Rialto Unified School District

A Schoolyard Forest Case Study

Located in the heart of the arid Inland Empire, California, Rialto Unified School District is home to thriving schoolyard agro-forests and gardens created within the last decade. Recent and ongoing schoolyard greening initiatives honor the district's agricultural roots while heralding a greener, more sustainable future, providing a model of district-wide living schoolyard transformation.

Overview

Supplying its student body with healthy food, cooling shade, and access to nature, each of Rialto Unified School District (RUSD)'s 19 elementary schools are host to both gardens and enclosed citrus groves, which it calls "Heritage Citrus Groves." Funded by a state stormwater grant, the groves represent a unique type of schoolyard forest that provide students with myriad opportunities for hands-on learning and access to fresh fruit and shade.

The district's "people, place, and planet" curriculum initiative uses its verdant living schoolyards as outdoor learning laboratories that provide opportunities for student exploration and learning. The success of RUSD's ongoing schoolyard greening efforts reflects the dedication of maintenance personnel, teachers, families, school administrators, and institutional partners toward the goal of creating a healthier environment for the district's students.

Alongside its citrus groves, RUSD built gardens with raised beds at each of its elementary schools.

DISTRICT INFORMATION

- **Name:** Rialto Unified School District
- **Location:** Rialto, California
- **Climate:** Mediterranean
- **Type:** Urban, Public School District
- **Grades:** K-12
- **Number of Schools:** 29
- **Number of Students:** 24,104
- **% of Students Qualifying for FRPMs:** 84.50%*

**FRPMs: Free and Reduced-Price Meals*

District-Wide Vision

RUSD's implementation of a comprehensive green schoolyards program is founded on collaboration among teachers, administrators, maintenance staff leadership, students, the school board, and non-district partners including local water agencies and nonprofits. Schoolyard greening is supported institutionally by a school board resolution that guides the district's approach to sustainability. The resolution pledged to reduce the district's environmental impact, to improve student wellness, and to increase focus on sustainability education.

Following the principles of this resolution, each of the district's 19 elementary schools has its own outdoor classroom learning environment containing a variably sized citrus and fruit tree grove (Heritage Citrus Grove) and raised garden beds. In addition, each of the district's five high schools hosts a "wellness" garden on its grounds.

The current district-wide vision of green schoolyards also honors the city's history of agriculture and citrus groves along with the district's own past. The city of Rialto was built upon citrus groves and agricultural fields, roots that ran deep even on school grounds themselves. Throughout the 20th century, RUSD students tended to, harvested, and consumed fruits and vegetables grown in school site gardens and fruit tree groves built right outside their classrooms. However, new schoolyard construction in the district during the postwar boom of the 1950s and 1960s converted these grounds to all-asphalt schoolyards, which cut students off from nature and from the district's agricultural heritage.

Fencing encloses citrus groves to delineate the outdoor learning space just as walls would within a classroom.

From Planning to Planting

Less than a decade ago, RUSD's schoolyards were like most schoolyards across the country: hot and asphalt-covered. The pendulum began to swing back toward green schoolyards in the early 2010s, a process that began perhaps unexpectedly with a professional development conference for the district's teachers. A California Math and Science Partnership Grant allowed the district to host a summer "staycation" during which teachers were paid to attend interactive training and information sessions on the history of Rialto and the specific needs of the community. The staycation revealed that many of the problems affecting the Rialto community could be traced back to environmental issues associated with water use and lack of tree canopy.

> **I spent 20-plus years saying 'NO' to gardens! I said they're too much work. But when all these kids came up with water-saving projects, I wanted to show them we were listening.**

Brian Montez, Grounds Maintenance Supervisor
RIALTO UNIFIED SCHOOL DISTRICT

A RUSD schoolyard garden (top) and newly-planted schoolyard forest (bottom).

A healthy, growing RUSD citrus grove.

Importantly, the staycation not only presented these environmental issues to teachers but also began to build the foundations of a collaborative and multidisciplinary approach to address them. Bringing together two areas of school operations that normally exist in isolation, education and building services, teachers worked with Rialto's grounds maintenance supervisor, Brian Montez, to understand school water usage and conservation needs.

Inspired by their exposure to the inner workings of building services, some of the teachers who participated in the conference designed place-based lessons and curriculum for their students on water and water use. Students presented their projects and findings to Montez, who was increasingly inspired by students and teachers to pursue schoolyard greening. More than any single training session, lesson plan, or school board resolution, getting Montez on board was instrumental in catalyzing the district's ability to make meaningful change on the ground.

This Heritage Citrus Grove (left) and garden are both enclosed within the same fenced plot.

Montez subsequently attended sustainable schoolyard conferences and learned from like-minded colleagues across the state of California. He then embarked upon an ambitious initiative to bring citrus tree groves and gardens to every elementary school across the district to coincide with the district's 125th anniversary. The effort would not only build beautiful, dynamic schoolyard agro-forests and classrooms but also save millions of gallons of water through turf removal. After securing grants and the support of local businesses, nonprofits, and water utilities, the district's grounds crew planted over three acres of green space across 19 of the district's elementary schools over the course of two years. Each elementary school received a citrus grove and garden, surrounded by fencing around the area to delineate the outdoor learning space just as walls would within a classroom.

The program has been wildly successful. The turf removal associated with the citrus groves saves the district over 6 million gallons of water per year. In 2022, students harvested over 14,000 pounds of fresh fruit from the more than 700 trees in the district's thriving citrus groves. The district's nutritional services purchases this bountiful harvest at market rate and serves the fruit in district cafeterias. The groves thus provide ample hands-on learning opportunities for students—from harvest to sale—while supplementing district food supplies with nutritious, locally grown fruit.

In addition to new citrus grove plantings, the district built outdoor learning labs and classrooms within existing shade tree groves. At Morris Elementary School, for example, the district's grounds crew constructed six raised garden beds, an amphitheater, an area for composting, and picnic tables on a 10,000-square-foot schoolyard plot featuring five towering ash trees.

Most recently, the district has started planting "carbon sequestration forests," groves of native trees planted for the purpose of capturing carbon and offsetting emissions. The district received a grant from a nonprofit tree planting organization to plant 300 large shade trees in clusters of around 50 trees each. This will create lush, cool schoolyard forests in which leaf litter will be allowed to accumulate, helping store carbon.

> **What did we need to do this to scale? We really needed inter- and intra-departmental collaboration.**
>
> Juanita Chan-Roden, Agent of Science and Career Pathways
> RIALTO UNIFIED SCHOOL DISTRICT

Curriculum Integration

Since the first Heritage Citrus Groves were planted in 2016, RUSD has been using these spaces as outdoor learning environments. The groves and gardens provide ample opportunities for curricular and extracurricular immersion.

One way RUSD uses its citrus groves as hands-on learning laboratories for its students is by engaging them in the monitoring of the district's schoolyard forests. At a 2022 district summer camp, middle school students used geographic information system (GIS) tools to mark the location of nearly all of the district's fruit trees. Next, they measured tree circumference and canopy area before giving each tree a "health checkup." The resulting interactive map is a valuable learning tool for students and teachers across the district and also allows the district to accurately account for the carbon sequestration associated with its citrus groves, calculations carried out by older students as another extension of the GIS project across grades. This ongoing effort represents just one of the myriad educational opportunities and benefits associated with schoolyard forests.

The district also continues to work to focus its curriculum on a "people, place, and planet" approach to education, including assessments at all grade levels that require time outside and specialized environmental resiliency and environmental science classes in middle and high schools. A working group of teachers is modifying curriculum to align with environmental literacy goals. Future efforts will concentrate not only on using the district's schoolyard forests to meet Next Generation Science Standards (NGSS) but also on opportunities to integrate the social sciences and language arts with its outdoor spaces.

A recently planted carbon sequestration forest.

Funding

The planning and planting of RUSD's Heritage Citrus Groves were funded by a grant awarded through California's Prop 84 (Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006). The citrus grove projects qualified for this funding as they replaced water-hungry grass turf and aid in stormwater retention.

In addition to its Prop 84 grant, the district has received grants from the California Department of Forestry and Fire Protection (CAL FIRE), turf removal rebates from local water districts, donations of trees from a local nursery, and additional financial and volunteer support from local nonprofits and corporations.

Costs of the Heritage Citrus Groves have been further defrayed by the water savings of turf removal and by grants awarded to the district's nutrition services and educational services to make use of the food and to explore learning opportunities afforded by the thriving citrus groves on school grounds, respectively.

By replacing water-thirsty turf with mulch, RUSD's tree planting program has realized 6 million gallons of annual water savings to the district.

> **We save a little over 6 million gallons of water every year.**

Brian Montez, Grounds Maintenance Supervisor
RIALTO UNIFIED SCHOOL DISTRICT

Another recently planted RUSD carbon sequestration forest.

Maintenance

Responsibility for maintaining the district's 23 citrus groves, gardens, and carbon sequestration forests is shared jointly by individual schools and the district's grounds maintenance department, currently composed of 28 grounds staff. Within the Heritage Citrus Groves, drip irrigation supplies water to the trees and garden beds. Students harvest ripe fruit and help keep the groves pest-free by monitoring the plants for any potential issues. While the majority of general upkeep is carried out by grounds staff, children play a crucial role as "eyes and ears," monitoring plant and tree health and informing adults of their observations. All fruit tree maintenance is carried out in-house while professional arborists are occasionally contracted to prune and maintain larger shade trees.

REFERENCES

The Trees of Rialto Storymap - GIS Tree Data Collected by Students (2022). https://storymaps.arcgis.com/stories/5b077439286547c7b9257456bb274e5b

Heritage Citrus Grove and Gardens Rialto Unified School District. Facebook Page. https://www.facebook.com/brianthetreeguy/

CALIFORNIA SCHOOLYARD FOREST SYSTEM

The California Schoolyard Forest System℠ seeks to create schoolyard forests across PreK-12 public school grounds statewide to directly shade and protect students from extreme heat and rising temperatures due to climate change. This initiative was founded by Green Schoolyards America in partnership with the California Department of Education, the California Department of Forestry and Fire Protection, and Ten Strands.

For more information, visit: **greenschoolyards.org/ca-forests**

CALIFORNIA Schoolyard Forest System℠

green schoolyards america

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