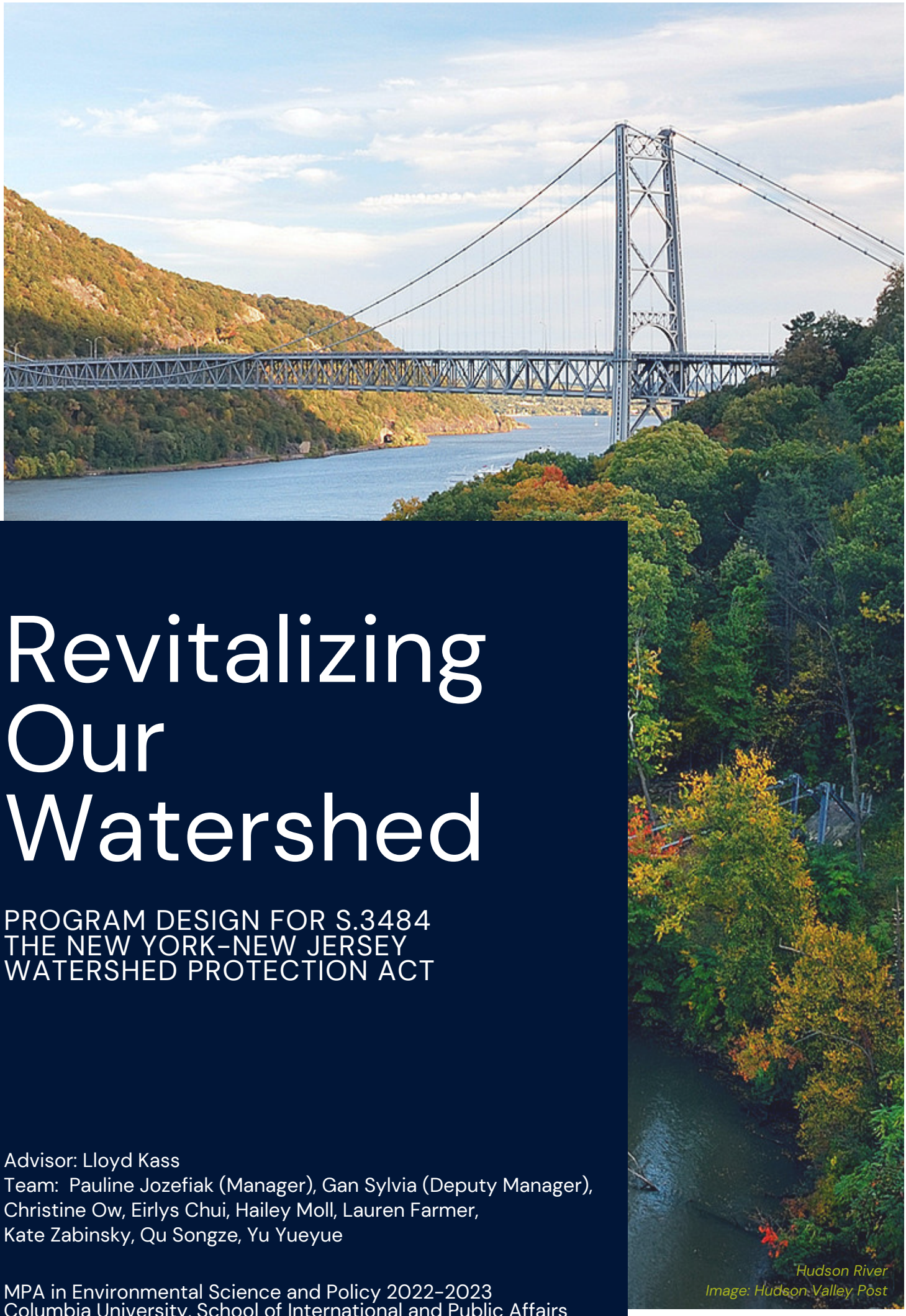


Revitalizing Our Watershed

PROGRAM DESIGN FOR S.3484 THE NEW YORK-NEW JERSEY WATERSHED PROTECTION ACT

Advisor: Lloyd Kass
Team: Pauline Jozefiak (Manager), Gan Sylvia (Deputy Manager), Christine Ow, Eirlys Chui, Hailey Moll, Lauren Farmer, Kate Zabinsky, Qu Songze, Yu Yueyue

MPA in Environmental Science and Policy 2022-2023
Columbia University, School of International and Public Affairs

Hudson River
Image: Hudson Valley Post

Table of Contents

Executive Summary

The New York-New Jersey Watershed is one of the United States' most populous and economically vibrant watersheds, housing 15 million residents and generating more than $60 billion in revenue annually from tourism, commercial fishing, and recreational activities (Hudson River Estuary Action Agenda, 2021). The Watershed encompasses the seven local watersheds that flow into the New York-New Jersey Harbor and the Harbor's associated estuaries. It contains valuable ecological resources such as wetlands, marshes, and oyster reefs, which not only provide habitats for endangered species like the shortnose sturgeon and the Atlantic sturgeon, but also perform ecosystem services for communities residing in the Watershed (S.3484 - New York-New Jersey Watershed Protection Act, 2022). Due to decades of rapid urban expansion and unregulated industrial activity, the Watershed currently faces serious socioecological threats from water pollution, habitat degradation, climate change impacts, and environmental injustice.

As such, S.3484, or the New York-New Jersey Watershed Protection Act, seeks to protect and restore the region encompassing the Watershed. In order to address the four socioecological threats outlined above, S.3484 will establish: (1) a Restoration Program, which will coordinate ongoing watershed restoration activities across state lines and varying levels of jurisdiction, and (2) a Restoration Grant Program, which will provide $50 million in annual grant funding to help implement various restoration and protection projects in the region. Together, the activities carried out by the New York-New Jersey Watershed Restoration and Restoration Grant Program will improve water quality, rehabilitate wildlife habitats, promote climate resilience, and engage the public to foster community involvement and improve public access to waterfronts. The U.S. Fish and Wildlife Services will be tasked to guide its implementation, facilitate an equitable distribution of funds, and ensure that environmental justice is centered in all aspects of the Restoration and Restoration Grant Program.

Efforts thus far in protecting and restoring the Watershed have been decentralized and progress has lagged, and initiatives implemented by stakeholders and governments in New York and New Jersey have been largely uncoordinated. Stakeholder alignment is key to advancing the region-wide effort envisioned in S.3484, with the success of the New York-New Jersey Restoration and Restoration Grant Program dependent on a bottom-up process that augments ongoing work rather than replacing it. The program design outlined in this report focuses on the first year of implementation for the Restoration and Restoration Grant Program and includes a comprehensive staffing and budgeting plan, a reporting mechanism that evaluates performance and provides feedback to measure success, and a detailed timeline to track progress and ensure program objectives are on course to be achieved.

With increased coordination, informed decision-making, and strategic planning, the Restoration and Restoration Grant Program works to protect the New York-New Jersey Watershed and improve the livelihoods of those inhabiting the region.

Our Watershed

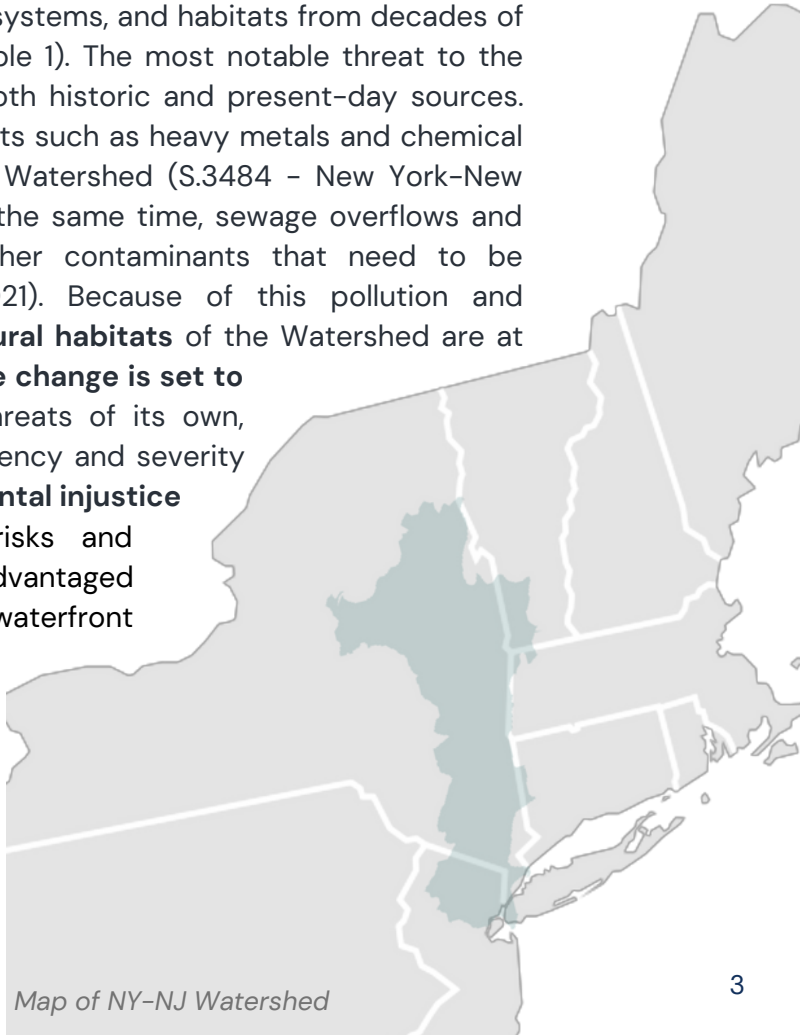
The New York-New Jersey Watershed (NY-NJ Watershed or the Watershed) encompasses seven local watersheds across two states, New York and New Jersey (Box 1), and is an economically vital region that generates more than $60 billion in annual revenue through tourism, commercial fishing, and recreational activities. It also provides habitats for local and migratory flora and fauna, including endangered species such as the American eel, and serves as a natural barrier against the effects of climate change for surrounding communities (Bicking, 2022).

Box 1. The seven local watersheds that make up the New York-New Jersey Watershed

The NY-NJ Watershed is made up of all the watersheds that flow into the NY-NJ Harbor, as well as the associated estuaries of that Harbor.

- Bronx River Watershed
- Hackensack River Watershed
- Hudson River Estuary
- Hudson River Watershed
- Mohawk River Watershed
- Passaic River Watershed
- Raritan River Watershed

Despite its economic, ecological, and environmental importance, the Watershed faces serious threats to its water quality, ecosystems, and habitats from decades of rapid urbanization and industrial activity (Table 1). The most notable threat to the NY-NJ Watershed is **water pollution** from both historic and present-day sources. Due to past industrial activity, legacy pollutants such as heavy metals and chemical pollutants contaminate several parts of the Watershed (S.3484 - New York-New Jersey Watershed Protection Act, 2022). At the same time, sewage overflows and urban and agricultural runoff introduce other contaminants that need to be remediated (Hudson River Foundation, 2021). Because of this pollution and encroachment from urban development, **natural habitats** of the Watershed are at **risk of degradation and destruction. Climate change is set to worsen existing challenges** and present threats of its own, such as rising sea levels and increased frequency and severity of extreme weather events. Finally, **environmental injustice** within the Watershed exacerbates the risks and impacts of these threats on historically disadvantaged communities, who have less access to waterfront spaces, live in areas that are more prone to flooding, and are disproportionately exposed to pollution hazards (Sustainable South Bronx, 2008).



Map of NY-NJ Watershed

Table 1. Major threats to the NY-NJ Watershed and associated issues

Threats to the Watershed	Associated Issues
Water Pollution	• Outdated sewer systems directly discharge untreated sewage into water bodies. In New York state alone, more than 800 sewage discharge points send raw sewage directly into water bodies after heavy rainfall (Hudson River Foundation, 2021) • Presence of sewage sludge, heavy metals, and chemical pollutants in waterbodies from unregulated industrial activity during the 19th and 20th centuries have caused parts of waterbodies to be designated as Superfund sites (O'Neil et al., 2016) • Stormwater runoff from agricultural and urban areas discharge excess nutrients into water bodies, creating algal blooms which cause fish kills and biodiversity loss (O'Neil et al., 2016)
Habitat Loss and Degradation	• Urban and agricultural developments encroach on wetlands, resulting in increased flooding. Over the last century, New York state has lost 60% of its wetlands, and flooding days have increased by 300% (Dahl, 1990; EDF, 2022)
Climate Change	• Increased frequency of extreme weather events, bringing record-breaking rainfall which results in increased flooding (Hudson River Foundation, 2018) • Temperature increase worsening habitat and biodiversity loss (Hudson River Foundation, 2018)
Environmental Injustice	• Disproportionate exposure of lower-income residents to water pollution and flooding. In New York, 11 out of 14 of the city's sewage treatment plants are located in predominantly-minority neighborhoods (Politico, 2012) • Low public access to waterfront spaces for recreation and other activities for lower-income and minority communities (S.3484 - New York-New Jersey Watershed Protection Act, 2022)

Current efforts to protect and restore the Watershed are carried out by individual local organizations and are decentralized across the seven local watersheds. This approach has resulted in a **lack of coordination**, which means restoration across the NY-NJ Watershed is **uneven and slow**. At the same time, there is a **risk of redundancy** when local organizations carry out similar activities, creating overlaps and therefore inefficiencies. Furthermore, organizations in smaller watersheds such as the Mohawk River, which is only located in New York State, are **not able to access federal grants, limiting the finances available** to support their critical work (Czajkowski, 2022).

Bill S.3484

In recognition of these threats, the New York-New Jersey Watershed Protection Act (S.3484 or the Act) was introduced in the U.S. Senate in January 2022 for the purpose of creating a Restoration and Restoration Grant program to protect one of the region's most critical watersheds. The long-term wellbeing of the Watershed is crucial, and S.3484 aims to sustain its economic, ecological, and environmental importance through supporting and coordinating restoration and protection efforts across the region.

S.3484 establishes the **NY-NJ Watershed Restoration Program** (the Restoration Program), which will support, coordinate, and empower ongoing restoration and protection efforts by local and state groups within the Watershed. S.3484 also establishes the **NY-NJ Watershed Restoration Grant Program** (the Grant Program), which will provide a federal cost share of up to 75% of required funds to approved initiatives. To support these programs, **S.3484 authorizes** $50 million to be appropriated each fiscal year from 2022 to 2027, with at least 75% of these funds being dedicated to the Grant Program. S.3484 calls upon the Department of the Interior and the U.S. Fish and Wildlife Service (USFWS) to create and administer the Restoration and Grant Program to achieve the goals stated above. The Act directs federal agencies to manage this Program, as they are the best equipped given that the Watershed crosses various administrative boundaries including state lines between New York and New Jersey. S.3484 also highlights the importance of achieving equity for communities affected by environmental injustice through projects that emphasize public engagement and increasing access to Watershed resources. This aligns with the Justice40 Initiative, which requires at least 40% of the overall benefits of specific federal investments to flow toward disadvantaged communities (Justice40 Initiative | Environmental Justice, n.d.).

Figure 1. Illustrated relationship between the Restoration Program and Grant Program that make up the final NY-NJ Watershed Restoration and Grant Program design

Program Design

The following chapter details the program design for the NY-NJ Watershed Restoration Program and Restoration Grant Program (collectively referred to as the Program) to achieve S.3484's goals of coordinating, financing, and supporting existing restoration and protection initiatives throughout the Watershed. Similar to how S.3484 is informed by the success of the Delaware River Basin Conservation Act, this program design draws inspiration from the Delaware River Basin Restoration Program (Box 2; S.921 - Delaware River Basin Conservation Act, 2015).

Box 2. Delaware River Basin Restoration Program:

S.3484 is heavily inspired by the success of the Delaware River Basin Restoration Program (the Delaware Program), which was passed in 2016 and similarly encompasses a non-regulatory coordination and grant program (U.S. Fish & Wildlife Service, n.d.). The USFWS manages the partnership on watershed restoration in the Delaware River Basin. Guided by a strategic plan developed by various stakeholders, the Delaware Program aims to conserve and restore habitats to mitigate flood risk and runoff, improve water quality, and create higher-quality recreational access (U.S. Fish & Wildlife Service, 2017). Since 2018, the Delaware Program has funded $40.4 million to 159 projects and achieved a total conservation impact of $100.1 million (U.S. Fish & Wildlife Service, 2022). The USFWS cites the Delaware Program as a model of the strengths of a "partner-driven…non-regulatory approach" to watershed management (Guertin, 2022). Ultimately, S.3484 and the NY-NJ Restoration and Grant Program were crafted with insight from the Delaware Program that incorporates lessons learned while accommodating local circumstances.

Example Project: Pequest River Dam Removal

Carried out by the Nature Conservancy and supported by the National Fish and Wildlife Foundation, the Pequest River Dam Removal project aims to improve aquatic habitat and mitigate floods through dam removal. Funding from the Delaware Program resulted in the development of engineering designs that were used to remove two blockages on the river, reducing local flooding and creating a migratory fish passageway (Heidbreder, Lewis and Moreno, 2022).

Delaware River Basin *Image: NRDC*

Program Objectives

Current restoration and protection activities in the Watershed are carried out independently by local organizations. As a result, there is a **lack of coordination and insufficient federal funding support**, especially for watersheds that do not cross state lines. In light of this, the Program seeks to mitigate these management challenges through a structure that is designed with these objectives in mind:

Alignment

Current restoration and protection efforts in the Watershed are carried out by individual organizations with little communication and coordination, which **creates redundancy and ineffective distribution of resources,** such as government grants. The Program will overcome this by acting as a coordinating body to **align existing and future Watershed activities** such that restoration goals can be met in an efficient manner.

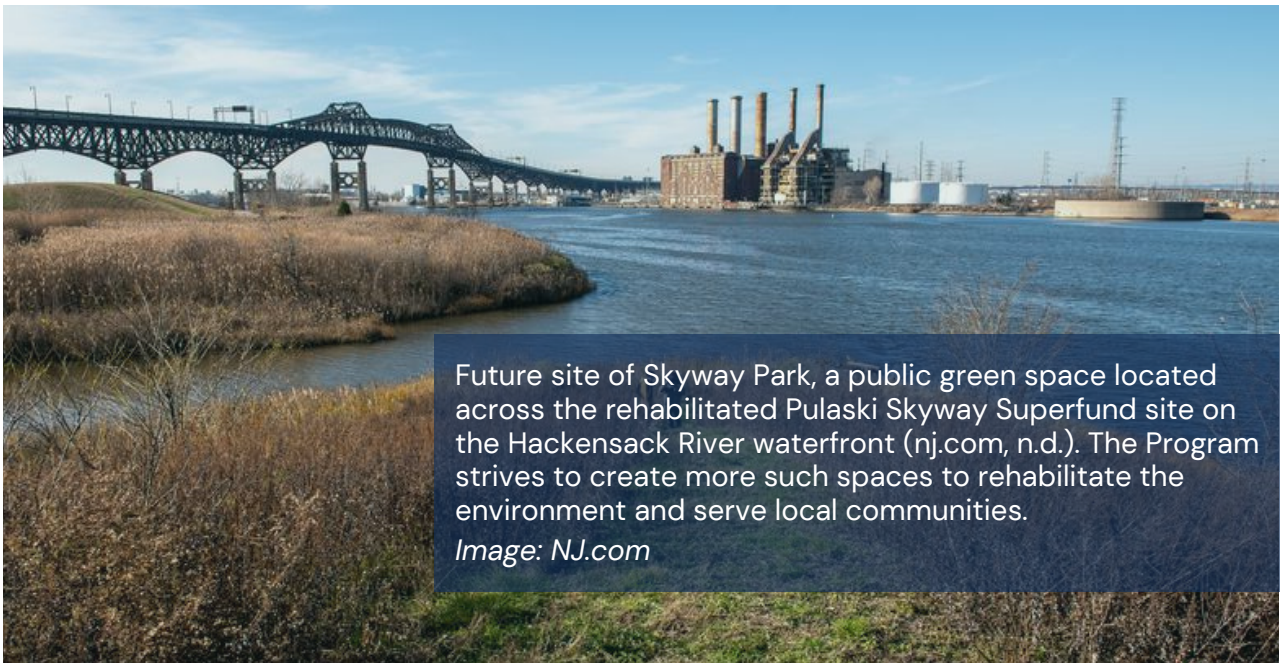
Enhancement

For local organizations, **financial support and capacity building** are key ways the federal government can bolster their ability to innovate and implement solutions for the Watershed. The Program seeks to enhance local organizations' existing work by **creating a dedicated funding source and providing technical assistance (such as navigating the grant process)** as stipulated in S.3484.

Community-Led

While the Program will be carried out at a federal level, its success hinges upon **a close understanding of the Watershed's restoration needs.** Grassroots engagement allows the Program to **reflect the true needs and concerns of the Watershed as informed by the expertise of local organizations,** particularly on matters of environmental justice.

Figure 2. Objectives of the NY-NJ Watershed Restoration and Grant Program



Future site of Skyway Park, a public green space located across the rehabilitated Pulaski Skyway Superfund site on the Hackensack River waterfront (nj.com, n.d.). The Program strives to create more such spaces to rehabilitate the environment and serve local communities.

Image: NJ.com

The table below (Table 2) illustrates the specific goals of the NY-NJ Restoration and Grant Program to target the identified threats in the Watershed.

Table 2. Goals for the Program in relation to threats to the Watershed

Threats to the NY-NJ Watershed	Goals for the NY-NJ Watershed Restoration and Grant Program
Water Pollution	Improve and maintain water quality
Habitat Loss and Degradation	Rehabilitate and enhance fish and wildlife habitat
Climate Change	Improve flood mitigation and habitat resilience by using natural climate solutions and nature-based infrastructure
Environmental Injustice	Engage public through education and public access

Program Framework

The Program is structured to be both **issue-focused** and **geographically-informed**. Given the various threats that the Watershed faces, it is necessary that the approach implements activities based on the four overarching issues of water pollution, habitat loss, climate change, and environmental injustice. Recognizing the intersections between these issues and accounting for their specific resource needs is pragmatic and efficient, and fosters a **cohesive Watershed-wide strategy**. The decision to incorporate a geographically-informed component presented itself naturally, as the NY-NJ Watershed is made up of separate, individual watersheds in which existing programs are already implemented, and is a result of consultations with watershed stakeholders throughout the program design process (Appendix: List of Stakeholder Interviews). This approach **minimizes redundancy and leads to less disruption to the current system of operation** by ensuring that existing programs of each location have a say in what activities to prioritize when working toward the goals set forth in the Act. In this way, the Program provides assistance while respecting the sovereignty of the current programs that have the best understanding of what would be effective given the systems already in place. Several key actors will be involved in this Program, which are highlighted in Table 3.

Mohawk River *Image: Wikimedia Commons*

Table 3. Key actors and their roles in the NY-NJ Restoration and Grant Program

Key Actors			
Local Organizations	Watershed Advisory Committee	National Fish and Wildlife Foundation	U.S. Fish and Wildlife Service
Funding applicants for the **Grant Program** from each local watershed who are currently involved in local watershed restoration initiatives	Comprised of representatives from each local watershed that advise federal actors on funding decisions for the **Grant Program** and restoration priorities of the **Restoration Program**	Contracted entity responsible for assessing grant applications, distributing grants to local organizations through the **Grant Program**, and supervising project progress	Oversee coordination of the **Grant Program** through the **Restoration Program** and provide administrative support to the National Fish and Wildlife Foundation

Prior to each new fiscal year, the USFWS team will leverage technical and scientific support to conduct an assessment of the Watershed's ongoing restoration and protection activities. These findings will be translated into **defined targets using specific metrics and incorporated into a set of watershed-wide criteria** for the upcoming year.

To advance a community-led approach, NFWF will implement a Request for Proposals (RFP) process across the seven local watersheds to identify projects for the Grant Program to fund. Projects will be selected based on the established watershed-wide criteria set by the USFWS with input from a Watershed Advisory Committee (WAC).

The primary responsibilities of the WAC are to **provide technical expertise in establishing the watershed-wide criteria and assist in the selection of proposals** for the Grant Program. The WAC can also act as an **informal forum for knowledge sharing and cross-collaboration** between representatives of each local watershed to promote best practices for restoration and protection work. The WAC will comprise representatives from local groups, academic institutions, and scientific advisors from each of the seven local watersheds who have technical expertise in the four main issues the Program addresses. This encourages **strong stakeholder collaboration** through a participatory approach. This grassroots-level engagement also ensures equal representation from each watershed in the funding allocation process. Example organizations and representatives that will make up the WAC are noted in Box 3.

Box 3. Example Organizations and Representatives of the Watershed Advisory Committee (WAC)

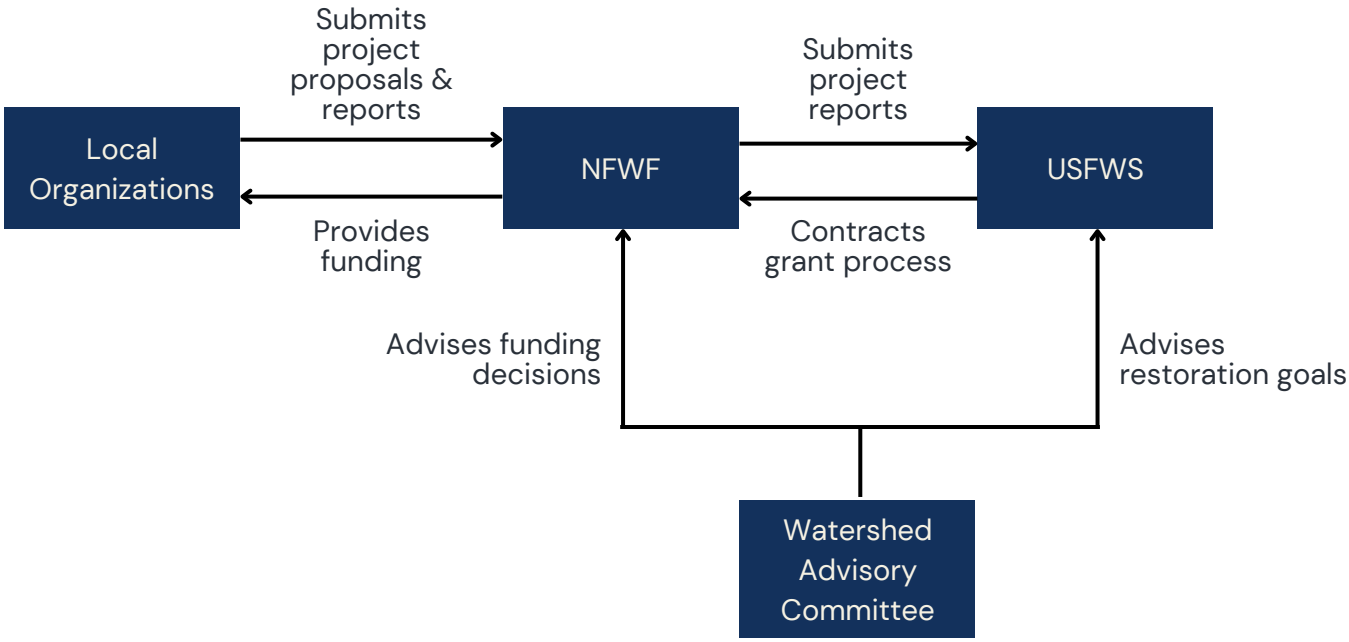
- Lead for Sustainable Raritan Initiative, Rutgers University
- Mohawk Watershed Coordinator, New York State Department of Environmental Conservation
- Program Director, Hackensack Riverkeeper
- Program Director for NY-NJ Harbor & Estuary Program, Hudson River Foundation
- Urban Waters Regional Coordinator, Urban Waters Federal Partnership

Funding from the Grant Program will be **allocated to each project based on individual project needs**, with consideration of the aggregated funding packet allocated to each local watershed. The involvement of the WAC will ensure **funds are distributed equitably across the region**. As funding is provided to each local watershed, those on the ground will take the lead on managing the projects in their communities. A locally implemented RFP process using a set of watershed-wide criteria also ensures that **projects are aligned among the local watersheds** to achieve the aforementioned common goals and that **resources are placed where they are needed most** to bolster ongoing work.

As mentioned above, the Act calls for the USFWS to oversee the management of the overall Program. The National Fish and Wildlife Foundation (NFWF) will be the entity contracted responsible for administering the Grant Program. NFWF is an independent 501(c)(3) non-profit organization whose core mission is to sustain, restore, and enhance habitats and wildlife in the U.S. for current and future generations. Created by Congress in 1984, NFWF brings decades of experience in funding landscape-scale conservation projects as well as in project monitoring and evaluation. To date, NFWF has funded more than 20,400 projects with more than 6,000 organizations, including the Delaware Program, which the Program was modeled after (National Fish and Wildlife Foundation 2021 Annual Report, 2021). Given their expertise and experience in implementing similar grant programs and analyzing grant results, the USFWS will work with NFWF staff to ensure the most efficient use of human resources and implementation of the Restoration and Grant Program (Figure 3).

The Billion Oysters Project, which builds oysters reefs in Brooklyn Bridge Park to revive the local ecosystem, cleans contaminated waters, and creates a natural storm barrier, is an example of current restoration efforts in the Watershed (DeWitt, 2020).
Image: amNY

The following figure summarizes the overall framework of the Program:



1. NFWF puts out a Request for Proposals (RFP)
2. Local organizations submit proposals to NFWF in response to RFP
3. NFWF, with help from the Watershed Advisory Committee, ranks and selects proposals for funding approval by the USFWS
4. NFWF and the USFWS approve and disburse funding to local organizations
5. Local organizations deliver project reports to NFWF which reports to the USFWS for overall Program evaluation to assess areas for improvement

Figure 3. Watershed Restoration and Grant Program Design Framework

Staffing Plan

The proposed staffing plan (Figure 5) is an integrated approach in which the **administration of the Program will fall primarily to staff in the USFWS,** and the **Grant Program will be contracted out to NFWF**. The roles of the USFWS and NFWF, along with their working relationship, are illustrated in Figure 4. The combination of governmental staff that understand how to navigate federal bureaucracy and NFWF staff that can immediately mobilize the grantmaking is the most efficient way to execute the mandates of S.3484. Elements of the staffing plan were influenced by the Delaware Program (Delaware River Program, n.d.).

Mussels in the Upper Hudson *Image: NOAA*

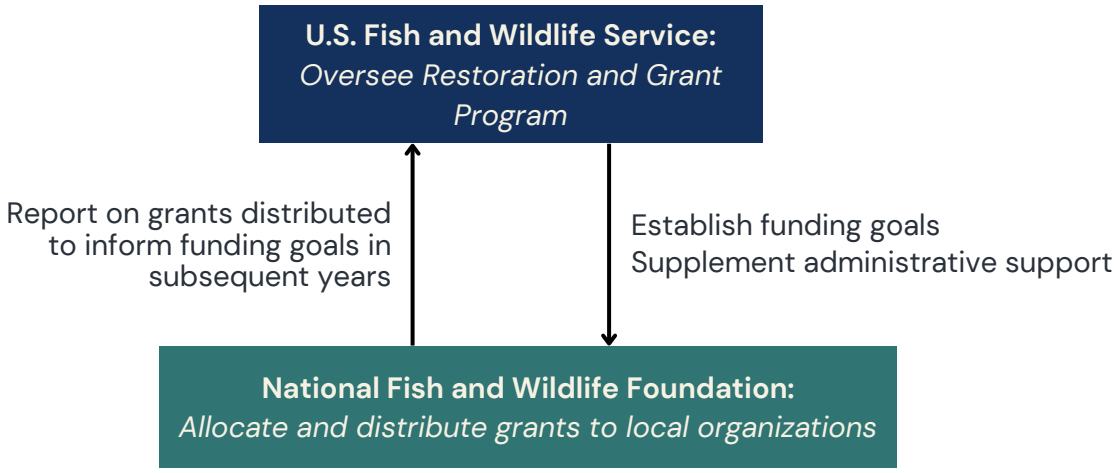


Figure 4. How the USFWS and NFWF work together in the Restoration and Grant Program

Existing U.S. Fish and Wildlife Service Staff

The Program will be under the purview of Northeast Region Headquarters at the USFWS. The **Assistant Regional Director** will be the point person in that office and will oversee the internal positions working on the program (as seen in Figure 5). The Assistant Regional Director will also be in charge of the management of the Grant Program contractor (NFWF).

New Positions and Contractors at the U.S. Fish and Wildlife Service

To facilitate the additional work from this program, **three additional staff members** should be hired in the Northeast Regional USFWS office. These positions are intended to supplement the current staff by handling specific aspects of the Restoration Program. The USFWS will hire a new **accountant** supervised by the current Regional Business Advisor, who will focus on finances for the Restoration Program as well as assist the Director of Program Operations at NFWF with ongoing grant disbursements and monitoring. Due to the size of this program and the specifics of grant funding, the USFWS will hire a person with specific expertise in grant accounting. For similar reasons, a new **planning, permitting, and contract specialist** will support the member from the NFWF general counsel's office. Additionally, the USFWS will hire a **program design consultant** for the first year to help launch the program. The USFWS Human Resources will be tasked with hiring and administration of these new positions.

Contract to the National Fish and Wildlife Foundation

The administration of the Grant Program will be contracted out to NFWF within which the Northeastern Regional Office will be in charge. The point person at NFWF will be the newly appointed **Manager of the Grant Program**. Existing appropriate staff positions at the Northeastern Regional Office of NFWF including the **Program Directors of Climate Adaptation and Resilience, Conservation Partnerships, and Director of Eco-Schools** will serve on the **Grant Committee**. The **Director of Program Operations** will oversee Grant Program monitoring and the **General Counsel** will oversee legal issues. While these positions are sufficient for grant review and grant-making, the previously mentioned existing and newly hired USFWS staff should primarily be responsible for providing administrative support, especially in accounting, communications, science advising, and permitting.

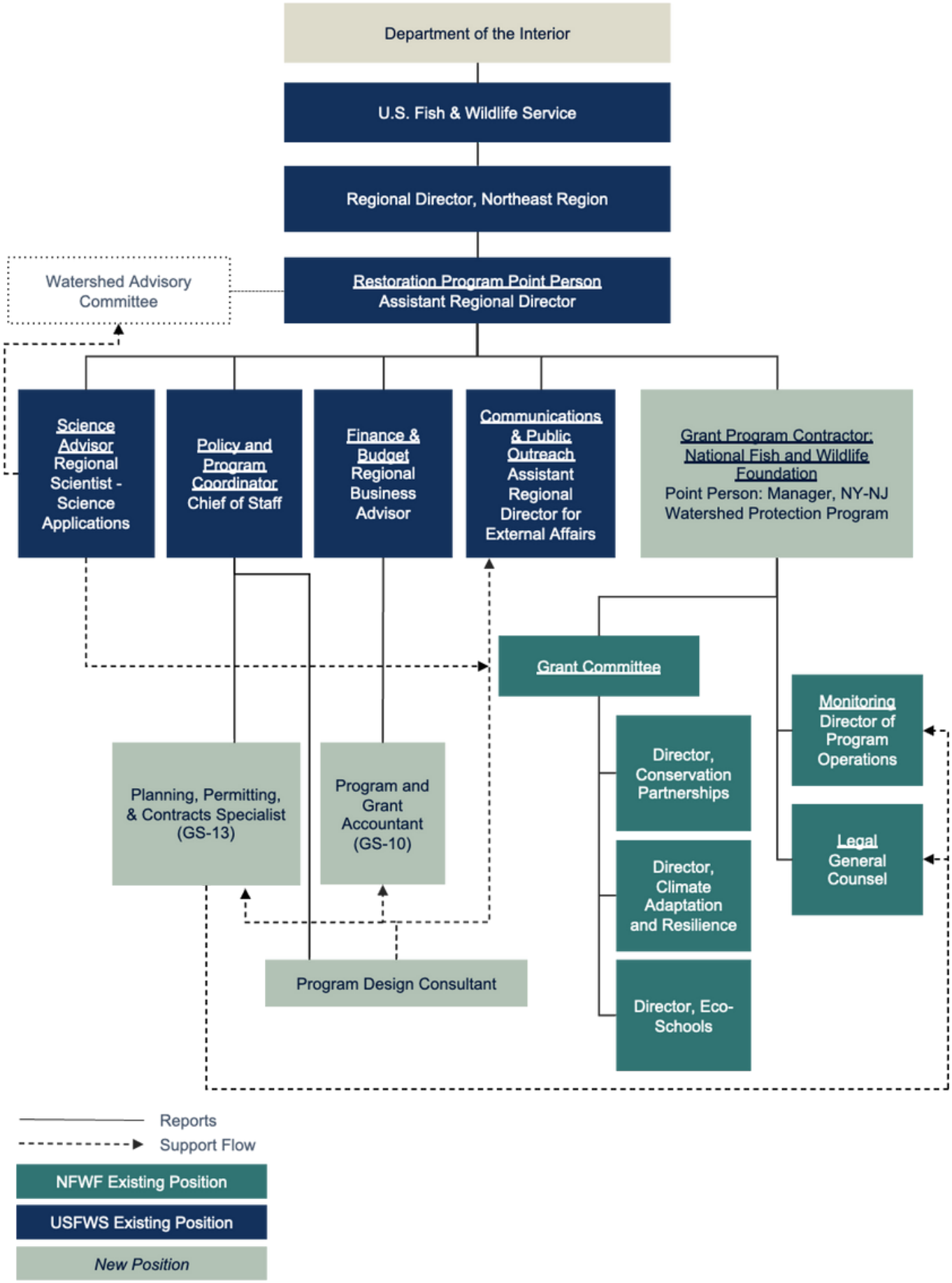


Figure 5. Detailed Staffing Plan

Budgeting Plan

S.3484 stipulates that no less than 75% of the $50 million authorized for the Program should be allocated to grants distributed for restoration and protection work. In the first year, the **amount available for grants may be maximized to around 90% of authorized funds (~ $46 million)**, leaving an estimated 10% for administrative costs. This section sets out the proposed budget and fees for the first year of program implementation **solely for program administration** (Figure 6), which is estimated to be **$4,032,000**. Below are the details and explanation of both the line-item budget and program budget. The detailed budget table can be found in the Appendix.

Line-item Budget

The line-item budget is commonly used in federal government budgeting, and provides detailed allocations for both **Personal Services** and **Other Than Personal Services**. Other Than Personal Services will make up 81% of the total administration cost, as contracting to NFWF will be a significant expense (Figure 6).

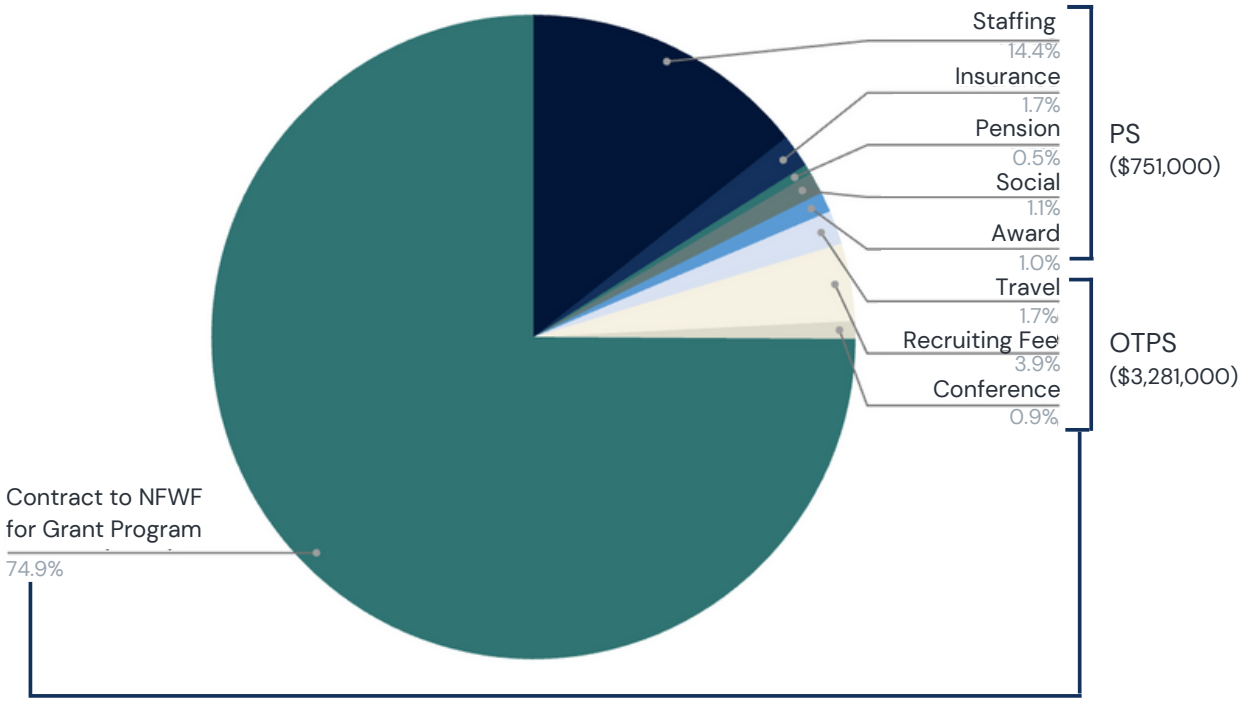


Figure 6. Line-item budget breakdown

Personal Services (PS)

Personal Services refers to the salaries, wages, and fringe benefits of the new staff. The salary payment is based on existing federal salary suggestions, with adjustments for locational compensation for living in New York and New Jersey (Fiscal Profile and Budgeting Instructions, n.d.; Salary Table, 2022). The newly hired staff at the USFWS and NFWF ranges from General Schedule (GS) 10 to 15. These staff members will be hired during the first quarter of the year and thus will work for approximately 0.9 Full-Time Equivalent (FTE) in the first year. All staff are expected to work full-time once they are onboarded. Accounting for the working time and location adjustment, the total first-year salary payment is estimated to be $579,000. Fringe benefits for the staff are estimated to be $172,000 (see Appendix: Detailed Budget Tables). The total PS is estimated to be **$751,000.**

Other Than Personal Services (OTPS)

Other Than Personal Services consists of all other expenses apart from Personal costs. For the Program, the contract service to NFWF makes up most of the OTPS. In compliance with the New York Fiscal Profile and Budgeting Instructions, up to 10% of total PS and OTPS budget allocation will be for overhead costs (New York General Schedule Pay Scale for 2022, 2022). Including anticipated travel and conference costs, and contract services for recruitment and to NFWF for the Grant Program, the total OTPS is estimated to be **$3,281,000** (See Appendix: Detailed Budget Tables).

Anticipated Changes in Spending in Year 1

Over the first year, spending for the Program will start slowly, building to its peak in Quarter Three. The budget components will include monitoring and evaluation, research, consulting, social media and marketing, public engagement, and staff recruitment. As the Program is approaching its implementation phase in the first year, the consulting fee will rise, while monitoring and evaluation and research costs will gradually fall to a stable level. Beyond Year 1, implementation costs for public engagement might see a significant rise as outreach efforts are intensified to encourage more local organizations to submit RFPs.

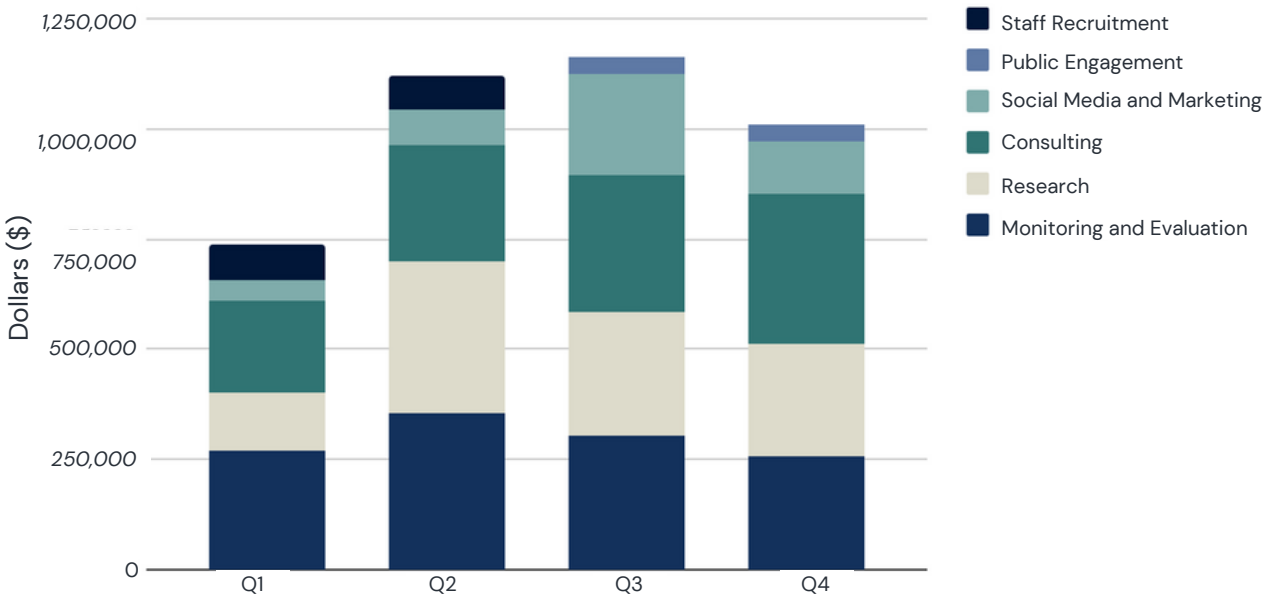
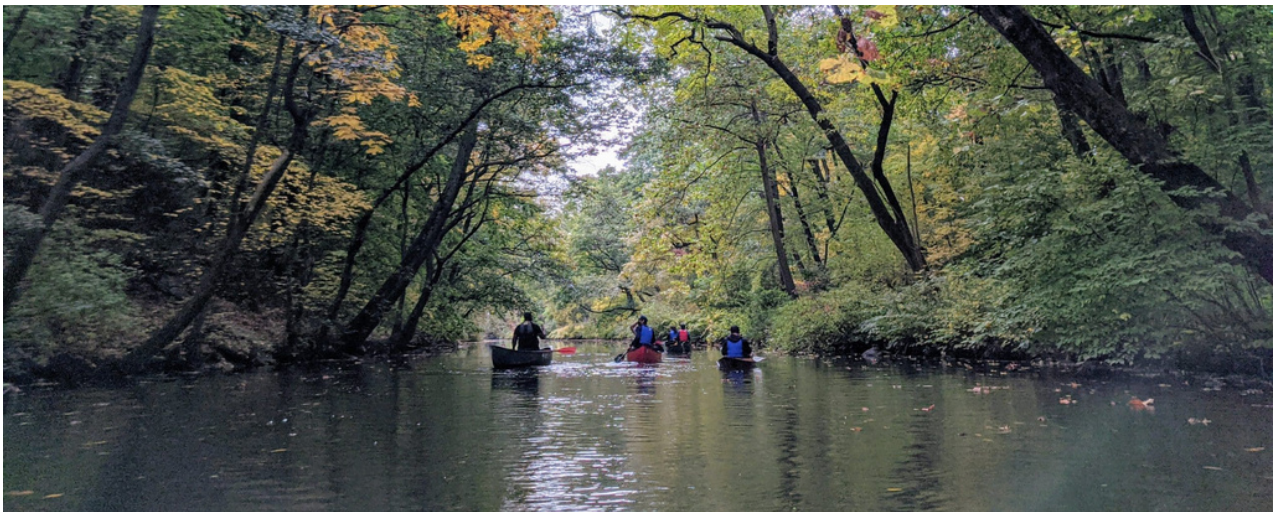


Figure 7. Program Budget in Year One



Bronx River *Image: Bronx River Alliance*

Measuring Success

The success of the Program hinges on the **establishment of a robust framework to evaluate performance and progress**. The framework is built upon measurable goals (Table 4) established by the USFWS with the WAC using metrics such as the amount of grant money committed, the number of grant projects initiated, and pollutant threshold levels. These goals inform what type of information will be included in the reporting process (Figure 8), which allow staff members to **accurately evaluate the effectiveness of the Program and thereby make adjustments as necessary each year.** This impact evaluation system is designed to ensure transparency and foster collaboration across hierarchical tiers within project management, fiduciary contractor, and federal government entities.

Three Phases of Impact Evaluation

Impact evaluation for the Program will occur in three phases, each with a unique set of metrics. Phase One and Two are described in the table below (Table 4), while details for Phase Three are in the Appendix section (see Appendix: Phase Three Performance Metrics).

- **Phase One** occurs in the first year of the Program after authorization and appropriation of funds and assesses the quality of project selection, and from this, what percentage of grant funds have been expended to date. Metrics from Phase One will carry over to the following phases but will be adjusted as needed.
- **Phase Two** occurs in Years 2-3 of the Program and assesses the quality of the project evaluation criteria and whether ongoing projects are on track with their proposals.
- **Phase Three** occurs in Year 4 and onward of the Program. All existing metrics will continue to be measured and new metrics will be included, which will assess whether funded projects are improving the conditions of the Watershed based on the four main issues the region faces.

Scientist conducting research off Pier 40 in the Hudson River to study the local ecology. Their work will be pivotal to support measurement efforts for the Program.
Image: New York Times

Table 4. Detailed Performance Metrics

Phase One: Year One of Program Operation		
Metric	Target	Rationale
# grants with NFWF	> 1 grant per watershed	Ensures equal representation of funded projects across the seven local watersheds
# projects initiated	> 3 projects per watershed initiated	Ensures the program is in progress and tracks which approved projects have begun work
% of grant money committed to projects	> 75% total grant money	Connects the expenditure of grant funding to the evaluation of project selection criteria, and allows NFWF to understand whether criteria for project selection is too restrictive
Phase Two: Years 2-3 of Program Operation		
% of projects on time and on budget to their project proposals	> 85% projects completed on time and on budget	Allows NFWF to oversee project performance and expectations
Win Rate (i.e. rate of project proposals funded versus project proposals submitted) (Neese & Boll, 2019)	> 90%	Allows NFWF to assess if the project selection criteria needs to be reevaluated

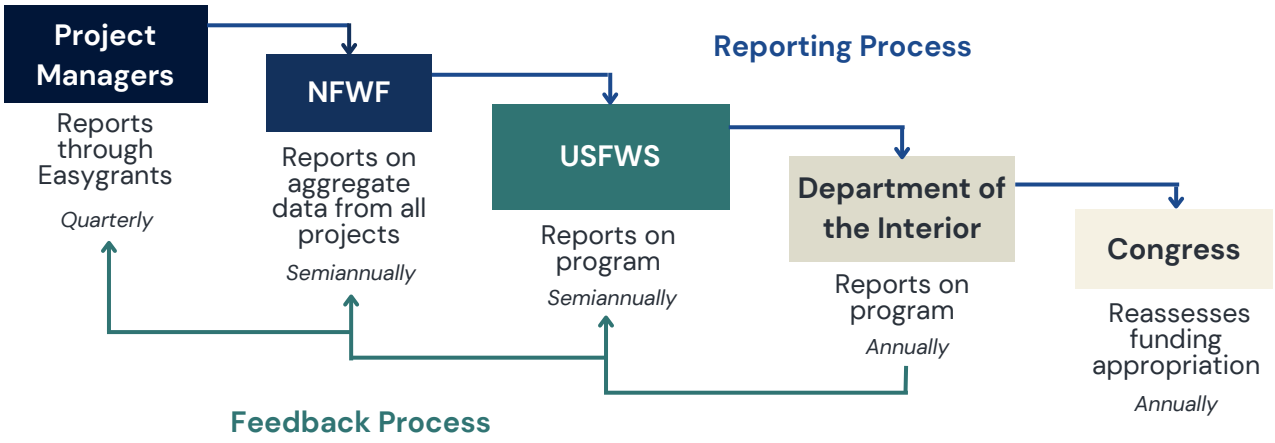


Figure 8. Reporting and Feedback Process for Measuring Success

Impact evaluation is critical to evaluating the success of the Program and helps achieve program goals by **facilitating effective communication** between inter-organizational supervisors and program managers. This performance measurement system applies similar metrics and approaches used in the Delaware Program and Chesapeake Bay Stewardship Fund (National Fish and Wildlife Foundation, 2017; National Fish and Wildlife Foundation, 2019). With specific, measurable, attainable, relevant, and timely metrics, informed decisions can be made to manage projects based on performance data. To promote accountability and determine the efficacy of the grants, regular reporting is essential (Figure 8). The Program expects quarterly reports from the local watersheds to NFWF, biannual reports to the USFWS, and annual reports to the Department of the Interior. The reports analyze actions, behaviors, and results among program staff and implementation contractors, and provide transparency regarding productivity levels externally. Reporting is crucial for **evaluating and monitoring progress, promoting transparency, elucidating the strengths and weaknesses of the program framework, and informing necessary adjustments for improvement**. By developing reliable performance indicators and quantifying the status of the Program's activities, organizations may better assess whether intended outcomes are achieved, and that progress is being made toward the ultimate goals of improving water quality, protecting habitats, mitigating climate change, and promoting environmental justice. A comprehensive performance management system monitors success and assists in modifying the program goals and framework as needed to advance the restoration and protection of the NY-NJ Watershed.

Data collection along the Hudson River *Image: Lamont-Doherty Earth Observatory*

Year One Master Calendar

The master calendar (Table 5) for the first year's implementation of the Act **presents key tasks to be delegated and deliverables to be completed during the course of program execution.** The calendar serves as a guideline of outputs and a timeline for when activities must be accomplished. This ensures that program goals are on track to be met. Through regular evaluations, organizations may assess the need for adjustments or additional resources to improve the program's operational plan and make changes accordingly.

Table 5. Master Calendar

Phase	Task	Primary Agency	Month 1	2	3	4	5	6	7	8	9	10	11	12
Recruit and finalize staffing plan for NY-NJ Restoration Program	Identify and shortlist officers in the U.S. Fish and Wildlife Service to serve as staff members for Restoration Program	USFWS												
	Conduct community outreach and surveys to identify technical expertise needed for Restoration Program	USFWS												
	Identify and shortlist officers in the National Fish and Wildlife Foundation to serve as staff members for Grant Program	USFWS												
	Identify and shortlist relevant experts based on community feedback and commence the contract recruitment process	USFWS												
	Shortlist potential members from local partner organizations to form the final NY-NJ Watershed Advisory Committee	USFWS												
	Finalize members of the NY-NJ Watershed Advisory Committee	USFWS												
	Finalize contracts of experts hired to support the Restoration Program	USFWS / NFWF												
	Conduct Quarter 1 evaluation and produce report	NFWF												
Research and establish priorities of NY-NJ Restoration Program	Research on Watershed needs by experts in collaboration with members of the Advisory Committee	USFWS												
	Finalize priorities for Restoration Program	USFWS												
	Establish grant criteria based on conclusions drawn from research	NFWF												
	Finance and budgeting conference	NFWF												
	Conduct mid-year status evaluation of implementation progress and produce report	NFWF												
Receive and evaluate proposals	Finalize grant criteria and scoring system to evaluate grant proposals	NFWF												
	Announce and publicize grant application	USFWS / NFWF												

	Initiate request for proposals (RFP) process and evaluate on a rolling basis	NFWF	
	Conduct Quarter 3 evaluation and produce report	NFWF	
Commit grants and review performance	Score RFPs and finalize grant awardees	NFWF	
	Commit first round of approved grants	NFWF	
	Finance and budgeting conference	NFWF	
	Assess output metrics to establish baseline understanding of what projects are selected	NFWF	
	Conduct Quarter 4 evaluation and produce annual report	NFWF	
	Communicate and incorporate feedback to make appropriate adjustments to program framework	NFWF	

Green infrastructure, such as these green roofs on the Milstein Center at Barnard College, are examples of urban initiatives that can be implemented to mitigate urban runoff, counter the urban heat island effect, and benefit the overall health of the Watershed (U.S. EPA, 2014). *Image: Silman*

Conclusion

The program design detailed in this report not only complements S.3484's policy goals and administrative structure, but also aligns with and enhances the work of the stakeholder entities involved. It is a well-grounded approach that builds upon the framework of existing localized jurisdictions within the Watershed, which will lead to a more seamless implementation process, especially as one of the Act's primary mechanisms is to coordinate across varying levels of authority in the region. Direct involvement from each local watershed and adherence to an established watershed-wide criteria will help to ensure equitable, efficient distribution and use of grants to advance projects that improve the health and well-being of local communities and the Watershed as a whole.

The longevity of the New York-New Jersey Restoration and Grant Program is tied to the ever-changing political environment, a factor that will need to be considered at every stage of its implementation. It is also important to recognize that for enduring change to happen in the Watershed, the Act's provisions will likely have to be renewed beyond 2027. Therefore, the Program must be implemented in a way that fosters consistent support from both community stakeholders and politicians to reduce skepticism and boost advocacy. To do this, we emphasize the importance of communication and performance measurement to determine how funds are used in the coordination, execution, and provision of assistance for restoration activities. These efforts will involve leveraging nature-based solutions, conducting environmental monitoring, and engaging the public to improve water quality, sustain fish and wildlife habitats, and enhance climate resilience. In doing so, the ultimate goal is for the programs in S.3484 to enjoy broad support over time and to ensure lasting positive impact for the New York-New Jersey Watershed.

Raritan River *Image: NYNJ Baykeeper*

Appendix

List of Stakeholder Interviews

Between September and November, the team conducted nine interviews with stakeholders within the Watershed to understand existing issues and implementation:

1. *Butler, E. & Purdy, I. (2022) Interview by Christine Ow, Lauren Farmer and Gan Sylvia. [Google Meet]. 14 October.*
    a. Elizabeth Butler is the Chief of the New Jersey Watershed Management Section at EPA and oversees the National Estuary Program and the Urban Waters Federal Partnership Program. Irene Purdy is a Project Manager at EPA and oversees the Bronx and Harlem Rivers Watershed within the Urban Waters Federal Partnership Program.
2. *Czajkowski, K. (2022) Interview by Christine Ow and Pauline Jozefiak. [Google Meet]. 27 September.*
    a. Katherine Czajkowski is the Mohawk River Watershed Coordinator at the New York State Department of Environmental Conservation overseeing the Mohawk River Basin Program.
3. *Knutson, K. (2022) Interview by Hailey Moll, Gan Sylvia and Pauline Jozefiak. [Google Meet]. 12 October.*
    a. Kelly Knutson is the Director of the Coalition for the Delaware River Watershed, which unites organizations and advocates for restoring and protecting the Delaware River Basin.
4. *Miller, M. (2022) Interview by Christine Ow and Hailey Moll. [Google Meet]. 19 September*
    a. Miranda Miller is a Legislative Assistant for Representative Paul D. Tonko (NY-20) leading a portfolio in Natural Resources & Environment
5. *Pirani, R. (2022) Interview by Hailey Moll and Yueyue Yu. [Google Meet]. 27 September.*
    a. Robert Pirani is the Program Director of the New York-New Jersey Harbor & Estuary Program (HEP) at the Hudson River Foundation.
6. *Shrading, E. (2022) Interview by Hailey Moll and Gan Sylvia. [Google Meet]. 29 September.*
    a. Eric Shrading is the Field Supervisor of the New Jersey Field Office of the USFWS overseeing Ecological Services.
7. *Slattery, M. (2022) Interview by Gan Sylvia and Hailey Moll. [Google Meet]. 21 October.*
    a. Michael Slattery is the Landscape Conservation Coordinator at the USFWS and is in charge of the Delaware River Program.
8. *Stinnette, I. (2022) Interview by Hailey Moll and Songze Qu. [Google Meet]. 29 September.*
    a. Isabelle Stinnette is the Restoration Program Manager of the HEP at the Hudson River Foundation and oversees habitat preservation and restoration activities within the harbor and its estuaries.
9. *Yeh, A. (2022) Interview by Lauren Farmer and Eirlys Chui. [Google Meet]. 23 September.*
    a. Alice Yeh is a Project Manager at EPA overseeing the Lower Passaic River Restoration Project.

Detailed Budget Tables

Appendix Table 1 New Staff Hires (PS)

Position	Staff Level	FTE	Salary
Manager	GS-15	0.93	$196,990
Program and Granting Accountant	GS-10	0.93	$88,121
Program Design Consultant	GS-14	0.93	$163,062
Planning and Permitting	GS-13	0.88	$130,531
Total Staffing			**$578,703**

Appendix Table 2 Fringe Benefit for New Staff Hires (PS)

Item	Cost
Insurance	$ 67,439
Pension	$ 19,593
Social	$ 44,271
Award	$ 40,509
Total Fringe Benefits	**$ 171,812**

Appendix Table 3 Other Than Personal Services Costs (OTPS)

Item	Cost
Travel	$ 68,075
Recruiting Fee	$ 157,021
Conference	$ 35,880
Contract for Grant Program	$ 3,020,074
Total OTPS	**$ 3,281,051**

Phase Three Performance Metrics

Phase Three: Years 4-Onward of Program Operation	
Rationale	
Ensure the projects funded by the Grant Program are assisting in meeting restoration outcomes for the Watershed	
Metric	Target
<u>Water Quality:</u> 1. Pounds of nitrogen, phosphorous, and sediment avoided annually (measured separately) 2. Number of Combined Sewer Overflow (CSO) events annually 3. Number of days with high levels of bacteria <u>Climate Change:</u> 1. Inches of sea level rise annually 2. Annual mean temperatures <u>Habitat Restoration:</u> 1. Miles of beachline restored 2. Acres of wetland habitat restored 3. Population counts of critical species, such as: a. Shortnose sturgeon b. American eel 4. Number of flood events annually 5. Miles of stream opened <u>Environmental Justice:</u> 1. Number of new or improved access points to public waterfront 2. Percentage of projects in disadvantaged communities 3. Number of citizen scientists and volunteers engaged in projects 4. Number of people educated about public waterfront access points and the Restoration Program	<u>Water Quality:</u> 1. Total nitrogen levels below threshold of 1.2mg/L and total dissolved oxygen and chlorophyll-a levels above thresholds of 2.3mg/L and 5µg/L respectively 2. Reduce to <15 events annually 3. Reduce to <15 days annually <u>Climate Change:</u> 1. Limit sea level rise to less than 21 inches by 2050 2. Limit mean annual temperature increase to less than 5.7 °F by 2050 <u>Habitat Restoration:</u> 1. At least 2 miles of shoreline restored 2. At least 3000 acres of wetland habitat restored 3. Increase overall population size by 15% in the returned population after spawning season 4. Accretion – Erosion Rate > 0 5. At least 10 stream corridors conserved <u>Environmental Justice:</u> 1. At least 20 access sites with improved accessibility 2. 40% minimum annually (in accordance with the Justice40 Initiative) 3. 250 new volunteers annually 4. 100% of residents in the Watershed have received literature in the mail; 40% of residents have received a public presentation

References

Report

- 'Are there amount restrictions for granting rating-based awards? | OPM.gov' (n.d.) U.S. Office of Personnel Management. Available at: https://www.opm.gov/frequently-asked-questions/new-performance-management-faq/awards-rating-based/are-there-amount-restrictions-for-granting-rating-based-awards/ [Accessed: 2 December 2022]
- 'Benefits Administration Letter 14-102' (2014) United States Office of Personnel Management, The Federal Government's Human Resources Agency. Available at: https://www.opm.gov/retirement-center/publications-forms/benefits-administration-letters/2014/14-102.pdf [Accessed: 2 December 2022].
- 'Cost of Insurance' (n.d.) U.S. Office of Personnel Management. Available at: https://www.opm.gov/healthcare-insurance/healthcare/reference-materials/reference/cost-of-insurance/ [Accessed: 2 December 2022].
- Da Silva, R., Dujardin, C., White, D., Christiana, L., Pirani, R., Strehlau, L. (2021) 'New York-New Jersey Harbor-Wide Water Quality Report 2010-2017'. Hudson River Foundation. New York, NY. Available at: https://www.hudsonriver.org/wp-content/uploads/2021/07/WaterQualityReport2021.pdf [Accessed 8 June 2022].
- Dahl, T.E. (1990) 'Wetlands losses in the United States 1780's to 1980's.' U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C. 13 pp. Available at: https://www.fws.gov/wetlands/documents/Wetlands-Losses-in-the-United-States-1780s-to-1980s.pdf [Accessed 17 Aug 2022].
- Delaware River Program (n.d.) NFWF. Available at: https://www.nfwf.org/programs/delaware-river-program [Accessed: 4 December 2022].
- EDF (2022) Urgent Action Needed to Prepare New York and New Jersey Communities for Sea Level Rise, Environmental Defense Fund. Available at: https://www.edf.org/media/urgent-action-needed-prepare-new-york-and-new-jersey-communities-sea-level-rise
- 'Fiscal Profile and Budgeting Instructions' (n.d.), p. 9. Available at: https://www.opm.gov/retirement-center/publications-forms/benefits-administration-letters/2014/14-102.pdf https://otda.ny.gov/programs/shelter/documents/Part-B-FISCAL-PROFILE-INSTRUCTIONS.pdf [Accessed: 2 December 2022].
- Heidbreder, S., Lewis, E. and Moreno, V. (2022) 'Delaware Watershed Conservation Fund', p. 7.
- 'Justice40 Initiative | Environmental Justice' (n.d.) The White House. Available at: https://www.whitehouse.gov/environmentaljustice/justice40/ [Accessed: 2 December 2022].
- Katherine, C. (2022) 'Interview with Katherine Czajkowski, Mohawk Watershed Coordinator at NYS Department of Environmental Conservation'.
- National Fish and Wildlife Foundation (2017) 'Delaware River Watershed Business Plan'. National Fish and Wildlife Foundation. Available at: https://www.nfwf.org/sites/default/files/2019-12/delaware-river-watershed-business-plan.pdf [Accessed: 26 October 2022].
- National Fish and Wildlife Foundation (2019) 'FieldDoc.org User Guide For 2019 NFWF Chesapeake Bay Stewardship Fund Applicants'. National Fish and Wildlife Foundation. Available at: https://www.nfwf.org/sites/default/files/chesapeake/Documents/field-doc-user-guide.pdf [Accessed: 26 October 2022].
- National Fish and Wildlife Foundation 2021 Annual Report (2021) 'Annual Report'. National Fish and Wildlife Foundation, p. 64. Available at: https://www.nfwf.org/sites/default/files/2022-03/NFWFar20220304web.pdf [Accessed: 20 November 2022].

Cont'd

- Neese, A.E. and Boll, J.A. (2019) 'Designing Performance Metrics for Grant Professionals: Recommendations from the Field', Grant Professionals Association, 6(2). Available at: http://www.informz.net/GPASSOC/data/images/Strategy%20Papers/Strategy_Papers_Volume_6_Issue_2.pdf [Accessed: 26 October 2022].
- 'New York General Schedule (GS) Pay Scale for 2022' (2022) Available at: https://www.federalpay.org/gs/2022/newyork [Accessed: 2 December 2022].
- NYDEC (2020) 'Hudson River Estuary Action Agenda 2021-2025: Opportunities for Action'. New York State Department of Environmental Conservation. Available at: https://www.dec.ny.gov/docs/remediation_hudson_pdf/hreaa2021.pdf [Accessed: 8 June 2022].
- O'Neil, J.M. et al. (2016) 'New York Harbor: Resilience in the face of four centuries of development', Regional Studies in Marine Science, 8, pp. 274–286. Available at: https://doi.org/10.1016/j.rsma.2016.06.004 [Accessed: 17 Aug 2022].
- Pirani, R and Boicourt, K. (2018) Climate Change; And its Impact on the NY-NJ Harbor & Estuary Program, Hudson River Foundation. New York, NY. Available at: https://www.hudsonriver.org/NYNJHEPClimateVulnerability.pdf [Accessed: 17 Aug 2022].
- Politico (2012) Gray and green: The story of a big-city sewer system that worked too well. Available at: https://www.politico.com/states/new-york/albany/story/2012/05/gray-and-green-the-story-of-a -big-city-sewer-system-that-worked-too-well-079265 [Accessed: 17 Aug 2022].
- 'Premiums' (n.d.) U.S. Office of Personnel Management. Available at: https://www.opm.gov/healthcare-insurance/healthcare/plan-information/premiums/ [Accessed: 2 December 2022].
- 'S.921 - 114th Congress (2015-2016): Delaware River Basin Conservation Act of 2015.' (2016) Congress.gov. Available at: https://www.congress.gov/bill/114th-congress/senate-bill/921/summary/00. [Accessed: 4 December 2022]
- 'S.3484 - 117th Congress (2021-2022): New York-New Jersey Watershed Protection Act.' (2022) Congress.gov. Available at: https://www.congress.gov/bill/117th-congress/senate-bill/3484. [Accessed: 4 December 2022]
- 'Salary Table 2022-GS' (2022) OPM.gov. Available at: https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2022/GS.pdf [Accessed: 2 December 2022].
- Sustainable South Bronx (2008) "In My Backyard: A Profile of Hunts Point with Recommendations for Realizing Community Members' Vision for their Neighborhood." Sustainable South Bronx. Available at: http://www.warnkecc.com/wp-content/uploads/wcc_ssb_report_2408.pdf
- 'Testimony of Andy Bicking: Director of Government Relations and Public Policy Scenic Hudson' (2022) US House, Committee on Natural Resources. Available at: https://naturalresources.house.gov/imo/media/doc/Bicking%20Testimony%20-%20WOW%20Leg%20Hrg%201.20.22.pdf [Accessed 8 June 2022].
- 'Testimony of Stephen Guertin Deputy Director for Policy, U.S. Fish and Wildlife Service, Department of the Interior, On H.R. 4057, Albatross and Petrel Conservation Act; H.R. 4092, Coastal Habitat Conservation Act of 2021; H.R. 4677, New York-New Jersey Watershed Protection Act; H.R. 4716, Refuge From Cruel Trapping Act of 2021; H.R. 5973, Great Lakes Fish and Wildlife Reauthorization Act of 2021; H.R. 6023, Multinational Species Conservation Funds Semipostal Stamp Reauthorization Act of 2021; and H.R. 1546, Combating Online Wildlife Trafficking Act of 2021.' (2022) 117th Congress, House Committee on Natural Resources, Subcommittee on Water, Oceans, and Wildlife. Available at: https://naturalresources.house.gov/imo/media/doc/Guertin%20Testimony%20-%20WOW%20Leg%20Hrg%201.20.22.pdf [Accessed: 15 September 2022].
- U.S. EPA (2014) Using Green Roofs to Reduce Heat Islands. Available at: https://www.epa.gov/heatislands/using-green-roofs-reduce-heat-islands [Accessed: 3 December 2022].

Cont'd

- U.S. Fish & Wildlife Service (2017) 'Delaware River Basin Restoration Program: A conservation action partnership'. FWS.Gov. Available at: https://www.fws.gov/sites/default/files/documents/Delaware-River-Basin-Restoration-Program-Framework_508_2022.pdf [Accessed: 15 September 2022].
- U.S. Fish & Wildlife Service (2022) A transformative investment in the Delaware River watershed. FWS.Gov. Available at: https://www.fws.gov/story/transformative-investment-delaware-river-watershed [Accessed: 15 September 2022].
- U.S. Fish & Wildlife Service (n.d.). Delaware River Basin Restoration. FWS.Gov. Available at: https://www.fws.gov/program/delaware-river-basin-restoration [Accessed: 15 September 2022].

Images:

- Alliance, B.R. (2021) The Indigenous History of the Bronx River: A Story of Honor. Available at: https://bronxriver.org/post/greenway/the-indigenous-history-of-the-bronx-river-a-story-of-honor/ [Accessed: 3 December 2022].
- Barnard College Milstein Center. (n.d.) [Digital Image]. Available at: https://www.silman.com/work/projects/view/barnard-milstein-center/ [Accessed: 3 December 2022].
- Daluja, S. (2018) For the Delaware River Basin, a Partial Fracking Ban Is a Partial Victory [Digital Image]. Available at: https://www.nrdc.org/stories/delaware-river-basin-partial-fracking-ban-partial-victory [Accessed: 3 December 2022].
- DeWitt, S. (2020) Billion Oyster Project installs shellfish in the waterway at Brooklyn Bridge Park | amNewYork [Digital Image]. Available at: https://www.amny.com/news/billion-oyster-project-installs-shellfish-in-the-waterway-at-brooklyn-bridge-park/ [Accessed: 3 December 2022].
- Fremson, R. (2018) Researching Off Pier 40 [Digital Image]. Available at: https://www.nytimes.com/2018/06/05/nyregion/new-york-today-hudson-river-fish.html [Accessed: 3 December 2022].
- Getty Images (n.d.) Hudson River Named America's Second-Most Endangered River [Digital Image]. Available at: https://hudsonvalleypost.com/hudson-river-named-americas-second-most-endangered-river/ [Accessed: 3 December 2022].
- Lamont Doherty Earth Observatory (no date) Hudson River Education - Running Hudson Workshops at Lamont-Doherty Earth Observatory Field Station (Research - Seining) [Digital Image]. Available at: https://lamont.columbia.edu/sites/default/files/styles/cu_crop/public/content/HudsonRiverEducation_Running%20Hudson%20Workshops_4x3.jpg?itok=-9bJQX8I [Accessed: 3 December 2022].
- McNeil, T. (2020) Mohawk River in Autumn [Digital Image]. Available at: https://upload.wikimedia.org/wikipedia/commons/b/b4/Mohawk_River_in_autumn.jpg [Accessed: 3 December 2022].
- NOAA (n.d.) Freshwater Mussels [Digital Image]. Available at: https://darrp.noaa.gov/sites/default/files/node-images/Unremediated%20with%20dense%20mussels%20%281%29.JPG [Accessed: 3 December 2022].
- nj.com (n.d.) Future site of Skyway Park - a public space on rehabilitated Superfund land [Digital Image]. Available at: https://www.nj.com/galleries/M2WV7QH5JVAW3HKLB3Y4K3NI3M/ [Accessed: 3 December 2022].
- Riverkeeper (2019) Raritan River [Digital Image]. Available at: https://www.nynjbaykeeper.org/wp-content/uploads/2019/05/riverkeepeer4.jpg [Accessed: 3 December 2022].

COLUMBIA | SIPA
COLUMBIA CLIMATE SCHOOL

Program Design for S.3484 New York–New Jersey Watershed Protection Act

Fall Workshop MPA-ESP Program 2022-2023