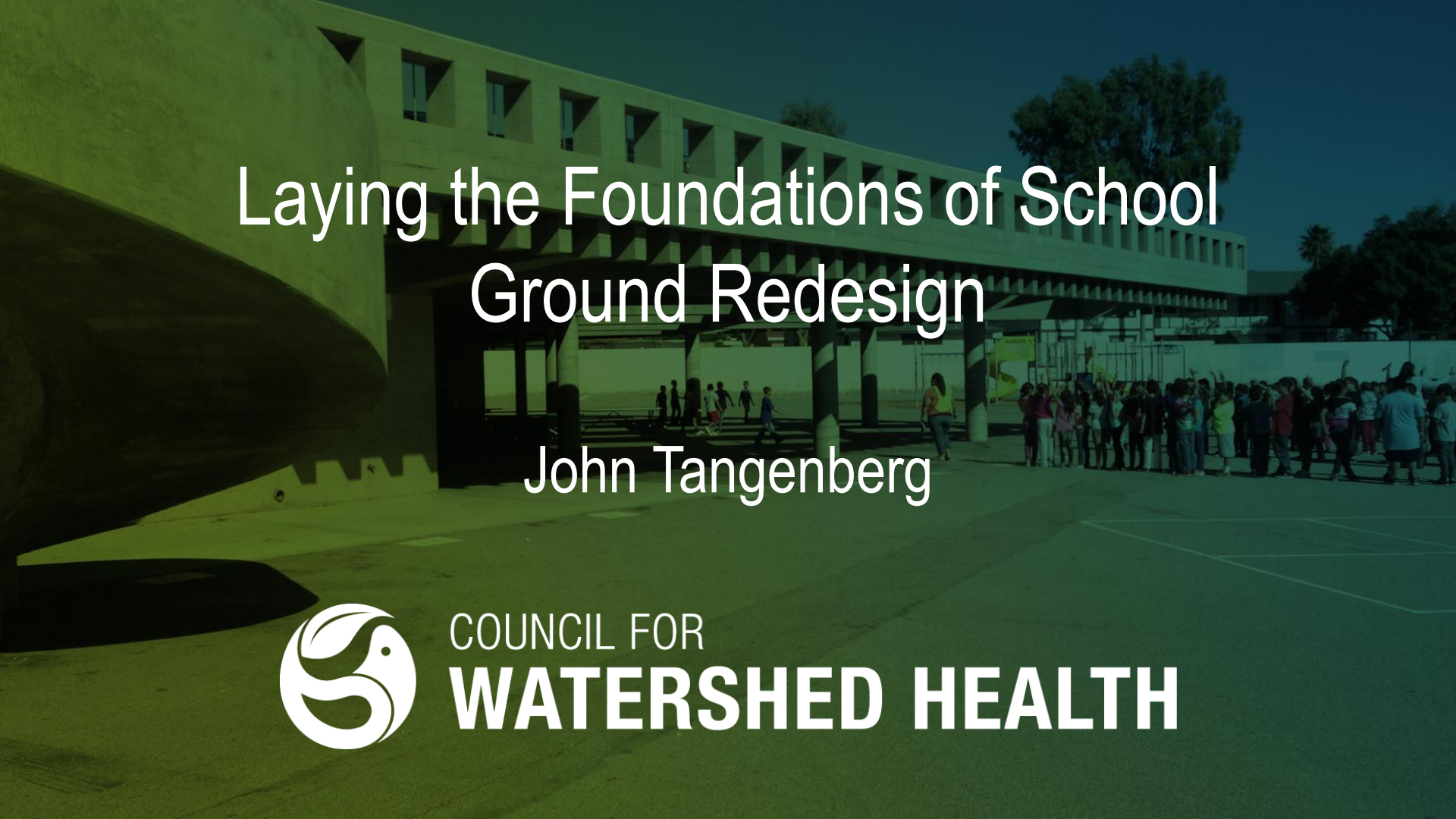


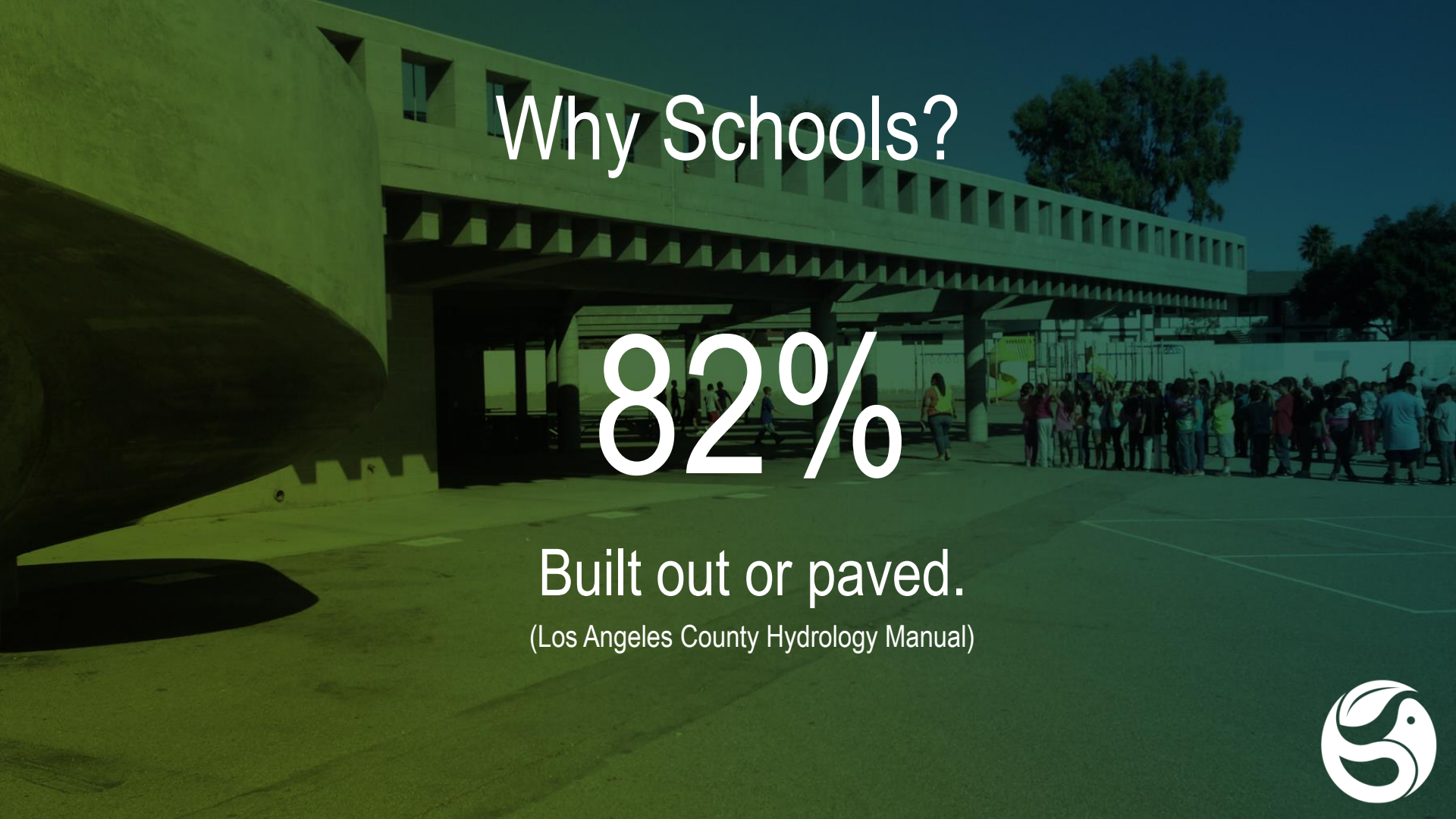
Laying the Foundations of School Ground Redesign

John Tangenberg

COUNCIL FOR
WATERSHED HEALTH

LAUSD Tree Canopy Study

Measure the tree canopy and the permeability to rainwater of the Los Angeles Unified School District elementary schools to inform prioritization for tree planting efforts and green infrastructure.

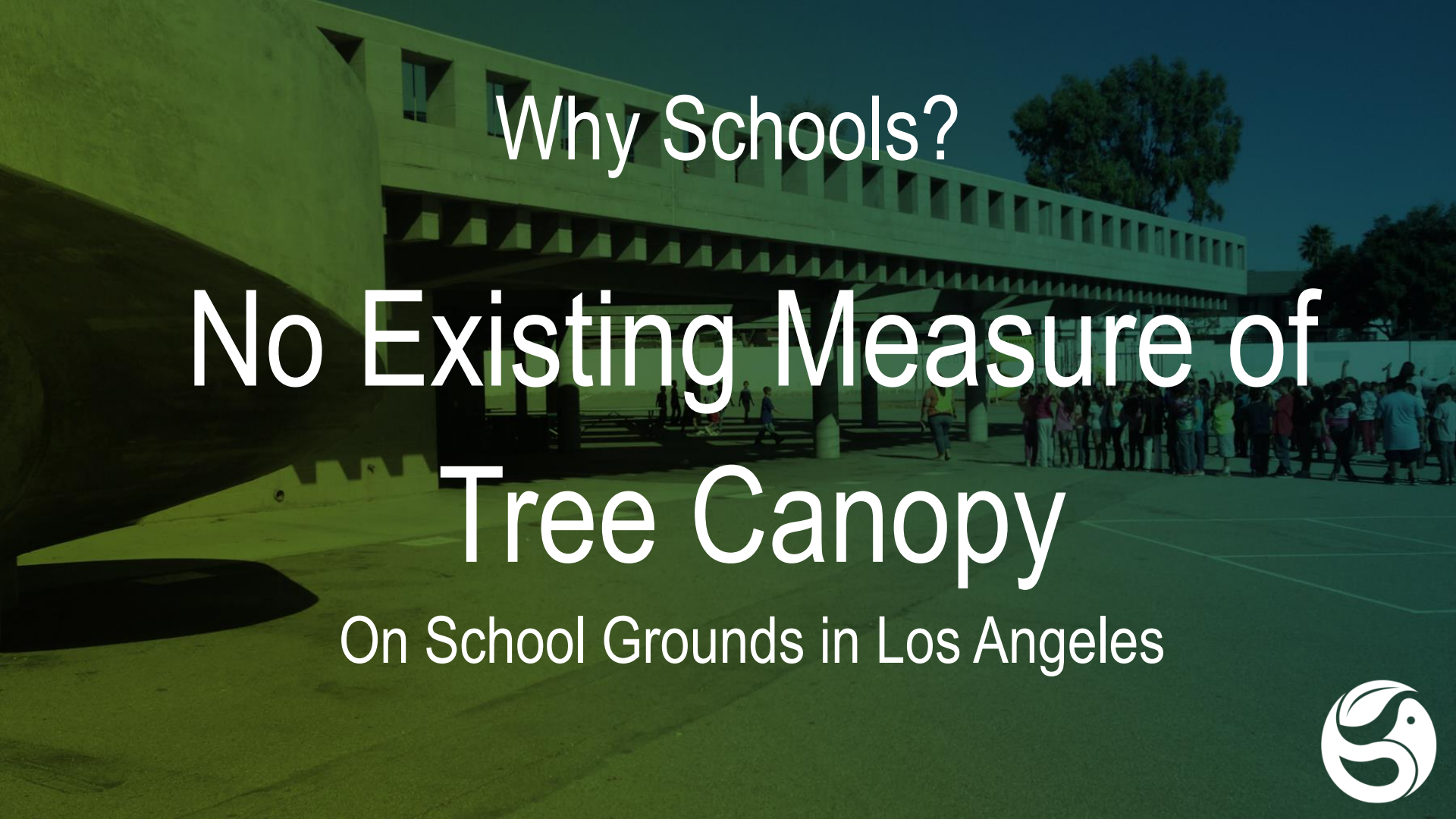


Why Schools?

82%

Built out or paved.

(Los Angeles County Hydrology Manual)



Why Schools?

No Existing Measure of Tree Canopy

On School Grounds in Los Angeles

Why Schools?

School Districts are

Large Land Owners

in Urban Southern California.

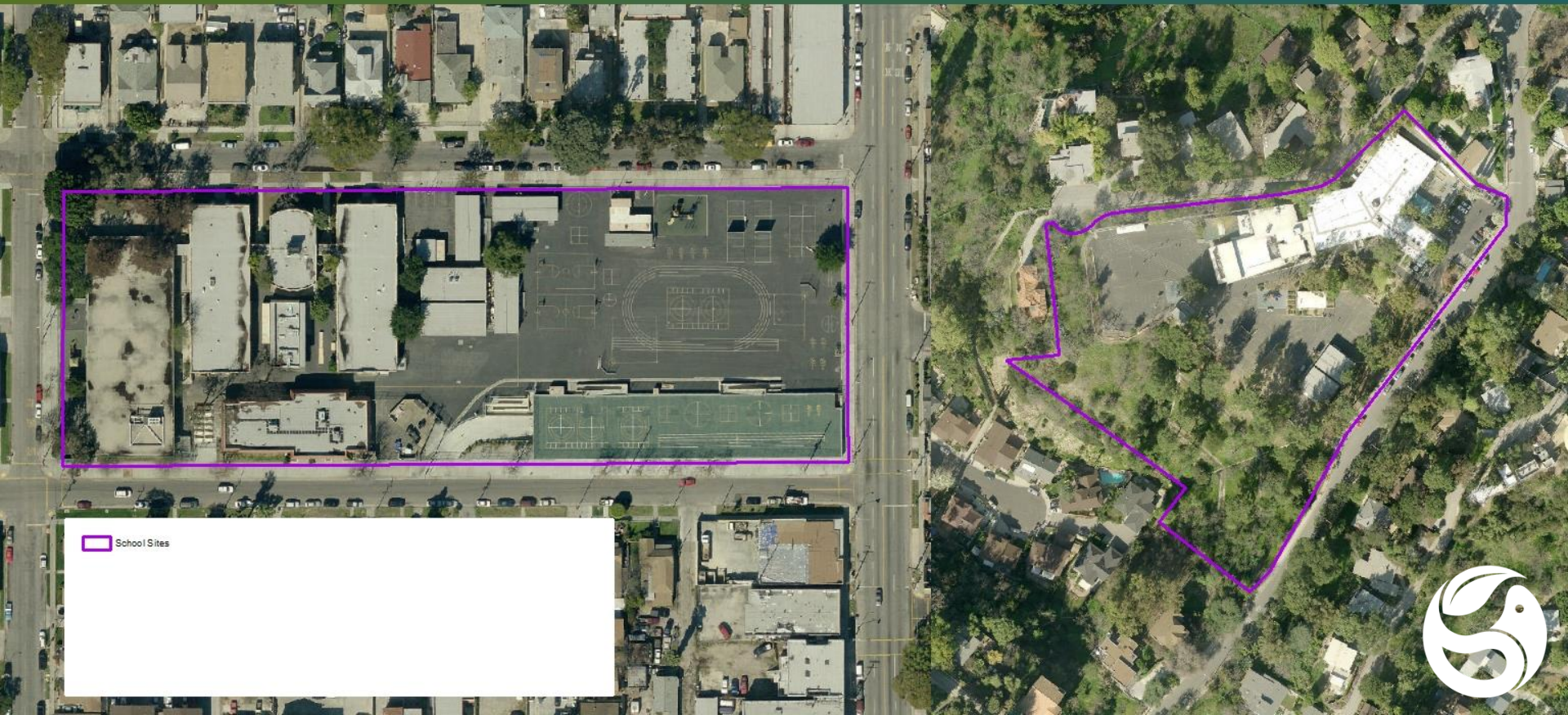
Why Schools?

Elementary Schools have a

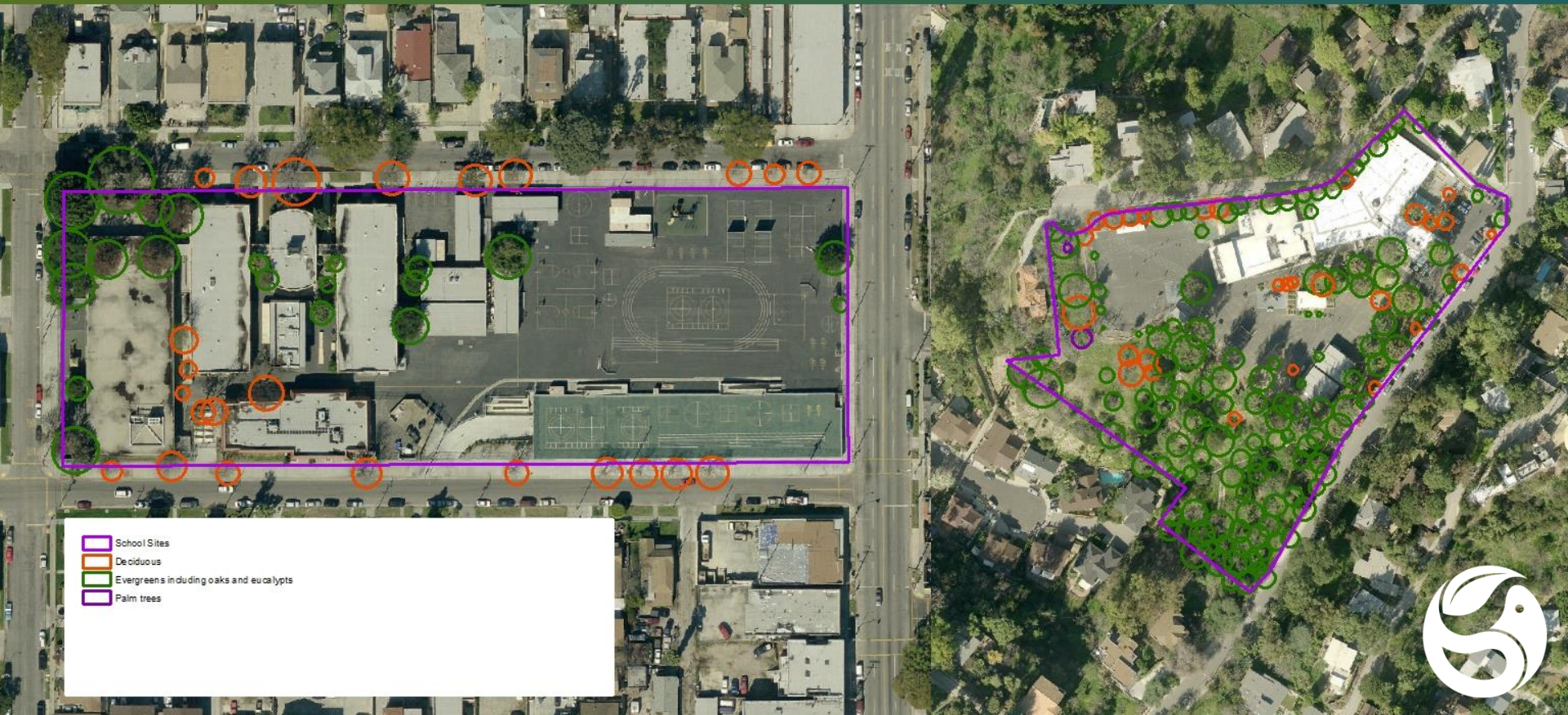
High Potential for Consuming Benefits

from green infrastructure

Building the Data



Canopy


School Sites
Deciduous
Evergreens including oaks and eucalypts
Palm trees

Non – Play Surfaces (Impervious)

Non – Play Surfaces (Pervious)

Play Surfaces (Pervious and Impervious)

1st St. Elementary School

Est. 1890

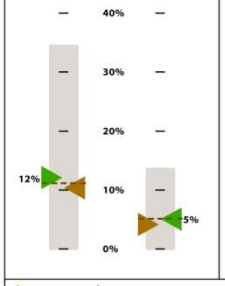
School site

Canopy Cover
- Deciduous
- Evergreen
- Palm Tree

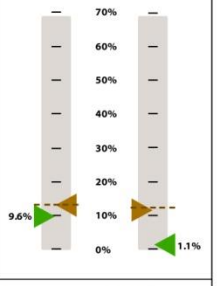
Suface Types
- Building roof line
- Accessible paved play area
- Accessible unpaved play area
- Inaccessible landscape
- Inaccessible open space/hill slope/parks
- Parking lot
- Walkways and other pavement
- School garden

Tree canopy and surface cover derived by Council for Watershed Health from visual analysis of 2011 LARIAC 1 ft.imagery, LA County GIS Building roofline, CAMS Street data and school site data provided by LAUSD.

Tree Canopy Cover

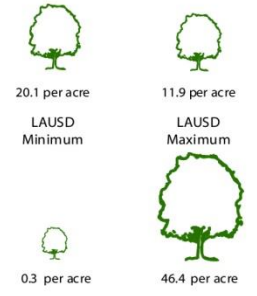


Unpaved Surface²



This School | Board District Average | LAUSD Range | LAUSD Avg.

Number of Trees



¹ Includes Accessible paved play area, Accessible unpaved play area and School gardens.
² Includes Inaccessible landscape, Inaccessible open space/hill slope/parks, Accessible unpaved play area and School gardens.
³ Includes Accessible unpaved play area and School gardens.

32nd/USC Performing Arts Magnet

Est. 1941

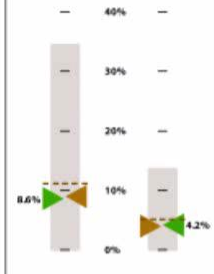
School site

Canopy Cover
- Deciduous
- Evergreen
- Palm Tree

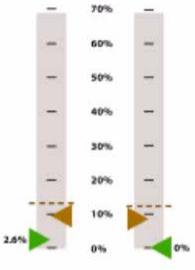
Suface Types
- Building roof line
- Accessible paved play area
- Accessible unpaved play area
- Inaccessible landscape
- Inaccessible open space/hill slope/parks
- Parking lot
- Walkways and other pavement
- School garden

Tree canopy and surface cover derived by Council for Watershed Health from visual analysis of 2011 LARIAC 1 ft. imagery, LA County GIS Building roofline, CAMS Street data and school site data provided by LAUSD.

Tree Canopy Cover



Unpaved Surface²



This School · Board/District Average · LAUSD Range · LAUSD Avg.

Number of Trees

This School	LAUSD Avg.
9.8 per acre	11.9 per acre
LAUSD Minimum	LAUSD Maximum
0.3 per acre	46.4 per acre

¹ Includes Accessible paved play area, Accessible unpaved play area and School gardens.
² Includes Inaccessible landscape, Inaccessible open space/hill slope/parks, Accessible unpaved play area and School gardens.
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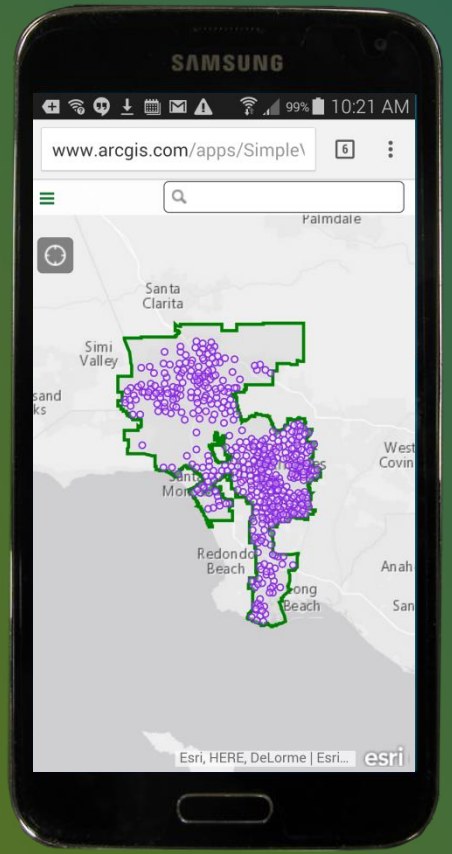
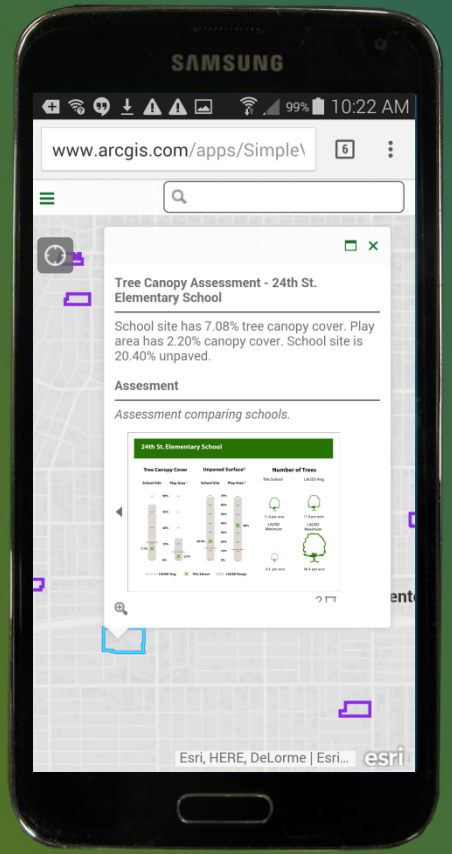
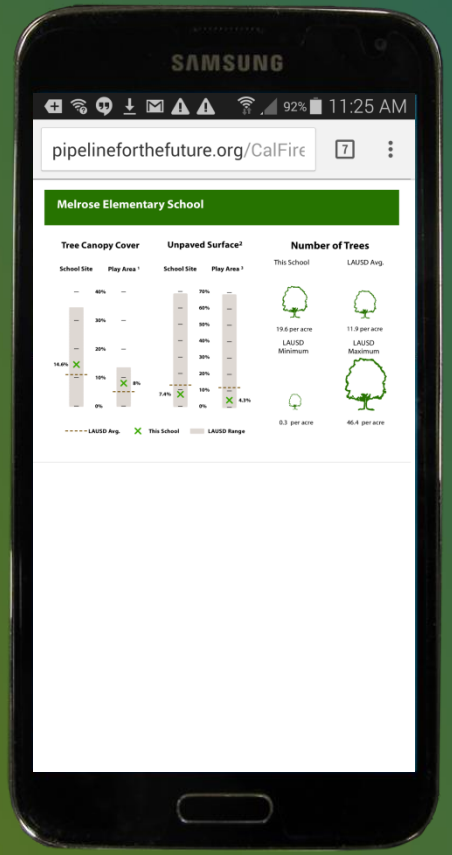
Information Access Via Mobile



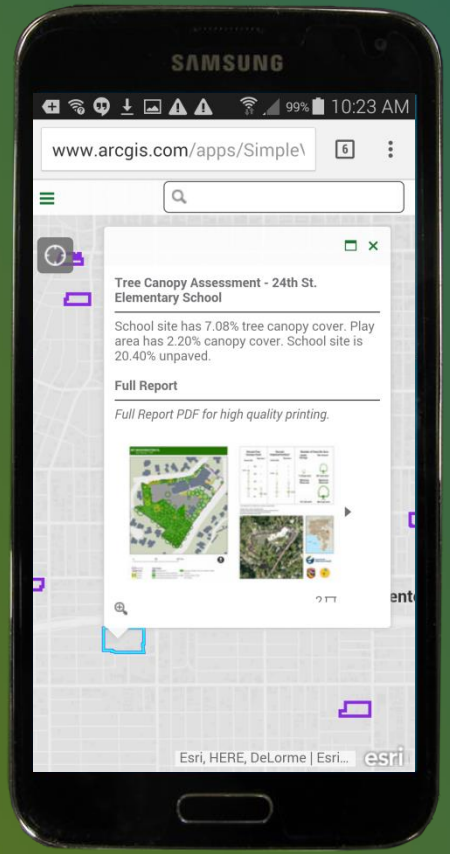
Information Access Via Mobile



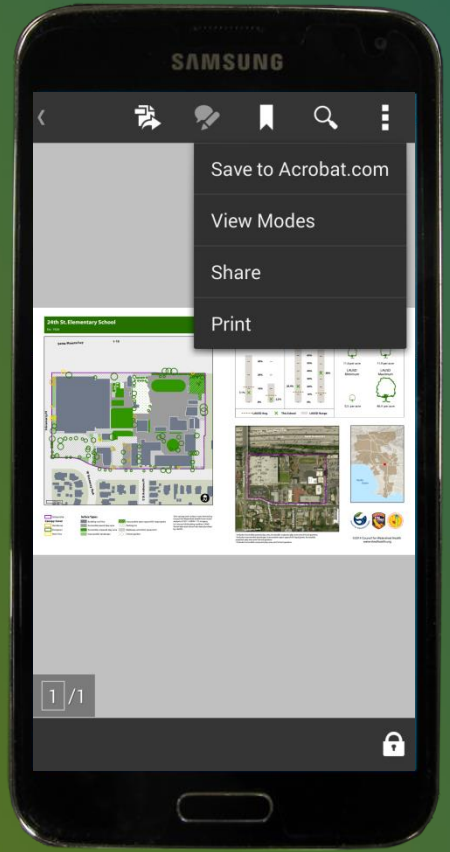
Information Access Via Mobile



Information Access Via Mobile



Information Access Via Mobile



DROPS the 30% Redesign

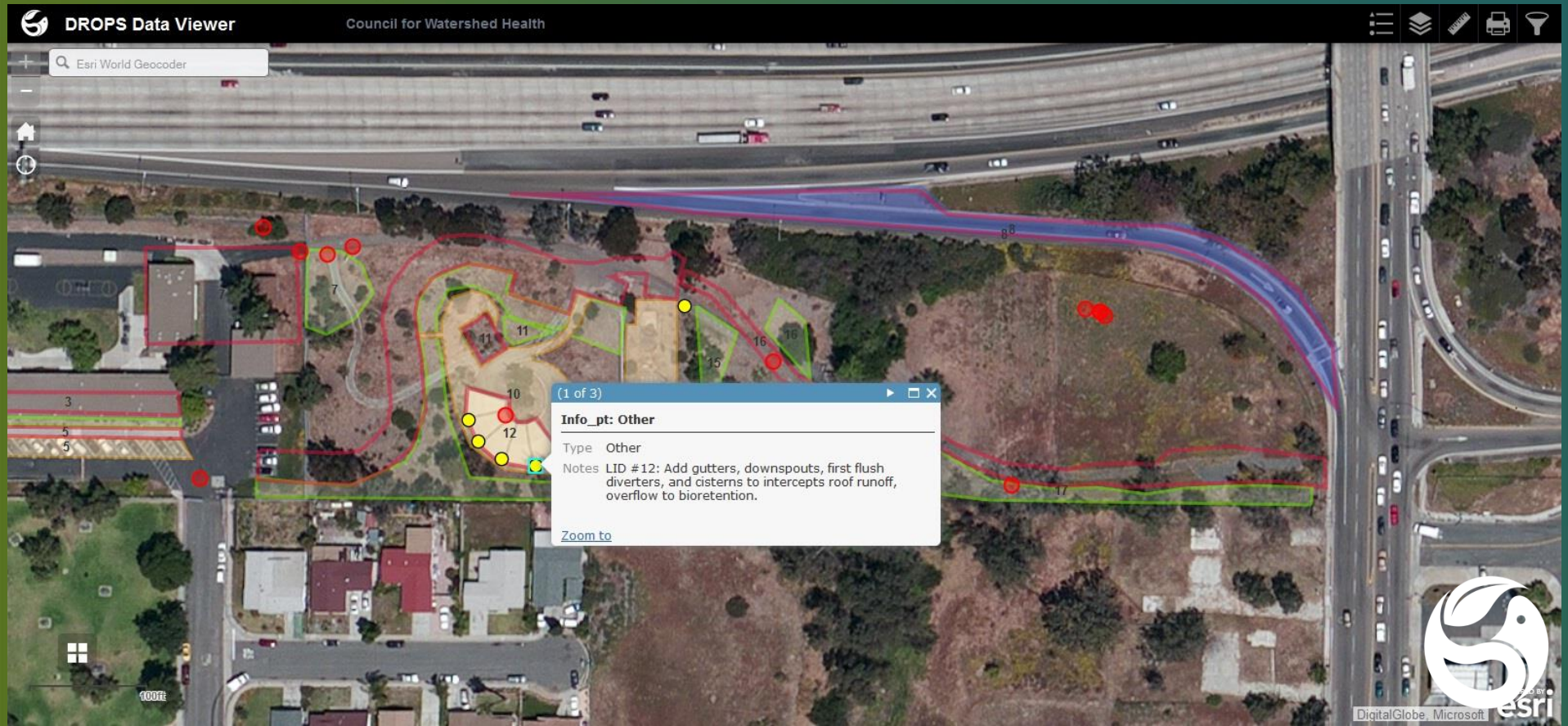
Drought Response Outreach Program for Schools (DROPS)

Providing Technical Assistance via

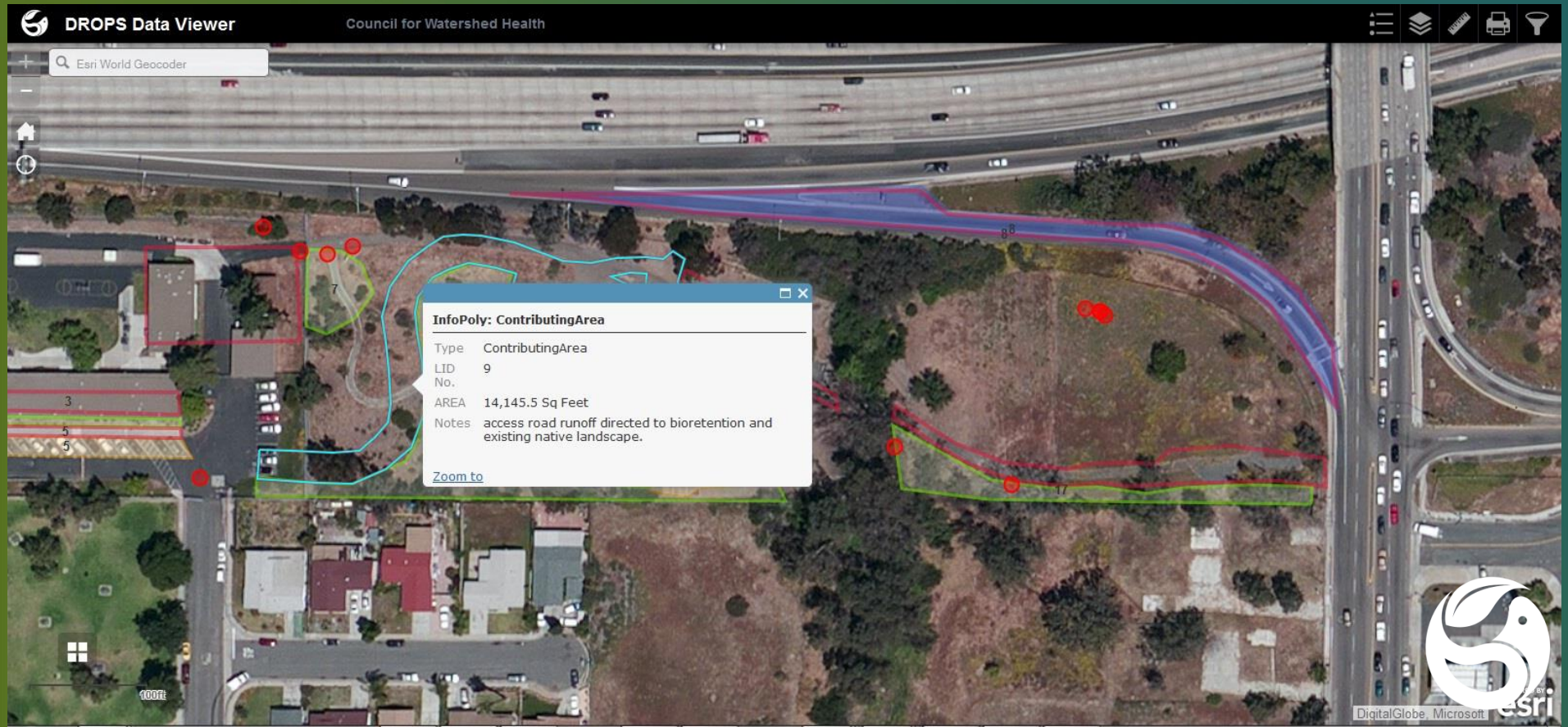
ArcGIS online and Web App Builder maps.

Web Map And Web App Data Input

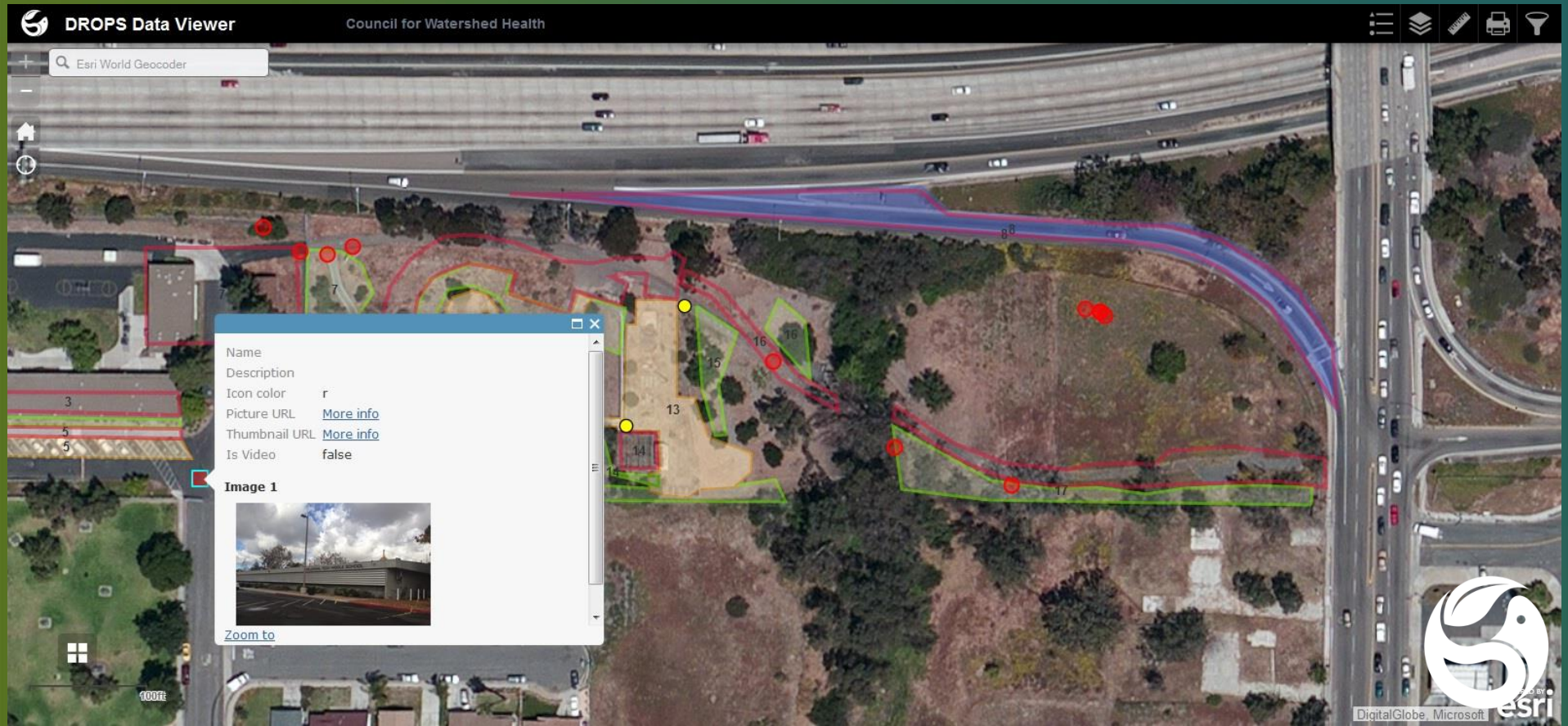
Web Map And Web App Data Input



Web Map And Web App Data Input



Web Map And Web App Data Input



Web Map And Web App Data Input


11
12
19
8
9
10
7
6
6
4
3
2
1

Next Steps

Integrate additional hydrology priorities into reporting.

Integrate educational opportunities with technology and STEM.

Current research into tree canopy ecosystem benefits related to sun safety - Moreno and Hilton at CGU.

Having Students Explore Water on Campus

Date Elementary School, Fontana

Where Water Flows at Date elementary

A story map


11 view N: play yard


12 view N: asphalt play yard


13 view N: asphalt play yard


14 S campus: V Channel/Drain


15 E Campus: perimeter slope

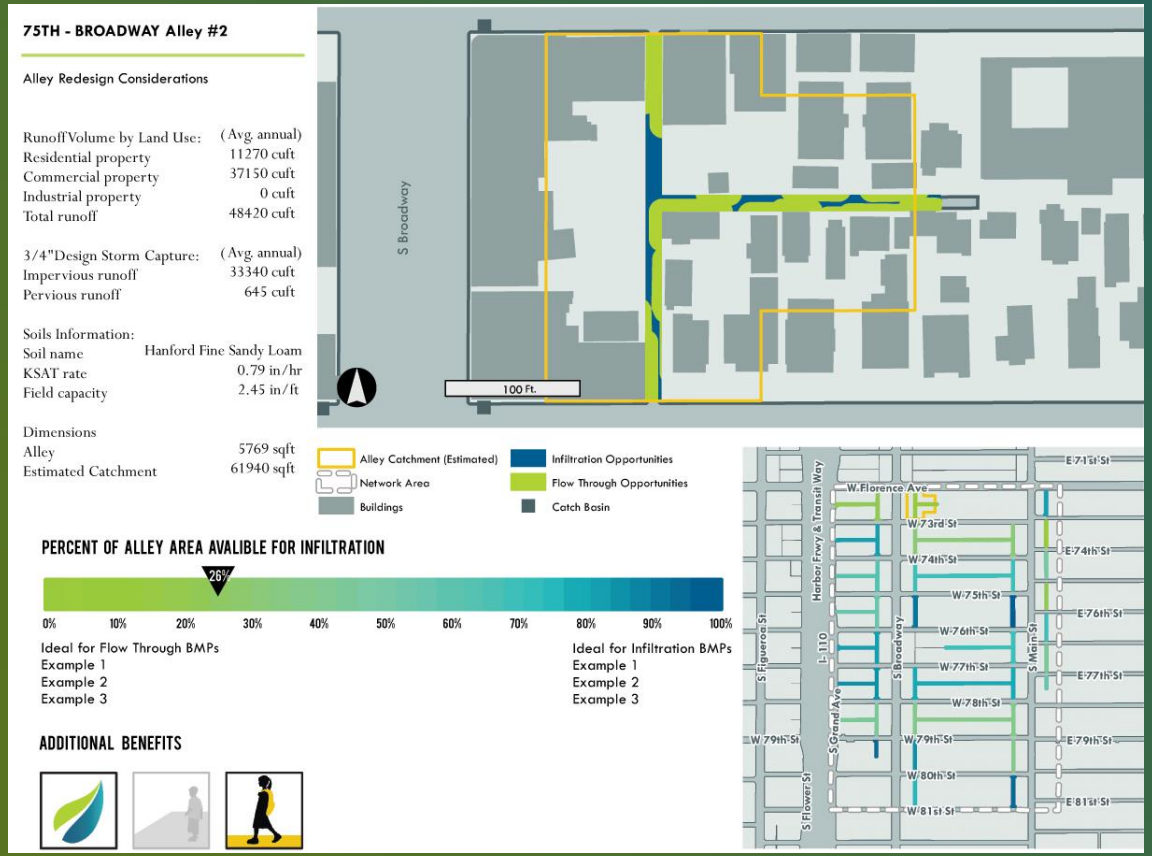

16 protable downspouts


17 view of E campus turf

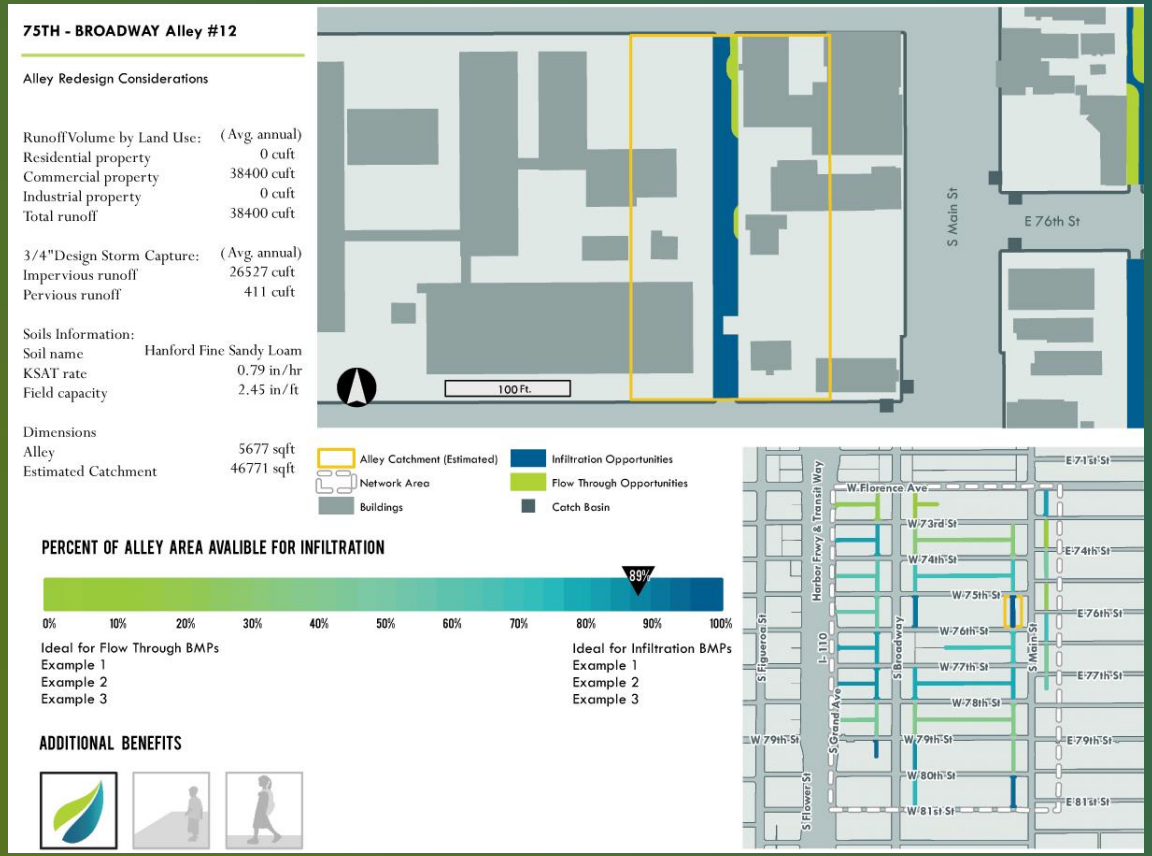

18 view W from portables


19 S campus view N - play yards

Measures of Hydrology and Other Benefits



Measures of Hydrology and Other Benefits



Measures of Hydrology and Other Benefits

Thank You

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