

Small Cities Co-Lab

Booklet Series

Book 2: Natural Environments

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Book 2: Natural Environments

Exploring opportunities for small city communities to reclaim, reimagine, and reconnect with their rivers, coastlines, and natural environments.



**College of Arts
& Sciences**
LEHIGH UNIVERSITY

Small Cities Lab

A photograph of a man and four children standing on a grassy bank next to a river, looking at the water. A canoe is in the foreground. The image is overlaid with a teal color filter.

How can we restore and reimagine our relationships to our rivers and coasts?

Waterfronts emerged as one of the most valued and consistently discussed dimensions of small-city life. Rivers and coastlines have shaped where small cities were established, how they developed, and how residents understand their sense of place and identity. At the same time, many waterfronts are effected by industrial decline, infrastructure barriers, and accelerating climate risks that limit public access and connectivity. In response, cities are working to restore their waterfronts as environmental, cultural, and economic assets.

This raises important questions about how to activate waterfronts that can balance these priorities, while most importantly re-building residents' relationships to water. Since small cities share similar waterfront histories, there is a significant opportunity to collaborate, exchange strategies, and reimagine how communities can reclaim and reconnect with their rivers and coastlines.

Waterfront Themes

Many small cities were established around rivers and bodies of water, and a majority of participants identified their waterfront as both a defining feature and one of their city's greatest assets. At the same time, they are impacted by pollution, environmental damage, and uneven access.

Waterfront discussions coalesced around four recurring themes:



Industry and Pollution

Long-term impacts of former manufacturing and shipping activity have left harmful effects on the environmental and public health.



Re-development (Tensions)

Cities are navigating redeveloping their waterfronts while balancing competing priorities: maintaining industrial or maritime activity, expanding recreation and open space, or creating new housing.



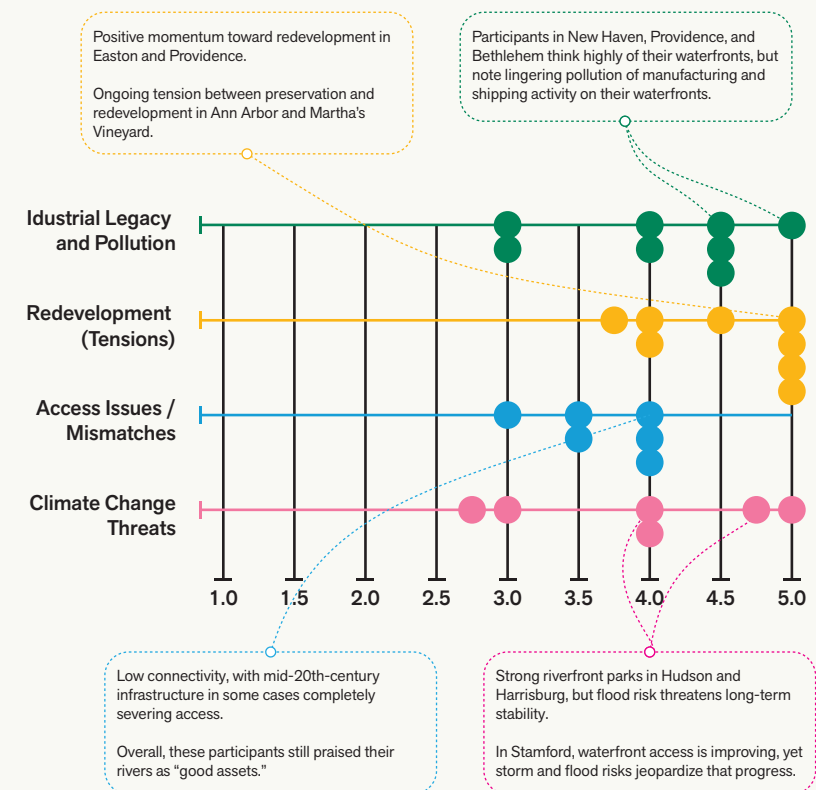
Access Issues and Mismatches

Highways, industrial zones, or poorly planned development separate neighborhoods from waterfronts, creating a disconnect between residents and these valued spaces.



Climate Change Threats

Flooding, erosion, and rising water levels make investment and maintenance on the waterfront even more pressing.



The chart above displays participant "quality" ratings of various waterfront attributes. Each bubble represents one participant's entry, describing a "river," "coastline," "bay," or a specific river or waterfront in their city: "Lehigh River," "Palsaic River," and "Long Island Sound Waterfront."

Participants rated the attribute they identified on a scale from 1 (liability) to 5 (asset). We then organized the chart by theme, grouping together the attributes that corresponded to the same theme along a connecting line.

Redevelopment Trajectories

Waterfronts are a common origin point for cities, and there are familiar timelines in the ways these spaces have evolved. Across cities, there were two overarching scenarios with communities diverging along different trajectories as they grapple with how these histories have unfolded locally and their capacity to respond.



Industry on the Ohio river. (RiverWise)

Scenario 1:

Brownfield Sites: Lingering Pollution, Reclamation, and Redevelopment

For many communities, this history began in the late 19th, early 20th centuries with the establishment of an industrial site along a river, bay, or ocean. As industrial decline spread in the mid-to-late 20th century, many of these facilities closed, leaving behind significant environmental legacies. Residual pollution and long-term contamination became defining features of these waterfronts.

In New Haven, along the Long Island Sound, participants noted that “residual pollution from the industrial history needs to be cleaned up.” Similar concerns were raised along the Lehigh River in Bethlehem, where participants described how “pollution has been a problem for decades,” referring to

the contamination left by Bethlehem Steel. When industry left, it often took investment with it, leaving cities to contend with contaminated land and waterways and the lasting constraints they impose without sufficient resources.

While participants emphasized that “the de-pollution of the river should be a key priority,” they also acknowledged a familiar challenge: “it costs money” and investment these communities may not have.

Reclamation

In some communities, however, this trajectory has shifted. The long arc from industrial use to decline has been met with new waves of investment, raising questions about how to balance economic activity with ecological and public goals. As one participant asked, how can cities “preserve or conserve ecological function of landscapes while still attracting and retaining capital / business?” In Newark, New Jersey, the Palsaic River is still “mostly used for trade” and continues to play an economic role. This comes with tradeoffs for residents, who noted the absence of “riverfront parks” and that the “water is not clear enough for recreation.”

Despite these tensions, participants more often emphasized reclaiming waterfronts for recreation and public access than preserving industrial or maritime uses. In St. Paul, Minnesota, along the Mississippi River, waterfront redevelopment has focused on both “recreational and economic generation.”

In Easton, Pennsylvania, along the Bushkill Creek, efforts center on “ecological restoration and a planned greenway project.” Providence offers another example of this transition, where participants described a “revitalized waterfront” featuring “water recreation and parks.” They also noted that this transformation followed “a long time to clean up the canal,” underscoring that reclaiming industrial waterfronts requires

significant financial resources and long-term political and social commitments. As cities navigate development trade-offs, waterfronts often become focal points for new open and green spaces.

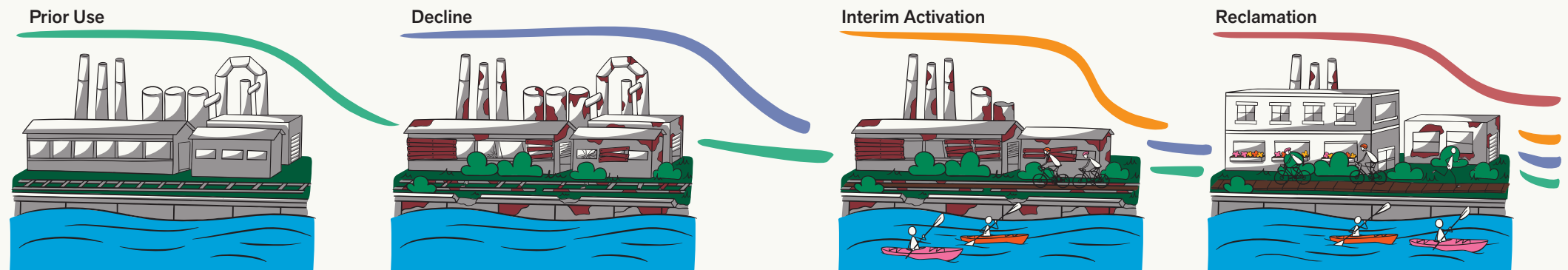
Redevelopment Choices

As cities continue to prioritize open space and activate waterfronts for public access, a pressing question emerges: how should cities balance investments in parks and recreation with the growing demand for new housing?

As development pressures intensify, particularly in high-amenity waterfront areas, decisions about land use become increasingly consequential. In Ann Arbor, a protected greenbelt

that surrounds the city and hugs much of the Huron River is “good for open space preservation but also limits development.” In Martha’s Vineyard, “huge amounts of land protected from development” for coastal conservation is “great for a natural island, [but a] problem for housing!” Echoing these concerns, other participants emphasized that “housing locations need to adapt,” and that cities must “identify locations for new housing.”

Communities face difficult choices about whether these landscapes should remain primarily public open space or responsibly accommodate new housing, especially as waterfronts become more desirable places to live.



Scenario 2:

Mismatch: Built over Natural

In other communities, the defining challenge was infrastructure expansion, which created mismatches between the built and natural environment. Highways and other infrastructure were built along – or directly over – waterways, limiting access and cutting nearby neighborhoods off from the waterfront.

In Middletown, Connecticut, participants described how a highway constructed over the river significantly restricts public access. Elijah Huge emphasizes that “the river is the reason for the city,” but now “a state highway separates it from the city and erases the river.” Completed in 1969, CT-9 was built directly along the Connecticut River, severing the downtown core from its waterfront. Tall, overgrown trees lining the highway further obscure the water, making the river almost invisible from the city itself.

Similar mismatches between waterways and public life were described in Meadville, where the Mill Run stream

“runs through downtown.” While some access remains, the river corridor has been paved over, reducing both its ecological function and its potential as a recreational space. These infrastructure decisions made decades ago, particularly in the 1970s, continue to constrain how waterfronts function today. By prioritizing cars over people and place, communities inherited waterfronts that are difficult to reach, underused, and increasingly vulnerable to erosion and neglect, despite their central role in the city’s history and identity.

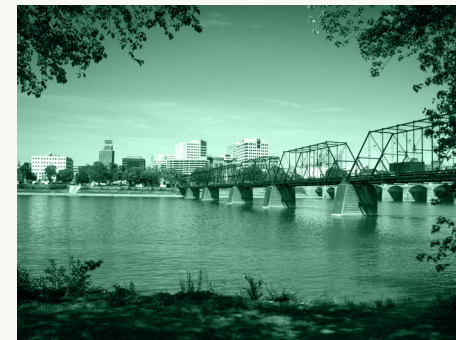
Climate Change Risks: Progress and Undosings

The challenge of reconnecting people to their waterfronts is unfolding as climate change accelerates. Rising seas, frequent flooding, and erosion are compounding the consequences of decades-old development decisions, increasing the urgency of delayed improvements while threatening to undermine recent progress.

In Stamford, participants noted that while “public access is getting better,” “flood risk [is] getting worse, fast.” In Hudson, NY, the “sea level rise may erase walkable park” which is “one of the only accessible and walkable spaces in the city.” Efforts to restore public access to waterfronts may be outpaced or undone by rising seas and flooding.

“While we did decrease the intensity of some allowable uses within neighborhoods, we also created more consistency...”

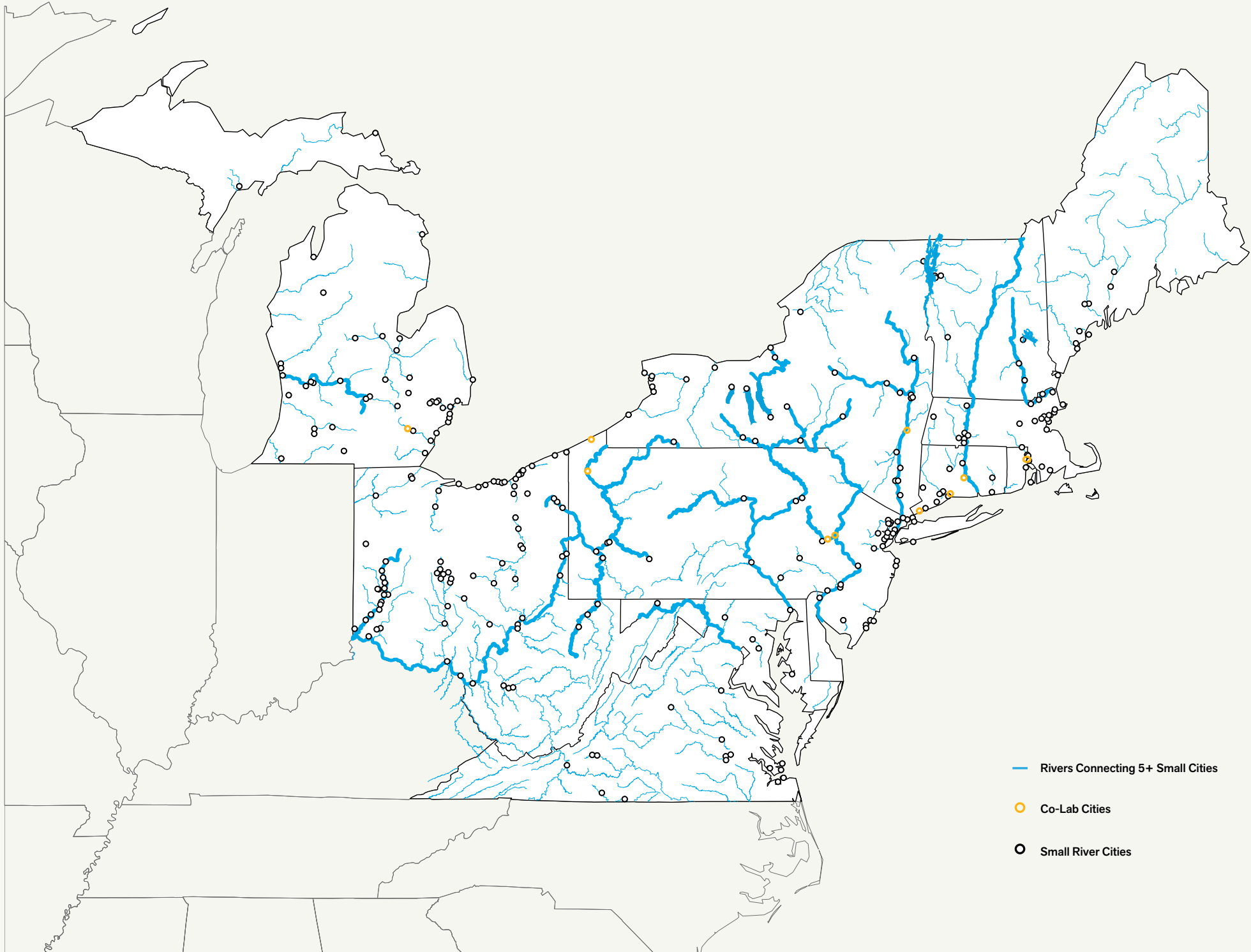
–Jennifer Gomez



Harrisburg, view from City Island Park.

Harrisburg offers an example of how waterfront redevelopment can simultaneously improve public access and climate resilience. The city’s long-term waterfront revitalization initiative was originally undertaken to address the public health hazards left by historic industrial activity along the river. Over time, this work has evolved beyond remediation to include the restoration and expansion of interconnected blue and green spaces, such as Wildwood

Park, described as “a restored wetland area that cleans the air, provides opportunities for recreation and wildlife habitat.” Here, reclamation is multifunctional; it introduces greenspace and trails to enhance public access and ecological health, but also contributes to climate adaptation. The park and wetland area “helps mitigate flooding.” Responsible waterfront redevelopment can serve multiple purposes, enhancing public access and reducing flood risk.



— Rivers Connecting 5+ Small Cities

○ Co-Lab Cities

○ Small River Cities

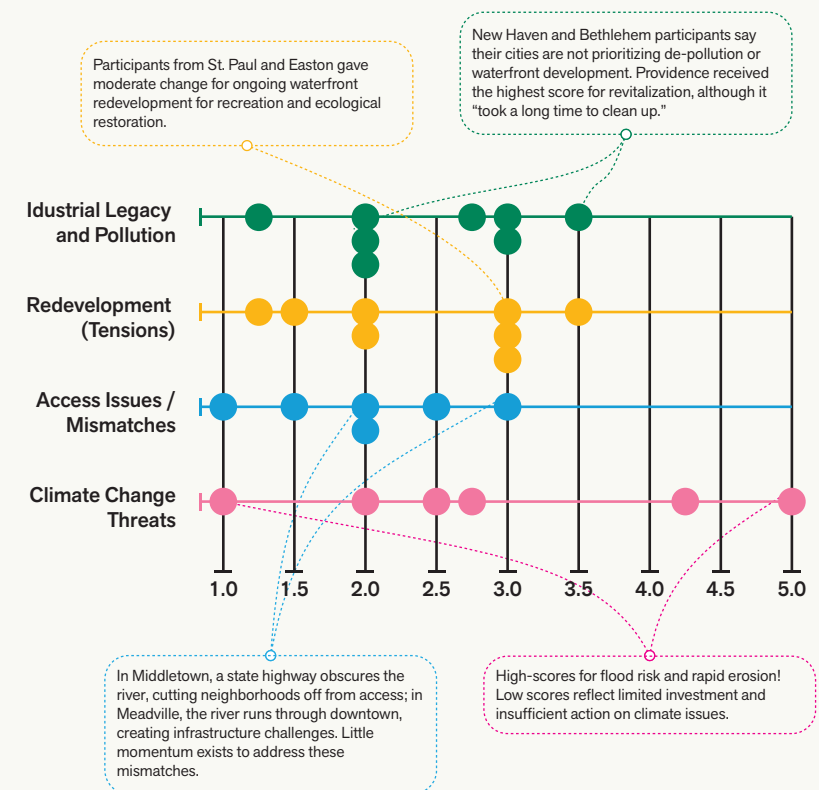
Charting a New Course: Collaboration and Interim Activation

Despite local trajectories in waterfront evolution, overlapping waterfront challenges point to opportunities for shared learning and coordination. One participant explicitly referenced the potential for a “Rivertown network,” suggesting that small cities facing similar waterfront conditions could benefit from collective strategies, shared tools, and regional collaboration to navigate their waterfronts’ futures.

The challenges for waterfronts are about reconciling an industrial past and preparing for future environmental needs. Cities must address the legacies of industrial and infrastructure development, remediating pollution, mitigating environmental damage, and repairing disrupted connections between neighborhoods and waterways. At the same time, they must prepare for growing climate risks. Rising water levels, increased flooding, and erosion make careful planning and investment more urgent than ever.

Across these conversations, one consistent thread emerged about the importance of reconnecting residents socially and culturally to waterfronts, which industrial uses and infrastructure previously severed. These landscapes are important cultural assets, shaping cities’ histories and identities. Laura Stedenfeld from Easton says the Delaware River “defines the whole identity of the city.” Reclaiming waterfronts therefore offers an opportunity to reintroduce more connected, pre-industrial relationships to rivers and coasts. This requires a reclamation process but importantly social activation that helps residents reimagine how they can engage with these spaces.

One idea gaining traction is *interim activation*. In several cities, organizers are exploring temporary or phased uses between the closure of industrial sites and full-scale redevelopment. Rather than waiting years or decades for complete remediation, interim activation introduces public programming, art, trails, or pop-up events that re-establish a social connection to the waterfront. These approaches allow communities to begin rebuilding relationships with their rivers while longer-term cleanup and planning are still underway.



The chart above displays participant “change” rating of various waterfront attributes. Each bubble represents one participant’s entry. Participants rated the attribute they identified on a scale from 1 (slow) to 5 (fast).

FEATURE

No Whiteboards, No Post-its

Design Engagement in Nature

Tessa Kelly and Chris Parkinson

Tessa Kelly and Chris Parkinson, lead ARCADE (arc-ade.org), a community-driven design practice based in Pittsfield, Massachusetts and Troy, New York, whose work interweaves architecture, landscape, urbanism, research, happenings, and art.

Building relationships between communities and their local natural ecosystems is our collective mandate as designers in the twenty-first century. This reflection on the first ten years of our practice — ARCADE — organizes our process for doing this work into a format that invites modification and expansion by other designers for their own local communities.

We founded our office in Pittsfield, Massachusetts, a post-industrial city of approximately 40,000 people in the Northern Forests ecological region

that spans the border between the United States and Canada. We are trained as architects, and returned to our home region early in our careers when we received a grant from the National Endowment for the Arts to start an experimental architecture-and-poetry project called The Mastheads as a way of reviving local heritage in a community facing economic, social, and environmental challenges after the departure of its manufacturing base in the 1980s.

We are not trained as landscape

designers, or ecologists, or foresters, or naturalists. But as we continued working directly with communities after launching The Mastheads, we realized that building meaningful connections between residents and their surrounding natural environments was one of the most impactful, and initially most available, openings for us to strengthen our local social fabric.

As many young designers know, commissions for public buildings will go to firms with “more built work.” Projects with minimal construction are more flexible. The work of “artists” can be discretionary, and outdoor “structures” are a more flexible designation than “buildings.” Our public work began to take the shape of designing community happenings and outdoor installations because that was a space and scale outside of the public procurement mandates that often send local work to large corporate firms based outside of the community.

From our first public project, we have worked to find pathways that fund the type of design we believe is necessary — learning from and within a community — in ways that keep “the public” as our clients, and allow us to experiment with engagement methodology as an



artform in itself. We build partnerships with local government, local non-profits, and neighborhood action groups and write grants to support multiple stages of public projects — from design, to construction, to ongoing programming. Two of these projects — the Westside Riverway Park on the Housatonic River in Pittsfield, MA and the Riverwalk along the Hoosic River in North Adams, MA — are the focus of this piece. The following sequence organizes the broad steps we take to understand, design, and support ongoing and meaningful engagement between communities and their natural environments.

1. Gather Memories

Outdoor projects on municipal land are part of the public realm. Every

site is connected to its immediate community by generations of stories and experiences that shape the local perception of that site. We begin public projects by inviting neighbors to share their memories of the site — whether it is a particular neighborhood block, natural feature, local business network, or the set of traditions that surround them.

We have gathered memories through videotaped elder interviews, through sitting with diners at a free-lunch hub and recording their neighborhood park memories, with poetry prompts at block parties, and at oral history tables. We expand on what we learn through research in the Local History departments of our public libraries and through municipal Historical Societies, with the goal of connecting the project to the larger culture and context of the site.

We compile and share this information back with the community at in-person events, gatherings, exhibitions, and limited local social media networks. Resident memories and site history create the backbone of the project “story.” How did we get here? Why did we get here? Where have we been and where do we want to go?

2. Design Events Where People Want to Be

Don't hold community input sessions at City Hall at dinnertime. No one wants to go! In the case of the Westside Riverway Park, we worked closely with a neighborhood leadership group, Westside Legends, to design events at the future park site that drew together all ages of residents and their families who came out to support them. We started building a celebratory culture around the site before any design work had begun. We shared community stories we had gathered about the site to set the tone for input on the new park. What should it feel like? What should happen there? How can it build on tradition and what can it offer that is new? Always provide free food!

3. Create a Repeating Format

In the case of the Westside Riverway Park, our events took on a repeating format of Block Parties. We learned at our second public event, the Westside Women's Circle, that everyone missed the neighborhood Block Parties that had stopped happening in the 1970s. We started to understand the format of the engagement events, as well as a core future function of the park, to be the revival of Block Parties (which are still active at the Westside Riverway Park



eight years later!). In the case of the Hoosic River, we needed to find a way to connect people with an entire 2.5-mile stretch of the river, which crossed through many different natural and urbanistic conditions. We designed a monthly format of Riverwalks in partnership with the local advocacy group Hoosic River Revival, guided by a local parks manager, that broke the full length into five sections. Each Riverwalk was held the last weekend of the month, included a free sketchbook and drawing tools, and culminated with a delicious table of local food provided by rotating North Adams restaurants. Each month's Riverwalk picked up where the previous one had left off, creating an intuitive format that allowed community members to map the river and its relationship to the city into their minds.



4. Invite New Physical Encounters

Physical experiences are important in connecting communities to their natural environments. The Hoosic Riverwalks included hikes through the woods, easy strolls on sidewalks, explorations of dams and bridges, and one session focused on trash cleanup along an overgrown path ringing an oxbow. Surveys at the end of these walks repeatedly showed extra enthusiasm for the more physically challenging components — bushwhacking! pulling tires out of the undergrowth! — alongside an appreciation for universally accessible alternatives.

At the Westside Riverway Park, local environmental groups including the Berkshire Environmental Action Team and the Housatonic Valley Association



bring canoes, kayaks, and trained attendants to help neighbors move through the river along the park's edge, and to meet visiting turtles and other wildlife.

5. New Thinking Pathways

While we sometimes design surveys to quantify feedback from community participants, more frequently we provide design exercises that allow the entire team — neighbors and designers together — to build a shared visual language around the project. These include base maps, where we ask residents to indicate the path of their own personal walking loops, key sites of significance, or problem areas. They include model-making activities with kids designing and writing about their dream park pavilions. They include sketchbooks where participants in the Riverwalk can see their familiar surroundings



in a new way through drawing — opening up possibilities for sharing ideas on the page. In partnership with The Mastheads' Literary Director, we provide poetry prompts for residents to describe the relationships between their neighborhood, community, and family.

6. Tell the Story

Once a general identity, program, and scope for the project response begins to cohere, we plan a local exhibition where we tell the story back to a broader community and to the residents who have participated over months of community happenings. This includes displaying their work, their words, their architectural models, photographs, drawings, memories, and histories alongside the emerging design. This presentation happens at the Schematic Design phase of development. It is an opportunity to show an early iteration,

receive input, and gauge the response. Typically, conceptual design ideas have already been shared informally at public gatherings leading up to the exhibition, so that there is already familiarity with and community voice within the design proposal.

7. Mock It Up

One of the key ambitions of extensive community design engagement is to keep residents engaged through as many phases of work as possible. If the larger motivation of this work is to build deep connections between communities and the natural environments that they must steward, it is critical to build ownership around the design as a bridge between the social and ecological conditions. Mocking up the proposed design experience is one step in doing this. At the Westside Riverway Park, we tested out different locations for the eventual performance pavilion by using moveable tents at Block Parties during the design stage. At the Hoosic Riverwalk, we built two full-scale "River Flags" to test out the concept of a visual marker announcing the river's route through the city.

8. Keep the Thinking Alive

We do not see our role as architects ending once construction of a public project is complete. We remain deeply

engaged with the communities forged during the design process to continue addressing neighborhood issues. For example, design engagement surrounding the Westside Riverway Park led to the Westside Legends spearheading affordable housing initiatives in the neighborhood, a Redlining Study commissioned by local bank Greylock Federal Credit Union, and a new parklet to safely route pedestrians through a maze of vehicular byways produced in the 1960s and 70s as part of Urban Renewal.

We have learned through the process of situating our practice and our life's work deeply into our own local community that while global-scale social and environmental issues feel intractable, relationships between humans and ecology start at the scale of the individual. We believe that designers must deeply invest in social development and ecological stewardship as a holistic goal to contribute to the wellbeing of the future of our planet. For us, the promise of this work depends on building deep trust, and begins in our own neighborhoods, our own forests, rivers, and meadows, alongside the communities we know best.

FEATURE

On the Waterfront: Piloting, or Other Ways to Begin

Andrei Harwell, AIA, Executive Director, Yale Urban Design Workshop

Alan Plattus, Founding Director, Yale Urban Design Workshop

In thumbing through design magazines and scrolling online, it would appear that urban waterfronts across the globe have been undergoing an unprecedented transformation. On sites like Domino Park in New York, the West Bund in Shanghai, or the HafenCity in Hamburg, lands that were once places of major industrial production now become places for cappuccinos and croissants. Fallow, inaccessible, toxic land yields to mixed-use megadevelopments with modest (but often iconic!) blue-green public spaces surrounded by high density, and high end, housing and commercial development through a series of neo-liberal financial transactions. In these global cities, real estate demand is so torrential that the waterfront will inevitably be developed (and also

protected), leaving the primary challenge for the urban designer or planner to direct the flood of global capital to ensure public access and aesthetic coherence.

But there is another kind of waterfront, one that characterizes the vast majority of American cities. These are the post-industrial edges of places like Bridgeport, New London, and West Haven, Connecticut, as well as Bethlehem, Pennsylvania. Here, the challenge is not managing a flood of capital; it is managing a drought.

In these smaller, “legacy” cities, the factories receded decades ago, leaving behind a scarred, contaminated, and often flood-prone landscape. Unlike in Brooklyn or Hamburg, there is no rising

tide of developers waiting to break ground. In this context, the traditional tool of planning, the “Master Plan”—a fixed, ten- or twenty-year vision of comprehensive redevelopment—is often an exercise in futility. We have all seen, and perhaps produced, these plans: beautiful renderings of promenades and mixed-use towers that sit on municipal shelves, gathering dust, because the economic engine required to jumpstart them simply does not materialize.

The Long Shadow of the Bulldozer

However, the resistance to the “Grand Plan” in our cities is not merely economic; it is historical. In Connecticut, perhaps more than anywhere else in America, the concept of “comprehensive planning” is inextricably linked to the trauma of Urban Renewal.

In the post-war era, cities like New Haven, Bridgeport, and New London were the laboratories for a previous generation of “Grand Visions.” These visions, backed by federal highway funds and the arrogance of the tabula rasa, did not stitch the city to the water; they severed it. Grand infrastructure projects—most notably the interstate highways—were driven through the heart of coastal communities, acting as

asphalt levees that physically cut off the downtowns and neighborhoods from the water, while spewing toxic PM 2.5 that have caused negative health outcomes across adjacent neighborhoods. Planners of that era viewed the industrial waterfront not as a community asset, but as a place to be separated from where we live. They replaced fine-grained neighborhoods with elevated expressways, parking garages, and single-use superblocks, turning cities away from the water. Famously, in New Haven, some students don’t even realize they are in a waterfront city.

The legacy of this era is a residue of deep skepticism left at the high-water mark of federal intervention. For communities that survived the bulldozer, a “Master Plan” looks like a threat. It implies displacement, eminent domain, and the erasure of local memory. The perceived failure of planning in the public imagination is that it serves only the wealthy and powerful, sacrificing community for commuters. But the real failure of Urban Renewal was its inability to handle complexity. It treated the city as a machine to be simplified rather than an ecosystem to be cultivated. It destroyed the delicate social and economic ecologies that made these places resilient, replacing them with

brittle, monolithic top-down systems that continue to fester in their hosts.

Therefore, the difficulty of change faces these two obstacles: a lack of access to capital to build, and a lack of trust to make big plans. To overcome these, we need a methodology that allows for compelling visions of change, but features other ways to begin than the bulldozer; a way of working that values what is there. It is incremental, experimental, adaptive and open-ended, allowing for course corrections and contingency over time.

Piloting and Ways To Begin

At the Yale Urban Design Workshop (YUDW), one way we confront this dual-challenge is through “piloting.” A pilot is not merely “Phase One” of a large construction project, nor is it just a small project. A true pilot is a representative piece of a larger vision: a semi-autonomous fragment, valuable and more or less complete, at least for a time, in its own right, yet generative, suggestive of possible next moves. Whether permanent or temporary, its value lies in its achievability: it can be realized in a short timeframe with limited resources, bypassing the paralysis that kills larger schemes. Crucially, it contains a “testable kernel”—a sounding weight dropped into the future. By making the

larger vision visible in microcosm, the pilot channels community desire and provides the proof-of-concept necessary to attract the capital or political will for the rest.

The goal of a pilot project is often to bring several larger systems or urban layers into conversation with each other through design. Critically, the pilot must always do more than one thing. It cannot be a mono-functional infrastructure; it must be a multi-valent node where ecology, economy, and social life intersect. While we typically conceive of pilots as being in a specific place with strict construction boundaries, they possess a networked logic. Their effects are designed to ripple outward, saturating surrounding areas and influencing systems far beyond their physical footprint. They are classic examples of what Edward Said has called “transitive,” as opposed to intransitive, beginnings (Said, *Beginnings: Intentions and Methods*, 1975).

This methodology finds a strong parallel in the Tactical Urbanism movement. Tactical urbanism deployed short-term, low-cost interventions—pop-up bike lanes, parklets, open streets—to instigate long-term change. While often “guerrilla” in nature, the core logic connects with our work: action should precede policy. By physically demonstrating the viability



Seaside Villages, Rain Garden.

of a public plaza for a single weekend, advocates could bypass years of abstract debate. At the YUDW, we adopt this agility but professionalize it, marrying the speed of the tactical urbanist with the strategic depth of the urban planner to de-risk complex sites.

Crucially, the pilot is also a strategy for risk mitigation. In the context of the post-industrial American waterfront, risks are rarely singular; they are compounded. A single site might face a “rising tide” of challenges: deep-soil contamination, flood vulnerability, and regulatory ambiguity simultaneously. For traditional capital, this saturation

of risk is paralyzing. The pilot de-risks the larger vision by attacking these liabilities in miniature. It allows a city to remediate a single acre rather than fifty, or to permit one prototype building rather than a district, proving that the specific toxicities—both environmental and bureaucratic—can be navigated. It transforms the unknown dangers of a polluted site into calculated, manageable variables.

Over the last decade, much of our work along the Connecticut and nearby New York coastlines has explored applying this kind of logic, using strategic fragments to address wicked problems



that the market has failed to address. Some examples have in ways succeeded and others failed, but all provide lessons about the potentials and pitfalls of how to begin.

Seaside Village: The First Proof

One of our earliest efforts to use this methodology was during a master plan project for a historic housing development in Bridgeport, Connecticut called Seaside Village. Built by the US Government during World War I to house munitions workers, but finished too late, Seaside Village is an architectural gem—a garden suburb of brick terraces

and semi-detached homes designed by R. Clipston Sturgis and Arthur Shurtleff. It is beloved by its residents, but it was built on a filled tidal marsh at a very low elevation; for a century, the water has been trying to reclaim it. As sea levels rose and storm patterns intensified, the streets of this historic area began to flood with alarming regularity. The neighborhood was threatened not just by the water, but by the paralysis of the solution. The grey engineering fix—massive pumps and pipe overhauls to eject water from the streets was too expensive for the cooperative to afford and too small for the city or state government to prioritize.

Instead of waiting for a multi-million-dollar sewer separation, the YUDW worked with the community to pilot a piece of “green infrastructure.” We identified a small, manageable site within the village adjacent to a parking lot that chronically flooded—and through a volunteer community building process, designed and installed a pilot rain garden. The rain garden was modest, but it effectively reframed water that had previously been a nuisance into something attractive. But more importantly it created a place that could be occupied by residents, and around which they could come together socially to manage the garden. The Seaside Village pilot demonstrated a new way of thinking about the water that diverged from the 20th century idea of making the problem disappear down the drain. It showed that “living with water” didn’t mean surrendering to it; it meant integrating it into the landscape and into daily life. This small pilot served as a “proof of concept” that released a reservoir of political will for what came next. Adjacent homeowners began to see their own properties not as victims of the tide, but as participants in a larger ecological system, to some extent shifting the neighborhood narrative from defensiveness to stewardship.

Resilient Bridgeport: Scaling the Pilot

The lessons learned in the intimate courtyards of Seaside Village became the foundation for a much larger ambition: “Resilient Bridgeport.” Just south of Seaside Village lies the South End, a peninsula of mixed industrial and residential uses that was devastated by Hurricane Sandy. Following the “Rebuild by Design” competition, the YUDW and our partners took on the task of thinking through flood risk for this entire district. The “Grand Plan” solution—a perimeter wall around the entire South End—was technically possible but socially and economically daunting. It risked turning the neighborhood into a fortress and severing it from the waterfront.

If we couldn’t afford to reshape the shoreline of the whole district immediately, could we build a larger “pilot” that proved a new way of living with water at a neighborhood scale? The result was a focus on a specific corridor: a raised street extension and a “stormwater park.”

In a state where “flood control” has usually meant concrete walls and channels, this pilot demonstrates that flood infrastructure could be a lush, sunken park that residents could enjoy on sunny days, and which could build social resilience. The design brought



West Haven



multiple urban layers into conversation: the park manages the hydrology of the surrounding blocks, provides a safe egress route during emergencies, and creates a new civic gathering space. This pilot serves a critical economic function. In a low-demand market, no investor wants to be the first to build in a flood zone. By using public funds to build a pilot that handles the water and creates a beautiful amenity, the public sector absorbs the risk. The pilot creates a “safe zone”—both hydrologically and financially—where private investment can eventually follow. It sends a signal flare to the market: “This problem is solvable.”

West River Crossing: The Urban Pilot

Sometimes, the obstacle isn't flood risk, but property rights and the lingering

fear of eminent domain. This was the challenge at the West River Crossing in New Haven. The vision for this site was ambitious: to transform a fragmented industrial waterfront into a vibrant public district with a waterfront park, water-oriented restaurants, and new housing. The challenge was that the waterfront had a fragmented ownership pattern and contained many polluted sites. One active industrial user, Bilco Hatch, had just moved its manufacturing to the Midwest, but hoped to keep their headquarters local where they had been a citizen for many decades. The design solution required a radical realignment of a street to create parcels and an organization that could unlock the waterfront and allow for development. The plan called for a new street that would cut a channel across multiple

private properties. In the era of Urban Renewal, the solution would have been obvious: the city would seize the properties, evict the owners, and clear the land. In the 21st century, that tool is rightfully toxic. Instead, we proposed a pilot based on geometry and negotiation. The city owned only one parcel in the entire district. Rather than waiting to acquire the rest, the YUDW proposed building an office building, a piece of the new street, and a fragment of a public waterfront on that one city-owned site.

Crucially, this building was designed to house the headquarters of Bilco Hatch, retaining a key employer in West Haven while freeing up their former industrial site for the park. This single building was designed to act as the pilot for the entire new street grid. By positioning it

according to the future street alignment rather than the existing one, the strategy was to physically demonstrate the new spatial configuration. It was an attempt to prove that the new district could be built incrementally, piece by piece, without the heavy hand of eminent domain, and in this way, was a rejection of the “bulldozer” method. The building was intended to act as a localized surge of investment and an example of a new scale and quality of development viable in this City, setting a new architectural standard for the parcels that would follow.

New London and Groton: The “Guerrilla” Heritage Park

Forty miles east, the cities of New London and Groton faced a different

variation of the post-industrial problem: fragmentation. The Thames River, which separates the two cities, is a landscape of immense historical power. Between the two cities, they host two historic waterfront forts, a submarine museum with the first nuclear sub, the future National Coast Guard Museum, and a dozen or so other heritage sites related to the water. But here, the waterfront is a patchwork of brownfields, abandoned sites, high speed roads, and rail lines.

The “pilot” here was two-fold: a water taxi and a visual identity. First, the water taxi acted as “guerrilla” infrastructure. Instead of waiting for millions of dollars to acquire land and build boardwalks, we launched a boat. This stitched together the existing docks at Fort Trumbull and City Pier in New London with the landing in Groton. Overnight, the insurmountable gulf of the river became a connector, and experiencing it became core to a visit to the region. Second, we needed to make this new connection legible. A boat alone does not make a park; a park requires a sense of place. To achieve this without permanent construction, the YUDW designed and produced a system of temporary signage. These were deployed at every landing point and key heritage site on both sides of the river. This signage unified the disparate sites, creating a “branded” experience that felt coherent even

though the physical connections were temporary. A tourist standing at Fort Trumbull could look across the river to Fort Griswold and see the same visual language, reinforcing the idea that the sites are connected and part of one structure. That first pilot has evolved into a sustainable system which runs the water taxi every year, in addition to collaborative programming and events. The whole became greater than the sum of the parts.

Fishers Island: The Cultural Pilot

Even in places of wealth, the “small city” dynamic can apply if the demographics are distorted. Fishers Island, accessible only by ferry from New London, faces an existential crisis of year-round population loss. It is an enclave of high property values, but its permanent population is extremely fragile. The “market” drives up prices for summer and year-round homes alike, starving the year-round community of access to housing. In this wealthy, conservation-minded community, fear of change and outsiders made it difficult to institute comprehensive changes that would keep year-round residents on an island with increasing costs and decreasing vitality.

So, we proposed piloting “people.” The intervention here wasn’t infrastructure,

but culture: building on an existing non-profit, we proposed an arts residency that brings a limited number of artists and writers to live and work on the island during the off-season. This residency acts as a “social pilot,” infusing a new demographic current—young, diverse, creative professionals—into the island’s ecosystem when it is most dormant. The residency activates community spaces with exhibitions and readings, bringing people together, and ripples of this pilot, we hoped, would be felt in the island’s school, its ferry service, and its winter economy, proving that a small injection of cultural capital can help stabilize a community teetering on the edge of becoming a ghost town.

Lighthouse Point Park: Piloting as Engagement

Currently, we are piloting heavily in our planning work for Lighthouse Point Park in New Haven. The challenge is not about building new infrastructure or navigating property lines, but about understanding how a beloved but underutilized public space can serve a wider community. Traditional planning might begin with a survey or a town hall —methods that often exclude those who cannot attend or articulate their desires in planning-speak. These traditional formats often privilege the loudest voices and can devolve into grievances about past planning failures.

Instead, we are using piloting as a form of active community engagement. This summer, we will test the waters by deploying a beer garden within the park – a “testable kernel” of a future park that is more active, social, and economically self-sustaining. By observing how people use the space when amenities are provided—where they sit, how long they stay, and how the event impacts the neighborhood—we gather data that is far more reliable than a questionnaire. The beer garden allows the community to “vote with their feet,” creating a swell of support for new programming. It transforms the planning process from an abstract discussion into a tangible experience, allowing residents to inhabit the future of the park and help shape it in real-time. If the pilot generates noise complaints or traffic snarls, the plan can be adjusted before concrete is poured. If it generates joy and revenue, it provides the undeniable evidence needed to advocate for permanent facilities. It is a way of wading into the water before committing to the swim.

The Fragility of the Beginning

It is crucial, however, not to romanticize piloting. Piloting is not a silver bullet; it is a stress test. Because pilots are often small, temporary, or contingent, they are inherently fragile. The first danger is that

the pilot never launches. This was the fate of the West River Crossing proposal. Despite a sound strategy—using city land to retain a major employer and pilot a new street grid—the project was never realized and economic conditions shifted that precluded ongoing effort to get the project done. In this case, the pilot served as a diagnostic tool: it revealed that despite the “cleverness” of the design, the city didn’t have the traction to execute even a single strategic building.

The second danger is calibration. A pilot is designed to operate in a specific mode, but it can be swamped when conditions change. In Seaside Village, the pilot rain gardens were calibrated for rainwater—freshwater falling from the sky. They functioned excellently in that mode, managing runoff and beautifying the streetscape. But during Hurricanes Irene and Sandy, the pilot was subjected to a different mode entirely: seawater storm surge. The gardens were inundated with salt water, which killed the freshwater plantings and destroyed large parts of the pilot.

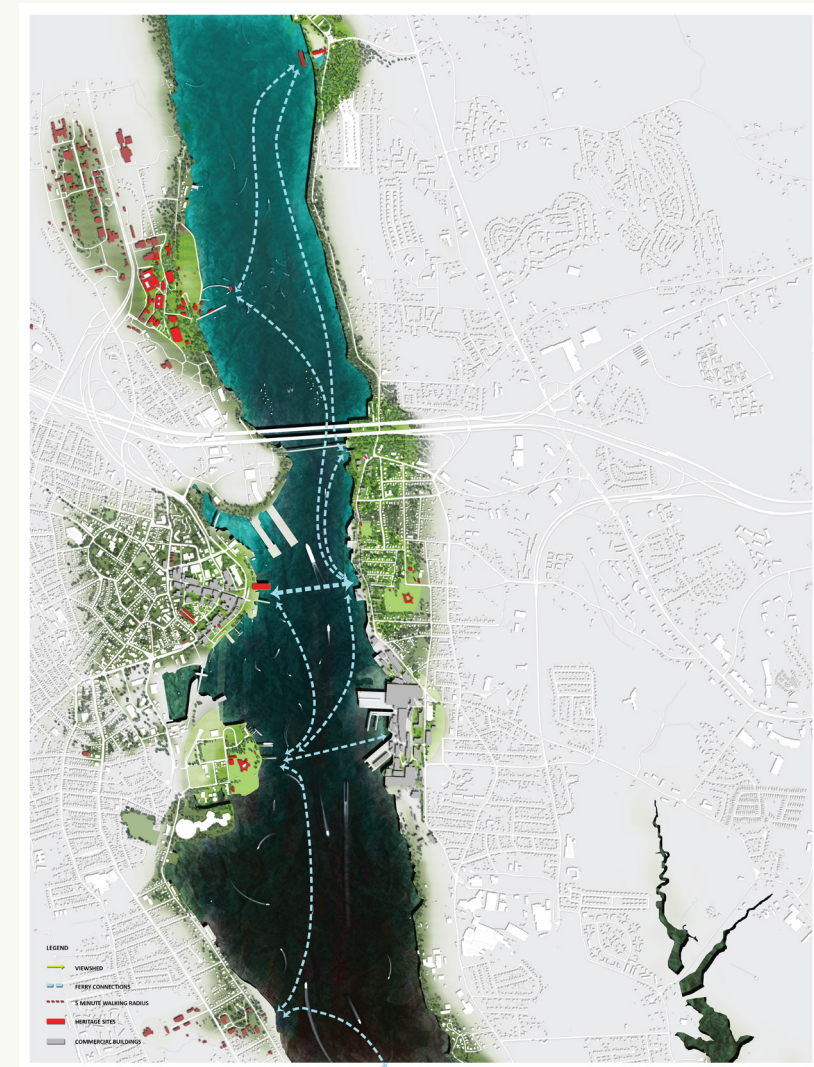
This fragility is instructive. It reminds us that “starting small” does not exempt us from the larger forces of economics or climate. A pilot can build a constituency—as the Water Taxi did in New London—but it can also be washed away or shelved if the soil, political or physical, is not ready to receive it.

Conclusion

In this environment of uncertainty, the “Grand Plan” is insufficient because it requires a leap of faith that no bank is willing to take, and a surrender of agency that no community is willing to accept. The pilot project attempts to bridge that gap. It replaces the rendering with a reality.

When a resident in New London sees a boat connecting two severed shores, or an artist on Fishers Island lights up a dark winter storefront, the future stops being a theory and becomes a fact. But as West Haven and Seaside Village remind us, these facts are fragile. They must be tended to.

For the post-industrial city, the pilot is not just a way to begin. It is a gamble. But given the alternative—stagnation and decay—it is a gamble worth taking. It allows us to reclaim our waterfronts not by erasing their industrial history or waiting for a boom that may never come, but by planting small, resilient seeds in the cracks of the pavement and hoping they survive the storm.



Thames River Heritage Park

FEATURE

Rivers as Organizing Principal

The Small Cities Lab spoke with Daniel Rossi-Keen, PhD, Executive Director of RiverWise, about the significance of the Beaver and Ohio Rivers to the county's regional identity. Once powerful connectors that structured industry and movement, the rivers later became markers of division and fragmentation. RiverWise asks how the waterways can be reclaimed as an organizing device for cultural and economic benefits.

The rivers of Beaver County have long shaped how communities see themselves – economically, historically, and emotionally. For generations, the waterways connected towns through the steady movement of people, goods, and industry. Local identities remained strongly tied to these riverbanks, but over time a broader regional identity fractured. When industry closed, the rivers that once linked communities came to be seen as physical boundaries between them.

At RiverWise, Daniel explains, “the rivers are geographically and emotionally at the heart of our decisions,” working to realize once again their potential as a civic asset that can connect communities across the county. The rivers’ enduring presence in the landscape – in the story of how these communities were formed and sustained – makes it a powerful organizing device for collective decision-making and long-term community investment.

RiverWise uses extensive community storytelling to reclaim Beaver County's



narrative and reshape public imagination about what its communities can become.

Rivers: Local Identity and Regional Ties

Beaver County, Pennsylvania borders Ohio and is shaped both geographically and historically by the Ohio River and the Beaver River, which meet at a central confluence within the heart of the county. The Ohio River flows northward before turning west into Ohio. The Beaver River runs south to meet it, forming an important confluence where development and industry once grew. The county's primary cities and boroughs trace these waterways. Along the Beaver River sit communities such as Beaver Falls, New Brighton, Fallston, Eastvale,

and Bridgewater. Along the Ohio River are Ambridge, Baden, Monaca, Rochester, and Aliquippa.

By the mid-20th century, these waterways had helped position Beaver County as one of the most industrially significant counties – ranked seventh largest in industrial output in the country. The rivers were essential for transporting coal, steel, and manufactured goods, and their confluence became the center of a massive industrial corridor. Railroads soon paralleled the riverbanks, further accelerating production and streamlining the movement of materials to regional and national markets.



The growth, industry, and identity of these communities were structured by access to their riverfronts. These rivers organized the flow of people, determined where factories and neighborhoods emerged, and shaped the infrastructure that connected them, shaping almost all aspects of residents' ways of life. Residents found employment and housing in relation to these riverbanks, which influenced how they participated in civic and economic life, and how they related socially and spatially to their neighbors. As a result, Daniel notes that the rivers are “a kind of identity-forming mechanism” for Beaver County communities. Even today, people continue to feel drawn to these

foundational histories and take pride in them. As the defining force behind why these cities and boroughs were founded and how they developed, the rivers became true makers of place and identity, and made regional coordination and connection possible.

Regional Narrative of Loss; Results in Limited Coordination

In the mid-to-late 20th century, industrial decline – and most significantly, the narrative of loss that followed it – weakened cross-community relationships and regional coordination. The rivers remained deeply significant locally, but no longer functioned in the

same way as connective infrastructure across communities.

Like many communities in Pennsylvania, Beaver County's primary industry disappeared in the mid-20th century. The region has since faced significant economic contraction and population loss. Industrial closures reshaped regional and local economies, as well as the stories that were told about these places. “We have been told for at least decades, if not generations, that our best days are in the past – that we have lost our central identity as a steel community, as an industrial center,” Daniel explains.

The industry that was once key to the county's identity was gone, and, for many, the narrative of decline continues to linger, profoundly shaping how residents understand their future. “The way we talk about something shapes what that thing becomes,” he says. “Many of the challenges we face are in our hearts and in our minds. . . . They have limited our capacity to dream.” Repeated stories of decline have created their own challenges about what communities believe is achievable. When communities are repeatedly told that little is possible, it becomes difficult to generate the momentum, investment, and collective action required to pursue a different future.

Even though many communities in the region share this experience, they did not move through it together. It was at the same time that the rivers shifted from a source of regional centrality to one of disconnection. Once “highways of commerce and of industry,” they came to be seen as a dividing line between communities. Daniel observes that “people won't cross the river to go to another community.” He continues, “the river is a neighbor to many of our communities. . . . and in that sense, it's also a bit of an unfortunate dividing significant locally, but has become regionally isolating. The result has been limited regional thinking and coordination. “We're highly provincial,” Daniel notes. “We tend not to think regionally as much as I think we could.” Although the rivers remain central to the identity of communities along their banks, they no longer function as the shared infrastructure that linked communities both physically and socially.

Riverfront Reinvestment and Reconnection

RiverWise set out to counter the region's narrative of loss and reclaim the waterways as a means for bringing communities back into a larger regional fabric. They ask, “Why don't we use the rivers as an organizing principle for our

work and see if we can more effectively utilize those assets in service to growing community decision making and planning and resource allocation?"

RiverWise uses the river as a framework for organizing collective action to bring investment and development opportunities into the county. Daniel and his team started by identifying three communities as strategic areas for focused investment, including Beaver Falls to the north along the Beaver River; Monaca at the confluence where the Beaver meets the Ohio; and Aliquippa which extends south along the Ohio River. From there, they established RiverWise with the hope of encouraging development projects designed to reconnect residents to the waterfront. The initial goal was to improve access, attract investment, and turn communities back toward the waterways they share.

However, nearly a decade later, Daniel explains that those early ambitions carried unrealistic expectations. There were consistent political, environmental, and infrastructural challenges that obstructed these goals. RiverWise serves a county that is home to 47 municipalities as well as a county government. Each municipality has its own leadership, priorities, and constraints. This means that moving a riverfront project forward often meant building alignment across

a governance structure that has become increasingly fragmented in the decades following post industrial closures. This pattern is common in many post-industrial Pennsylvania small communities. As industry declined, it was normal for political boundaries to harden as communities cling tightly to local control as an understandable means of survival. Municipal capacity constraints heighten this tension, making it difficult to move towards a more complex and collaborative governing structure.

On top of the political complexity was the lingering industrial legacy. Beaver County's rivers powered a massive industrial corridor for generations "that left all kinds of environmental and regulatory challenges," says Daniel. Contaminated land, brownfields, overlapped with land-use designations make redevelopment costly and slow. The very sites that offered the most potential were also the most encumbered.

In addition, the rail lines that once accelerated growth and movement now stand as physical barriers between residents and the water. "If you want to get to your river, you have to go over, under, or somehow through an established railroad line," Daniel notes. This mismatch between built infrastructure and waterfront access is a



common issue in communities across the Mid Atlantic and Northeast. Established rail lines, only used infrequently for transporting goods, regularly constrain redevelopment opportunities. In most of these cities, additional infrastructure development, most often highways, in the mid 20th century were built directly along the riverbanks, basically erasing the river entirely. Changing this becomes a significant political challenge. "Communities can't easily go up against the railroad lobby," says Daniel. The same holds true when attempting to challenge decades of policy that have prioritized cars.

Beyond the coordination challenges and environmental and infrastructure constraints, the greatest obstacle was building a shared idea of what change could look like. "When that vision doesn't exist, it's really hard to get funding, it's really hard to get political alignment," Daniel says. The early riverfront projects revealed that the work was not only about reconnecting people to the waterfront, but about fostering a public imagination around the region's future. This is especially true since the river itself was a deep part of communities' identities: reimagining the river is also about reimagining people's sense of place.



Reshaping Narrative and Public Imagination

Since its founding in 2018, RiverWise has come to understand that restoring the river into a regional, civic asset requires reshaping how residents see their own communities, and what they believe is possible within them. Because of this, RiverWise works to return narrative agency to residents, helping them shape this shared vision for the county's future. Central to this reframing is understanding the identity residents still attach to their riverfronts. The rivers established communities and their industries, but what does that represent to residents?

What does it mean to them that these previous riverfront uses are no longer there? From there, how can residents view the waterfront differently? How can it become a civic and community asset instead of the remnants of an industrial corridor?

Today, RiverWise operates as a community and economic development nonprofit across multiple municipalities in Beaver County. As the organization advances development initiatives, it simultaneously works to rebuild relationships and regional coordination that were weakened by economic contraction and municipal fragmentation.

Storytelling and sustained community engagement are central to the organization's approach. Central to RiverWise's team are a professional documentarian and a journalist who capture and circulate resident stories. The goal is to "counteract the notion that Beaver County's best days are behind it, seeding a sense of hope and possibility... and to organize community voice and community power so that residents can exercise agency over the places they call home." The communities in Beaver County are a lot more complex than this singular narrative of decline depicts.

RiverWise works to restore agency to residents in order to surface a fuller, more composite picture of the people and places that make up the region. As a result, storytelling becomes both a cultural and social benefit as well as a catalyst for increased investment and change. As Daniel explains, "This is a robust engagement with the economic and social future of our communities, and what we're trying to accomplish, if organized well and resourced well, can be a driver of not only identity, and not only quality of life, but also economy, infrastructure, [and] resilience." They "create the narrative conditions necessary for residents to come alive to a possible future, and at the same time, help them create that future."

In the years since its founding, RiverWise has helped to generate tangible economic and social impact across Beaver County. Along the many communities that line the region's waterways, RiverWise has catalyzed both economic opportunity and community resilience. Over the past decade, and in close partnership with Pittsburgh based nonprofit New Sun Rising, the organizations have together incubated roughly \$30 million in community projects. Central to the development of such projects is the Justice 40 Opportunity Navigator (J40N), which was created in partnership with New Sun Rising.

The program was initially created to help federally designated Environmental Justice communities in Beaver and Allegheny Counties access Justice 40 funding - a Biden era commitment to direct 40% of the benefit of federal infrastructure and climate investments to historically disadvantaged communities. This designation was an important opening for Beaver County communities that carry the compounded legacy of industrial pollution and decades of economic disinvestment. Subsequently renamed the Sustainable Futures Initiative, this program walks community organizations through the entire process, from educational workshops that help residents identify and shape project

ideas to direct technical assistance in applying for grants and managing funds. The results have been significant with \$8.4 million raised for regional projects, 46 initiatives supported, and 32 EJ communities reached. The Sustainable Futures Initiative is proof that the rivers can still organize people, direct resources, and create significant economic and social benefits.

It is impossible to restore rivers into the assets they once were without a shared vision to carry it forward, especially in a region where longstanding narratives of decline have narrowed what residents feel is possible. RiverWise started to ask what that collective vision could be. The rivers' evolution mirrors Beaver County's economic and social change; as communities disengaged physically and socially, the rivers became dividers. Despite this, the rivers continue to be seen as foundational elements of local

community identity, and because of that, they represent the county's ability to endure. Understanding this story of the waterways reframes the region's identity away from loss to persistence.

As their organizing principle, RiverWise is cultivating a collective imagination about what future change might look like and rebuilding the capacity to think beyond municipal boundaries. To date, the organization is restoring regional coordination and bringing new investment into the county.

Check out some of RiverWise's storytelling work here:

<https://www.youtube.com/@RiverWise/playlists> !

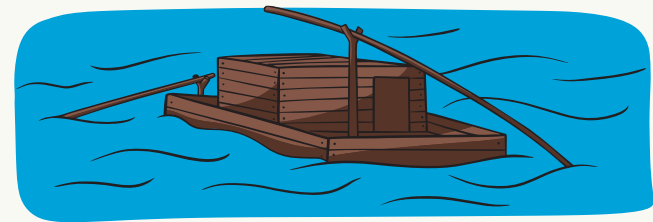
The Boatmen's Dance

Traditional

*The Boatman dance, the boatman sing,
the boatman do about everything,
And when the boat men gets on shore,
he spends his cash and works for more*

*Dance boatman dance,
O, dance boatman dance,
O, dance all night till broad daylight,
and go home with the gals in the morning.*

*Hey ho, the boatmen row,
Floating down the river on the Ohio...*



INTERVIEW

Resilience Park

The Small Cities Lab spoke with Maggie Wallner, Conservation Ecologist at the Lehigh Valley Conservation District, a partnership of conservation professionals working to protect Lehigh County's diverse natural resources through leadership, technical assistance, education, land protection, promotion of sustainable development, and protection of water and soil quality. The conversation explored the process of reclaiming a neglected slope along the Trout Creek in downtown Allentown PA.

Prior Use and Decline

Kevin Lahoda

The site that became Resilience Park was a vacant lot with a history of unlawful dumping and invasive plants. What was the history and condition of the land when you first encountered it, and what did that tell you about how urban parcels tend to get abandoned in cities like Allentown?

Maggie Wallner

Yes, from what I've been told by a combination of area residents and city staff, the conditions of the lot were less than inviting for many years. However, that's not quite the state the space was in when my colleagues and I were made aware of it. Thanks to a collaborative clean-up effort between Allentown's Environmental Advisory Council, city staff, and hardworking volunteers, several dump-truck loads of trash, as well as



invasive plant material had already been removed. The appearance of the site was akin to any mowed-grass field. There was small debris which could have blown in from nearby streets or garbage cans, but it was clear that most of the intentional refuse dumping had ceased, and the space was already in motion towards a state of reclamation. I personally didn't get a sense of the severity of the lot's historical use as a dumping site until I started digging to install our nature journaling bench. Beneath the soil surface were many layers of plastic debris and broken bottles. I think that shows how misuse of a space can both compound and linger over time, until the cycle is disrupted in some way.

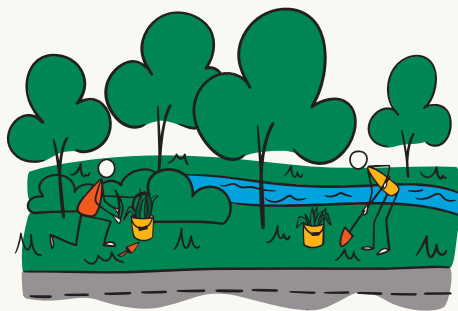
The Catalyst for Action

Kevin Lahoda

Reclaiming urban green space often requires a combination of financial resources and long-term political and social commitments. What were the key conditions — people, funding, or timing — that made it possible to move from a neglected lot to an organized effort?

Maggie Wallner

All of those factors have been critical! I really feel like we approached The City with a decent plan at an opportune time. There had just been this massive time and energy investment in the space with the previously mentioned clean-up, and installing some nature-based park features was one way to keep that positive momentum going! I think it was key that decision-makers from all organizations involved possessed the vision to recognize that. We received letters of support from The City and The EAC which assisted our access to much-needed funding from The Lehigh Valley Greenways Conservation



Landscape. So timing was a factor, but really I attribute the park's success to the folks who did the initial clean-up work, then lent us their support, and to the LVG Conservation Landscape whose future-mindset allows for unique projects like this to be funded.

Interim Activation

Kevin Lahoda

Before Resilience Park was formally established, the city and the Environmental Action Committee began cleaning up the site. How important was that early, informal activation in building the momentum and community trust needed to make the park official?

Maggie Wallner

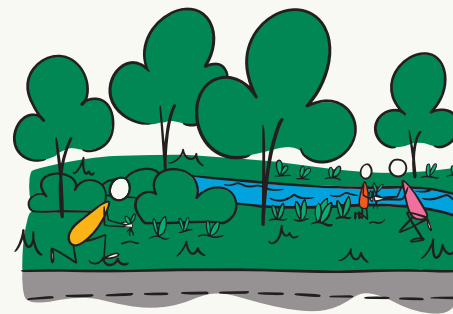
Resilience Park would likely not exist without the EAC and that first clean-up! At the very least, a parcel in a different

location would have been chosen- one which may not be able to provide as many nearby residents with access to grass and garden space, fruit trees, or a stream. I think there's more need and desire for meaningful connection to nature than ever, but acting to facilitate that for others can be quite difficult as an individual. Instead of having someone "pass the torch" in this instance, the EAC provided a torch to light the way for Resilience Park while keeping their own aflame. The community's trust of the space seems to be building over time. Each year, there seems to be more community interest in the park and what we've planted. I love when residents approach me and ask questions about the trees and how I'm caring for them, or tell me how often they enjoy the nature trail! I think their willingness to approach me and share a tiny piece of themselves really speaks to the unifying powers of nature!

The Reclamation Process

Kevin Lahoda

Ecological restoration was central to the park's mission — removing invasive species and planting native species along Trout Creek. What does that kind of ecological work actually look like on the ground, and what does it mean for a neighborhood to have access to a restored natural space?



Maggie Wallner

It looks like long days spent correctly identifying, manually removing, and disposing of a lot of wineberry, bush honeysuckle, and garlic mustard! At a site like this where the majority of existing vegetation is comprised of invasive plants, but there is no current funding to create and enact an in-depth plan, restoration work can be slow-going. At this time we are focused on removing large honeysuckle shrubs and replacing them with native species like Spicebush, Elderberry, Chokeberry, and Arrowwood Viburnum. Often the native shrub is much smaller than the invasive shrub which was removed. This can look unsatisfying at first, but when the suite of beneficial birds and insects these native species support is considered, the true impacts of restoration can be understood. What it really means is increased quality of life for everyone! There will be more blooms,

birds, and butterflies that residents hope to see in nature, and Trout Creek's water quality benefits from the sediment and pollution filtration capacity of native plants' robust root systems. Adults can enjoy a relaxing post-work walk just beyond their doors, and kids can come home from school and have a safe place to practice the problem-solving and risk-assessing skills that unstructured play in nature provides.

The Role of Design

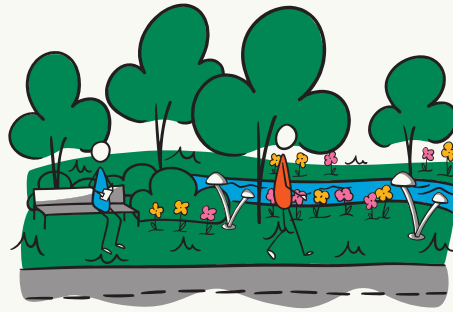
Kevin Lahoda

Our partnership brought Lehigh students in to design interpretive signage and companion booklets for the park. How does that kind of designed experience — helping visitors connect to the native species and the ecological story of the place — fit into the larger goals of the park?

Maggie Wallner

One major goal of the park is to promote ecological literacy. I know it's a cliché, but knowledge is power! In my experience, the more informed folks are about something, the more they tend to care about it. I want the nearby residents to know the space is for them and to feel comfortable in it. Providing visitors with things like bilingual interpretive signage and activity booklets is more than giving

them something to do. It's extending both an invitation to see themselves as part of the working natural world instead of separate, as well as ideas to be a more active participant in it. I hope the excellent interpretive tools Lehigh students designed will spark community interest for years to come!



Looking Forward

Kevin Lahoda

Reclaiming urban greenspace isn't just ecological — it requires social activation that helps residents reimagine their relationship to nature. What does that look like at Resilience Park now, and what would success look like five or ten years from now?

more native plants would benefit the park, but I think in the farther-flung future, installation of ADA-compliant accessibility paths or boardwalks would be an incredible success.



Maggie Wallner

Since its beginning, LCCD has held small events with local school and veteran groups to spread Resilience Park's story, and engage visitors socially with nature-based educational programs and activities. Resilience Park is now also home to a food-insecurity-fighting community garden managed by Promise Neighborhoods of The Lehigh Valley. I don't know how long it will take, but an element of future success, to me, would be more local groups finding the park to be a valuable location for social and nature-based activities. Of course





Natural Environment Respondents

The responses that follow were developed in conversation with the *Co-Lab's* ongoing inquiry into the natural environment of small cities. Each contributor brings a distinct vantage point — practitioner, researcher, community organizer — and together they reflect the layered, long-horizon nature of the work the *Co-Lab* seeks to document and advance.

Russell K. McIntire

How can we restore and reimagine our relationships to our rivers and coasts?

Professor of Public Health, Lehigh University, on the public health evidence linking rivers and blue spaces to human wellbeing.

I am an Associate Professor in the Department of Population Health at Lehigh University, where I teach and do research. I am a socio-behavioral researcher who studies how nature and green spaces improve human health. Some of my most satisfying research projects are collaborations with organizations who have missions to increase the amount of and access to quality green spaces among vulnerable populations. I help them quantify the health impacts of their programs, to

generate evidence that they can use to support their work and build the case to funders for more funding.

Despite what you may hear, evidence actually does impact the policies and the actions of those in power, especially at the local level. Generating and transmitting evidence of the influence of green spaces on health can impact policies and initiatives such as local zoning, open spaces preservation, educational campaigns, and advocating



River clean-up. Summer Sustainability Initiative, 2025. (RiverWise)

for resources for greening initiatives, all of which can improve access to green spaces and make people healthier. Similarly, I believe that gathering evidence about the health benefits of our rivers and waterways will help us reclaim these spaces for people and the environment.

A robust literature shows that nature exposure or even simply living near green spaces (e.g. parks, forests, gardens) is beneficial for human health in

a myriad of ways, by improving physical, mental, immune, and social health (Frumkin et al., 2017; Hartig et al., 2014). Similar to urban green spaces, urban blue spaces- bodies of water which can include ponds, lakes, oceans, rivers, canals and manmade fixtures of water (Haefner et al, 2017)- have been shown to be associated with improved human wellbeing (White et al., 2021; Smith et al., 2022), mental health (Guan et al., 2025), and mitigation of urban heat island effects (Ampatzidis & Kershaw,

2020). Organizations working to restore, reimagine, and improve access to rivers and waterways should highlight evidence about the positive health impacts of these spaces in their work.

The Small Cities Lunch and Lab webinar on March 6, 2026 reminded me of an important complement to messaging about the evidence of nature and health. I loved hearing the way that RiverWise gathers stories from people who live in communities surrounding rivers in Beaver County Pennsylvania, and uses these stories to challenge dominant narratives about local industry loss and community decay. This community storytelling emphasizes connection, emotions and feelings of pride that are linked to place.

Place attachment is a term in Environmental Psychology that describes the emotional bond between individuals and specific places, and influences the way people feel, think, and behave (Lewicka, 2011). I think that those that advocate for conservation, restoration and improved access to waterways can learn from RiverWise's work, and have an opportunity to develop messaging that highlights and amplifies stories and sense of place attachment among communities they work with. Success of such messaging is also supported in the academic literature, as studies have

shown that people with stronger place-based emotional ties are more likely to support local environmental conservation efforts (Jayakody et al., 2024). Creating media campaigns combining personal stories that evoke place attachment AND the strong evidence about the health benefits of green and blue spaces, can be an effective strategy to build support for initiatives at the local level or at a broader scale. As I continue to collaborate with organizations working to create healthy places, I will encourage them to review the inspiring stories documented by RiverWise.

Russell K. McIntire is an Associate Professor in the Department of Population Health at Lehigh University's College of Health. His research focuses on identifying populations with the greatest disease burdens, Lehigh University designing interventions to reduce health disparities, and improving quality of life across demographic and geographic groups. His work on the built environment and greenspace has particular resonance for small cities, including research on community-designed park initiatives that transform vacant urban lots into neighborhood green spaces. He holds a PhD in Health Behavior from Indiana University and an MPH from Case Western Reserve University.

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Christina Smith

How can we restore and reimagine our relationships to our rivers and coasts?

Former Executive Director of Groundup Bridgeport, former Executive Director of Groundwork Bridgeport, on waterfronts as places of solace, connection, and everyday restoration.

I write this response one day after my birthday. The first one without my mom calling to sing me happy birthday in her silly way. She had a beautiful voice, but not necessarily a beautiful singing voice, which made the gesture that much more of a treat, and now a precious memory. So I answer this question in a sorrow-filled state, still mourning, still grieving.

More than a month ago, I willingly and happily agreed to write this piece. At the time I was high on the idea of renewing a

childhood interest in writing poetry, and imagined producing something mature, non-rhyming, and deeply poetic. That idea left the building as the deadline approached. So you have this essay instead. Essai, from the French: an attempt, a trial. Which is truly what this is.

In a brief moment of worry that writer's block might take over, the thought of using AI crossed my mind. But between the visual of water bottles wasted with every prompt-response exchange and



"Sliver by the River," Pequonnock River, Bridgeport, CT. (Groundwork, Bridgeport)

my reluctance to outsource the joy of crafting my own thing, this is what you get instead: my stream of consciousness. I have always been a transparent person, prone to TMI and TMS (too much silliness), and when I'm in a low mood it's easier to let it out unfiltered than to put on a face I think people want to see. So I will.

What does any of this have to do with restoring and reimagining our relationships to rivers and coasts? For

me, the answer lies in waterfronts as places to simply be. Third spaces, outside of home or office, where you can get away from whatever is overwhelming you. Places to be in touch with nature, and in humanity with others.

What I envision are minimally touched river and coastal fronts, with little or no imprint of human intervention. Places of respite from the over-built environment and the daily go-go-go of modern life. So many of us face feelings of sadness,

loneliness, stress, and anxiety day in and day out, overwhelmed by the flood of content grasping for our attention. Isn't there something magical about the way nature designs itself without any of that? The way water carves its own paths, beavers change the flow, plants sustain aquatic life. Nature just keeps naturing: no deadlines, no bills, no traffic, no wars.

Throughout history, rivers and coasts have served utilitarian functions: transport, food, washing. Recreation too, though even that can feel like a production. I love the idea of a relaxing beach day, but the reality involves towels, umbrellas, sunscreen, coolers, and sand in every crevice. Suddenly it sounds as programmed and stressful as whatever I was trying to escape.

At a time when institutions across the world are declaring a crisis of loneliness and disconnection, it is an opportune moment to ask how we might restore our relationship to these places. I say restore rather than reimagine deliberately. We spend too much time wanting to innovate, wanting to fix what was never broken. Sometimes the better move is simply to let things be. Restoring means going back, before industrialization and modernization, to seeing rivers and coasts not only as utilitarian spaces but as places for observation, contemplation, and wonder. Places to notice the way

water moves, the ebbs and flows of the tide, the colors, even the smell of low tide. Places of solace, respite, flow. And places to foster a deeper connection with one another, to observe and marvel together at the simplicity and complexity of nature's many parts working in harmony.

Christina Smith is the former Executive Director of Groundwork Bridgeport, a community-based environmental revitalization organization in Bridgeport, Connecticut. A Bridgeport native, she brought to the role a background spanning finance, urban planning, and municipal government, including service as a Bridgeport City Council member and as the city's Director of Central Grants. She holds a B.A. in Economics from Princeton University, an M.A. in Historical and Sustainable Architecture from NYU, and an M.Sc. in Urban Regeneration from University College London. At Groundwork, she led programs focused on youth engagement, urban forestry, waterfront restoration, and community placemaking.

Laura Stedenfeld

Relational Landscapes: Moving Past Resilience

Founding Principal of Omnes Landscape Architecture, responding to Tessa Kelly on stewardship, reciprocity, and relational waterfront design.

Approaching waterfront planning through the lens of resiliency can empower communities to equitably design and implement safe, sustainable solutions for anticipating, adapting to, and mitigating the impacts of climate change. Many communities are now met with forceful stressors such as warehouse development, data centers, low-density development, flood risks, crop-killing drought, and life-threatening heat. As constant pressure from myriad environmental, economic, and

infrastructural systems shapes waterways and our relationship to them, “resiliency” planning is not just a best practice but an absolute necessity.

We need resilient systems right now. There has been a gradual shift in talking about “sustainable” to “resilient” systems as effects of climate change finally started to reveal themselves in the past two decades. And today, we’re firmly entrenched within the crisis.

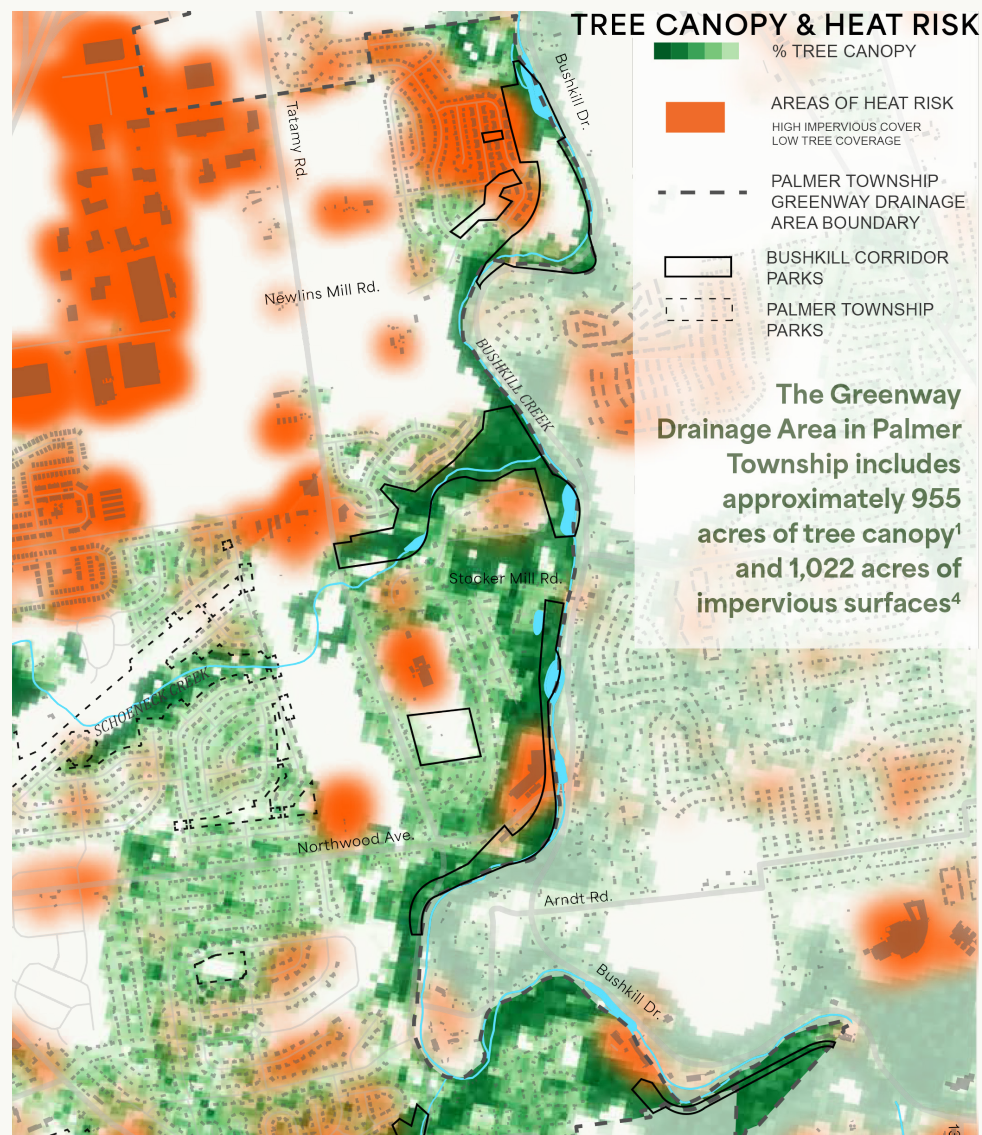


Mill Race Birds Eye-Flood Diagram
(Laura Stedenfeld)

A restored relationship to rivers and coasts, especially in small cities, starts with shifting how we see and experience these landscapes. For a long time, our relationship has been defined by production from the Industrial Revolution or adaptive re-use of those brownfields for human recreation and use. I believe we’re currently going through a relational shift in cities, **moving back toward stewardship, care, and an actual, lived relationship with the land.**

When people care for the landscape, they receive reciprocal benefits: emotional regulation, a sense of calm, joy, and opportunities for gathering and connection. There’s reciprocity, just like in our human-human relationships. When we care for the systems that sustain us, they in turn support us.

Resilience is not an end goal in itself. *We need to reduce the underlying stressors that cause the need for resilience.* Every being has a threshold beyond which



Bushkill Creek Greenway Master Plan. Tree Canopy & Heat Risk (Laura Stedenfeld)

accumulated strain becomes untenable, rendering resilience an inherently short-term condition. However, just as one may heal stress in the body, we can achieve health by revealing and tending to the root cause of our maladies.

In my planning and landscape architecture practice, we have been thinking about relational systems of care to create regenerative places that thrive, not just survive. We recently led a yearlong planning effort for the waterfront of the Bushkill Creek Greenway in Palmer Township, Pennsylvania. The plan was initiated specifically to protect this beloved creek from the stresses of climate change and to uplift history along the Greenway. The resulting plan is an example of a climate-forward vision for a waterfront that will derive its success from stewardship and relationships with nature.

The Bushkill Creek Greenway builds upon an existing rail-trail corridor, one of the first in the country, and connects a series of parks, historic sites, and ecological areas. Places like the Binney & Smith factory (home to Crayola Crayons) anchor the corridor, alongside historic dams that still shape how the creek functions today.

The project integrated year-long community engagement in which

over 4,000 individuals participated in the planning of the Greenway. When we asked the community about their values through a survey, there was an overwhelming mandate from more than three-quarters of the community for investment in conservation and climate change mitigation. Early on, we formed the ethos that each decision and recommendation within the plan must enhance places for people and nature, where both benefit.

The plan recommends a series of restoration projects, but also active programming that brings people together within nature-based experiences. By the end of the process, our team had compiled a list of more than 100 participants who expressed strong interest in being stewards of the Bushkill Greenway.

Survey respondents also provided us with a list of 50 non-profits and local businesses that they would like to see engage in expanded programming along the creek, with creative ideas such as:

- Native plant identification and training for the community and maintenance crews by the Wildlands Conservancy, a regional conservation non-profit
- Night-time star viewing parties by Nurture Nature Center, a local

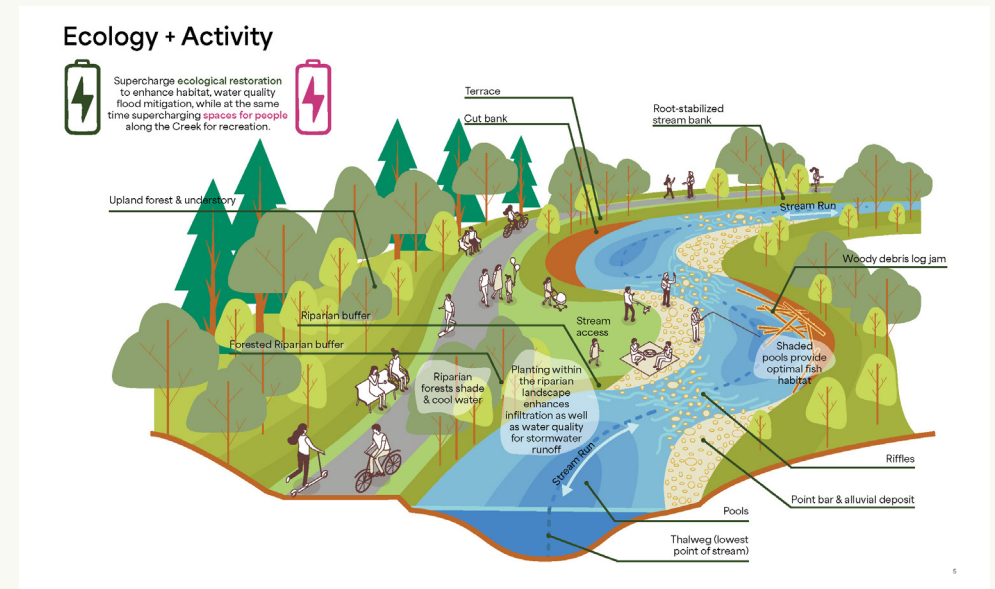
- museum and ecology center
- A partnership between the school district and the non-profit Trout Unlimited to teach elementary school kids about trout's role in the creek's ecosystem
- Talks and nature walks by professors and students at Lafayette College, who have been researching the hydrology and ecology of the Creek for decades

To best anticipate and respond to the needs of natural systems, our team projected into the year 2100. Within the context of the rapidly expanding Lehigh Valley region, Palmer Township is expected to see an increase of 8,016 residents, and will experience a greater demand for transit, open space, walkability, and resilient design. At the same time, climate change will continue to reshape daily life with more intense storms, flooding, and heat events.

Environmental impacts include:

- **Increased Precipitation:** The region can expect an additional 12% increase (49 annual inches) in precipitation.¹ We can also expect more extreme precipitation events, with a 32% increase in the average annual number of days with precipitation greater than one inch, equaling 11 days.⁸

- **Hotter Weather:** We can expect an average 9.4°F increase by 2100.¹ The number of days above 90°F will increase by 420% to 65 days (Current days over 90°F are 15-16).⁷
- **Increased Droughts:** There will be an 11% increase in the longest stretch of days without precipitation.⁷
- **Shifting USDA Planting zones:** By the end of the century, many U.S. cities may have climates resembling locations 400+ miles to their south. This would mean that Palmer Township's climate, and the plants and crops that thrive within it, will be comparable to Raleigh, North Carolina and the Piedmont bioregion.
- **Increased agricultural pollution:** Crops will become more vulnerable to pests and invasive species, producing lower yields and encouraging more use of petroleum-based fertilizers and pesticides. Reduced petrochemical availability will cause increased food prices, and eventually (finally?) a pivot to organic, non-chemical farming.
- **Reduced Air Quality:** Northampton County has some of the worst air quality⁸ in the U.S., from industry, transportation, and pollutant-trapping topography. Climate change is expected to increase ozone and fine particulate pollution.



Bushkill Creek Greenway Master Plan. Ecology + Activity (Laura Stedenfeld)

The Bushkill Creek Greenway Plan also considers the non-human lens, ensuring natural systems support wildlife and provide migration pathways for animals escaping extreme heat and drought. We wanted to supercharge **ecological restoration** to enhance biodiverse habitat while at the same time supercharging **spaces for people** along the Creek for recreation. The plan introduces ecological typologies and strategies to ameliorate compacted soils, habitat loss, invasive or degraded tree canopy, erosion, and upstream pollution from agriculture and warehousing.

The planning strategy for parks along the Greenway relates to these landscapes as they once behaved before being designed: as functional wetlands. Though many of these parks host athletic events, play, fitness use, and community gatherings, the community understands that these landscapes will likely be reclaimed by floodwaters in coming decades. The design integrates riparian buffers and plans for ADA-accessible elevated boardwalks, offering access while letting visitors be immersed in the changing wetland landscape.

The Bushkill Creek is impacted by low stream connectivity due to historic low-head dams, originally built to power 19th-century mills, that block native trout migration and pose safety risks from dangerous⁹ recirculating currents. While heavily used in summer, these dam structures create maintenance and liability concerns. Removing the dams would restore natural stream function, improve water quality, reconnect habitat, and increase flood storage by reactivating the floodplain. Our team proposed keeping the existing bulkhead of the dam and converting it into a community gathering place for fishing and environmental education, honoring history while prioritizing safety and ecological restoration.

This attitudinal shift in the design of waterfronts toward stewardship, care, and an actual, lived relationship with the land can also shift how we think about waterfront investment. Large, capital-heavy projects have done a lot of good, but they aren't always the model we can rely on moving forward, especially given economic uncertainty, debt burdens, and natural resource shortages. In small cities, there is an opportunity to do something more incremental and grounded: working directly with communities, testing small interventions, and building over time. As is the case with the plan for the Bushkill Creek,

implementation is less about one big move and more about a series of actions that accumulate, conducted with the community.

Changing climates will require a mass spatial reorganization of cities, with migration affecting both people and non-human species alike. The climate collapse that we are facing, and encountering most directly along waterfronts, is not merely a catastrophe. It is also a condition that makes transformation possible. What if we embrace it as a critical transition point, a forced departure from old ways of being that no longer work?

The Bushkill Creek Greenway Master Plan is just one example of climate-forward, relational planning that uses nature as a connective tool for an urban waterfront. With more than 3.5 million miles of streams and rivers flowing through 95% of U.S. cities, waterfronts are not just local landscapes, they are national infrastructure for ecological resilience. And as we move into more regenerative models that emphasize stewardship, care, and relational design, I hope we lessen the need for resiliency in the face of global pressures. What we protect can, reciprocally, protect and nurture us as well.

Laura Stedenfeld is a landscape architect, artist, and founder of Omnes, a design studio based in Easton, Pennsylvania practicing in landscape architecture, planning, and public art. Trained in architecture at Parsons School of Design, she spent the early part of her career at studios including OLIN and Thomas Balsley Associates before founding Omnes in 2019 with a focus on bringing quality design and planning to mid-size cities and rural communities. Her work centers on civic and institutional master plans, parks, plazas, and post-industrial waterfronts, with projects across the Lehigh Valley, Philadelphia, and nationally. Omnes is a women-owned and LGBTQ+-certified enterprise and a recipient of awards from the American Society of Landscape Architects and the American Institute of Architects.

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The background of the page is composed of several overlapping geometric shapes in two shades of green: a medium teal and a darker forest green. These shapes include circles, triangles, and irregular polygons, creating a dynamic, abstract composition. The shapes are layered, with some appearing in front of others, creating a sense of depth.

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