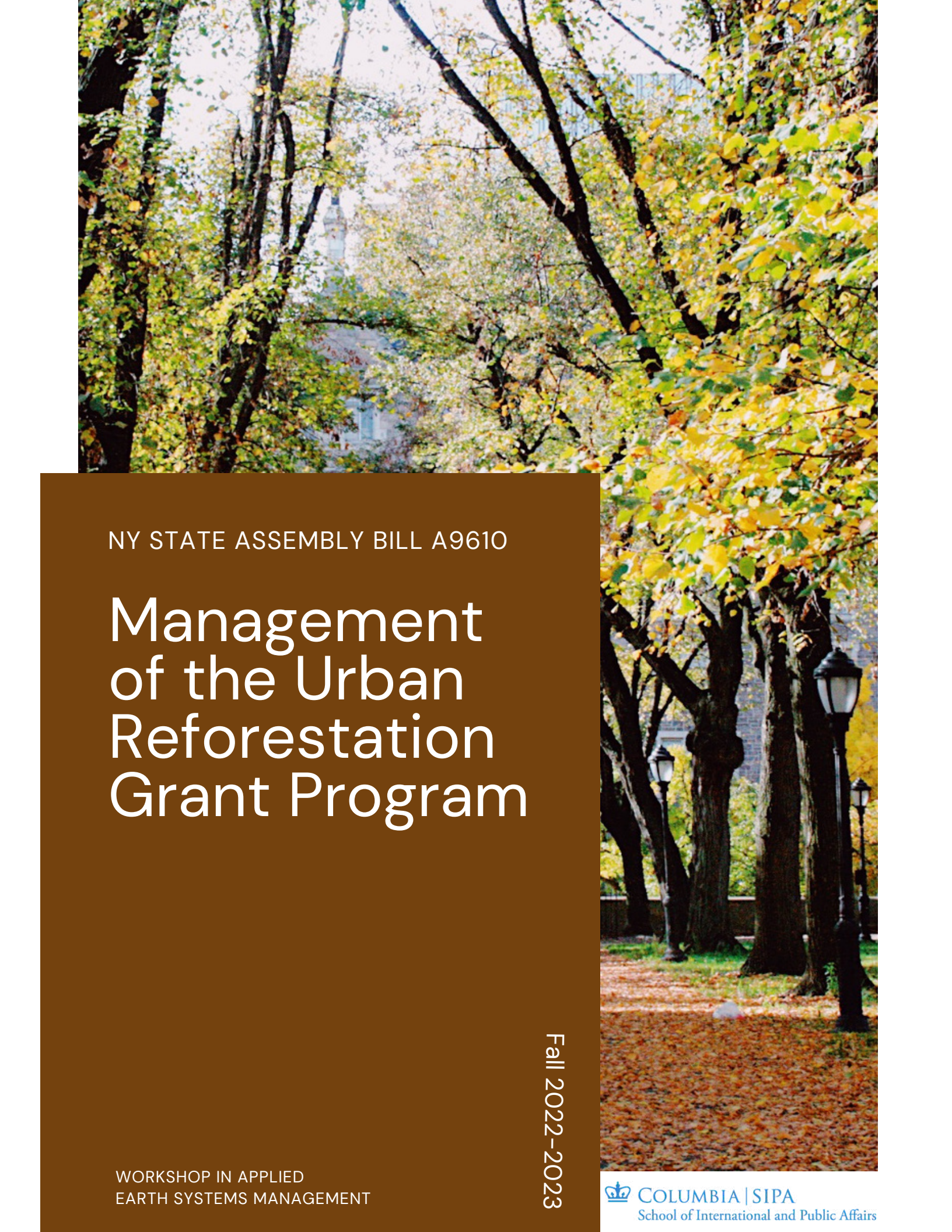




NY STATE ASSEMBLY BILL A9610

Management of the Urban Reforestation Grant Program

WORKSHOP IN APPLIED
EARTH SYSTEMS MANAGEMENT

Fall 2022-2023



COLUMBIA | SIPA

School of International and Public Affairs

03	Glossary
04	Executive Summary
06	Introduction Lasting Impacts: Urban Forestry in New York State Land Use Change from 1800s to Present Day
08	Legislative Summary A9610 Specifications & Directives A9610 Current Status The Political Climate & Stakeholder Analysis
14	Program Design Design Principles The Methodology Program Workflow & Breakdown
20	URA Implementation The Implementation Plan Overview of the Proposed Staffing Plan Organizational Logistics Overview of URA Budget URA Fiscal Analysis
27	Master Calendar Overview of the Master Calendar Quarterly Breakdown
33	Performance Management The Methodology SMART Evaluation URA in Action
37	Conclusion
39	The Team
44	References

Glossary

AGENCY	FULL DEFINITION
URA	Urban Reforestation Act
DOT	Department of Transportation
NYC Buildings	New York City Buildings
DTF	Department of Taxation and Finance
DOB	New York State Division of Budget – Responsible for coordinating all aspects of the state budget
DEC	Department of Environmental Conservation
NYC Parks	New York City Parks
NYC Planning	New York City Planning
RFA	Request for Application
Eligible Municipality	A New York State municipality eligible to apply for the URA grant
Grants Gateway	The primary outlet for NYS agencies to post upcoming and available funding opportunities
URA Grant Program	The grant program affiliated with New York State Bill A9610

Executive Summary

Urban development has disrupted many crucial natural ecosystems in New York State to cause environmental problems: peak temperatures in cities are higher than in surrounding rural areas, extreme rain and storms overwhelm sewer systems; the high energy intensity of cities produces air pollution and associated health risks for urban residents.

This is especially true in New York State, where 91% of the population—18 million people—live in 127 urban areas and suffer from many environmental problems. Trees and urban vegetation are a natural solution to all of these issues. They lower peak temperatures in cities, absorb excess stormwater, and filter air pollution. However, New York State has steadily lost urban forest acreage in the past decades.

In March 2022, Assemblymember McMahon proposed Bill A9610, the Urban Reforestation Act, to the New York State Assembly. It aims to mitigate urban vegetation loss by creating a direct funding stream for municipalities across the State to plant and sustain trees. Under this bill, funding comes from fees applied to billboards visible from highways across New York State. A report produced by this group in August 2022 explains the scientific background of this initiative (URA Report, 2022).

This report discusses a potential approach to design and execute the Urban Reforestation Act implementation program. It begins by setting context in the first three chapters on the bill's specific mandates for state and city agencies, on the scale of the environmental problem, and on the political climate surrounding the bill. Next, in "Program Design", the report details the design methodology and discusses program design options along with their advantages and disadvantages. The following three chapters cover the key pillars of implementation: staffing, budget, and master calendar. The report concludes with a review of systems in place to manage performance.

A team of eleven Master of Public Administration candidates at Columbia University's School of International and Public Affairs compiled this report as part of a project spanning two semesters.



Introduction

Lasting Impacts: Urban Forestry in New York State

Overview

New York State's Urban Reforestation Act (URA) aims to bolster urban forestry in New York. This section details the state's biome, climate, population, and land-use characteristics to contextualize the bill's potential impacts.

Urban Forestry

The Department of Environmental Conservation (DEC) defines urban forests as "All of the trees within a town, village, or city...(including) street and yard trees, parks, cemeteries, golf courses, school grounds, and undeveloped green spaces." According to the 2020 New York State Forest Action Plan, urban and community forests cover roughly 7% of the 18.7 million acre tree canopy in New York.

Impact of Urbanization

Converting forests to urban areas and decreasing urban vegetation has disrupted natural systems within New York State's cities. This drastic land use change increased stormwater runoff and weakened the environment's ability to regulate temperature and filter air pollutants. The disruption of these systems threatens infrastructure and human health through increased flooding and higher risks of illness due to heat and poor air quality. In addition, reduced vegetation has also led to biodiversity loss and habitat fragmentation. This ecological damage further impacts urban forests, creating a vicious cycle of tree loss.

Climate Change Impacts

A warming climate has drastically impacted New York State. Precipitation from storms has increased by 70% since 1958, and temperatures have risen by almost 2.5 degrees Fahrenheit since the start of the 20th Century. These rising temperatures change natural patterns—for example, in many areas of New York, vegetation blooms 8 days earlier versus the 1950s baseline (Impacts of Climate Change in New York, 2014).

Introduction

Land Use Change from 1800s to Present Day

By 1840, New York State was home to seven of the nation's 30 largest cities.

The state's economic dominance through the 1800s spurred massive conversion of forest to agricultural land to feed a growing population, house urban residents, and create industrial sites. By 1880, forested land cover in New York State reached its lowest point, with only 25% of pre-colonial forest stocks remaining (Forests and the Environment, n.d.).

By the early 1900s, the glaring change in forest cover prompted the New York Forest Fish and Game Conservation Commission to sound the alarm. The 1929 State Reforestation Act and 1931 Hewitt Amendment pioneered statewide reforestation efforts, resulting in the state of the rural forests today (History Of State Forest Program, n.d.). However, this reforestation did not extend to the rapidly-expanding urban environments built to house and transport a booming population.

Suburbanization took off in the 1950s, as the automobile emerged as the dominant mode of transport, and industries migrated away from the region. This is exemplified in cities like Buffalo, which tried to entice businesses to stay by connecting business districts to outlying suburbs through highways. This reduced forest cover by cutting through forested land to accommodate infrastructure for commuting residents (Mehaffy, 2016).

This pattern of urban expansion has continued in the 21st century. Today, 19.8 million people call New York State home. Roughly 18 million residents (about 91%) live in urban towns and cities with populations between 20,000 and 1 million people (U.S. Census Bureau QuickFacts, n.d.). Urban areas comprise 10.3% of New York's total land area, approximately 3.5 million acres. **From 2001 to 2010, humans converted 637 square miles of New York State forest into cities—equivalent to more than 180 Central Parks.** A growing body of research has recently revealed the ecological, social, and economic impacts of the cumulative devegetation of New York's cities.



Legislative Summary

The URA builds on an **existing, robust** environmental grant ecosystem.

The bill aims to restore urban vegetation in New York state's urban areas to mitigate environmental problems such as the urban heat island effect, water drainage issues, poor air quality due to pollution, and a lack of biodiversity. The bill also promotes economic benefits such as increasing urban area aesthetic appeal, which consequently raises property values.

To achieve this purpose, the URA amends three existing laws.

It amends the New York State Transportation law Section 88 by adding subdivision 5-a. This amendment imposes a \$1,000 annual fee per billboard, but only if it is visible from an interstate or primary highway. It also creates a \$500 fine for non-compliance, with a \$100 fine for every additional day of non-compliance. Exceptions include government signs, signs advertising the business they are sited on, direction signs, and advertising owned by companies that own or rent five or fewer billboards. The function of identifying eligible billboards and levying the fee will be handled by the New York Department of Transportation Right of Way Office and New York City Department of Buildings Sign Enforcement Unit.

It modifies the New York State Finance law by adding Section 91-H to create the "NY State Urban Reforestation Fund" where all the revenue collected by fees and fines will be housed. The Comptroller in the New York State Division of Budget and the Commissioner of the New York State Department of Taxation & Finance will jointly administer this program.



The URA's purpose is to create a fair and adequate funding mechanism for the development of New York's urban forests programs, as described in Article 53 of the Environmental Conservation Law.

A9610 Specifications & Directives

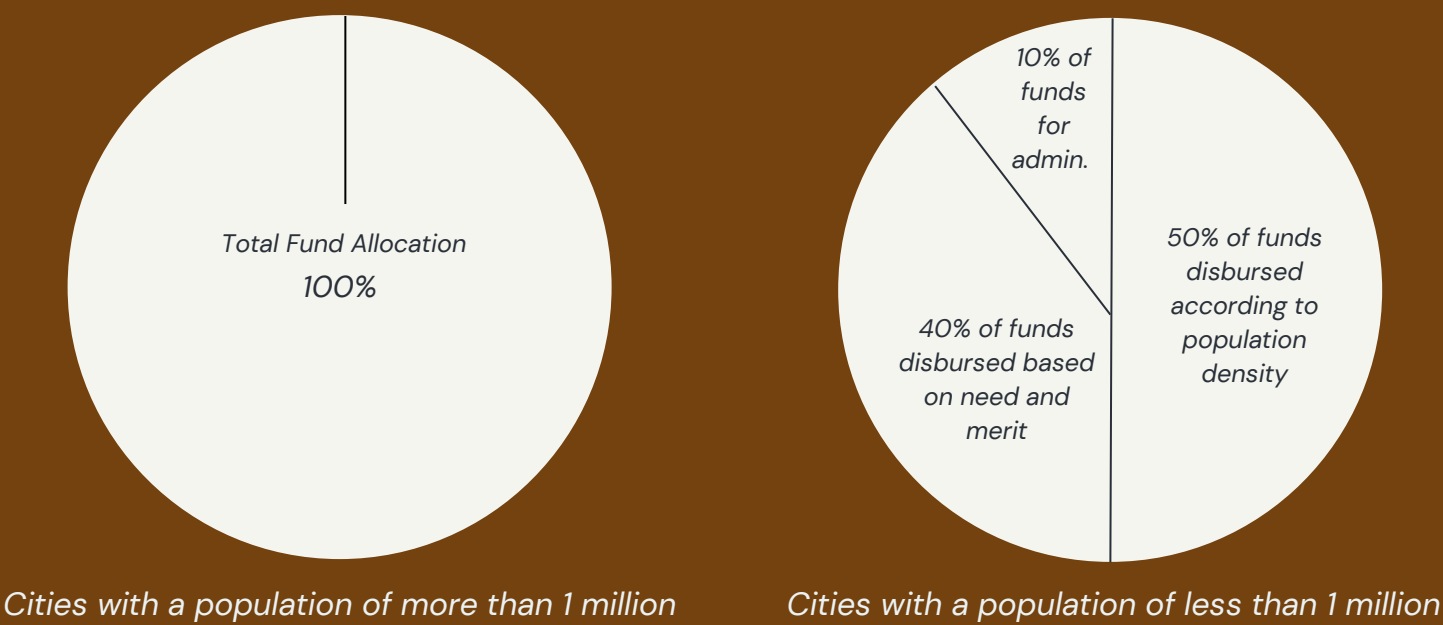
The URA modifies and expands Article 53 of the state’s Environmental Conservation Law. Eight new subdivisions are added (8 to 15) to Section 53–0303 and an entire new section section 53–0309 is added.

These amendments create work standards and direction for hiring of forestry roles with the funds collected. The Bill mentions the need for specific roles involved in urban reforestation, mainly professional foresters (someone who graduated from a school of forestry or is accredited by a professional forestry association). The necessity for these specific roles is justified by the specificity of the actions required to implement urban reforestation. These activities include conservation, tree planting, pruning, and maintenance—covering the entire lifecycle of reforestation from planning to maturity. It also specifies key roles to be hired such as professional foresters. Finally, the URA directs fund allocation based on population size, population density, and need for vegetation planting and maintenance.

The New York State Department of Environmental Conservation and New York City Parks Department will manage grant allocation and implementation of the URA’s standards.

The figure below shows the fund breakdown based on population size, population density, need, and merit.

Figure 1: A9610 Funding Breakdown



A9610 Current Status

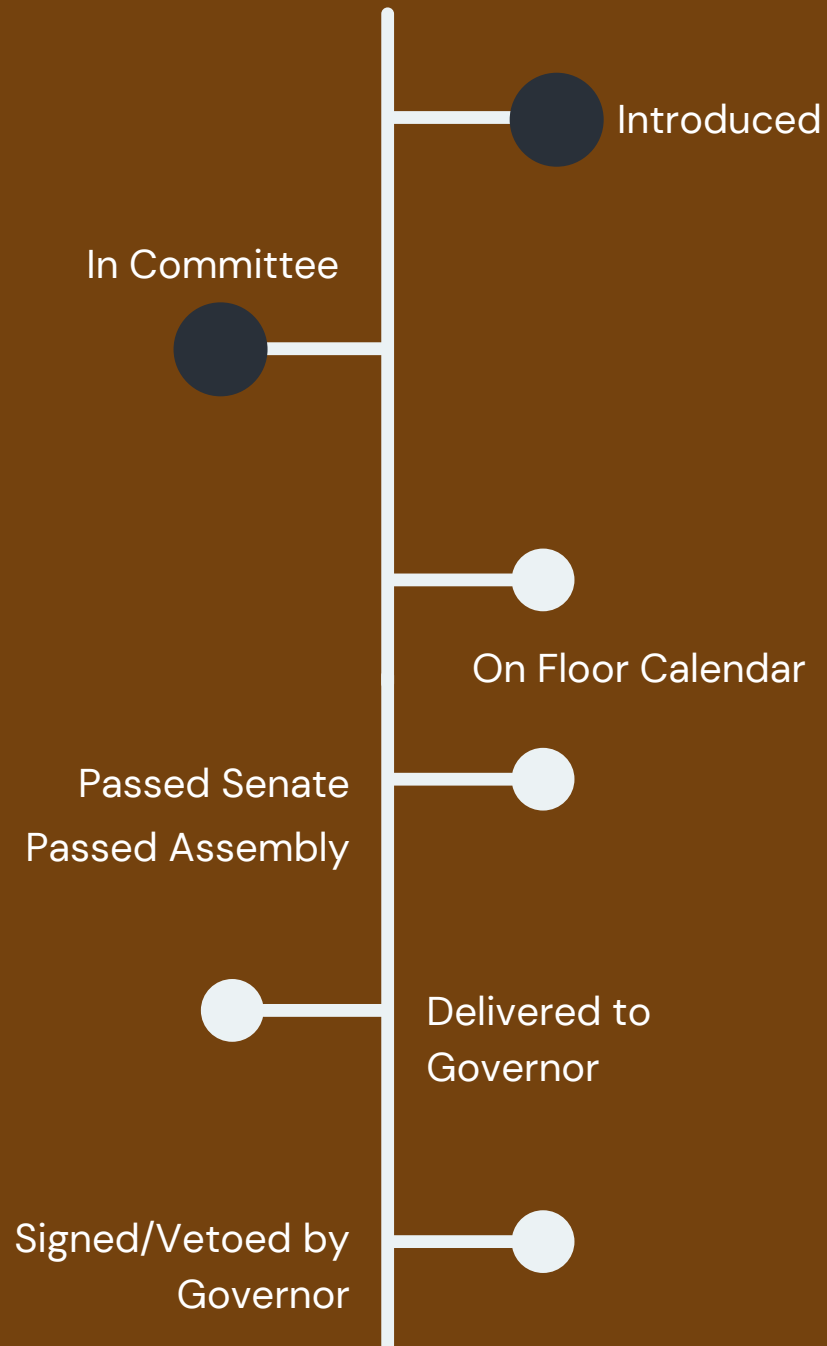
Democratic NYS Assemblywoman Karen McMahon introduced the Urban Reforestation Act (New York State Assembly Bill A9610), on March 23rd, 2022 in the 2021-2022 legislative session. McMahon is a Democratic Assemblywoman representing the 146th Assembly District within the Buffalo-Niagara Falls metropolitan area.

Three out of four bill co-sponsors are New York City representatives – Assemblymembers Maritza Davila and Jo Ann Simon represent Brooklyn districts, while Assemblymember Eddie Gibbs represents a district in Upper Manhattan. The 4th sponsor, Aileen Gunther, represents the 100th Assembly District, covering Orange County.

Title 3 of Article 53 of the New York State Environmental Conservation Law was established to promote urban forestry and to address the irregular removal of trees and vegetation in urban areas of New York State. The Urban Reforestation Act is an addendum to Article 53. It fills a gap in Article 53 which was a funding gap for urban forestry by creating a dedicated revenue stream to remedy the aforementioned issues.

The URA currently lies in the Committee on Transportation, where it will potentially be discussed during the 2022-2023 legislative session. If it passes through the Committee, it must be placed on the floor calendar to be voted on by both the New York State House and Senate. The figure to the right highlights the URA's current status.

Figure 2: A9610 Timeline



The Political Climate

The Urban Reforestation Act (URA) aims to fund the preservation and expansion of urban vegetation. If the NYS Committee on Transportation approves the Act, it moves to the floor calendar for of the New York State House and Senate.

Assemblymember Sam Hoyt, the original author of the bill, introduced it in 1999 to promote reforestation in the state. The aim was and is to create a dedicated funding stream sourced from taxes imposed on outdoor advertising in NYS. Assemblymember Hoyt envisioned billboards as the funding source because it targets a lucrative industry while avoiding taxing individuals. However, at the time, it was blocked by the Department of Transportation (DOT). It was reintroduced in 2008, again by Assemblymember Sam Hoyt, but was blocked by the same entity. At the source of the failure to pass the act was the billboard lobby, a stakeholder opposed to its success since it could directly affect the billboard industry by impacting its income. The lobby influenced the DOT into blocking the bill from being implemented.

Stakeholder Analysis

Many stakeholders can influence the success or failure of the URA's implementation. The table on the next page outlines these entities and their various roles. This analysis shows that more stakeholders are in favor of the bill passing than against it (4 to 2). Moreover, increasing awareness of environmental issues may bolster the bill's support.

The URA faces one central challenge to passage: the billboard lobby. Although the current political climate (a pro-environment one) would suggest that the bill would easily pass, the billboard lobby has previously blocked the legislation twice. To ensure the bill's successful implementation, additional grassroots organization must support its passage.



This stakeholder matrix shows favorable odds for the URA to pass in the long-term.

Figure 3: URA Stakeholder Matrix

Entity	Assumed Stance	Involvement
New York urban dwellers	Most NY city residents would support passing the URA.	Property values and neighborhood aesthetics would increase. This will likely boost the mental health and strengthen the feeling of ownership and community pride of city residents. On the opposing side, property owners (homes, cars) may be worried about liability caused by tree damage.
Department of Environmental Conservation (DEC)	The DEC would support passing the URA as it aligns with the Department's mission to protect and enhance the overall environment.	The DEC would be responsible for distributing the funds to cities with over 20,000 residents and allocating funding based on population sizes. It will oversee much of the project's components, including hiring personnel.
Department of Finance (DOF)	The DOF would likely support the URA as it would redirect private-sector funds toward city development.	The DOF would work with the state comptroller to administer the funds collected through the billboard taxes. This has the potential to expand their team to create bandwidth to carry out these tasks.
Municipalities over 20,000 residents	Individual city governments would likely support the URA. People view trees as an asset, and funds come from billboards rather than their respective constituents.	The individual governments would receive the funding to plant and maintain trees in their city, boosting property values, and overall aesthetic appeal. Tree planting would also help municipalities reduce citizens' environmental and financial costs.
Department of Transportation (DOT)	The DOT oversees billboard regulations in NY State. The connections between the DOT and billboard industry may affect support for or against the URA.	The DOT is linked to the billboard industry as it regulates the number of billboards allowed on highways and their specific location. The DOT could block the bill as it has twice prior, due to the influence of the billboard lobby which is against the bill passing.
Billboard companies and lobbyists	Billboard companies and their lobbyists would be against passing the URA, as they historically have been.	The bill imposes a tax on billboard companies with five or more billboards for each unit visible from the highway, with fines for noncompliance.

The background of the slide is a close-up photograph of a lawn covered with fallen autumn leaves. The leaves are in various stages of decay, showing a range of colors from bright yellow and orange to deep reds and browns. Patches of green grass are visible between the leaves. A semi-transparent white rectangular box is positioned in the upper half of the image, containing the title text.

URA Grant Program Design

Design Principles

Introduction

The URA establishes the Urban Reforestation Fund (URF), to support urban forestry for 127 eligible municipalities throughout New York State. Revenue from this fund stems from a \$1000 annual fee on eligible outdoor advertising in New York State. These funds are disbursed via grants to eligible municipalities and nonprofits for urban forestry projects ranging from tree inventories to tree planting. The URA mandates complex activities, necessitating a multi-agency effort for program design and implementation. The following principles guided development of the Urban Reforestation Act Grant Program.

Understanding The Foundational Principles

1

Minimizing work and duplication

A collaborative Joint Working Group approach enhances current work streams by centralizing the current environmental grant eco-system at the DEC, avoiding work duplication.



2

Leveraging existing institutional knowledge

Joint Working Groups include industry experts, such as urban foresters and DEC personnel, allowing for an efficient workflow.



3

Promote knowledge sharing and innovation

The entire program design engages with relevant stakeholders along the way, prioritizing knowledge-sharing, conversations, and innovation.



A Closer Look: The Methodology

The Advantages of a Shared Approach

The chosen program design avoids creating new organizational structures, except where necessary to facilitate inter-department communication. This plan utilizes existing billboard registration and fee collection methods. Joint Working Groups will tackle application definition and results sharing steps, key process steps where the benefits of pooling resources and facilitating learning across different state agencies is maximized. This approach allows for efficient program initiation that minimizes disruptions to current systems. It balances the agility of individual agency responsibility with centralization when efficiencies may be gained from resource pooling, information sharing, and breaking down silos.

The Drawbacks of a Shared Approach

Drawbacks of this approach include the time lost to set up Joint Working Groups. This new organizational structure may also create friction as it cuts across jurisdictional boundaries where standard operating procedures must be created from scratch.

Considering Alternative Options

Other options considered included: a fully centralized design and an independent design. The fully centralized design creates Joint Working Groups for billboard survey, application definition, and results sharing i.e the entire program workflow. This option allows for extensive resource pooling and information sharing. However, it increases work duplication in the billboard survey step because NYS Department of Transportation and NYC Sign Enforcement Unit have existing teams to manage outdoor advertising permits. Creating a Joint Working Group for billboard survey will create inefficiency and reduce operating speed by adding bureaucracy at a point where centralization offers no advantage. The independent program design option has the same workflow but without collaboration between NYS and NYC agencies. It breaks down tasks into department-specific subtasks without centralization at any step. This option leverages local and specific expertise while reducing the time spent on establishing inter-departmental teams. However, this option does not allow for resource pooling and information sharing at crucial steps of application definition and results sharing, risking working in silos, hampering learning, and the possibility of worker shortages.

Co-Management of the URA

Key Activities

Given the URA's mandate, the program design must deliver two major functions: funding administration and grant administration.

Funding Administration

Step 1: Billboard Management

Agencies involved: *NYS Department of Transportation (DOT), NYC Buildings – Sign Enforcement Unit*

The Right of Way Office in the NYS Department of Transportation and the Sign Enforcement Unit in the New York City Department of Buildings have existing teams that manage outdoor advertising permits. These offices will tally the number of eligible billboards and report it to the next step to create a budget estimate.

Step 2: Funding Management

Agencies involved: *NYS Division of Budget (DOB), NYS Department of Taxation and Finance (DTF)*

The NYS Division of Budget Comptroller will take the advertising permit tally from the prior step to create a budget estimate for grants.

They will also take requests to staff the grant administration and provide funding. NYS Division of Budget also sends the budget estimate to the NYS Department of Taxation to levy the URA fee.



Co-Management of the URA

Grant Administration

Step 3: Application Management

Agencies involved: *NYS Department of Environmental Conservation (DEC) – Community and Urban Forestry Grant Program, NYC Parks Department Grant Office*

The NYC Parks Department's Grant Office and NYS Department of Environmental Conservation's (DEC) Urban and Community Forest Department will prepare staffing requests to send to the NYS Comptroller's office. These two offices will also define eligible projects and scoring criteria, answer applicant Q&A, and finally score the applications.

Step 4: Fund Disbursement for Grants

Agencies involved: *NYS (DEC) – Division of Management and Budget, NYC Parks – Capital Budget*

Agencies from the prior step will communicate awardees to DOB and DTF for final approval and disbursement of funds.

Step 5: Results Sharing and Performance Monitoring

Agencies involved: *NYS DEC Community and Urban Forestry Grant Program, NYC Parks Department Grant Office, NYS DOB, NYC Planning Commission*

NYS DEC and NYC Parks will track the results of the grants awarded as well as application trends, and publicize this information. The NYC Parks Dept. work with the NYC Planning office and the NYS DEC will work with the NYS Dept. of Taxation to track how funds are spent.



At a Glance: Program Workflow

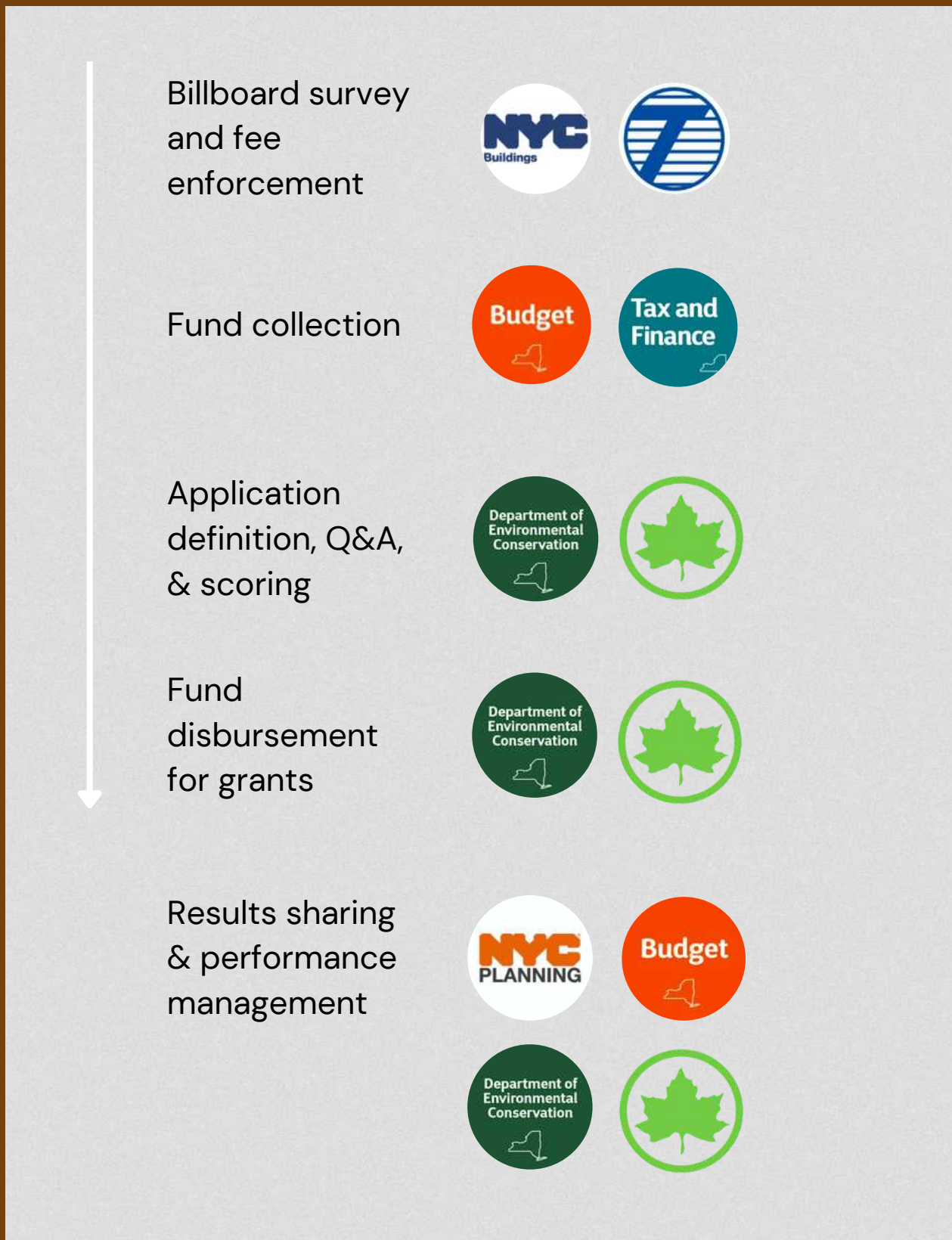
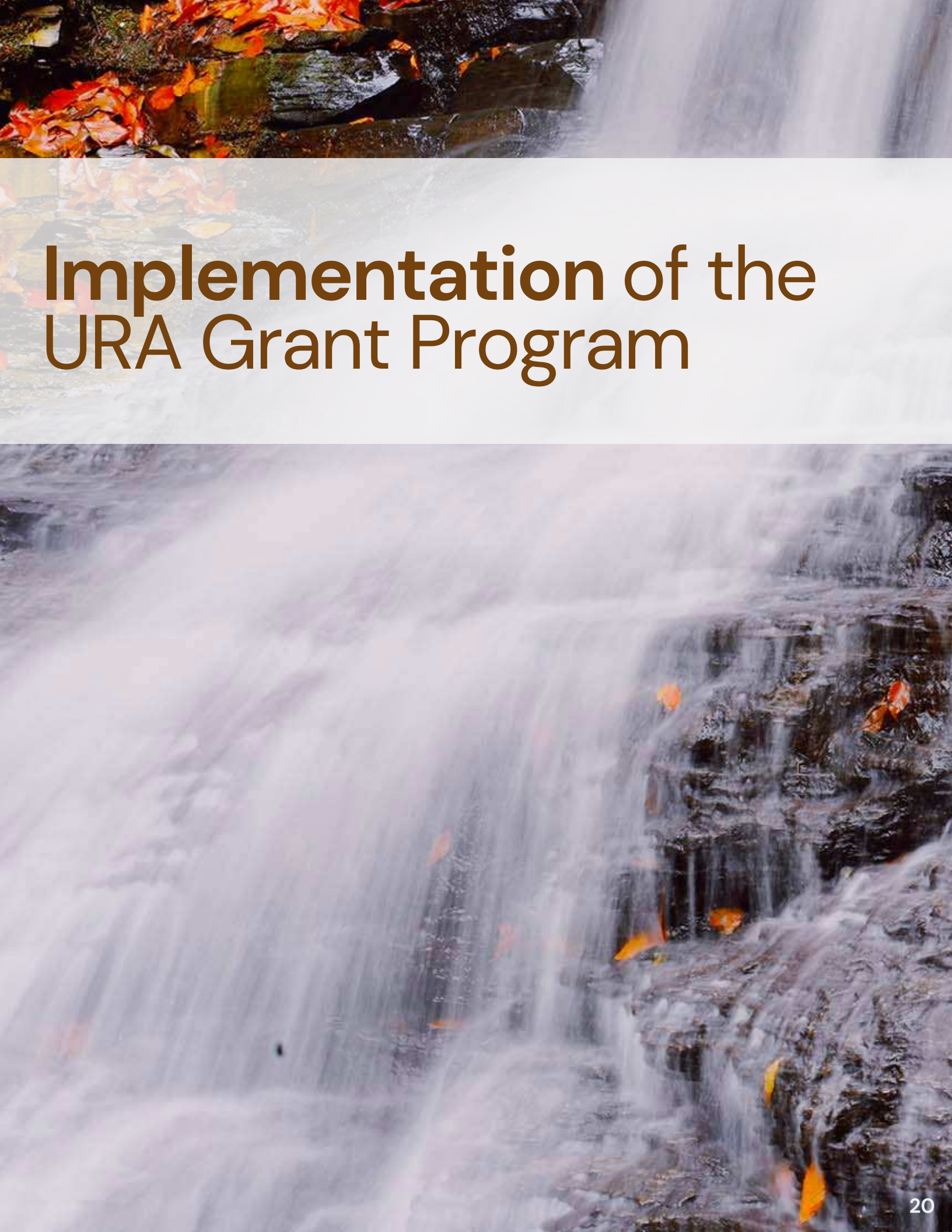


Figure 4: Workflow Steps and Agencies Involved



Implementation of the URA Grant Program

The Implementation Plan

The **Agencies** Involved

To carry out the recommended program design during the first year of implementation, the involved state and city governments and agencies must engage in streamlined collaboration.

Streamlining Collaboration: **Joint Working Groups**

The implementation plan encapsulates current urban vegetation activities and supports new, innovative projects. It does so by minimizing duplication of work (New York State has numerous well-developed standard operating procedures) and leveraging existing institutional knowledge. For example, the Grant Gateway tool at the State level already offers rigorous scoring criteria. The following proposed implementation plan adds in knowledge-sharing processes to increase public buy-in as well as apply successful solutions across the state.

The URA Grant Program design lays out the need for joint working groups between these Government agencies to reduce duplication of management duties, maintain the program's agility, and allow for resource pooling. The URA program structure accounts for separate funding streams between New York State and New York City, and aims to streamline communication channels. Therefore, the working group will integrate New York State DEC and NYC Department of Parks and Recreation staff to maximize information sharing. The NYC Planning State Division of Budget and New York City Planning will join the working groups during auditing program results and performance.

Overview of the Proposed Staffing Plan

Figure 5: Department of Environmental Conservation, Organizational Chart

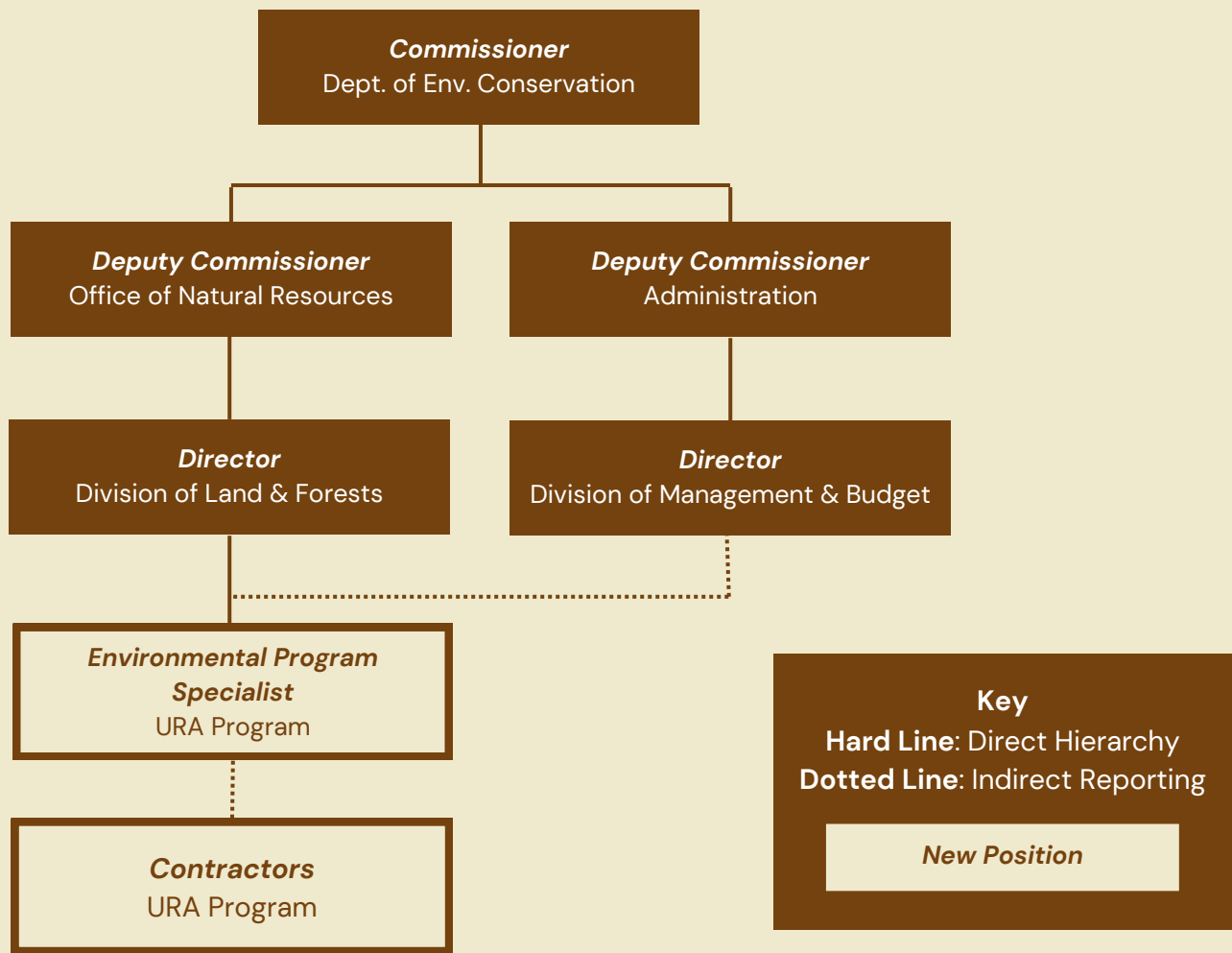


Figure 6: Parties Interacting with the Environmental Program Specialist



Implementation

An Added Role

To oversee the URA program implementation, one new full-time employee (FTE) will be hired to serve as an Environmental Program Specialist under the Department of Environmental Conservation's (DEC) Division of Land and Forests. The role will also have a task-dependent reporting relationship to the Deputy Commissioner of the Office of Natural Resources and the Director of the Division of Management and Budget for fund administration activities.

The new position sits in the (General Schedule) GS-8 to GS-12 range and based on the person's relevant experience and subject matter expertise, he/she would be in GS-10 or GS-11 grade, which will inform their salary and benefit amounts, as described in the budget section of this report. The Specialist's responsibilities entail managing the aforementioned joint working group involving multi-agency staff, developing the guiding framework for municipalities, and coordinating with the audit team from the Department of Taxation and Finance and Foresters under DEC for annual audits to mark progress. The Environmental Program Specialist will also oversee New York City's URA implementation by coordinating with the staff from the NYC Parks department. The Environmental Program Specialist and delegated representatives from the existing staff of the Division of Lands and Forests and Division of Management and Budget of DEC, staff of NYC Parks, and Audit teams of the Department of Taxation and Finance will form the joint working group. The joint working group, headed by the Environmental Program Specialist, will oversee the work done by the implementing partners in the various municipalities and also facilitate the representatives of the DEC to aid the URA program.

Organizational Design

The DEC will lead program implementation. The DEC Commissioner heads this department, and two main offices will lead the URA program. The Office of Natural Resources, headed by a Deputy Commissioner, will house the URA program. This Office has a Division of Lands and Forests headed by a Director. The URA program will be housed under this division. The second is the Office of Administration, led by the Deputy Commissioner. The Division of Management and Budget under this office will hand over all the tax funds allocated for the project. A Director also oversees the Division of Management and Budget. The Division of Management and Budget will receive the funds after the Department of Taxation and Finance releases them (Figure 2). The funding availability and the bandwidth of these departments will dictate the division of responsibilities of staffing the URA and similar projects. Respective division directors will reallocate staff time and responsibilities based on URA program mandates.

Contractor Management

The program recommends cities contract out, labor, or partner with an organization to roll out the first year of the plan, if they did not already work with an external entity on the grant application process. The joint working group formed in the first quarter will request proposals from interested municipalities through a competitive request for proposal process hosted on NYS's current grant application portal, Grants Gateway. After receiving a grant award for their respective municipalities, interested parties will sign a Memorandum of Understanding with the DEC for effective and timely ground-level implementation.

Implementation

Overview of the URA Budget

Key program activities within the DEC include program publicizing, grant advising and reviewing, and performance monitoring. To perform these tasks, the DEC will need to operate within a budget of 10% of the revenue generated from taxing billboards outside of New York City (NYC). For projects within NYC, the DEC will work jointly with the NYC Parks Department, which will have its own budget. While the URA does not mandate a funding split for NYC, a 10% dedication of funding for administrative activities is recommended.

Program Budget

Within personnel services, the DEC will require a portion of the operating budget, between \$94,500 and \$108,000 (\$70,000–\$80,000 salary, plus benefits) to hire an Environmental Program Specialist. This specialist will ensure that the program achieves its mandate of distributing the entirety of the allocated fund through grants to NYS municipalities.

The DEC will spend the remaining operating budget on contracting labor. \$22,680 – \$36,180 will cover consulting of foresters and certified arborists to advise municipalities on the development of urban forestry plans. They will also provide suggestions on criteria to consider during grant scoring. This expertise will be vital in prioritizing projects and maximizing the likelihood of achieving the program's long-term goals.

Considerable on-site expertise will be required of foresters to verify the correct implementation of urban forestry grants. The DEC's 23 regional foresters will take direct measurements of tree distribution and assess overall health of the urban canopy. They will also audit the work of municipalities that have previously received funding. The plan allots \$14,520 to fund this additional work.

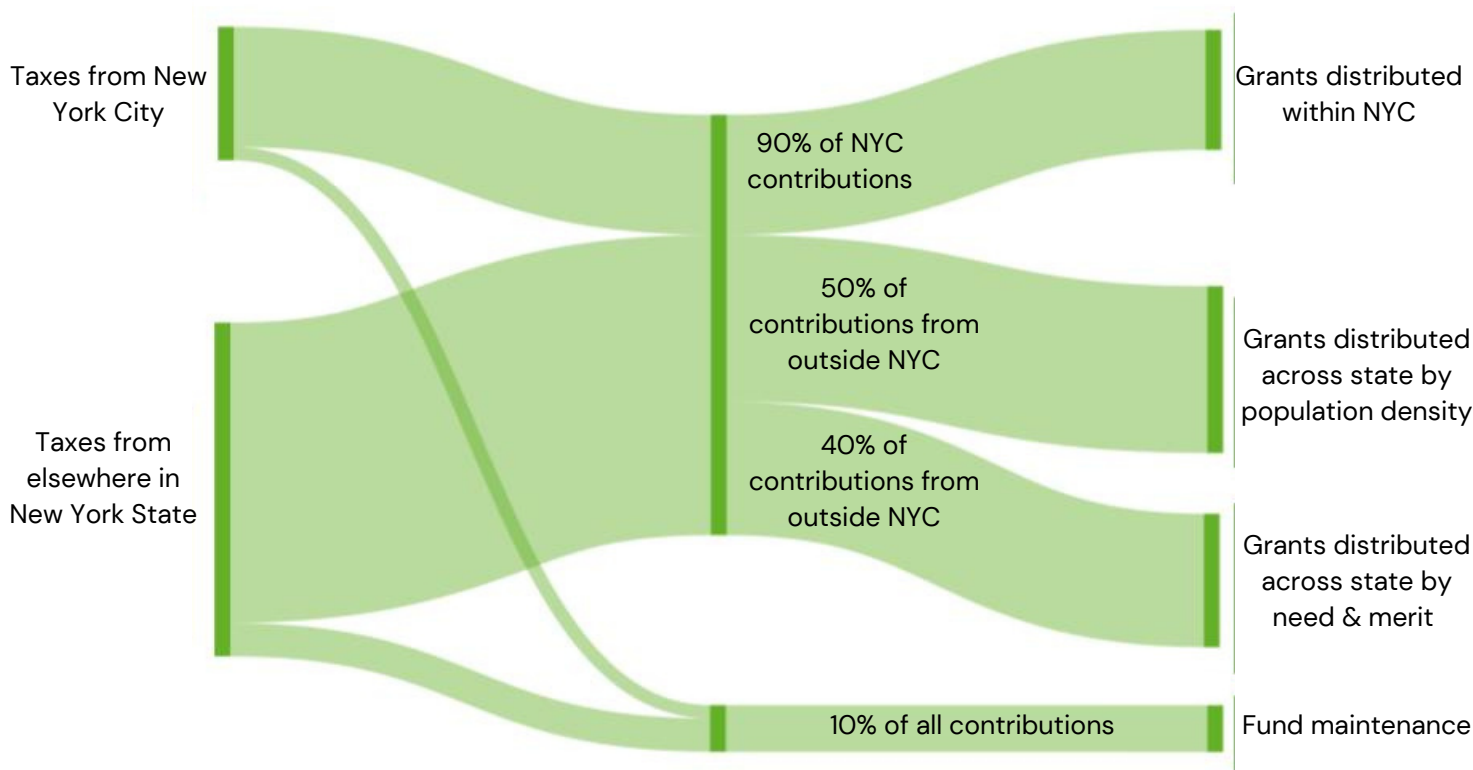
In the first year of the program, the DEC will utilize the idle auditing budget before any grants are awarded to advertise the added funds. The campaign aims to notify municipalities of the newly-available grants and to offer application resources, including the consultation of foresters, iTree software, and online EJ mapping tools. To develop and distribute these materials, the DEC will establish a contractual agreement with an approved agency to provide temporary support.

URA Fiscal Analysis

Projected Revenue

Roughly **1,452 registered, taxable billboards** stand along highways in New York State (610 in NYC and 842 in the rest of NYS) (Berger, email communication, 2022). This will determine the revenue generated for the Urban Reforestation Fund and the program’s overall budget. The DEC estimates a total revenue of **\$1.452 million**, with a program budget of \$1,452,000 based on current industry numbers.

Figure 7: Estimated Funding Flow



The figure above demonstrates how funding will flow from taxable billboards in both New York City and New York State to the URA Grant Program.

URA Fiscal Analysis

By bill mandate, 90% of the revenue generated from billboard taxation outside of NYC is allocated for distribution to municipalities. 50% of the revenue must be distributed by the population size of the municipality, and the remaining 40% must be distributed by need and merit. The NYC Parks Department and the DEC will work together to disburse the revenue generated within NYC to projects in the city.

Figure 8: The Line Item Budget



Personnel Services Total	\$94,500 – \$108,000
Environmental Program Specialist Salary	\$70,000 – \$80,000
Environmental Program Specialist Benefits	\$24,500 – \$28,000
Other than Personnel Services Total	\$37,200 – \$50,700
Rollout Campaign Contracting Fees	\$14,520
Fund Processing	\$22,680 – \$36,180
Municipality Budget	\$1,306,800
Total Program Budget	\$1,452,000

URA Master Calendar

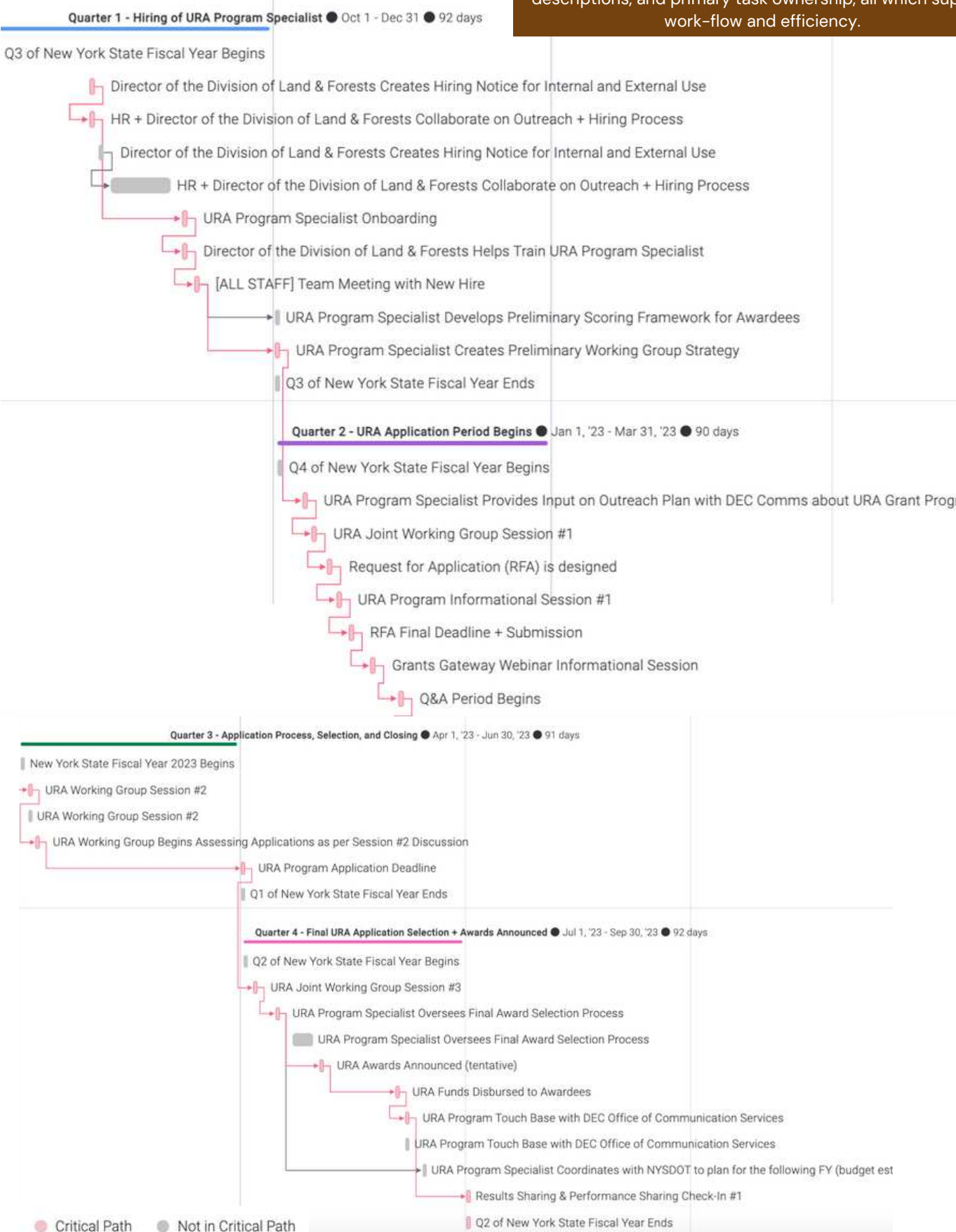


Master Calendar

Overview

Figure 9: The Master Calendar

The calendar is divided into four quarters (Q1-Q4) and follows the fiscal year cycle of New York State, which begins April 1 and ends March 31—this is paramount for proper fund disbursement and awardee timeframes. It includes a color-coded prioritization system and establishes a critical path according to dependencies, allowing for key activities to be triaged. Other features include: individual deadlines, task type, task descriptions, and primary task ownership, all which support work-flow and efficiency.



Quarter 1: Hiring of URA Program Specialist

Quarterly Activities

Q3 of New York State Fiscal Year Begins – **Oct. 1**

Director of the Division of Land & Forests

Creates Hiring Notice for Internal and External Use – **Nov. 1**

HR + Director of the Division of Land & Forests

Collaborate on Outreach + Hiring Process – **Nov. 1**

URA Program Specialist Onboarding – **Dec. 1**

Director of the Division of Land & Forests

Helps Train URA Program Specialist – **Dec. 1**

[ALL STAFF] Team Meeting with New Hire – **Dec. 5**

URA Program Specialist Develops Preliminary

Scoring Framework for Awardees – **Dec. 31**

URA Program Specialist Creates Preliminary

Working Group Strategy – **Dec. 31**

Q3 of New York State Fiscal Year Ends – **Dec. 31**

Description

The quarterly modules begin with the hiring of the URA's permanent, full-time staff member (Environmental Program Specialist), who will be selected, onboarded, and trained to prepare for the upcoming grant cycle. This will include an all-staff team meeting and a personalized training session.

Quarter 2: URA Application Period Begins

Quarterly Activities

Q4 of New York State Fiscal Year Begins – **Jan. 1**
URA Program Specialist Provides Input on Outreach Plan
with DEC Comms about URA Grant Program – **Jan. 9**
URA Joint Working Group Session #1 – **Jan. 12**
Request for Application (RFA) is designed – **Jan. 17**
URA Program Informational Session #1 – **Jan. 20**
RFA Final Deadline + Submission – **Jan. 24**
Grants Gateway Webinar Informational Session – **Jan. 31**
Q&A Period Begins – **Feb. 9**
Grants Gateway Application Opens – **Feb. 14**
Q&A Period Ends – **Mar. 31**
New York State Fiscal Year 2022 Ends – **Mar. 31**

Description

Along with forming the Joint Working Group, Q2 is defined by extensive outreach in collaboration with DEC Communication Services, Q&A, and informational sessions that will assist in the application process. This includes launching the first Joint Working Group Session and Q&A period.

Quarter 3: Application Process, Selection, and Closing

Quarterly Activities

New York State Fiscal Year 2023 Begins – **Apr. 1**

URA Working Group Session #2 – **Apr. 4**

URA Working Group Begins Assessing Applications
as per Session #2 Discussion – **Apr. 7**

URA Program Application Deadline – **Jun. 30**

Q1 of New York State Fiscal Year Ends – **Jun. 30**

Description

Subsequently, Q3 and Q4 focus on the selection process. The Working Group will meet once in Q3 to begin assessing the applicants according to the established scoring criteria. A highlight of Q3 includes the URA Application Deadline.

Quarter 4: Final URA Application Selection + Award Announcement

Quarterly Activities

Q2 of New York State Fiscal Year Begins – **Jul. 1**

URA Joint Working Group Session #3 – **Jul. 5**

URA Program Specialist Oversees Final Award Selection Process – **Jul. 14**

URA Awards Announced (tentative) – **Aug. 1**

URA Funds Disbursed to Awardees – **Sept. 1**

URA Program Touch Base with
DEC Office of Communication Services – **Sept. 5**

URA Program Specialist Coordinates with
NYSDOT to plan for the following FY (budget estimates) – **Sept. 12**

Results Sharing & Performance Sharing Check-In #1 – **Sept. 30**

Q2 of New York State Fiscal Year Ends – **Sept. 30**

Description

In Q4, the awardees will be finalized with final approvals from the Department of Environmental Conservation's Office of Management and Budget and the Comptroller's Office. Subsequently, rejection letters will be sent out first, followed by acceptance letters. Shortly thereafter, funds will be allocated for the first cycle.



Performance Management

The Methodology

The Environmental Program Specialist will monitor short-term progress of grant-funded projects to guide the program towards long-term improvement of urban forestry in New York. They will synthesize the data collected at local level by grant awardees to measure the indicators relevant to the program's long-term goals. These indicators include net urban canopy change across the state and the three-year survival rate of URA-funded tree plantings.

Throughout the grant life cycle, awardees will submit quarterly progress reports through the online platform Grants Gateway. After completion of the projects, awardees will also submit annual reports. The DEC and the municipality will jointly decide on relevant performance measures to include in the report, in addition to tree inventories. These inventories will include data on the age, species, and location of individual trees. The Specialist will create a standard inventory template to easily summarize the data into relevant indicators.

In addition to the Specialist, DEC foresters will play an active role in performance monitoring. DEC regional foresters will visit project sites to verify the accuracy of the quarterly reports. After the project's first five years, the Specialist will meet with foresters to evaluate the program's progress using the defined indicators. Together, the Specialist and DEC foresters will update the program's strategy, which may include updating grant scoring criteria and prioritizing different grant types.

SMART Evaluation

The URA Grant Program presents three quantifiable, long-term goals for the grant program. The indicators were evaluated based on the SMART method. Findings are highlighted below:

of
Trees Lost
Annually

1

The program **aims to halt or reverse the loss of urban canopy** in New York State, which occurred at an average rate of 6,700 acres annually between 2008 and 2013.

% of Trees
Added in EJ
Neighborhoods

2

The loss of urban canopy has occurred at higher rates in disadvantaged communities. The program aims to **improve equity in tree distribution**. The non-profit organization, American Forests, publishes a Tree Equity Score (TES) for neighborhoods across the U.S. The score provides a standardized measurement of urban canopy inequity and ranges from 0 to 100. As an initial goal, the program will seek to reach a minimum TES of 50 within all eligible cities.

of Newly-
Planted
Trees Alive
after 3 Years

3

While preserving existing trees will play an important role in reducing the loss of urban canopy, expanding New York's urban canopy into environmental justice areas will require the planting of new trees. **The URA aims to achieve 90% three-year survivorship of grant-funded tree plantings** (Roman, 2013).

URA in Action

Measurement Strategies

The DEC will require awardees of URA grants to submit quarterly reports throughout the lifespan of their grant projects and annual reports following the end of the projects. These reports will include tree inventories which list the populations and distributions of trees within the municipality. The DEC will use these tree inventories to measure two key indicators towards reaching the above goals: survivorship of newly planted trees and net canopy loss or gain.

Achievability

The program will prioritize funding for planning and maintenance grants to preserve existing canopy. By helping municipalities develop forestry plans and fund key maintenance activities, the program will minimize the premature loss of trees, greatly reducing the rate of canopy loss. The program will also offer workforce development grants to fund the training and hiring of urban forestry workers to perform these maintenance activities.

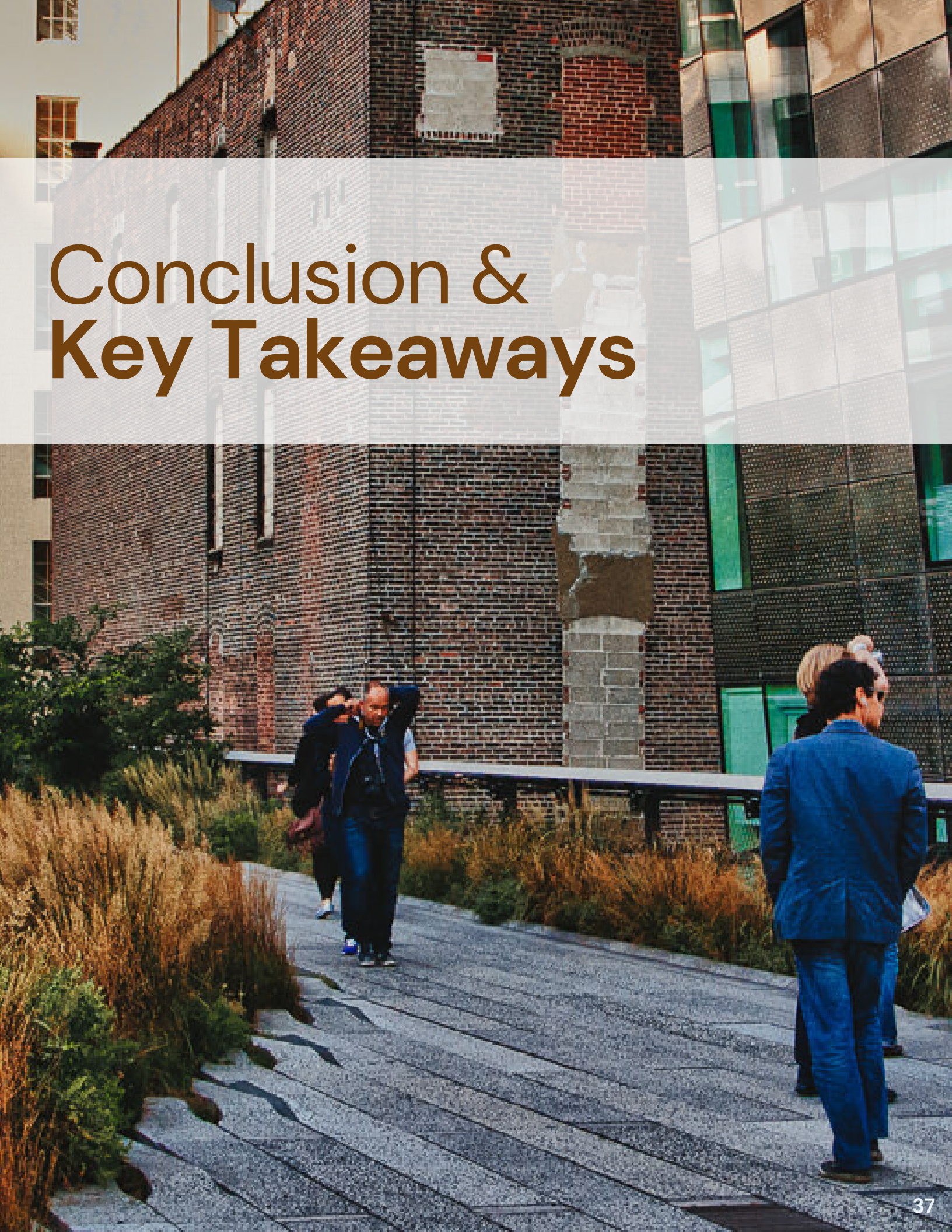
The program will use careful scoring guidelines to fund projects that best align with its equity and tree survivorship goals. The DEC will require grant-funded tree planting to occur in designated environmental justice communities with a deficit of canopy. Additionally, the grant review process will give an advantage to plans which include community organization sponsors who will assist with the future care of the new trees. Studies have shown that stewardship greatly improves the chance of survival for a new tree (Breger et al., 2019).

Relevance

As described in previous sections, a healthy urban forest can mitigate the negative impacts of urban development. The potential impacts of the program include the reduction of the urban heat island effect, improvement in air quality, reduction of stormwater runoff volume, and protection of biodiversity of plant and animal populations within the area. These impacts will vary across municipalities but can be estimated using simulation softwares such as iTree (Roman, 2013). The program goals of reducing urban canopy loss and improving equity in canopy coverage constitute the first steps towards providing these ecosystem services to all of New York's urban residents.

Timescale

The benefits of urban forestry accumulate slowly with the growth of individual trees and the construction of new parks or other green spaces. The program aims to achieve the above goals within 20 years of the start of the program. After the first five years, program staff and DEC foresters will evaluate early results and adapt the program's goals and strategies as necessary.



Conclusion & Key Takeaways



Key Takeaways

The Urban Reforestation Act aims to address the decline in urban forests in New York State and calls for improvements in urban forestry in an effort to alleviate environmental problems such as urban heat island effect, stormwater run-off, and loss of biodiversity. The URA creates a dedicated funding stream by taxing billboards visible from highways and mandates specific activities to promote urban forestry but does not have a rigid program implementation mandate.

The Policy Design explained in this report fulfills the mandate of the Urban Reforestation Act, addresses current challenges to urban forestry in NYS, while taking into consideration the modest budget allowed by the funding stream.

Extensive organizational research and interviews with DEC officials highlighted that the main challenge to urban forestry is the lack of trained forestry workers for tree planting and maintenance. The proposed program design addresses this challenge by establishing a topical grant category for developing an urban forestry workforce. It avoids duplication of work by merging with existing urban forestry grants within DEC. The plan institutes joint working groups for cross-pollination of ideas between urban municipalities to share information about grant applications and project results. Finally, this program ensures ownership and accountability by hiring a new DEC employee who will oversee the program implementation, increase inter-agency collaboration, and promote knowledge sharing with other urban forestry programs.

Ultimately, the Urban Reforestation Act implementation plan builds agency capacity and strengthens existing frameworks. Despite modest funding, this program design establishes a consistent, long-term commitment to urban forestry to improve the living conditions of the urban residents of New York State.

The Team



The Team



Kasturi Thorat

Kasturi is an ambitious and committed professional, with background in global health and experience in policy analysis, scientific research, and entrepreneurship. The intersections of public health and climate change drive her to work towards a healthy, equitable, and sustainable planet.

In her role as Manager, she led a team of ten brilliant, motivated individuals to create timely deliverables. She formulated the project work plan, ensured team collaboration, and liaised with faculty advisor, Professor Louise Rosen.



Matteo Chiadò Piat

Before joining Columbia SIPA, Matteo was a business development professional in the software industry. Passionate about the climate cause and its socioeconomic implications, his mission is to understand how the private and public sectors can work together to shape a cleaner and carbon neutral future.

As Deputy Manager in this project, he helped coordinate the efforts of the team, help them leverage their many strengths and learn from each other, and liaise with the team's faculty advisor.



Julia-Grace Sanders

Five years writing about the world's most pressing environmental challenges as a science journalist ignited Julia-Grace's desire to drive change in the climate space. An experienced program manager, researcher, and creative thinker, she is passionate about distilling complex information to inform problem-solving and think strategically about solving the climate crisis. Throughout the URA Grant Program development process, she leaned on her reporting experience to clearly convey the team's analyses. Her previous role building a grants management program proved especially useful for this project and informed the program development methodology.



Jinming (John) He

Jinming He is an entrepreneur the renewable energy sector. He has proven success at driving cross-sector business performance improvement through technology innovations & creative solutions to complex problems. He is focusing on the sustainability usage of retired solar panels. His goal is to reduce the pollution from landfill old solar panels and increase the production of the new generation of greenhouse farms. Jinming was heavily involved in the procedure to draft logical and rational policies as a member of the workshop for the previous two semesters. In the meantime, Jinming discovered the influence of lawmakers and/or state assemblies. Compared to other executive branch positions, they are more accountable. Drafting laws and/or regulations is easy but figuring out whether they make sense or not will take time.

The Team



Diana Bunge

Diana is a motivated, young professional with years of experience in content production, strategic communications, and thought leadership. A recent graduate of Boston College, she is passionate about ESG reporting and conscious consumerism. Throughout these two semesters, Diana played a crucial role in designing, editing, and crafting the message of the team's reports and deliverables.



Ipsita Dash

Ipsita has worked for around 5 years in different managerial positions and has a wide spectrum of cross sectoral experiences in domains of climate change and sustainability. Her background in environmental science helped her lead the development of scientific solutions for the project, in the summer semester. In the fall semester she used her past experience in project management to chalk out the literature for the project and build on the organisational structure for the implementation of the bill.



Eric Smith

Eric received his Bachelors in astrophysics from Haverford College in 2015. He spent the next six years at an outdoor education camp in the mountains of California where he taught science and climbed trees to fix the zip line and other parts of the adventure course. During the 2020 lockdown he studied data science online. To the URA workshop group, Eric brought a scientific perspective and attention to detail.



Alma Bauer

Alma graduated from McGill University (Canada) in 2022 with a Bachelor's of Arts, majoring in political science and double minoring in environmental studies and religion. While pursuing her undergraduate degree, she also worked remotely for the World Bank's "Catching Up Regions Initiative" Program as a short term analyst for nine months. Currently, she is a student in the MPA ESP program at SIPA, Columbia University (class of 2023). From June to December 2023, she worked with ten teammates on the Urban Reforestation Act (URA). She participated in the research (scientific and political) and analytical processes undertaken to present weekly briefings and memos and to produce two final reports on the URA.

The Team



Rafae Ghani

Rafae is a former strategy and business development consultant at IBM who joined SIPA to supplement his business experience with policy skills to scale carbon removal and industrial decarbonization solutions. In the summer semester, Rafae drew on his management experience to lead the team as Manager, creating the best environment for each team member to contribute, and his story development skills to craft briefings on the scientific nature of the problem and solution. In the fall semester, he used his analytical and research skills to lead the proposed program design.



Zheqi (Jerry) Li

Jerry is a student in MPA Environment Science and Policy, concentrating on sustainability management and investment. Before the MPA-ESP program, he worked as a management consulting analyst in the energy & material sector. In this workshop, he leads the budget and revenue plan work-stream. After this master's program, he hopes to continue devoting his passion to decarbonizing manufacture and transportation industry.



Hannah Harasaki

Hannah comes from a professional background in international affairs and is passionate about the intersection between global policy and the environment. She joined Columbia's SIPA to get a deeper dive into the scientific principles behind climate change and is eager to apply that knowledge to guide effective and equitable development in the climate space. Hannah put this into practice when she served as Deputy Manager of the team during the summer semester. She also organized the reports analyzing the Urban Reforestation Act for the summer and fall semester.



References

Article 6. Legislation. NY State Senate. (n.d.). Retrieved December 3, 2022, from

<https://www.nysenate.gov/legislation/laws/STF/A6>

Bauer, A., Bunge, D., Dash, I., Ghani, R., Harasaki, H., He, J., Li, Z., Piat, M. C., Sanders, J.-G., Smith, E., & Thorat, K. (2022). (rep.). *NY STATE ASSEMBLY BILL A9610 Urban Reforestation Act.*

Berger, A. (2022, October 24). (email.). *Information Request Student Research on the Sign Enforcement Unit.*

Breger, B. S., Eisenman, T. S., Kremer, M. E., Roman, L. A., Martin, D. G., & Rogan, J. (2019). Urban tree survival and stewardship in a state-managed planting initiative: A case study in Holyoke, Massachusetts. *Urban Forestry & Urban Greening*, 43, 126382. <https://doi.org/10.1016/j.ufug.2019.126382>

CHAPTER 25 Highway. Legislation. NY State Senate. (n.d.). Retrieved December 3, 2022, from

<https://www.nysenate.gov/legislation/laws/HAY/-CH25>

CHAPTER 43-B Environmental Conservation. NY State Senate. (n.d.). Retrieved December 3, 2022, from

<https://www.nysenate.gov/legislation/laws/ENV>

Climate act. NYSERDA. (n.d.). Retrieved December 3, 2022, from <https://climate.ny.gov/Our-Climate-Act>

Cuomo, A. M., & Seggos, B. (2020). New York State Forest Action Plan.

https://doi.org/https://www.dec.ny.gov/docs/lands_forests_pdf/nysfap.pdf

Forests and the Environment. (n.d.). New York State Department of Environmental Conservation. Retrieved August 14, 2022, from <https://www.dec.ny.gov/lands/41769.html>

Grants management. Grants Management. (n.d.). Retrieved December 3, 2022, from <https://grantsmanagement.ny.gov/>

History Of State Forest Program. (n.d.). New York State Department of Environmental Conservation. Retrieved August 14, 2022, from <https://www.dec.ny.gov/lands/4982.html>

Mehaffy, B. R. (2016). Land Use Plan—City of Buffalo. OFFICE OF STRATEGIC PLANNING, 130.

New York Urbanized Area: Population & Density from 1800 (Provisional). (2005). Demographia.

<http://demographia.com/db-nyuza1800.htm>

NY State Assembly Bill A9610. NY State Senate. (2022). Retrieved December 3, 2022, from

<https://www.nysenate.gov/legislation/bills/2021/a9610>

Pay and the general schedule. Go Government. (2022). Retrieved December 3, 2022, from <https://gogovernment.org/all-about-government-jobs/pay-and-the-general-schedule/>

Roman, L. A. (2013). *Urban Tree Mortality* (thesis). *Tree benefits!: I-tree*. <https://www.itreetools.org/about>. (n.d.). Retrieved December 3, 2022, from <https://www.itreetools.org/>

U.S. Census Bureau quickfacts: New York. (n.d.). Retrieved December 3, 2022, from

<https://www.census.gov/quickfacts/fact/table/NY/PSTO45221>

Note: All images are publicly available assets with creative and commercial licensing given.

We thank you for your time, support, and commitment to climate resilience.

Acknowledgements

We'd like to thank Professor Louise Rosen for her continued time, effort, and support throughout the past two semesters. We are so grateful for your commitment to our team. Additionally, we'd like to extend our thanks to the policy and scientific experts that aided in our research and exploration of this topic.

Special thanks to our **design leads and editors**:

Kasturi Thorat (Manager)
Matteo Chiadò Piat (Deputy Manager)
Hanna Harasaki
Diana Bunge
Julia-Grace Sanders

And with overwhelming gratitude to the **team**:

Alma Bauer
Eric Smith
Jinming (John) He
Ipsita Dash
Rafae Ghani
Zheqi (Jerry) Li