



Adapting L.A. to Fight Climate Change and Protect it from the Consequences

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Deep in the ground below Los Angeles sits a secure high tech facility. From this room, thousands of emergency workers and medical personnel, and their vehicles and rescue equipment can be deployed and controlled. The facility requires a crack team of highly trained representatives from each city agency, supported by continually updated intelligence as it monitors progress and allocates or relocates resources to situations of higher need. Team members collaborate to hold an integrated picture of the city, connecting the dots to protect the public and minimize damage. Welcome to the city's Emergency Command Center. It operates when there is an immanent threat of flood, earthquake or civil unrest.

Nearly every day of the year, the center is dark and dormant. But perhaps it shouldn't be. Los Angeles faces a quiet, growing, daily disaster that causes injury, pain, loss of life and economic damage to thousands of residents and businesses. The impact is felt far beyond the city limits, threatening the health and safety of millions of people around the world.

Given the urgency, it's imperative that we mobilize the city's resources to protect the population from this unfolding disaster. Although many agencies and organizations are addressing these issues, they're doing so in uncoordinated silos, wasting time, energy and resources. Worse, their uncoordinated efforts often conflict.

The culprit responsible for this quiet disaster is our resource use. Simply put, we've become one of the largest sources of global warming on the planet. Our warm, dry climate pushes us to air condition our buildings and import our water. Pumping it over the mountains into the LA basin is the largest single use of electricity in California. And then there is the energy we use to power our vehicles.

Burning energy produces global warming gases and air pollution. While global warming may seem remote, air pollution is immediate and leads to respiratory and lung diseases, and other problems that diminish our health,

productivity, and quality of life.

A misunderstanding of the city's environment exacerbates the problem. For example, roughly half the water we need each year rains down onto a city which is 2/3 asphalt, concrete or buildings. We send nearly all this water to the ocean, causing drought, pollution, and flooding problems. In summer, that unshaded hardscape raises city temperatures as much as 10 degrees, increasing photochemical smog and pushing us to use more energy for cooling. The tree-deficient landscape undoubtedly is a factor in the Centers for Disease Control's declaration of melanoma as increasingly the most common form of cancer in America.

Today there is no person, no agency, no system, no structure at any level of government—or in the community—whose job is to monitor and manage our city ecosystem. With an integrated management approach, we could save precious time and utilize the billions of dollars currently wasted for implementing solutions.

Let's look at water. The LA DWP spends nearly \$1 billion every year on water. The LA County Department of Public Works spends roughly \$500 million disposing of 85% of our rainfall, which as stated above, could meet half our annual demand. We may be spending a half billion dollars a year to throw away a half billion dollars worth of rainfall.

The good news is that these problems are reversible. The correct approach, contrary to the climate change naysayers, could not only reduce our global warming impact, but improve our economy and quality of life.

There are two things to do:

1. We must reorganize our infrastructure management, from fragmented to integrated, just like the Emergency Command Center.

2. We must shift our priority from outmoded brown and gray technology to green, and figure out how to invest in human capital and natural capital to meet our water needs and reduce our energy demands.

This means understanding Los Angeles as a living ecosystem and working with nature to rehabilitate its ability to protect us and meet our needs.

Consider the power of trees and forests. The root zone under a large native oak includes fallen leaves, twigs, compost, mulch, humus, and the permeable soil that is home to millions of organisms. Those elements work together as a giant sponge that can filter out pollutants and treat up to 57,000 gallons of rainfall in a 12-inch flash flood, using it to recharge the ground water. Take that tree away, and you get a flood, pollution, soil erosion and diminished local water supply.

Ten years ago, TreePeople brought together a team of economists, engineers, and building and landscape architects and an array of government agencies to determine the feasibility of adapting the LA landscape with a combination of trees, and technologies that mimic them ... cisterns, bio-swales, and gray water systems. The premise was that we waste so much money in dis-integrated infrastructure management, that there would be enough to create an integrated ecosystem. The multi-year study and demonstration projects yielded potential results such as cutting water importation by half, solving our flooding and

stormwater pollution problem, dramatically reducing energy used for cooling, improving air quality and creating up to 50,000 new jobs.

This promise triggered more demonstrations, feasibility studies and initial action including retrofitting homes, schools, parks and an entire sub-watershed. It led to LA's first integrated plan for water, recently adopted by the city council. The city and county have each formed Watershed Management agencies and begun regional integrated planning. Voters have passed billions of dollars in new bonds that require integrated, multi-purpose projects. Now we need—and have in Mayor Villaraigosa--the leadership and vision to lead Los Angeles in a new kind of Olympian effort.

Imagine managing Los Angeles as one living watershed ecosystem. Imagine the impact of strategically planting enough trees and tree mimicking technologies to create functioning community forests in every neighborhood of Los Angeles. Imagine the amount of water and energy saved and jobs created if we adapted and properly managed the entire city landscape.

Imagine if every day, a crack team of our best and brightest people, supported by ongoing feeds of intelligence and data, collaborated to monitor conditions and deploy resources, people, programs, and equipment to heal our city and communities by eliminating the sources of the damage, disease and destruction. Perhaps its time to stop imagining and begin acting.