

2005 Report Card

for Los Angeles County

Infrastructure



A Citizen's Guide

Message from the Chair

Dear Friend:

Our quality of life is directly linked to the condition of our infrastructure. By failing to keep pace with our growing needs, we can expect to spend more time stuck in traffic and less time with our families. We can also expect to spend more time and money repairing deteriorating roads, bridges, water lines, sewers, storm drains and flood control levees and less time recreating at parks and beaches. The condition of our infrastructure is also critical to the economic well-being of our region. Virtually every product we purchase arrives by ship, rail or truck, yet we give little thought to the importance of our ports, rail facilities and highways in getting these products to market. We similarly take our aging flood control system for granted despite its excellent performance during record rainfalls earlier this year. Nor do we give a second thought to how clean water reaches our homes and businesses and where our trash and sewage goes. Somehow, water just magically materializes in our taps, while sewage and trash simply vanish from toilets and curbside bins.

Just try and imagine what life would be like in Southern California if our infrastructure could no longer keep pace with our rapid growth — jammed highways, flooded roadways, limited transit, beaches closed by sewage spills, “boil water” orders issued by health authorities, trash piled in our streets, and dwindling products on our store shelves. Fiction you say? Think again. All of this happened just last month along our nation’s gulf coast. Yes, it was caused by a hurricane of epic proportions, but the region’s inadequate infrastructure greatly exacerbated the problems, triggering levee failures and a chain of nightmarish events all of which led to the devastation of one of America’s great cities.

While we need not worry about a hurricane striking Southern California, the devastation resulting from an earthquake or other natural disaster could have far reaching consequences on our quality of life. Think about it, and while you do, keep in mind that our infrastructure requires constant maintenance, periodic replacement, and occasional expansion to meet the needs of our growing communities. If we don’t find the money to keep our infrastructure in good condition, who will? And how much more will it cost, in terms of money and human suffering, to make repairs after things have gone terribly wrong?

Harvey R. Gobas, P.E., M.ASCE

A handwritten signature in blue ink, appearing to read "Harvey R. Gobas". The signature is fluid and cursive, with a large initial "H" and "G".

Chair, 2005 ASCE Los Angeles County Infrastructure Report Card Committee
Past President, American Society of Civil Engineers, Los Angeles Section

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Introduction

More than 18 months ago, the Los Angeles Section of the American Society of Civil Engineers initiated efforts to update its 2002 Los Angeles County Infrastructure Report Card. Since that time, over 80 individuals representing public and private sectors, as well as academia, have spent countless hours carefully reviewing and assessing the condition of eleven different infrastructure categories, including bridges, dams, drinking water, flood control, parks, ports, solid waste, streets and highways, transit, urban runoff, and wastewater. Grades for these 11 categories range from B+ to D with a cumulative average of grade of C+. Estimates of annual investments needed to maintain and appropriately expand our infrastructure exceed \$10 billion.

Earlier this year, the American Society of Civil Engineers also released its 2005 Report Card for America's Infrastructure. That report evaluated 15 categories and assigned a cumulative grade of "D" to the nation's infrastructure (declining from a D+ in 2001). That report also estimated a national investment need of \$1.6 trillion over the next five years.

Whether we are looking at the local picture or the national picture, one thing is clear. With each passing day, the inability of our infrastructure to meet the needs of our growing population further threatens our economy, the environment and our quality of life. It is therefore essential that our policy leaders establish a comprehensive long-term infrastructure development and maintenance plan. Public commitment to such a plan is critical to its success. Federal or state funding alone will not meet all of our needs, making local funding crucial to the success of any plan. Voters must also be educated on the importance of such funding. They must recognize that when they reject a local sales tax increase set aside for transportation improvements, they are effectively sentencing themselves to additional time stuck in rush hour traffic and higher repair bills caused by potholes. Proper education campaigns have shown that we can effectively educate voters on such matters — evidenced by the recent passage of an important stormwater related bond issue in the City of Los Angeles.

All of us in Southern California have a right to expect good roads, rail and shipping transportation systems, clean water, proper waste management, effective non-polluting drainage systems and clean parks and beaches where we can spend our free time. With that in mind, it is the hope of all of those involved in the 2005 Los Angeles County Infrastructure Report Card that this report will prove to be a catalyst for taking the necessary steps to sustain our vital infrastructure and maintain our quality of life.

Why Infrastructure Matters

Richard G. Little, AICP
The Keston Institute for Infrastructure
University of Southern California

People living in the United States can count themselves blessed for many reasons. Among them are clean water to drink, electricity to power their homes and businesses, instant connectivity almost anywhere on earth, and a highway network that allows them to drive safely and at high speed throughout a vast country. This is mostly taken for granted, which is not surprising. Unless they are intimately familiar with these services, why would anyone stop to think about why tap water is clean and safe to drink, why the electric current drones on reliably and uninterrupted, or a long distance phone call takes only as long to connect as the time required to enter the desired number. Most people alive today are too young to remember when it was not always so. Less than one hundred years ago, people routinely became sick and often died from water borne diseases, still lit their homes with candles and oil lamps, personally provided the power for almost everything done about the home, and communicated only face-to-face or via the telegraph or postal service.

A question often asked is why infrastructure matters. In our modern society, this question has become as basic as why air, water, and food matter. Simply stated, we cannot live the way we do without infrastructure. More accurately, we cannot live without the services it provides. In 2003, when the eminent National Academy of Engineering rated the twenty greatest engineering achievements of the 20th century that transformed our lives, five infrastructures — electrification, water supply, the telephone, highways, and the internet — were among them. If we try to imagine life without the safe tap water or reliable electricity, communications, or personal mobility that modern infrastructure provides, we conjure up a place and time very different from where we are today — simpler, perhaps, but very different.

If we agree then that it is in our own best interests that these vital services be sustained over the long term, we should also recognize the need to maintain the systems that deliver them. Just as living things go through a process of generation, growth, maturation,

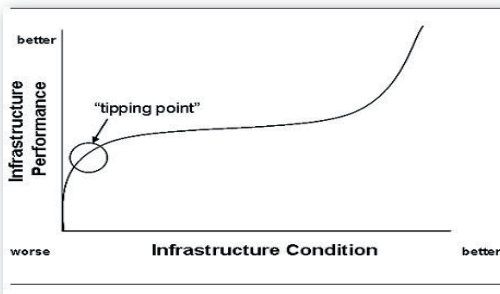
decline, and death, the life cycle of physical infrastructure follows a similar path. Unlike natural systems, however, physical systems cannot sustain themselves; they must be renewed from without. This implies actions on our part in the form of maintenance, repair, renewal, and replacement on a more or less continuous basis. These sustaining actions require capital, materials, labor and other resources. Depriving a physical system of funding for maintenance and repair, for example, will have a similar effect to depriving a natural system of food or water — it will decline and ultimately, cease to function.

Despite our obvious dependence on infrastructure, we often fail to make the mental and physical connections between the desired services and the projects necessary to provide them. Because of this, we are skeptical of calls for increased investment to maintain existing systems and build new ones to replace the old. We balk at providing the funding for this or that agency or wonder why rates for what we consider a public service increase over time. We don't seem to find it illogical to argue against the physical manifestation or cost of infrastructure while still demanding its services. We tend to think that new systems are needed just to support new growth. However, it is not a question of whether we will grow or by how much. Even if we don't grow at all, we will continue to demand a high quality of services — services that will be provided by infrastructure of all types.

Infrastructure professionals around the country are engaged in efforts to measure and assess the condition and capacity of these systems. This process provides a snapshot in time of the state of the systems on which we depend. Fortunately, the world is not crumbling around us. Unfortunately, this does not necessarily mean that all is well. Infrastructure by its nature is robust and resilient. Catastrophic failures are rare and almost always preventable if detected in a timely manner. However, complacency can lead to disaster. In the 1980's there were a rash of collapses of major U.S. highway bridges that resulted in many deaths and considerable economic disruption. In most instances, the warning signs of failure were missed because of cutbacks in funds for routine inspection, maintenance, and repair. But these warning signs are subtle. The figure below shows that infrastructure condition can degrade considerably before performance is noticeably affected. This creates a "tipping point" situation where the build-up to failure is lengthy, but once begun, it proceeds rapidly

and irreversibly. In other words, once the bridge starts falling, it is too late to consider repairs.

There are other reasons to be concerned with the physical state of our infrastructure. First, failures rarely occur in a vacuum. A leaking sewer or water main can produce consequences that extend well beyond the point of damage; a water main break in Laurel Canyon Boulevard in July disrupted traffic between the San Fernando Valley and Hollywood for several days. Many systems are also interdependent. A failure in one may cause serious and unexpected failures in another. For example, in May, 1998 a communication satellite rotated out of its orbital position and over 80 per cent of the digital pagers in the U.S. went off-line. Cable and broadcast transmissions were affected, as were credit card authorizations and ATM transactions. This event could have had even more serious human impacts as many hospitals and health care providers faced a crisis in emergency communications when they could not page doctors and other care givers.



*Infrastructure Condition Noticeably Affects Performance
Only at the Extremes*

In his recent book “Collapse,” Jared Diamond writes perceptively and eloquently about the failure of ancient societies. To a greater or lesser degree, these societies all failed to establish a sustainable balance between consumption and renewal of vital resources. In essence, they “mined” water, food, and timber at rates that nature could not replenish. As the resources necessary for survival were consumed, the societies themselves lost the ability to function. The point being that keeping the systems on which we depend so completely in a good state of repair is not a luxury, but prudent self-interest. Without

a continued and reliable flow of infrastructure services, the viability of modern society as defined by our quality of life and economic well-being, is put at risk. How much we value these aspects of our lives will, in large part, determine why and how much infrastructure matters to us.

***Richard G. Little** is a professional planner and director of the Keston Institute for Infrastructure at the University of Southern California, a center of infrastructure policy research. He has over thirty years experience in planning, management, and policy development relating to public facilities including fifteen years with local government.*

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. Sometimes, those who actually use the infrastructure most must pay for it through tolls, utility bills, or special taxes on gas, airline tickets, and other items. But because infrastructure improvements affect us all by supporting our economy and providing fundamental community services, the public usually bears a portion of the cost through general tax revenues.”

All levels of government, from federal to state, county, regional, municipal and special districts share in the responsibility for collecting and distributing funds for infrastructure improvements. At the local level, funds are often raised through the issuance of bonds or the collection of general, property or sales taxes or user fees. As noted in the National ASCE Report, “This places responsibility for infrastructure renewal and development squarely with the individual voters, who must approve bond issues and elect political leaders who will make our infrastructure needs a priority.”

Preserving Our Infrastructure

Los Angeles County is comprised of 88 cities and communities, some dating back over two centuries, while others have been in existence for only a few decades. Yet the infrastructure everywhere, even in the relatively newer areas, requires continuous attention, maintenance and ongoing replacement and expansion. As previously noted, 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.

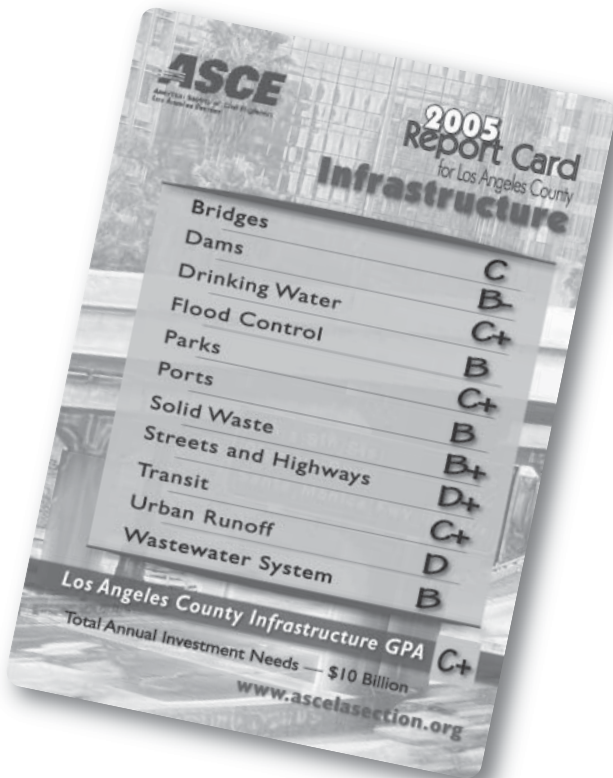
This Los Angeles County Infrastructure Report Card and Citizens Guide is intended to serve as a vehicle to engage our community and civic leaders in a call to action for stronger investment in our region’s vital infrastructure. This has never been more important, as we stand on the brink of tremendous projected growth over the

next few decades. Please use this guide to get involved in protecting our infrastructure investments and planning for the future. It's your community and your future at stake.

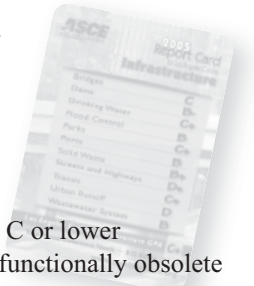
Grading of Our Infrastructure

Over 80 individuals contributed to the working groups and assigned letter grades to eleven categories of Los Angeles County public infrastructure. An Executive Review Committee reviewed the grades and made adjustments up or down as they deemed appropriate for the infrastructure category being considered.

The grading is on a scale of "A" to "F" with an average grade being "C." The Report Card, reprinted on the following pages, shows how public infrastructure in Los Angeles County measures up.



Report Card Summary



Bridges — C

Over 40% of the County’s bridges rate a C or lower including many structurally deficient or functionally obsolete bridges. The work needed to improve the condition of the bridges includes upgrading of older safety rail, adding lanes (widening), and major replacements.

Dams — B-

Many of the County’s 96 dams are over 50 years old and their auxiliary mechanical and electrical components are nearing the end of their useful life. If the existing dams are not kept in safe operating condition, their structural and functional condition will deteriorate placing the public’s flood protection and water conservation benefits in jeopardy.

Drinking Water — C+

While, water quality and capacity generally rate well, facility condition does not with a large percentage of the County’s water systems constructed prior to 1950 and nearing the end of their useful lives. The replacement of these aging distribution systems poses a major problem for water agencies.

Flood Control — B

Although the County’s flood control system performed well during historic rains earlier this year, it is nevertheless important to continue improvements to the aging system including measures to protect water quality and reduce pollution. Without this additional funding, the County’s flood control system will deteriorate and flood protection for the general public will be at risk.

Parks — C+

The City and County of Los Angeles operate over 700 recreational facilities. Some of these facilities are below desirable operating standards while others are in need of upgrade or replacement. Additional funding is also required for land acquisition to acquire and develop new park facilities.



Ports — B

The San Pedro Ports comprise the fifth busiest shipping terminal in the world. Given the important role they play in our local economy, a good on-going maintenance program in addition to regular assessment and upgrade of the port's infrastructure are vital to ensuring the continued reliable movement of cargo.

Solid Waste — B+

Los Angeles County has the largest and most complex solid waste system in California. Despite the numerous available disposal facilities, solid waste managers are faced with various challenges, including decreasing landfill capacity, overcoming public opposition to establishing new facilities, recycling and disposal constraints, and transportation issues.

Streets and Highways — D+

Traffic congestion and local pavement conditions have continued to worsen during recent years. Without significant additional funding, congestion problems will only get worse and the overall condition of pavement in Los Angeles County will continue to decline each year. This decline will result in increases in vehicle repair costs, traffic delays, fuel consumption, and vehicle emissions.

Transit — C+

While Southern California has benefited from numerous regional and local transit systems, the area continues to suffer from a number of operating issues that prohibit continued growth. These issues include continually worsening traffic, which slows busses, effecting on-time performance; the need for additional trips to compensate for traffic delays; and rising fuel costs.



Urban Runoff — D

Urban runoff continues to pose major water quality problems in Southern California with experts disagreeing on the needed funding requirements by two orders of magnitude. Despite these problems, there have been some recent positive developments including the 2004 passage of the City of Los Angeles' Measure O, a general obligation bond for water quality improvements.

Wastewater System — B

Most of the thousands of miles of primary and secondary sewers, hundreds of pump stations and numerous major treatment plants in Los Angeles are in fair to good condition. Nevertheless, there are a number of facilities which rated a "C" or "D" that need to be upgraded, rehabilitated, or replaced.

Understanding Infrastructure Issues

Now that you have seen the Los Angeles County infrastructure report card, you may be asking how you can help improve our County's and cities' infrastructure. Our suggestions parallel those in the ASCE National Report Card.

Infrastructure is a complex network of public works, which includes roads, bridges, dams, and utilities. The rules governing infrastructure planning, financing, construction, and upkeep are equally complex. Whether your goal 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 rules is the first step toward becoming an advocate for sustaining infrastructure at acceptable standards of condition in your community.

As you read through this Citizen's Guide, please think about the following:

Be an informed citizen. In order to influence 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, just as with your home or automobile. The money saved can be used to fund other community priorities. Unfortunately, policies often encourage new construction at the expense of maintenance.

Think long-term. Renewing America's infrastructure is an ambitious goal that cannot be achieved overnight. Furthermore, the roads, bridges, water treatment plants, and other facilities built today must serve for decades to come. Comprehensive planning and long-term investment are key to sound decisions about infrastructure.

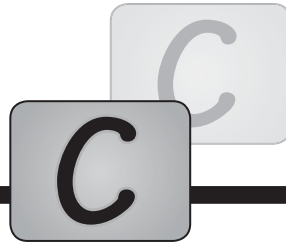
Consider all the factors influencing infrastructure decisions. Building a new highway has implications beyond the immediate highway corridor. For example, concern that a new highway may displace wetlands must be balanced against the reduction in air pollution that will result from decreased traffic congestion.

Do more with less. Clearly, money alone will not solve our infrastructure problems. Solutions to urban problems such as traffic congestion and contaminated water require new technologies and approaches. Research can help identify more efficient designs and longer lasting, low maintenance materials. And, we can change our behavior through recycling, telecommuting, or using mass transit, for example, to reduce the demand on our infrastructure.

Preserve the environment. To use the nation's resources most effectively, we must balance environmental and economic goals. 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 gained from infrastructure improvements, there are broader community benefits. For example, even though you may not use the new mass transit system, its construction will reduce traffic congestion on local roads and increase nearby property values.

Bridges



There are 3,591 bridges in Los Angeles County. These include bridges owned and/or maintained by Caltrans, the City of Los Angeles, the County of Los Angeles and 70 other cities. Caltrans has 2,033 bridges; the City of Los Angeles has 533 bridges; the County of Los Angeles has 257; and the other cities have 768.

Assessment of Existing Bridges

The condition of bridges within Los Angeles County was determined by inspections and ratings according to national standards established by the Federal Highway Administration (FHWA). Federal laws require bridge inspections every two years.

Federal Funds for bridge improvements are available based on the Sufficiency Rating (SR). The SR is an overall condition score that combines a number of factors including condition, traffic, and geometry which ranges from 0 to 100. A 100 score is the best and 0 is the worst. The SR score for each bridge was matched to a letter grade using a common grade scale. Letter grades for individual bridges were averaged to obtain a cumulative score for all the bridges.

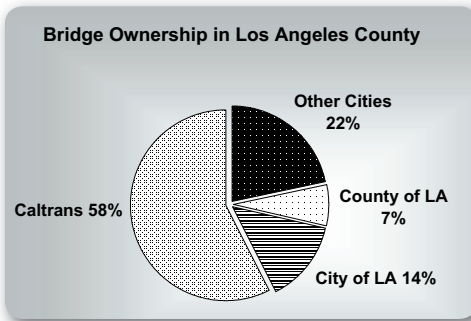
Other methods used by the FHWA to track the condition of bridges are the designations Structurally Deficient and Functionally Obsolete. These designate bridges that do not meet current standards. A structurally deficient bridge may need repair or rehabilitation on a major structural element (i.e., the deck). A functionally obsolete bridge has older design features. While it is not unsafe, it may not fully accommodate current traffic volumes, vehicle sizes or vehicle weights. The structurally deficient and functionally obsolete designations were used to help estimate the type and cost of improvements needed.

Final Grade

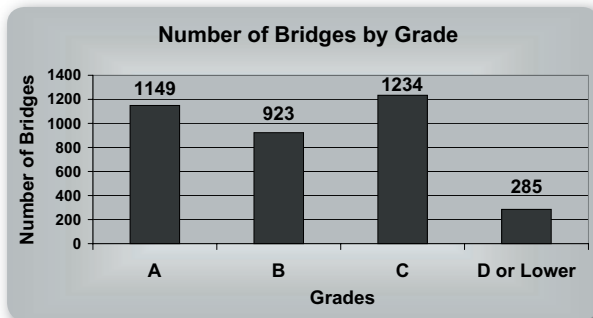
Based on the condition data available, our bridges rate a “C.”

Investment Needs

The work needed to improve the condition of the bridges with lower SRs includes upgrading of older safety rail, adding lanes to bridges (widening) and replacement of major parts or entire bridges. The estimated investment costs were based on the recent cost analysis for bridge work performed by the City of Los Angeles. The total infrastructure investment needed for all bridges within Los Angeles County is estimated to be \$5.3 billion.



An \$826 million Five Year Capital Improvement Plan (CIP) is recommended. The plan is weighted to deal with the worst bridges first. Addressing the worst bridges first will provide the greatest improvement in the overall grade of the bridges. At the same time, progress will be made on less urgent improvements.



Recommendations

- ▶ Support increased funding of the Federal Highway Bridge Rehabilitation and Replacement (HBRR) Program.
- ▶ Address identified bridge improvements in each jurisdiction's Capital Improvement Plan.
- ▶ Support modification to HBRR regulations to increase participation in bridge rehabilitation projects that enhance regional traffic flow.
- ▶ Support reactivation of the HBRR funding for bridge safety rail replacements.

Sources

- ▶ Federal Highway Administration, National Bridge Inspection Standard
- ▶ California Department of Transportation (Caltrans)
- ▶ County of Los Angeles
- ▶ City of Los Angeles

Dams



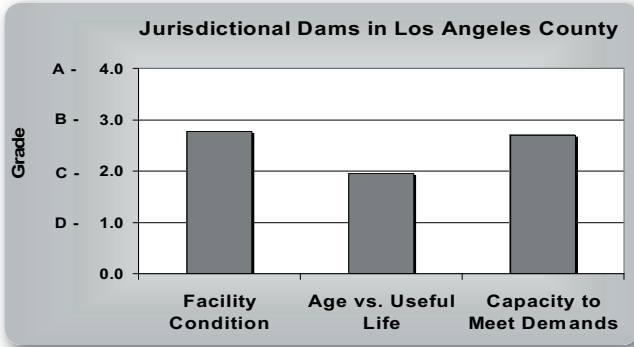
Dams

There are 96 facilities in Los Angeles County classified as dams by the California Department of Water Resources, Division of Safety of Dams (DSOD). These facilities are maintained and operated by various owners and are located throughout the County. Many serve a vital role as part of the County's Flood Control system holding back storm runoff and capturing sediment washed from the hillsides. Other facilities provide water conservation or water storage to meet supply needs. The facilities consist of concrete and earthen embankment dams in natural canyons and debris basins in natural streams, as well as reinforced concrete tanks. DSOD is responsible for dam safety for 90 of these facilities, while 6 are owned and operated under the jurisdiction of the United States Army Corps of Engineers (Corps).

Assessment of Existing Dams

A committee comprised of dam engineers from DSOD, Los Angeles County Department of Public Works, Metropolitan Water District of Southern California and the Corps rated the dams in Los Angeles County based on three factors: Facility Condition which includes physical condition of the dam, amount of deferred maintenance, frequency of dam inspections, condition of monitoring instrumentation, and identification of any unsafe conditions at the dam; Facility Age vs. Useful Life which rates the facility based on its age, whether or not it has received significant rehabilitation, and if it meets relevant standards for its current use; and Capacity to Meet Current and Projected Demands which addresses whether or not the facility meets its original purpose and function (has capacity been reduced or restricted?) and if it can withstand anticipated physical demands such as floods and earthquakes.

Facility Condition and Capacity to Meet Current and Projected Demands were considered the most important factors related to the safety of a dam. These factors were weighted equally, while Facility Age vs. Useful Life was given half the weight in determining an overall rating.



Final Grade

The overall rating for the 96 dams in Los Angeles County is “B-“. This is the same grade assigned in 2002 when Facility Condition was the only factor used for the rating.

Investment Needs

Many of the dams in Los Angeles County are over 50 years old and their auxiliary mechanical and electrical components are nearing the end of their useful life. In order to keep existing dams in safe operating condition, an annual maintenance and rehabilitation investment is needed. The cost of required annual operation and maintenance for dams in Los Angeles County is in excess of \$50 million. Additionally, the cost for necessary seismic rehabilitation and major upgrades to Los Angeles County dams over the next five years is in excess of \$75 million. Without this investment, the structural and functional condition of these dams will deteriorate, and flood protection and water conservation for the general public may be jeopardized.

Recommendations

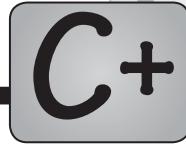
- ▶ Support continued funding to keep the County’s dams in good operating condition.
- ▶ Support additional State and Federal funding through grants or

other programs for required seismic rehabilitation and upgrades to major dams in Los Angeles County to restore or increase their flood control and water conservation capabilities.

Sources

- ▶ Army Corps of Engineers, Los Angeles District
- ▶ California Department of Water Resources, Division of Safety of Dams
- ▶ County of Los Angeles Department of Public Works
- ▶ Metropolitan Water District of Southern California

Drinking Water



The drinking water system in Los Angeles County is comprised of many separate systems ranging from small to one of the largest in the nation. The 10 million residents living within the County are served by numerous municipal systems, water districts and private water companies. Two-thirds of the County's water is imported from the Colorado River and Northern California. Ensuring a safe, reliable water supply for all residents is of the utmost importance if we are to maintain our current lifestyle and protect the public health.

Assessment of Existing Systems

The County's drinking water system was assessed based on evaluation of three major factors: condition of facilities; capacity of facilities; and operation of facilities.

The condition of the drinking water system facilities earned a rating of "C-." While the larger facilities used to convey imported water to the County are in good condition, challenges still persist in funding the replacement of the smaller, local water distribution pipelines. A large percentage of these smaller water pipelines were installed between the early 1900s and 1950 and are quickly reaching the end of their useful life. It is estimated that over 5,000 miles of these aging water pipes must be replaced within the next 10 to 20 years.

The capacity of the County's water system is rated "B." Billions of dollars have been invested to ensure greater water supply and reliability through the construction of new reservoirs and conveyance pipelines over the past two decades. Nevertheless, both imported and groundwater supplies are at risk due to environmental concerns, water rights reallocations, and contamination. As the County continues to grow, new supplies will be needed to offset anticipated losses in imported water as other southwestern states also continue to grow.

Looking toward the future, water recycling, ocean water desalination and increased efficiency in water use and conservation will be essential to meet our water demand.

Water quality was found to exceed the regulatory standards and earned an “A.” However, problems do occasionally occur, requiring facilities to be temporarily or permanently removed from service. Future investment will be needed to prevent and quickly detect contamination. As new contamination is identified, measured, and regulated, the cost to provide safe water will continue to increase.

Final Grade

Applying a weighted grade to each of these categories gives an overall grade for the County drinking water systems of “**C+**.”

Investment Needs

Our largest challenge over the next ten years out will be funding the replacement of aging water distribution pipelines serving Los Angeles County residents. Systematic and timely investment of approximately \$3 billion within the next five years is needed for constructing water projects, including rehabilitation and replacement of the aging infrastructure. Water agencies in Los Angeles County have the ultimate responsibility for keeping drinking water safe and reliable by adhering to regulatory health standards and making necessary improvements.

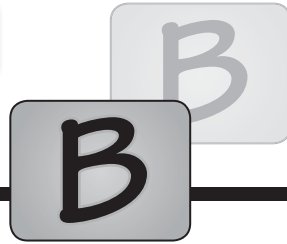
Recommendations

- ▶ Rehabilitate or replace older facilities, including improving hydraulics in undersized facilities to meet future demands.
- ▶ Invest in new resources and technologies to continue to meet growing demand and stringent water quality standards.
- ▶ Manage prudently including maximizing water reclamation where feasible.
- ▶ Support public and private investment to maintain a safe, reliable water supply and distribution system, and protect the public health.

Sources

- ▶ Los Angeles Department of Water and Power
- ▶ The Metropolitan Water District of Southern California
- ▶ California Water Service Company
- ▶ City of Cerritos
- ▶ City of Downey
- ▶ City of Lakewood
- ▶ City of Long Beach
- ▶ City of Manhattan Beach
- ▶ City of Paramount
- ▶ City of Santa Fe Spring
- ▶ City of Signal Hill
- ▶ City of Southgate
- ▶ Southern California Water Company
- ▶ City of Pasadena
- ▶ City of Santa Monica
- ▶ City of Torrance
- ▶ Financial projections from the Los Angeles Department of Water and Power 10-Year Capital Improvement Program (CIP) and the Metropolitan Water District's 3-Year CIP

Flood Control



Flood Control

During the record-setting 2004-05 rainy season, the flood control system performed as designed, with local flooding reported only in areas such as Sun Valley where a regional flood control system does not exist. The Los Angeles County Flood Control District (LACFCD) and the cities within Los Angeles County have constructed a comprehensive and effective flood control system that includes dams, open channels, debris basins, underground storm drains, and water conservation facilities. Recently the county and cities have expanded their focus to managing not only the quantity of stormwater but also managing its quality: from preventing flooding to preventing pollution as well. This Report Card update provides a condition assessment for the County's channels and storm drain systems using data from the LACFCD and the cities of Long Beach, Los Angeles, and Santa Clarita, which provide flood protection for 85% of the County.

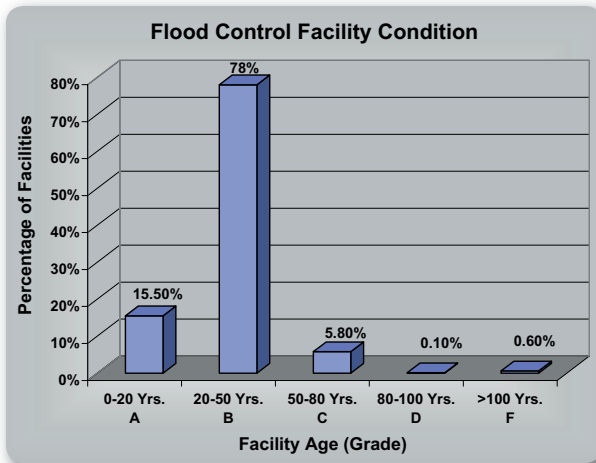
Existing Flood Control Facilities

Age is a primary factor affecting the condition of flood control facilities. A scoring system was applied to the 5,731 miles of channels and storm drains. An "A" was given to facilities built in the last 20 years, a "B" if built 20 to 50 years ago, a "C" if built 50 to 80 years ago, a "D" if built 80 to 100 years ago, and an "F" for facilities built over 100 years ago. The average grade given is a "B-."

Effectiveness

The Federal government designates flood hazard areas as Flood Zone A, and requires inhabitants to carry mandatory flood insurance. Less than 5.7% (177.5 square miles) of the City of Los Angeles and the unincorporated area of the County is designated Flood Zone A.

With such a small area subject to mandatory flood insurance and minimal drainage complaints, the effectiveness of the flood control system is rated “A.”



Final Grade

Applying an equal weight to each of these conditions, the overall grade for the flood control infrastructure for Los Angeles County remains a “B.”

Funding Needs

In order to keep the flood control facilities of the cities of Los Angeles, Long Beach, and Santa Clarita as well as the Los Angeles County Flood Control District (LACFCD) in good operating condition, an estimated additional investment of \$147 million annually is required. This estimate considers the life expectancy of each type of facility and the annualized cost to replace them. It addresses construction and replacement only and does not include necessary ongoing maintenance, nor does it address water quality or water conservation projects.

The total presented does include \$72 million annually to address local flooding problems within the cities of Los Angeles, Long Beach, and Santa Clarita. It is important to note that during the storms of 2005, local flooding within the City of Los Angeles may have been caused by insufficient regional flood control infrastructure. This estimate to address localized flooding includes only 100 of the 400 top flood

control projects awaiting funding listed by the City of Los Angeles. Additional funds are required to address all projects on the priority list.

Without this needed investment, the County's flood control system will deteriorate and flood protection for the general public will be jeopardized.

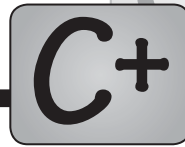
Recommendations

- ▶ Support additional funding to keep the County's flood control infrastructure in good operating condition
- ▶ Continue to expand the view of flood control to include improving water quality and reducing pollution.
- ▶ Support local agencies in their efforts to obtain additional funding to deal with the unfunded water quality mandates.

Sources

- ▶ LACFCD Maintenance Management System (MMS) and other databases utilized
- ▶ by the County of Los Angeles Department of Public Works and the cities of
- ▶ Long Beach, Los Angeles, and Santa Clarita in their maintenance efforts.
- ▶ Flood insurance information was provided by the City of Los Angeles.
- ▶ Flood Zone A area, Federal Emergency Management Agency's Flood Insurance Rate Maps.

Parks



Parks bring a social benefit to the community by providing individuals and families with a natural and safe environment. The intrinsic value provided includes recreation, economic, social and environmental benefits. Individuals and families traditionally view and use parks as an oasis of natural beauty and serenity with the purpose of providing pleasure and creating community. Parks are now transcending this role to become the catalyst of a community's social network, offering a multitude of activities and events to the public that enhance their health and well-being. This interaction strengthens a community bond in which social values and beliefs are transmitted, shared and respected. Urban parks increase the property values of surrounding homes and help build stronger communities by maintaining current residents and attracting prospective residents into the area. Parks are central to the quality of life and offer all age groups, including tots, children, teenagers, adults, and seniors, the opportunity to congregate and enjoy leisure activities.

The Los Angeles City Department of Recreation and Parks operates over 600 recreational and park facilities. These facilities total over 15,600 acres that stretch from the San Fernando Valley to San Pedro. The Department is responsible for a variety of recreational and park facilities that include neighborhood, community and regional parks, recreation centers, senior citizen centers, childcare centers, camps, golf courses, swimming pools, tennis courts, ball fields, soccer fields, skate parks, lakes, beaches, museums, historic sites, camps, golf courses, swimming pools and tennis courts and recreation programs to meet the needs of 3.5 million City residents. This system includes the same type of infrastructure found in every municipal jurisdiction, including roads, sewers, storm drains, lighting, bridges, and buildings.

The County of Los Angeles Department of Parks and Recreation is entrusted with the responsibility of meeting the diverse and innovative needs of the 10 million residents of Los Angeles County. Department operations are divided among six agencies that are responsible for providing a system of recreational facilities and programs to benefit residents and visitors to Los Angeles County. It operates facilities totaling 65,528 acres, with over 120 facilities including local and community regional parks, regional parks, natural areas, wildlife and wildflower sanctuaries, botanic gardens, and golf courses. Amenities at these facilities include swimming pools, baseball and softball diamonds, soccer fields, jogging trails, fishing and boating lakes, bicycle, equestrian and hiking trails.

Assessment of Parks

The Los Angeles City Department of Recreation and Parks used the same evaluation method that it utilized for the 2003 Infrastructure Report. An evaluation form was created to capture the current condition of the widely varied types of parks and facilities. Each facility and feature received a letter grade (A, B, C, D, or F) based on criteria provided for each facility and facility component. The evaluations were conducted by a team of professionals (e.g., Recreation, Maintenance, and Construction) skilled and knowledgeable in their specific area.

The City's evaluations and resulting grades demonstrate that there are facilities operating below a desirable standard. Facilities and facility components such as pools, building roofs and floors, stand alone rest rooms, and play areas/play surfaces, were identified as priorities for immediate repair, upgrade, and replacement. There are underserved populations, including preteens, teens, families, low-income families, active seniors, and transit dependent households, in many areas of the City. The evaluations identified many communities which need additional parks and recreation facilities, limiting the Department's ability to offer additional recreation programs needed by the community.

The Los Angeles County Department of Parks and Recreation's recent infrastructure inspection and evaluation of facilities determined that a relatively high number of maintenance repairs are needed. As local

communities increase in population, so do the budgetary constraints in the maintenance of existing parks and the development of new facilities. Although there is a dire need to use funds to pay for these rising costs, park facilities must compete with other municipal services for limited financial resources.

The evaluations conducted by the Los Angeles County Department of Parks and Recreation considered the following three factors: usability, structural condition, and aesthetics/appearance. While different methodologies were used by the City and County, the two agencies were consistent in their overall resultant grade of C+.

Safe, attractive, and accessible facilities are necessary in order to provide park patrons with the dynamic recreational programs they need. The condition of a facility's infrastructure, the level of maintenance it receives, and the type and number of specific facility features (e.g. tennis courts, fields, etc.) have a direct relationship to serving the needs of the local community. Analysis of the infrastructure results indicates three significant contributing factors that cause park and recreation facilities to receive low grade evaluations: overuse, deferred maintenance, and age.

Final Grade

The final grade for park infrastructure in Los Angeles County is “**C+.**”

Investment Needs

The 2002 Infrastructure Report Card on Parks estimated that \$1.29 billion was needed to address unmet park infrastructure needs and enhance efforts to maintain current and future Parks infrastructure. During the past three years these needs have basically gone unnoticed. Currently, that figure has grown to more than \$1.3 billion in infrastructure needs to address buildings, roofs, pools, gymnasiums, irrigation systems, ball field and turf renovations, picnic shelters, play equipment, tree service, trails, roadways and parking lots, and lakes.

Furthermore, money is needed for land acquisition to acquire and develop new park facilities in urban areas and under-serviced communities within Los Angeles. This will help provide children and families with recreational opportunity, in addition to economic, social and environmental benefits that have a positive impact on their well-being.

Recommendations

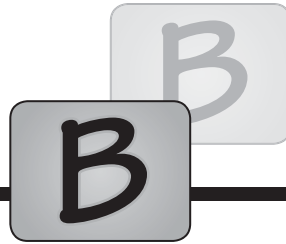
Although the Parks' financial resources are limited, alternative methods to increase funds can be developed. The following recommendations reflect strategies that are geared to raising awareness and finding solutions to the infrastructure financial dilemma:

- ▶ Formulate an Action Plan for facilities and programs based on infrastructure results
- ▶ Inspect and evaluate facility infrastructure to determine unmet needs
- ▶ Develop a prioritized infrastructure needs list with corresponding dollar amounts
- ▶ Implement a yearly preventative maintenance and deferred maintenance program
- ▶ Identify available funding within the current budget
- ▶ Solicit partnerships with media corporations and/or celebrities to promote the quality of life benefits that parks and recreation provide families
- ▶ Increase funding to assist jurisdictions in meeting the park acreage standards set by the National Recreation and Parks Association of 4 acres of land per 1,000 residents.
- ▶ Identify and prioritize future park locations and program needs.
- ▶ Identify new park funding opportunities from state and federal agencies including ballot propositions.

Sources

- ▶ Los Angeles City Department of Recreation and Parks
- ▶ County of Los Angeles Department of Parks and Recreation

Ports



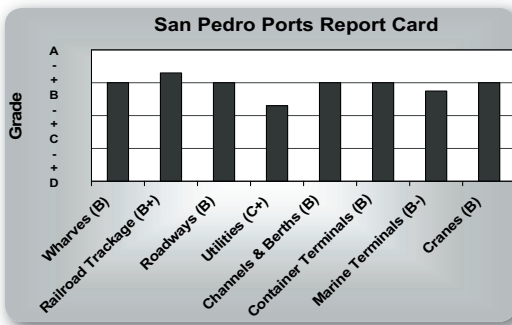
The San Pedro Bay Ports consist of the Port of Long Beach and Port of Los Angeles (Ports) and represent the fifth busiest shipping terminal complex in the world. The Ports of San Pedro Bay have conducted an infrastructure assessment of the entire Harbor District using existing records. The assessment consisted of evaluating eight different components of the Ports' infrastructure, including wharves, railroads, roadways, utilities, channels and berths, container terminals, other marine terminals, and gantry cranes. Together they provide the basis for the efficient operation of the Ports' system. To ensure a consistent process to grade the components, a scoring system was jointly developed by the two Ports.

The scoring system was generally based on the age of facilities in the Port's Harbor District as compared to its useful life or the physical condition of the facilities. A higher grade was given for the more recently constructed improvement with an "F" given when the useful life was exceeded. The useful life utilized was: container wharves, 50 years; other wharves, 75 years; railroad trackage, 50 years; utilities, 50 years; and cranes 30 years. The results of "levels of service" analysis were factored into the scoring for roadways; water depth and sufficient terminal acreage were factored into the channels and berths, container terminals, and other marine terminals components. Roadway conditions are based on vehicular levels of service.

The scoring resulted in the grade for each component as shown in the graph on the page:

Final Grade

The overall grade for the San Pedro Bay Ports based on an equal input of each of the eight components is a "B" grade.



The Ports and their infrastructure have an important role in the movement and supply of our nations goods and materials. The overall infrastructure in the Ports is in good shape. To maintain current levels, the regular assessment and upgrade of the Ports' infrastructure is vital to facilitate the cargo exchange from water to land via rail or truck and visa versa. It is equally vital to ensure an on-going maintenance program and continued redevelopment for the reliable movement of cargo. This extends outside of the Ports Harbor Districts through connecting infrastructure such as the Alameda Corridor for trains or truck routes like the I-710 freeway.

Investment Needs

Handling more than 40% of the nation's waterborne cargo, the San Pedro Bay Ports have experienced an average of 7% increase in cargo each year since the mid-1980's. In 2004, a total of 13.4 million twenty-foot containers were handled in the Port complex. It is projected that by 2010, a total number of 19.7 million twenty-foot containers will be handled in the Port complex. In addition, the Port handles other commodities such as liquid, auto's and bulk.

The San Pedro Bay Ports are looking at continued major

Federal and State Funding	
Category	Federal/State Share
Dredging	\$200 Million
Roadways	\$190 Million
Wharf Cold Ironing	\$160 Million
Bridges	\$640 Million
Railroads	\$140 Million
Security	\$270 Million
Waterfront Development	\$200 Million
Total: \$1.8 Billion	

improvements with total investments nearing \$6.5 billion forecasted over the next five years. A major portion of these investments is for terminal developments in both Ports and for infrastructure, both

new and upgraded. Although a large portion of the funding for these improvements comes from revenue generated by the shipping companies, there is a need for state and federal assistance in the amount of \$1.8 billion for a portion of the infrastructure related improvements and particularly for assistance of needed roadway, rail, bridge and security project. It is equally important that the adjoining roadways, freeways, bridges, and railways in the surrounding region receive improvements for the efficient movement of goods through this global gateway.

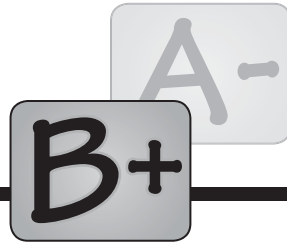
Recommendations

- ▶ Support federal and state funding of the following San Pedro Bay Ports infrastructure items over the next five years. These items have received similar funding in the past and continue to require outside state and/or federal funding.
- ▶ Bridge amount includes funding for the replacement of the Gerald Desmond Bridge and improvements to several over crossings of the I-710 Freeway. The Wharf Cold Ironing refers to ship to shore electrical power program or alternative maritime power. This will enable ships to turn off their own power and plug into an electrical power source on land, which drastically reduces emission of pollutants into the air. The Federal Transportation Bill (TEA-21) was recently passed which will provide approximately \$110 million in funding towards the Gerald Desmond Bridge and other infrastructure projects. This amount is minimal compared to the overall need.

Sources

- ▶ Facilities Master Plan for the Port of Long Beach, 2004
- ▶ Port of Los Angeles 2003 Annual Report and Facilities Guide
- ▶ Ports of Long Beach/Los Angeles Transportation Study, June 2001
- ▶ Marine Transportation System, Southern California Freight Movement Infrastructure Needs Summary, 2002
- ▶ Port of Los Angeles Baseline Transportation Study, April 2004
Port of Los Angeles Rail Synopsis, July 2004
- ▶ Port of Long Beach Rail Master Planning Study, 2005
- ▶ September 16, 2005 — San Pedro Bay Ports' Report Card

Solid Waste



Los Angeles County has the largest and most complex solid waste management system in California. In 2004, the County disposed of an average of 43,000 tons of solid waste per day. Since the average disposal rate is anticipated to increase to 45,000 tons per day by 2020, traditional and novel approaches are actively being explored to ensure adequate disposal capacity.

Assessment of Existing Solid Waste System

Solid waste collection is conducted by approximately 100 private waste haulers and several governmental agencies. These haulers dispose of waste at 12 municipal solid waste landfills, 2 waste-to-energy facilities, and 5 inert waste landfills. Even with numerous facilities available, solid waste managers are faced with various challenges, including decreasing landfill capacity, overcoming public opposition to establishing new facilities, recycling and disposal constraints, and transportation issues.

Transportation Issues

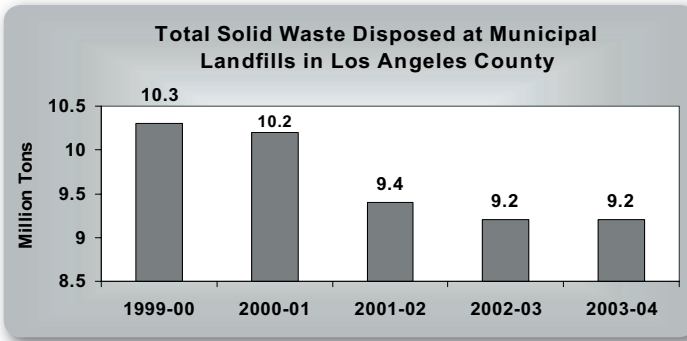
Every component of the County's waste disposal system relies on transportation infrastructure. Collected refuse and recyclables must be moved to processing and disposal facilities. Many jurisdictions collect refuse, recyclables, and green waste separately. At a time when jurisdictions are curtailing pavement maintenance programs, the increased truck traffic has resulted in further pavement deterioration.

Hauling waste by rail to remote sites offers a long-term alternative for the County's waste disposal needs. However, according to experts, regional rail operations will face a serious shortage of track capacity by 2010. One method to facilitate the availability of track space for waste-hauling trains is to ensure that the necessary solid waste

infrastructure is sited near freeways and rail lines, although siting such facilities may be difficult in heavily urbanized Los Angeles County.

Recycling

To reduce landfilling of solid waste and comply with California's Integrated Waste Management Act (AB 939), jurisdictions are aggressively implementing a myriad of waste prevention, recycling, and composting programs. These programs have allowed County jurisdictions to collectively achieve a waste reduction rate of 47%. As a result, more than 100 million tons of solid waste has been diverted from landfills since 1990 – equivalent to filling the Rose Bowl 285 times over. Moreover, the per capita disposal rate was reduced from



3,200 lbs/person/year in the late 1980s to 2,300 lbs/person/year in 2004. AB 939 sets the mark at 50% reduction of total waste disposed for all jurisdictions, so work remains to be done.

Conversion Technology

Conversion technology refers to converting solid waste into useful products or renewable energy. If fully developed, these technologies (already common in Japan and Europe) would reduce dependence on landfilling and fossil fuels, while complementing California's recycling infrastructure and complying with strict environmental safeguards.

The County of Los Angeles Department of Public Works, the Los Angeles County Integrated Waste Management Task Force, the County Sanitation Districts, the City of Los Angeles, and others are

working together to develop a demonstration conversion technology facility in order to assess logistical and economic feasibility and collect additional data. Decision-makers will use this information to formulate appropriate public policy regarding the future development of conversion technologies.

Final Grade

The overall grade for Solid Waste Management is “**B+**.”

Investment Needs

It is estimated that over \$200 million per year for the next five years is needed to maintain and operate the solid waste infrastructure, including implementing the recommendations identified below.

Recommendations

To build on the progress made in Los Angeles County, ASCE recommends:

- ▶ Support the necessary infrastructure for the waste-by-rail system.
- ▶ Provide resources to implement additional recycling programs, including countywide and regional approaches to waste management.
- ▶ Stimulate markets for recyclables using methods such as extended producer responsibility and other sustainable practices.
- ▶ Provide additional resources to develop alternative waste management technology facilities and increase coordination among stakeholders.

Sources

- ▶ County of Los Angeles Department of Public Works
- ▶ County Sanitation Districts of Los Angeles County
- ▶ City of Los Angeles Bureau of Sanitation
- ▶ City of Burbank
- ▶ SCS Engineers

Streets and Highways



D+

The assessment of Los Angeles County streets and highways consisted of grading pavement condition and traffic congestion. The pavement condition component was scored based on maintenance records from Caltrans, the City of Los Angeles, and the County of Los Angeles. Traffic congestion was scored based on capacity data from the Metropolitan Transportation Authority (MTA) Congestion Management Program Reports.

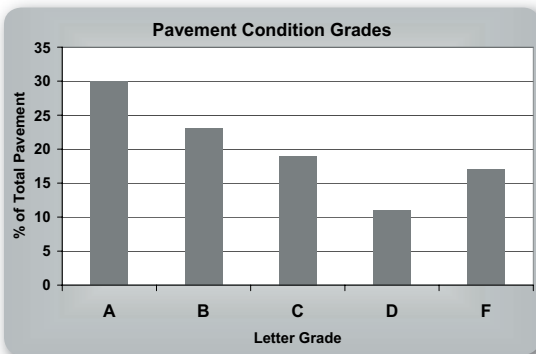
Assessment of Streets and Highways

Pavement Condition

Los Angeles County and the City of Los Angeles use computerized pavement management systems to rate pavement inventories. Individual pavement segments are rated on a scale of Very Good to Poor. Grades of “A” through “F” were assigned based on pavement segment ratings (an “A” grade corresponding with Very Good). A total of 1.8 billion square feet of street and highway pavement was studied.

An additional 414 million square feet of Caltrans pavement was rated using Caltrans’ pavement assessment methods. The Caltrans grades (“A” through “F”) were incorporated into the overall grade

of “C-.” The local pavement condition has worsened due to lack of investment funding and the enormous quantity of rainfall the Southern California area received this year.



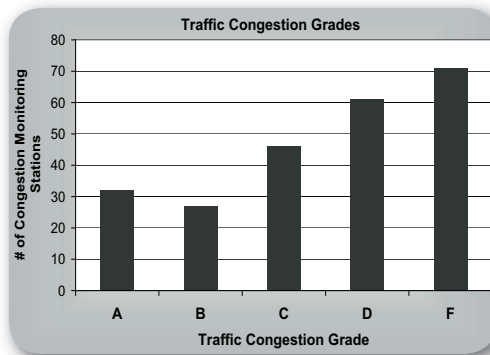
Traffic Congestion

Traffic congestion was scored on freeway and arterial level of service (LOS) data contained in the MTA Congestion Management Program (CMP) Reports for 2004. Freeway LOS is a ratio of vehicles counted over capacity. Arterial LOS uses a ratio of vehicles counted over intersection capacity. LOS data for freeways and arterials was measured during both AM and PM peak traffic conditions. The study includes 156 arterial and 81 freeway monitoring stations.

Like pavement condition, letter grades assigned to LOS scores are based on an “A” to “F” grading scale. The combined freeway and arterial grade is “D.”

The 2004 MTA CMP showed that half of the freeway system operates at the most congested levels in the morning and afternoon rush hours. Many freeway segments experience congestion in both directions during

these times, an unfortunate expansion of the traditional suburb-to-downtown commute pattern. Similarly, 40% of arterial intersections in the morning rush hour and half of the intersections in the afternoon rush hour operate at these diminished LOS levels. While arterial intersection levels of service have experienced modest changes since the 2002 ASCE Report Card, freeway levels of service rated “F” have increased 10%.



Final Grade

Since the last Report Card, almost \$4.5 billion of transportation funds have been diverted, either through loans or suspension of Proposition 42 funds and loans of state highway accounts funds, in California. During the same time the vehicle miles traveled (VMT) on our streets and highways have gone up by almost 15%, and the upward trend is continuing. By the contrast, during the last three years cost of highway projects has significantly increased due to

several factors. First, there has been a drastic increase in cost of construction projects over the last three years compared with the last three decades. The compounded rate of increase for Caltrans Index between 1972-2002 was 2.6% increase per year. However, the average increase of Construction Industry Materials Price Indices over the last three years is about 7%. Although many factors, national and global, are contributing to this change, the end result is nonetheless a substantial increase in the cost of project delivery in Los Angeles County. Second, the average real estate prices in many parts of Los Angeles County have almost doubled over the last three years, and this would substantially increase the cost of right-of-way acquisitions for street and highway projects. The combined effects of increases in project costs with the loss of billions of dollars of transportation funds has caused a significant adverse impact in our ability to meet the badly needed transportation improvements in Los Angeles County. Furthermore, the demand on certain streets and highways in Los Angeles County has also increased substantially as the result of Twin Ports activities, caused by increases in the national and regional economies. In view of all these changed conditions since the 2002 report card, the grade for Streets and Highways is now a **D+**.

Investment Needs

An investment of approximately \$2 billion is required to improve the conditions of roadway pavement to an acceptable state of repair. A planned approach to pavement investment suggests that \$1 billion is needed over the next five years. \$175 million is required annually to maintain acceptable pavement condition. State highways and freeways require an additional \$2.6 billion in roadway conditioning and maintenance over the next five years.

Without this additional funding, the overall condition of pavement in Los Angeles County will continue to decline each year. This decline would result in increases in vehicle repair costs, traffic delays, fuel consumption, and vehicle emissions.

To relieve congestion, the MTA estimates that approximately \$9.6 billion is required for freeways and \$2.5 billion for arterial roadways through 2026. MTA also indicates \$1.74 billion is needed for priority highway projects over the next five years. Caltrans congestion relief projects have a funding shortfall of \$1.1 billion, where \$4.5 billion is

needed to keep pace with worsening congestion over the next five years. The City of Los Angeles will need \$319 million for capital improvement projects over the same period. Without additional investment, peak hour speeds will continue to decline.

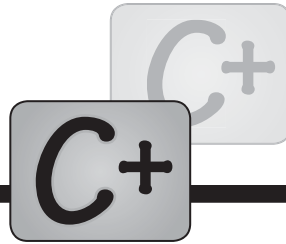
Recommendations

- ▶ Endorse both the State and Los Angeles County MTA Consensus Principles for Reauthorization of the Federal Transportation Equity Act for the 21st Century (TEA-21).
- ▶ Increase Congestion Mitigation and Air Quality Improvement (CMAQ) funding and Surface Transportation Program (STP) funding for Los Angeles County without adversely impacting other transportation funding programs.
- ▶ Endorse development and implementation of improvements to increase arterial and freeway system capacity and efficiency.
- ▶ Endorse the Los Angeles County Mobility-21 resolutions that seek additional revenues to meet Los Angeles County's street and highway needs.
- ▶ Endorse efforts to protect Proposition 42 funds for their designated transportation improvement purposes.

Sources

- ▶ 2002 City of Los Angeles Rapid Infrastructure Condition Assessment Draft Report
- ▶ Los Angeles County Department of Public Works, Road Maintenance
- ▶ 2001 MTA Long Range Transportation Plan
- ▶ 2004 MTA Congestion Management Program Report
- ▶ 2003 MTA Short Range Transportation Plan For Los Angeles County
- ▶ 2002 MTA Capacity Enhancement and System Preservation Needs Assessment, Incorporated Cities – County of Los Angeles
- ▶ Caltrans, California Department of Transportation

Transit



Los Angeles County is a highly urbanized county consisting of over 4,000 square miles, with 88 Local Cities and large unincorporated areas, and a population of approximately 10 million. Public transportation includes rail services, busses, and paratransit. In Los Angeles County, Metrolink rail provides service on 7 routes serving 54 stations in the counties of Los Angeles, Orange, Riverside, San Bernardino, Ventura and Northern San Diego. Metro operates 4 rail and subway lines providing transportation to downtown from outlying areas.

While Metro is the predominant regional transportation operator with 189 bus routes, ridership continues to increase on the 16 municipal operator (Antelope Valley Transit Authority, Arcadia Transit, Claremont Dial A Ride, Culver CityBus, Foothill Transit, Gardena Municipal Bus Lines, La Mirada Transit, Long Beach Transit, City of Los Angeles DOT, Montebello Bus Lines, Norwalk Transit System, Redondo Beach WAVE, Santa Clarita Transit, Santa Monica's Big Blue Bus, and Torrance Transit System) transit systems that provide local and regional transportation in various jurisdictions throughout the County. Several Municipal Operators and Local Cities and the County have added routes to either supplement or replace MTA routes, and to add feeder services to the Metrolink and Metro Rail Stations that have been added to their communities. The City of Los Angeles is also developing plans to expand the DASH routes by adding 22 lines. Over 40 cities operate a third tier of fixed route services within their communities providing links to the regional transit systems, and over 80 cities provide paratransit services targeted to meet the needs of transit-dependent seniors, disabled persons and the general public within their communities. In addition, Access Services, Inc. (ASI) operates American Disabilities Act (ADA) paratransit services for all eligible Los Angeles County residents.

Nearly 391 million fixed-route transit trips are taken each year with 68% of the trips provided by Metro, 30% of the trips provided by municipal operators, and 2% of the trips provided by the cities' fixed route services.

Assessment of Current System

Overall, the criteria for assessing the transit system in each category were: Age; Condition; Fleet size; Maintenance and Rehabilitation; ADA Compliance; Parking; and Bicycle amenities. Service Quantity was based on the daily trips provided, the number of people served, and daily passenger miles served. Service Quality was based on vehicle speed, on-time performance, cost per passenger mile, subsidy per passenger mile, and seat capacity.

Fixed Route	Annual Boardings	Revenue Service Hours	Number of Vehicles	% of Boardings
Metro	265,812,052	7,567,118	2,714	68%
Municipal Operators	115,358,309	2,946,975	1,127	30%
Subtotal	381,170,361	10,514,093	3,841	98%
Local Cities	9,585,219	422,215	199	2%
Total Fixed Route	390,755,580	10,936,308	4,040	
Metrolink	63.7 Million			
Metro Rail	10.7 Million			

Transportation Mode Grades

Rail: Metrolink	B
Rail: Metro Rail	C-
Metro and Municipal Transit	C+
Local Fixed Route Transit	C
ADA Regional Paratransit	B+

Metro has added the Gold Line (rail from Pasadena to downtown), several Rapid Bus routes, and has recently implemented the Orange Line (14-mile transitway across San Fernando Valley), however

the region continues to suffer from a number of operating issues that prohibit continued growth:

- ▶ Traffic continues to worsen, which slows buses, effecting on-time performance
- ▶ Additional trips are added to compensate for traffic delays
- ▶ Increased fuel costs

Final Grade

The final grade for the transit system in Los Angeles County is “C+.”

Investment Needs

The Metro 2003 Short Range Plan estimated that over \$12.8 billion is required to fund regional Metro and Municipal Transit improvement priorities through 2009. In addition, the Local Cities Infrastructure Survey indicates a minimum investment need of \$530 million for transit capital, transit technology and operating expenses over the next few years.

Recommendations

- ▶ Fund transit projects and programs identified in the Los Angeles County MTA’s Long-Range Transportation Plan and increase funding for new systems and expansions, buses and bus facilities, transit capital and preventative maintenance, and paratransit capital needs for services provided by Regional, Municipal, County and Local governmental Agencies.
- ▶ Fund transit programs and continue the expansion of Rapid Bus Routes.
- ▶ Incorporate Rapid Bus amenities, Limited Stop Operations and enhanced Transit Stations throughout the County.
- ▶ Develop and fund programs to increase Los Angeles’ awareness of immediate transit needs and long-term benefits including improved air quality, greater access and the greater economy of transit use.
- ▶ Work to develop a consistent and reliable source of funding for public transportation in California and in Los Angeles County.
- ▶ Endorse efforts to protect Proposition 42 funds for their designated transportation improvement purposes.

Sources

- ▶ Metro Long Range Transportation Plan for Los Angeles County 2001
- ▶ Metro Short Range Transportation Plan for Los Angeles County 2003
- ▶ Metro Los Angeles County Regional Transit Plan 2003 to 2007
- ▶ Metro Los Angeles County Regional Transit Plan Update Surveys
- ▶ Access Services Paratransit Update Plan 2003-2004
- ▶ Metro Los Angeles County NTD Reporting 2004
- ▶ Los Angeles County Infrastructure Surveys 2005

Urban Runoff



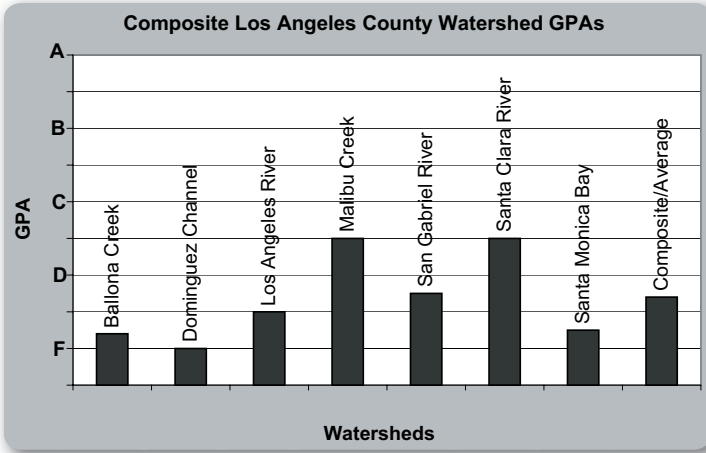
Urban runoff is water that flows off of streets and into our storm drains, flood control channels, creeks and the Pacific Ocean. Urban runoff includes both “dry-weather” flows from activities such as car washing and over-irrigation, and natural stormwater runoff from rainstorms. Both types of urban runoff can be heavily polluted, picking up automotive fluids, pet waste, litter, and other contaminants. The impact of polluted urban runoff is felt by both the natural ecosystem and by humans who come into contact with the water

Assessment of Urban Runoff Conditions

For the 2005 ASCE Report Card, the analysis team developed an assessment methodology, resulting in a regionwide grade. Four equal parameters were chosen as appropriate indicators for water quality. These indicator pollutants are nutrients (from fertilizers), bacteria (from pet waste and other sources), metals (from road residues), and trash.

The scoring was done by watershed. A watershed is the area that drains to a common low point. In Los Angeles County seven watersheds were evaluated which include the land area draining into such low points as the Los Angeles River, Malibu Creek, and the Santa Monica Bay. The watersheds were assessed based on how well they are meeting State water quality standards. Evaluations were made on both water quality in each watershed and the efforts made in the implementation of





improvements. The 2005 evaluation was made on an “A” through “F” scale. An “A” would only be awarded if implementation efforts are successful enough to achieve significant improvement in water quality. An “F” indicates not only poor water quality but also failure to initiate effective water quality improvement efforts. A grade of “B” or “C” indicates efforts are underway, and there is some water quality improvement, but final objectives have not been met.

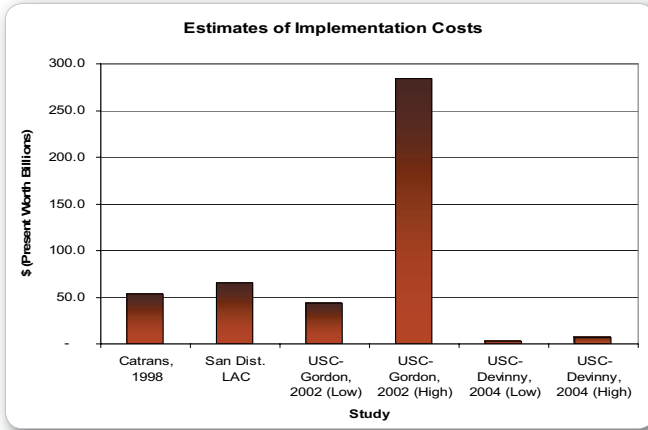
For each watershed and parameter, grades were established and combined for a composite total. A scale was adopted for numerical weighting and development of a Watershed Grade. The seven Los Angeles County Watersheds that were evaluated are shown here.

Final Grade

As shown above, the Composite Los Angeles County Watershed Grade is “D” for the region. The watershed-specific grades are provided below.

Investment Needs

There is significant debate on what investment will be needed to meet water quality objectives. While present estimates for water quality compliance are significant, the estimates range two orders of magnitude - from \$2.8 billion to \$284 billion. The following chart shows the range of implementation cost estimates.



Although the overall grade remained unchanged from the 2002 ASCE Infrastructure Report Card, there are a number of positive trends. The overwhelming passage in 2004 of Los Angeles City Measure O, a \$500 million general obligation bond for water quality improvements, indicates that Los Angeles residents recognize the importance and value of clean rivers, creeks, and beaches. Also, assembly Constitutional Amendment No. 13 currently being considered by the Legislature would potentially allow city and county agencies to raise funds to meet urban runoff needs without going to a public vote.

Recommendations

The following are a list of recommendations related to urban runoff including public education:

- ▶ Continued focus, cost-effective, and implementation efforts improve water quality.
- ▶ Continue to expand the scientific knowledge base to help identify appropriate science-based attainable goals and methods to achieve them.
- ▶ Encourage outreach efforts to not only support water quality goals, but to assist in the securing of adequate resources to work toward these goals.
- ▶ Seek additional sources of funding to assist with water quality improvement and compliance with regulatory requirements.

Sources

Water quality data was compiled by the County of Los Angeles Department of Public Works. Cost data is referenced below:

- ▶ Devinny, Joseph, Sheldon Kamieniecki, and Michael Stenstrom. (Devinny et. al.) 2004. Alternative Approaches to Stormwater Quality Control. Prepared for the Los Angeles Regional Water Quality Control Board. USC Center for Sustainable Cities.
- ▶ California State University, Sacramento (CSUS). 2005. NPDES Stormwater Cost Survey. Prepared for California State Water Resources Control Board. Office of Water Programs CSU Sacramento. January.
- ▶ Gordon, Peter, John Kuprenas, Jiin-Jen Lee, James E. Moore, Harry Richardson, Christopher Williamson. (Gordon et. al.) 2002. An Economic Impact Evaluation of Proposed Storm Water Treatment for Los Angeles County. School of Engineering and School of Policy, Planning, and Development. University of Southern California. November.
- ▶ California Department of Transportation (Caltrans) 1998. Financial and Economic Impacts of Storm Water Treatment, Los Angeles County NPDES Permit Area. Presented to California Department of Transportation Environmental Program Report I.D. #CTSWRT-98-72. November.

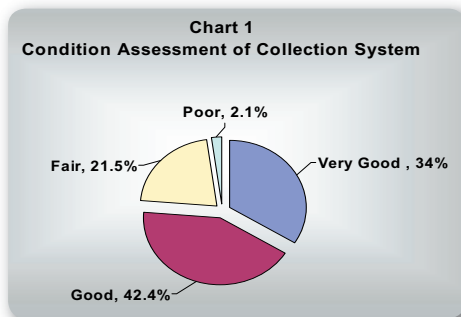
Wastewater System



The Los Angeles County wastewater collection and treatment system consists of numerous separate systems ranging in size from very small to very large. The City of Los Angeles operates and maintains 6,692 miles of primary and secondary sewers, 47 pump stations, and 4 major wastewater treatment plants. The County Consolidated Sewer Maintenance District operates and maintains 5,100 miles of secondary sewers, 153 pump stations, and 4 small wastewater treatment plants. The County Sanitation Districts of Los Angeles County operates and maintains 1,320 miles of primary and secondary sewers, 50 pump stations, and 11 major wastewater treatment plants. Included in this year's survey is assessment information from 22 smaller municipal systems encompassing 6,015 miles of primary and secondary sewers and 53 pump stations.

Assessment of Current Wastewater Treatment System

The existing Wastewater Collection and Treatment System is comprised of three main components: the gravity flow collection system, sewage pump stations, and wastewater treatment plants.



Collection System

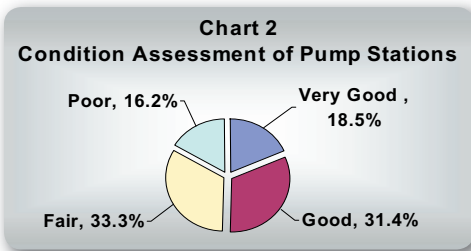
The collection system consists of 3,651 miles of primary sewers (16 inches in diameter and larger) and 15,476 miles of secondary sewers (less than 16 inches in diameter). The collection system was rated using an "A" through "F" grading system. Sewers in excellent condition, with no cracks, tight-fitting joints, and

sufficient capacity to accommodate future growth and wet weather flows were rated an “A.” Sewers that had collapsed and were in need of immediate repair were rated “F.”

The sewer collection system in the County has a combined overall condition rating of “B.” However, 23.6 percent of the collection system, which represents approximately 4,530 miles of sewers, has reached a point where repairs and rehabilitation are needed to keep the system functioning properly.

Pump Stations

There are 303 pump stations within the wastewater collection system.



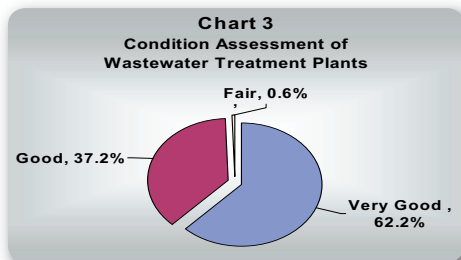
The pump stations were rated using an “A” through “F” grading scale. Pump stations in excellent condition, with sufficient capacity for future wet-weather flows received an “A”

grade. Pump stations in a very deteriorated condition, not meeting design standards, and lacking capacity for dry weather flows received an “F” grade.

The pump stations in the County have a combined overall rating of “C+”. However, 49.5 percent of the pump stations require significant improvements to restore capacity or upgrade deteriorated conditions to keep them functioning properly. Over the next five years all “D” or lower-rated pump stations should be rehabilitated.

Treatment Plants

Wastewater collected throughout the County is treated at one of 19 treatment plants. The treatment plants were rated using an “A”



through “D” grading system. Treatment plants that had sufficient capacity to meet current and future wet weather flows, required only

routine maintenance, and were in full permit compliance received an “A.” Plants that had capacity for only dry weather flows, required extensive maintenance and improvements, and could not consistently meet all permit requirements received a “D.”

The combined rating for the wastewater treatment plants is “B+.” However, ever changing regulatory requirements will require modifications to the existing wastewater treatment plants, even those receiving a high grade of “B” or better.

Final Grade

Applying equal weight to each of these system components, the overall grade for the wastewater system is a “**B**” which compares quite favorably to the national average grade of “D” recently given by ASCE.

Investment Needs

The estimated five-year operation and maintenance budget for the wastewater system is \$2.2 billion. In addition to this, all condition “C” and “D” components should be upgraded, rehabilitated, or replaced. The necessary capital improvement costs to accomplish this goal over the next five years is estimated to be \$2.6 billion.

Recommendations

- ▶ Support funding for an accelerated capital improvement program to protect public health and safety.
- ▶ Support funding for closed circuit television inspection of the collection system to determine structural integrity.

Sources

- ▶ The Consolidated Sewer Maintenance District’s Maintenance Management System and other databases used by the County of Los Angeles Department of Public Works
- ▶ City of Los Angeles Infrastructure Assessment Reports
- ▶ County Sanitation Districts of Los Angeles County Sewerage and Office Engineering Departments

What You Can Do

This guide offers solid proof that much more needs to be done to ensure adequate infrastructure for our region. It is now up to concerned citizens like you, who understand the economic and quality of life benefits of a healthy infrastructure, to push for action.

You have seen the big picture of what's happening in Los Angeles County. Here are some steps you can take help sustain and improve our infrastructure:

- ▶ Learn all you can about the infrastructure problems in your area.
- ▶ Contact the California Department of Transportation, your county and city governments and other sources to learn about plans for ensuring adequate roads, sewers, parks and water systems.
- ▶ Work to help pass local bond issues to repair, replace and expand your roads, parks, water systems, and other infrastructure.
- ▶ Express your concern to public officials, such as city managers, council members, county supervisors, and state and federal legislators. Ask them how they plan to solve infrastructure problems. Urge your neighbors to support your cause.
- ▶ Regularly attend meetings held in your community about pressing infrastructure problems.
- ▶ When you see a problem, find out what level of government has jurisdiction over it. Sometimes various levels of government deal with different aspects of the same problem.
- ▶ Search the Internet. Agencies at all levels of government have Web sites that list laws and regulations that pertain to your issue of concern. These Web sites can be a helpful link to other government and advocacy group resources. If you know of an interest group that deals with the area you're interested in, visit its site.
- ▶ Ask business groups, such as your Chamber of Commerce, to examine the infrastructure in your community and its effect on local businesses, employment and the economy.
- ▶ Write letters to the editor of your newspaper, your state representatives and members of Congress, expressing your concerns and opinions on infrastructure.

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- ▶ Volunteer for, or organize, citizen advisory committees dealing with your community's infrastructure issues.
 - ▶ Support local, state and federal officials who understand and are committed to infrastructure preservation. Ask them to make infrastructure an election issue, just as they would education, crime or health care.
 - ▶ Talk to civil engineers in your area about solutions and needs.

Acknowledgements

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Harvey Gobas, P.E.	Psomas Senior Project Manager, Past President ASCE Los Angeles Section, Chair, 2005 Los Angeles County Infrastructure Report Card
Shahnawaz Ahmad, P.E.	SA Associates President, Past President ASCE Los Angeles Section
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Dennis Mak, P.E.	City of Santa Clarita Senior Engineer
Long Nguyen	Los Angeles County Department of Public Works Civil Engineering Student Worker
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Michelle Leonard	SCS Engineers Vice-President, Solid Waste Planning and Facilities
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Matthew Masuda, P.E.	City of Los Angeles, Bureau of Engineering Civil Engineering Associate
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Hamid Saadatnejadi, P.E.	California Department of Transportation, (Caltrans), District 7 Office Senior Transportation Engineer
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Penny Hill	Los Angeles County Sanitation Districts Recycling Coordinator, Sewerage Department
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Brent Lorscheider, P.E.	City of Los Angeles, Bureau of Sanitation Senior Engineer
Isaac Pai, P.E.	Long Beach Water Department Chief Engineer
Alan Tran	CH2M Hill, Los Angeles Office Engineer
Patrick Udeh	Los Angeles County Department of Public Works Senior Civil Engineering Assistant
Donna Won, P.E.	Los Angeles County Sanitation Districts Senior Civil Engineer, Sewerage Department

Special Thanks To...

Melinda Barrett	Los Angeles County Department of Public Works Head, Public Relations Group, Citizen's Guide Editor
Bernice Franco	Psomas Citizen's Guide Compiler and Graphics Coordinator
April Gallegos	USC Keston Institute for Infrastructure Director, Special Events & Development
Hank Koffman, P.E.	University of Southern California Viterbi School of Engineering Professor of Civil Engineering
Richard Little, AICP	USC Keston Institute for Infrastructure Executive Director
Brian Sasaki, P.E.	Los Angeles County Department of Public Works Deputy Director
Don Wolfe, P.E.	Los Angeles County Department of Public Works Director of Public Works

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Founded in 1852, ASCE has more than 137,000 members worldwide and is America's oldest national engineering society. The Society recently celebrated its 150th anniversary.

The Los Angeles Section of ASCE was formed in 1913. It is the largest section in ASCE, with nearly 4,000 members covering Los Angeles, San Luis Obispo, Kern, Santa Barbara, Ventura, Inyo, Mono, San Bernardino, Riverside, and Orange Counties. Regular meetings of the Section members are held, technical groups have been formed to serve the needs and interests of members in specialized fields of engineering, and a special group has been established to provide a forum for younger members. Career guidance at the pre-college level, as well as curriculum and career selection assistance to civil engineering students, are other activities of the Section. Information on Section activities is available at: www.ascelasection.org.

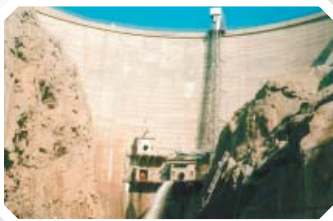


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Los Angeles County
Infrastructure
Report Card



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