

## CONVENTION CENTER

MICLA is not the vehicle for commercial paper when there are existing agreements of governance and control. LA CONVENTION AND EXHIBITION CENTER AUTHORITY has jurisdiction control of the facilities at the LA CONVENTION CENTER by virtue of a Joint Powers Authority. They approved the Final Environment Impact Report for the CONVENTION CENTER EXPANSION in 1986.

Language of the JPA Joint Powers Agreement reads:

*The purpose of this Agreement is to create an agency as a public entity separate and apart from the parties to this Agreement to administer and execute such Agreement, the purpose of which is to provide for the construction and operation of a convention and exhibition hall and related facilities, including any expansion or enlargement thereof (herein sometimes referred to as 'Convention and Exhibition Center') suitable as a place of public assembly for the use, benefit and enjoyment of the public upon a site within City bounded by 11th Street, Figueroa Street, Venice Boulevard and the Harbor Freeway, all as more particularly set forth in Exhibit A hereto titled 'Legal Description - Convention and Exhibition Center Site,' which is incorporated herein by this reference.*

Use of MICLA Municipal Improvement Corporation of Los Angeles would not be appropriate under the terms of the JPA. The proposed Los Angeles Convention Center Commercial Paper Program would need to be under the LA Convention and Exhibition Center Authority.

Please reconsider the entities used to finance the department in relationship to your contractual commitments of governance.

## DEPARTMENT OF PUBLIC WORKS

The 2010-2011 Infrastructure Report Card (attached) totals infrastructure needs at \$9,731,000,000 with a funding shortfall for \$7,840, 000,000. How is this factored in this budget.

Joyce Dillard  
P.O. Box 31377  
Los Angeles, CA 90031

Attachment:

REPORT\_CARD\_INFRASTRUCTURE\_2010\_2011

CITY OF LOS ANGELES  
DEPARTMENT OF PUBLIC WORKS



# infrastructure

2010-11  
report card



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## Welcome Letter

Dear Reader,

The City of Los Angeles Department of Public Works is pleased to present its Infrastructure Report Card (IRC) and hope that you will find it informative.

The purpose of the IRC is twofold. The first is to provide you with the current condition reflected by a grade as compared to the recommended grade for each of the infrastructure systems under the control of Public Works. Secondly, this Infrastructure Report Card gives recommendations on how to improve each of these systems.

On a daily basis, City residents depend on this infrastructure for economic prosperity, public safety, and quality of life. Looking forward, our City will remain competitive through meeting our current and future infrastructure needs by putting the Infrastructure Report Card's recommendations into action.

Sincerely,

### BOARD OF PUBLIC WORKS COMMISSIONERS

  
Cynthia M. Ruiz, President


  
Andrea A. Alarcón, Vice-President

  
Paula A. Daniels, President Pro Tempore

  
Steven T. Nutter

  
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Enrique C. Zaldivar, P. E., Bureau of Sanitation

  
Ed Ebrahimian, Bureau of Street Lighting

  
William A. Robertson, Bureau of Street Services



## What the Letter Grade Means...

Our Infrastructure Report Card has been developed as a resource to analyze the current condition of our key infrastructure assets and provides recommendations on how to maintain and strengthen these assets. This report examines our infrastructure and evaluates the status of assets using a methodology comparable to that used by the American Society of Civil Engineers. Seven key components of each infrastructure system were considered but not weighted, including:

- **Capacity** – Evaluate the infrastructure’s capacity to meet current and future demands through 2015.
- **Condition** – Evaluate the infrastructure’s existing or near future physical condition.
- **Funding** – Identify the current level of funding (from all sources) for the infrastructure category and evaluate the estimated funding needs through 2015.
- **Future Need** – Evaluate the cost to improve the infrastructure and determine if future funding prospects will be able to meet needs through 2015.
- **Operation and Maintenance** – Evaluate the owner’s ability to operate and maintain the infrastructure properly and design the infrastructure in compliance with government regulations.
- **Public Safety** – Evaluate to what extent the public’s safety is jeopardized by the condition of the infrastructure and the potential consequences of failure.
- **Resilience** – Evaluate the infrastructure system’s capability to prevent or protect against significant multi-hazard incidents and the ability to recover quickly and reconstitute critical services with minimum damage to public safety, health, the economy, and national security.

Additionally, throughout the grading process, data was researched, compiled, and analyzed to determine an initial grade and then validated to determine the final grade for each of the City’s infrastructure assets.





<p style="text-align: center; font-size: 2em; color: blue;"><b>A</b></p>	<p style="text-align: center;"><b>Exceptional</b></p>	<p>The infrastructure:</p> <ul style="list-style-type: none"> <li>• meets current capacity and anticipated capacity needs for the next five years,</li> <li>• meets all regulatory requirements,</li> <li>• is within its design lifespan or is regularly inspected and determined to be in good condition, and</li> <li>• has enough funding secured for all anticipated maintenance and upgrades anticipated before 2015.</li> </ul>
<p style="text-align: center; font-size: 2em; color: green;"><b>B</b></p>	<p style="text-align: center;"><b>Good</b></p>	<p>Minor changes required in one or more of the above areas to enable the infrastructure system to be fit for its current and anticipated future purposes.</p>
<p style="text-align: center; font-size: 2em; color: yellow;"><b>C</b></p>	<p style="text-align: center;"><b>Adequate</b></p>	<p>Major changes required in one or more of the above areas to enable infrastructure to be fit for its current and future anticipated purposes.</p>
<p style="text-align: center; font-size: 2em; color: brown;"><b>D</b></p>	<p style="text-align: center;"><b>Poor</b></p>	<p>Critical changes required in one or more of the above areas to be fit for its current and future anticipated purposes.</p>
<p style="text-align: center; font-size: 2em; color: red;"><b>F</b></p>	<p style="text-align: center;"><b>Failing</b></p>	<p>Inadequate to meet current and future needs.</p>

When applicable, industry standard rating criteria were also considered when determining the letter grade for each system. For example, “Bridges” uses the Federal Highway Administration’s Sufficiency Rating as a basis of evaluation for each bridge.



## The Report Card at a Glance

[www.dpw.lacity.org/IRC2011.pdf](http://www.dpw.lacity.org/IRC2011.pdf)

The Department of Public Works is responsible for maintaining the infrastructure systems listed below. This table shows each system's current grade and the recommended grade. Please note that the sections within the IRC are devoted to a specific infrastructure system's history, assessment, and recommendations (including grade determination).

SYSTEM	CURRENT GRADE	RECOMMENDED GRADE
Bridges	<b>C-</b>	<b>B</b>
Flood Control	<b>B-</b>	<b>B</b>
Sidewalks	<b>D+</b>	<b>C+</b>
Solid Resources	<b>B-</b>	<b>B+</b>
Streets	<b>C</b>	<b>B</b>
Street Lighting	<b>C</b>	<b>B</b>
Street Trees	<b>C+</b>	<b>B</b>
Urban Runoff	<b>D</b>	<b>C</b>
Wastewater Collection	<b>B-</b>	<b>B+</b>
Wastewater Treatment Plants	<b>B-</b>	<b>B</b>





## about our department

### We Work for You!

The City of Los Angeles Department of Public Works is comprised of the Board of Public Works and the Bureaus of Contract Administration, Engineering, Sanitation, Street Lighting, and Street Services. We are the City's third largest department and are responsible for the construction, renovation, and the operation of City facilities and infrastructure as well as providing many of the day-to-day services such as trash pick up, street lighting, and street repair to City residents.


As the City of Los Angeles keeps pace with the needs of its people, the Board of Public Works continues its leadership tradition with more than 100 years of service to the community. We are an executive team consisting of five members who are selected and appointed by the Mayor and confirmed by City Council to five-year terms.

We set policy and manage the Department while each of the Public Works Bureaus has a General Manager, appointed by the Mayor. The General Manager is responsible for providing the administrative and financial oversight of the day-to-day operations of the Bureau.

### Quality, Opportunity, and Compliance

The Bureau of Contract Administration constitutes one of the premier contract administration organizations in the world. Inspectors and Compliance Officers apply their technical expertise to ensure that the policies and procedures governing contracting in the City are rigorously and equitably enforced. We work hard to protect the public interest and take satisfaction in knowing that we play a vital role in constructing quality public improvements to be enjoyed by the City's residents.

To achieve this mission, we administer contracts and permits for public works construction and improvement projects such as streets, sewers, storm drains, street lighting, and public facilities, such as libraries and police stations. Other responsibilities include inspecting public works projects on a daily basis to ensure work constructed on public property is of the highest possible quality, meets specifications, and is completed on schedule and within budget. We also monitor all contracts for compliance to Federal,



State, and City laws and policies related to prevailing wage, affirmative action, and the Minority/Women Business Enterprise and Other Business Enterprise Subcontractor Outreach Program.

## Serving the Present; Designing the Future

The Bureau of Engineering's goal is to be the "provider of choice" for our clients. Our Mission is to be recognized as a national leader in the delivery of sustainable capital projects by Fiscal Year 2016/2017. We have a work force of more than 900 engineers, architects, surveyors, and other specialty staff, as well as support staff, with hundreds of active projects totaling \$2.8 billion in construction value.

Our services are best described by summarizing our core functions. We plan, design, survey and manage construction of traditional infrastructure to protect public health and improve mobility. These infrastructure elements include the wastewater collection system, wastewater treatment and reclamation plants, the flood control system, and the street system including bikeways and bridges. We plan, design and manage construction of public buildings (vertical infrastructure) to improve the livability of the City by providing sustainable and environmentally sensitive building and landscape designs for new City buildings, and modifications to existing City buildings that include Police, Fire, recreational, and library facilities. We also support the economic development of the City through the issuance of permits, checking of plans and establishment of requirements for the construction of public right-of-way components of privately and publicly funded facilities, issuing more than 15,000 permits annually.

Our array of project management, planning, design and construction management services is available to all City Departments. Some of our specialized services include water-efficient landscape designs, environmental investigations and documentation, geotechnical studies, land development infrastructure requirements, real estate and property analysis, and specialized mapping and analytical Geographic Information System services. In addition, the Bureau is leading the effort to green City facilities. To date, 42 facilities have completed the United States Green Building Council's LEED rating process, with 25 Certified facilities, 7 Silver facilities, 8 Gold facilities, and 2 Platinum facilities.





## Working Hard Every Day for a Sustainable in L.A.

The Bureau of Sanitation takes pride in our vision of being an organization that sets the benchmark for outstanding customer service and responding to the challenges of tomorrow. We accomplish our mission of protecting public health and the environment through our primary responsibilities which are to collect, clean, and recycle solid and liquid waste generated by residential, commercial, and industrial users in the City of Los Angeles and surrounding communities.

We carry out our responsibilities by the management and administration of three primary programs which are the Cleanwater Program, Solid Resources, and Watershed Protection. The Cleanwater Program is consisted of the world's largest wastewater collection and treatment systems. Our 6,700 miles of sewers serve more than four million residential and business customers in Los Angeles and 29 contracting cities and agencies. Solid Resources collects refuse, recyclables, yard trimmings, and bulky items from more than 750,000 homes, with an average of 6,652 tons per day. Watershed Protection is a broad-based program that uses a multi-pronged approach to reduce water pollution and improve the City's receiving waters and their aquatic environments.

## Bright Lights – Safe Nights

The Bureau of Street Lighting designs, constructs, operates, maintains and repairs the City's streetlights. The City's streetlight system has more than 210,000 streetlights, incorporating more than 400 different varieties of lights and covers 5,000 of the City's 6,500 centerline miles. We are also responsible for the financial administration of the Street Lighting Maintenance Assessment Fund. We provide quality, timely, cost-effective and courteous service to the communities of Los Angeles in lighting of streets and public ways within established authorities and by encouraging residents to report damaged or out-of-service street lights in their neighborhoods.

We are committed to reducing light, pollution glare, and light trespass through our membership in the International Dark Sky Association which supports crafting local, state, and national lighting ordinances to ensure starry spaces for future generations.



## Providing Quality Street Services in a Timely and Efficient Manner

The Bureau of Street Services provides roadway maintenance, improvement, resurfacing and reconstruction of streets and related structures and engineering design of streets and streetscapes in the City of Los Angeles. In addition, we provide maintenance, repair, and improvement of approximately 7,300 centerline miles of public streets, alleys and related structures, making approximately 250,000 repairs per year. We resurface and reconstruct 150 to 200 miles of streets annually as well as clean public streets and alleys using a variety of methods including machine sweeping more than 600,000 curb miles per year. We are responsible for maintaining and preserving the City's 700,000 trees within the urban forest. We are responsible for the maintenance of over 290 acres of landscaped median islands, enforcement of City Ordinances related to street trees, and enforcement of the Annual Weed Abatement Ordinance for over 12,000 private parcels and City-owned lots. We enforce the State and City's Municipal Codes governing the use of public right of way to correct violations affecting public health and safety.





## City's Blue Ribbon Task Force on Infrastructure

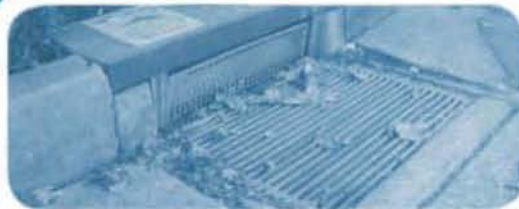
In 2003, the City of Los Angeles formed the Blue Ribbon Task Force on Infrastructure, comprised of experienced professionals from the infrastructure stakeholder community. The charge of the Blue Ribbon Task Force was to assess the condition of the City's infrastructure assets, identify the condition level to which these assets should be maintained, and determine the resources required to repair, maintain, replace, rehabilitate and expand the City's infrastructure assets over a 10-year planning horizon (2004 – 2013).

The Blue Ribbon Task Force met with the General Managers and staff from the City's departments responsible for managing infrastructure systems. The departments reported on the current condition, performance, capacity and demands placed on the City's infrastructure. Additionally, each provided analysis and plans to support the infrastructure investment needs assessment. Subsequently, the Blue Ribbon Task Force's final recommendations included expenditure plans, funding strategies, and proposed a \$29.9 billion ten-year program to begin addressing the most critical of the City's infrastructure investment needs.

## Infrastructure Report Cards and GASB 34

It is important to clarify that the purpose of the City's IRC is quite different from that of the reporting the City does to comply with Governmental Accounting Standards Board (GASB) Statement 34. The IRC is used to strengthen the public's understanding of the conditions of infrastructure systems, communicate the need to maintain acceptable condition levels for infrastructure, and guide policy decisions for sustainable infrastructure management. GASB 34 is a required financial management mechanism that uses highly detailed cost methodologies to report the City's infrastructure assets in the City's financial statements, including the City's Comprehensive Annual Financial Report.

There is no direct correlation between the financial reporting, i.e. capital costs expended, and the condition of the infrastructure assets. Using the capital expenditures for infrastructure assets, as required for GASB 34, and attempting to determine the condition of the assets from this alone are not feasible.







## BRIDGES

### overview

There are 602 bridges in the City of Los Angeles. The Bureau of Engineering manages the maintenance, retrofit, rehabilitation, and reconstruction of 507 bridges, with the remaining 95 bridges owned and maintained by other agencies.

Public Works bridge construction started in the early 1900s. Between 1910 and 1940, 210 bridges were built in the City of Los Angeles, of which 16 are historical. Fourteen of these historical bridges are built over the Los Angeles River. By the late 1960s, most of the City's bridges had been built.

In 1975, the City Council approved the Seismic Safety Plan that was designed to mitigate earthquake hazards. As a result, structural analysis of the existing bridges to determine adequacy to resist earthquake loads began in Fiscal Year 1978-79. Bridges requiring seismic bracing were incorporated into the Capital Improvement Program funded by the Gas Tax. By 1985, 22 bridges had been upgraded at a cost of \$3.8 million.

Soon after the Loma Prieta earthquake of October 17, 1989, the City Council placed a bond issue (Proposition G) on the ballot as a lifesaving measure to strengthen seismically-deficient buildings and bridges. Passage of Proposition G provided \$176 million for seismic strengthening of bridges. Under the first phase, bridges were seismically upgraded at a total construction cost of \$120 million.

The 2003 City's Blue Ribbon Task Force Report presented a condition assessment of the City's infrastructure for bridges. It was concluded that 83 bridges were structurally deficient or functionally obsolete, and the majority exceeded their 50-year design life. These 83 bridges were programmed into the 10-Year Capital Improvement Program which is managed by the Bureau of Engineering with funding from Federal and Proposition funds. Due to funding shortages, only 24 projects have been completed, leaving 59 projects for the next 10-Year Capital Improvement Program.



## description

Of the 602 bridges in Los Angeles, there are 438 vehicular bridges, 89 pedestrian bridges, 35 tunnels, two bikeway bridges, 35 railroad bridges, and three miscellaneous utility bridges. Currently, 280 bridges are more than 50 years old. Regular inspection of bridges is shared by the California Department of Transportation (Caltrans) and the Bureau of Engineering with 427 bridges inspected by Caltrans and 175 bridges inspected by the BOE.

In addition to the inspection of 175 bridges, the Bureau of Engineering's Structural Engineering Division maintains a detailed database of all the City's bridges, including the entire bridge inventory, inspection data, repair requests, structural condition of various bridge and tunnel elements, sufficiency ratings, cost data, traffic and geometric data.

Bridges are repaired and improved through a variety of funding sources including Proposition G, the Highway Bridge Program by the Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users, Proposition C, the Capital Improvement Program, and the State's Local Seismic Safety Retrofit Program funds.

## assessment

Each bridge is physically inspected biennially, analyzed for load-carrying capacity, and then a Sufficiency Rating is computed. Bridges are individually rated by Sufficiency Rating. This rating is computed in accordance with the national standards developed by the Federal Highway Administration and is based on structural adequacy, safety, essentiality for public use, serviceability, and functional obsolescence. Sufficiency Ratings range from 0 to 100 following a standard grading system.

A modified Federal Highway Administration Sufficiency Rating is the basis for the bridges assessment used in this Infrastructure Report Card. The modified Sufficiency Rating includes weighting factors for the size and age of each bridge. This assessment methodology is used to establish the current overall Bridge system grade of C- for City maintained bridges (507 of 602).

For a complete listing of the bridges and their assessment, see the Department of Public Works, Bureau of Engineering's intranet page at <http://boe.ci.la.ca.us/techdocs/ircbridges.pdf>



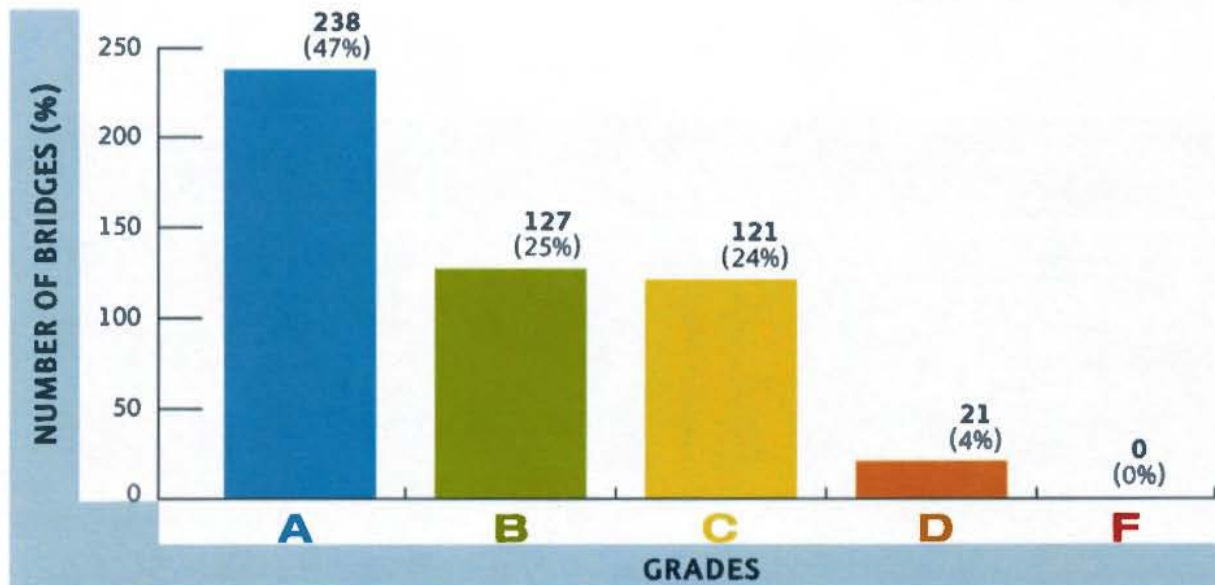


grades

**BRIDGES**

current grade: **C-**  
recommended grade: **B**

GRADE	DESCRIPTION
<b>A</b>	Structure in very good condition and has operational capacity to meet the near future demand. No action required.
<b>B</b>	Structure in good to fair condition and meets current operation needs. Minor repairs needed for continuous usage.
<b>C</b>	Structure in fair to poor condition and can operate with continuous significant upgrade.
<b>D</b>	Structure in very poor condition and does not meet operational needs without significant upgrade. Continuous and major upgrades are necessary.
<b>F</b>	Structurally inadequate and fails to meet current operational needs, public accessibility and safety. Structure needs to be replaced for cost-effective solution. Requires immediate action.



## recommendations

In January 2003, the Mayor and City Council adopted a policy for bridges under Council File 01-2715. As detailed in the 2003 City's Blue Ribbon Task Force Report, the Bureau of Engineering recommended improving the overall bridge system through strengthening, widening and/or reconstruction of the 83 identified substandard bridges in order to comply with this Council policy. Since 2003, 24 bridge projects have been completed at a cost of \$57.2 million. The Bureau of Engineering recommends continuing with the 2003 Blue Ribbon Task Force Report recommendation by completing the remaining 59 bridge projects by 2020. The bridge system grade will improve from C- to B by completing these remaining bridge projects.

The 59 bridge projects consist of 35 active projects that are in various stages of design and construction and 24 on-hold bridge projects that require local matching funds in order to secure federal funding for design and construction. The 10-Year Capital Improvement Program for the remaining 59 bridges is estimated at a total cost of \$965.9 million. Funding of \$443.4 million has been secured through various sources with an additional \$302.5 million to be identified and secured to complete the Capital Improvement Program. Additionally, annual funding of \$1.0 million is needed for bridge-routine inspection and maintenance. A summary of funding needed to improve the Bridge infrastructure is shown in the table below.





## BRIDGES 10-YEAR CAPITAL EXPENDITURE AND FUNDING PLAN

	TOTAL COST \$ in Millions	SECURED FUNDING \$ in Millions	FUNDING NEEDED \$ in Millions
<b>CAPITAL IMPROVEMENTS</b>			
<b>35 Active Projects</b>	674.1	663.4	10.7
Caltrans/FHWA (HBP)		529.9	
Prop G, C, CIEP (City Match)		102.1	
LSSRP (State Match)		31.4	
<b>24 On-hold Projects<sup>1</sup></b>	291.8 <sup>1</sup>	0.0 <sup>1</sup>	291.8 <sup>1</sup>
Caltrans/FHWA (HBP)		0.0 <sup>1</sup>	
<b>Inspection &amp; Maintenance</b>	10.0	0.0	10.0
GF or Gas Tax (B&T Fund)		0.0	
<b>TOTAL EXPENDITURES</b>	<b>975.9<sup>2</sup></b>	<b>663.4</b>	<b>312.5</b>

**Legend:**

- HBP – Highway Bridge Program
- CIEP – Capital Improvement Expenditure Program
- LSSRP – Local Seismic Safety Retrofit Program
- B&T Fund – Bridge & Tunnel Maintenance Fund

**Footnote:**

- 1 Local-match funds of \$33.8 million is required to secure \$258.0 million of Federal funds. Total of \$291.8 million, made up of local-match and Federal funds are required for the 24 On-hold Projects.
- 2 Totals include, Inspection & Maintenance item of \$10.0 million.







## FLOOD CONTROL

### overview


The flood-control system in the City of Los Angeles consists of more than 1,000 miles of storm drain pipes, open channels, and other significant elements to protect residents and property from flood damage. The Bureau of Sanitation acts as the owner of the City's flood control system and is responsible for the financial management, operation, and maintenance. The Bureau of Engineering's Street Improvement and Stormwater Division is responsible for engineering support and for implementing capital improvement projects for the stormwater program. The overall flood control responsibility within the City's jurisdiction is shared with the Los Angeles County Department of Public Works, United States Army Corps of Engineers (Army Corps), and California Department of Transportation. Each agency exercises jurisdiction over the flood control facilities they own and operate.

The local and regional flood control systems have been built and upgraded through federal and state legislation and county bond measures from the early 1900s through 1970. The larger capital flood control projects within the City of Los Angeles and regional projects were constructed by the County of Los Angeles. The City typically constructed smaller capital projects (project value < \$1M). However, since about 2003, very minimal capital flood control expenditures have been made, with only about \$1M spent annually for emergency storm drain repairs. The Bureau of Sanitation continually investigates drainage complaints and maintains a tracking and project prioritization system. There are currently more than 400 potential flood control capital improvement projects in the system.

The 2003 City's Blue Ribbon Task Force Report recommended various steps to secure construction funding and a goal of constructing 8.2 miles of new storm drains annually over the next 10 years. This goal was never implemented due to lack of funding.

### description

The flood control system is designed to protect residents and property from flood damage. Along with more than 1,000 miles of storm drain pipes, there are 35 miles of open channels, 39,388 catch basins,



3,374 culverts, 1,078 low flow drains, 162 debris basins, and 18 stormwater pumping plants. Pipes vary in size, shape, and material and range in age from 20 to 100 years. The majority of the system consists of reinforced concrete pipes or structures with approximately 30 miles of corrugated metal pipe that is mainly used in the hillsides and in limited access areas.

Within the City of Los Angeles, there are four primary watersheds: the Los Angeles River, the Santa Monica Bay, the Ballona Creek, and the Dominguez Channel. Stormwater runoff from these watersheds directly discharges to the ocean or other agencies' flood control systems within the City prior to discharging to the ocean.

The Bureau of Engineering receives an average of 200 drainage complaints annually. Drainage complaints are all documented and include a field investigation and recommend mitigation measures as appropriate. Drainage complaints due to ponding water, clogged drains, or those that are otherwise maintenance-related are referred to the Bureau of Street Services and the Bureau of Sanitation. Complaints that identify significant drainage deficiencies result in proposed capital improvement projects, and the Bureau of Engineering has identified more than 400 capital improvement projects throughout the City that are necessary to address the drainage deficiencies within the City. This translates into about 170 miles of new storm drains throughout the City.

To support a more efficient approach to mapping and studying the flood control system, the Bureau of Engineering, between 2004 and 2008 digitized the flood control infrastructure information contained on the paper "Drainage Maps" into our Geographic Information Systems. The flood control Geographic Information Systems is a tool used to assist with the system inventory, condition assessment, and capacity modeling. The Bureau of Engineering is responsible for maintaining the stormwater infrastructure inventory while the Bureau of Sanitation manages the records and is responsible for the operation and maintenance of the system.

## assessment

A comprehensive condition assessment of the flood control system has never been done. In 2006, the first Basic Condition Assessment Program for flood control infrastructure was completed. System capacity was not addressed in this assessment. Under this 2006 condition assessment effort, a representative sample of flood-control assets was chosen for physical inspection, including 54 miles of storm drain





pipes, 7 miles of open channel, 1,716 catch basins, nine stormwater pumping plants, 10 debris basins, and 18 low flow drains. The selections represented the City's diverse geography, terrain, soil type, land use, asset size, material and cross sectional shape.

Based on the physical condition of the samples, grades were assigned from A to F. Using regression analysis techniques, the assessment data of sample assets was used to predict the condition of assets that were not inspected. Several potential predictor variables were identified initially to model the asset condition. A mathematical model was developed that is capable of making conclusions regarding the condition of all assets based on sample assessment results.

In summary, 990 miles of the City's storm drain pipes have a grade of A, while 10 miles of the City's storm drain pipes have a grade of B. The 30 miles of corrugated metal pipe that have exceeded their service life are considered to have a grade of F. A grade of F is also given to the 170 miles of pipe identified in the 400 proposed capital improvement projects. Based on this assessment, the City's overall flood-control system has a current grade of B-.

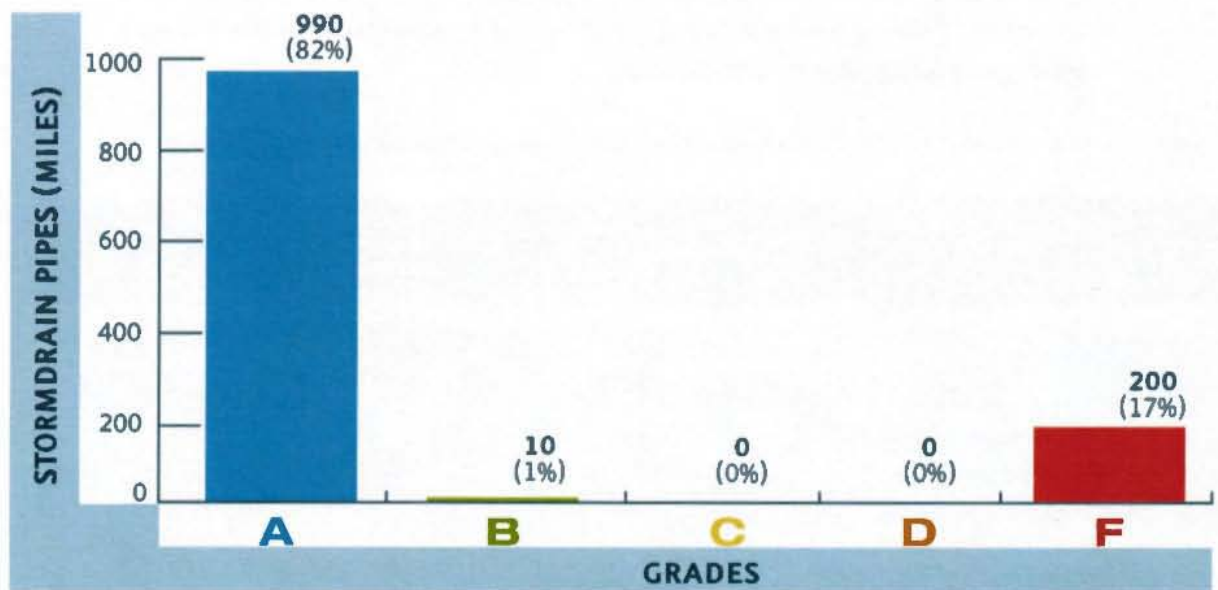
## grades

### FLOOD CONTROL

current grade: **B-**

recommended grade: **B**

GRADE	DESCRIPTION
<b>A</b>	Flood-control system is in very good condition and may be inspected as part of the regular inspection program. No repairs required.
<b>B</b>	Flood-control system is in good condition and may be inspected as part of the regular inspection program. Repairs may be required.
<b>C</b>	Flood-control system is in fair condition and will be inspected as part of the regular inspection program. Repairs will be required.
<b>D</b>	Flood-control system is in poor condition and will be considered for replacement, rehabilitation, and frequent inspection. Repairs will be required.
<b>F</b>	Flood-control system is in bad condition and will be scheduled for immediate replacement or rehabilitation. Immediate repairs or replacement is needed.







## recommendations

The goal is to maintain a Grade B or better for the flood-control system. The Bureau of Engineering recommends continuing with the 2003 City's Blue Ribbon Task Force Report recommendations. These recommendations are to take the necessary steps to secure funding and to pursue the following recommendations which will achieve a Grade B for the flood-control system:

1. Restructure the Stormwater Pollution Abatement Charge – The Stormwater Pollution Abatement Charge rate must be adjusted to provide additional funding for flood control to support an average annual capital improvement program of \$20 million for 20 years.
2. Secure \$100 million in funding to replace 30 miles of corrugated metal pipe. As discussed previously, Corrugated Metal Pipe causes the majority of the emergency repairs in the City. As the Corrugated Metal Pipe systems are replaced, the annual funds spent on emergency stormwater repairs will decline.
3. Secure \$200 million in capital funding for the Bureau of Sanitation to construct 50 miles of priority storm drain systems to mitigate local flood hazards. Priority is given to those flood-control projects near major streets and critical facilities, areas of repeated flooding and flood damage, and areas of repeated traffic accidents, with the highest priority for multiple impacts.

A summary of the funding needed to improve the Flood Control infrastructure is as follows:

FLOOD CONTROL CAPITAL IMPROVEMENT EXPENDITURE AND FUNDING PLAN			
EXPENDITURE	TOTAL COST \$ in Millions	SECURED FUNDING \$ in Millions	FUNDING SOURCE
Replace 30 miles of Corrugated Metal Pipe in 10 years	\$100	\$0	TBD
Construct 50 miles of Storm Drain systems in 20 years	\$200	\$0	TBD
Emergency Repairs	\$1 (ANNUALLY)	ABOUT \$1 (ANNUALLY)	SPAF









## SIDEWALKS

### overview

Unlike other infrastructure, Los Angeles' 10,750 miles of public sidewalks are unique because California law (Streets and Highways Code, Section 5610) establishes the primary responsibility for maintenance with the property owner adjacent to the sidewalk. If a sidewalk is damaged by a public street tree, the City shares that maintenance responsibility per Los Angeles Municipal Code Section 62.104. Regarding parkway planting adjacent to the public sidewalk, Los Angeles Municipal Code 62.168 specifies the adjacent property owner as responsible for maintaining and preventing parkway plants from becoming "dead, liable to fall, dangerous, or an obstruction to public travel."

There also exist sidewalk and parkway-plant installations which are nonstandard and are the express responsibility of the adjacent property owner. These installations require special liability insurance, a maintenance plan, and special permission from the Board of Public Works which includes, but is not limited to, the use of nonstandard materials, and plants, etc.

Since State law dictates that the individual property owners have the primary responsibility for the maintenance of the sidewalks, the Department of Public Works is not funded to manage a sidewalk program or maintain a comprehensive database for sidewalks, and sidewalks were not included in the 2003 Blue Ribbon Task Force Report.

### description

The City's current inventory is approximately 10,750 miles of sidewalks with a potential of 13,000 miles (twice the 6,500 miles length of public streets in the City). More specific information is not available for several reasons. The difference may be site-specific hardships that precluded sidewalk construction, subsequent zoning changes or simply lack of funds. A second reason is sidewalks are not the responsibility of any single entity but rather the responsibility of nearly a million individual property owners. It is only where a sidewalk is damaged by a public tree that the City has joint responsibility. Since the City does not have the sole responsibility for a comprehensive sidewalk program or the funding, there is no current effort to survey, inspect or monitor sidewalks. Any detailed information about specific sidewalks



and their condition rating is limited to localized areas that are part of a special grant program or a targeted initiative.

There have been several initiatives to help property owners with sidewalk maintenance including Improvement Bonds, Assessments, 50/50 Program and "Point of Sale" repairs. The first two initiatives have had inadequate voter support. Many property owners are unaware of their sidewalk maintenance responsibilities or have the mistaken belief that maintenance for the City's sidewalks is provided by property, income or sales taxes. These beliefs have been perpetuated given the City's lack of funds for active enforcement of sidewalk maintenance and reluctance to issue citations against property owners.

The 50/50 Program, which shares costs between the property owner and City, has been a huge success but lacks funds to continue. The Point of Sale requires any deferred sidewalk maintenance be addressed during property sales and is being discussed actively at this time.

## assessment

For the reasons described, the lack of data does not support a composite grade verifiable by analysis. With limited surveys showing approximately 40% of the City's sidewalks in the "D" (Poor) and "F" (Very Poor) categories, a qualified estimate is that sidewalks have an overall grade of "D+."

## grades

### SIDEWALKS

current grade: **D+**

recommended grade: **C+**





GRADE	DESCRIPTION
<b>A</b>	Meets all current regulations. Satisfies anticipated usage for next three years. Only routine maintenance (cleaning, sweeping, parkway plants trimmed) needed within next three years.
<b>B</b>	Meets all current regulations. Satisfies anticipated usage for next three years. Exhibits light cracking requiring special maintenance (crack sealing) within next three years to sustain rating.
<b>C</b>	Meets regulations at time of original construction. Satisfies Americans with Disabilities Act access requirements. May not satisfy anticipated usage for next three years. Exhibits moderate cracking, wear and offsets requiring special maintenance (grinding, crack sealing) within next three years to preclude accelerated deterioration.
<b>D</b>	May require Americans with Disabilities Act access retrofit. May not satisfy anticipated usage for next three years. Exhibits heavy cracking, wear and offsets requiring repairs (limited replacement, grinding, root pruning, etching, asphalt patching) within next three years to sustain rating.
<b>F</b>	May require Americans with Disabilities Act access retrofit. May not satisfy anticipated usage for next three years. Exhibits heavy cracking, wear, offsets and instability. Repairs are no longer effective, only allowing temporary usage.

## recommendations

- Educate the public regarding its responsibilities per State law and their civic duty for maintaining sidewalks.
- Request City funding to develop a comprehensive sidewalk inventory that would document such issues as current conditions, compliance with regulations, estimated cost for repairs, compatibility with usage and pedestrian volume, and the priority.
- Continue to pursue alternative means to fund sidewalk projects, such as grants, special programs, voter indebtedness, 50/50, and the Point of Sale.
- Target an overall grade of C+.







## SOLID RESOURCES

### overview

The Bureau of Sanitation is responsible for the safe and efficient collection, recycling, and disposal of solid resources generated within the City of Los Angeles. The Bureau of Sanitation has been providing solid waste management services to single-family residences since 1890. Solid waste management has evolved from its early separation of wastes into three streams in the 1900s, to relying on a single waste stream collection by private haulers in the 1950s, to the introduction of sanitary landfills in the 1970s, to the consideration of waste-to-energy programs in the 1980s, to the reintroduction of traditional recycling in the 1990s, and finally to the current state-of-the-art programs and facilities focusing on increasing landfill diversion. By 2001, the Bureau of Sanitation achieved a diversion rate of 62 percent through the implementation of various source reduction, recycling, and other programs, and reached 65 percent in 2008. Currently, the Bureau of Sanitation aims to achieve a landfill diversion goal of 70 percent by 2013.

Solid Resources was one of the infrastructure elements addressed in the 2003 City's Blue Ribbon Task Force Report. Some of the recommended projects have been implemented. Liquefied Natural Gas/Compressed Natural Gas (L/CNG) fueling facilities were constructed at the collection yards in East Valley, West Valley, South Los Angeles, and Harbor. The truck-wash facility at the West Valley yard was upgraded. To date, 391 collection vehicles have been converted to clean fuel (i.e., L/CNG), and final closure of the Toyon landfill was completed. The remaining projects proposed by the City's Blue Ribbon Task Force report have not been completed due to budgetary and regulatory constraints. These projects have been incorporated in the current five-year Solid Resources Capital Improvement Program. The Solid Resources Capital Improvement Program provides direction and guidance for the Solid Resources Program in planning and managing its infrastructure assets for a period of five years.

The implementation of the five-year Solid Resources Capital Improvement Program will require an investment of about \$105 million. Of the total investment needed, \$19 million is required for the existing projects (of which only \$12 million has been secured) and \$86 million for the proposed projects. Funding will have to be secured through a combination of sources including bond issuance, Solid Waste Resources Revenue Fund and other special revenue funds, as well as federal, state and local grants.



## description

The City of Los Angeles is home to more than four million people in more than 468 square miles. A total of 10.4 million tons of Municipal Solid Waste is generated per year from both residential and commercial sectors. Residential waste is collected by the Bureau of Sanitation, and commercial waste is handled by private haulers.

The Bureau of Sanitation provides a three-stream weekly curbside-collection service for recyclables, yard trimmings, and refuse, utilizing a fleet of about 770 vehicles collecting residential solid resources from six waste sheds: East Valley, West Valley, South Los Angeles, North Central, West Los Angeles, and Harbor. Each waste shed has a collection yard that provides office and parking spaces for operational staff as well as facilities for fueling and washing collection trucks.

The recyclables are taken to Material Recovery Facilities for beneficial reuse, while yard trimmings are sent to both City-owned and contracted green-waste processing facilities for composting. The refuse is hauled to contracted landfills as the Bureau of Sanitation no longer operates active landfills.

The Bureau of Sanitation also operates the Central Los Angeles Recycling and Transfer Station where a large portion of the refuse is transferred for consolidation into high-volume trucks for more economical shipment to landfill sites. In addition, the Bureau of Sanitation operates six Solvents, Automotive, Flammable and Electronics centers for the collection of household hazardous waste and electronic waste.

In summary, the Bureau of Sanitation currently manages Solid Resources infrastructure consisting of six collection yards, one transfer station, two green-waste processing facilities, one composting facility, six closed landfills, six Solvents, Automotive, Flammable and Electronics centers, four L/CNG fueling stations, and three truck wash facilities. This report contains the assessment of each facility and makes recommendations for how each facility can be improved to meet the anticipated demands placed on the Bureau of Sanitation's Solid Resources Program. In addition, the report discusses the investment needs for implementing the recommended improvements.





## assessment

The Solid Resources infrastructure is assessed every two years to evaluate the current condition, performance, capacity, and demands of the infrastructure assets, such as structure and equipment. The assessment method involves interviewing key site personnel and reviewing existing facility records, including drawings, maps, site surveys, equipment service logs, and various solid waste generation reports.

For assessment purposes, the Solid Resources infrastructure is divided into seven categories: 1) Collection, 2) Transfer, 3) Recycling/Processing, 4) Disposal, 5) Special Waste Handling, 6) L/CNG Fueling, and 7) Truck Washing. Grades for each category were assigned based on the American Society of Civil Engineers 2009 standards. The grading was on a scale of "A" (4) to "F" (0), with "A" for a facility in very good condition and "F" for a facility inadequate to meet current and future needs. Facilities whose condition could not be observed were given a grade of "Not Rated."

## grades

**SOLID RESOURCES**

current grade: **B-**

recommended grade: **B+**

GRADE	DESCRIPTION
<b>A</b>	Solid Resources facility is in very good physical condition. Meets current capacity needs and future capacity needs for the next three years. Meets all regulatory requirements. No action is required.
<b>B</b>	Solid Resources facility is in good to fair physical condition. Meets current capacity needs. Minor improvements/repairs needed for continuous operation.
<b>C</b>	Solid Resources facility is in fair to poor physical condition. Meets current capacity needs. Routine repairs needed for continuous operation.
<b>D</b>	Solid Resources facility is in poor physical condition. Meets current capacity needs. Significant repairs needed for continuous operation.
<b>F</b>	Solid Resources facility is inadequate and fails to meet current operational needs. Facility needs to be replaced. Requires immediate action.
<b>Not Rated</b>	The condition of the Solid Resources facility could not be observed.

## recommendations

The Bureau of Sanitation has developed a 5-year Solid Resources Capital Improvement Program that will make the necessary improvements to various existing facilities over the next five years (Fiscal Years 2010-2011 through 2014-2015). The Solid Resources Capital Improvement Program expenditure plan is developed for a period of five years and is updated every year.

The implementation of the Solid Resources Capital Improvement Program will address capacity needs and structural deficiencies, comply with regulatory requirements, meet current health and safety standards, and improve operational efficiency of the Solid Resources infrastructure. The proposed projects will improve the infrastructure grade from “B-” to “B+” as well as implement repair and maintenance work to keep the current service level of the facilities.

The 5-year Solid Resources Capital Improvement Program consists of 24 capital improvement projects and one repair/maintenance project. There are eight existing projects in various stages of design and





construction and 17 proposed projects. A total capital investment need of approximately \$105 million is required to plan, design, and construct these projects over the next five years. Of the total investment need, \$19 million is required for the existing projects and \$86 million for the proposed projects. For the existing projects, funding in the amount of \$12 million has been secured and an additional \$7 million will have to be identified. To implement all the projects in the 5-year Solid Resources Capital Improvement Program, a total funding of \$93 million needs to be secured through various funding sources. The table below summarizes the funding needed to repair, maintain, and improve the Solid Resources infrastructure.

<b>SOLID RESOURCES 5-YEAR CAPITAL EXPENDITURE AND FUNDING PLAN</b>			
	<b>TOTAL COST \$ in Millions</b>	<b>SECURED FUNDING \$ in Millions</b>	<b>FUNDING NEEDED \$ in Millions</b>
<b>CAPITAL IMPROVEMENTS</b>			
24 Active Projects	103.63	12.13	91.50
Fund 45T		2.70	
Fund 46T		0.40	
Fund 47D		1.00	
Fund 48S		0.78	
Fund 49G		5.28	
Fund 509		0.19	
Fund 556		1.77	
Repair & Maintenance	1.50	0.00	1.50
Fund 556	1.50	0.00	1.50
<b>TOTAL EXPENDITURES</b>	<b>105.13</b>	<b>12.13</b>	<b>93.00</b>









## STREETS

### overview


The Bureau of Street Services is responsible for the maintenance of approximately 6,500 centerline miles (28,000 lane miles) of roadway and 800 miles of alley within the City of Los Angeles. This report specifically addresses only the pavement aspect of streets. (Note that other facets, such as traffic and street reconstruction, are the responsibility of other City agencies.)

The Bureau of Street Services manages a systematic and objective pavement preservation program. The goal of the program is to maintain and enhance the physical environment while promoting a safe and secure pavement system for the community. Due to limited funding, the current focus is on preserving as many streets as possible before the point where reconstruction, which costs three to five times more than preservation, is necessary. A policy of relying solely on maintenance, instead of improving street condition, has been adopted until adequate funding is available for improvement.

Prior to World War II, the City had approximately 2,500 miles of paved streets. The Annual Resurfacing Program consisted of about 50 miles. After World War II, with expansion into the San Fernando Valley, the City street system grew to the current 6,500 miles. Until about 1986, the annual resurfacing program remained at 50 miles. In 1973, the Bureau of Street Services implemented the Slurry Seal Program to preserve and extend the life of selected local streets.

The 2003 City's Blue Ribbon Task Force Report recommended reconstruction of 1,000 miles of failed local streets through a Street Capital Improvement Plan to be funded by modified local and state funds and by a proposed \$387.8 million bond. In addition, a maintenance program was recommended. Due to funding shortfalls, only 155 miles of local streets were reconstructed and only 985 miles of streets have been resurfaced from the beginning of Fiscal Year 2003-2004 through October 2009. In addition, 1,984 miles of slurry seal have been applied to local streets during this period.

Currently, the 2009 estimated cost to reconstruct 1,000 miles of failed local streets is approximately \$650 million, close to twice the 2003 amount.



During the past decade, maintenance and preservation of streets has been continually under-funded. The average annual budget for select and local streets has been approximately \$59 million, compared to the \$254 million recommended. These funding limitations have placed the average condition of the street system at a fair condition, and if the current budget levels continue, the street network will worsen to a poor condition. This has resulted in a current \$1.92 billion backlog of poor to very poor condition streets that require correction.

## description

In addition to being the largest municipal street system in the nation, it is also the most congested. The 6,500 miles of improved streets are divided into two geographic areas: the Metropolitan area (53%) and the San Fernando Valley (47%).

The street system is divided into four functional classifications: primary arterials, secondary arterials, collector streets, and local streets. The first three classifications are considered “non-residential” streets and are primarily throughways that connect distant locations. This group of streets represents approximately 2,600 miles of the street network and usually, these are wide streets (between 45 feet and 100 feet) that carry heavy volumes of traffic. Primary, secondary, and collector streets are designed and constructed with thicker layers of asphalt to last approximately 15 to 20 years before resurfacing is necessary.

Local “residential” roadways represent approximately 3,900 miles of the street system and their width varies between 15 feet and 45 feet. They carry local and light traffic but are sporadically exposed to heavy traffic such as refuse collection trucks, buses, and/or construction trucks. The Bureau of Street Services expects this class of roads to last between 30 to 35 years before resurfacing is necessary.

The street system may also be classified by surface type. Two types of surfaces are typically found in City streets: asphalt concrete and Portland cement concrete. Approximately 5,840 miles of the street network are asphalt concrete, while 493 miles are Portland cement concrete. Other types combined represent 107 miles of the street system. Streets are repaired and improved through a variety of funding sources, including Gas Tax, Proposition C, Traffic Safety, and the General Fund.





## assessment

To monitor, maintain, and manage this street infrastructure, pavement condition levels are determined by using the internationally accepted Pavement Condition Index (PCI – ASTM standard D6433-99). This scale rates the physical condition of the street considering the pavement's structural integrity and surface operational condition. This numerical rating index ranges from 0 for a failed pavement to 100 for a pavement in perfect condition.

The Bureau of Street Services uses MicroPAVER which is a Pavement Management System that not only provides a systematic and consistent method for assessing maintenance and rehabilitation but also determines the optimal time for repair by predicting future pavement condition. The Pavement Condition Index scores are subsequently grouped into letter grades, "A" to "F" with "A" representing the streets in good condition and "F" representing the streets in very poor condition.

The current plan is to survey one-third of the entire street system every year and complete the survey of all City streets within three years. This is accomplished using a semi-automated van to collect pavement distress data. This van is equipped with a computerized work station, cameras to take digital images of the street surface, and lasers to capture roadway roughness and rutting data.

## grades

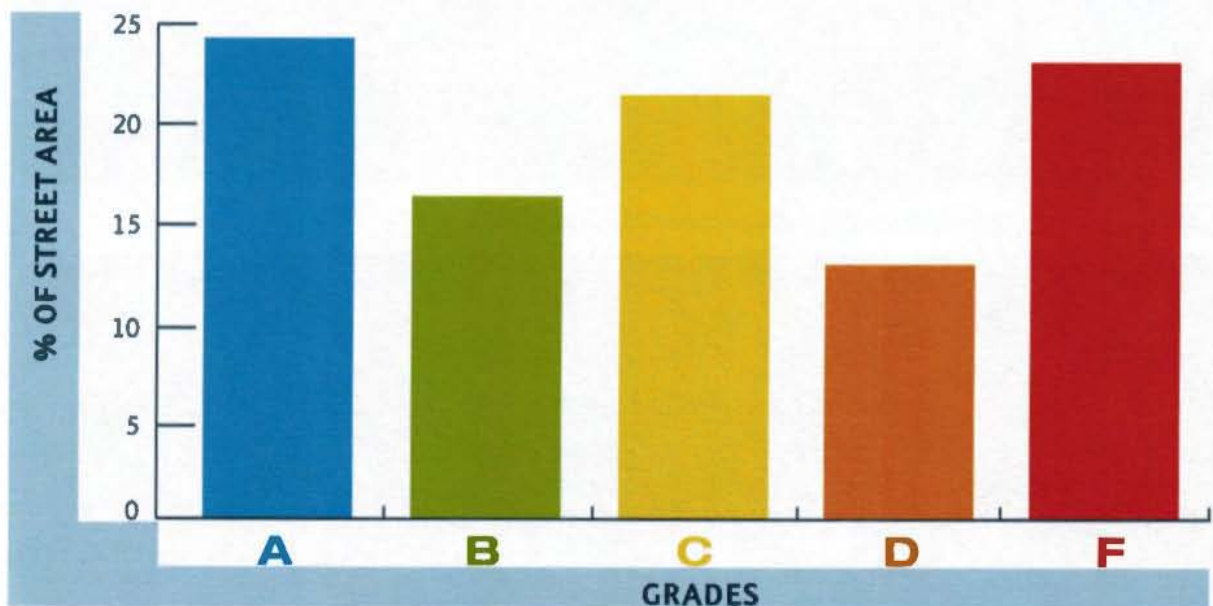
### STREETS

current grade: **C**

recommended grade: **B**

The 2008 street network average weighted PCI is 62 which equals the 2005 Pavement Condition Index. This outcome is largely due to the slurry-seal maintenance program on residential streets. The Street Infrastructure Condition Assessment of the non-residential network (primary, secondary, and collector streets) indicates a weighted average condition level of "C+" while the residential network (local streets) has a weighted average condition level of "C-." Additionally, it was determined that the combined weighted average condition level of the overall street system is a "C."

GRADE	DESCRIPTION
<b>A</b>	Pavement Condition Index Range is between 86 and 100. Pavement is in good condition and exhibits no cracking, no oxidation and no base failure. No action is required.
<b>B</b>	Pavement Condition Index Range is between 71 and 85. Pavement is in satisfactory condition and exhibits minimal cracking, no oxidation and no base failure. Slurry seal of local street pavements required.
<b>C</b>	Pavement Condition Index Range is between 56 and 70. Pavement is in fair condition and exhibits minimal cracking, 0% to 5% base failure. Maintenance Overlay of 1 ½" to 2" of asphalt concrete required.
<b>D</b>	Pavement Condition Index Range is between 41 and 55. Pavement is in poor condition and exhibits moderate cracking, 6% to 35% base failure. Resurfacing of 2" to 2 ½" of asphalt concrete required.
<b>F</b>	Pavement Condition Index Range is between 0 and 40. Pavement is in very poor condition and exhibits major or unsafe cracking, 36% to over 50% base failure. Resurfacing or Reconstruction of 6" to 12" of asphalt concrete required.







## recommendations

In order to maintain the City street system in a satisfactory condition of a "B" or Pavement Condition Index 80, the majority of streets must exhibit no structural failure. The City must allocate \$285 million per year for the next 10 years in order to eliminate the current maintenance and rehabilitation backlog of \$1.92 billion. So, the choice is to spend \$1.92 billion to eliminate the current backlog or spend \$2.85 billion over 10 years.

For reconstruction of local streets, since 2003, only 155 miles of the 1,000 miles recommended have been completed. Also, the recommended funding level of \$387.8 million in the 2003 City's Blue Ribbon Task Force Report is now an insufficient amount to reconstruct 1,000 miles of failed streets and the current cost to do this work is \$650 million. The 2003 recommendation specifically addressed reconstruction of local streets. However, in order to achieve a Grade "B" or Pavement Condition Index of 80, all streets in the network should be considered.



Main - 28th to 29th, Pavement Condition Index 43, Grade D



Figueroa & 48th, Pavement Condition Index 57, Grade C-

Acknowledging the current economic outlook, minimally, the recommendations discussed above and the actions discussed below are recommended:

- Establishing and funding a baseline pavement preservation program annually that provides for 320 miles of major rehabilitation (resurface and reconstruction) and 400 miles of preventive maintenance (crack and slurry seal). This is the minimum required to maintain the street system in its current condition for the next ten years.
- Allowing the Bureau of Street Services to modify the budget allocation formula as needed. This formula allows for the equalization of pavement conditions Citywide. As a result, all neighborhoods in the City would have streets with similar pavement conditions.

A summary of the funding needed to improve the pavement infrastructure from a "C" to a "B" is:

<b>STREETS 10-YEAR CAPITAL IMPROVEMENT PROGRAM</b>				
<b>EXPENDITURE</b>	<b>TOTAL COST</b> \$ in Millions	<b>SECURED FUNDING</b> \$ in Millions 2009/2010 Base Budget	<b>FUNDING NEEDED</b> \$ in Millions	<b>FUNDING SOURCE</b>
Resurfacing Program	2,540	400	2,140	Gas Tax & Prop. C
Maintenance and Slurry Program	310	156	154	Gas Tax & Traffic Safety
<b>TOTAL EXPENDITURE</b>	<b>2,850</b>	<b>556</b>	<b>2,294</b>	<b>Gas Tax, Prop. C &amp; Traffic Safety</b>



Figueroa - 42nd to 43rd, Pavement Condition 100, Grade A





## STREET LIGHTING

### overview

The Bureau of Street Lighting is responsible for the design, construction, operation, maintenance, and repair of the street lighting system, and manages more than 200,000 street lights in the City of Los Angeles. Street lighting is a very important part of the infrastructure of a city. It provides a safer environment for vehicular and pedestrian traffic during night-time hours, helps a community's aesthetics and identity, is a deterrent to criminal activity, and improves the overall quality of life.

The City's history of street lighting dates back to 1867 when a contract for lighting the streets by gas was granted by the City of Los Angeles Gas Company. Only a few units were ever installed. By 1882, when street lighting by electricity was finally authorized, there were 136 lamps operated by gas. Arrangements were made in 1890 with the Los Angeles Electric Company and the San Gabriel Electric Company to install electric lines and fixtures and supply energy and maintenance. In 1905, Broadway, south of First Street, was lit by the City's first incandescent, ornamental, electrical street-lighting system.

Funding for street lighting infrastructure comes from the Street Lighting Maintenance Assessment Fund that covers the operation and maintenance costs of the street lighting system. This revenue has been frozen with the passage of Proposition 218 in 1996, which hampers the City's ability to adjust the Street Lighting Maintenance Assessment Fund to correspond with the inflation index without directly going to the voters for that authority. Although the funds have been frozen, the operation costs of the street lighting infrastructure have continued to increase. This has led to a projected future deficit for the continued operation and maintenance of this system.

The 2003 City's Blue Ribbon Task Force Report recommends a comprehensive street lighting reconstruction and maintenance plan that involves reconstructing 70,816 street lights over a period of 10 years. Due to the shortage in funding, only a fraction of street lights have been restored.



## description

The City's 200,000 streetlights also consist of nearly 400 different styles of poles, ranging from modern to ornamental. These lights provide illumination for about 70% of the City. The street lighting system infrastructure includes streetlight poles, luminaries and lamps, foundations, conduits, and the electrical system. The majority of the street lighting system in the City of Los Angeles has underground wiring.

The Bureau of Street Lighting has identified two areas that are in desperate need of outside funding which are vital to the preservation of the City's street lighting system and directly impact the safety of vehicular and pedestrian traffic. These include 1) replacing 140,000 existing streetlight fixtures with energy-efficient LED units in order to save energy and 2) repairing streetlights that are in poor condition and need rehabilitation or replacement.

In 2009, The Bureau of Street Lighting started to replace the 140,000 existing streetlight fixtures with LED units. These replacements will be completed with City forces. The LED program will cost \$57 million but can generate savings in energy and maintenance costs that will pay for the estimated loan amount of \$40 million in seven years, with no adverse impact to the General Fund. This program will realize a total savings of \$48 million over a seven-year period, including \$35 million in energy and \$13 million in maintenance savings. After debt service is retired in year seven, the City will realize savings of \$10 million annually from this program. These savings will allow the City to continue to operate the City's street lighting system, since the current revenue is frozen and is annually incurring increases in expenditures.

Currently, 18% (37,027) streetlights are in desperate need of replacement. The streetlights are approximately 90 years old with underground systems that are continuously failing. This 18% accounts for 80% of the streetlights out. This area is in vital need of funding.

## assessment

A street lighting system's life span is estimated at approximately 60 years. At this point, the pole, conduit, and foundation begin to erode, causing light outages and maintenance problems.

System age and light source (lamp type) are the basis for the street lighting assessment used in this Report. Categorizing the street lighting system by age and light source provides a direct relationship to





other factors such as energy efficiency, maintenance needs, and safety. This assessment methodology is used to establish the current overall street lighting system grade of C+.

The existing street lighting system has been evaluated every 10 years, using evaluation criteria based on age, maintainability, and energy efficiency.

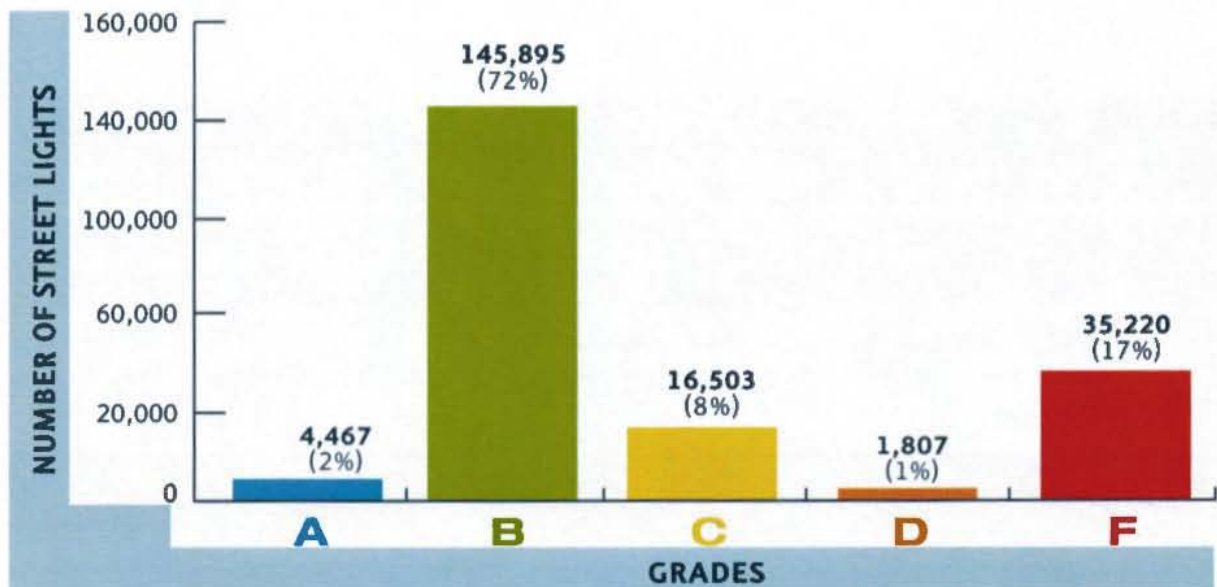
## grades

### STREET LIGHTING

current grade: **C**

recommended grade: **B**

GRADE	DESCRIPTION
<b>A</b>	Not in need of energy efficiency upgrade. Safe and efficient multiple circuit. Maintainable and reliable. Less than 30 years old (LED and Induction).
<b>B</b>	Candidate for energy efficiency upgrade. Safe and efficient multiple circuit. Maintainable and reliable. Less than 45 years old (High Pressure Sodium and Fluorescent).
<b>C</b>	Candidate for energy efficiency upgrade. Safe and efficient multiple circuit. Maintainable and reliable. Streetlight is 46 – 59 years old (High Pressure Sodium and Fluorescent).
<b>D</b>	Candidate for energy efficiency upgrade and system rehabilitation. Multiple circuit. Over 60 years old (any light sources).
<b>F</b>	Major and continuous repairs required. Dangerous high voltage series circuits. System needs to be replaced.



## recommendations

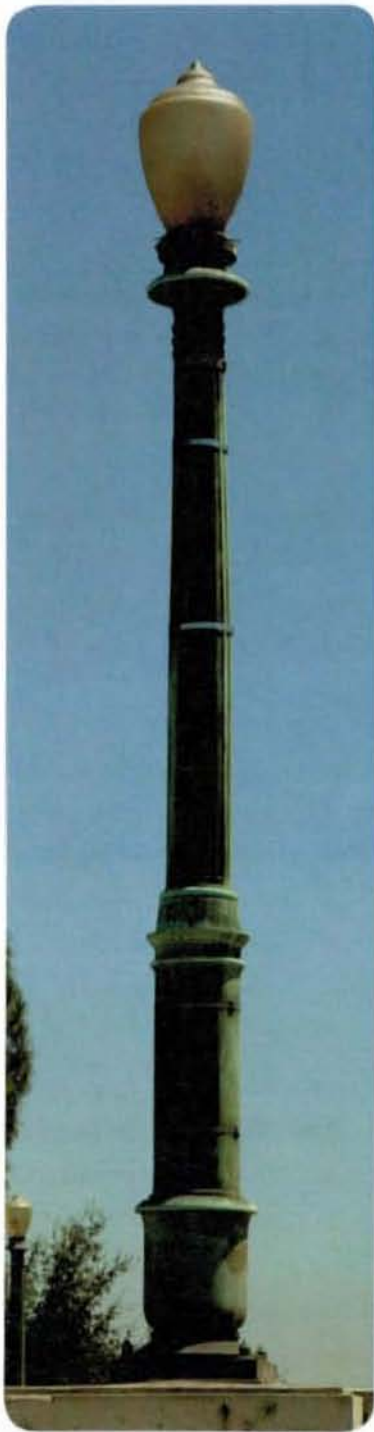
In the 2003 City's Blue Ribbon Task Force Report, it was recommended that the City's street lighting system be upgraded. The Bureau of Street Lighting has developed the LED program to save energy, as well as reduce maintenance in an effort to improve the City's infrastructure. The savings from the program will pay for the maintenance.

In addition to the LED program, the Bureau of Street Lighting also recommends replacing and rehabilitating its most unsafe, high maintenance, and inefficient units. A total of \$370 million in additional funds are needed in the next 10 years to improve the overall condition rating of the City's street lighting system from a "C" to an "B". A summary of the funding needed to improve the street lighting infrastructure is shown in the table on the next page.





<b>STREET LIGHTING 10-YEAR PROGRAM AND FUNDING PLAN</b>	
<b>PROGRAM EXPENDITURES</b>	<b>TOTAL COST</b> \$ in Millions
High Maintenance High Voltage Conversion (Fixtures)	\$370.0
Other	\$0.0
<b>TOTAL EXPENDITURES</b>	<b>\$370.0</b>
<b>FUND SOURCE</b>	
Street Lighting Maintenance Assessment Fund	\$2.0
Other Funding	\$2.0
Department of Water and Power Rebate	\$2.0
Possible Other Sources: Gas Tax - CIEP, ARRA	\$2.0
<b>TOTAL FUNDING SOURCES</b>	<b>\$8.0</b>
<b>TOTAL FUNDING REQUIRED</b>	<b>\$362.0</b>







## STREET TREES

### overview

The Bureau of Street Services manages more than 700,000 trees. Unlike many cities, the City includes its street tree population as a General Plan Framework infrastructure element. Although in theory, this allows for a better planned, maintained, and sustained element, maintaining high quality infrastructure requires continuing allocation of adequate maintenance resources.

Approximately 50 to 60 percent of the City's street trees were planted during the post-World War II building boom that continued through the late 1960s. Trees provide a myriad of benefits to the ecosystem including, but not limited to, reducing heat island effects, minimizing energy costs, soil erosion and stormwater runoff, increasing property values, carbon storage, and adjacent street pavement surface life. These quantifiable benefits vary throughout a tree's life.

Unlike other infrastructure, trees do not depreciate in a straight line. As trees mature, a point is reached where benefits to the ecosystem equal and exceed the costs of watering and care. It is at this point that the tree begins to appreciate in value. As trees continue to age, benefits to the ecosystem begin to diminish and costs exceed benefits.

### description

The City has the world's largest municipal street-tree population which currently numbers more than 700,000 trees. The street trees are under the control of the Department of Public Works per Los Angeles Municipal Code Section 62.161-176. The street-tree population is largely a result of the City exercising its development discretionary powers and thereby requiring street trees.

The City's street tree population is comprised of an extremely diverse species base. There are more than 900 identified tree species. The genus and family base is also extremely diverse. However, due to the high volume of street tree planting during the post-World War II building boom, the age distribution is somewhat compacted.



## assessment

The street tree infrastructure assessment is based on four factors: species diversification, age, planted area to vacant area ratio, and the health of the trees. The City developed a street tree database in the mid-1990s and the species diversification and tree planting assessment are based on the information in that inventory.

Arboriculture Best Management Practices require a healthy urban forest to be comprised of less than 10% of any one tree species, 20% of any one tree genus, and 30% of any one tree family. The City's highest 20 species in population are all separate species, genus, and family. No specie comprises more than seven percent of the population, and the genus and family distribution are well above the recommended 20% and 30% respectively. The City's species diversity rates an "A" grade.

Due to the large number of tree plantings in the 1950s and 1960s, many street trees are in the 50-year age range. Given the general health of most of these trees, the City may expect a continued 20-40 year period where benefits to the ecosystem exceed the costs for care. However, sometime in the next few decades, a large percentage of the street trees will be rapidly reaching senescence and diminishment or loss of their benefits to the ecosystem. Given this potential for a rapid decline in the street tree population, the age diversity rates a grade of "C."

The street tree inventory disclosed approximately 800,000 locations where trees could be planted with 680,000 actual tree plantings. It is estimated today that an additional 20,000 street trees have been planted. This equates to an approximately 87% planted to vacant ratio. Therefore the planted to vacant ratio grade earns a "B."

Due to the lack of funding, the health of the street trees can only be anecdotally assessed at this time. It is estimated that globally, the health of the City's street trees is a grade of "B-."

Therefore, the street trees overall grade is a C+.





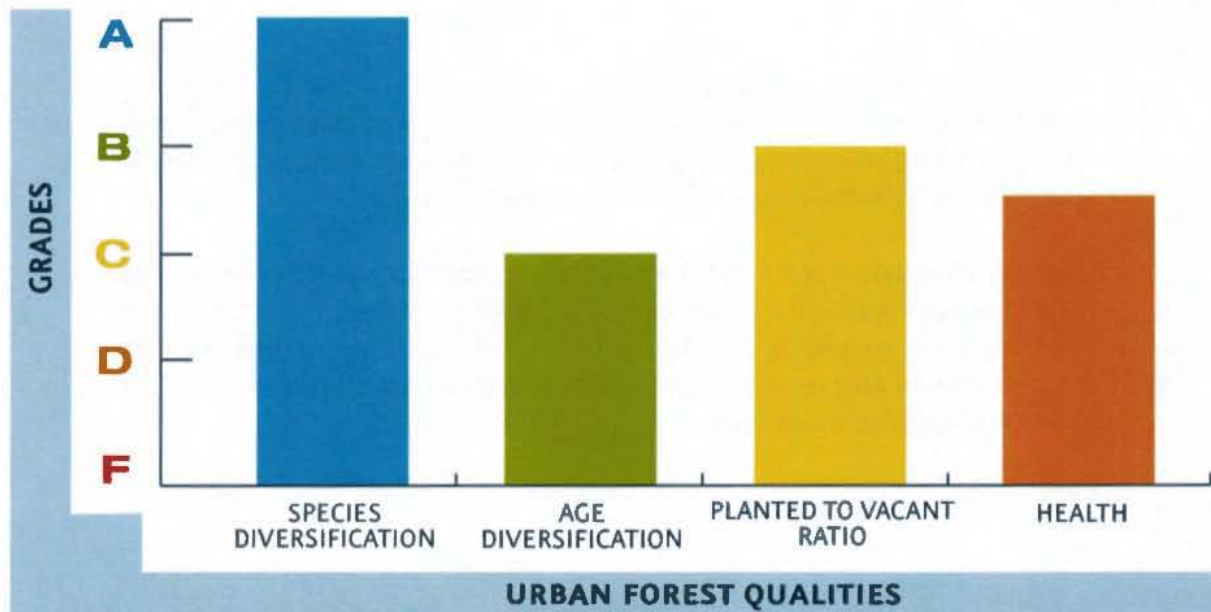
## grades

### STREET TREES

current grade: **C+**

recommended grade: **B**

GRADE	DESCRIPTION
<b>A</b>	Street tree population is comprised of varied species and ages and in a very healthy condition. Ninety-five percent or greater of the available tree planting sites are planted. Street tree environmental services optimal and exceed costs.
<b>B</b>	Street tree population is comprised of varied species and ages and in a healthy condition. Ninety percent or greater of the available tree planting sites are planted. Increase in tree planting required. Street tree environmental services exceed costs.
<b>C</b>	Street tree population is comprised of varied species with half over-mature or senescent and poor to good health. Seventy-ninety percent of the available tree planting sites are planted. Tree removal and replacement program and increase in tree planting required. Street tree environmental services diminished and costs beginning to exceed benefits.
<b>D</b>	Street tree population is comprised of limited species with more than 50% over-mature or senescent and poor to good health. Fifty-ninety percent of the available tree planting sites are planted. Tree removal and replacement program and increase in tree planting and species diversification required. Street tree costs exceed ecosystem services.
<b>F</b>	Street tree population is comprised of only a few species with more than 50% over-mature or senescent and poor to good health. No new tree plantings. Majority of available tree planting sites contain dead/dying trees or are not planted. Tree removal and replacement program and increase in tree planting and species diversification required. Street tree costs greatly exceed benefits as ecosystem services reach minimal level.



## recommendations

These recommendations are based on international and national “best practices” for urban forests.

- Since the implementation of the Million Trees L. A. program, the City has seen a large increase in the number of street tree plantings. This program has heightened community awareness of the benefits of planting trees and also assisted in educating the community on how to maintain trees properly. The continuation of the Million Trees L. A. will improve the street-tree infrastructure significantly.
- A phased street tree removal program is recommended. This program would target areas of the City with long blocks of uniform species and aged tree plantings. Tree removals would begin with the removal of 10 to 15 percent of the existing trees and repeated every five to 10 years depending upon species. The tree removals would be immediately replaced with the uniform species unless the planting area of the street was not conducive to that species.

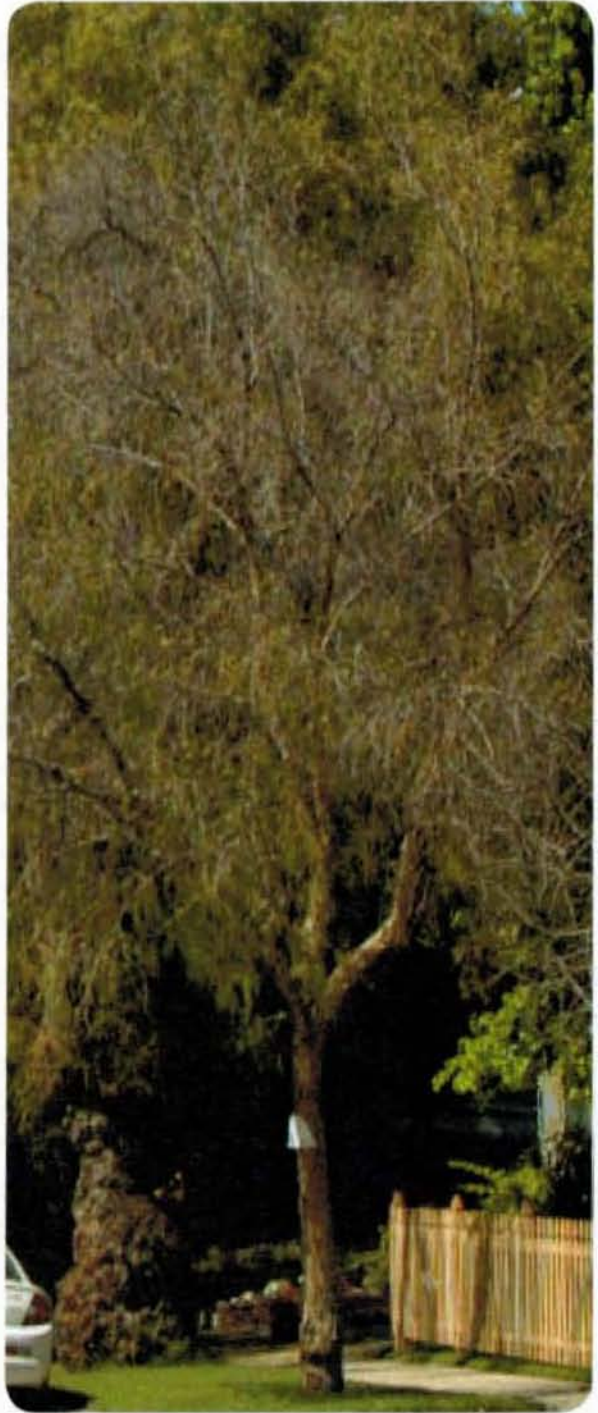
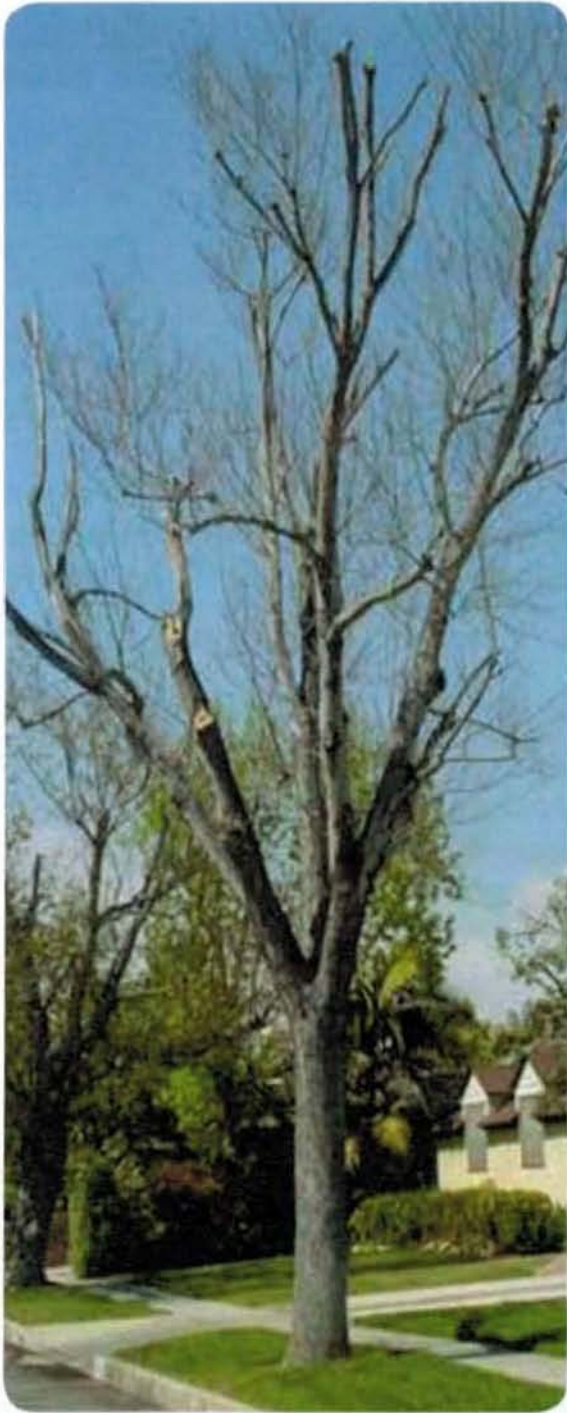




- Nearly all of the City's urban forest is a human construct and the street-tree population is entirely of that nature. Given the City's temperate climate, with adequate water, almost any tree can grow. The City must leverage the species availability while being mindful of a diminishing water supply.
- The City must take a more global view of the street-tree population and realize that street-tree sustainability can only be achieved by proactively removing and replacing trees, continuing the Mayor's Million Trees L.A. Program and investing more street-tree maintenance funding will ensure that these goals and street-tree health will continue in the future.











## URBAN RUNOFF

### overview


The Bureau of Sanitation has been charged with keeping the City in compliance with the mandates of the Federal Clean Water Act, as required in the City's Stormwater Permit. Every day urban runoff flows untreated through the City and picks up trash, oil, bacteria, fertilizers and pesticides, and toxics along the way. These eventually end up in the City's water bodies. The regulatory standards that must be met are referred to as Total Maximum Daily Loads. A Total Maximum Daily Load is a limit to the amount of a pollutant that a specific water body can receive from all sources (including urban runoff) and still meet water quality standards. With 14 Total Maximum Daily Loads currently in effect and more than 60 expected, the Bureau of Sanitation continues to assume a leadership role in protecting the quality of the City's waters.

In November 2004, with voter approval of \$500 million for Proposition "O," efforts to comply with the first Total Maximum Daily Loads for trash and bacteria were seen throughout the City. With the installation of screens and inserts at catch basins and through the Bureau of Sanitation's eight Low Flow Diversions, the City has successfully met its interim compliance milestones for the trash and bacteria Total Maximum Daily Loads.

These projects provide a solid start on improving water quality. However, more Total Maximum Daily Loads will require more projects. Proposition O is a one-time funding source for specific projects. The Bureau of Sanitation's funding source for the Stormwater Program is the Stormwater Pollution Abatement Charge, which has not been increased since 1993 and is inadequate to provide for the flood control and pollution abatement needs of the City. With Total Maximum Daily Loads being promulgated faster than funding can be identified, the cost of compliance has far exceeded the revenues generated by the Stormwater Pollution Abatement Charge. The City will need to identify a new source of ongoing funding for new projects.

The 2003 City's Blue Ribbon Task Force Report addressed condition assessment of the Bureau of Sanitation's stormwater system infrastructure for flood protection and touched on the anticipated regulatory requirements that would need to be met. It was concluded that the Bureau of Sanitation should maintain a





rating of “D” or better but no recommendation on improving urban runoff was mentioned. As a result of more stringent federal and local requirements surrounding urban runoff, it has become necessary for the City to assess urban runoff as an independent category.

## description

The City of Los Angeles is tributary to four major watersheds: Santa Monica Bay, Los Angeles River, Ballona Creek and Dominguez Channel. A watershed is described as all the land that drains to a common low point. With urban runoff flowing into the City’s water bodies, the impact of polluted urban runoff on our water bodies has led to more stringent regulatory requirements. As a result, the four major watersheds in the Los Angeles region have major pollutants being addressed in more than 60 Total Maximum Daily Loads.

Each Total Maximum Daily Load requires the following: 1) a coordinated monitoring plan to establish a baseline and assess overall compliance; 2) an implementation plan that identifies how the water body will be brought into compliance by implementing water-quality improvement projects; and 3) in some cases, performance of special studies. The Bureau of Sanitation has taken a leadership role on many of these Total Maximum Daily Loads and has been proactive in working with surrounding municipalities to develop and implement plans for many of the Total Maximum Daily Loads. Implementing the projects identified in these plans is estimated to cost millions of dollars.

Throughout the City, numerous water quality projects have been implemented using a variety of techniques and green strategies. The most visible of these projects are the catch basin screens and inserts that prevent trash from entering the storm drain system and the Low Flow Diversions along Santa Monica Bay that divert dry weather urban runoff to the sanitary sewer. Additionally, the Bureau of Sanitation is continually researching new strategies to comply with new Total Maximum Daily Loads. These strategies include green solutions such as Low Impact Development, green structural, best management practices and stormwater reuse. It is anticipated that \$220 million per year in additional funding is needed in order to implement projects throughout the City to meet these water quality standards, and an additional \$30 – \$50 million is needed annually for routine maintenance over the next 10 years.

## assessment

Criteria for assessing compliance with Water Quality Standards and Total Maximum Daily Loads are based on implementation efforts that are successful enough to reflect significant improvements in water





quality, leading to Total Maximum Daily Loads compliance and this grading is also consistent with the 2005 American Society of Civil Engineers Los Angeles County Chapter's evaluation of urban runoff.

The four major watersheds (Santa Monica Bay, Los Angeles River, Ballona Creek and Dominguez Channel) and, three of the larger impaired water bodies (Machado Lake, Marina del Rey, and Los Angeles Harbor) within those watersheds were evaluated. For each watershed and parameter, grades were established and weighted equally for a composite total. A scale of A = 4, B =3, C = 2, D=1, F=0 was adopted for numerical weighting and development of a Watershed Grade Point Average.

The Composite City of Los Angeles Watershed GPA is 1.4 or a "D" for the City.

For a complete listing of the watersheds and their assessment, see the Bureau of Sanitation's intranet page at: <http://www.lastormwater.org/Siteorg/download/techman.htm>

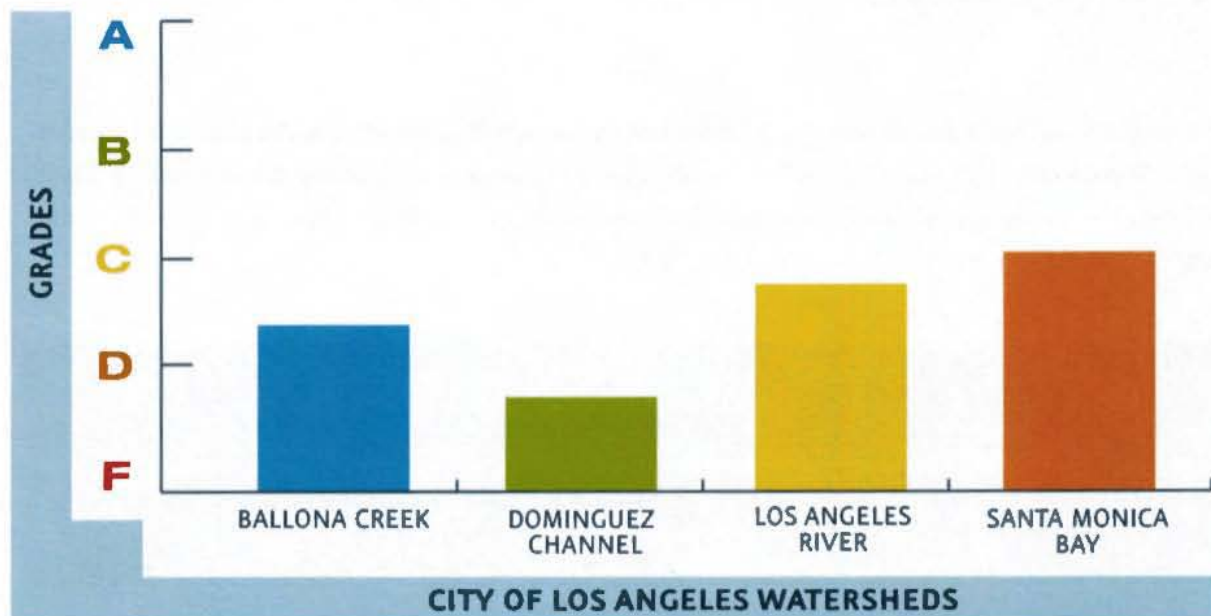
## grades

### URBAN RUNOFF

current grade: **D**

recommended grade: **C**

GRADE	DESCRIPTION- IMPAIRMENTS / WATER QUALITY CONDITIONS
<b>A</b>	Implementation efforts are complete and are in full compliance with the Water Quality Standards.
<b>B</b>	Majority of Implementation efforts are complete and interim compliance is being met.
<b>C</b>	Some Implementation efforts are underway and interim compliance is being met.
<b>D</b>	Implementation Plan developed but not implemented. Negligible improvements in water quality.
<b>F</b>	No efforts underway for impaired waterbody.



## recommendations

As discussed previously, projects already underway provide a solid start on improving water quality, but more Total Maximum Daily Loads will require additional projects and funding. Proposition O has proven to be a step in the right direction. However, the Stormwater Pollution Abatement Charge that is dedicated to provide for flood protection and pollution abatement cannot even generate adequate revenues for flood protection, let alone the revenues needed for maintaining Total Maximum Daily Load compliance. Unlike other infrastructures that have been in place for decades, the infrastructure needed to improve urban runoff water quality has yet to be constructed.

Possible funding sources may include, but are not limited to:

- Increasing the City's Stormwater Pollution Abatement Charge,
- Partner with the Los Angeles County Department of Public Works to assess County wide Stormwater fees, and
- Seek major amendments to the Clean Water Act to procure massive federal funding, similar to the 1970s program that established 80% federal and 20% local funding for the expansion of the City's wastewater treatment plants.





Given the timetable for compliance is more than several years, it is unfeasible for the City to attain an "A" grade. At a minimum, in order for the City to maintain compliance with the Total Maximum Daily Loads, an improvement from a "D" to a "C" is needed. A Summary of the funding needed to improve the urban runoff infrastructure from a "D" to a "C" is as follows:

<b>URBAN RUNOFF 10-YEAR CAPITAL IMPROVEMENT EXPENDITURE PROGRAM</b>			
<b>EXPENDITURE</b>	<b>TOTAL COST \$ in Millions</b>	<b>SECURED FUNDING \$ in Millions</b>	<b>FUNDING NEEDED \$ in Millions</b>
Current MS4 Permit Requirements	\$ 350	\$ 250	\$ 100
Operation & Maintenance of Prop O Projects	\$ 175	\$ 0	\$ 175
New MS4 Permit Requirements	\$ 250	\$ 0	\$ 250
Flood Protection	\$ 75	\$ 30	\$ 45
Total Maximum Daily Loads Projects	\$ 2,650	\$ 0	\$ 2,650
<b>TOTAL EXPENDITURE</b>	<b>\$ 3,500</b>	<b>\$ 280</b>	<b>\$ 3,220</b>









# WASTEWATER COLLECTION

## overview

The Bureau of Sanitation owns and operates one of the largest wastewater collection system in the country. Before the late 1800s, the City's primary means of sewage disposal included direct on-land irrigation for farms and sewer diversions, such as cesspools or privy vaults. Rapid growth in the 1920s led to the immediate relief of sewers and other infrastructure improvements. Dockweiler Sewer was built during that period, becoming the first outfall sewer in the City. As capacity needs increased, the East Central Interceptor Sewer and North Outfall Sewer were built in the past decade.

Today, the current network consists of over 6,700 miles of public sewers that serves over 4 million people and 29 contract agencies. To meet the growing demand while maintaining a high quality of service, the Bureau of Sanitation continuously assesses and improves the condition of its wastewater collection and conveyance system through the use of planning and infrastructure studies.

Based on the 2003 City's Blue Ribbon Task Force Report, in order to fully fund the Wastewater Capital Improvement Program through the Sewer Construction and Maintenance Fund, a total of \$1.8 billion over 10 years (2003-2013) was required. The Sewer Construction and Maintenance Fund operates as an enterprise fund. Revenues generated from the City's sewer service charge as well as revenues from other agencies fully fund its operations, maintenance, and capital programs. In the report, an estimated 500 miles of sewer were identified as C and D pipe lines. Due to the urgency of the project, the identified sewers may not be included in the current Wastewater Capital Improvement Program, but will be added in the future. Based on the Wastewater Capital Improvement Program, of the 468 miles of sewers listed, approximately 206 miles have been rehabilitated.

Through these studies, deficiencies in the system are identified to be addressed. Many of the most severe deficiencies are being or have been repaired. As deficiencies are identified, their respective conditions are used to define and prioritize the necessary improvement projects for inclusion in the Wastewater Capital Improvement Program. In the current 2009-2018 Wastewater Capital Improvement Program, \$989 million is needed over the next 10 years to maintain and rehabilitate the current condition of the wastewater collection system.





## description

The Bureau of Sanitation provides wastewater collection, treatment, and disposal services for approximately 4 million residents within a 600-square-mile service area, including 29 contract agencies outside the City. The Bureau of Sanitation's more than 6,700 miles of public sewers that can convey about 500 million gallons per day of flow to the Bureau of Sanitation's four wastewater treatment and water reclamation plants.

The wastewater collection system is separated into two networks. The larger Hyperion System serves approximately 95% of the population and conveys wastewater to the Hyperion Treatment Plant. The Terminal Island system conveys wastewater to the Terminal Island Treatment Plant.

The Bureau of Sanitation's sewer system is broken down into primary sewers (16-inches and larger in diameter) and secondary sewers (less than 16-inches in diameter). Secondary sewers serve the local neighborhoods and make up about 90% of the Bureau of Sanitation's wastewater collection system network. The flows from the secondary sewers feed into the primary sewer lines. Primary sewers are represented by the trunk, interceptor, and outfall portion of the system and convey wastewater to the treatment plants. There are approximately 710 miles of primary sewers which make up more than 10% of the length of the entire system. This represents the greatest potential liability to the City in the event of a failure since the primary sewers carry all the flow.

The wastewater collection system also includes 44 wastewater pumping plants. Wastewater pumping plants are used throughout the City to convey sewage from lower elevations to higher elevations for optimal gravity flow. The various pumping plant capacities in the Bureau of Sanitation's collection system ranges from 30 gallons per minute to 27,000 gallons per minute.

## assessment

The wastewater collection grading system is comparable to the American Society of Civil Engineers scoring system for evaluating public infrastructure. The assessment is prioritized based on the greatest potential risk and adverse impact on the community. The sewer system was assessed for physical condition and hydraulic capacity. The physical condition is assessed with closed circuit television cameras that have been deployed throughout a significant portion of the system. These results were then extrapolated to achieve a system-wide assessment. Age, pipe material, and size were key attributes to determine the grade for the structural assessment. A second assessment was based on the hydraulic





capacity of the wastewater collection system components, including the sewers, pumping plants, interceptors, and outfall sewers. Both assessments reported the condition in a manner similar to a collegiate system from A to F with A being the best and F the poorest. The current average overall sewer system condition rating is a B-. Nevertheless, there are still about 571 miles of sewers with less than B ratings that should be rehabilitated based on the urgency of the project. Currently, 20% of the entire collection system has not been assessed yet.

For a complete listing of the wastewater collection system and their assessment, see the 2009 Infrastructure Report – Wastewater Collection System.

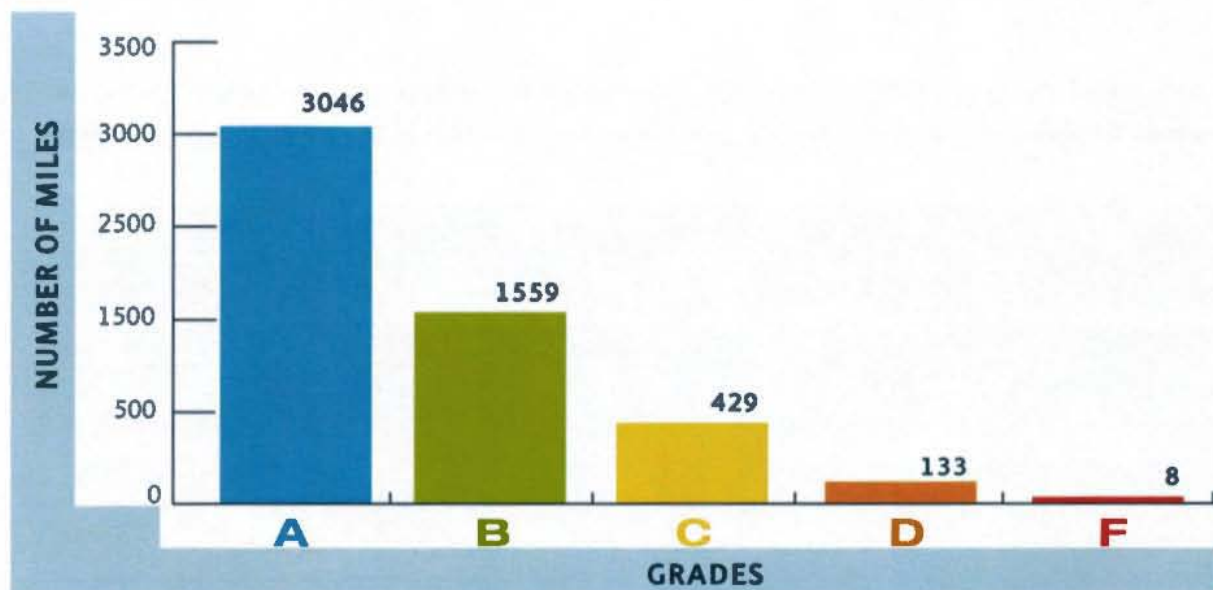
## grades

### WASTEWATER COLLECTION

current grade: **B-**

recommended grade: **B+**

GRADE	DESCRIPTION
<b>A</b>	Condition is almost like a new sewer pipe. Sufficient capacity to accommodate future growth and wet weather flows. No annual cleaning maintenance required to remove roots or other debris.
<b>B</b>	No immediate repairs required. Sewer pipe has limited hairline cracks, corrosion, and roots. Sufficient capacity to accommodate future growth and wet weather flows. Routine maintenance and inspection required.
<b>C</b>	Sewer repairs required within the next 10 years. Moderate cracks/fractures, continuous corrosion, infiltration, and roots. Missing grout/mortar or damage in liner. Only sufficient capacity to handle current flows; limited wet weather capacity. Multiple cleaning required each year to remove roots and other debris.
<b>D</b>	Sewer repairs required within 5 years. Significant fractures, corrosion, infiltration/roots. Missing bricks or ceramic tiles. Broken pipes with holes, joint separation, or reinforcement exposure. Only sufficient capacity to handle current flows; no wet weather capacity. Multiple cleaning required each year.
<b>F</b>	Immediate repairs required. Collapsed pipe/street, dirt pipe, missing crown of pipe, void in backfill, or full flow obstruction/blockage with threat of overflow. Insufficient capacity; unable to support current flows.



## recommendations

According to the Wastewater Capital Improvement Program, 468 miles of sewers are listed to be rehabilitated; approximately 207 miles have been completed. Based on the existing and projected assessment, 571 miles of sewer have been identified as less than B ratings sewers, which will be added into the upcoming Wastewater Capital Improvement Programs based on the urgency of the project. In addition, the remaining 262 miles of sewers currently listed in the Wastewater Capital Improvement Program will also be completed within the next ten years.

In order to improve the wastewater collection system condition to “B+”, constant repair and renewal of the system is required. The renewal is essential to the protection of the public health and safety, reduction of avoidable sewer overflows and reducing the City’s exposure to liability from regulatory penalties and third party lawsuits. But, most importantly, renewing the sewers that are in a worse than B condition is critical to the City’s efforts to improve the quality of life in its neighborhoods and protect our water resources, while allowing for the economic and social revitalization of the City.



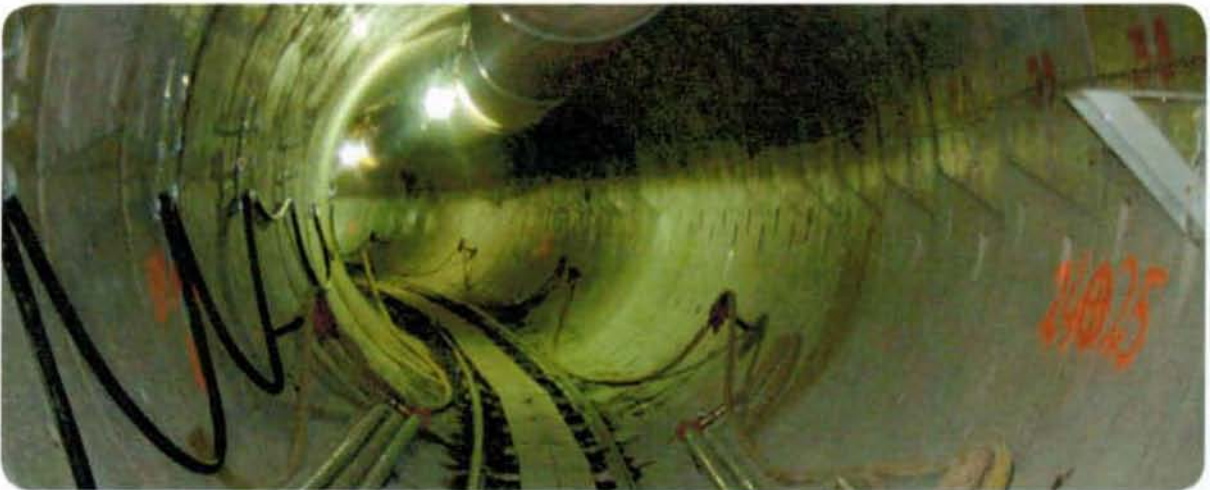
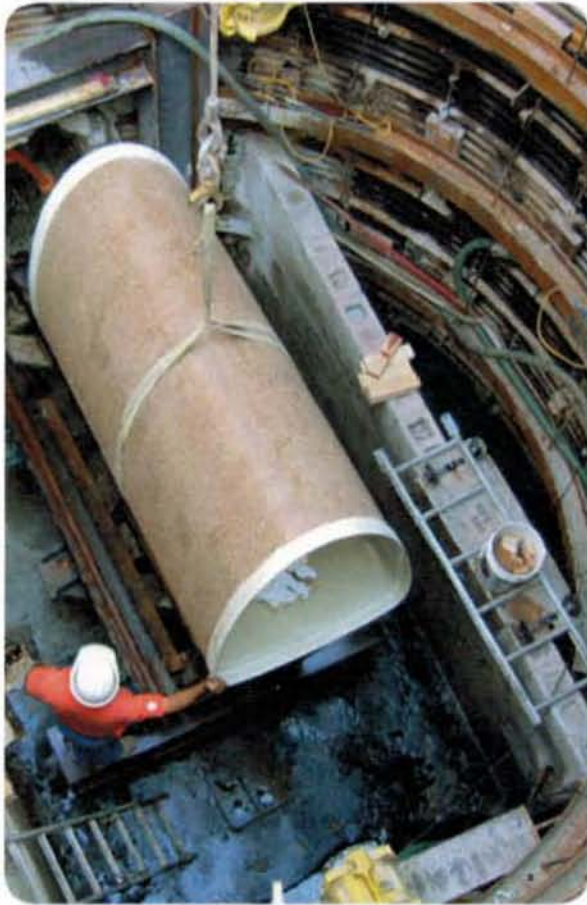
It is estimated that the allocation of \$989 million through the various funding sources should be obtained. A summary of the funding needed to maintain the Wastewater Collection System infrastructure is as follows:

<b>WASTEWATER COLLECTION 10-YEAR CAPITAL IMPROVEMENT EXPENDITURE PROGRAM</b>				
<b>EXPENDITURE</b>	<b>TOTAL COST \$ in Millions</b>	<b>SECURED FUNDING \$ in Millions</b>	<b>FUNDING NEEDED \$ in Millions</b>	<b>FUNDING NEEDED</b>
Emergency Repairs	\$ 131	\$ 131	\$ 0	SCM
Primary Sewers	\$ 292	\$ 67	\$ 225	SCM
Secondary Sewers	\$ 312	\$ 87	\$ 225	SCM
Pumping Stations*	\$ 73	\$ 4	\$ 69	SCM
Other Sewers (Interceptors, Outfall, etc)	\$ 165	\$ 75	\$ 90	SCM
Master Planning (BOE and BOS)*	\$ 16	\$ 7	\$ 9	SCM
<b>TOTAL EXPENDITURES</b>	<b>\$ 989</b>	<b>\$ 371</b>	<b>\$ 618</b>	<b>---</b>

\* Pumping stations only include wastewater conveyance only. Assumed no rate increases for the next 10 years.

\* BOE stands for the Bureau of Engineering and BOS designates for the Bureau of Sanitation.

Based on the table, under the existing rate structure, funding is only secured for Fiscal Year 2010-2011 and Fiscal Year 2011-2012. Funding is required for the next 8 years through the Sewer Construction and Maintenance Fund, thus a rate increase may be required in order to maintain the current conditions in the Wastewater Collection System.







## WASTEWATER TREATMENT

### overview

The Bureau of Sanitation owns and operates the City's wastewater treatment system, with the history of the City's wastewater treatment service dating back to 1894, when the first wastewater collection facility, the predecessor of modern Hyperion Treatment Plant was built on Santa Monica Bay. In 1935, the Terminal Island Water Reclamation Plant came into operation to provide service to the Harbor Area. In 1976, the Los Angeles-Glendale Water Reclamation Plant came into operation. In 1985, the Donald C. Tillman Water Reclamation Plant was built in San Fernando Valley. In the 1990s, Hyperion Treatment Plant received a major upgrade to full secondary treatment.


In the previous assessment in 2003, the infrastructure of wastewater treatment plants received an overall grade of "B". Between 2003 and 2010, approximately 370 million construction dollars have been spent on more than 162 capital improvement projects. Today, the overall infrastructure of wastewater treatment plants is "B-".

The primary source of funding for the Bureau of Sanitation's wastewater treatment program comes from the user fees. The Bureau of Sanitation is responsible for the operation and maintenance of the wastewater treatment plants. The Bureau of Engineering manages the design and construction projects for this infrastructure system.

The 2003 City's Blue Ribbon Task Force Report addressed the condition assessment of the Bureau of Sanitation's infrastructure for wastewater treatment plants. A goal had been set in 2003 to maintain the overall grade of "B" for the wastewater treatments plants program.

### description

The Bureau of Sanitation's wastewater treatment plants treat residential and commercial wastewater generated within its 600 square mile service area. Treatment facilities range from secondary to advanced tertiary with effluents being discharged into reclaimed water systems or the environment.



The Bureau of Sanitation owns and operates four wastewater treatment facilities. The largest of these is the 450 million gallons per day Hyperion Treatment Plant. Over two-thirds of Los Angeles' wastewater, primarily from the central and western sections of the City, is treated at Hyperion Treatment Plant. The Donald C. Tillman Water Reclamation Plant, with a capacity of 80 million gallons per day, treats flows from the San Fernando Valley. The 20 million gallons per day Los Angeles-Glendale Water Reclamation Plant serves the area around Griffith Park, including the Glendale and Burbank communities. The 30 million gallons per day Terminal Island Wastewater Treatment Plant in San Pedro serves the communities surrounding the Los Angeles Harbor.

More detailed information about the City of Los Angeles' wastewater treatment facilities is available at: [http://www.lasewers.org/treatment\\_plants/about/index.htm](http://www.lasewers.org/treatment_plants/about/index.htm)

## assessments

The Bureau of Engineering conducts an assessment of wastewater treatment plant processes every three to five years. The assessment is largely based on the existing records (Capital Improvement Projects listing, Project Schedules, and Plant Drawings) and interviews of the key on-site personnel. The physical condition and capacity of the wastewater treatment plants were identified and the entire infrastructure was graded from "A" to "F". Other elements of consideration included performance and funding needs.

The grading system was established by a Board of Public Works Report titled "Infrastructure Condition Assessment Summaries" and was adopted on January 10, 2000. This grading system is used to determine the overall grade of "B-" for the wastewater treatment program.

## grades

### WASTEWATER TREATMENT

current grade: **B-**

recommended grade: **B**





GRADE	DESCRIPTION
<b>A</b>	In very good physical condition. Has the capacity to meet the future demand. No action required.
<b>B</b>	In good to fair physical condition. Has the capacity to meet current demand. No immediate action required.
<b>C</b>	In fair to poor physical condition. Has the capacity to handle current and future dry weather flow. Requires routine action.
<b>D</b>	In very poor physical condition. Has the capacity to meet only the current dry weather flow. Requires significant action.
<b>F</b>	Requires emergency action.



## recommendations

Currently, three wastewater treatment and water reclamation facilities are assigned a “B-” rating. One treatment plant is at the grade “C”. It is recommended that the wastewater treatment and water reclamation facilities of the Bureau of Sanitation be improved to a minimum overall operating condition of “B” or better with no individual treatment process being lower than “C”. The City should also seek to bring improvements to the system where opportunities exist in order to meet projected increase in flows, enhance efficiencies, and continue to protect the public and the environment.

For the wastewater treatment plants, the 10-year planned expenditures for the Wastewater Capital Improvement Program is estimated at \$640 million. Due to the reduction in the City’s budget caused by the recent economic downturn, many projects in the wastewater treatment program have either been canceled or rescheduled to later fiscal years to balance with the projected available funding. These delays may reduce the facilities’ grades below the levels recommended above.

<b>WASTEWATER TREATMENT PLANTS 10-YEAR CAPITAL IMPROVEMENT EXPENDITURE PROGRAM</b>	
<b>PLANT</b>	<b>EXPENDITURES \$ in Millions</b>
Donald C. Tillman Water Reclamation Plant	\$ 52
Hyperion Treatment Plant	\$ 475
Los Angeles/Glendale Water Reclamation Plant	\$ 40
Terminal Island Water Reclamation Plant	\$ 73
<b>TOTAL WASTEWATER CAPITAL IMPROVEMENT PROGRAM 2010-11 THROUGH 2019-2020</b>	<b>\$ 640</b>

Detailed procedures and policies are outlined in manuals to ensure that projects meet the standards set by the City of Los Angeles.







## Acknowledgements

The preparation of the 2010 Department of Public Works Infrastructure Report Card (IRC) benefited from the assistance and expertise of the following employees who participated wholeheartedly in this process.

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