



2015

Environmental Report Card

FOR LOS ANGELES COUNTY

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Executive Summary

The challenge of moving towards sustainability in Los Angeles County is daunting: it is the most populous county in the nation and consists of 88 individual cities. After nearly two years of gathering and analyzing data, the Institute of the Environment and Sustainability at UCLA has developed an Environmental Report Card for the County of Los Angeles, the first of its kind in the nation for a major metropolitan area. The aim of this report card is three-fold: to provide a broad picture of current conditions, to establish a baseline against which to assess the region's progress towards environmental sustainability, and as a thought provoking tool to catalyze policy discussion and change. In collaboration with the Goldhirsh Foundation and the LA2050 initiative, our hope is to start a conversation within the community about what our overall goals should be for LA County's environment, how we can better measure our progress, and what we can do to make substantial strides toward reaching these goals.

Table 1: Summary of Grades

Category	Grade	Indicators
WATER	C	Water Sources and Consumption, Drinking Water Quality, Groundwater Quality, Surface Water Quality, Surface Water Discharges, Beach Water Quality
AIR	C+	Ambient Air Quality, Stationary Source Toxic Emissions
ECOSYSTEM HEALTH	C-/INCOMPLETE	Protected Areas, Wildfire Distribution And Frequency, Drought Stress, Kelp Canopy Coverage, Rocky Intertidal Species Populations, Wetland Conditions
WASTE	B/INCOMPLETE	Municipal Waste, Hazardous Waste
ENERGY AND GHG	B-	Greenhouse Gas Emissions, Energy Sources/Renewables
QUALITY OF LIFE	C+	Community Accessibility, Commute Times & Mode Of Transportation, Park Access & Quality, Community Environmental Health

We used 22 different indicators to grade the environment of Los Angeles County. These indicators fell into six overall categories: Water, Air, Ecosystem Health, Waste, Energy and Greenhouse Gases, and Environmental Quality of Life. Some of the indicators used were developed by environmental groups or government agencies. Also, we developed indicators based on data provided by numerous sources. Many of the factors that are critical to assess environmental condition aren't measured on a routine basis or the data is

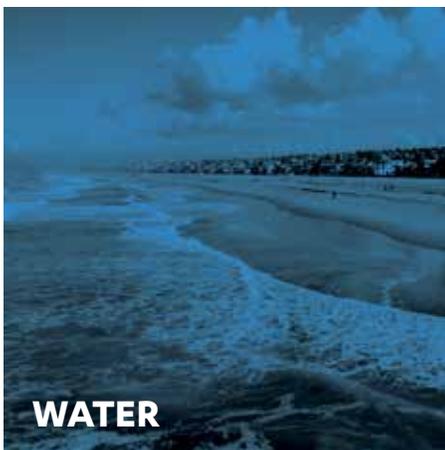
not readily accessible. Indeed, gathering and analyzing data from numerous sources was the biggest challenge in developing the report card. We have included recommendations on monitoring and data needs at the end of this report.

Another major challenge was developing a grading system. Ideally, grades would be based on an objective system that takes into account how well the region is doing for each indicator. For some areas like ambient air or surface water quality,

grading systems could be developed based on compliance with environmental laws. However, the majority of indicators are not tied to any environmental standards or legal requirements. Even those that are tied to standards, such as ambient air quality, pose an assessment challenge. The LA region's air quality has improved dramatically over the last 45 years, but the region is still frequently in non-attainment for ozone and PM10 (particulate matter) standards. As such, how does one grade the region? We decided to use our

best professional judgment of current conditions and we took the historical context into account. In addition, we implemented an extensive external review process that utilized some of the leading experts in the six environmental categories. Thus we acknowledge the report card grading is currently subjective, based on our expertise and knowledge of the tremendous changes in environmental quality that have occurred. Further, for this report card, we chose to only assign grades to the six categories, rather than to individual indicators, in order to limit the subjectivity of the grades.

The completion of the “Sustainable LA” UCLA Grand Challenge research plan, and city-level plans such as the City of Los Angeles Sustainability pLAN, may establish numeric targets that could be used to establish a grading system for future report cards. We plan to solicit extensive feedback from government agencies, NGOs, academics, and business leaders, as well as from the community at large, on recommendations for better indicators, and goals and metrics needed to develop a more consistent and explicit grading system. Ideally, the environmental report card will be produced on an annual or biannual basis.



GRADE: C

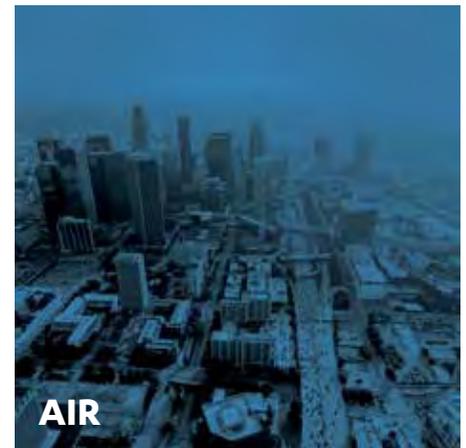
- Currently, approximately 58% of the water used in LA County is sourced from outside the region.
- Between 2000 and 2013, per capita water demand dropped by roughly 16%; however, there have not been gains in

these areas in the last few years and use increased from 2011 to 2013.

- Overall, based on the publicly available sources of data, nearly everyone in the Los Angeles area was provided with clean water in 2012.
- Contamination of groundwater wells is prevalent countywide. The principal contaminants include solvents, nitrates, benzene, MTBE and perchlorate. It is important to note that contaminant levels in public supply wells do not equate to drinking water quality. Where groundwater is used for drinking water, additional monitoring is required and the water almost always undergoes further treatment. Furthermore, not all local groundwater is designated for drinking water supply. However, contamination of drinking water aquifers means that additional energy and resources must be expended for this local resource to replace imported water.
- Surface water quality in Los Angeles County is poor. Approximately 85% of LA County assessed rivers, streams and shorelines, and essentially 100% of assessed bays, harbors, lakes and estuaries, are impaired for one or more pollutants.
- Summer 2013 dry weather water quality at LA County beaches was excellent and winter dry weather water quality was also very good. Wet weather water quality continues to be an area of concern statewide - 40% of LA County monitoring sites receiving F grades in wet weather

Despite summer beach water quality improvements, continued reductions in pollutant loads from waste water treatment plants and industry, a long history of water conservation, successful water recycling efforts in much of the county, and reliable, high quality drinking water coming out of the vast majority of taps, the LA region received a C on the report card. Surface water quality impairments are prevalent county-wide, stormwater is highly polluted and not improving in quality, groundwater contamination is severe and county-wide, and the region is far too reliant on water

supplies from the ecologically sensitive Colorado River, Eastern Sierra, and the Bay-Delta regions. With the passage of Proposition 1, TMDL deadlines looming, and state and local commitments to water recycling and integrated water management, the region has a tremendous opportunity to improve in the near future.



GRADE: C+

- Nearly all areas of LA County experienced exceedances of the Federal ozone standard in 2013. Exceedances of the stricter State standard were more prevalent, occurring nearly 17% of days in the Santa Clarita Valley, and nearly 12% of days in the East San Gabriel Valley.
- Exceedances of the Federal standard for fine particles in 2013 were focused in areas around downtown Los Angeles and the San Fernando Valley.
- The estimated carcinogenic risk from air toxics in the LA Basin has dropped by 65% in 2013 compared to 2005. While diesel PM exposure decreased by ~70%, it still dominates the overall cancer risk from air toxics. Highest risk areas are near the ports and transportation corridors.
- Reported air emissions of many pollutants from industrial facilities have increased significantly since 2009. The top three emitters comprise a significant portion of the annual emissions.
- Exide (now permanently closed) and Quemetco, two large battery recyclers, have historically been two of the largest

emitters of metals (lead and arsenic in particular), but enforcement actions and changes to facility operations have reduced emissions over the last several years.

We acknowledge and applaud the undisputable air quality progress that has occurred over the past 40 years on smog, lead, other air toxics, and diesel particulates. The positive results of these improvements are exemplified by a recent long term study by researchers at USC that demonstrated that lung performance of adolescents improved with improved air quality in the Los Angeles basin²¹. However, air quality continues to be frequently dangerous in some parts of the region, and has negative impacts on surrounding natural areas as well. Achieving attainment with air quality standards is also becoming more difficult due to tougher new, health-based standards and the contribution of overseas pollution, such as from China²². We are especially concerned about the prospective impacts on air quality of increased heat incidences due to climate change; warmer temperatures have been shown to increase surface ozone and future increases are expected to be greatest in urban areas²³. Regional prevailing winds push air pollution inland where there are more lower income residents, and health impacts are likely to be aggravated into the future unless much greater strides are taken to reduce pollutants from all sources. Moreover there is a strong relationship between the location of polluting industrial manufacturing and our goods movement facilities and corridors and low-income residents of color²⁴. More protective polices, more inspections and better enforcement of existing regulations continues to be a major need, as is the need for more standardized, comprehensive monitoring and reporting requirements. More research on chemical toxicity is needed, especially on cumulative and synergistic impacts of exposure. More research on clean manufacturing – which has lagged – is also needed. However, continued progress on reduction of diesel particulates, efforts like the Clean Up Green Up²⁵ initiative, and the transformation of the transportation sector to zero emission vehicles provides promise for better grades in future years.



GRADE: C- / Incomplete

- Thirty-four percent of total LA County land area is protected public land, and regulatory designations limiting use or development encompass an additional 8%. There are 41,807 acres of marine protected areas.
- Nearly 100,000 acres of land in LA County have experienced significant departures from historic fire frequency, with potential for vegetation type change and increased risk of structure loss (in areas that are burning far too frequently) and potential for increased fuel loading and more intense wildfires (in areas burning far less frequently).
- Remote sensing data shows that Los Angeles County vegetation is experiencing extreme water stress due to the ongoing drought.
- Total kelp canopy coverage in LA County has remained relatively stable over the last 10 years.
- Dramatic declines in sea stars at all four monitoring sites and mussels at Point Fermin over the last decade, raise concerns about the health of our local rocky intertidal habitats. Climate change induced sea level rise may lead to larger impacts in the future due to loss of habitat. Sea Stars have been significantly affected by the current bout of wasting syndrome affecting much of the North American Pacific coast.
- Both the total area and types of coastal wetlands have changed dramatically

over the last 150 years. LA County has lost 96-98% of its vegetated and un-vegetated estuarine areas from 1850 to the present.

- Urban streams throughout LA County exhibit very poor functional condition, reflecting the impacts of channelization and loss of floodplain connectivity, as well as poor biological condition, potentially due to factors such as changed hydrologic regime, loss of instream habitat and water quality impairments.

Despite the fact that the region continues to make progress in protecting both terrestrial and marine open space, historic habitat loss due to urbanization and the myriad of stressors (invasive species, pollution, shared uses) that coincide with wide scale urbanization have inflicted a damaging toll on the region's diverse ecosystems. With the current indicators available, making an overall assessment on ecosystem health is difficult. For example, although marine protected areas have been recently established in LA County, we don't have the data yet to determine if the Santa Monica Bay and Catalina coastal ecosystems inside MPAs have improved due to reductions in fishing pressure. Also, the state of fish and squid populations off the LA coast is still poorly understood. Further, the fluctuating state of local kelp canopy and rocky intertidal indicator species gives a confusing picture of the state of our coastal ecosystems. Riparian habitat is largely degraded in urban areas because of the loss of natural channels and surrounding buffer zones. The state of the terrestrial biota in the County is even more uncertain. We need insect, bird, mammal, herpetofauna, plants and other indicator data to set baselines and assess terrestrial ecosystem health. For example, constant effort mist-netting and point counts of birds in parks, protected areas, and urban areas is a must. The LA County Museum of Natural History has initiated a number of Citizen Science monitoring projects including Reptiles and Amphibians of Southern California (RASCals), Spider Surveys, and the BioSCAN (biodiversity science: city and nature) insect monitoring program. These may form the basis for future county-wide indicators. There also

needs to be a systematic approach applied to monitoring the presence and impact of invasive species in both local aquatic and terrestrial ecosystems. Finally, the ability of urbanized Los Angeles to be home to important habitat area has not been well quantified or imagined. It is critical to determine the extent to which native plants in the urban fabric can add more high-quality habitat for fauna and help maintain native floral biodiversity.

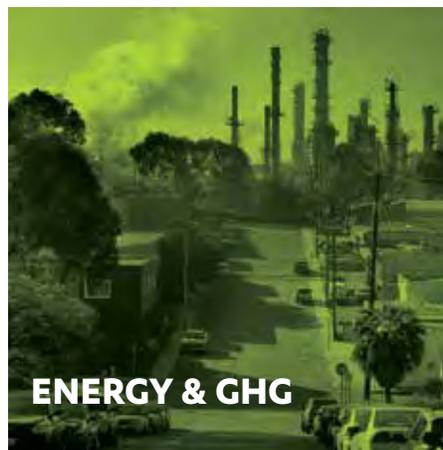


GRADE: B / Incomplete

- Performance against municipal waste per capita disposal rates has improved over the past 5 years and no LA County jurisdiction appears to be exceeding its population-based per capita disposal target for the year 2013.
- Total municipal waste generated by the County peaked in 2005 and has generally decreased since, with 2013 generation just under 9.5 million tons; however, waste tonnage has leveled off over the last 4 years with little improvement since 2010.
- The total amount of hazardous waste generated in LA County in 2013 was approximately 2.2 million tons, although this may be an over-estimate, due to certain limitations in data availability.
- Only a small fraction of the total hazardous wastes generated in LA County are reported through the EPA Toxic Release Inventory requirements, limiting data availability on chemical constituents in hazardous waste streams.

- The Exide Technologies facility in Vernon and the Quemetco facility in the City of Industry (both lead acid battery recyclers) were among the top seven generators for both DTSC-reported wastes and TRI-reported wastes. Quemetco alone generated approximately half of the TRI reported hazardous waste in 2013.

Thanks to AB 939, subsequent regulations, and numerous recycling and source reduction programs, all cities in LA County have successful solid waste diversion programs as required by CalRecycle. However, due to limitations in data collection, there are not reliable data on solid waste recycling programs or even the actual quantities of waste generated and diverted from landfills. With the advent of a city-wide exclusive franchise system for municipal solid waste, the city of Los Angeles has the opportunity to require more complete collection, diversion, and recycling data from their contracted waste management companies. For hazardous waste generation in the region, volumes are extremely high, but that's not surprising from a region as populous and industrialized as Los Angeles County. A more precise analysis is hampered by limitations in data availability; in addition to questions related to volumes and chemical constituents, an evaluation of waste minimization efforts and regulatory compliance was not possible due to lack of readily available information.



GRADE: B-

- LA County annual, per capita GHG emissions in 2010 were 10.1 metric

tons; annual per capita electricity consumption in 2010 was 5.9 megawatt hours.

- LA County has one of the lowest per-capita electricity consumption rates in the nation, comparable to San Francisco and New York City. However, due to continued reliance on coal, its greenhouse gas emissions rate is approximately 30% higher than those cities, while still being significantly lower than other metropolitan regions.
- Building energy comprises the largest single portion (>39%) of the County's emissions inventory,
- Almost all LA County utilities met or exceeded the 20% renewable energy standard for 2013. The only exceptions were the City of Cerritos, Vernon Light & Power, and Azusa Light & Water.
- Solar power represents an extremely small percentage (< 1%) of the energy mix for LA County utilities. Renewable energy comes primarily from wind (>10%), geothermal (~ 5%), and biomass/biowaste (~3%).
- Coal energy is still prevalent in the region, with a number of utilities receiving ~30-40% of their energy from coal sources.

Although the region is largely on track to meet renewable portfolio standards and GHG emission targets, there is still too great a reliance on coal as an energy source. Very little of the region's energy is generated by local sources such as solar. Further, GHG emissions and energy use data are often inadequate for accurate assessment. Fleet, busline and truck transitions from diesel to natural gas have reduced GHG emissions, as have more fuel efficient cars. In general, Title 24 and numerous cities' green building requirements are leading to more energy efficient new buildings, but there are not enough comprehensive energy efficiency retrofit programs for existing building stock.

However, overall, the LA region is far more energy efficient and has lower per capita GHG emissions than many large

U.S. cities. Although our mild climate helps greatly, the fact that our per capita energy use and GHG emissions are half the national average demonstrates that energy efficiency and GHG reduction efforts make a difference. At the same time, progress toward sustainability requires an industry trajectory that adds higher levels of value to the economy for each terajoule that is consumed, and cleaner sources of power that release less greenhouse gas per terajoule consumed. Community Choice Aggregation (CCA) is emerging as a promising option for increasing levels of clean energy sources, especially at local levels. Two ongoing examples of CCA in California are Sonoma Clean Power and Marin Clean Energy; within LA County, the City of Lancaster has just approved a CCA Program. A State standard for renewable (bio)gas would provide additional benefits of reducing pressure on landfills, dairies and other methane producing activities. National standards are needed for categorizing and tracking energy sources in order to monitor progress toward renewable goals.



GRADE: C+

- The average Walk Score for the City of Santa Monica was 78, for the City of Los Angeles - 64, and for the City of Long Beach - 66. For comparison, the average of the 141 Walk Score-rated cities was 47; the highest was 88 for New York City, followed by 84 for San Francisco.
- The overwhelming majority of LA County residents, 73%, drove alone to work; 10% carpoled and 7% took public transportation.
- The mean travel time to work was 30 minutes. Only 7.5% of the public commuted less than 10 minutes a day while 22.6% of the workforce commutes over 45 minutes to work. The mean time for public transportation was 75% greater than that for driving alone, and 54.7% of mass transit commuters take over 45 minutes to get to work.
- The City of Long Beach was ranked 24th out of 60 cities in the US with a Park Score of 54. The City of Los Angeles was ranked 45th out of 60, with a Park Score of 42. ParkScores calculated by the Trust for Public Land ranged from a high of 82 (Minneapolis) to a low of 26 (Fresno).
- Census tracts with the highest percentiles of Pollution Burden and Overall EnviroScreen Scores are widespread across the southern half of Los Angeles County, the area with the lowest average annual incomes. As expected, these tracts correspond to major transportation corridors and industrial areas.
- Twenty-one percent of the County's population lives in census tracts ranking in the top (worst) 10% of Pollution Burden scores within the State, and >19% of the County's population lives in census tracts ranking in the top (worst) 10% of Overall EnviroScreen scores within the State

Based on the indicators we analyzed alone, the region would get a C grade or worse for environmental quality of life. However, there are many aspects of the region's quality of life that have improved dramatically over the last two decades. There have been substantial investments in parks through Proposition 12 and County Measure A, and through efforts from the Trust for Public Land, People for Parks, Amigos de Los Rios, North East Trees, Los Angeles Neighborhood Land Trust, and local and state conservancies and the Los Angeles Conservation Corps. Even measures like LA's stormwater bond, Proposition O, have added greatly to parks in a region surrounded by beaches and mountains.

Public mass transportation has improved dramatically with Federal investments and Measure R funds catalyzing numerous far-reaching projects. The vast majority of

residents in the region live within walking distance of public transportation. City walkability is a challenge in many areas, but programs like Mayor Garcetti's Great Streets, and efforts in numerous coastal cities give one optimism that communities are becoming more welcoming to pedestrians. And the miles of bike lanes have increased greatly over the last five years as activists and CicLAvia have brought widespread awareness to the need for more bikeable communities. But despite these numerous regional and local improvements in quality of life metrics, the region's traffic continues to be untenable and far too many people are living in areas with low EnviroScreen scores: a strong sign of poor environmental health in many communities.

Conclusions

Based on our analyses, the LA region will not be getting on the Dean's list for its first environmental report card. Grades ranging from C- to a B/I won't make anyone happy. However, the Environmental Report Card is our first effort so some of our indicators may not have best reflected how well the region is doing in each environmental category. Over the years, new indicators will be developed, new goals and targets will be adopted, we'll rely less on one time studies and old baseline data for indicators, and more objective grading approaches will be developed.

Although the region has experienced dramatic improvements in a wide variety of environmental areas over the last few decades, we still have a long way to go till there are safe, healthy neighborhoods for all of the region's residents and workers. At the end of 2013, UCLA Chancellor Block announced the university's first ever Grand Challenge – Sustainable LA, through reaching goals of 100% renewable energy, 100% local water and enhanced ecosystem health by 2050 in all of Los Angeles County. In the first two categories, the trends are in the right direction, but they are definitely not at a pace that will achieve the energy and water goals. As for the biodiversity goal, we don't monitor LA County's ecosystems well enough to even make an assessment on our progress, but we do know that climate change,

human population growth, and increasing urban development will make biodiversity conservation a tougher chore in 2050 than it is today. In future report cards, we will assess how well the region is moving towards achievement of these ambitious environmental goals.

The last year has demonstrated that there is the opportunity for tremendous environment and sustainability progress statewide and locally. In Governor Brown's 2015 State of the State speech, he announced five major climate goals: 1) By 2030, half of the state's electricity will come from renewable energy sources; 2) By 2030, energy efficiency savings will double; 3) By 2030, California will cut petroleum use by cars and trucks in half; 4) California will aggressively reduce the release of methane, black carbon and other pollutants; and 5) The state will develop and implement programs that sequester carbon in natural and working lands. These announcements build on the Governor's successes of landslide approval of the Proposition 1 water bond, and considerable major action in response to his drought declaration and the California Water Action Plan.

Regional and local water delivering entities are working much harder to reduce water use across the board, and to plan for a dramatically different water regime in the future involving less reliability on external sources. In response to the state's drought actions, the city of Los Angeles and Santa Monica have adopted bold water conservation targets of 20% in two short years. And the entire region, funded largely by the MWD, has initiated aggressive lawn replacement programs with rebates of up to \$3.75 per square foot in the city of L.A., a gradual recognition of the region's unique Mediterranean climate and plants. Also, in April, Mayor Garcetti will release the city of Los Angeles' first ever sustainable city plan. The Sustainable City pLAN will encompass the environment, economy and social equity addressing issues including energy, water, climate, green jobs, and the city's biological resources.

The recent change in the County Board of Supervisors promises to ensure that environmental quality is coupled with

greater attention to social equity. The Board of Supervisors recently added two Supervisors with long-standing environmental records: Sheila Kuehl and Hilda Solis. Kuehl has a long history of protecting Santa Monica Bay, the Santa Monica Mountains and better managing California's solid waste and water supply. Solis has a long environmental justice, toxics, and air quality history.

The Los Angeles Regional Collaborative for Climate Action is becoming the go-to place for information about policies cities can adopt to reduce their greenhouse gas emissions. The Metropolitan Transit Authority has bold projects on the drawing boards that will tie the region together more fully, including providing more transit access in and out of the Valley. Youth are flocking to Los Angeles as a place of tremendous opportunity. They are bringing their creative energy, building the Clean-Tech workforce, and exhibiting new transit and bicycle friendly attitudes. This means more local manufacturing as well, and there is a noticeable growth in "Made in L.A." products, from clothing to micro brews. The region is changing, and facing its challenges.

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