found at http://www.faa.gov/airports_airtraffic/airports/aip/. The Division recently updated "State Dollars for Your Airport" which can be found at <http://www.dot.ca.gov/aeronautics>.

Results and Conclusions

Taken as a whole, the Aviation Infrastructure Review Committee believes that funds are not being adequately distributed to support a comprehensive aviation infrastructure that is flexible and adaptable to changing technologies. Rather than continually growing the major hubs, the committee believes a more organic model of growth should be supported. The major hubs will reach a practical limit and smaller, intermediate hubs should be developed to accommodate travel growth between and around them.

The proposed development of creating an integral airport network, involving more public airports of now medium and smaller sizes, will alleviate the stress to larger major hub airports and associated infrastructure elements. By improving "on-demand travel" with air taxi and air shuttle networks,

people and goods can be moved more directly and closer to their intended destinations. An added advantage is that people and goods movement will be done more quickly, with less expense to the consumer. Enhanced development of all Inland Empire regional airway commuting will sharpen the local travel convenience, reduce commute times, and ultimately consume fewer resources.

Sources

The process for accumulating data for the publicly accessible airports of Riverside and San Bernardino Counties followed the development of a methodically derived questionnaire form and was supplemented with existing regulated governmental data files. The questionnaire was used to interview the airport managers at each of the 32 qualifying bi-county airports. The basis of the interview was to determine the current state of airport infrastructure in comparison with the infrastructure proposed in a five-year master plan, the funding sources available to each airport needed to make the improvements, the past record of acquiring funding, the projected intent to acquire future funding, as well as the qualifying sources of those funds.

To acquire supplemental background information for qualifying airports, the National Plan of Integrated Airport Systems (2007-2011) was researched. This database provided a "List of NPIAS Airports with Five-year Forecast Activity and Development Cost".

By researching the California Department of Transportation's "California Division of Aeronautics, Capital Improvement Program Summary by Airport Type", the Aviation Infrastructure Review Committee was able to ascertain the categorical funding available to each NPIAS category for the three funding types – federal, state, and local.

Energy

This is the inaugural year for the inclusion of an energy section in the ASCE Infrastructure Report. Energy (electricity, renewables, and natural gas for purposes of this report) is a vital component of the economic and social well being of any community and a critical piece of the infrastructure make-up of the Inland Empire. Due to consistent population growth, energy infrastructure requires constant development and planning. This report assesses the supply, transmission/distribution, and maintenance of electricity, and natural gas infrastructure with special attention given to renewable resources. It should be noted that electricity is not a natural resource and is produced by utilizing other energy resources such as fossil fuels and renewable resources including biomass, wind, geothermal, and solar resources.

The 2010 energy report will serve as a baseline for future assessments. Energy does not have infrastructure challenges that are isolated to the Inland Empire because all energy supplies depend on transmission infrastructure that interconnect cities, counties, and states. In order to enhance our ability to assess the local energy infrastructure in the future, Inland Empire specific statistics on supply, transportation/distribution, and maintenance need to be obtained.

Final Grade

Energy infrastructure is graded as a “B” based on a comprehensive assessment of supply, transmission/maintenance and distribution in each industry. Recommendations on how to improve in future years can be found in the Recommendations section of this report.

• Electricity

Supply

The Inland Empire is provided electricity by several electric “utilities,” including the investor-owned and regulated utilities (IOUs) of Southern California Edison and Bear Valley Electric, and also by a number of publicly-owned electric utilities (POUs), also known as municipal utilities, including the cities of Banning, Colton, Corona, Moreno Valley, Rancho Cucamonga, Riverside, and the Imperial Irrigation District. Most are members of the Southern California Public Power Authority (SCPPA). Although Inland Empire specific supply/generation data is not readily available, local electricity supplies come from sources like the newly constructed Inland Empire Energy Center and recently expanded Mountain View and Agua Mansa power plants. All of these facilities use natural gas technologies. Supplies are also imported from out-of-county and out-of-state resources. Due to the growing population in the Inland Empire, companies are continuing to investigate new supply opportunities.

Transmission/Distribution

Transmission corridors are critically important to connect heavily populated areas with the development of the geothermal, wind and solar resources found in the rural areas of the state, like Imperial County, that California is counting on to meet the Renewable Portfolio Standard (*refer to the Renewable Resources section below*).

Several utilities are pursuing new transmission lines that would link Southern California to the vast renewable resources located in the Imperial Valley, eastern San Diego County, and northern Baja Mexico regions. Examples include the Sunrise Powerlink proposed by San Diego Gas and Electric, and Green Path North proposed by Los Angeles Department of Water and Power.

New power plants must be connected to the grid in order to deliver power. This is like building a new on-ramp to a freeway. Just like freeways, transmission lines have a limit to the amount of traffic they can accommodate. Too much generation can mean congestion or even the electrical equivalent of gridlock. So connecting new generators often means expanding or upgrading existing transmission lines or building new transmissions. It can take up to 10 years to plan and build transmission lines, just about the same as building a new freeway. Much of that time is associated with obtaining right-of-way and permitting.

Nature dictates where renewable energy is feasible, and those locations are seldom conveniently located near existing power or gas transmission lines. In California, efforts to construct new transmission lines traditionally face staunch opposition for environmental or aesthetic reasons, or a simple desire not to live near high-voltage or other types of transmission gas or water lines. The reality is that California cannot have clean power - or perhaps even sufficient power - without additional capacity to send that power to customers. *Practical Power*, **The Press Enterprise**, Wednesday, May 14, 2008.

Maintenance

Utility providers do a good job of meeting and exceeding vigorous mandated requirements for maintaining electric transmission and distribution facilities for the safety of the public and the reliability of the source. Requirements are subject to California Public Utilities Commission (CPUC) regulation and California State law.

Electric transmission lines are subject to high pressure cleaning several times a year and frequent visual inspection with replacement and tree trimming as necessary to maintain safety and reliability. In addition to the cleaning and inspection of the actual hardware, access roads paralleling the lines are subject to constant maintenance as well. Given rapid community growth, transmission lines are occasionally upgraded to meet additional capacity needs. Upgrading existing facilities is considerably easier than constructing new transmission lines.

• Renewable Resources and Clean Energy Legislation

Renewable sources of energy are an important part of our portfolio for the future well being of energy supplies. Like natural gas, electricity and other forms of energy, which require added infrastructure and maintenance on existing energy infrastructure, renewables are also an important piece of the energy puzzle requiring additional investment and policy consideration to improve the overall energy grade. Renewable energy sources include wind, solar, geothermal, biomass, and hydro.

California law requires each of the state's IOUs to have 20% of their electric energy sold to customers generated by renewable resources by the year 2010. Although this state law does not apply to POUs, they have adopted similar requirements for renewably generated energy. These laws and requirements are referred to as "Renewable Portfolio Standards."

The challenges with renewable sources of energy are threefold:

1. Financing;
2. Advancing technologies for efficiency; and
3. Transmission or delivering the resource to the end user.

Financing

Production Tax Credit's play a significant role in the development and financial justification of new projects within the renewable energy arena. Unfortunately these credits are presently subject to legislative change each year and do not offer the stability required to fund multi-year projects. To be effective, these credits need to be firmly in place for the entire duration of new developments. This will help offset the ever increasing development costs of putting "green-field" site projects together. Developers need incentives to build renewable energy projects. This is one area that could help raise the energy grade tremendously.

Supplemental Energy Payments (SEP's), administered by the California Energy Commission, were created to encourage the development of renewable energy projects by subsidizing the "above market costs" of renewable energy production. The funding process for SEPs was reformed in late 2007 making it more difficult to fund projects. The process needs to be changed in order to once again make renewable energy projects feasible.

As noted in the **Wall Street Journal** article, *May 27, 2008, Costs to Build Power Plants Pressure Rates*, "One practical consequence of the inflationary pressures is that they make it harder for plant developers, such as utilities, to lock in prices as part of big projects. The longer the time period involved in construction, the bigger the risks inherent in any fixed-price contract. Instead of paying for time and materials, many firms are seeking contracts in which prices are tied to various indexes."

Advanced Technologies

There is a continued need to apply advanced technologies to improve renewable efficiencies. The future of renewable energy in the Inland Empire is diverse and gaining momentum every day. There is a growing amount of funds earmarked for advancement in technologies related to renewable energy in the form of federal and state programs, bonds, and private investment capital. Although investment money is available for manufacturing and distribution, in order to capitalize on these highly competitive opportunities, city and county governments must be committed to attracting the renewable energy industry into the Inland Empire region with economic incentives.

Transmission of Renewables

Most renewable resources are located in remote areas, far from the population centers where the power is needed, requiring transmission lines to bring the power over long distances. Often, the lines must go through environmentally sensitive areas of the desert and mountains. Planning and building for this transmission requires approvals from federal, state, and local governments, and sometimes raises difficult environmental and aesthetic issues.

The renewable resources within the Inland Empire are both diverse and substantial. As a result both Riverside and San Bernardino counties are well positioned in seeking and obtaining a balanced portfolio and more independence from fossil fuel derived generation, such as oil and coal. Specifically, the counties do not have to place reliance on one type of renewable technology to meet goals, and can improve cost control stability by not being unduly subject to the fuel pricing volatility of fossil fuels. Unlike just about any other region in the United States, the diversification of renewable energy types available to be fully maximized and optimized within the Riverside and San Bernardino counties is unparalleled and must be moved forward in an expedited manner towards the future benefit of all present and future inhabitants of the counties.

In developing/expanding what is already in place in terms of renewable technologies, the “pinch-point” in all of the above is transmission access limitations both geographically and capacity wise. The same people that are concerned about the NIMBY – not in my backyard - principle and not wanting further fossil fueled generation in the region or transmission line development are also inadvertently stifling the growth of both in-county renewable generation and external renewable generation which could be wheeled to the area’s most needing the benefit of a renewable resource.

- **Natural Gas**

Supply

In 2006 Natural Gas supplied 29.5% of California’s energy needs. Approximately 13.5% of the natural gas came from in-state production

and the remaining 86.5 % was imported from other states and Canada. In 2008, a liquefied natural gas (LNG) facility in Mexico became operational providing a new natural gas supply source to California.

The largest use of natural gas in California is for electricity generation, which uses about 44% of the supply. Residential users consume 22% of natural gas supplies, and 33% is used by commercial and industrial users. Less than 1% of California natural gas supplies are used for transportation in vehicles.

Transmission/Distribution/Maintenance

The Inland Empire is provided natural gas by two gas utilities, Southern California Gas Company and Southwest Gas. Under agreement with the U.S. Department of Transportation (DOT), the CPUC regulates and inspects both utilities for safety and reliability as specified in the Code of Federal Regulations.

The gas utilities plan, build and maintain the natural gas delivery infrastructure to meet the needs of Southern California and the Inland Empire now and in the foreseeable future. The gas transmission and distribution network is continually changing as new pipelines and associated facilities are installed to serve new customers; aged infrastructure that has reached the end of its useful life is replaced; and facilities that are in conflict with other utility and public works projects are moved. The Natural Gas Transmission and Distribution system is planned and built in accordance with specified design criteria. Maintenance and construction activities are performed in accordance with regulations prescribing safety and reliability standards. In addition, new pipeline safety regulations are to be published by DOT in 2009 and are expected to result in additional maintenance activity and replacement of distribution pipelines. With continued investment, natural gas infrastructure is well positioned to meet the needs to the Inland Empire now and into the foreseeable future.

Recommendations

Due to continued growth and a renewed focus on sustainability in the Inland Empire, improving the energy infrastructure grade includes, but is not limited to:

- Favorable legislation.
- Expanded transmission corridors that link renewable resources to end users.
- Government incentives to utilize existing structures for renewable resources.
- Expedited licensing processes, flexible development standards and managed public perception.

- The issue of “peak power” and “stored energy” in California is of significant importance and requires more attention and programmatic solutions. The CPUC’s Self-Generation Incentive Program (SGIP) currently provides incentives to support existing, new, and emerging distributed energy resources. The SGIP provides rebates for qualifying distributed energy systems installed on the customer’s side of the utility meter. As of January 1, 2008, qualifying technologies include wind turbines and fuel cells.

With the recent signing of SB 412, the CPUC is given the authority to determine technology eligibility for SGIP based on green house gas (GHG) emissions impacts. The Energy Division will soon be investigating how to evaluate currently eligible technologies against the new GHG requirements, consider what new technologies may be added into the program, and consider any other program changes that may be necessary. Considerations may include energy storage as a stand-alone technology, or coupled with other technologies, such as solar.

- The development of distributed stored energy is critical to California’s energy infrastructure and future. Aggregate load shifting and increased participation in existing demand response programs will make a positive impact in balancing California’s supply and demand of electricity.

Other forms of storage that are useful and proven are chilled water, ice storage and thermal storage. Each of these forms of storage plays an important role in the sustainable future of California.

- Funding mechanisms currently in place to bring in new supplies of natural gas and electricity need to be maintained.
- Wind Infrastructure needs: significant amount of land, access to grid (connection), areas with sustained wind;
- Hydro Power Infrastructure needs: areas with water flow (natural) or man-made dam system.
- Solar infrastructure needs: large amounts of land, connection to grid.
- Continued support for a balanced portfolio to encourage new gas supplies.

Sources

California Energy Commission

Southern California Public Power Authority

Southern California Edison

Southern California Gas Company

Banning Municipal Utility

Colmac Energy

Development Management Group, Inc.

Practical Power, **The Press Enterprise**, Wednesday, May 14, 2008

Costs to Build Power Plants Pressure Rates, **Wall Street Journal**, May 27, 2008

Flood Control and Urban Runoff

Flood Control

The Inland Empire's flood control systems have been constructed over the past 100 years. At least 50% of the existing systems were constructed prior to the 1960's and have either served their useful life (systems typically provide approximately 50 years of useful service) or have since exceeded their design capacities. Therefore, those systems require replacement or, at a minimum, upgrading.

Much of the major portions of the urban flood control system were constructed during the last 50 years and have been designed to safely convey 100-year to 200-year storm events to rivers, creeks or washes. Cities or developers are constructing smaller systems as urban areas expand. These systems are designed to convey 100-year storm events within the public right-of-way.

Master plans for both counties indicate that major portions of the system infrastructure required to provide desired flood protection must still be constructed. As such the existing systems are not providing the desired capacities. In addition, as communities develop, increasing runoff volumes further compromise the system capacities.

Urban Runoff

Following the recognition that nonpoint sources of water pollution are a substantial problem, the federal Clean Water Act was amended in 1987 to establish a framework to regulate stormwater discharges under the National Pollutant Discharge Elimination System (NPDES). Four Regional Water Quality Control Boards (RWQCB - Santa Ana, San Diego, Colorado River, and Lahontan) adopted NPDES Municipal Separate Storm Sewer System (MS4) permits for municipal stormwater discharges for San Bernardino and Riverside counties and their incorporated cities in the respective watersheds in the 1990's. These permits are the main regulatory tool to control stormwater pollutants.

The Municipal Stormwater NPDES Permits require water quality monitoring and the implementation of Best Management Practices (BMPs) to eliminate polluted non-stormwater discharges and to reduce pollutants that are mobilized by rainfall and carried to receiving waters by storm runoff. BMPs include a wide range of source control and treatment control methods and may potentially be an integral part of the flood control infrastructure.

Final Grade

The final grade for Flood Control and Urban Runoff is a "C".

This grade was based on independent evaluations of both Counties western regional storm drain infrastructure by the ASCE Branch Committee with assistance from the County Flood Control Districts. The evaluations considered condition, capacity, operation and maintenance, and security and safety. Subcategories included status of funding, current projects in design, and compliance with NPDES Regulations. The basis for evaluation included of age of facilities, maintenance records, staff input, photos, levee seismic survivability, design backlog, District budgets, number and severity of 303(d) listed water bodies, current and future population, fire induced debris/sediment impacts to facilities, and a risk assessment to Prado and Seven Oaks Dams.

Investment Needs

Budget constraints have severely reduced operations and maintenance staff for flood control systems over the past 10 to 20 years. As such, the systems have not been properly maintained to ensure the existing systems operate properly during storm events. For example, flood control retention basins and storm drain systems vital to conveying peak storm events may not be of sufficient capacities because of sediment and/or debris deposits resulting from lack of regular cleaning of the systems.

Although the Municipal Stormwater NPDES Permits have been in place for well over a decade, implementation of needed action has been slow and incremental. Public education has been ongoing and increasing. Very few regional improvements have been implemented and few are planned, although they are needed. The main constraint is funding, followed by a lack of adequate scientific information to establish effectiveness and performance. Projections of the required cost to implement needed action to meet existing flood control and urban runoff water quality objectives are estimated to be \$700 million.

Recommendations

As indicated above, it is estimated that \$700 million is needed to meet existing flood control and urban runoff water quality objectives. Current funding sources fail to meet these infrastructure needs. Increased funding is needed to improve flood protection and urban runoff quality.

It is recommended that increased funding through federal, state and local sources be developed to meet our current needs. Funding sources must be ongoing so that funding is available for infrastructure construction and for ongoing operation and maintenance of the new infrastructure.

Sources

San Bernardino County Stormwater Program Annual Report, 2007.

Riverside County Flood Control and Water Conservation District Annual Report, 2007.

Coachella Valley Water District Annual Report, 2007.

Municipal Storm Water NPDES Permit and Waste Discharge Requirements for San Bernardino County (Order No. R8-2002-0012; NPDES No. CAS618036) adopted April 26, 2002 by the California Regional Water Quality Control Board, Santa Ana Region

Municipal Storm Water NPDES Permit & Waste Discharge Requirements for Riverside County (Order No. R8-2002-0011; NPDES No. CAS618033) adopted October 25, 2002 by the California Regional Water Quality Control Board, Santa Ana Region.

Municipal Storm Water NPDES Permit & Waste Discharge Requirements for Riverside County Whitewater River Watershed (Order No. 2008-0001; NPDES No. CAS617002) adopted May 21, 2008 by the California Regional Water Quality Control Board, Colorado River Region.

Municipal Storm Water NPDES Permit & Waste Discharge Requirements for Riverside County (Order No. R9-2004-001); NPDES No. CAS0108766) adopted July 14, 2004 by the California Regional Water Quality Control Board, San Diego Region.

Master Plan and Capital Improvement Program for: (1) Riverside County Flood Control & Water Conservation District; (2) San Bernardino County Flood Control District, and (3) Coachella Valley Water District.

Parks, Recreation and Open Space

The Inland Empire has a rich history of human habitation. The original Spanish land grants deeded thousands of acres as ranchos. These large land grants were needed to support the grazing herds of the local economy. It took several acres of existing vegetation to support each animal. The lack of accessible natural resources acted as a deterrent to population growth. The local inhabitants recognized the need to cluster around and manage those resources. There has always been drought with occasional flooding that caused hardship on the people of this area. The missionaries and Indians of the early days built “zanjas” or irrigation canals to provide for limited farming opportunities. It has only been in the last several decades that population growth and housing demand have created the pressure to develop the relatively open Inland Empire.

The Inland Empire, which includes portions of Riverside and San Bernardino counties, is experiencing a tremendous amount of urbanized growth. Parks, Recreation, and Open Space (PR&O) are not considered infrastructure. As such, PR&O is an optional amenity needed to address quality of life issues. The stress of living in an urbanized environment must be balanced with common open space, parks and recreation opportunities. New York City set the standard early on when they set aside and developed Central Park. In the urban setting, a person’s physical, emotional and psychological health is connected to their ability to relate to a contrasting environment. Urban development is conditioned to provide improved parks and open space. Local and regional governments contribute to recreation facilities at a much slower pace. The growth rate of the Inland Empire causes concern as we become more aware of the need for PR&O. The current abundance of undeveloped open space is disappearing at an alarming rate. Open space, once developed is generally lost forever.

Final Grade

The final grade of “B” for the Inland Empire’s PR&O resulted from support of previously approved legislation, most notably the Park Bond Fund. The assessment of PR&O infrastructure in the Inland Empire was conducted through a mail-in survey. The questions focused on seven areas of greatest concern including the existing conditions of:

- Parks;
- Recreation facilities;
- Open spaces;
- Future facility needs;

- Financial resources;
- Upkeep and variety; and
- Accessibility.

Scores of 1 to 5 were assigned to the responses with 5 being “very good”. It was through the data collection process that the success of Proposition 12 (the 2000 Park Bond Act) and Proposition 40 (2002 Park Bond Act) were noted. Many of the survey responses rated existing facilities as “excellent” or “good” in condition. However, the lack of maintenance funding for existing facilities is a contributing factor in the assignment of the “B” grade.

Regional systems crossing multiple jurisdictions are seen as very beneficial. An excellent example of a regional multi-jurisdiction system is the Santa Ana River Trails, also known as the Crest to Coast Trail system, which extends from Big Bear Lake to the Pacific Ocean. This system of interconnected parks, trails and wildlife habitat is under construction and supported by Riverside, San Bernardino, and Orange counties. Many local communities are making connections to this major backbone system. Over \$7 million has either been spent or committed for this project in San Bernardino County. The county of Riverside has announced the establishment of the nation’s largest wildlife conservation area, the 9,100-acre Potrero Wildlife Area. This open space will be a major part of Riverside County’s Multiple Species Habitat Conservation Plan. The regional park system is growing with facilities in Rancho Cucamonga, Devore, and Yucaipa enjoying great success.

Investment Needs

The Park Bond funding along with development fees have funded a substantial amount of PR&O. In order to raise the final grade for the Inland Empire’s PR&O, the counties of Riverside and San Bernardino would need additional funding of \$167.5 million over the next five years. This would require funding similar to Propositions 12 and 40. Funding at this level, if carefully managed, would raise the final grade to an A. Sustainability issues must be addressed for long term success. Green projects must be encouraged to lower impacts, maintenance costs and be community supportable. Parks and recreation programs are among the most vulnerable programs to funding cuts; several communities are unable to support any recreation programs. As a result, they must rely upon volunteer organizations to provide services. Volunteers should be used to supplement, not fulfill, the role of government.

Parks, open space, and recreation opportunities are essential to every urban community. The public facilities being used by the community is highly valued. The community needs consist of setting aside land, construction of facilities, and maintenance of those facilities. The quality of life in any city can be directly related to its park system. The previously mentioned park bond

acts provided funding to greatly improve and expand park systems in the Inland Empire. Funding is required to maintain and expand these existing facilities as well as construct new facilities. Proper maintenance is necessary for long-term benefit of any infrastructure.

Recommendations

- Support legislation that will provide funding for PR&O including maintenance;
- Identify PR&O as needed and required infrastructure in the budgetary process;
- Provide and support outreach opportunities to educate the public and gather support for PR&O programs;
- Support minimum PR&O standards for all jurisdictions; and
- Identify regional opportunities for PR&O and facilitate multi-agency cooperation.

Sources

The mail-in survey consisted of the following five questions:

Question	Average Score
Condition of your city/county park facilities	3.7
Condition of recreation facilities	3.5
Condition of open spaces	3.3
Sufficient facilities for next 10 years	3.0
Annual budget for maintenance, repair, and replacement of park facilities	2.6

A total of 20 cities responded; eight from Riverside County and 12 from San Bernardino. Following is a list of participating cities/counties:

Riverside County Agencies	Average Score
Coachella	1.6
Corona	2.6
Moreno Valley	3.4
Murrieta	3.4
Norco	3.8
Palm Springs	4
City of Riverside	2.5
Temecula	3.4
San Bernardino County Agencies	Average Score
Chino	3.4
Chino Hills	4.4
Colton	3.8
Fontana	3.4
Grand Terrace	3.8
Highland	4.2
Loma Linda	4
Montclair	2.6
Ontario	3.6
Rancho Cucamonga	3.4
City of San Bernardino	1.6
Upland	2.4

Solid Waste

The collection, processing, recycling, composting, energy conversion and disposal of solid waste in the Inland Empire are a complex, integrated waste management system. The integrated system and its infrastructure provide an essential service to sustain the urban environment.

Final Grade

The 2010 overall grade of "C+" for the solid waste infrastructure is based on survey information reflecting the opinions of stakeholders. The solid waste infrastructure grade in the 2005 Report Card was a "B-".

The decline in the overall grade is attributed to recent and/or pending changes in laws and regulations brought about by climate change initiatives and new mandated requirements from the California Integrated Waste Management Board, State Water Resources Control Board, and the local air quality management districts.

Investment Needs

It is estimated that at least \$80 million of development funds are needed to meet and sustain the integrated solid waste infrastructure by 2020. In addition, the development of adequate local markets for recycled materials and compost products must be found to offset volatility in regional and global commodity markets

Recommendations

Public debate is ongoing over the location and use of the Inland Empire's landfills, recyclable materials processing facilities, compostable materials operations, transfer stations, and collection systems. The Solid Waste Infrastructure Working Committee and the Review Committee recommend the following policy options for consideration:

- Continue to develop improved landfill design and operating technologies;
- Continue to plan and expand the current permitted capacity of existing landfills and compostable materials facilities;
- Research and secure additional federal, state, local, and private funding programs for the development of conversion technology programs;
- Continue to educate consumers on the value of recycling and proper disposal of hazardous waste; and
- Continue to research and secure additional funding for the development of adequate local markets for recycled materials and compost products.

Infrastructure Assessment Methodology

The overall evaluation of the solid waste infrastructure was influenced by the recognition that the lack of certain types of recycling - composting, biomass, bio-fuels, and conversion technology components - have not been added or integrated into the solid waste infrastructure.

Both the existing and future condition of the integrated solid waste infrastructure was evaluated. Assessment included existing conditions, as well as immediate future conditions where pending projects would improve the infrastructure conditions through either funding or design.

In addition, both existing as well as future capacity was evaluated. Facilities and systems were reviewed to determine if they could support the Inland Empire communities and to sustain the current population as well as future growth.

Maintenance and operations of the solid waste infrastructure was difficult to evaluate. Consideration was given to whether public and private entities had sufficient funding levels for their facilities and systems maintenance. Attention was also given to infrastructure failures contributing to non-compliance with regulatory requirements.

Results and Conclusions

The results of the infrastructure assessment and analysis of policy options indicate a present and future need to expand and/or provide additional components to the existing integrated solid waste infrastructure. Chief among these components is the need for facilities to produce biomass feed stocks, bio-fuels, and conversion technology projects to produce renewable energy.

Lack of cross-media cooperation among regulators, recent down turns in recyclable commodities markets, and project financing uncertainties have jeopardized the sustainability and expansion of the integrated solid waste infrastructure.

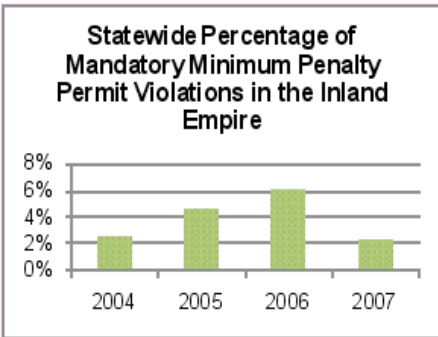
Sources

A survey of jurisdictions within Riverside and San Bernardino counties was conducted to determine the grade for the current infrastructure. The survey looked at capacity, condition, and maintenance for various components of the solid waste and recycling industries. Each section was assigned a maximum of points allowed, which was located under "Scoring Points". Each respondent placed their score in the "Your Score" column. There was a maximum amount of points of which respondents thought of the present infrastructure. If the respondent had no opinion or knowledge of the infrastructure level, they were instructed to place an "N/A" in the "Your Score" column. Following is a list of waste management plans upon which the survey was based:

- California Integrated Waste Management Board Strategic Plan;
- Riverside County Integrated Waste Management Plan;
- San Bernardino County Integrated Waste Management Plan; and
- Southern California Association of Governments Regional Plan.

Wastewater Infrastructure

The arid southwest United States maintains a very unique ecosystem with watercourses that are considered to be ephemeral or intermittent streams, without the discharge of treated wastewater from urbanized areas. These stream systems maintain several beneficial uses such as aquatic life, habitat, recreational uses and drinking water supplies. The discharge of treated wastewater, or recycled water, the natural water courses are heavily regulated and protected by the State Water Resources Control Board and Regional Water Quality Control Boards.



State law mandates the imposition of minimum penalties of \$3,000 per occurrence for specific violations of the federal Clean Water Act permits issued by the water boards. These minimum penalties are commonly referred to as Mandatory Minimum Penalties (MMPs). Over the past four years, the MMPs for permit violations in the Inland Empire

represented 4.1% of the total MMPs issued throughout California. Considering the Inland Empire has nearly 12% of the total regulated facilities by the State Water Resources Control Board, the ratio of permit violations to the number of regulated facilities indicates the infrastructure in the Inland Empire is generally capable of producing water quality in compliance with the permit requirements.

However, wastewater agencies are constantly impacted with new regulations such as salinity control, nitrogen reduction and now a group of chemicals classified as emerging contaminants. The term “emerging contaminants” is being applied to the roughly 30,000 substances we use every day that are turning up in our lakes, rivers and oceans, where they can potentially impact aquatic life. While most of these chemical compounds break down through the extensive wastewater treatment process and in the environment, approximately 400 resist these processes and can accumulate in fish and wildlife. These compounds are generally referred to as emerging contaminants because approximately 75% of these 400 compounds have not been studied thoroughly to determine their impact on our environment. Once the impacts of these compounds are better understood, it will be the wastewater treatment infrastructure that will need to be upgraded to become even more pure and clean.

Final Grade

The major wastewater treatment plants in the Inland Empire have design flow treatment capacity of nearly 300 million gallons per day. Considering the facilities at the major wastewater treatment plants and the sewer collection systems (lift stations and force mainlines) there is an extensive amount of infrastructure that needs to be upgraded, operated and maintained. The overall capacity and condition of the wastewater treatment and collection systems in the Inland Empire results in a final grade of "B+".

This grade recognizes the large investments that continue to be made locally to enhance the wastewater treatment facilities to meet the ever changing regulatory permit requirements. This grade also recognizes the need to focus on the large amount of wastewater infrastructure that is below ground in the form of thousands of miles of sewer collection facilities and lift stations that are routinely maintained. Additionally, the grade recognizes the investments made by local agencies to secure these critical facilities based on vulnerability evaluations.

Policy Options and Recommendations

The responsibility to maintain wastewater infrastructure is at the most local level of government. This provides a unique ability for wastewater infrastructure to be constructed, enhanced and expanded based on the specific needs of each local community. However, common to all agencies is the need to enhance wastewater treatment to meet future regulations.

With technology enabling the detection of chemical compounds at lower levels, engineers and wastewater treatment professionals will be required to develop new filtration processes to meet these stringent standards.

Infrastructure Assessment Methodology

The objective of the report card is to foster an understanding of the importance of public infrastructure and its impact to the quality of life and economic vitality in the Inland Empire. To provide a quantifiable grading system for wastewater infrastructure, the members of the wastewater committee surveyed public wastewater agencies in the Inland Empire to determine the capacity and condition of wastewater treatment and collection facilities.

To better evaluate the wastewater treatment infrastructure, a review of the active discharge permits issued by the Regional Board was conducted together with violations of these permits. Violations of the permit requirements were used as an indicator of the capability of the treatment systems in the Inland Empire.

To further evaluate the wastewater collection systems, a review of sanitary sewer overflows was conducted based on records maintained by the State Water Resources Control Board.

Investment Needs

The implementation of new regulatory requirements and projected growth in the Inland Empire will require a continued investment in wastewater infrastructure. The enhancement of treatment capabilities to meet new regulations will be largely the responsibility of existing ratepayers while an increasing population will require new facilities be constructed. However, outside funding sources to supplement capital improvement projects can also come from grants or low interest loans that help minimize the need for steep increases in local wastewater fees. For local agencies, the expansion of wastewater infrastructure will require a careful balance of a complex regulatory environment, growth and aging facilities. The total of all of these demands are expected to require financial investments of over \$4 billion for new wastewater infrastructure and enhancement of existing wastewater infrastructure over the next decade.

Additional investments will be required for salinity management of the Santa Ana Regional Interceptor (SARI) and desalination facilities needed to control salinity in the Inland Empire.

Recommendations

Based on the information reviewed and collected, the following is recommended for wastewater agencies in the Inland Empire:

- The regulatory requirements for wastewater treatment are anticipated to increase significantly over the next several years. Local elected officials should recognize this high quality local water resource as a valuable commodity to be used within their community;
- The SARI pipeline is a critical component necessary to meet regulatory requirements related to salinity control. This brine disposal facility should be strongly considered by local agencies as an element of their regulatory compliance plan; and
- Wastewater agencies are highly regulated and provide a valuable water resource to our communities and the environment. Public agencies should recognize and communicate the enormous financial contribution made to improve the quality of life of the Inland Empire and the overall environment.

Sources

Santa Ana Regional Water Quality Control Board 2004 Basin Plan
(R- NPDES Permits)

Wastewater Agency Surveys

Water

With a population growing faster than any other region of the state, the Inland Empire is dependent on a reliable, high quality water supply. Supplemental water imported from northern California is critical to meeting existing and future demands.

Final Grade

The original water grade in 2005 was a “C+”. That grade was based on the fact that inland water agencies at that time were flush with cash from development fees, large percentages of many distribution systems were new, and agencies had capacity built into their systems for expansion.

The 2005 grade noted the regulatory climate, in which water quality regulations are becoming more stringent, and recognized that some water systems are older and will require large expenditures for maintenance in the near future.

The 2010 updated grade is a “D+”. This reflects a number of changes in the industry over the past five years, among them:

- The Wanger decision, a court decision that restricts water supply pumping from the Delta;
- Chronic and acute state budget deficits resulting in delays in issuing bonds for approved State grant funding for water infrastructure;
- The current construction slowdown in the region, leading to a reduction in fees; and
- A regulatory climate that poses huge uncertainties for water agencies.

A new issue, climate change, appears to have a chance of impacting future water supplies. The most likely outcome of climate change over the next several decades is greater storage requirements on the part of local and regional water agencies.

For these reasons, the grade for water has dropped from “C+” to “D+”. By far the biggest impact on the grade is the Wanger decision and other threats to the reliability of the Delta. This decision has reduced the reliability of State Water Project water significantly.

Investment Needs

Overall, the state of the Inland Empire’s water infrastructure is not good, in large measure due to infrastructure issues in other parts of the state, in particular the Sacramento Delta. Since much of the Inland Empire depends on imported water from the Delta, these issues, including court-ordered restrictions on Delta exports, drive the grade downward from five years ago. In addition to this water reliability issue, the biggest concern on the part of water agencies is the changing regulatory landscape that is both unpredictable and expensive to meet. If a long-term fix for the Delta were to be implemented, if agencies with older infrastructure can find ways to repair or replace it, if additional recycled

water facilities can be constructed and markets found for it, and if agencies can augment their current storage volume, the region as a whole would be better off. A total of \$6.8 billion is needed for infrastructure investment.

Positive Trends

While the changes related above should be a cause of concern to water agencies, there are many positive actions that have occurred since 2005. Water agencies have been proactive in efforts to improve their ability to meet long-term water demands, including:

- Integrated regional planning;
- Some action on Delta problems, including the commencement of a Bay Delta Conservation Plan;
- The construction of many major local and regional facilities; and
- Implementation of conservation based tiered rate structures and water use efficiency measures.

Recommendations

The committee has a number of recommendations for water agencies to deal with the current situation. These include:

- Continued integrated regional planning to maximize productivity of regional resources;
- Additional local and regional storage facilities, including above ground and groundwater storage; and
- The education and encouragement of legislators and other decision-makers to understand statewide water issues (Delta, etc.).

Assessment Methodology

The methodology for the 2010 upgrade was not to take another survey, but rather to consider changed conditions since the original report card. Those changed conditions were detailed above. The changed conditions, including a number of positive events, resulted in lowering of the grade to "D+". The updated grade takes security more into account than the original grade. A number of security issues have been addressed by local water agencies in the past five years.

Results and Conclusions

In spite of completion of a number of new regional water infrastructure projects, the grade of "D+" is a result of other actions that are statewide or national but that have, had, or could have, a negative impact on regional water supplies or the financial ability of purveyors to meet the needs of their customers.

The Wanger decision reducing exports of water from the Delta, along with potential climate change, have and will continue to have a devastating impact on water supplies for much of the Inland Empire that will not be mitigated in the near term. This impact on water supplies, coupled with the current economic conditions and State budget situation, brings the water grade down from a "C+" to a "D+."

Recycled Water Infrastructure

The State of California has long recognized the benefits associated with recycling water. The state legislature declared that a substantial portion of future water requirements can be met economically through the beneficial use of recycled water. The intent of the legislature is for the state to undertake all possible steps to encourage the development of water recycling so that recycled water may be made available to help meet California's growing water requirements. Statutes have been added to the Porter - Cologne Water Quality Control Act that prohibits the use of water from any suitable potable-water source for the irrigation of greenbelt areas, including golf courses, cemeteries, parks, and highway landscape areas, where suitable recycled water is available.

A large portion of the potable water in the Inland Empire is vulnerable to interruption by natural forces, such as prolonged drought, conveyance issues, and climatic change. With new supplies of potable water becoming scarcer with an increasing demand, it is important to maximize the use of recycled water to meet our water needs. Recycled water for approved uses conserves potable water, and this means a more dependable water supply for everyone.

Unlike infrastructure evaluations for drinking water and wastewater, recycled water infrastructure is not a mandated public service provided by all agencies. Rather, recycled water is a resource available to the few wastewater treatment agencies that have the ability to construct separate water distribution facilities solely for the delivery of recycled water. In some cases the recycled water provider can have a conflict with the potable water provider in the same community based on concerns with cross connections and dependence on customer revenue for operations. This scenario significantly reduces the ability for a community to maximize the use of recycled water.

Recycled water infrastructure will be important for the growth and sustainability of the Inland Empire. The construction of this infrastructure will:

- Conserve drinking water supplies;
- Provide a dependable, drought-proof water supply that is locally controlled;
- Reduce the dependency of imported water; and
- Protect the local groundwater supplies.

Final Grade

Maximizing the use of recycled water in the Inland Empire will help to reduce the impacts of drought, climate change and growth. While a number of agencies have already implemented recycled water programs such as in the Inland Empire Utilities Agency service, Eastern Municipal Water District service area, Yucaipa Valley Water District and parts of the Western Municipal Water District area, the use of recycled water is currently an underutilized resource that can be put to beneficial use as more recycled water is produced as a result

of population growth. Many established cities have large quantities of treated wastewater supplies but lack the infrastructure needed to convey the recycled water to the points of demand within their own community. For the relatively new and existing facilities in the Inland Empire, this infrastructure can be graded very high for its overall capacity, condition and operations.

However, with increasing local water needs in the Inland Empire and limits on potable water availability due to drought and climate change impacts, the infrastructure to convey highly treated and reliable recycled water supplies for direct use and indirect use such as groundwater recharge purposes needs to be expanded. Many agencies including the City of San Bernardino are now aggressively moving forward with plans for advanced wastewater treatment in their area for groundwater replenishment but funding to implement remains a concern. Recognizing the significant infrastructure now in place but also the capacity expansion needed for future conveyance of recycled water, a final grade of "B" is assigned to recycled water at this time.

Infrastructure Assessment Methodology

Recycled water infrastructure will have a tremendous impact on the quality of life and economic vitality in the Inland Empire. To assess the capacity, condition and maintenance of this infrastructure it was important to evaluate the capacity, condition, age and asset management of these facilities. To conduct this evaluation, an informal survey was conducted among the water recycling agencies in the most heavily populated cities of Riverside and San Bernardino counties to collect data on the installation date of recycled water infrastructure. Based on this data, estimates were developed regarding the facility condition, age, asset management and future funding need.

Investment Needs

Water supply is critical for the growth of the economy and quality of life in the Inland Empire. Recycled water is quickly becoming a more acceptable water resource that is now commonly used for irrigation of schools, parks, golf courses and agriculture.

Recycled water is produced from several wastewater treatment plants throughout the Inland Empire. While wastewater agencies have traditionally prepared planning documents to utilize recycled water within their own territory, it is just recently that these agencies are taking a more regional approach to maximize recycled water throughout the region. This regionalization will maximize the use of recycled water by increasing the availability while also increasing the overall investment need for recycled water infrastructure.

The investment need for recycled water does not include wastewater treatment costs. It does however include the cost related to constructing duplicate water distribution systems necessary to provide recycled water service to non-potable water customers throughout the region. This cost is expected to be \$1 billion based on implementation of traditional recycled water infrastructure. This cost can be significantly higher based on the aggressive implementation of recycled water in the Inland Empire.

Recommendations

The regulations pertaining to the treatment of wastewater is continuing to become more stringent resulting in a more pure recycled water supply. As the population grows, this high quality water resource will likewise continue to grow in quantity. It is therefore critical for water agencies in the Inland Empire to recognize the value of this local resource and maximize its use while protecting the existing commitments for this water supply. New policies that reinforce and support water recycling were recently authorized by the local Regional Board that will help streamline recycling project permitting. These local actions will help reduce overall implementation costs and time to implement this important infrastructure.

Based on the information reviewed and collected, the following is recommended for recycled water infrastructure in the Inland Empire:

Public agencies should continue to conduct public outreach to communicate the high quality nature of recycled water as an important local resource for non-potable uses; and communities should work together to establish more regionalized recycled water distribution systems to maximize the use of this resource throughout the Inland Empire.

Sources

Recycled Water Agency Surveys

What You Can Do

Infrastructure is a complex network of public works, which includes roads, bridges, airports, school facilities and utilities. The rules governing its planning, financing, construction and upkeep are equally complex. Whether your interest is to shorten your daily commute, attract new business to your community, or protect the environment for your children, gaining a better understanding of these issues is the first step toward becoming an advocate for infrastructure renewal in your community.

Now that you have seen the Inland Empire's infrastructure report card, you may be asking how you can help our region's and your community's infrastructure. Our suggestions are similar to those given in the ASCE National Report Card:

Be an Informed Citizen

In order to educate public officials about infrastructure needs in your community, you must understand what those needs are. Consider the Infrastructure Report Card. How does your community measure up?

Demand Continuous and Timely Maintenance

If transportation, water and other infrastructure facilities are not kept in sound condition, they cannot support the level of service they are designed to handle. Regular maintenance prolongs use and minimizes the need for costly repairs. In Riverside and San Bernardino counties, voters have taken action to ensure transportation funding by approving local sales tax measures. Measure A in Riverside County and Measure I in San Bernardino County were approved by local voters and ensure funding for maintenance and expansion of transportation facilities.

Think Long-Term

Renewing America's infrastructure is an ambitious goal. It cannot be achieved overnight. In the Inland Empire, we must not only renew our existing infrastructure but commit to expanding it to meet our needs. Moreover, the facilities built today must serve for decades to come. Comprehensive planning and long-term investments are the key to sound decisions about infrastructure.

Consider All the Factors Influencing Infrastructure Decisions

Building a new highway has implications beyond the immediate highway corridor. For example, concern that a new highway may displace wetlands must be balanced against the reduction in air pollution that will result from better traffic flow. An example in addressing this priority can be seen in

Riverside County with the Riverside County Integrated Plan that linked the adoption of a general plan with transportation and habitat planning. The comprehensive approach considered multiple environmental factors, which will protect natural habitat while speeding the approval of new transportation infrastructure.

Maximize Efficiency

This is often referred to as “Do more with less;” however, with significant growth forecasted, the Inland Empire is not in a position to accept a reduction in infrastructure investment. While money alone will not solve our infrastructure problems, every effort to increase the level of investment should receive strong consideration. In doing so, solutions to problems such as traffic congestion and contaminated water require new technologies and approaches. Research can help identify more efficient designs and longer-lasting, maintenance-free materials. We can also change our behavior through recycling, telecommuting, or using public transit to reduce demands on our infrastructure. In doing so, we maximize the value of our investments and receive the greatest efficiency from our infrastructure.

Preserve the Environment

To use the region’s resources most effectively, we must balance environmental and economic goals. In many cases, the natural environment of San Bernardino and Riverside counties is what attracts people to the area and is an integral part of the region’s distinct appeal. Land use and transportation patterns designed to foster economic growth and personal mobility can be developed in harmony with environmental benefits.

Look at the Big Picture

Remember that beyond the immediate, individual benefits you gain from infrastructure improvements, there are broader community benefits. For example, even if you don’t use public transit, the option it provides reduces overall congestion and can increase nearby property values.

Methodology

Overall Report Card Objective

To build widespread support and understanding as to the importance of public infrastructure facilities, systems, and its impact to the quality of life and economic vitality in the Inland Empire.

Organizational Structure

The report card was developed through the efforts of three committee levels. The committee members are listed in a separate section of this guide.

The Infrastructure Working Committees consisted of technical experts from the field – including both public and private sector participants. Each committee developed the detailed methodology for its specific category, collected and evaluated the data, prepared its section of the “2010 Report on the Inland Empire’s Infrastructure,” and assigned the initial grade.

The Review Councils were comprised of leaders in the public sector, consultant/private industry, academia, and the environmental community. Their responsibilities were to review and evaluate the findings of the working committees, and to establish public policy considerations for each infrastructure category.

The Executive Committee was responsible for organizing and guiding the overall Report Card effort.

Development of Report Card Grades

In the development of Report Card Grades, the three fundamental components of the infrastructure were considered:

Condition

What is the existing or near future condition of the infrastructure facility? In assessing the condition of the infrastructure, the immediate future conditions (up to three years) included improvements funded or in design.

Capacity

Are the current facilities able to support the current population? Will the existing and planned (funded) facilities be able to support the community in ten years? The existence of Master Plans, Funding Plans and Capital Improvement Programs were key factors in the capacity assessment.

Operations

The working committees each developed parameters applicable to their areas as described in the “2010 Report on the Inland Empire’s Infrastructure.” Key issues were: Is the specific infrastructure system complying with existing regulatory requirements? Do the organizations have sufficient funding for facility maintenance?

Weighting Factors and Grading Criteria

The weighting factors applied by each working committee varied, but most applied equal weights to each of the three categories listed above. The Riverside/San Bernardino Counties Report Card effort follows the ASCE National Report Card’s approach based on the following scale:

A	90-100%
B	80-89%
C	70-79%
D	41-69%
F	40% or lower

Committee Roster

Executive Committee

Co-Chairs: Chris Turnage / AE/PB and Ron Moreno / RBF

Members:	Mark Norton	SAWPA
	Bill Carney	IEEP
	John Soulliere	CVEP
	Bill Greene	RBF
	Mark Matsumoto	UCR
	Rick Bishop	WRCOG
	Robert Bein	RBF

Transportation Committee

Chair:	Peter Bucknam	Bucknam & Associates
Members:	Bob Harary	HNTB
	Neil Nilchian	County of Riverside
	David Griffith	TY Lin

School Facilities (K-12) Committee

Chair:	Susan Ryan	NTD Architecture
Members:	Jim Choate	Fusco Engineering
	Joe Lutz	CW Driver
	Janet Dixon	Riv. USD
	Peggy Reyes	Desert Sands USD
	Wael Elatar	SBC USD
	Tom Tooker	CA Dept. of Education

Aviation Committee

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Members:	Jim McLaughlin	Geocon
	Brian Anderson	RBF
	Ryan Damery	HNTB Corporation – L.A.
	Chad Davies	Riverside County - Economic Development Agency (EDA)

Flood Control and Urban Runoff Committee

Chair:		
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	Jeff Rupp, PE	David Evans & Associates
	Joe Castaneda, PE	JLC Engineering & Consulting
	Mark Baker	CONTECH Stormwater Solutions Inc.
	Zully Smith, PE	RCFC&WCD
	Ken Edwards, PE	RCFC&WCD

Parks, Recreation & Open Space Committee

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Members:	Deborah Woldruff	City of Loma Linda
	Jeff Peterson	City of Loma Linda

City of Loma Linda Parks, Recreation and Beautification Committee

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George Pendered	Doree Morgan
Janet Razzouk	Valerie Gallant
Richard Wiley	Miguel Rojas

Solid Waste Committee

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	Alex Brachovich	Kleinfelder
	Russell Keenan	CR&R, Inc.
	David Fahrion	Burrtec Waste Industries
	Chuck Tobin	Mojave Desert and Mountain Recycling JPA
	John Davis	Colmac Energy, Inc.
	Graeme Donaldson	Agriservice
	Mary Matava	City of Indian Wells
	Susan Weisbart	

Wastewater Committee

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Members:	Jerry Thibeault	SARWQCB
	Dan Parks	Coachella Valley Water District
	Joseph Zoba	Yucaipa Valley Water District
	Jon Bourgeois	Hall & Foreman
	Emily Long	Boyle Engineering
	Rodd Greene	Yucaipa Valley Water District
	Luis Leon	CDM
	Jack Nelson	Yucaipa Valley Water District

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Chair:	Jeff Davis	CSU, San Bernardino, Water Resources Institute
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	Dave Ferguson	MWH Global
	Jerry Wilson	CVWD
	Richard Bardin	Boyle Engineering
	Bob Tincher	SB Valley MWD
	Bill Bryden	San Bernardino Water Department

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Chair:	Dan Rendler	The Southern California Gas Company
Members:	Amber Starbuck	The Southern California Gas Company
	Michael Bracken	DMG, Inc.
		Liberty XXIII Biofuels Power, LLC
	Graeme Donaldson	Colmac Energy
	Shawn Kennedy	Power Sole Energy
	Paul O'Neal	Paul O'Neal & Associates
	Ricardo Olalde	Kleinfelder
Beverly Powel	Southern California Edison	

Communications Committee

Chair:	Tanya Love	RCTC
Members:	Eliza Echevarria	RCTC
	John Standiford	RCTC

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The American Council of Engineering Companies of California (ACEC California) is a 50 plus year-old, nonprofit association of private consulting engineering and land surveying firms. As a statewide organization, it is dedicated to enhancing the consulting engineering and land surveying professions, protecting the general public and promoting use of the private sector in the growth and development of our state. ACEC California members provide services for all phases of planning, designing and constructing projects. Member services include civil, structural, geotechnical, electrical and mechanical engineering and land surveying for all types of public works, residential, commercial and industrial projects.

The ACEC California family includes 22 local chapters covering the state, a 61-member Board of Directors (elected by the chapters), 24 Committees, 2 Academies, 5 Affiliated Organizations and a state office staff of 11. The Council represents approximately 1000 firms and 20,000 employees within the State of California.



The American Public Works Association is an international educational and professional association of public agencies, private sector companies, and individuals dedicated to providing high quality public works goods and services. APWA is a 501(c)(3) charitable organization, incorporated in the state of Illinois.

Originally chartered in 1937, APWA is the largest and oldest organization of its kind in the world, with headquarters in Kansas City, Missouri, an office in Washington, D.C., and 64 chapters throughout North America. APWA provides a forum in which public works professionals can exchange ideas, improve professional competency, increase the performance of their agencies and companies, and bring important public works-related topics to public attention in local, state and federal arenas.

The association is a highly participatory organization, with hundreds of opportunities for leadership and service, and a network of several dozen national committees in every area of public works. Governed by a 17-member board of directors, elected at both the regional and national levels, APWA is an open, flexible association with a diversified membership of 29,000 and a reputation for quality services and products.

The APWA Southern California Chapter, Inland Empire Branch was established in the early 1960s. Serving the communities of Riverside and San Bernardino Counties, the Branch has supported the public works community through membership programs, workshops, seminars, scholarships and sponsorships. The Branch holds bi-monthly membership meetings and presents public works project awards on an annual basis. Managed by a 13-member board of directors from the public and private sectors, the Branch boasts a membership of over 300.



The American Society of Civil Engineers enhances the welfare of humanity by advancing the science and profession of engineering.

The Society offers continuing education courses and technical specialty conferences; develops technical codes and standards for safer buildings, water systems, and other civil engineering works; publishes technical and professional journals, manuals, and a variety of books; works closely with Congress, the White House, and federal agencies to build sound national policy on infrastructure and engineering issues; and supports research of new civil engineering technology and materials.

Founded in 1852, ASCE has more than 140,000 members worldwide and is America's oldest national engineering society.

The ASCE San Bernardino and Riverside Counties Branch was formed in 1953. It is one of the seven branches located within the Los Angeles Section of ASCE. The branch serves as the local organizational arm of the National American Society of Civil Engineers. The purpose of the San Bernardino and Riverside Counties Branch is to support the local civil engineering professionals and the profession in the two county area. A local governing board composed of volunteer civil engineers residing in the area provides leadership for the branch. Monthly branch activities include networking opportunities, social events, recognition of civil engineering achievements, educational and informational seminars, awareness of employment opportunities, and education and outreach to the community about the civil engineering profession and the services it provides. The ASCE San Bernardino and Riverside Counties Branch is a supporter of bringing awareness of local infrastructure needs to the community and is a strong partner in the development of the Inland Empire Infrastructure Report Card covering the San Bernardino and Riverside Counties.