
Table of Contents

ASCE Message from the Report Card Chair.....	2
Introduction.....	3
Who Pays for Infrastructure?	4
Renewing and Building the Inland Empire	5
Grading of Our Infrastructure.....	6
Transportation	10
School Facilities (K-12).....	18
Aviation	21
Flood Control and Urban Runoff.....	27
Parks, Recreation & Open Space.....	30
Solid Waste.....	33
Wastewater	37
Water	41
What You Can Do	45
Methodology	47
Committee Roster.....	49
About CELSOC.....	56
About APWA.....	57
About WRI.....	58
About California Infrastructure Coalition.....	59
About ASCE.....	60



ZONE IV, DISTRICT 13, LOS ANGELES SECTION
San Bernardino & Riverside Counties Branch
FOUNDED 1953

Message from Report Card Chair

Dear Friend,

The question is sometimes asked, “What is infrastructure and why should I care?” Infrastructure is the large-scale public systems, services, and facilities of a region that are necessary to support economic activity and quality of life. There are many sectors of infrastructure. However, our focus in this report card has been on those infrastructure sectors that are typically publicly funded. The area covered by this report card is the San Bernardino and Riverside Counties, the Inland Empire of Southern California.

Since October of 2003, over 80 volunteers from both public and private sectors have come together in working committees to establish a report card development methodology which focus on infrastructure components. As a past president of the San Bernardino and Riverside Counties Branch for the American Society of Civil Engineers, it has been my privilege to work with so many talented and knowledgeable people from so many walks of life. Our goal was to prepare a report card which list grades of each infrastructure sector so that awareness of the sector’s condition, capacity and maintenance needs could be shared. The ultimate end is to build support for dedicated and consistent sources of funding for the infrastructure necessary to support one of the fastest growing regions in the country.

With the Federal and State continuing budget crisis, funding to support infrastructure needs will become even more challenging to obtain and will rest more and more on local solutions. Public awareness of the need to support infrastructure for the future is absolutely necessary to keep pace with the growth. More communities are feeling the pinch to fund their infrastructure needs through local bond measures as historic funding from State and Federal funding sources continue to dry up. The infrastructure report card will be one of many important tools to let state and federal legislators, local elected officials and the public know of the importance of maintaining these important systems all too often taken for granted. With your help, the message will be heard.

As chair of this important effort, I wish to express my deepest appreciation to all who have spent many hours of their own time along with many support organizations in helping to develop this infrastructure report card serving the Inland Empire of Southern California.

Sincerely,

Mark R. Norton, P.E.
Chair, Report Card Executive Committee

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 brought on over a course of many years, which leads to the temptation of putting off investments, especially when short-term budget challenges overwhelm policymakers. During the past two years, the State of California has been faced with multi-billion dollar budget deficits. Not surprisingly, one response has been to divert and borrow more than \$6 billion from state transportation accounts leading to the delay and cancellation of needed highway projects including some in San Bernardino and Riverside counties. According to a report by the Automobile Club of Southern California, “. . . drivers spend between 50 and 140 hours a year stuck in traffic jams at a cost of up to \$2,500 in wasted time and fuel.”

Transportation is not the only area that suffers. According to the California Infrastructure Coalition, formerly California Rebuild America Coalition, public works expenditures in the 1960's constituted nearly 20 percent of statewide spending, whereas today it

comprises only three percent despite tremendous growth. In the Inland Empire, some of the slack has been taken up by local efforts to fund transportation improvements such as Measure A and the Transportation Uniform Mitigation Fee program in Riverside County and Measure I in San Bernardino County. The concern is that the buying power of these measures is diminished somewhat by cutbacks in state and federal investments.

The bottom line is that immediate action is necessary. If Riverside and San Bernardino counties are to move into the 21st Century as economic leaders, a renewed commitment to better infrastructure is imperative. Much of the commitment must be to plan for the future, but we must also consider the upkeep of existing infrastructure as well. If we fail to plan for anticipated growth, the situation will only worsen. As CalRAC notes, “one dollar spent now for proper maintenance can save five times that much in repair costs just a few years down the line.”

The 2001 ASCE National Report Card (www.asce.org/reportcard) noted, “The nation’s critically important foundation for economic prosperity received a cumulative grade of D+. Shortfalls in federal and state funding and changing population patterns have placed a tremendous burden on our aging water and wastewater systems, airports, bridges and highway facilities. In life, you get what you pay for and America has not been paying for its infrastructure for decades.”

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. 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.”

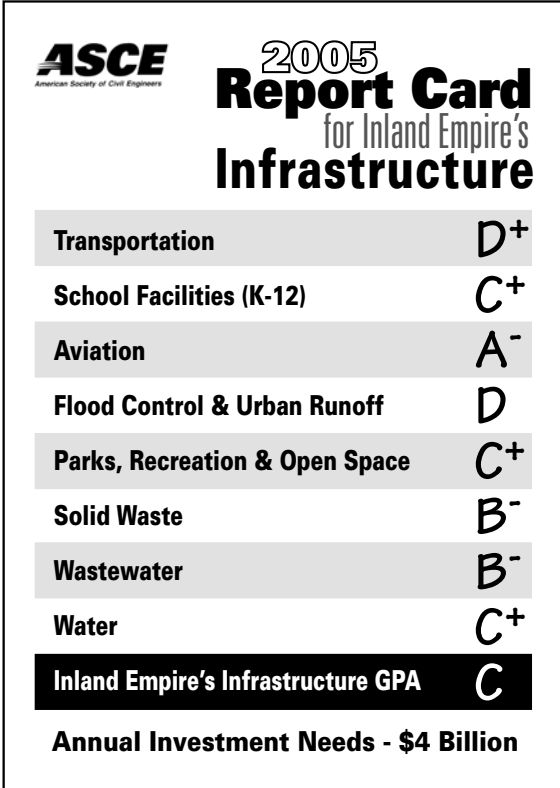
Renewing & Building the Inland Empire

Riverside and San Bernardino counties are comprised of numerous communities, some dating back over 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 2005 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 eight main categories of the Inland Empire's infrastructure to create this first annual Report Card. 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.



The image shows a report card graphic with the ASCE logo (American Society of Civil Engineers) and the title "2005 Report Card for Inland Empire's Infrastructure". Below the title is a table listing eight infrastructure categories with their corresponding letter grades. The bottom row is highlighted in black with white text, showing the overall GPA as 'C'. Below the table, it states "Annual Investment Needs - \$4 Billion".

Transportation	D⁺
School Facilities (K-12)	C⁺
Aviation	A⁻
Flood Control & Urban Runoff	D
Parks, Recreation & Open Space	C⁺
Solid Waste	B⁻
Wastewater	B⁻
Water	C⁺
Inland Empire's Infrastructure GPA	C

Annual Investment Needs - \$4 Billion

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.

D+

Transportation

Total Investment Needs: \$2.0 Billion

Local agencies are finding greater success in improving street conditions due to the success of long-term county-wide funding measures and fee programs; however, Inland Empire decision-makers continually strive to keep pace with deteriorating sections of highway with limited funds. For the Inland Empire highway system to achieve a satisfactory grade, significant funding sources need to be earmarked, approved and allocated both for new construction to add needed capacity and for maintenance of existing roads. Both counties need assistance from the federal level through the re-authorization of the Federal Transportation Act, Proposition 42 needs to be funded, and local agencies need to continue to find creative ways to finance street and transit improvement projects such as is seen in Riverside County's Transportation Uniform Mitigation Fee programs in the Coachella Valley and Western Riverside County.

C+

School Facilities (K-12)

Total Investment Needs: \$20 Billion

Much of the region is facing twin challenges; the first challenge is in maintaining existing facilities while the second challenge is finding the necessary funding to build new facilities. The most convenient short-term solution that many local school districts turn to is to add portable classroom facilities to meet immediate enrollment needs.

A-

Aviation

Total Investment Needs: \$1.2 Billion

All seven major airports in the Inland Empire have existing infrastructure and facilities that are in good to excellent condition, based on sound facilities management practices, and have sufficient levels of annual funding for maintenance, repair, and capacity enhancements. The seven airports conduct operations with accepted safety standards as well as complying with other regulatory criteria specific to environmental compliance, airspace controls, noise level, and other community compatibility issues.

D

Flood Control and Urban Runoff

Total Investment Needs: \$7 Billion

Master plans for both San Bernardino and Riverside 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 desired capacities. In addition, as communities develop, runoff volumes increase, further compromising system capacities.

C+

Parks, Recreation & Open Space

Total Investment Needs: \$655 Million

The Inland Empire is widely known as an area with a wealth of recreational opportunities. The area is quite fortunate to be home to a variety of environments including mountains, deserts and lakes. This complements a commitment by both counties to maintain significant areas of open space to serve the region's rapid growth. While current parks, recreational, and open space infrastructure is generally rated good to excellent, there is a growing concern that funding necessary to maintain this infrastructure is in jeopardy. Examples can be seen in a number of local communities that have been forced to cut parks and recreation programs.

B-

Solid Waste

Total Investment Needs: \$60 Million

The Inland Empire's growing population, coupled with a high rate of development, impacts the capacity of the current and future integrated waste management infrastructure. Research, planning and funding of new waste management technologies will become even more critical as the population increases.

B-

Wastewater

Total Investment Needs: \$2.8 Billion

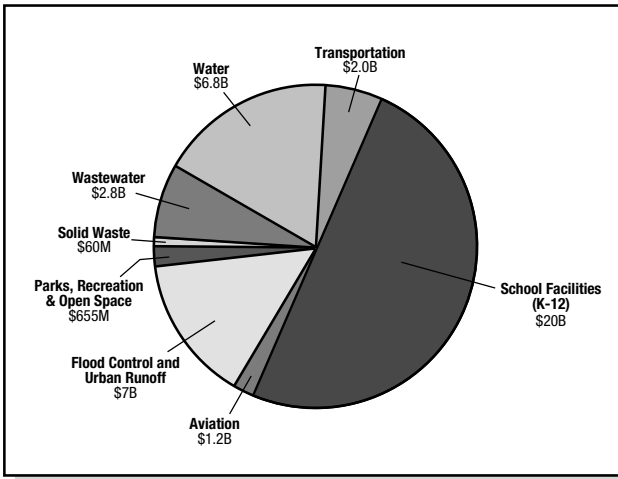
Inland Empire wastewater agencies are doing an adequate job of recycling treated wastewater for industrial and irrigation purposes. To improve recycling efforts, agencies will have to work with regulators to develop comprehensive plans that maintain existing wetlands habitat.

C+

Water

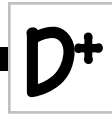
Total Investment Needs: \$6.8 Billion

Overall, the state of the Inland Empire’s water infrastructure is good, with some room for improvement. With developer fees providing the funding for most new infrastructure, the biggest concern on the part of water agencies is the changing regulatory landscape that is both unpredictable and expensive to meet. 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.



10 Year Total Investment Needs

Transportation



The Inland Empire is one of the fastest growing regions in the United States and has achieved high standards for transportation system maintenance and improvements. However, it will require high levels of continued investment to maintain this standard. Riverside County approved a 30-year extension of Measure A, a half-cent sales tax for transportation improvements, in 2002, and San Bernardino County has done the same in the November 2004 general election with Measure I. In western Riverside County, the Transportation Uniform Mitigation Fee (TUMF) will fund more than \$2 billion in arterial and intersection improvements during the next 20 years. The Coachella Valley Residents have participated in the Coachella Valley Association of Government (CVAG) TUMF program for over 10 years. These funding sources have been and will continue to be keys to the Inland Empire maintaining and improving its transportation infrastructure.

For the past ten years, the citizens of the Inland Empire have seen vast improvements to their freeways as well as to their streets and roads. The centerpiece for the Riverside County Transportation Commission (RCTC) is improvements to SR-91 Freeway through Riverside culminating with the reconstruction of the Riverside Interchange (60/91/215) near downtown Riverside. For the San Bernardino Associated Governments (SANBAG), the construction of SR-210 Freeway from the LA County line to connect with SR-30 (Crosstown) Freeway in San Bernardino has been a success story for its Measure I program, along with construction of the SR-71 Freeway and other freeway widening projects. Both counties have also invested in improvements to local roads, grade separations, and bus and rail services, including the nation's fastest growing commuter rail system, Metrolink, which serves over 20,000 riders per day on lines that serve the Inland Empire.

Highways

For the evaluation of Inland Empire highway conditions, information was collected from the State and several local agencies representing a typical cross section of the Inland Empire. Freeways, highways and local arterials were rated based on their pavement condition, existing operation and capacity to accommodate projected growth.

The data indicates that the freeway system is operating slightly over capacity while the arterial system is well below capacity. This demonstrates that while the local agencies have properly planned and implemented the supporting arterial roadway system around development, the state freeway system providing the backbone to the overall system is in danger of collapsing. In the future, the demand for the freeway system will far exceed the capacity and the arterial system will be approaching capacity, resulting in substantial congestion and delays.

Some of the greatest challenges to the Inland Empire transportation system are in meeting the demand for travel between the housing-rich inland areas and the jobs-rich coastal areas, and in carrying the truck-borne freight between the busy ports of San Pedro / Long Beach and the rest of the United States. Some of the most severe capacity constraints are found along the I-15 and SR-91 corridors through Corona and feeding into Orange County, along the SR-60 and I-10 corridors to Los Angeles, and the I-15 corridor over Cajon Pass. The I-15 and SR-91 freeways near Corona and I-15 over Cajon Pass are confined by simple geography that affords few opportunities for economical solutions to the heavy traffic loads that exists in this area. Because of the constrained conditions, right of way and environmental mitigation become the critical elements, and it is reasonable to assume that an investment of several billion dollars will ultimately be needed to address these challenges. To deal with the SR-91/I-15 situation, the RCTC and the Orange County Transportation Authority are currently conducting a \$3.3 million Major Investment Study to determine new corridors to serve inter-county traffic. The same agencies have also adopted a State Route 91 Improvement Plan that details numerous improvements to be made along the SR-91 corridor. Some funding

has already been identified for improvements, primarily from the extension of Measure A. The Measure A Expenditure Plan includes \$498 million in funding for SR-91 improvements and \$359 million for the widening of I-15.

The I-15 Comprehensive Study is in progress under the auspices of SANBAG, RCTC, California Department of Transportation (Caltrans), and Southern California Association of Governments (SCAG) to assess the long-term capacity needs of the corridor from the SR-60 junction in Riverside County to the Victor Valley. This corridor is heavily impacted by rapid growth in freight traffic as well as commute traffic from the booming Victor Valley. The renewal of Measure I dedicates \$230 million to addressing this need, but more will almost certainly be needed to address the heavy truck volumes in the corridor.

Bridges

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

As a result of significant recent investments in new freeway construction as discussed for Highways above, and the rehabilitation or replacement of structurally deficient and functionally obsolete bridge structures by local agencies throughout the two-county region, the overall condition of bridges is currently good. Of the 3,161 bridges in the Inland Empire, only 18 percent are classified as deficient. However, increasing traffic throughout the region, particularly trucks, and funding shortfalls will jeopardize this standing. The majority of bridge rehabilitation and replacement project funding comes from grants from the FHWA. In the future, it can be expected that funding needs for such bridge projects will increase beyond current levels.

Transit

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. In addition, Metrolink, Southern California's five-county commuter rail system, serves cities in the densely populated western portions of the Inland Empire. 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.

The major public bus fleet operators in the region have replaced either all or most (greater than 83%) 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 multi-modal transportation centers are a mix of old and new, as would be expected.

The current condition of the bus systems are very good based on customer surveys, and the operating efficiency measure of the system capacity is also above average. However the effectiveness measure of the capacity and maintenance performance are below average compared to other representative transit systems. The low ranking in capacity effectiveness was determined using a criterion of peak period buses per 100,000 population. In many ways, this reflects the challenge of provide transit service to a sprawling area with low population densities.

Regarding rail transit, more than 20,000 passenger trips per day are taken on the Metrolink lines that serve Riverside and San Bernardino counties. The San Bernardino Line has been especially successful, carrying more than 10,000 passengers per day and now offers a train every 20 minutes during rush hour. In addition to the service itself, significant investments have been made in transit facilities.

Examples include the restoration of the Historic Santa Fe Depot in San Bernardino, the opening of a new station in Downtown Corona and the construction of additional parking spaces at stations in Rancho Cucamonga, La Sierra and Downtown Riverside.

The recent extensions of Measure A and Measure I and the passing of the western Riverside County TUMF provides some financial resources for critical transit improvements in the Inland Empire in the coming years. Bus and commuter rail transit systems are a viable and much needed solution for the increasing highway congestion predicted for the Inland Empire. But continued commitment to developing adequate transit systems and facilities is vital from Federal, State and Local government agencies, as well as the regional business community and the public. This is especially true considering the growing need of public transit to serve aging populations and persons with disabilities that have specialized transportation needs.

Final Grade

If the Inland Empire Report Card had been issued ten years ago, the overall grade would undoubtedly have been a failing grade. Today however, with over ten years of improvements funded by the Measures from both Counties and the State and Federal transportation funding sources, the condition, operation, and capacity of our transportation system has improved greatly. In fact the analysis of the data for the existing operations indicates adequate performance for the entire Inland Empire region. The future capacity of the system is not adequate however. This analysis indicates a system with significant impacts in key areas, especially along the freeway corridors.

Funding these projects in the future is a real concern. While the local agencies are providing a means for funding their transportation projects, the state has not been able to fully fund its obligations to the State Transportation Improvement Program. The Federal allocation of transportation funds has also been limited due to the poor return of California's contribution. Unless these funding trends are reversed, funding for project construction will be a limiting factor to the amount of improvement that can be achieved.

Recognizing the dependence the freeways have on the regional transportation system throughout the Inland Empire, and the lack of specific funding sources outside of the local agencies, the final grade was weighted one-half grade down. The resultant grade for the transportation system is therefore a “D+”.

Investment Needs

As a result of the Inland Empire’s significant investment in new construction and rehabilitation over the past ten years through financing provided by State and Federal funding and Measure I and Measure A sales tax revenue, the overall condition of both our highway system and freeway system is fair. Local agencies are finding greater success in improving street conditions due to the success of long-term county-wide funding measures; the Inland Empire highway system is continually striving to keep pace with deteriorating sections of highway with limited funds and while having to forecast maintenance improvements during an economic funding shortfall. For the Inland Empire highway system to achieve and/or maintain a satisfactory grade, significant funding sources need to be earmarked, approved and allocated. Both counties need assistance from the federal level through the re-authorization of the Federal Transportation Act, Proposition 42, which was recently passed, needs to be funded and local agencies need to continue to find creative ways to finance street and transit improvement projects such as is seen in Riverside County’s TUMF programs in the Coachella Valley and western Riverside County.

It should also be noted that the grade of “D+” is a cumulative grade for the entire region of San Bernardino and Riverside counties. The average commuter stuck on SR-91 coming home from a job in Orange County would probably give the system a failing grade. However, the majority of residents in the Inland Empire commute to jobs in the region. Given the vast size of San Bernardino and Riverside counties, special care must be taken to ensure proper investments in regional and local arterial roads and transit systems, as well as to freeways that serve neighboring areas. It is a challenging balance that will require significant attention and investment.

Finally, 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. Significant investments are necessary in the region to mitigate freight-related impacts that would include grade separations, truck lanes and added rail capacity.

It has been estimated that it will required \$2.0 billion over the next ten years to improve the Inland Empire’s transportation infrastructure to a level of “C+.” This is in addition to the funding that has already been secured through measures passed by voters.

Recommendations

To continue maintaining and improving transportation infrastructure, the Inland Empire needs a continuous source of funding in addition to the half-cent sales tax initiatives that have been approved in each county. Without a continuing source of funds for transportation improvements, there will be a tremendous depreciation of transportation assets. Unfortunately the trend in Sacramento and Washington D.C. in recent years has not been positive. More than \$6 billion statewide has been diverted in state transportation funding and Congress has failed to pass a reauthorization of the federal transportation act. A renewed emphasis on transportation investment in state and federal government is absolutely essential for the Inland Empire.

The most significant impact to the letter grade within the Inland Empire Transportation system is the I-15 and SR-91 corridors through Corona and feeding into Orange County. This stretch of freeway is confined by the simple geography of the land and affords few opportunities to provide economical solutions to heavy traffic load that exists in this area. Because of the constrained conditions, right of way and environmental mitigation become the critical elements and it is safe to assume that another \$1 Billion in funding could alleviate the situation within I-15 / SR-91 Corridor.

If another \$1 Billion were invested in the Inland Empire over its entire roadway system over the next 10 years, it could be assumed that the letter grade for the Inland Empire could be increased by one. This is still dependent on a major investment as noted on the I-15/SR-91 Corridor and a similar investment from Orange County for the adjoining SR-91 Corridor. Overall, this requires a minimum of \$2 billion which is over and above the local/state funding that is already committed from the Measure A program in Riverside County, Measure I program in San Bernardino County, and State Improvement Plan (STIP).

Sources

Each component of the Transportation Infrastructure - Highways, Bridges, and Transit – required unique data sources. The Condition category of Highways was heavily dependent on numerous local agency pavement management program reports recently completed as of 2000 to 2004, County pavement management programs, and a similar Caltrans State and District 8 Pavement Condition Report.

The Operation and Capacity categories of Highways utilized output data from SCAG Inland Empire Traffic Analysis Model; SANBAG Level of Service Report (FY 2000-2003); SCAG 2004 Regional Transportation Plan; and Destination 2030 Transportation Plan.

The Condition category of Transit utilized data from on-board surveys of transit passengers performed in 2003 by both Omnitrans and the Riverside Transit Agency. The Capacity and Maintenance categories utilized data gathered for a National Transit Database (2002), maintained by the Federal Transit Administration, that provided comparable data on similar transit systems across the country.

Data for Bridges was gathered from a Caltrans structures database containing features information, geometric data, the latest inspection ratings and the calculated Sufficiency Rating for each bridge in Riverside and San Bernardino Counties. This database is maintained for all bridges in California.

School Facilities (K-12)



C+

Given the premise that a quality public education to all children is an essential service of government and that a well-educated population is necessary for a prosperous and progressive society, the development and maintenance of school facilities is a key component of the infrastructure. The school districts and county offices of education within the Inland Empire are continually challenged to build new schools to accommodate enrollment growth, as well as maintain the public's investment in existing school facilities.

The education of the region's workforce is especially important given the area's need to create jobs. The ability to attract major employers and new industries to the Inland Empire depends on a skilled and educated workforce. A continued commitment to fund educational facilities and to fund the ongoing labor costs needed to operate quality schools cannot be underestimated.

Public policy must reflect the need for adequate educational facilities for all of our children. Consideration should be given to the following issues:

- Growing and shifting enrollment in the public schools will necessitate building new and increasingly expensive school facilities
- There will be a continuing need to protect the public investment in existing school facilities. Proper maintenance of existing facilities will reduce capital outlay costs for new school facilities.
- There will be a continuing need to modernize existing facilities for structural integrity, handicapped access, indoor air quality, security, and evolving technologies

-
- A continuous and ongoing funding source for these improvements is essential to maintain a high quality of school infrastructure in the Inland Empire

Final Grade

Based on the condition, capacity, and maintenance of existing school facilities evaluated by 55% of the 53 school districts surveyed, the final grade for the Inland Empire's K-12 school facilities is a "C+".

Investment Needs

School districts receive funding for new construction and modernization of existing facilities through the State School Facility Program. Under existing regulations, the State provides 50% of new construction funding and 60% of modernization funding when State school facility bond funds are available. In 1998, the voters approved \$6.7 billion for school facilities and in 2002 and 2004, the voters approved a combined total of \$25.35 billion. There have also been increases in local bond funding because of a change in state law that lowered the voter threshold for local school measures to 55 percent from the previous two-thirds requirement.

Current estimates indicate that the State will be able to fund their portion of all eligible new school construction through 2006. However, modernization funds may be exhausted earlier. Local school districts must provide their share of the capital outlay dollars to complete the partnership. Typically, school districts rely on local general obligation bonds approved by district voters to supply their matching share of funds.

To raise the final grade to a "B" for school facilities, the voters will need to continue the approval of State and local bonds. If the current level of enrollment growth continues in the Inland Empire, funding for new school construction, modernization, and maintenance in San Bernardino and Riverside counties could exceed \$2 billion per year for the next ten years.

Recommendations

In order to document the need for capital improvement and maintenance of facilities, each local school district is strongly encouraged to develop and continually update a Five Year Long Range Comprehensive Master Plan for Facilities Expansion and a Five Year Capital Improvement Plan for Maintenance of Existing Facilities. Both plans need to identify necessary projects over the five years, the estimated cost, and a plan to generate the revenue to complete the projects. These plans should be developed with the input of the staff and community and approved by the local district governing board.

Sources

The sources of data for the development of a letter grade for school facility infrastructure was based on a survey sent to each local school district within the Inland Empire. The survey was sent to the management level staff member responsible for school facility infrastructure. The survey focused on three areas: Condition of Existing School Facilities, Capacity of School Facilities, and Maintenance of School Facilities. More than half of the school districts responded to the survey. The responses were evaluated by a team of experts with extensive background in school facilities and a letter grade for each area was established.

Aviation



The aviation infrastructure in San Bernardino and Riverside counties currently consists of seven major active airports and numerous smaller general aviation and personal aircraft airports. The airports that were evaluated are: Ontario International Airport, Palm Springs International Airport, March Inland Port Airport, Southern California Logistics Airport, San Bernardino International Airport, Riverside Airport, and Chino Airport.

An example of the quality of the Inland Empire’s airports can be seen in the recent decision by international shipper DHL to locate an air hub and distribution center in March Inland Port Airport located at March Air Reserve Base, Riverside County. The presence of international air cargo and commercial airline carriers exemplifies the quality of the region’s aviation facilities and the capacity for additional growth.

Ontario International Airport

Ontario International Airport is the most significant aviation facility within San Bernardino and Riverside counties. The airport is located 35 miles east of downtown Los Angeles and is currently operated by the Los Angeles World Airports (LAWA). Ontario International Airport currently serves 6.5 million passengers, moves 572,000 tons of cargo, and conducts 146,000 operations (landings and take-offs) a year.

The airport operates two terminals that are 265,000 square feet each with a total of 26 gates. The two terminals have an estimated capacity of 10 million annual passengers. There are 13 passenger carriers including AeroMexico, Alaska, America West, American, Continental, Delta, Frontier, JetBlue, Lineas Aereas Azteca, Northwest, Southwest, United/Ted, and United Express, and 11 cargo carriers. The existing airside infrastructure consists of two major runways of 12,200 ft. and 10,200 ft. in length and more than 350,000 sq. ft. of existing hangar space.

There are existing facilities and capacity available for future commercial passenger and cargo growth. Adequate land area is available to accommodate new facilities, and the airport is currently in the process of developing a master plan to guide expansion through the year 2030. The anticipated passenger volume at build-out in the year 2030 is 30 million annual passengers. No additional runway construction is required to serve the maximum build-out level for aircraft operations in 2030.

Additionally, there is excellent capacity to support the on-going growth of the cargo carriers on the airport. A new cargo complex is planned to accommodate the anticipated growth through 2020. There are no curfew or noise issues that curtail anticipated growth of the airport, and the fixed base operators that currently occupy space on the airport are experiencing tremendous growth and are adding to and renovating their existing buildings and facilities. Future funding will be secured through Federal Aviation Administration (FAA) Airport Improvement Program (AIP) funds and a variety of landing fees, concessions, and leased property income.

Palm Springs International Airport

Palm Springs International Airport is classified as a primary service airport by NPIAS (National Plan of Integrated Airport Systems). It is estimated that the airport adds over \$900 million to the regional economy and 15,000 jobs to the local community.

As a tourist destination, the Coachella Valley has rebounded from the tragedy of 9/11 and continues to attract visitors from throughout the world. Its continued popularity has resulted in an expected 120% passenger increase at Palm Springs International Airport since the year 2000, and 1.4 million passengers are expected to use the airport in 2004.

Planned short range improvements total over \$20 million from fiscal year 2004-05 through 2006-07. Approximately 63% of these improvement projects are eligible for funding through the FAA. Intermediate range projects total over \$38 million, over 50% of which are eligible for FAA

funding. These projects will focus mostly on demand-related growth and economic opportunities. Some key intermediate range projects include the development of a Federal Inspection Service (FIS)/Customs Facility, construction of a parking structure, acquisition of 32 acres to the northeast of the airport, and pavement rehabilitation.

March Inland Port Airport

March Inland Port Airport is currently operated by the March Inland Port Airport Authority. The United States Air Force Reserve actively operates out of the airfield as well as the Air National Guard, which operates two active air wings. Currently, the United States Air Force Reserve is responsible for the daily maintenance and operations of the airfield.

There is extensive existing capacity available for future cargo operations. There is also an area of the airfield reserved for future commercial passenger operations. The required infrastructure to accommodate this future cargo transportation and commercial passenger growth will include additional taxiways, lighting systems, a transportation fuel farm, security operations, and multi-modal transportation facilities. March Inland Port Airport has a development plan for establishing a major air cargo port at the airfield, and there is extensive business park and commercial development occurring adjacent to the airfield. There are also local roadway and state highway improvements planned to increase access to the future air facilities and mitigate airfield development.

Southern California Logistics Airport

Southern California Logistics Airport (SCLA), formerly George AFB, has a Transportation Security Administration (TSA) certified security program and provides logistics support to the military and civilian communities, hangars and warehousing, as well as transitional aircraft storage. The airport is currently operated by the Southern California Logistics Airport Authority. SCLA has existing landside and airside infrastructure facilities that are in good to excellent condition.

The current aircraft mix is primarily commercial operations with some military and General Aviation operations. Current takeoffs and landings are estimated at approximately 40,000 with a capacity to handle 230,000 per year.

As one of the fastest growing airports in the country and with the future proposed addition of a new 5,000 acre multi-modal business complex, SCLA will have the ability to serve a variety of business uses. These include the ability to serve multi-modal cargo, aircraft maintenance, manufacturing and distribution, flight training, defense programs and flight tests. SCLA will have the ability to be served by air, highway and rail while not being constrained by surface or air operations restrictions.

San Bernardino International Airport

San Bernardino International Airport is classified as a commercial airport, and is considered one of California's best opportunities for cost-effective manufacturing, distribution, aviation operations, e-commerce, and office support units.

The airport can be an advantageous target for future businesses as it has a potential 14,000 acres of re-developable project area, 2,100 acres of developable land in an Enterprise Zone, 175 acres in a Foreign Trade Zone, and on-site U.S. Customs. Moreover, 4 million potential passengers live within 60 miles, and the airport has 24-hour armed security.

Riverside Airport

Riverside Airport is situated on a 441-acre site in the northwest portion of the City of Riverside. The airport is classified as a General Aviation "Reliever" Airport as it relieves general aviation air traffic from Ontario and John Wayne commercial airports. The airport averages 110,000 aircraft operations per year, has approximately 230 based aircraft and manages over 150 various airport leases.

The existing runway configuration at Riverside Airport includes two intersecting runways. The primary runway is 5,400 feet long and can

accommodate most business and corporate jets for flights throughout the continental United States and Mexico. The other runway will soon be extended to a length of 6,400 feet.

The airport terminal building anchors a general aviation business center offering a wide range of services and amenities including a transient ramp, ground services and fuel, rental cars, restaurant, and flight planning, a pilots' lounge, and a conference room. The Airport also has a FAA-operated contract Control Tower, Automated Flight Service Station, and Flight Standards District Office. The Airport provides instrument approach capability offering ILS, GPS, RNAV, and VOR approaches.

In the next few years the airport will utilize funding sources from the FAA, State of California Division of Aeronautics, and the Airport itself, totaling over \$26 million in improvements.

Riverside Airport is designated a Local Enterprise Zone whereby businesses may qualify for a variety of financial incentives. It is also located in one of the City's Redevelopment Project Areas.

Chino Airport

Chino Airport is located in the southwestern portion of San Bernardino County, within the city limits of the City of Chino. Chino Airport is one of six airports operated by San Bernardino County and is classified as a reliever airport.

Chino Airport encompasses 1,100 acres, has two parallel runways and a crosswind runway ranging from 4838 ft. to 7000 ft. in length. Chino Airport has a precision ILS instrument approach and a non-precision VOR/GPS-B circling instrument approach.

Chino Airport is home to a wide variety of general aviation aircraft, ranging from World War I and World War II vintage aircraft, to the newest business turbojets. The range of aviation services provided at Chino Airport is diverse and includes: aircraft museums, flight training, and aircraft sales, maintenance, painting, chartering, and fueling.

Final Grade

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 as well as limited capacity and increasing restrictions on aviation infrastructure growth within adjacent counties. The situation here may be characterized as unique to the nationwide dilemma of new and increased demand for passengers and air cargo far outdistancing the construction of new facilities to meet these demands. For that reason, the final grade for the Inland Empire's aviation facilities is an "A-".

Investment Needs

Investment needs are estimated to be \$1.2 billion over the next ten years. This total was calculated based on data obtained from individual airport sources and the Southern California Association of Governments (SCAG) 2004 Regional Transportation Plan.

Recommendations

- Continue investment at current levels or higher
- Continue to coordinate with SCAG and other regional agencies to analyze the effects of proposed future transportation construction projects

Sources

March Joint Powers Authority
Southern California Logistics Airport
SCAG 2004 Regional Transportation Plan
SCAG 2030 Regional Transportation Plan: "Destination 2030"
Palm Springs International Airport 2003 Airport Master Plan
Inland Empire Economic Partnership
March Globalport

Flood Control and Urban Runoff



D

Flood Control

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 (systems typically provide approximately 50 years of useful service) or were constructed of insufficient 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 fifty 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). The Santa Ana Regional Water Quality Control Board adopted NPDES Permits for municipal stormwater discharges for San Bernardino and Riverside counties and their incorporated cities in the Santa Ana River watershed in 1990. 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 that may involve public education and outreach, housekeeping procedures, activity restrictions, and temporary or permanent structural features. Structural features are designed to improve water quality, may be public or private, and are potentially an integral part of the flood control infrastructure.

Final Grade

The final grade for Flood Control and Urban Runoff is a “D.”

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. It is estimated that over \$5 billion is required for flood control system improvements.

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 water quality objectives range from tens to hundreds of millions of dollars. Currently, the 10-year capital program costs are estimated at \$7 billion.

Recommendations

As indicated, over \$5 billion is required for flood control system improvements and at least \$2 billion is required for urban runoff. Currently, the 5-year and 10-year capital program costs are estimated at \$3 billion and \$7 billion respectively. 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 funds 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, 2003
Prepared by the San Bernardino County Flood Control District
for Compliance with Order No. 02-12; NPDES Permit No. CAS 618036
- San Bernardino County Stormwater Program Annual Reports,
2001 & 2002
Prepared by the San Bernardino County Flood Control District
for Compliance with Order No. 96-32; NPDES Permit No. CAS618036
- County of San Bernardino Santa Ana Basin Area Report of Waste
Discharge, September 1, 2000. Application for Renewal of the
Municipal NPDES Stormwater Permit, 2001-2006; Prepared for
the San Bernardino County Flood Control District by CDM and
Larry Walker and Associates.
- Municipal Storm Water NPDES Permit for San Bernardino County
(Order No. 02-12; NPDES No. CAS618036)
Adopted April 26, 2002 by the California Regional Water Quality
Control Board, Santa Ana Region
- Riverside County Flood Control Masterplan and Capital
Improvement Program
- San Bernardino Flood Control Masterplan and Capital
Improvement Program

Parks, Recreation & Open Space

A logo consisting of the letters 'C+' in a bold, black, sans-serif font, enclosed within a white square with a thin black border. The logo is centered between two thick, horizontal black bars that extend to the left and right edges of the page.

The Inland Empire is experiencing a tremendous amount of urbanized growth. The stress of living in an urbanized environment must be balanced with common open space, parks and recreation opportunities. In the urban setting, a persons' physical, emotional and psychological health are related to their ability to connect with a contrasting environment. The growth rate of the Inland Empire causes a concern for communities as they become more aware of the important need for parks, recreation & open space (PR&O). Open space, which for years was taken for granted, is now in danger of being lost forever.

Regional systems crossing multiple jurisdictions are seen as very beneficial. The Santa Ana River Trails, also know as the Crest to Coast Trail system, extends from Big Bear Lake in the San Bernardino mountains to Newport Beach. This system of interconnected parks, trails and wildlife habitat is under construction and supported by both Riverside and San Bernardino 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 established a unique Multiple Species Habitat Conservation Plan which balances the needs of new development along with the responsibility to preserve open space and critical habitat. This includes the establishment of the 9,100-acre Potrero Wilderness Area. Similar habitat areas are being preserved in the Coachella Valley.

Recreational needs in many communities are also an important priority. Both San Bernardino and Riverside counties are known as recreational destinations. For example San Bernardino County is home to many winter recreational areas as well as unique desert environments such as Joshua Tree National Park. Riverside County offers boating and

fishing opportunities at various locations including Diamond Valley Lake and Lake Elsinore. Furthermore, both counties are home to extensive fairgrounds and sports facilities that serve numerous recreational needs.

Final Grade

The assessment of PR&O infrastructure in the Inland Empire was conducted through a mail-in survey focusing on the existing conditions of PR&O, along with future facility needs and financial resources. Eighty percent of the cities and counties, representing over 2 million residents of the Inland Empire, responded to the survey. Fully 90 percent of the responses determined that existing facilities were excellent, good or average in condition; however, lack of maintenance funding for existing facilities is a concern. The final grade for the Inland Empire's PR&O is a "C+."

Investment Needs

Park Bond funding along with development fees have funded a substantial amount of PR&O. To raise the final grade for the Inland Empire's PR&O to a "B", the Counties of San Bernardino and Riverside would need additional funding of \$655 million over the next 10 years for upkeep, rehabilitation and maintenance of existing facilities. This amount is estimated by using the 2002 Park Bond Act funding allotment. Unfortunately, parks and recreation are vulnerable to funding cuts. Several communities are unable to fund any recreation programs and must rely upon volunteer organizations to provide these services. Not surprisingly, community members have realized this and organized activities to address some of these needs.

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.
 - Identify regional opportunities for PR&O and facilitate multi-agency cooperation.

Sources

Park Infrastructure Survey Responses from 20 agencies

State of California Proposition 40

(<http://4050bonds.resources.ca.gov>)

State of California Parks, Department of Grants and Local Services

(<http://www.parks.ca.gov>)

Riverside County Regional Park & Open Space District

(<http://www.riversidecountyparks.org>)

San Bernardino County, Santa Ana River Parkway

Solid Waste



B-

The Inland Empire's collection, processing and disposal of solid waste have become a complex integrated waste management system. The Inland Empire's method of solid waste disposal involves four distinct components. The first is collection of the residential, commercial, and industrial waste. The second is processing of the waste to remove recyclable materials and to compost organic waste. The third is disposal of the residual waste into public and private landfills. The fourth component is biomass and other conversion technologies.

In 2002, the waste disposal rate at Inland Empire landfills averaged about six pounds per day per capita. In 2002, the population of the Inland Empire was 3.4 million, with a projected population of 5.3 million by 2025, an increase of about 33.5 percent. These population numbers, coupled with a high rate of development, impacting the capacity of the current and future integrated waste management infrastructure, points out that research, planning and funding of new waste management technologies will become even more critical as the population increases. For the Inland Empire, Riverside County landfills have permitted capacity through 2025 to support local and imported waste residuals disposal and San Bernardino County landfills have permitted capacity through 2018 to support local and imported waste residuals disposal.

Today, 26 public and private haulers collect 85 percent of waste generated from residential and non-residential sources. The remaining 15 percent of waste being self hauled directly to the landfills should be targeted in the future as a potential for processing diversion. Approximately 83 percent of the collected waste is transferred to one of the 56 transfer stations, materials recovery facilities (MRFs), compostable materials facilities and other processing facilities. Recyclable and compostable materials are separated through manual and semi-automated processes. The remaining 17 percent of solid waste residual is transported to both public and private Inland Empire landfills.

The Inland Empire's haulers' waste collection and transfer fleets are modern and well maintained, with sufficient backup and infrastructure improvements to handle today's demand. Cleaner fuel burning collection fleets remains largely an unaccomplished goal.

Currently, there are 18 transfer stations in the Inland Empire that collect and transfer waste to MRFs, compostable materials handling facilities, construction and demolitions debris processing facilities and landfills. The Inland Empire processes recyclable materials at six MRFs. Food waste, green waste, manure, and wood wastes are processed at eight chip and grind facilities and/or compost facilities. Food waste along with other organics is also being used as a digester feedstock to produce methane gas and electricity.

Waste residuals from the collection, transfer and processing components of the solid waste infrastructure are transported to the landfills by specially designed high volume transport trucks, waste hauler collection trucks, or self-haul vehicles. Once at the landfills, waste is tipped, spread and covered with soil and/or alternative materials daily. Waste residuals are placed in a series of layers within a controlled environment that includes non-permeable liners, gas collection systems and groundwater monitors. Gas collection systems at five landfills each have the potential to produce about one megawatt of power, enough electricity to power approximately 1,000 homes; however, only one is currently developed. Methane has been burned and flared into the atmosphere at each of the other facilities with appropriate air emission controls.

Recycling programs have contributed substantially to the reduction of residual waste delivered to Inland Empire landfills. It has been estimated that recycling has accounted for an approximately 49 percent reduction in solid waste delivered to our landfills over the last ten years, and this number continues to grow as more waste diversion is achieved. In addition, electronic waste collection and household hazardous waste drop-off centers have greatly reduced the amount of such material being deposited in our landfills.

Final Grade

In assessing the condition of the solid waste infrastructure, existing conditions and immediate future conditions (up to five years) resulting from pending projects were considered. Further, facilities and systems were reviewed to determine if they can support the Inland Empire communities and future growth. Consideration was also given to whether public and private entities had sufficient funding levels for their facilities and systems maintenance and infrastructure failures contributing to non-compliance with regulatory requirements.

Recognizing that certain types of recycling, composting, biomass, and conversion technology components have not been added or integrated into the solid waste infrastructure, the final grade for solid waste is “B-.”

Investment Needs

Infrastructure funding to improve conditions, develop and retain capacity, and maintain the collection, processing, diversion, and disposal of solid waste in the Inland Empire is accomplished through a series of mechanisms. First, there is the collection and disposal fee for residential and non-residential users. Because of State and Federal mandates and regulations placed on the operation of the integrated waste management system whereby the State has imposed a pass-through fee on all waste disposal, the State has become a partial funding source for specific programs. The generation of electricity is a limited or minor source of revenue for the entire solid waste system, and does not contribute to the research and development for more efficient use of our landfills and recycling programs.

Overall, significant infrastructure has achieved substantial accomplishment in diversion. Additional developments will be driven by continued pursuit in these areas along with research and development in new technologies. Further infrastructure development needs to occur to stimulate the processing of food, green waste and conversion technology. It is estimated that an additional \$60 million of development funding is needed to meet the future needs of the solid waste infrastructure in the Inland Empire over a 10 year period.

Recommendations

Public debate is ongoing over the location and use of the Inland Empire's landfills, recyclable materials processing facilities, compostable materials operations, and transfer stations. One of the most difficult issues regarding disposal of solids from sanitary sewer processing plants remains largely unresolved.

Other solutions are:

- Continue to develop improved landfill design and operating technologies;
- Continue to plan and expand the current permitted capacity of existing landfills;
- 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;
- Continue to research and secure additional funding for the development of adequate markets for recycled materials and compost products.

Sources

Riverside County Integrated Waste Management Plan
San Bernardino County Integrated Waste Management Plan
California Integrated Waste Management Board Strategic Plan
Southern California Association of Governments

Wastewater

B-

In semi-arid regions where riverbeds are frequently dry, wastewater treatment plants are critically important, as discharges from these plants provide all or most of the river flows during much of the year. The three major river systems in the Inland Empire—the Santa Ana, the Mojave, and the Whitewater, have very little or no natural flow in them (at least in most reaches) for at least six months each year. Regional water quality control boards govern discharges into these river systems and maintain high standards for wastewater treatment plant discharges. Wastewater collection systems are important from an odor perspective—if there is a failure or a blockage in the sewer system, odors will soon give rise to complaints from local residents. Thus it is important to keep sewage collection and wastewater treatment facilities in good working order.

A key issue that wastewater agencies face as they consider implementing or expanding reuse (recycling) programs is the local basin plan enforced by the regional water quality control board. These basin plans are adopted to be consistent with state law and policies and to prevent further degradation of basin water quality. The concern behind restrictive basin plans is that the discharges from the treatment plants, through the recycled systems, will increase either the total dissolved solids (salts) or nitrogen levels within the basins. Another issue related to water recycling is resource agencies that can require dischargers who create aquatic ecosystems in dry river beds (such as in the Santa Ana River) to maintain such flows.

The Santa Ana Regional Interceptor, or SARI line, is a regional wastewater line owned by the Santa Ana Watershed Project Authority (SAWPA). It was originally constructed in the 1970's to convey highly saline non-domestic wastewater (such as brine from desalters and industrial discharges) out of the upper Santa Ana watershed to Orange County to be treated and discharged to the Pacific Ocean. The system includes approximately 73-miles of pipe in San Bernardino and

Riverside counties. Virtually the entire system is less than 27 years old; relatively young by infrastructure standards, where pipelines are typically designed for a 50- to 75-year life. While the SARI system is relatively new, and while current flows are well below capacity, damage to this system would place a huge economic burden on the Inland Empire, as highly saline, non-domestic waste discharges would have to cease. This means that a number of local desalters, producing nearly 50 million gallons per day of water, would have to shut down. In addition, industrial facilities that discharge into this system would have to shut down, impacting jobs.

Sludge handling is an important part of the wastewater treatment process. Land application of dewatered sludge is a common method of sludge disposal. Riverside County has banned land application of Class B sludge and is currently working on a plan that could allow land application of Class A sludge, which requires additional processing. Public concerns over odors, vector, and perceived health issues continue and will likely result in increased capital and/or operational costs for handling sludge.

Final Grade

There are a relatively small number of large regional wastewater treatment agencies, and many smaller agencies (including cities and water districts) that own and operate sewage collection and transmission systems conveying raw sewage to the regional treatment plants. Survey responses from treatment agencies representing over 2.2 million residents and collection agencies representing over 1.8 million residents result in a final grade for Wastewater of “B-.”

The grade means that agencies are by and large keeping up with rapid growth, while at the same time maintaining existing infrastructure, some of which is getting close to or exceeding its design life. This is especially true in older cities such as San Bernardino, Riverside, and Ontario.

Investment Needs

Sludge handling is always an important part of the wastewater treatment process, and agencies are generally doing a good job of this, though indications are regulations regarding sludge treatment, especially with regard to land application, may change. Inland Empire wastewater agencies are currently evaluating various technologies that would convert sludge to Class A for reuse, or convert the sludge to energy. Much of the sludge in the area is either being handled by Synagro at its Corona compost site, scheduled for closure in 2008, or being exported from the Inland Empire for composting or land application. All trends point to the cost of sludge handling and disposal increasing in the future due to regulatory or land availability issues.

In the high desert and other areas, several wastewater agencies are considering subregional (“satellite”) treatment facilities designed to provide treated recycled water close to the potential users. Siting these plants and mitigating the concerns of local residents and businesses is a significant concern since the initial reaction of having a wastewater plant in the vicinity may not be positive.

Finally, with the aging infrastructure in the collection and transmission systems, particularly in the older urban areas, funds will have to be made available for substantial replacement or refurbishment programs in the next 20 years.

To achieve the final grade to a “B” for wastewater infrastructure, it will require \$2.8 billion over the next ten years.

Recommendations

Based on the data collected, the following is recommended for wastewater agencies in the Inland Empire:

- Work with elected officials and others to expand wastewater recycling programs. Maximize use of external funding sources, such as bond money, to do so.

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- Work with stakeholders of the SARI system and the Corps of Engineers to protect and/or relocate the pipe downstream of Prado Dam. While such a project will be relatively expensive, a failure of the system could cost more in the future. Again, maximize the use of external funding to do this.
 - Implement asset management plans to enhance maintenance of existing facilities. Asset management plans include a lifecycle cost evaluation and a risk assessment component to determine how best to prioritize operation and maintenance expenditures.
 - Expand the investigations of alternative methods for sludge handling and disposal in the event that regulations governing this process change.

Sources

West Valley Water District Capital Improvement Plan (CIP)

Eastern MWD CIP

Coachella Valley WD CIP

City of Riverside Water CIP

City of Riverside Wastewater CIP

City of San Bernardino Water CIP

City of San Bernardino Wastewater CIP

Victor Valley Water District CIP

Inland Empire Utilities Agency CIP

Completed surveys from 9 wastewater treatment agencies

Completed surveys from 8 wastewater collection agencies

Water



The Inland Empire was settled in large measure because of abundant water supplies. Water is no less important to the Inland Empire today. With a population of nearly 3.5 million and an average of 8-12 inches of rain per year, local water resources are not sufficient to meet annual water demands. The region could not exist in its current form without imported water and an infrastructure network to deliver it.

Water agencies in the Inland Empire continue to depend on four primary sources for their water—the Colorado River; northern California; local groundwater and treated stream flows from Lytle Creek, the Santa Ana River, Mill Creek and other local canyons; and desalted groundwater and treated wastewater in the form of recycled water. In some areas, regional water quality control boards have created basin plans that include water quality limits that cannot be met by standard recycled water systems, especially with regard to total dissolved solids. In these areas, implementation of recycled water systems must take an integrated approach to maintain existing water quality and meet basin plan requirements.

Changing water quality regulations and/or contamination in groundwater can have a great impact on water supply as well as the cost of water. Over 20 wells have been removed from service in the Rialto area, greatly reducing the local water supply and making it more difficult to meet summer demands. In the Victor Valley, recent changes in the drinking water standard for arsenic have caused the local water purveyor to install or plan for expensive wellhead treatment, which will increase the cost of that water. As water quality standards continue to tighten, water agencies will have to spend more money to treat their water to the higher standards.

The major water issue facing water purveyors in the Inland Empire is increasing water demands brought on by development. These demands make the area more susceptible to droughts. Supplies of Colorado

River water have been reduced from historical levels by federal mandate. Further, State Project water and local supplies are subject to unpredictable weather patterns. Thus, water storage, the ability to draw from multiple sources, increasing use of recycled water, and better management of local groundwater and surface water resources have been and will continue to be increasingly important. Additional storage of available water during wet years in groundwater basins or in flood control facilities would help augment existing storage and help to drought-proof the region.

Better management of local water sources and reduced per capita usage for future development are also keys to stretching existing supplies to meet higher water demands and future droughts. Better management practices include greater water conservation, new groundwater recharge programs, groundwater storage projects, more recycled water use from wastewater treatment plants, and enhanced watershed management.

These management practices are important because they include non-structural solutions, with little capital investment by water purveyors. They also include capital-intensive projects such as recycled water. Management solutions involve changing behavior (water conservation programs), changing culture (increasing water recycling efforts), and making better use of existing resources, such as groundwater basins that have the capacity to store wet weather supplies.

A second key issue facing local water agencies is that of changing water quality regulations. As Federal and State drinking water quality standards are tightened, water agencies will have to provide enhanced treatment that will increase the cost of drinking water. Two examples of this are perchlorate and arsenic. These two pollutants alone will likely cause many agencies throughout the state to spend millions of dollars on treatment systems.

In areas such as the Victor Valley, overdrafting of the groundwater basin is an issue that must be corrected through demand management, more imported water, and recycled water programs.

Final Grade

Responses from water agencies representing nearly 2.5 million residents of the Inland Empire resulted in a final grade for Water of “C+.” While there are issues that local water agencies have to deal with in the present and on the horizon, agencies are generally serving high quality water to Inland Empire residents and businesses, and are keeping up with rapid growth during a drought that has covered most of the American West for five years.

Investment Needs

Some Inland Empire water agencies have embarked on a formal asset management program to improve maintenance of infrastructure. While expensive to implement, experience has shown that this can improve maintenance while lowering long-term costs.

Future water rates in the region will reflect tighter water quality standards, the need for capital projects to serve new customers, and the need to maintain or replace existing aging water infrastructure. The capital projects to serve new development will, for the most part, be funded by that development. Water agencies will benefit from this relatively new infrastructure but will still have to maintain it.

To raise the final grade to a “B” for water facilities, it will require \$6.8 billion over the next ten years.

Recommendations

Upon analysis of the available data, the following is recommended to water purveyors in the Inland Empire:

- While constructing new facilities, do not lose sight of existing infrastructure, particularly facilities that are at or near their design life. Also, agencies that have not done so should review facilities for their ability to continue service during and after seismic events and to implement necessary improvements.
- Increase the amount of local operational and emergency storage within the distribution system to better meet daily and emergency demands.

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- Educate the public on water quality issues to enable them to understand the relationship between tighter regulations, water quality, and water rates. Ratepayers must understand that higher quality water may mean higher costs and hence higher water rates.
 - Maximize external funding for new infrastructure, such as for treatment of perchlorate and other emerging contaminants. Work with federal and state elected officials to bring outside dollars to the region to clean up pollutant plumes. Take advantage of state water bonds to construct new facilities or implement better watershed management practices.
 - Find new sources of water for those purveyors in a position to do so.
 - Develop or expand interconnections between water purveyors, increasing overall reliability.
 - Expand the use of recycled water to augment supplies.
 - Explore the use of asset management programs to better handle ongoing maintenance of expanding and aging systems.

Sources

West Valley Water District Capital Improvement Plan (CIP)

Eastern MWD CIP

Coachella Valley WD CIP

City of Riverside Water CIP

City of Riverside Wastewater CIP

City of San Bernardino Water CIP

City of San Bernardino Wastewater CIP

Victor Valley Water District CIP

Inland Empire Utilities Agency CIP

Completed surveys from 22 water agencies

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 “2005 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 “2005 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

	<i>Name</i>	<i>Title / Affiliation</i>
Chair:	Mark Norton	Past President ASCE, San Bernardino and Riverside Counties Branch Santa Ana Watershed Project Authority
Members:	Robert Bein	National Past President ASCE / RBF Consulting
	Rick Bishop	Executive Director, Western Riverside Council of Governments
	Bill Green	Sr. Vice President, RBF Consulting
	Eric Haley	Executive Director, Riverside County Transportation Commission
	Norm King	Executive Director, San Bernardino Associated Governments
	Mark Matsumoto	Dean of Engineering, University of California, Riverside
	April Morris	President, Associated Engineers
	Tom Mullen	Former Riverside County Supervisor
	Barbara Cram Riordan	California Air Resources Board, Former San Bernardino County Supervisor
	Ron Roberts	President, Southern California Association of Governments / City of Temecula Councilman
	Bob Wolf	President, Germania Construction, and former California Transportation Commissioner

Transportation Committee

	<i>Name</i>	<i>Affiliation</i>
Chair:	Peter Bucknam	Bucknam & Associates
Members:	Richard Hart	David Evans and Associates
	David Griffith	TY Lin International McDaniel
	Mark Ainsworth	Southern California Association of Governments
	Ron Mutter	City of Redlands
	Eric Haley	Riverside County Transportation Commission
	George Johnson	County of Riverside
	Laddie Svarc	County of San Bernardino
	Medhat Matta	County of San Bernardino
	Peter Ramey	City of Moreno Valley
	Jerry Jack	City of Cathedral City
	Tim Mimmack	City of Ontario
	Tony Wang	City of Chino Hills
	Mike Prodegracz	City of Hesperia
	Steve Beswick	City of Temecula
	John Gabor	OMNIS

Transportation Review Committee:

Les Card	LSA Associates
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School Facilities (K-12) Committee

	<i>Name</i>	<i>Affiliation</i>
Chair:	Scott Shira	San Bernardino County Superintendent of Schools
Members:	Linda Sweaney	San Bernardino County Superintendent of Schools
	Jim Choate	Riverside County Office of Education
	Dave Anderson	Vanir Construction Management
	Julius Conway	Corona Norco Unified School District

<i>Name</i>	<i>Affiliation</i>
Michael Perez	San Bernardino City Unified School District
Tom Garnella	Business (retired), Ontario Montclair School District

School Facilities (K-12) Review Committee:

Kent Van Gelder	California State Department of Education
Tom Tooker	California State Department of Education

Aviation Committee

	<i>Name</i>	<i>Affiliation</i>
Chair:	Mat Huff	VanderHawk Consulting
Members:	Gary Miller	RBF Consulting
	Mike Chesney	RBF Consulting

Aviation Review Committee:

Paula McHargue	Los Angeles World Airports (LAWA)
Peter Soderquist	Southern California Logistics Airport
Phil Rizzo	March Joint Powers Authority
Mark Kranenburg	City of Riverside

Flood Control and Urban Runoff Committee

	<i>Name</i>	<i>Affiliation</i>
Chair:	Michael Thornton	TKE Engineering
Members:	Zully Smith	Riverside County Flood Control and Water Conservation District
	Matt A. Yeager	County of San Bernardino
	Fuad Modiri	County of San Bernardino

Parks, Recreation & Open Space Committee

	<i>Name</i>	<i>Affiliation</i>
Chair:	T. Jarb Thaipejr	City of Loma Linda
Members:	Deborah Woldruff	City of Loma Linda
	Lori Lamson	City of Loma Linda
	Jeff Peterson	City of Loma Linda
	Kurt Swigart	City of Loma Linda Parks Recreation, Beautification Committee (PRBC)
	George Pendered	PRBC
	Janet Razzouk	PRBC
	Richard Wiley	PRBC
	Betty Stark	PRBC
	Doree Morgan	PRBC
	Valerie Gallant	PRBC
	Miguel Rojas	PRBC

Parks Review Committee

	Pete Dangermond	The Dangermond Group
	William Havert	Coachella Valley Mountain Conservancy

Solid Waste Committee

	<i>Name</i>	<i>Affiliation</i>
Chair:	Paul Ryan	Inland Empire Disposal Association
Members:	Barbara Spoonhour	Western Riverside Council of Governments
	Jim Gibbs	Waste Management, Inc.
	David Fahrion	CR&R, Inc.
	John Davis	Mojave Joint Powers Authority
	Hans Kernkamp	Riverside County Waste Management Department
	Bob Zetterberg	City of Rancho Cucamonga
	Chuck Tobin	Burrtec Waste Industries

Solid Waste Review Committee

	Eric Herbert	Burrtec Waste Industries, Inc.
	Robert Nelson	Retired, Riverside County Chief Engineer Officer

Wastewater Committee

	<i>Name</i>	<i>Affiliation</i>
Chair:	Jeff Davis	California State University, San Bernardino, Water Resources Institute
Members:	Richard Bardin	Boyle Engineering
	Greg Barry	Nolte Associates
	Allen Todd	Carollo Engineers
	John Jannone	Eastern Municipal Water District

Water Committee

	<i>Name</i>	<i>Affiliation</i>
Co-Chairs:	Jeff Davis	California State University, San Bernardino, Water Resources Institute
	Allen Evans	Kleinfelder
Members:	Dave Ferguson	MWH Global
	Richard Bardin	Boyle Engineering
	Bill Bryden	San Bernardino Water Department
	Jerry Wilson	Cucamonga Valley Water District
	Bob Tincher	San Bernardino Valley MWD

Water/Wastewater Review Committee

Rich Atwater	Inland Empire Utilities Agency
Tony Pack	Eastern Municipal Water District
Bernie Kersey	City of San Bernardino Municipal Water Department
Dieter Wirtzfeld	Riverside Public Utilities (Water)
Steve Schulz	Riverside Wastewater
Robert DeLoach	Cucamonga Valley Water District
Jerry Thibeault	Santa Ana Regional Water Quality Control Board
Dan Parks	Coachella Valley Water District

Communications Committee

	<i>Name</i>	<i>Affiliation</i>
Co-Chairs:	Bill Green	RBF Consulting
	Ron Moreno	RBF Consulting
Members:	Meredith Maloney	Inland Empire Economic Partnership
	Andy McCue	University of California, Riverside
	Catherine McMillan	Coachella Valley Association of Governments
	John Standiford	Riverside County Transportation Commission
	Andrea Zureick	San Bernardino Associated Governments

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CELSOC

CONSULTING ENGINEERS AND
LAND SURVEYORS OF CALIFORNIA

CELSOC is a 50-year-old, nonprofit association that represents private consulting engineering and land surveying firms throughout the state of California. The association 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. Our 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 CELSOC family includes 24 local chapters covering the state, a 64 member Board of Directors (elected by the chapters), 24 Committees, two Academies, five Affiliated Organizations and a state office staff of 12.

CELSOC is the voice for all engineering and land surveying firms throughout the state. Through active legislative advocacy CELSOC is able to ensure that our members can focus on what they do best – their business. We are the only organization in the state that provides design firms with an ability to control their professional destiny. One of the many other benefits that CELSOC offers its members is continuing education opportunities through our seminars and conferences.

CELSOC is the nation's largest Member Organization in the American Council of Engineering Companies (ACEC). Membership in CELSOC means automatic membership in ACEC, and representation at the national level.

For more information about CELSOC visit our website at www.celsoc.org or call us at 916.441.7991.



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.

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 67 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 26,000 and a reputation for quality services and products.



The Water Resources Institute (WRI) develops and encourages sound research and analysis and provides educational resources on water issues affecting Southern California communities.

The WRI houses one of the largest regional water resource archives in the nation. A growing portion of this archive, which includes books, reports, government documents, maps, photos, newspaper and magazine articles, and water resources data, is accessible via the WRI's web site, wri.csusb.edu.

In addition, the WRI is involved in a number of educational and research programs for Cal State, San Bernardino students, K-12 students, and for the general public. Through its speaker series, the Institute has hosted a number of high profile speakers over the past several years, including journalists, elected officials, lobbyists, and environmentalists. A series of annual conferences has explored Inland Empire water issues, including water infrastructure. An applied research program has been developed to support the regional water industry.

Through its oral history program, the WRI is capturing the history of water resource development in the Inland Empire by interviewing many key individuals who have been involved.



The California Infrastructure Coalition is a non-profit, broad-based organization whose mission is to build support for dedicated and consistent sources of funding sufficient to sustain California’s vital infrastructure facilities and systems.

California Infrastructure Coalition is committed to increasing awareness of California’s infrastructure requirements and seeks to build support for the development and implementation of policies and funding that will result in well-maintained, safe infrastructure facilities and systems that will meet the current and future needs of California.

California Infrastructure Coalition membership includes California cities, counties, special districts and other regional organizations, and corporations, as well as other non-profit organizations that represent all who are impacted by infrastructure investment policy.



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 125,000 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.