

A4LE LEARNINGSCAPES 2019

---

**THE GREAT OUTDOORS**

ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES



**LEONA KETTERL**  
SENIOR ARCHITECT  
RAINFORTH GRAU ARCHITECTS



**GERARDO SALAZAR**  
ADMINISTRATOR OF OUTDOOR  
AND ENVIRONMENTAL EDUCATION  
LOS ANGELES UNIFIED SCHOOL DISTRICT



**GARY J. LAI**  
LANDSCAPE ARCHITECT  
PRINCIPAL, AHBE/MIG

## LEARNING OBJECTIVES:

1. Participants will learn strategies to utilize nature in culturally relevant and responsive teaching pedagogues.
2. Using two Outdoor Education Center programs as case study examples, participants will identify inclusive education strategies to encourage positive attitudes toward science and to foster communication and collaboration skills.
3. Participants will explore various methods to employ, and educate users on how to care for native and drought resistant plants in their landscape designs.
4. Participants will examine techniques of incorporating sustainability into school site design and the importance of instilling students with the value of water conservation.

# THE GREAT OUTDOORS

ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES

# THE GREAT OUTDOORS

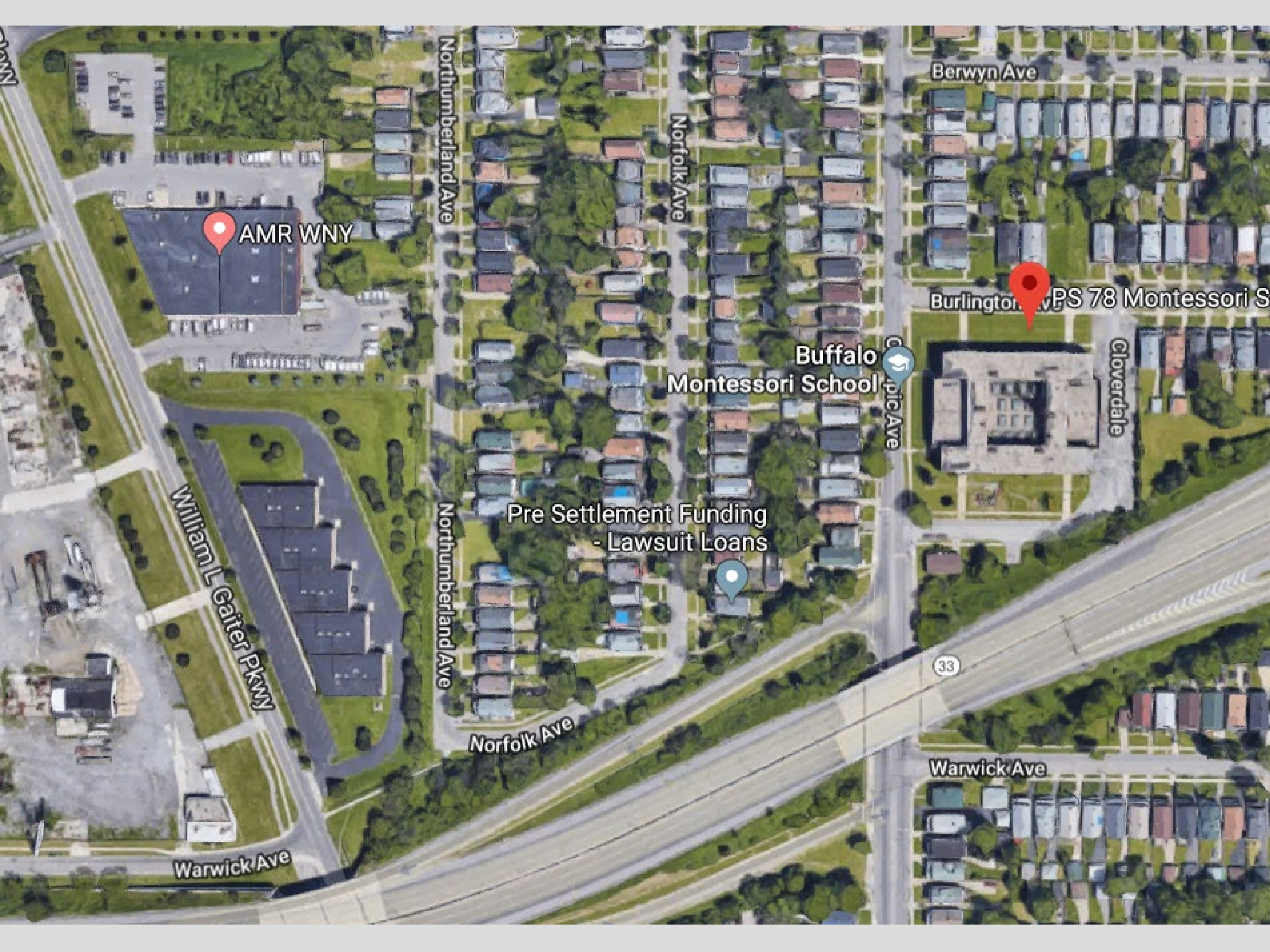
ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES



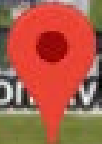








AMR WNY



Burlington WPS 78 Montessori S



Buffalo  
Montessori School



Pre Settlement Funding  
- Lawsuit Loans

William L Gaiter Pkwy

Warwick Ave

Northumberland Ave

Northumberland Ave

Norfolk Ave

Norfolk Ave

Berwyn Ave

Cloverdale

Warwick Ave

33



©2019 Microsoft Corporation | 2/27/2019

2420 S Shenandoah St, Los Angeles, CA 90034







© 2019 Microsoft

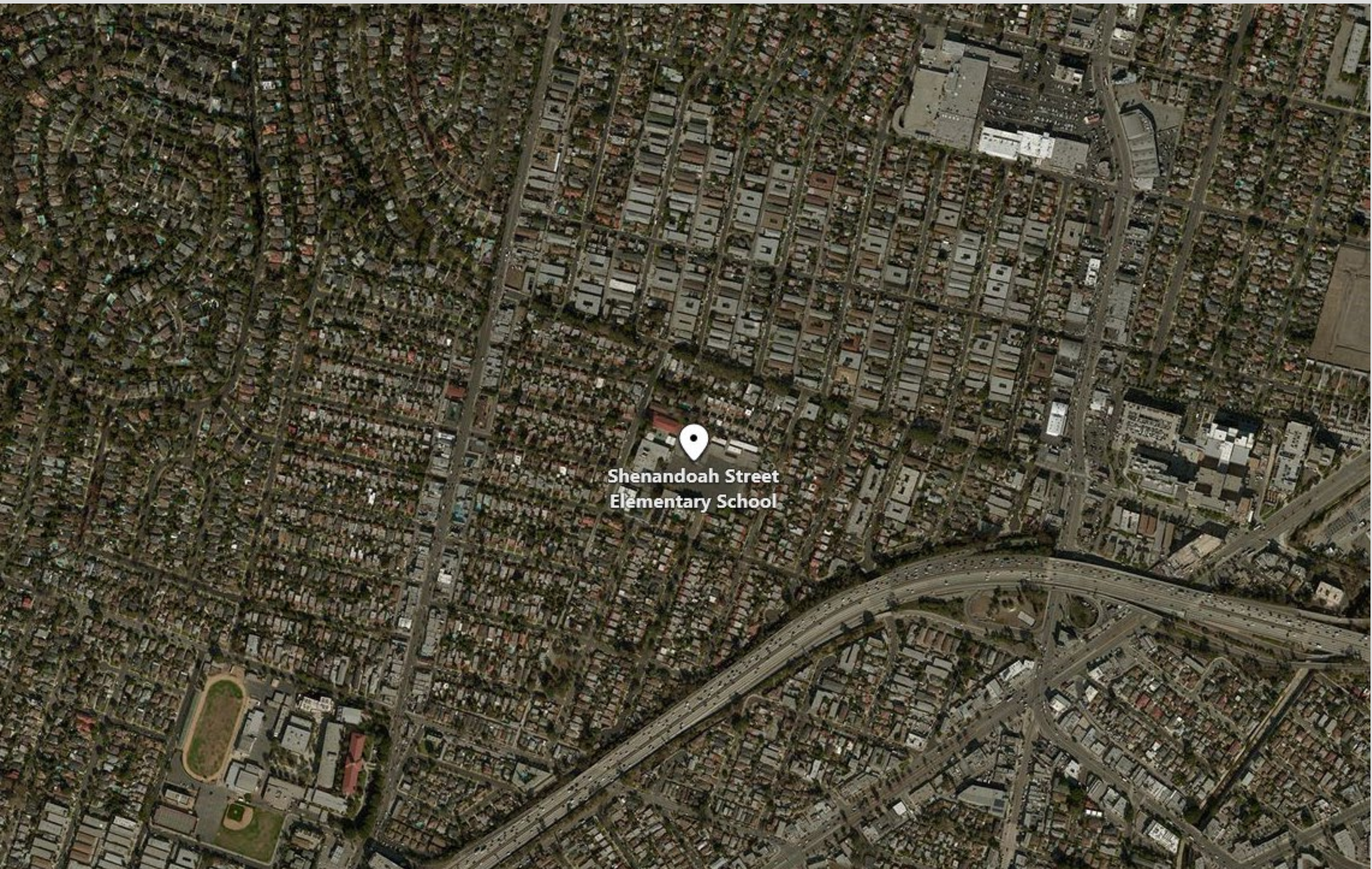
United States, CA, Los Angeles  
Co., Los Angeles

Labels

Shenandoah Street  
Elementary School

50 feet





Shenandoah Street  
Elementary School





*and in the suburbs...*



***preserve ecosystems***

***reduce heat island effect***

***improve air quality***

***stormwater management***

***resilience***

***biophilia***

***nature deficit disorder***

***healthy development***



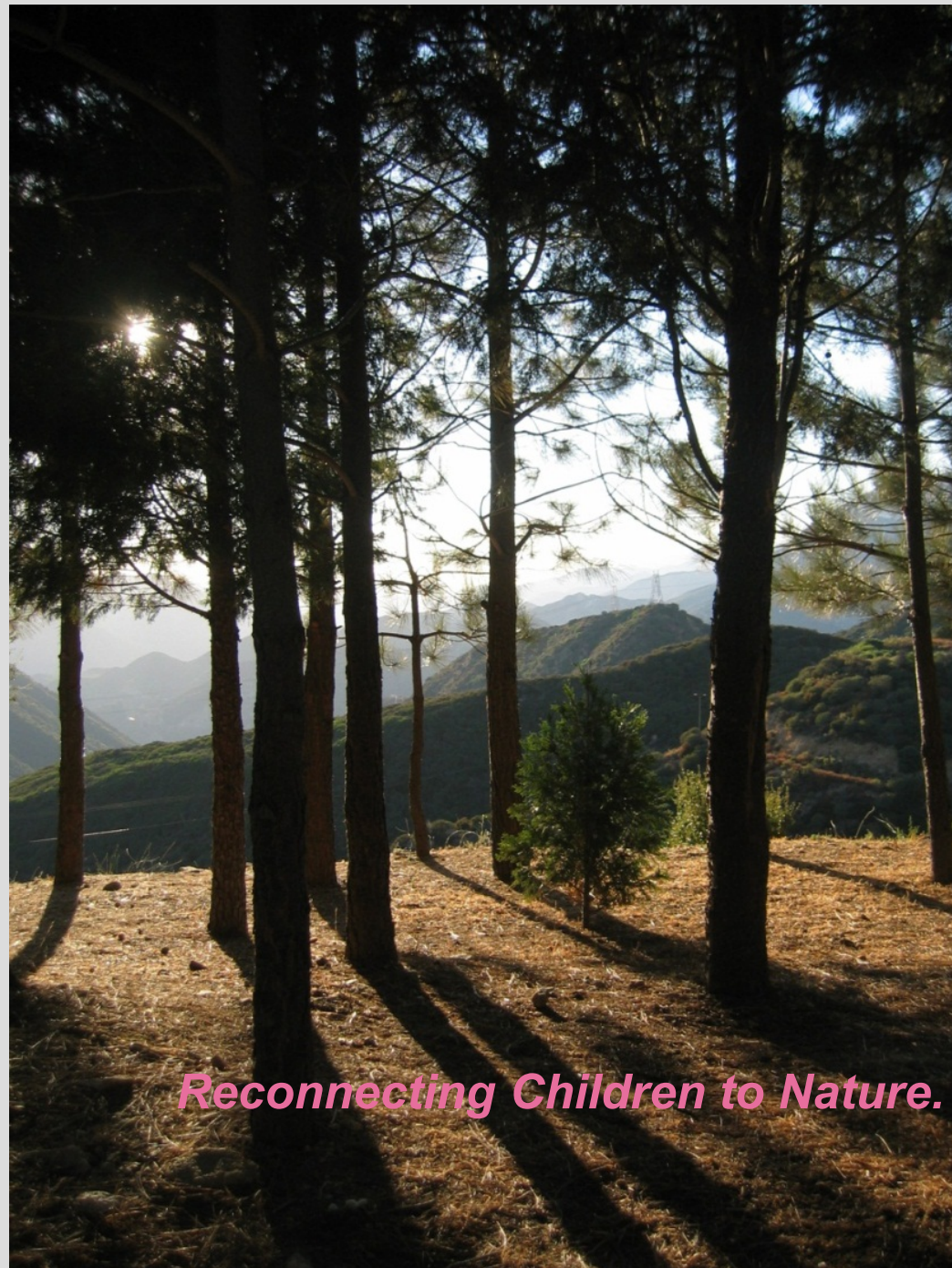
# OFFICE OF OUTDOOR & ENVIRONMENTAL EDUCATION

## THE GREAT OUTDOORS

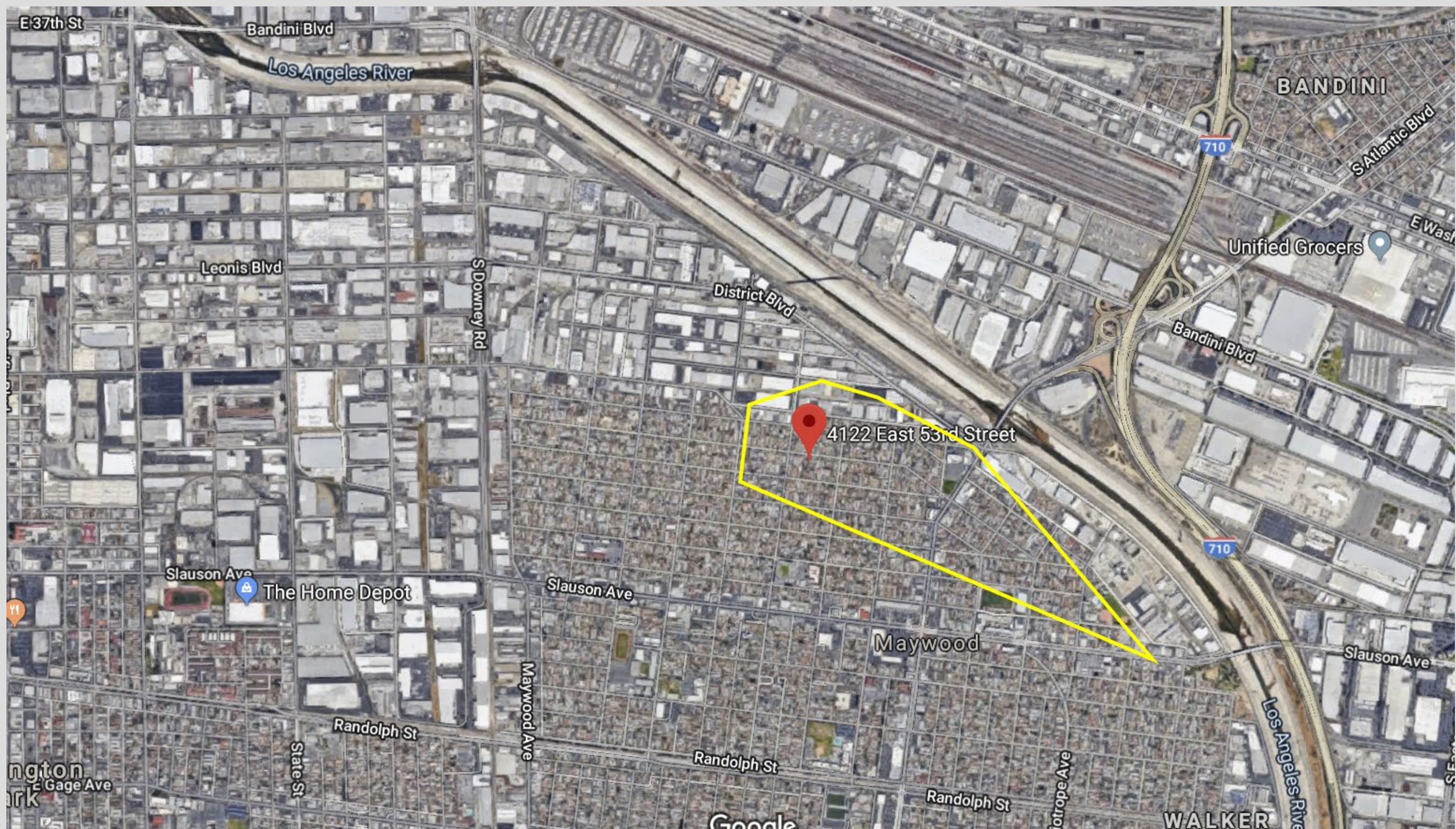
ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES



# OOEE















# What is our mission/vision?

## PURPOSE

- How are we perceived?
- What's our 30 second elevator pitch?
- Are we saying the same thing?
- Do we offer what people need?
- How do we measure success?
- Are we managing expectations?





Earth & Energy

# China Pushes Electric Vehicles and Makes Producing Fossil Fuel Vehicles Tougher

Getty Images

IN BRIEF

SHARE





Earth & Energy

# General Motors Will Launch 20 All-Electric Cars by 2023

📷 General Motors

IN BRIEF

SHARE



# IN THE FOOTSTEPS OF ZIKA:

## The Next Critter-Borne Viruses

There are currently over 50 countries with confirmed cases of the Zika virus. While health authorities are focused on containing the spread of this latest mosquito-borne disease, epidemiologists are on the lookout for new viruses that may be carried and spread by insects. Find out what could be the next Zika in the making.

# MAYARO

---

**CARRIER:** *Aedes* mosquitoes

**SYMPTOMS:** Fever, chills, rashes, vomiting, diarrhea and joint pains

**TREATMENT:** None



## FACTS:

- Similar to chikungunya virus, was first isolated in Trinidad in 1954.
- May already have adapted, like chikungunya, to be transmitted by urban mosquitoes such as *Aedes aegypti* or *Aedes albopictus*.
- Recent cases reported in large Brazilian cities.
- As of September 2016, was detected in Haiti in what could be new strains adapting to urban cycle.



# RIFT VALLEY FEVER



## CARRIER:

*Culex tritaeniorhynchus* and *Aedes vexans* as well as possibly over 30 other mosquito species, 19 of which are native to North America

## SYMPTOMS:

Fever and chills that can lead to hemorrhagic diseases accompanied by abnormal bleeding or brain inflammation

## TREATMENT:

None (but there is current advanced work on a vaccine)

## FACTS:

- Half of all Rift Valley hemorrhagic cases are fatal.
- Discovered in Kenya in early 20th century and was limited to Africa.
- In 2000, cases were reported in the Arabian Peninsula.
- Wild and domestic animals can serve as reservoirs of the virus.

# CRIMEAN-CONGO HEMORRHAGIC FEVER

**CARRIER:** Ticks (mostly of the *Hyalomma* genus)

**SYMPTOMS:** Fever, rashes, bleeding from almost anywhere in the body

**TREATMENT:** Commonly the antiviral drug ribavirin but is said to be not very effective

## FACTS:

- Up to 40 percent fatality rate.
- Identified in 1944 and spread from Africa to China.
- Arrived in Turkey in 2002 and by 2015 has infected 10,000 people there.
- Reached India in 2011, Germany in 2015, Spain in 2016, and in the UK by hitchhiking on migratory birds.





# USUTU



**CARRIER:** *Culex* common house mosquito  
(which transmits this Avian virus)

**SYMPTOMS:** Headaches, fever, neurological  
disorders (similar to West  
Nile virus)

**TREATMENT:** None

## FACTS:

- Possibly connected to climate change; after warm summers in Europe, Usutu outbreaks and massive die-offs were reported among 4 species of birds.
- In 2013, 3 serious human cases were documented in Croatia.
- 6% of Italians around Modena have recently and unknowingly been infected with the virus.
- For most cases, Usutu infections in humans end without symptoms.







# A week in the life of P-22, the big cat who shares Griffith Park with millions of people

Story by **THOMAS CURWEN**

Graphics by **JOE FOX**

FEB. 8, 2017, 12:03 A.M.

**T**he lion slinks through the chaparral, a blur of movement in the night. Head held lower than his shoulders, he scours the brush in a ravine just south of Travel Town in Griffith Park.

Hind paws land where the forepaws lift. No twig snaps, no crinkling leaf. He's silent, an ambush predator, always hunting, always looking for opportunity.

Inside a small gray box on his neck, a microprocessor switches on to calculate and time stamp his location — 21:00, Dec. 2, 2016 — one of 56 readings made in the course of a week. The coordinates reveal the lion's rambling course through this island of wilderness in the midst of the city.

As famous as he is, the mountain lion known as P-22 is a mystery, his day-to-day life hidden by his instincts for evasion.

The National Wildlife Federation has called the species a "nearly perfect predator," and among the survival skills, fine-tuned over 40 million years of evolution, is a talent for invisibility.

**Can you spot the mountain lion in this photo?**





## Forest bathing: What it is and why you should try it





### **What is forest bathing?**

In 1982, the Japanese Ministry of Agriculture, Forestry, and Fisheries created the term *shinrin-yoku*, which translates to “forest bathing” or “absorbing the forest atmosphere.” The practice encourages people to simply spend time in nature — no actual bathing required. It’s also very low impact, which means you don’t have to go for trail runs or do an intense hike. The goal of forest bathing is to [live in the present moment](#) while immersing your senses in the sights and sounds of a natural setting.

### **Does it work?**

There’s a reason why the largest cities in the world have parks, trees, and pockets of nature woven throughout their busy streets. One study by the *International Journal of Environmental Health Research* found that spending time in an urban park can have a positive impact on a person’s sense of well-being.<sup>1</sup>

Aside from city parks, the more in-depth practice of forest bathing has been found to lower blood pressure, heart rates, and levels of harmful hormones — like cortisol, which your body produces when stressed.<sup>2</sup> This can help put you in a more calm and relaxed state.





- Relevance
- Rigor
- Relationships
- Resource Conservation

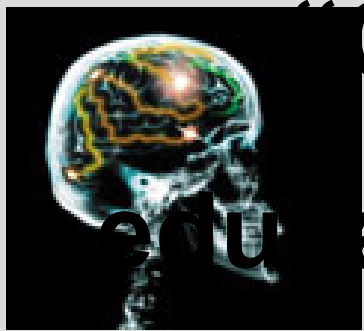




## Neuroscience: creating habits of mind

- Emotional connections to content  
= long term memory
- Processes facilitates mental clarity  
and creates pathways to organize  
information
- Climate of acceptance  
encourages academic and  
scientific risk taking/innovation





**“Civilization is a race between  
education and catastrophe.” -- H.G.**

***Wells***

**Our best efforts in student engagement**

**(rigor, relevance, and relationships),**

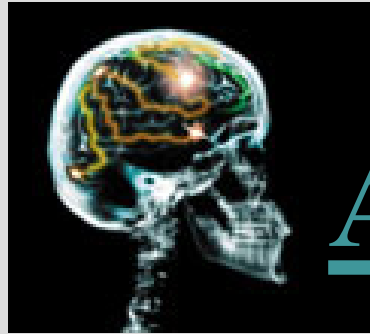
**requires a shift from...**

**“What am I supposed to *teach*?”**

**to**

**“How do *my students learn*?”**





# Attention and the Brain

- Emotions → attention → learning
- It is **neurologically impossible** to learn and remember information to which the brain has *not* paid any **attention**.
- States of **emotional awakening** (RAS):  
Novelty - Attention – Enthusiasm – sustained Interest
- The brain's ability to stay attentive for extended periods of time is quite modest. Expectations of doing so are **“brain-antagonistic”** and yield diminishing returns.



# Point Fermin OEC:

## Science at Sea and Coastal Ecosystems





# Camp Skyhook at Clear Creek





# Day of Discovery: *Descanso* *Gardens*





# Day of Discovery: *USS Iowa*







659,639  
K-12  
students

Over a  
million  
parents

Serving  
over 800  
schools in  
27 cities

Reconnect  
One World





# THINK BIG!





# Brain Considerate Strategies in action





# NINETEENTH CENTURY LANDSCAPES WRAPPED AROUND TWENTY-FIRST CENTURY SCHOOLS

## **THE GREAT OUTDOORS**

ENVIRONMENTAL STEWARDSHIP IN URBAN LANDSCAPES

























**LAWNS USE  
ROUGHLY  
1M GALLONS  
OF WATER  
PER ACRE**

**MWELO Calculation**



# STANDARD UNDERSTORY PLANTING





# DIRECT UNDERSTORY SUBSTITUTION



*Phormium*  
Flax



*Hesperaloe*  
Red Yucca



*Lonicera*  
Honeysuckle



*Lantana*  
Spreading  
Lantana



---

# WATER REQUIREMENTS

Current standards:

862,400 gal. / acre / year

Revise plant species:

388, 080 gal. / acre / year

Revise plant species, revise irrigation:

269,500 gal. / acre / year

Average annual savings:

\$60,000 acre / year





**50% OF WATER  
IS WASTED  
DUE TO  
IRRIGATION  
INEFFICIENCY.**

US Environmental Protection Agency  
(EPA)



































# Naturalist landscape design intent



Wonderful College Prep Academy  
Delano, California



# Low water using plants



Claremont McKenna  
College – North Mall  
Claremont, California

**Breeze™ Dwarf Mat  
Rush**  
***Lomandra longifolia***  
**'LM300'**



**Bakersfield**



**Northridge**



**Redding**



**San Francisco**



**Soquel**



**Santa  
Barbara**



# Outdoor learning



Cal Poly Business Administration  
Pomona, California



Playa Vista Elementary  
Playa Vista, California



# Outdoor modern amphitheater



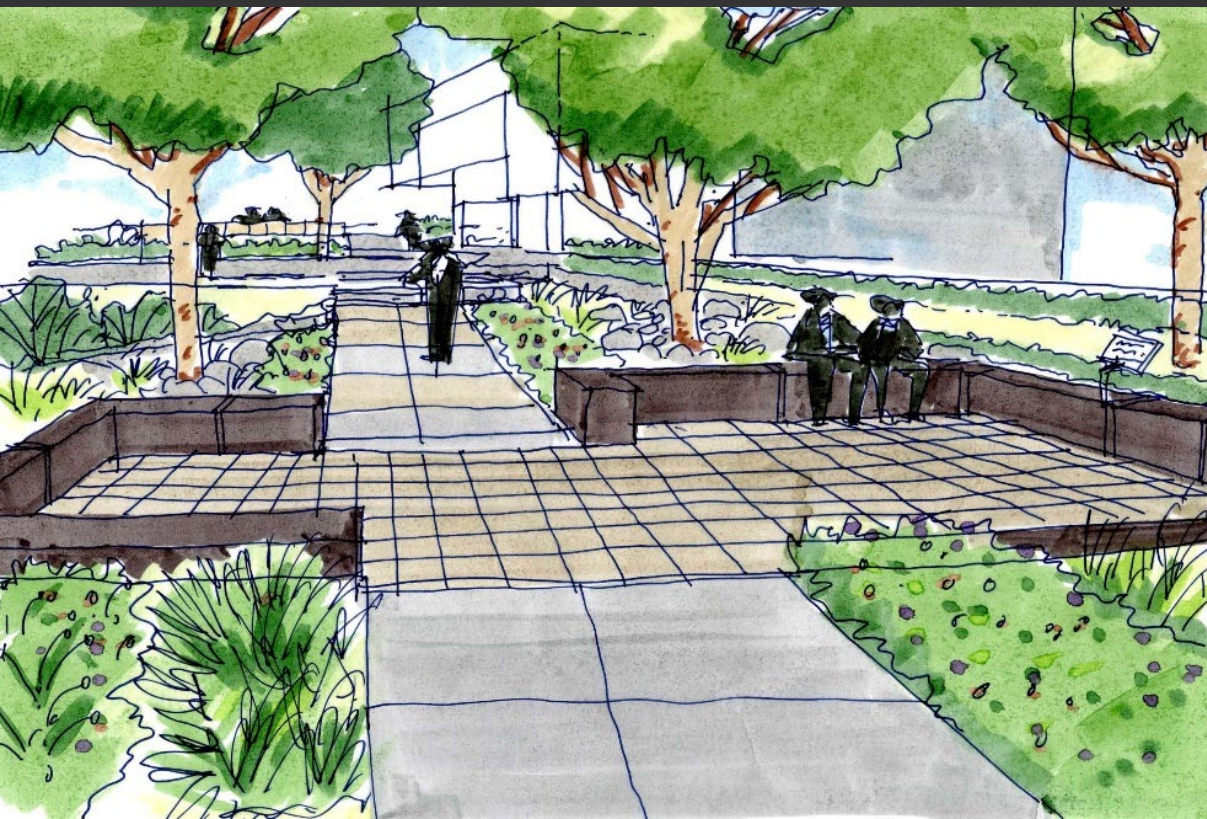
LAUSD San Pedro High School  
Olguin Campus  
San Pedro, California



Wonderful College Prep Academy  
Delano, California



# Community nodes



Los Angeles Southwest College  
Los Angeles, California



Pasadena City College Technology Arts  
Pasadena, California



# Synthetic turf and less lawn



Claremont McKenna College –  
North Mall  
Claremont, California



Maywood Center for Enriched Studies  
Maywood, California



# Creative design with hardscape



Robert F Kennedy Community Schools  
Los Angeles, California



Blair International Baccalaureate  
Middle School  
Pasadena, California







# Playa Vista Elementary



*Agapanthus africanus*  
Lily of the Nile





# Playa Vista Elementary

What We Found	Recommendation
<ul style="list-style-type: none"><li>• High salinity along with border-line high Boron and off the charts Sulfate readings</li><li>• Normal soil pH</li></ul>	<ul style="list-style-type: none"><li>• Provide a list of reclaimed water tolerant plants</li><li>• Apply gypsum to scratched soil per soil analysis report. Drench to leach out salts.</li></ul>



# Playa Vista Elementary



Where did all of  
the irrigation  
heads go?



# Playa Vista Elementary

What We Found	Recommendation
<ul style="list-style-type: none"><li>• Inefficient irrigation system</li></ul>	<ul style="list-style-type: none"><li>• Repair or replace pressure regulator</li></ul>



# Playa Vista Elementary





# Playa Vista Elementary

What We Found	Recommendation
<ul style="list-style-type: none"><li>• Rough turf</li></ul>	<ul style="list-style-type: none"><li>• Repair irrigation system</li><li>• Organic only campus; therefore tough to use weed and feed</li><li>• Define best practices for turf care</li></ul>



# Future Opportunities and Solutions

- Overall District Water Policy
- M&O Buy In
- Individual School Buy In
- Training
- Belief



“ONE OF THE CONDITIONS  
OF HAPPINESS IS THAT  
THE LINK BETWEEN  
HUMANS AND NATURE  
SHALL NOT BE BROKEN.”

Leo Tolstoy



