EXECUTIVE SUMMARY

Executive Summary

Throughout the visioning process, there were few messages that resounded with the community as clearly as the need for better connections between the communities and the waterways.

In early 2015, the Newtown Creek Superfund Community Advisory Group (CAG), met at LaGuardia Community College to develop a set of guiding principles and thereby establishing a framework for determining the future of the Creek and its surroundings as the EPA's process for remediation moved forward. The members of the CAG knew that if any long term plan for the cleanup of the waterway were to be a success, the bar had to be set high in order to see appropriate attention and investments. They knew that if the community surrounding the Creek was to benefit from the coming remediation they had to be involved as proactive participants in the planning of its future restoration.

From that initial meeting, 12 Guiding Principles were outlined (see page 46). They range from the conspicuous (removal of contamination, stopping ongoing pollution sources, and preventing future contamination) to the less overt (promotion and protection of industrial uses, restoration of indigenous wildlife in the water and onshore, resilience in light of climate change and its impacts on Creek communities, and public access and participation in the waterway). They are a dynamic and proactive set of guidelines, designed to usher in a Newtown Creek for the 21st century; robust, resilient, and as teaming with life as the City that surrounds it.

With City plans for sewage and stormwater pollution investments taking shape through DEP's Long Term Control Plan (LTCP), legacy contamination clean-up through the EPA's Superfund process

Newtown Creek at Whale Creek

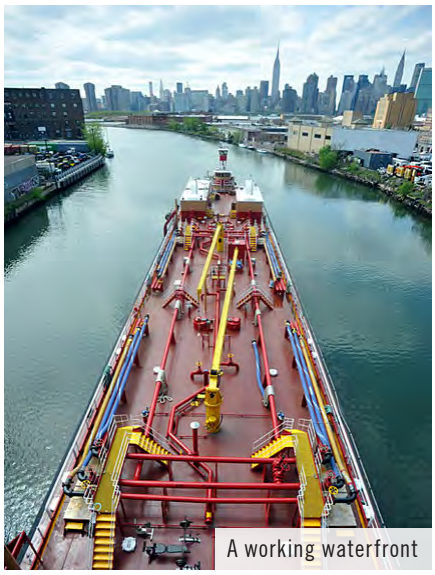
underway, and redevelopment of all kinds exploding in communities surrounding the waterfront, Newtown Creek needs its own comprehensive long-term plan, one that pulls all of these elements together and sees the waterway in its future, cohesive state.

The CAG's principles were the first concrete steps in creating a roadmap for agencies at the helm of the Creek's remediation. This Vision Plan takes those principles and builds off of them; visualizing a new way for the Creek to function in the coming century. To create such a roadmap, Riverkeeper and the Newtown Creek Alliance, alongside Creek stakeholders in the Brooklyn and Queens communities, launched the vision process to capture decades of community conversations in one report.

With all of the pollution presently discharging into these waterways each year, and uncertainty around access and the way in which Superfund remediation and restoration will take place, there is, and always has been, a community of people fighting for this community resource and a place to play, learn, fish, and paddle. We hope that this report captured the concepts of the local community – residents, businesses, visitors, and visionaries alike.

We see Newtown Creek not as an unapproachable problem, or as forgotten a waterway; rather, we see waterways teeming with aquatic life, active recreational communities, clean water stewards, and committed educators. We see a waterway with great potential.

This Vision Plan is a community-driven catalog of these efforts already underway, as well as some new ideas for investments and innovations we, the community, have yet to launch – given the pollution and access barriers extant in this watershed. The Vision Plan is also a record of the pollution, access, and investment barriers facing Newtown Creek, and a plan for how to overcome those barriers, together.



A working waterfront

A natural waterfront

THE CREEK

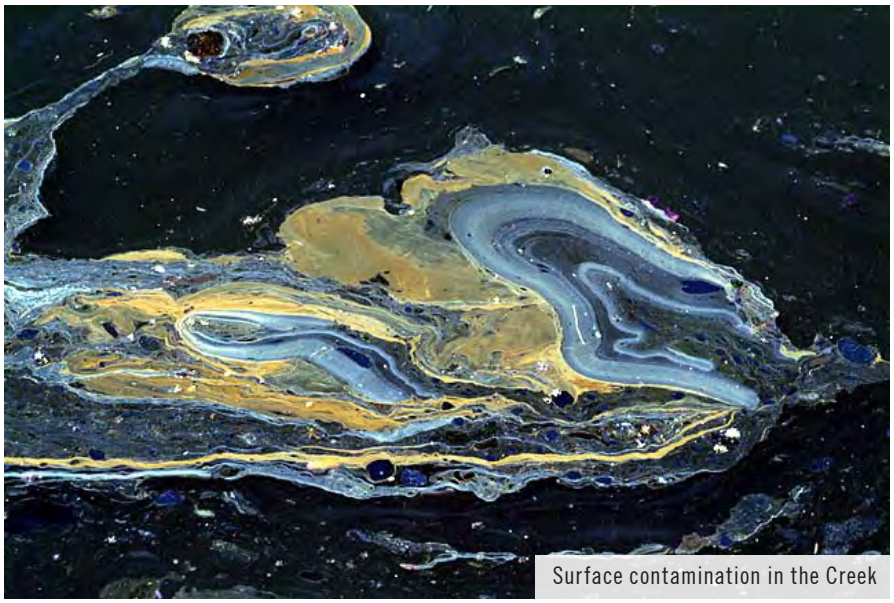
Determining a path forward for the Newtown Creek requires efforts and innovation through large tracts of both Queens and Brooklyn, it's clear that change in the waterway is driven by change in the watershed. The Creek both connects and divides a number of communities in Queens (Long Island City, Sunnyside, Maspeth, and Ridgewood) and Brooklyn (Greenpoint, East Williamsburg and Bushwick). These neighborhoods are home to hundreds of thousands of New Yorkers; a host of cultures, economies, and interests. Many of these areas are experiencing rapid commercial and exponential residential expansion and growth, exerting extreme pressures on existing industry and infrastructure alike.

The industrial sector around Newtown Creek inadvertently has removed many of these neighborhoods from their waterway. Crucial to past and present regional economies, these industrial sites are both the cause of many of the Creek's worst problems and hold the keys to many of the it's most valuable clean water innovations. However and often surprisingly, recreational activities abound throughout the Creek, despite toxic contamination, sewage and stormwater pollution, and inaccessible waterfronts. Street-end access points, boat clubs, and environmental education hubs have arisen in several of the quiet corners and protected areas of the Creek. With valuable and significant maritime uses, historically low levels of pollution, new commercial investments, and growing local neighborhoods, Newtown Creek plays a unique and crucial role in the economic, social, and urban environment of Queens, Brooklyn - all at the (geographic) center of New York City.

STATE OF THE CREEK

A singularly complex and dynamic urban ecosystem, Newtown Creek is deeply polluted and has suffered more than a century of degradation. The last two decades however, remarkable strides have been made to reverse this legacy. The ebbs and flows of use and abuse, attention, and care from the regulatory and management agencies, universities, industries, and local advocacy efforts, continue to shape the Creek systems we work and live with today and will define the bounds of what is possible for the future. These complex systems are not always easy to define, some elements of them are very clear; legacy pollution, ongoing contamination, rebounding ecosystems, a transitioning industrial core, exploding adjacent commercial and residential development, a strong and growing group of community advocates and stewards. How these systems intertwine to form a healthy future is what this planning document envisions.

Ecologically, the naturalized riprap, hard bulkheads and soft edges, floating docks and fledgling salt marsh wetlands, street ends and sewer outfalls of the Creek are all a part of the larger estuary system that is the New York Harbor. Tidally driven and inundated by runoff with every rainfall, these waterways have the potential to be part of a very productive regional ecosystem. Today, however, much of the historic wetlands, marshes, seagrasses and soft edges have been transformed, hardened with bulkheads, functionally removed from the rest of the ecosystem – in short, the Creek has been turned from a natural wetland to a man made waterfront, losing the benefits of habitat rich soft edges and water infiltrating soils. The natural and constructed floating wetlands that do exist (or have been built) in the Creek reveal the potential for the waterway to realize the many co-benefits of salt marsh restoration, such as water filtration by native mussels and oysters and storm surge protection due to energy absorbing landscapes.



Surface contamination in the Creek

The Creek, home to water-dependent industries – barges brining materials in and carrying the City's wastes out – must figure prominently in this Vision. These industries are the hidden life's blood to the City; providing well paid entry level blue collar jobs, critical infrastructure, and economic stability to many of the surrounding communities. The waterway itself is designated as a Significant Maritime and Industrial Area (SMIA); industries along the Creek move over a million tons of freight by barge every year. The Creek's waterfront is nearly entirely industrial - the Mouth of the Creek being the only exception.

Expansive pre war rooftops, enormous parking lots, miles of pavement, all impermeable surfaces that lead from to the water's' edge to several blocks upland. Multiple truck routes, highways, and significant bridges cross the Creek, the Pulaski, recently modified for better bike and pedestrian use, the newly-rebuilt Kosciuszko, the more than a century old Grand Street bridge and a host of streets along and around the shoreline are all highly trafficked industrial and commuter corridors. Pressing up against this industrial activity the region is being reshaped by dense new developments, new infrastructure, and new zoning plans.

Layered over these ecological, social, and economic considerations is the catastrophic stress caused by ongoing sewage and stormwater pollution. The vast majority of the land that drains to this waterway – the ~6,500 acre Newtown Creek sewershed – is served by a combined sewer system. In this antiquated waste water system (where storm drains in the streets are connected underground with the sewer pipes coming from homes and businesses),

precipitation events as common as 1/10th of an inch can exceed the sewers' capacity, overflow within the system, and discharge directly into the Creek. Up to 1.2 billion gallons of discharge (consisting of raw sewage, pharmaceuticals, oils, debris, litter, and many more pollutants) can enter Newtown Creek every year – enough to fill the Empire State Building over three times with pollution. A devastating reality for marine life, workers and nearby residents that are expected to live alongside this actuality.

TOXICITY AND A VISION FOR CLEAN WATER

Contamination, its origins and lasting effects vary throughout the Creek; from the crude oil pollution at the ExxonMobil Greenpoint site – where millions of gallons of oil spilled over generations have pooled into underground oil reservoirs, to PCBs, PAHs, heavy metals, and an alphabet soup of hazardous materials scar that the landscape and ruin the waters. This coupled with the ongoing CSOs, the beleaguered waters often appear hopelessly marred by humanities activities.

Industry, particularly oil and other refineries and metal processing facilities, have left a legacy of contamination throughout the Creek and its watershed. These past problems continue to have deleterious impacts on the Creek and surrounding communities. The groundwater is unusable, cut off from use in the mid 1900s, underground plumes of oil seep into the waterway and other toxic plumes threaten the health of residential communities above, all causing public anxiety around health problems throughout the area. Years of advocacy by citizen groups, non-profits (including Riverkeeper and Newtown Creek Alliance) and elected officials have led to a thorough examinations of the extent of the decades and decades of pollution. These efforts triggered a host of small-scale enforcement actions, large-scale oil spill remediation work, and, eventually, the listing of Newtown Creek as a Superfund site, relief and environmental justice is in sight.

Maspeth Avenue Plank Road Street End

Newtown Creek was listed on the National Priorities list in 2010, triggering the EPA Superfund process. From 2011 to 2018 an extensive Remedial Investigation (RI) has been underway to assess the state of contamination and risks to ecology and human health. Simultaneously, the EPA designated the initial six Potentially Responsible Parties (PRPs) responsible for contamination in Newtown Creek. At the release of this Visioning Plan, with the RI process close to complete and a number of additional PRPs identified, the agency is poised to begin developing a Feasibility Study (FS), details of the Creek's ultimate cleanup, cost and associated timeline. Any such plan would be announced in a Proposed Remedial Action Plan (PRAP), open to public comment and subsequently memorialized in a final Record of Decision (ROD). Remediation of the waterway and its sediments will follow in the years to come.

This Superfund process, and specifically the CAG's role in the ultimate remediation plan, is a crucial part of this report, as the clean-up will ultimately create the baseline Creek conditions on which many of the projects and solutions identified in this plan rely. Further, potential Natural Resource Damage Assessment (NRDA) efforts and community restoration, corollary to the EPA's remediation work – for which the PRPs will also bear the costs – will be the venue for many of the environmental, education, and access based proposals in this report.

Despite all the contamination, stormwater discharges, and sewage pollution, it is important to recognize that water quality in Newtown Creek is better today than it

has been in the past century. Much of this improvement is due to upgrades that have already taken place to the Newtown Creek Waste Water Treatment Plant. This recognizable landmark is capable of handling up to 700 million gallons of raw sewage daily, a staggering number and a relief to the waterway. Plans for the future, through the Long Term Control Plan, call for further capture of sewage during wet weather events. Even more innovation for water quality improvement is needed, including some of the idea outlined in this document.

Because of improvements made to-date, the Creek is responding; wildlife is returning and more and more people are utilizing the waterway as a resource for recreation and education. With the projects and priorities set forth in this Vision Plan, Newtown Creek can again be a vast resource that is accessible, fishable, swimmable, and enjoyable. One that provides the unique ecosystem services that healthy tidal salt marshes once provided to much of New York Harbor.

In this Vision Plan for the future, shorelines are no longer crumbling unusable as a working waterfront, nor are they only hard bulkheaded walls, unsuitable for life. Instead, the waterfront edge is the connective tissue of the Creek's urban ecosystem, protecting upland areas from flooding and providing habitat for aquatic plants and animals. The Creek's crucial core navigable channels remain and are fortified, ensuring that the industrial economy can thrive. Green roofs blanket warehouses, climate resilience retrofits abound, and maritime access can be found in all reaches. An urban ecosystem like this embraces the multiple uses of the Creek and provides opportunities and access for area community members to enjoy, learn from, sustainably use, and live alongside.

OUR APPROACH

A clean water vision for Newtown Creek formed over time, through a participatory process shaped by the many voices of Newtown Creek advocates and stakeholders. The Newtown Creek CAG,

June 3, 2017 Public Visioning Session

was the spark that started this Vision Plan and provided the Guiding Principles that grounded the Vision Plan process. From there, Riverkeeper and the Newtown Creek Alliance developed a categorization method utilizing Four Rs; Remediation, Restoration, Resilience, and Recreation, to frame the approach to this Plan (see page 24). The goal was to provide a roadmap for remediating historic pollution and degradation, restoring and revitalizing lost and damaged ecosystems, providing for safe and accessible opportunities for recreation and education; on the waterfront, between communities, and on the water, and ensuring climate and economic resilience of the industries, businesses, communities, and ecosystems around the Creek.

With this framework in mind, the generation of ideas and input from stakeholders for physical projects along the waterfront and throughout the Creek watershed was the primary vision process goal. Dividing the Creek into seven different reaches allowed us to work with city agencies, community members and those with vested interests in the waterway on specific, detailed proposals along the shores of the Creek. Community members proposed, contributed to, and developed the ideas presented here – at CAG meetings, at our kick-off meeting, a visioning session, at networking events, and at a host of smaller stakeholder sessions and brainstorming meetings. These meetings and workshops brought together community leaders, residents, and experts from organizations and agencies around the City. LaGuardia Community College, Waterfront Alliance, SWIM Coalition, Billion Oyster Project, Evergreen, LIC Roots, North Brooklyn Boat Club, Harbor Lab, students from Williamsburg High School for Architecture and Design, Smiling Hogshead Ranch, and so many more stakeholders from areas businesses, community boards, IBZs, elected officials, city agencies, were all among the hundreds that came to the various meetings throughout the planning process.

September 15, 2017 Public Mixer

The uniquely skilled and adept team at Perkins + Will brought these ideas to life. These designers offered invaluable urban design and planning expertise, they were a steady hand that made the Vision Plan truly a visual exercise. For each Reach, and for the system as a whole, the goal was to capture the present state and future potential of the Creek. All the while integrating the needs, desires, and concerns of the people and businesses that are integral achieving the Visions presented here.

While this document represents a version of the outcome of these processes, the ideas herein are designed to be malleable – to be reshaped as needed, as time goes on, by more public input, as often is the reality in scenarios such as these. This Vision is a tool developed by the Creek community, for the community, to be used by the community.

CREEK WIDE SOLUTIONS

Newtown Creek is too complex to be analyzed as one waterfront. In order to more effectively develop actionable ideas from the community, and ensure we captured their specific concerns, this Plan divides Newtown Creek into seven separate “reaches” (a nautical term for segments of a waterway), there is a seperate section that discusses Creek Wide ideas and project opportunities for improvement. Each reach has an individual story, and connects in a unique way to the surrounding communities. Taken all together, each reach is part of a whole, and in this case, the whole is greater than the sum of its parts.

The Vision Plan's 7 Reaches

THE REACHES

The **Mouth of the Creek** is home to the greatest area of new development anywhere along the Creek's shore, both in Brooklyn and in Queens, it is also the region most prone to flooding. Investments in edge design improvements on both sides of the waterway will help with neighborhood resilience while also shoring up waterfront businesses into the future. Proposals for a small marina and a redesigned street end shoreline allow for increased accessibility to the water for recreational use.

Whale Creek is one of the most active maritime use industrial areas of the Creek, due to the regular barge traffic servicing the Newtown Creek Wastewater Treatment Facility and recycling operations nearby. Surrounding the Wastewater Treatment Facility, the City's "Nature Walk" already provides direct access to the water and hosts rare for the area native plants and interpretive artwork.

With intelligent and inclusive planning, the waters and waterfronts of Whale Creek can be designed in a way that ensures industry coexists with recreation, access doesn't impede maritime traffic, and bulkheads support jobs as well as ecosystems. A reimagining of the Department of Sanitation's derelict waste transfer facility into a learning laboratory and light industrial hub brings water access to the heart of the reach, while wetland creation at North Henry Street provides an anchor and a refuge for the ecosystem and a safe space for recreation out of shipping lanes.

The westernmost (and arguably most stagnant) tributary of Newtown Creek, **Dutch Kills** cuts almost due north from the Newtown Creek Wastewater Treatment Plant into Long Island City, Queens. Intimately nestled among tens of thousands of students at half a dozen different schools, new residential towers, and rapidly growing commercial and industrial corridors, this tributary has for too long been kept apart from the community around it.

Every year, millions of gallons of combined sewer pollution pour into Dutch Kills, abandoned deteriorating barges lie unattended, legacy contamination is found throughout the surface and subsurface sediments of the tributary. Low bridges and sediment build-up render the waterway inaccessible by even the smallest boats. Crumbing bulkheads, neglected streetscapes, and overgrown edges prevent people from seeing or enjoying the waterway. At Visioning events, community members envisioned the tributary with nearby green park space, green roofed buildings, a scenic walking loop around the Creek, and bridge designs that support in water salt marsh restoration; in sum, a waterbody that connects one of the fastest-growing communities in the City to a restored wetland waterfront park.

Midway into the Creek, **Mile Two** is a long narrow channel of water. This is the epicenter of one of the Creek's largest remediation projects: a massive, 17-30 million gallon plume of oil that lies underground below businesses and homes in Greenpoint. On the opposite shore, in Queens, the Blissville Seep still leaks oil into the water. Trucks and heavy construction vehicles continue to dominate the surrounding streets. Shorelines, deteriorated and crumbling, provide little storm surge protection for the upland industries.

Because this reach is industry-heavy, and there is little to no space for adaptation planning within the Creek itself in this narrow stretch, industrial buildings must play a large role in building climate resilience and ecological restoration.

Green infrastructure, particularly green roofs and adapted shorelines and bulkheads offer opportunities. Though space in Mile Two is limited, community members' visions for the reach, take full advantage of the coming Kosciuszko Bridge Parks, and street-end parks for critical open space, green infrastructure, and water access.

Before the Creek was industrialized, the **Turning Basin** sat at the confluence of a number of tributaries and shallow marshes. Over time, this open basin was widened and deepened – and the islands at its center, made up largely of oysters and mussels, was either dredged and removed or filled in to make more usable land – to create an area large enough for barges and the large boats of the early 20th century to turn around in and head back out of the Creek.

Shallow, silty, and home to one of the largest combined sewer outfalls in the Creek, **Maspeth Creek** presents one of the best local opportunities for ecosystem restoration. Decades of sedimentation have made Maspeth Creek impassable by boats. With large-scale industrial operations encircling the tributary (but largely parking lots abutting the waterway itself), and a trash boom stretching across the mouth of Maspeth Creek, the waterway has been kept a world apart from human use for half a century. Maspeth Creek remains, nonetheless, coated in contamination and saturated with sewage, but the inaccessibility of Maspeth Creek provide sanctuary for wildlife. Cormorants, herons, menhaden, and more have been observed fishing, foraging, and schooling around the trash boom and in the open waters of the Basin.

Community members imagined Maspeth Creek and the Turning Basin managed together as one ecological system, with Maspeth Creek made permanently non-navigable, shoreline edges revitalized, lookouts and walkways built out as nature walks of their own. Restoration would firmly anchor the environmental revitalization of the Newtown Creek as a whole, returning this natural community asset to the people, fish, and waterfowl.

The **East Branch** tributary was once the northeastern edge of the vast Newtown Creek salt marsh, connecting to fresh water and feeding into streams. Traversing East Branch today, the Grand Street Bridge connects the Boroughs of Brooklyn and Queens. The old bridge, unsafe for pedestrians and bikes, could be part of larger green street corridor providing access to the water and habitat for oysters and other marine wildlife. Upland, parking lots drain directly into the waterway, contributing to pollution and inhibiting area resilience. These lots can be transformed with protective berms and green infrastructure, redesigned to a capture stormwater and build resilience for the industrial corridor and surrounding communities. Neighboring DEP's new aeration facility, there is a property fallen into disuse, originally promised for community purposes, those promises are as neglected as the property.

The industrial legacy that channelized East Branch dramatically limited tidal flow leading to stagnant waters, heavy CSO discharges make the water severely impaired. Despite the odds, community members see a different future for East Branch. The shallow waters offer up an amazing opportunity for restoration with salt marsh and sea grassesand the reintroduction of oysters, both create new marine wildlife habitat. With a little help, this inlet can become an ecological pocket of marshland driving clean water throughout the system.

Farthest from the mouth of the Creek and the East River, **English Kills** runs right up to the doorstep of the close-knit Bushwick community. This head end of the Creek is only fed by stormwater and sewage pollution, discharges from one of the largest combined sewer outfalls in the City; hardly the type of waterway this proud community deserves.

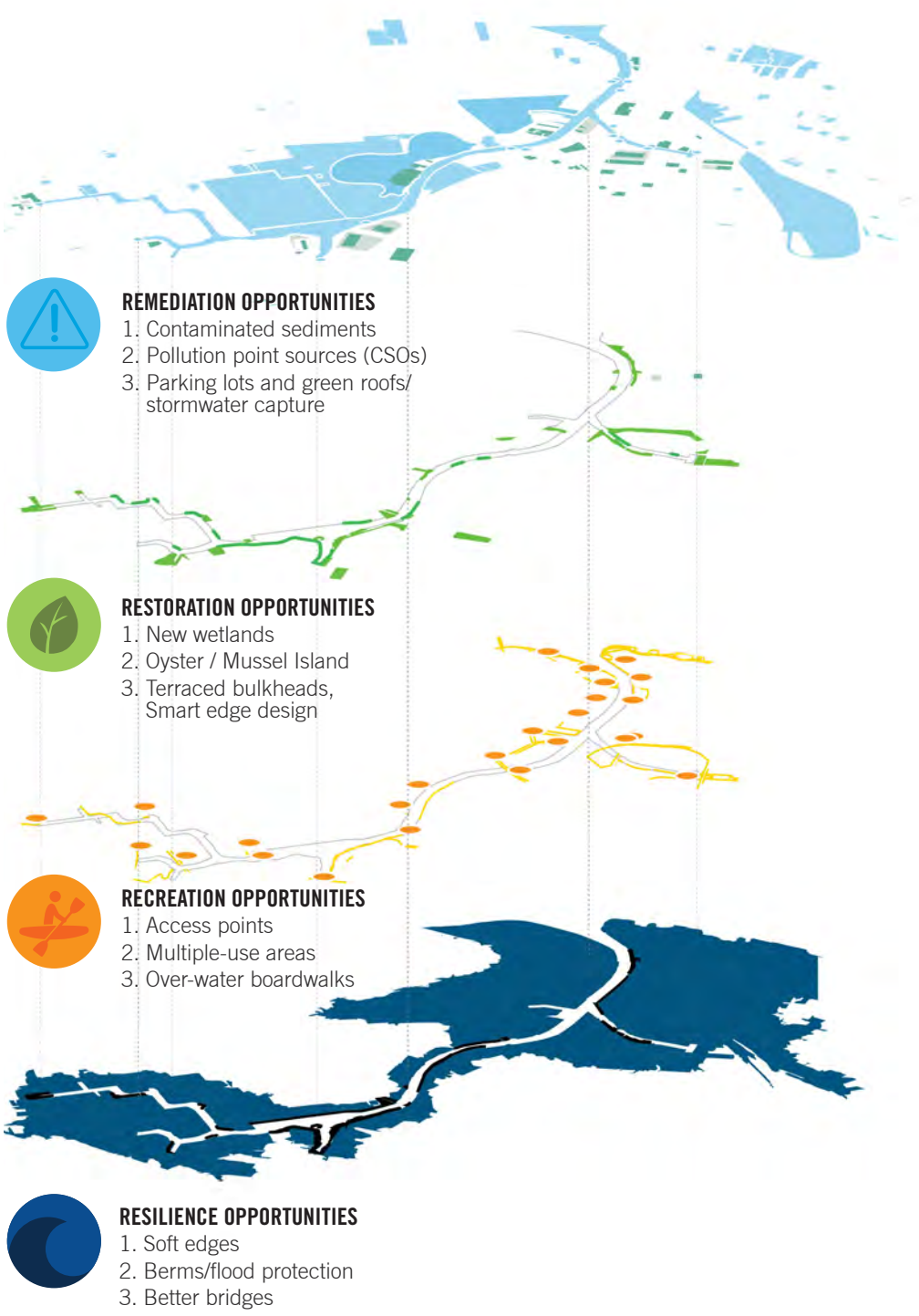
Proposed New Head of Creek Park, page 118

The most significant feature of English Kills isn't necessarily the combined sewer that feeds it, but the series of 90-degree hairpin turns. These unnatural, jagged turns impede tidal flow - and prevents water circulation; thus, the very structure of English Kills is its greatest weakness. Polluted sediment, stagnant waters, and toxic contamination remain stuck in this tributary, waiting for investments in remediation,and perhaps a softening of its man made corners.

The vibrant and rapidly-expanding residential, commercial and mixed use areas have no way to access or explore the waterway running behind their buildings – a barrier that can, and should, change given the lack of open space available in this part of Brooklyn. As one of the most low-lying, densely-developed, and highly contaminated stretches of the Creek, community members envisioned pockets for parks, shallows ideal for salt marsh restoration, shorelines poised for innovative reconstruction, rooftops ready to be greened, and city streets and sidewalks redesigned for efficient stormwater capture and control, English Kills is a perfect living laboratory for urban clean water innovation.

CREEK-WIDE

Breaking Newtown Creek into seven separate reaches enabled us to focus on individual projects and site-specific localized improvements. A comprehensive approach, however, enables understanding of complex issues that exist across multiple reaches, boroughs and neighborhoods. A full Creek analysis moves beyond the political and geographic siloed configurations of the watershed that limit and isolate issues, that are complex and multi-layered.



Creek-Wide 4R's

As we compiled what we viewed as Creek-wide solutions, two overarching policy recommendations emerged as key factors in the ultimate remediation and restoration of this waterway: the need for interagency collaborative planning and the value of multiple uses. These pillars led to a number of system-wide priority projects.

Developing solutions for stormwater capture on bridges and overpasses, area-wide green infrastructure, and designing safer streets and corridors for cyclists, pedestrians, and public transportation will require the time and attention of a number of agencies.

Shoreline innovation – for multiple-use resilience and restoration benefits – will need to be elicited from a number of academic and agencies partners and will need to be folded into both small-scale business decision-making processes as well as long-term Superfund plans.

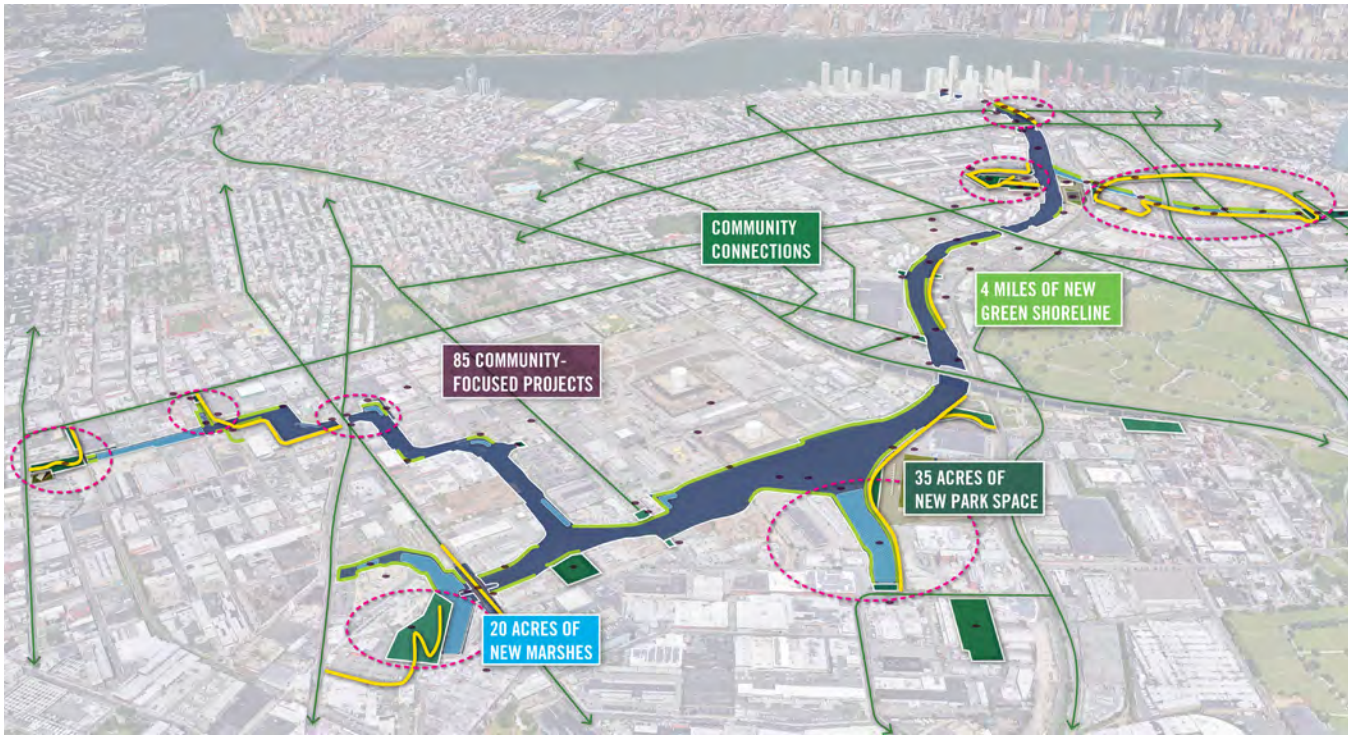
Finally, hard looks at navigability, where should we improve and advocate for better barge use and where should there be areas delisted as navigable waterways largely before many projects in this Vision can be made feasible.

THE ROAD AHEAD

The majority of this report focuses on physical improvements to Newtown Creek, the water, its shorelines, and adjacent upland areas. While it would be easy to say that the next step here is to break ground on these improvements, this contaminated, industrial, sewage-burdened waterway has never had solutions that simple. Thus, since our first meeting with the public, the biggest question we've been asked is how we could make any vision for the Creek a reality – let alone a vision – significantly changing how almost every inch of the Creek is shaped and functions. Simply put, the answer is to work incrementally. By working the Creek at small scales, reach by reach, the clean water future can be built.

The framework for taking those steps, presented here as priority projects and system solutions, will require significant investment of time and creativity by the community, agencies, industries, developers, planners, and elected officials – shaping together what Newtown Creek will look like for years to come.

With two boroughs, three Community Board districts, four City Council districts and seven different neighborhoods bordering Newtown Creek, better integrated engagement throughout these separate communities is a vital next step.



Only by having an informed and engaged community, working collaboratively toward the same goals, will we collectively achieve the priorities set forth in this Vision Plan. While many of the city, state, and federal elected officials that represent Newtown Creek are supportive of the cleanup efforts, there is a glaring lack of recognized leadership by any one office. Achieving this Vision requires an all-hands-on-deck objective. These entities, moreover, must coordinate and collaborate to ensure that solutions aren't delayed – let alone missed – due to this lack of leadership. Strategic deployment of city planners, engineers, community liaisons and budget officers, architects and lawyers from the city, state, and federal agencies working on Newtown Creek will be the key to efficient and effective implementation of this Vision.

Perhaps most significantly, new funding sources must be cultivated for essential projects affecting the Creek. Waterfront industries cannot take it upon themselves to install the best-choice bulkheads, or open up public access corridors. Private owners, unfortunately, do not possess the wherewithal nor the funding for radical renovations required to make necessary improvements. New infrastructure will be needed, heavy lifting will be essential. So will small signs and subtle innovations, the devil is in the details. Pilot projects for new wetland designs are already in the works for the Creek, but we'll also need to survey ecosystem trends and apply new technologies. These investments demand a careful assessment of Natural Resource Damage Assessment funding opportunities, innovation in Superfund remedial design, and more investment in the communities that are living and working in the Creek's watershed today, with all of these, strong proactive and progressive leadership is key.

Newtown Creek Alliance and Riverkeeper, as advocates for the Creek and its surrounding communities, recognize the challenges inherent in carrying out this Vision over the long term. Our plan is to remain present and active, and will be here with the Creek and with the community as final decisions are developed at the city, state, and federal levels; striving to ensure that this Vision Plan, and the priorities included herein, are championed and ultimately met.

85 Community-Focused Projects in 7 Reaches

MOUTH OF THE CREEK page 64

1. Long Island City Shoreline Restoration
2. Pulaski Bridge Public Space Improvements
3. Pulaski Bridge Marina
4. North Brooklyn Community Boathouse
5. Connecting Vernon to Vernon
6. Greenpoint Bulkhead
7. Vernon Boulevard Street-End Redesign
8. Hunter's Point Promenade
9. Oyster Reef Reintroduction: Encircling LaGuardia Airport

WHALE CREEK page 72

1. Nature Walk Enhancements
2. Kingsland Avenue Connection
3. Improved Piers and Industrial Access
4. Kingsland Wildflowers Expansion
5. Bulkhead Salt Marshes
6. Clean Soil Bank and Community Compost Facility
7. Gateway to Greenpoint
8. Enclosures for Open Use Facilities
9. Shoreline Restoration at Industrial Lots
10. Shoreline Restoration at North Henry Street Public Basin
11. Marine Transfer Station Redesign
12. Better Barge Traffic Flow for Industrial Uses

DUTCH KILLS page 80

1. Removal of Abandoned Barges
2. Ranch on Rails
3. Renovation of Borden Avenue Bridge House
4. Shoreline Wetland Restoration
5. Improved Bridge Designs
6. Green Parking Garage for LaGuardia Community College
7. Bernie's Walk
8. 29th Street Park
9. Montauk Cutoff Extension
10. Dutch Kills Loop

MILE TWO page 88

1. Kosciuszko Bridge Waterfront Park
2. Oyster Gardens
3. Gardner Avenue Improvements
4. Review Avenue Bike Path
5. Penny Bridge Park
6. Living Bulkheads
7. Remediated Blissville Seep
8. Apollo Street Sponge Park
9. Shoreline Stabilization and Restoration
10. Redesign of Green Asphalt Edge
11. 400 Kingsland Avenue

MASPETH CREEK & TURNING BASIN page 96

1. Connecting Cooper Park to the Water
2. Maspeth Avenue Overlook
3. Floating Wetlands
4. 49th Street Overlook
5. 49th Street Public Space
6. Green Roof and Mural on Shipping Facility
7. Copper Plant Walkway
8. National Grid Bulkhead Redesign
9. Round the Corner at Maspeth Avenue
10. Plank Road Expansion
11. Mussel Island
12. Maspeth Marsh: New Wetland Creation
13. National Grid Remediation and Redevelopment

EAST BRANCH page 104

1. Border of the Boroughs
2. Green Roofs on Older Industrial Buildings
3. Solar Installations on Newer Industrial Buildings
4. Bridge Redesign: Oyster and Mussel Reefs
5. Soft Shoreline Edges
6. Wetland Restoration
7. Bridge Reconstruction: Public Access and Ecosystem Function
8. 47th Street Lot
9. Western Beef Berm

ENGLISH KILLS page 112

1. Metropolitan Avenue Water Access
2. Metropolitan Avenue Overlook
3. Remediate Active Seepage Sites
4. Colossal Shoreline Redesign
5. Pocket Marshes
6. New Head of Creek Park
7. New Basin Boardwalk

CREEK-WIDE PROJECTS page 122

1. Parking Lot Redesign
2. Reducing Marine Debris
3. Enforced No Wake Zone
4. Reverse Recent Encroachment onto Public Property
5. Sea Level Rise Adaptation
6. Green Roofs on Industrial Buildings
7. Green Infrastructure throughout Watershed
8. Renewable Energy Deployment
9. Wayfinding and a New Network of Educational Signage
10. Improved Pedestrian and Bicycle Infrastructure
11. Stormwater Capture from Bridges and Overpasses
12. Historic Stream and Groundwater Investigation
13. Funding for Shoreline Redesign and Construction
14. Strategic Delisting of Navigational Areas