

URBAN PLANNING AND GREEN INFRASTRUCTURE THE COMMUNITY AS LIVING LABORATORY³⁹

Cities typically manage and treat their water — drinking, waste, and storm run-off — with a deteriorating system of over-burdened gutters, pipes, and tunnels. Water system failures are increasingly common, leading to flooding, service disruption, and sewage overflows. On coasts, riverbanks, and floodplains, systems built to 100-year flood standards are faltering with the increased prevalence of severe precipitation events. Cities in arid regions fare no better, with drought reducing the reliability of water supplies and parched land unable to absorb sudden, severe precipitation.

One key adaptive strategy is to integrate more green infrastructure, which can mimic the natural water cycle using vegetation and soil. Deploying technologies like permeable surfaces, green roofs, bioswales and rain gardens is improving stormwater management, water quality, and CO₂ emissions in Milwaukee, Philadelphia, and other cities. Water infrastructure investments can also create local economic opportunities, leading to jobs in the construction, utility, and water management sectors, in landscaping and ecosystem services, and, indirectly, manufacturing.

Because of this, in cities across the country, community colleges, public sector unions, environmental advocates, businesses, and municipal leaders are talking about green infrastructure and its potential contribution to more resilient systems for urban stormwater, wastewater, and drinking water management (*see above, page 11*). They are not, however, always talking to one another — or about parallel initiatives in urban planning, community health, and ecosystem services. This sort of integration, spearheaded by community colleges and benchmarked by community engagement, is particularly impressive in Oakland, CA.

The Peralta Community College District, an environmental and sustainability leader in Alameda County, comprises four East Bay campuses, including Laney and Merritt

Colleges in Oakland. Three Peralta initiatives merit attention here: a symposium, a creek, and a jobs plan.

In April 2014, the Peralta Community College District, together with the Institute for Sustainable Policy Studies and Sustainable Pacific Rim Cities, held a **Resilient and Sustainable Cities Symposium** at Laney College in Oakland. *Resilient Cities and Pre-Disaster Planning: Linking Together Regional and Community Partners* aimed to advance Bay Area resiliency work by lifting up related partnerships between colleges, elected officials, community groups and businesses, and by celebrating the selection of Alameda, Berkeley, Oakland and San Francisco to be part of the Rockefeller Foundation's 100 Resilient Cities initiative.

The true value of the symposium, according to organizers and participants, was in opening a space for dialogue that transcended sectoral and institutional siloes. Representatives from city, community, and education joined together in analyzing issues from fire and food security to climate action and environmental justice.

These sorts of wide-ranging public conversations are critical, according to Dr. David Ralston, an urban planner with the city of Oakland, faculty member in Merritt's Environmental Program, and fellow at the college's Institute for Sustainable Policy Studies. Ralston reports that he still gets "blank stares" when he talks about resiliency — the very reason the SEED Center decided to write this report. Ralston finds it useful to locate resilience in the connection between sustainability and community health, given the country's current interest in healthy cities, and the county's ongoing concern with air and water pollution. He also ties resiliency to conversations on adaptation and mitigation, and their potential impact on the thing of perhaps most concern to low-income communities in the East Bay: jobs.

To make all of this part of a community college curriculum, perhaps as a new four-year degree, Ralston and his

colleagues are thinking about creating a hub at Merritt and Laney that would develop related career paths — possibly to jobs in public administration with a focus on resiliency. In his dual roles at the college and at the city, Ralston sees an opportunity to create a unique degree program with a much more applied focus than anything the state colleges offer. To help articulate and advance this vision of a college-community-city partnership around resiliency, he is running for the District Board. In the mean time, through his work at Merritt, Ralston is already helping to develop educational programs with direct links to community groups and local resilience projects.

Merritt's Workforce Development & Applied Sciences Division includes the Landscape Horticulture Department, which offers eight stackable certificates and four associates degrees, including an associate of science in landscape design and construction. The department also oversees the Merritt College Environmental Management and Technology (ENVMT) Program which has been educating East Bay residents for more than fifty years in fields ranging from watershed management and urban farming to climate change and alternative energy. The affiliated environmental center — "Self-Reliant House"⁴¹ — also serves as a base for Merritt's Institute for Sustainable Policy Studies and the East Bay Watershed Center.

The interdisciplinary ENVMT program at Merritt offers a variety of certificates, a transfer curriculum, and two associate of science degrees:

- Greening the Urban Environment: Design, Planning, Environmental Justice; and
- Ecological Restoration, Ranger, Naturalist and Outdoor Education.

The program is at once an academic and a hands-on, community-based learning initiative. Students begin each term with a connect-the-dots mapping exercise (see page 31). They know from the start that part of their

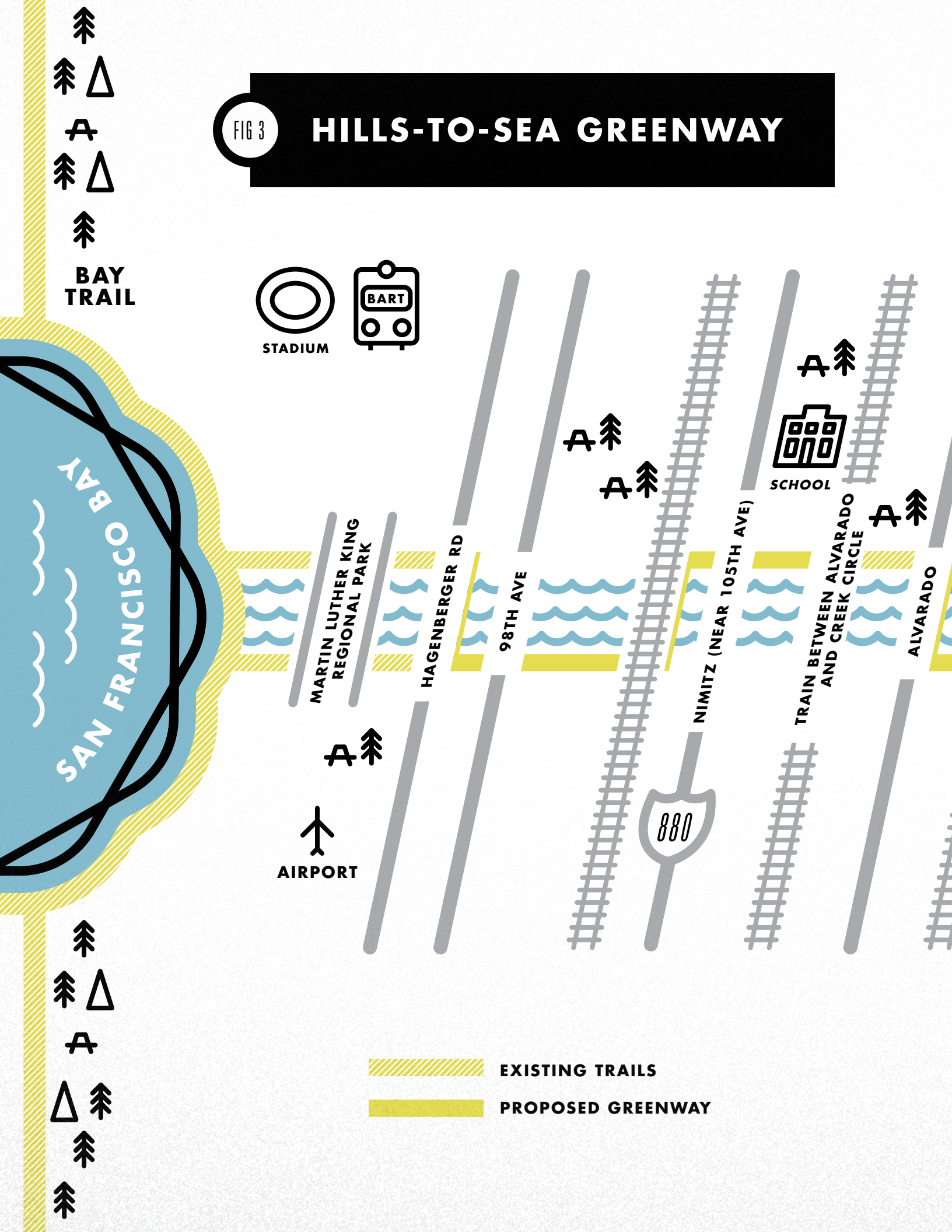
work is to identify local assets and infrastructure projects and partner with related environmental and community groups, learning how to build out a resiliency initiative in the "real world." Students may help design and develop a project, and initiate the community conversations necessary to advance it. Or they may identify an ongoing effort, like the creek restoration described below, and organize a conference to help publicize and advance that work. In either case, Merritt's vision of resilience is more about skills for democratization than engineering; social cohesion than emergency response. And all of it is built around a plan for green infrastructure and a curriculum on environmental management, with skills both technical and social.

Two efforts embody this approach to green infrastructure and community engagement: the San Leandro Creek Greenway Project and the Green Works Development Program.

In each case, the community college played a critical role as both incubator and shepherd. The foundational concerns were not on the city's radar screen; and the city, in any case, lacked resources to lead such initiatives. Through these and similar projects, students witness firsthand how a city can move from resistance to involvement: the college convenes a conversation, secures stakeholders and funding, and suddenly municipal leaders are rushing to get a place at the table, observes Ralston.

The San Leandro creek drains a 48-square mile watershed and runs more than six miles from Lake Chabot in the East Bay Hills to Martin Luther King, Jr. Shoreline Park, meandering through low-income areas of Oakland, and connecting parks, trails, natural resources, schools, and transit nodes. Restoring it is part of an envisioned "**Hills to Sea**" greenway (figure 3). Proposed by students and faculty at Merritt, greenway development is baked into urban planning and environmental management classes,

FIG 3 **HILLS-TO-SEA GREENWAY**



BAY TRAIL

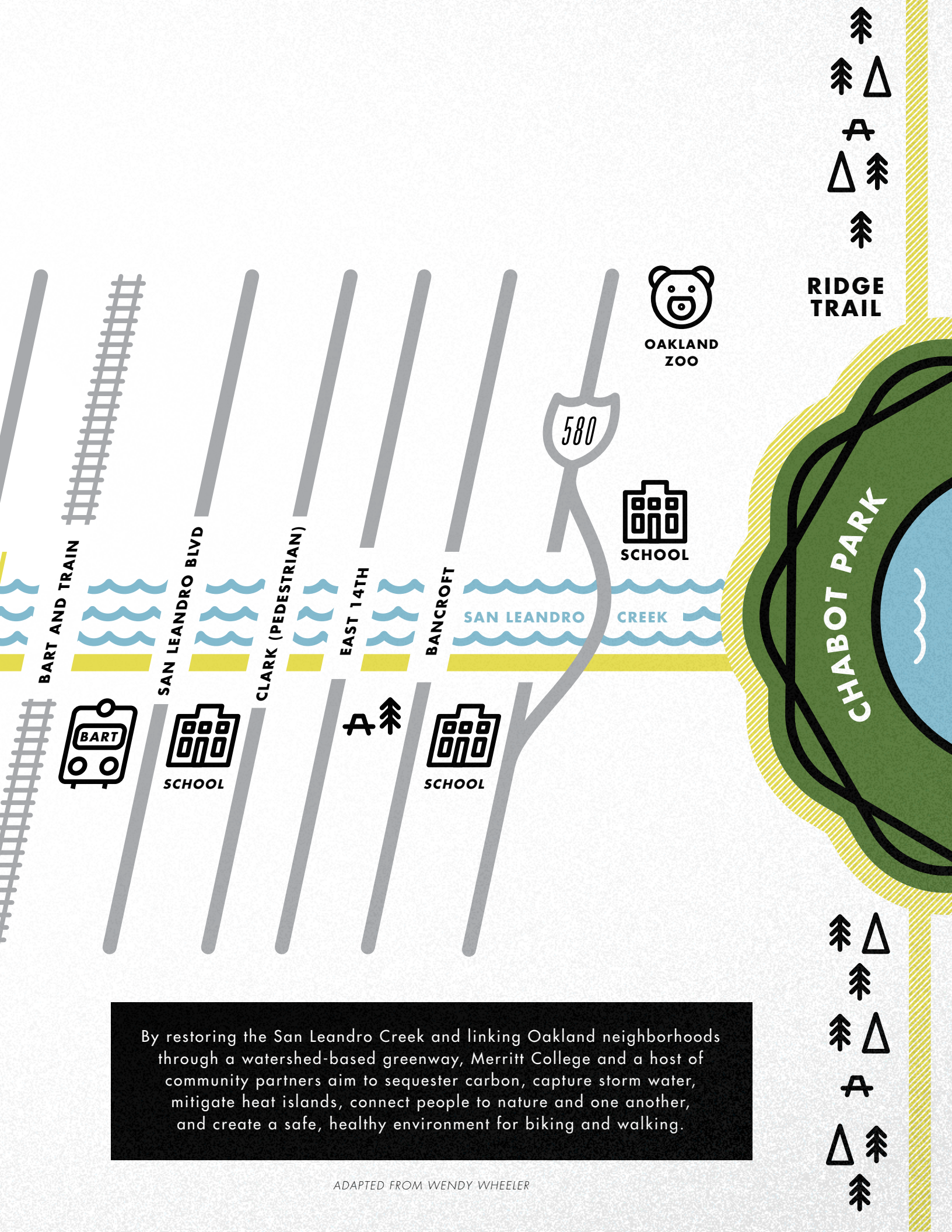



STADIUM

SCHOOL

AIRPORT

 EXISTING TRAILS
 PROPOSED GREENWAY



By restoring the San Leandro Creek and linking Oakland neighborhoods through a watershed-based greenway, Merritt College and a host of community partners aim to sequester carbon, capture storm water, mitigate heat islands, connect people to nature and one another, and create a safe, healthy environment for biking and walking.

ADAPTED FROM WENDY WHEELER

and thus doesn't require separate college program funding up front. Project advocates have landed several grants, including \$250,000 from the California Department of Transportation and a technical assistance award from the National Park Service. Merritt and other greenway partners will eventually go after additional state and local monies to fund specific portions of the project. The goal, says Ralston, is to first get plans and priorities in place. Greenway organizers want to ensure that the community-visioning effort at the heart of the project continues to guide its development, and that community voices are not drowned out by the professional project managers and consultant teams that will inevitably follow from any major funding.

As part of a regional climate action planning process, Bay Area cities have to map priority conservation areas for green and open space. Merritt wanted to take this a step further and landed on watershed-based greenways as a model of how urban forestry can sequester carbon, capture storm water, mitigate heat islands, connect people to nature, and create a safe, healthy environment for biking

There is a critical role for community colleges wherever cities lack will or resources, says Ralston. But the work has to be done in concert with the community. In this case, Merritt began to convene "connect the dots" meetings around the greenway (*figure 4*), and worked with Bay Localize — who was already organizing dozens of environmental justice groups, activists and scholars on food policy, forestry, transportation, health, environmental justice, and watershed preservation to advocate for inclusive adaptation planning.

In 2013, Bay Localize produced *Mapping Our Future: A Work Plan for Public Engagement & Equity in Climate Adaptation Planning in the San Francisco Bay Area*, which outlines an inclusive plan for community resilience, including measures to connect residents in the bay's most vulnerable neighborhoods with jobs generated by adaptation plan implementation.⁴²

A number of related questions emerged from the greenway conversations: Who will maintain it? What about jobs? The college's environmental technology program

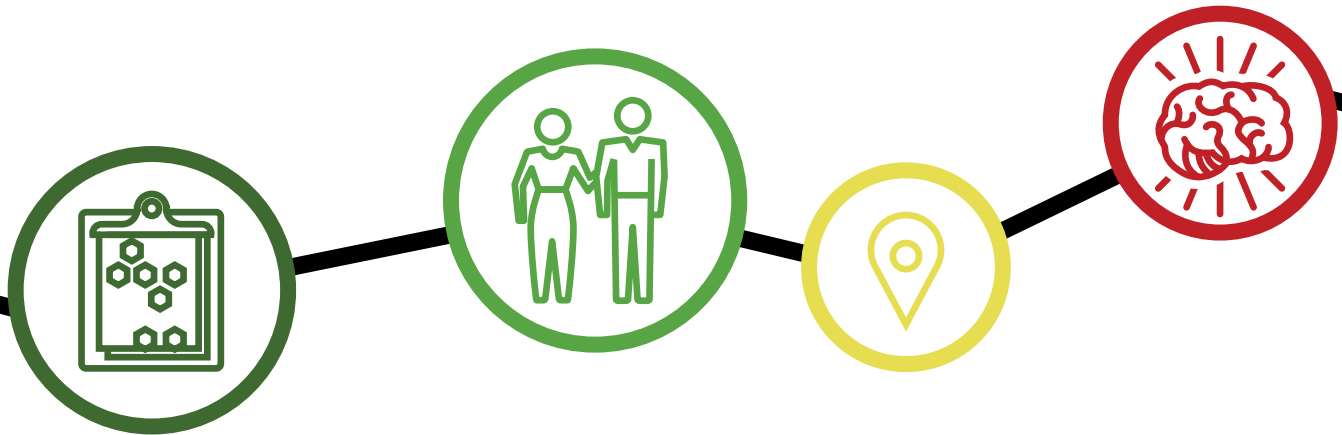
developed a green jobs track addressing less capital-intensive approaches than, say, renewables — watershed management, landscape architecture, etc. This programming is part of an ambitious jobs program known as Green Works Development (GWD).

Green Works Development, modeled on Oakland's Green Jobs Corps, began in 2010 as a pilot collaboration between the Oakland school district,

Merritt College, and the city of Oakland, which contributed \$200,000 in urban redevelopment funds. Training local high school students on paid summer projects in local parks, the program covered generalized instruction in green landscaping and horticulture, environmental planning, and sustainable building techniques.

A community college participates in operationalizing resiliency — economic and environmental — as convener, leader, and educator.

and walking. Community stakeholders were hungry for this, notes Ralston; they were tired of ad-hoc, minimalist responses to climate and environmental hazards. Thus what had been a mandate for open space became a window for the city to think comprehensively about urban renewal, community development, and climate action planning.



CONNECTING THE DOTS

FIG 4

Merritt's Connecting The Dots model facilitates resiliency planning and asset-mapping conversations with students, municipal leaders, and community groups. The college convenes diverse stakeholders to engage in "ongoing conversations about connecting with each other and where we live." Dots can be people, places, organizations, and ideas.

ADAPTED FROM MERRITT COLLEGE ENVIRONMENTAL PROGRAM, INSTITUTE FOR SUSTAINABLE POLICY STUDIES

The WPA-style program, developed through an organic, place-based process, connected environmental education, local kids, neighborhood engagement, on the job training, and green infrastructure. It now runs as an informal network of local business, nonprofit, education, and government agencies interested in developing sustainable public works, like the San Leandro Creek Restoration where it began. GWD engages local residents and opens doors into community college academic or apprenticeship pathways, leading to jobs in stewardship or public works. The program is currently working with the CA Department of Labor, the City of Oakland, and the Peralta Community College District to establish an arboriculture apprenticeship at Merritt College linking local residents to emerging jobs in urban forestry.

Equity, according to Ralston, drives project design: in order to address concerns that a top-down approach could lead to gentrification, GWD focuses on developing not just local jobs but local expertise — and a deep sense of community ownership. Neighborhood groups request improvements to greenways, parks, and watersheds, and then work with planners and crews from the community college to develop and install them. It is a remarkable process in which a community college participates in operationalizing resiliency — economic and environmental — as convener, leader, and educator.