

## UNEARTHED AND UNFORGOTTEN



### A 19TH-CENTURY FREEDMEN'S SETTLEMENT COMES ALIVE AGAIN IN BROOKLYN.

BY JONATHAN LERNER

Nearly 50 years ago, a cluster of old houses, set slightly askew, was “discovered” in Brooklyn’s Crown Heights neighborhood. They had been surrounded and concealed by newer structures aligned to the modern street grid. These modest cottages were the last physical trace of Weeksville, a self-sufficient farming settlement founded by freed African Americans after slavery was outlawed in New York in 1827.

An organization soon coalesced to document the history and preserve the structures. In the decades since, the mission broadened, and the newly completed Weeksville Heritage Center has wider ambitions: both to celebrate the area’s black history and to foster its present-day cultural vitality. The historic houses have been restored and are joined by a dazzling new building with exhibition, performance, research, and classroom spaces. Between them is an outdoor area meant for active programming and historical interpretation. Elizabeth J. Kennedy, ASLA, the designer, says, “One challenge was to make the historic land use patterns apparent.” Another was to reveal the idiosyncratic route of long-erased Hunterfly Road, originally a Native American footpath, which the old houses had fronted.

At midcentury, Crown Heights was in decline. “The early 20th century frame houses built around [the historic ones] were lost to vacancy, so this whole view opened up again,” Kennedy says. “The site was magical.” The once-hidden houses, themselves rural in character, were now seen at a distance unusual in this dense urban context. Viewing pre-grid maps, Kennedy “could see that the roadway was an extension of the drainage pattern” leading to Jamaica Bay. “It’s only conjecture, but it was probably a more gentle way of navigating Brooklyn’s topography at that time, a natural feature that could landmark a path.”

Where the vanished road’s route intersects the new building at the far edge of the roughly one-acre site from the houses, the architects

**TOP**

The Weeksville houses were hidden in the center of a Brooklyn block.

**INSET**

Now viewed across the lawn and meadow, the houses evoke the settlement’s rural character.



→ Sara Caples and Everardo Jefferson of Caples Jefferson Architects placed a glass lobby. Passersby glimpse the historic houses through it as if looking down the Hunterfly Road, and visitors enter the Heritage Center as if by walking along it. Kennedy then marked the road's diagonal route across the gently mounded one-acre site with several narrow cuts that have retaining walls of Cor-Ten steel. A second phase of the project will turn a derelict lot across the street into a parking area for school buses. Their required turning radius "creates this corner that we can preserve," Kennedy says. "The old foundations of the previous buildings are all there. So by bridging over them along the alignment of the Hunterfly, you will continue to cross history."

**TOP**

The meadow and boardwalk are aligned to reveal the historic farm grid.

**BOTTOM**

The path of vanishing Hunterfly Road is traced through the new building and across the future parking area.

The site design includes lawns for active programming use, and—its largest piece—a meadow set on the angle of the historic farm grid. Between these elements are linear wetlands that Kennedy says are meant to separate them like hedgerows. Seen in long view, the result is a formal arrangement with the lawn areas a foreground, Kennedy explains. "The wildflower break in the swale is the end of



the foreground, then the meadow is the midground, and the background is the houses." The meadow is planted with a random-seeming mix of little bluestem, wild rye, and clover. Kennedy says, "We wanted to have the sense of overgrowth and abandonment," to reference not only the lost agricultural history of Weeksville but also the neighborhood's recent experience of urban decay.

The goal of her landscape design, Kennedy says, was to create a framework for interpretation of the layered

and nuanced site. She credits her ability to do that to the considerable research that had been done into Weeksville's history, including its history of land use. Much of that information was archival, from historic atlases and documentation of the civil engineering that extended the modern grid across the community. But some was inherent to the site, says Kennedy, "features that said, 'We're here to be uncovered.'" ●



## A RED STATE RIDES ON

### THE KEYS TO WALKBIKE NC'S BROAD SUPPORT IN NORTH CAROLINA.

BY MARGARET SHAKESPEARE

Major statewide planning efforts—especially ones focusing on land use or nonmotorized activities—have recently been blocked by political conservatives as unnecessary or worse. And by all measures, North Carolina is a red state. Yet, the state's new bicycle and pedestrian plan, WalkBikeNC, never ran into major political roadblocks—not even when the state went through an election cycle in the middle of the project. That's attributable to the design team and the North Carolina Department of Transportation (NCDOT) staff's spending a lot of time in communities statewide, talking to people.

Paul Morris, FASLA, a past ASLA president who was then Deputy Secretary of Transit at NCDOT, was also instrumental. Early on, he pitched WalkBikeNC as a five-pillar framework that included, along with mobility and environmental sustainability, other meat-and-potatoes goals like economic growth, public safety, and health and wellness. That got other state departments, including natural resources, health, and commerce, interested and involved in the plan. WalkBikeNC's potential returns—including \$174 million added annually to the state's economy, \$76 million annually in reduced health-care costs, and a \$68 million annual increase in visitor spending—have resonated with both political parties.

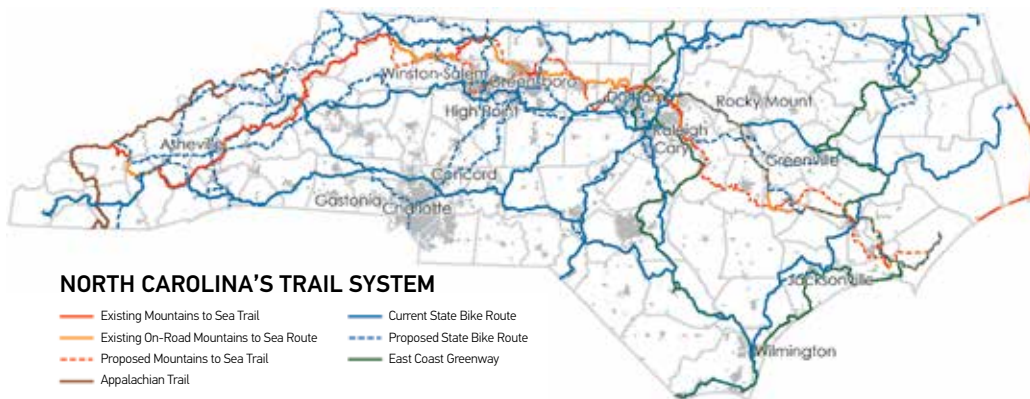
"The thorniest challenges came with implementation of recommendations or programs within communities," says Matt Hayes, a planner at Alta

Planning + Design, the firm hired to author the plan. Alta interacted with local planners to adjust codes that would make communities more compact and reduce sprawl, or create a more inviting pedestrian environment, such as wider sidewalks and trees that give shade, aid stormwater retention, and calm traffic. These ideas sometimes ran up against local regulations and ad hoc practices, and it will likely be tricky to ensure consistency statewide as the plan rolls out.

North Carolina stretches for 560 miles, from beaches and barrier islands westward through the coastal plain and piedmont, on to the 6,684-foot altitude of Mount Mitchell (the highest elevation east of the Mississippi) and its neighboring Appalachian range peaks. To overcome that landscape variation and the local rules that go with it, Alta used the landscape to define some project parameters.

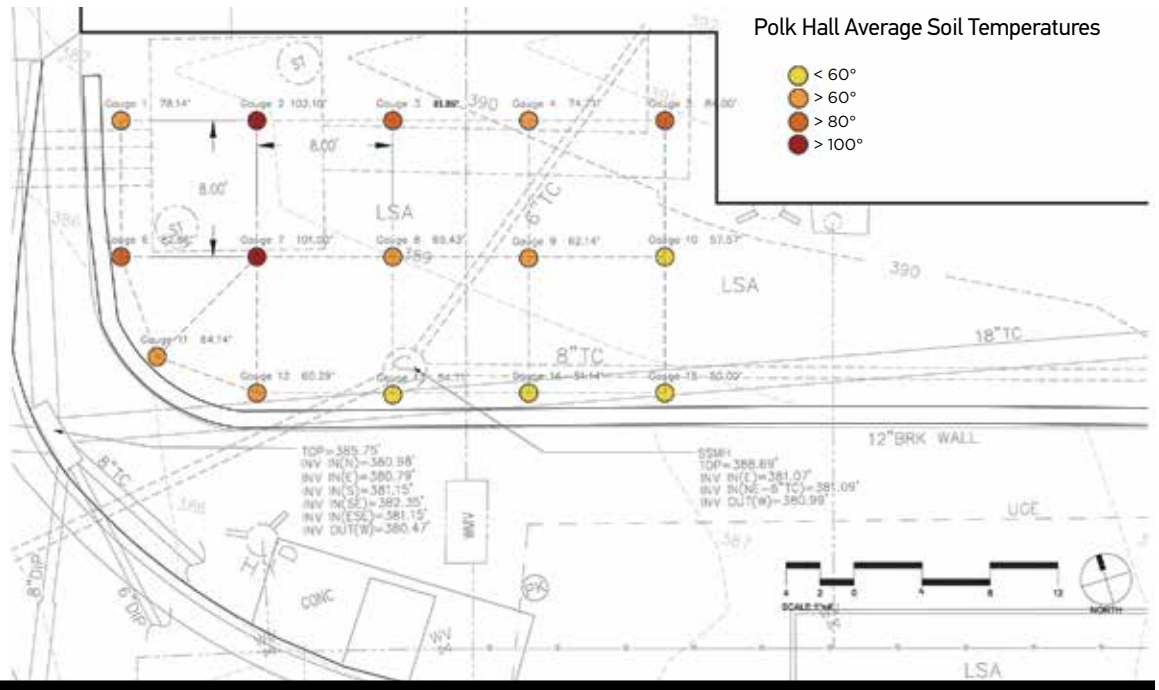
"The state is long so we divided it by mountains, piedmont, and coastal for purposes of public participation, environment, and health and wellness components," says Chuck Flink, FASLA, an Alta senior adviser and the lead landscape architect for WalkBikeNC. Then the project team worked with metropolitan and regional planning organizations, as well as regional NCDOT offices, to ensure broad community involvement and capitalize on local knowledge to recommend bicycle routes and for design development proposals. Planners posed weekly questions to the public through an interactive website and organized focus groups at regional and local scales.

WalkBikeNC has become a widely accepted guide as the state adds to its existing 3,000-mile bike system, paves rural-road shoulders, and completes projects such as the Mountains to Sea Trail (a more than 700-mile hike from Clingman's Dome to the Outer Banks), and as communities look for better ways to integrate land use and transportation and raise awareness of connections between walking and biking and public health. "It wasn't reinventing the wheel," Hayes says. Rather, it was a matter of bringing together a lot of seemingly disparate elements—elements such as mountains and beaches, environmentalists and business groups, liberals and conservatives. ●



ALTA PLANNING AND DESIGN, TOP; NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, BOTTOM

BEATING  
THE HEAT



**STUDENTS MITIGATE  
OVERHEATED SOIL  
ON CAMPUS.**

BY ADAM REGN ARVIDSON, FASLA,  
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**TOP LEFT**  
Students at NC State designed techniques to mitigate steam pipe heat for a small garden.

**TOP RIGHT**  
Probes showed soil temperatures in excess of 100 degrees in places.

Polk Hall sits on a prominent corner at North Carolina State University in Raleigh. It is home to the animal science and biochemistry departments (which explains, somewhat, the ornamental cow skulls). In 2009, a building addition removed a large and beloved oak tree from a planting area near Polk's southwest corner. The area was replanted, but all the plants died. Then another batch died. "They put in plant after plant, and the local community just watched these plants die," says Julieta T. Sherk, ASLA, a registered landscape architect who teaches in NC State's landscape architecture and horticultural science departments.

The reason for the failures? According to an analysis Sherk led with students in her landscape construction studio, steam pipes running under the soil were raising temperatures to, in places, more than 100 degrees. The studio got involved at the request of the campus landscape architect Tom Skolnicki, and last year they built an underground heat

dissipation system and installed a more heat-tolerant landscape.

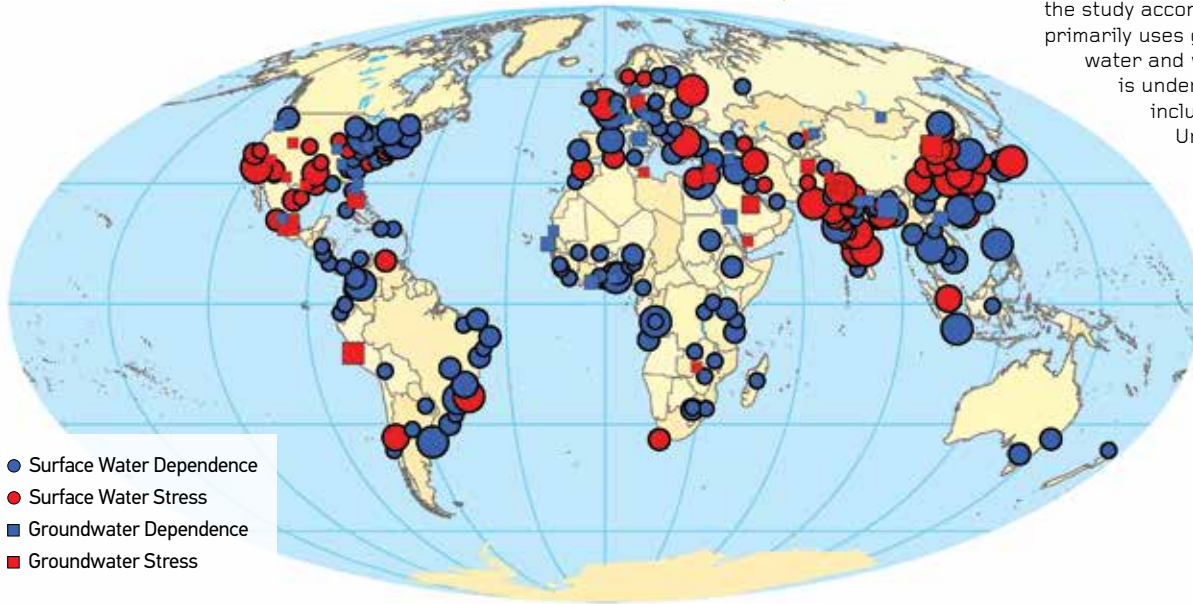
The first step was to set up a grid of temperature gauges in the 37-foot by 22-foot space. Eight of the 15 locations had temperature averages of 86 degrees. Temps were higher near a pair of access vaults for the steam lines. Sherk organized brainstorming sessions with the university's facilities management staff, and then each student created his or her own design that ultimately contributed to the final design for the area.

Sherk and the students, working with facilities staff, removed much of the existing soil around the pipes and created something of an underground burrito. They placed six inches of gravel around the steam pipes. Within the gravel, above the pipe, they placed four-inch-diameter fabric-wrapped PVC pipe with holes drilled into it for vertical pipes to vent the heat captured by the horizontal PVC. Then, an insulation membrane was laid across the entire site, above the PVC-and-gravel

burrito. With this detail, new soil above the membrane remains at normal temperatures, while steam pipe heat vents into the air at strategic locations.

Sherk and her team then planted yucca, butterfly bush, camellias, and pink muhly grass, all of which tend to be more tolerant of high soil and air temperatures. After installation, the students tested the average temperature among the eight worst heat gauge grid points again and found that they had dropped more than 20 degrees to 63.5 degrees. At one location, soil temperature dropped from 102 to 64 degrees.

Little garden spaces underlaid with steam pipes exist all over campus, says Sherk, but the Polk Hall garden was expensive: \$30,000 (about \$36 per square foot), all of it raised from various grants and funds within the university. Sherk has worked with facilities staff to consider another location, but without the prominence of Polk Hall, and it was hard to justify the cost for now. ●



**WATER SOURCES AND STRESS**

This world map plots each city in the study according to whether it primarily uses ground- or surface water and whether that source is under stress. Hot spots include the western United States, northern China, and the Indian subcontinent.

## WHERE THE WATER GOES

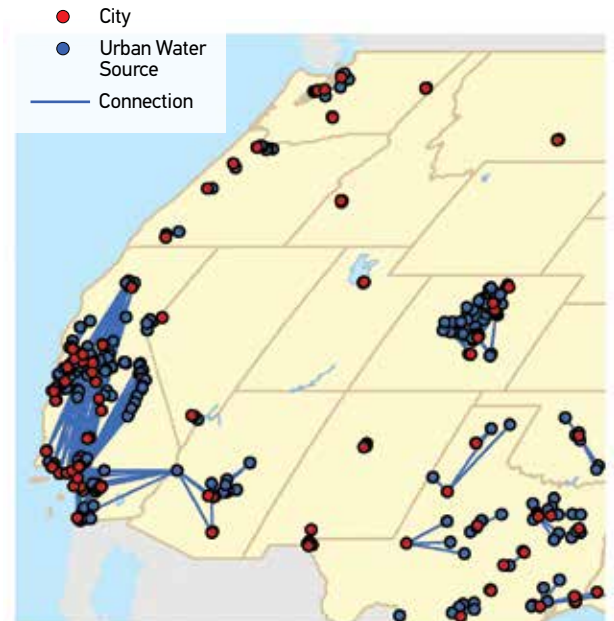
**A NEW STUDY EXAMINES WHERE WORLD CITIES GET THEIR WATER.**

“This is a simple question,” says Robert McDonald, a researcher at the Nature Conservancy. “Each city knows where it gets its water. But there’s no world map.” He says that if anyone wanted to identify which cities would have water supplies most affected by climate change, or those that would see water quality issues owing to urban sprawl, there was no global way to do that. So McDonald and a group of researchers made that map. A paper describing their findings was recently published in open-source format (free for all to read) in the journal *Global Environmental Change*. (It’s available online at [www.journals.elsevier.com/global-environmental-change](http://www.journals.elsevier.com/global-environmental-change).)

McDonald’s study includes cities with populations of at least 750,000—about one-third of all urban dwellers.

Cities of this size have professional water utilities, so McDonald and his team were able to find water source data through phone calls, web searches, and annual reports. The raw utility data was then analyzed by hydrologists to better understand scarcity. They found that 80 percent of large cities use surface water. That, according to McDonald, is the inverse of smaller cities, which rely on groundwater. “That’s interesting because there are thousands of cities in the developing world making that transition between ground- and surface water,” McDonald says.

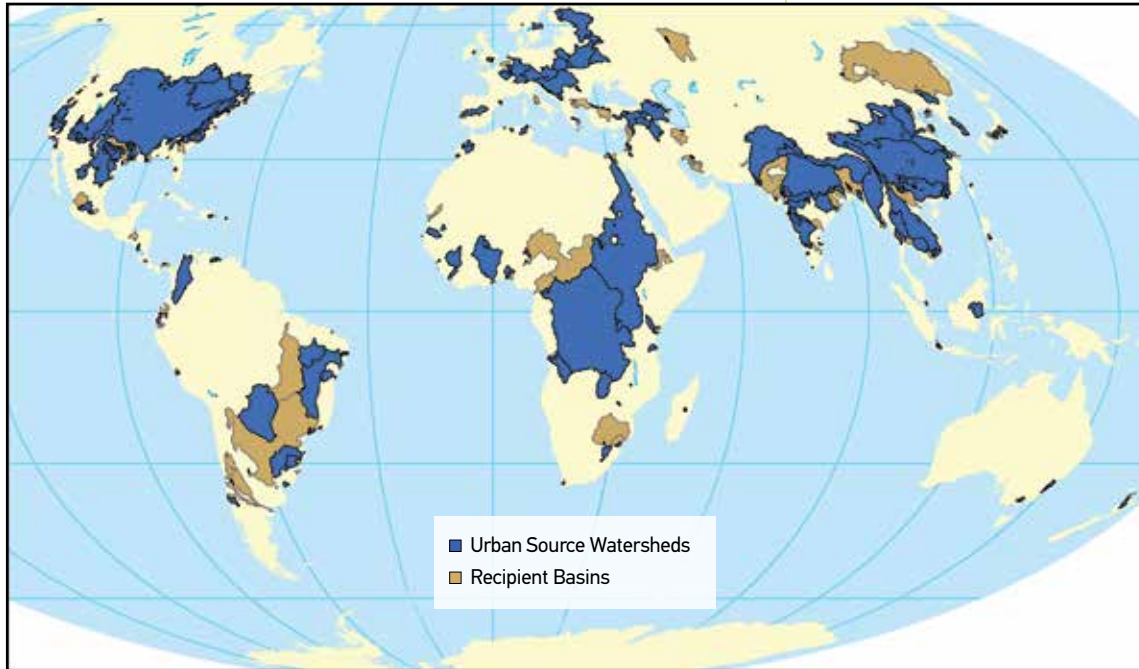
Though much has been written about the water woes of Las Vegas and Los Angeles, the fact is that every resident of those and other southwestern cities can still turn on a tap every day and get clean water. “When



**WATER SOURCE CONNECTIONS IN THE WESTERN UNITED STATES**

A closer look at the western United States shows how infrastructure plays a major role in reducing water scarcity. Here, red dots (cities) are connected to their water sources (blue dots) with transmission lines.

ROBERT McDONALD, COURTESY GLOBAL ENVIRONMENTAL CHANGE



→ you account for infrastructure,” McDonald says, “cities you thought were water stressed are no longer water stressed.” That’s not the case in infrastructure-poor regions of the world such as the Arabian Peninsula.

McDonald’s study also considered economics relative to the distance a city goes to get water. Cities with the highest incomes get their water from an average of more than 50 kilometers away, while the poorest cities go out less than half as far. Of course, there’s a hydrological aspect to this, too. Drier cities must go out farther to get water—see, again, the western United States. McDonald says the interaction between these two trends—the distance a city needs to go to get enough water and its financial ability to do so—explains water

scarcity. “I worry about cities that are dry and poor,” says McDonald, such as Sanaa, Yemen, which has little fresh water nearby but cannot build a desalination plant, as other, richer Arabian cities have done.

In an interesting secondary issue, McDonald found that cities are moving water across basins, essentially changing the hydrology of large parts of the world. “We are homogenizing the water cycle,” he says, by bringing water long distances to cities and then dumping the waste (whether treated or not) nearby. China, which is moving vast amounts of water from its tropical South to the drier North, is a notable example on the map. “Recipient basins are a lot wetter than they would be without water infrastructure,” says McDonald. ●

**WATER MOVEMENT ACROSS BASINS**

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