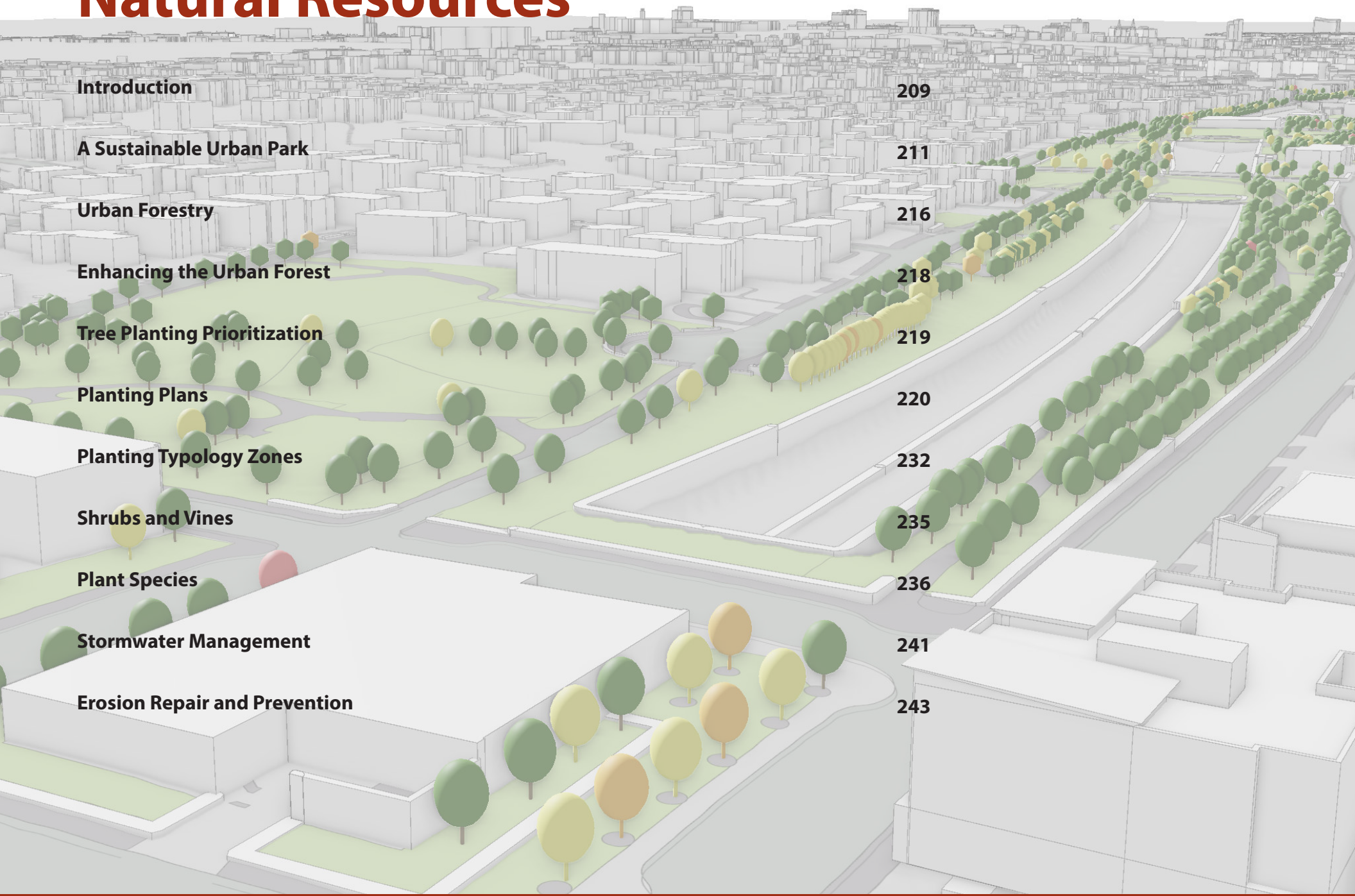
8
Natural Resources

Natural Resources



Natural Resources

Introduction

Overall, natural resources in urban parks play a crucial role in creating sustainable, healthy, and vibrant urban environments. They offer a range of benefits that enhance the quality of life for city residents.

Environmental benefits are significant. Trees and plants in urban parks filter pollutants and produce oxygen, which improves air quality. Parks help mitigate the heat island effect by providing shade and cooling the air through transpiration. Additionally, vegetation and soil in parks absorb rainwater, reducing runoff and preventing flooding.

Biodiversity is also promoted through urban parks. They provide habitats for various species of plants, animals, and insects, fostering a diverse urban ecosystem. Parks serve as green corridors that connect different habitats, allowing wildlife to move and thrive across the city.
Health and well-being benefits are substantial. Parks offer spaces for physical activities such as walking, jogging, and sports, contributing to physical health. Green spaces have been shown to reduce stress, improve mental health, and enhance overall well-being.

Social and community benefits include serving as community gathering spaces that foster social interactions and community cohesion. Parks provide recreational opportunities and venues for cultural and social events, enriching community life.

In terms of **economic value**, well-maintained parks can increase property values in surrounding areas. They attract tourism and can boost local businesses by drawing visitors to the area.

Lastly, parks offer **educational opportunities**. They provide resources and programs about nature, conservation, and the environment, offering a hands-on learning environment for both children and adults.
By incorporating these elements, urban parks contribute to a more livable and resilient city.

The scale of the landscape planting when the park opened was immense, featuring thousands of trees, shrubs, and vines. This vast landscape was established on deck structures with imported soils, creating a lush oasis amidst densely settled urban communities. Over the past 35 years, while some areas of the park have matured beautifully, others have struggled due to various urban stressors.

Expanding the tree canopy is crucial for maximizing environmental benefits such as improved air quality, enhanced shade, and support for environmental justice (EJ) communities. Increasing tree cover helps mitigate the urban heat island effect, offers cooling shade, and contributes to the overall health of urban ecosystems.

Improving growing conditions is essential for ensuring the long-term health of the park's vegetation. Many areas face difficult conditions, particularly in narrow sections where soil quality and space limitations challenge plant growth. The introduction of new soil management practices and enhancements to the existing soil could help address these issues.

Preparing the park for the effects of climate change is increasingly important. As climate change impacts intensify, the park's landscape needs to be resilient to extreme weather

Introduction, continued

events, shifting temperature patterns, and other climate-related challenges. This includes selecting climate-resilient plant species and adapting maintenance practices to evolving conditions.

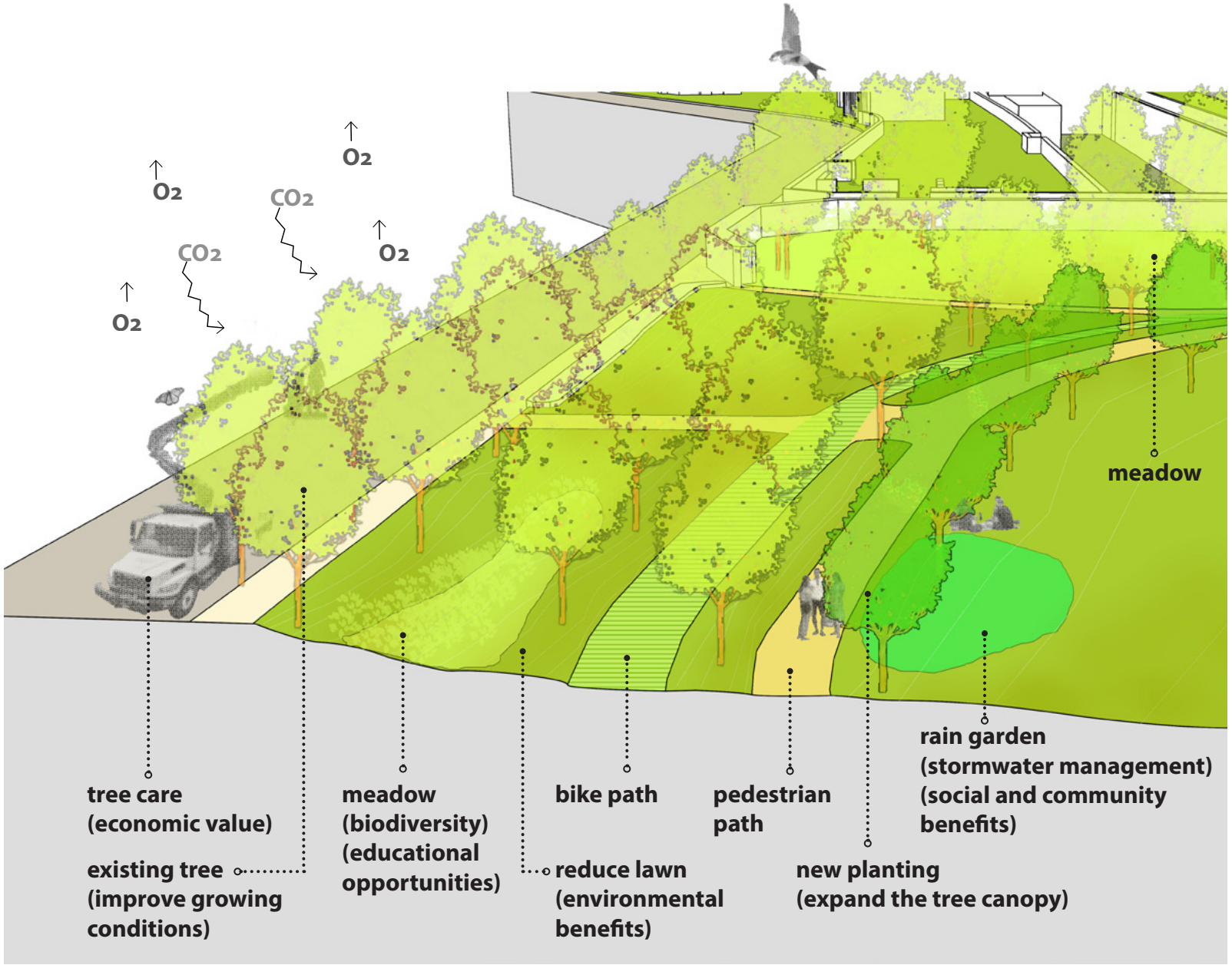
Since 1990, many ornamental trees have been struggling or dying out, highlighting the need for updated planting strategies and species selection. The conditions in the park have been particularly harsh due to soil quality and environmental stressors, making it necessary to revisit soil management and plant care practices.

In the **South End**, the lush gardenesque conditions differ significantly from the rest of the park, requiring tailored approaches to landscape management and plant selection to address local challenges effectively.

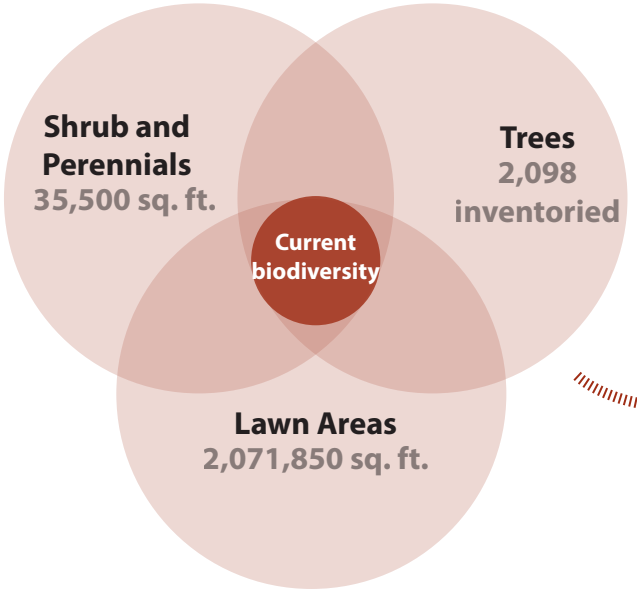
Stormwater management should no longer convey water to the closed drainage system that just puts more pressure on Stony Brook, the Muddy River, and the Charles River. As much as possible, stormwater should be infiltrated with rain gardens, decompacted soil, and modification of the drainage structures to include infiltration piping.

By addressing these elements, the park can continue to serve as a vital green space and community resource, adapting to the evolving needs of its urban environment.

A Sustainable Urban Park



A Sustainable Urban Park



Improving biodiversity in cities involves various strategies aimed at creating and enhancing habitats for a wide range of species, promoting ecological connectivity, and fostering community engagement in conservation efforts. Enhancing urban biodiversity can be achieved through several key approaches:

1. **Stewarding the Urban Forest:** Proper care and management of urban trees help maintain and expand the urban forest, which provides critical habitats for wildlife and improves overall ecological health.

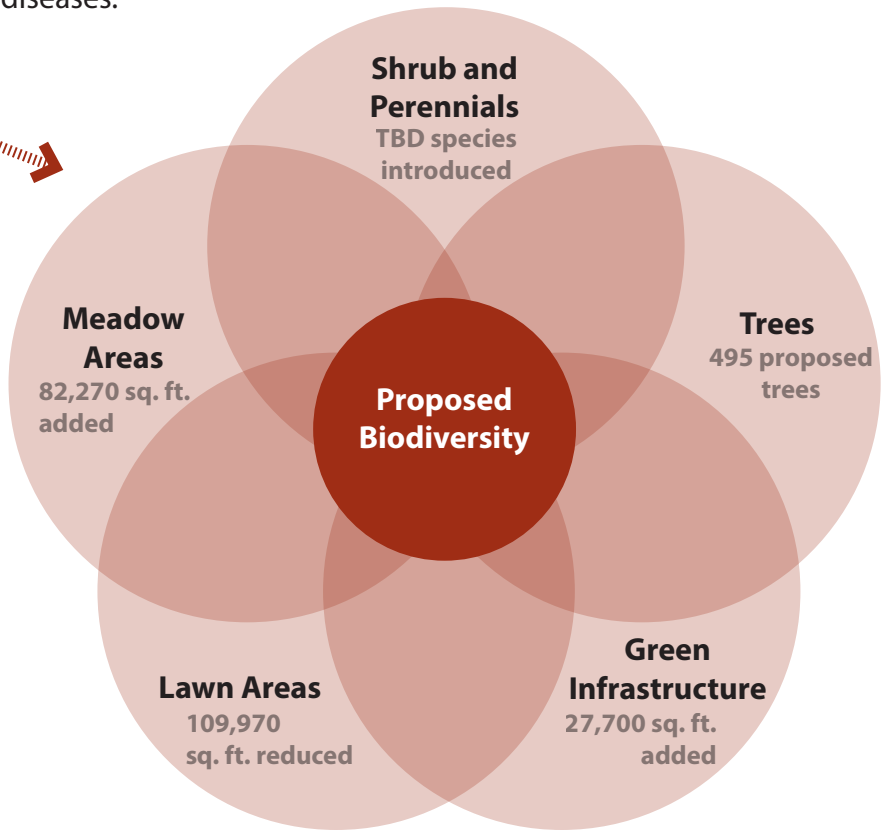
2. **Converting Lawns to Meadows:** Transforming traditional lawns into meadows can support a greater variety of plant and insect species, reduce maintenance needs, and prevent soil erosion.

3. **Invasive Species Management:** Addressing and controlling invasive species prevents them from outcompeting native flora and fauna, preserving the ecological balance of urban environments.

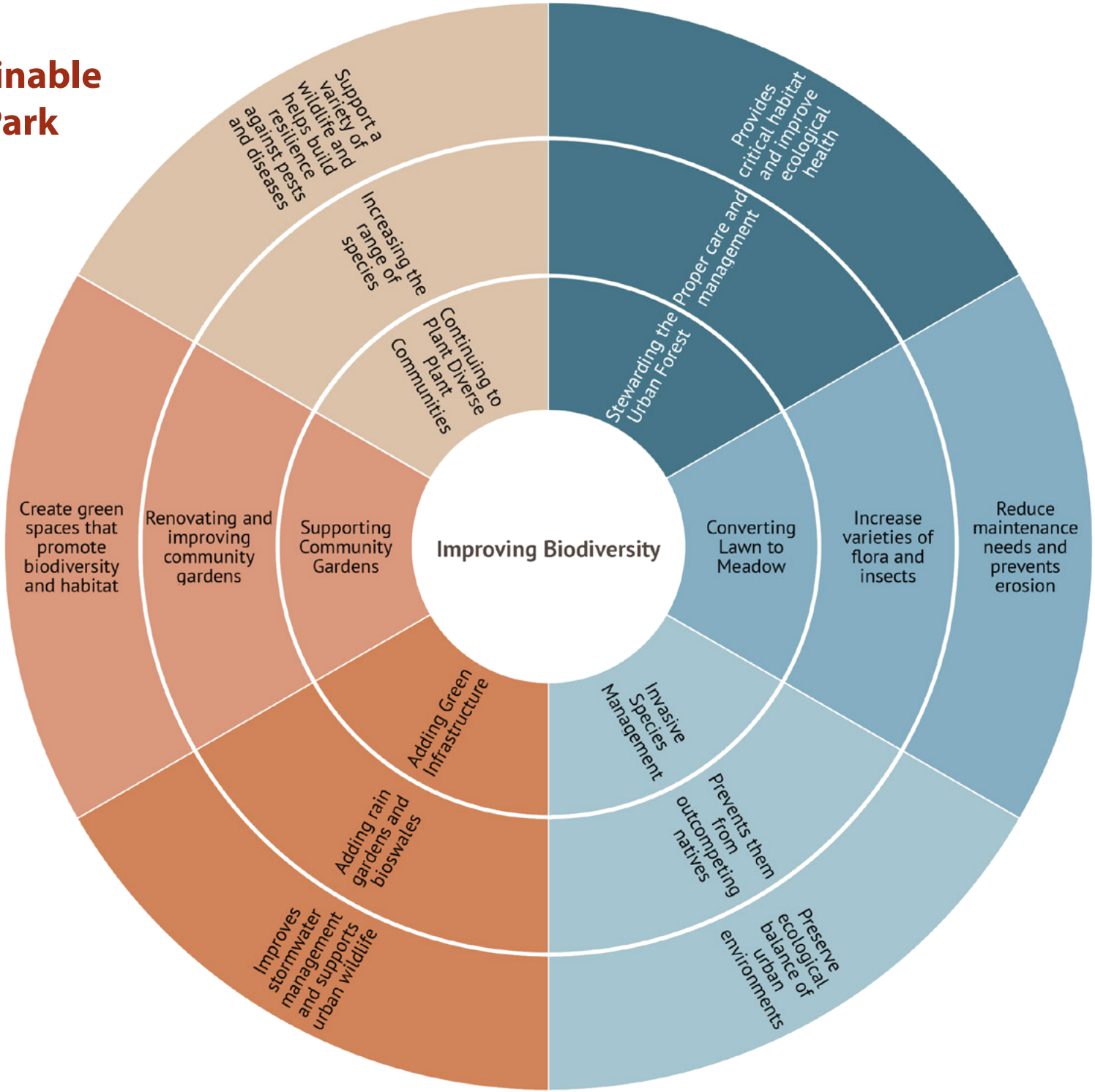
4. **Adding Green Infrastructure:** Implementing green infrastructure such as rain gardens, and bioswales enhances habitat diversity, improves stormwater management, and supports urban wildlife.

5. **Supporting Community Gardens:** Community gardens not only provide fresh produce but also create green spaces that promote biodiversity and offer habitats for various species.

6. **Continuing to Plant Diverse Plant Communities:** Planting a diverse range of species in urban areas supports a variety of wildlife and helps build resilience against pests and diseases.



A Sustainable Urban Park



A Sustainable Urban Park

Climate change is significantly affecting the use of public parks in several ways. Rising temperatures are increasing the heat intensity, which in turn impacts the comfort and usability of outdoor spaces. This has highlighted the need for more shaded areas within parks to provide relief from extreme heat. Additionally, the frequency and intensity of storms have increased, leading to more substantial rain events and reduced snowfall, which can strain existing park infrastructure and contribute to erosion and flooding.

These changes also bring about new challenges, such as an increase in pests and diseases that can damage vegetation, further stressing park ecosystems. In response, park designs must adapt to these evolving conditions.

Resiliency for inland urban parks refers to their capacity to adapt to and withstand various environmental, climatic, and socio-economic stresses while continuing to deliver ecological, social, and recreational benefits. An ecologically resilient park is characterized by its biodiversity, which supports a stable and adaptable ecosystem. By incorporating diverse habitats, such as meadows and wooded areas the park can better support different species and adapt to environmental changes. Additionally, maintaining healthy soils with good structure and nutrient content is crucial for robust plant growth and effective stormwater management.

Climate resilience is also a key aspect, involving the selection of climate-resilient plant species that can withstand extreme weather events like heatwaves and heavy rainfall. Adaptation strategies, such as adjusting planting schedules and incorporating drought-resistant plants, help the park manage changing climate conditions. Parks can also mitigate the urban heat island effect by providing ample shade and cooling areas, benefiting both the ecosystem and its visitors.

Shade pavements, benches, and playgrounds with trees or built structures.

Infrastructure resilience involves using durable materials and construction techniques for park amenities, such as pathways and playgrounds, to withstand environmental stresses. Effective stormwater management systems, including bioswales and rain gardens, are essential for reducing flooding and managing runoff, protecting both the park and surrounding areas.

Use light colored pavements where possible.

Provide lighting to allow evening use of park elements to avoid summer heat.

A Sustainable Urban Park, continued

green corridors and ecological networks connects isolated habitats, allowing species to move and disperse throughout the city. Implementing green infrastructure, such as green walls, permeable pavements, and bioswales, enhances habitat connectivity and supports urban wildlife.

Incorporating biodiversity considerations into urban planning and development projects ensures that new developments include green spaces and habitat features. Adopting and promoting green building standards, such as using native plants in landscaping and creating green roofs and walls, fosters urban biodiversity. Raising awareness about the importance of urban biodiversity through educational programs, workshops, and campaigns, and encouraging residents to participate in citizen science projects that monitor and document urban wildlife and plant species, engages the community in biodiversity conservation. Organizing volunteer activities for habitat restoration, tree planting, and invasive species removal further involves the community in these efforts.

An ecologically resilient park is characterized by its biodiversity, which supports a stable and adaptable ecosystem. By incorporating diverse habitats such as meadows and wooded areas, the park can better support different species and adapt to environmental changes.

Developing and enforcing policies and regulations that protect and promote urban biodiversity, such as tree protection ordinances and green space requirements, are crucial. Providing funding and incentives for biodiversity-friendly projects, including grants for community gardens and subsidies for green roofs, supports these initiatives. Promoting community gardens and urban farms that use organic practices and support a variety of plant species, as well as establishing pollinator-friendly gardens that provide food and habitat for bees, butterflies, and other pollinators, enhances urban biodiversity.

Conducting regular biodiversity assessments to monitor the health and diversity of urban ecosystems, and using data from these assessments to inform and adapt management practices and policies, ensures the ongoing support of urban biodiversity. By implementing these strategies, cities can create more resilient, sustainable, and biodiverse urban environments that benefit both wildlife and residents.

Urban Forestry

Urban forestry involves several key components aimed at the effective care and management of tree populations in the SWCP. The first component is tree planting and establishment, which involves selecting appropriate tree species that are well-suited for urban environments and ensuring they are planted in suitable locations to maximize their benefits and reduce conflicts with infrastructure. Regular maintenance activities, such as pruning to ensure tree health and safety, watering, mulching, fertilizing to support tree growth, and managing pests and diseases to protect urban trees, are essential.

Implementing policies and regulations to safeguard existing trees from damage during construction or development and maintenance activities is crucial for tree protection. The tree inventory conducted in 2023, should be updated every 10 years and should be used to make management decisions and record tree removals or new tree planting. This allows the inventory to be used to evaluate tree health and identify maintenance needs ensures ongoing care and management.

As possible, DCR or the friends groups should engage residents in tree planting and care through volunteer programs fosters community involvement. Educating the public about the benefits of urban trees and how to care for them raises awareness and encourages stewardship. By focusing on these key components, urban forestry aims to create healthier, more sustainable urban environments that provide numerous benefits to both people and wildlife.

Urban forestry faces several challenges that must be addressed to ensure the success and sustainability of tree populations in urban settings. One major challenge is limited space, as urban areas often have limited room for tree planting due to competing land uses. Additionally, urban soils can be compacted, infertile, and shallow, which poses significant challenges to tree growth. Regular maintenance of urban trees can be costly and require ongoing funding, and tree roots and branches can interfere with sidewalks.

To overcome these challenges, several strategies for effective urban forestry can be implemented. Integrated planning involves incorporating urban forestry into park planning and development processes to ensure that trees are considered in the overall urban design. Selecting a diverse range of tree species enhances resilience to pests, diseases, and climate change, making urban forests more robust and adaptable. Community engagement is crucial, as involving residents in urban forestry activities fosters stewardship and support for tree planting and care.

Urban forestry is a crucial aspect of creating sustainable and livable cities, providing numerous benefits that enhance the quality of life for urban residents. By addressing the challenges and implementing effective strategies, cities can develop healthier and more resilient urban forests that offer environmental, social, and economic benefits.

Urban Forestry, continued

The tree inventory completed by the Davey Resource Group in 2023 provided invaluable data to inform recommendations for the urban forest. Combined with city-wide data and recommendations from the City of Boston Urban Forest Plan, we propose the following actions:

1. **Expand the Tree Canopy:** The tree canopy within the SWCP should be expanded to provide essential environmental benefits to the surrounding community. This includes improving air quality, providing shade, and enhancing biodiversity.

2. **Maintain Existing Trees:** Maintenance of existing trees is as important as planting new ones, as mature trees offer exponentially more environmental benefits. Additional staff and funding are needed to support hazardous tree removal, pruning, tree protection, and watering.

3. **Prioritize Environmental Justice Areas:** Resource distribution for new tree planting and existing tree maintenance should prioritize environmental justice areas, such as those in Roxbury, to address disparities in environmental benefits.

4. **Diversify Tree Species:** New tree planting should diversify the collection to mitigate large-scale losses due to pests and diseases. This diversity will enhance the resilience of the urban forest.

5. **Ensure Establishment of New Trees:** Funding for new tree planting should include provisions for watering during the first two to three years to ensure that trees become established and thrive.

6. **Develop a Succession Plan:** A succession plan is needed to replace species like ash and hemlock that have pest issues, Norway maples that are failing, and ornamental trees reaching maturity. This plan will ensure the long-term health and sustainability of the urban forest.

7. **Improve Soil Conditions:** Deep soil decompaction and soil amendments are necessary to address the thin layer of topsoil provided during the original park construction. Improving soil conditions will enhance tree growth and allow roots to grow deeper, avoiding damage to paths.

By implementing these recommendations, we can ensure the continued health and expansion of the urban forest, providing significant environmental, social, and economic benefits to the community.

Enhancing the Urban Forest

Enhancing and improving the Urban Forest is driven by three distinct categories. Maintaining and improving the existing trees, proper planning for the future, and ultimately putting the planning into practice by expanding the tree canopy.

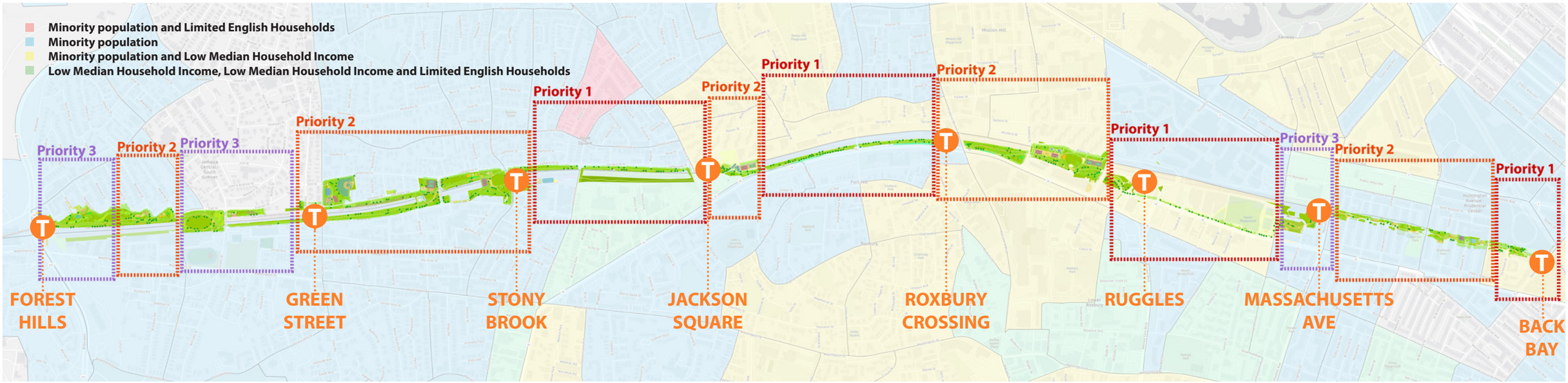
Each of these three categories are immensely intertwined with each other. Proper maintenance will set up high quality standards for a healthy group of trees and safety for the every day park users. Proper planning will help identify areas in need of planting, short and long term needs, and selecting the appropriate tree for a specific space. Finally, expanding the canopy and implementing new trees will yield multi-faceted benefits that will impact generations to come.

Tree Planting Prioritization

The Southwest Corridor Action Plan aims to enhance tree canopy coverage across the city to address several environmental challenges, such as mitigating the heat island effect, absorbing stormwater, and improving air quality. This plan involves different goals for tree canopy coverage in various neighborhoods, including Jamaica Plain, Roxbury, and the South End, considering the specific needs and conditions of each area.

Key considerations for tree planting include:

1. **Current Tree Canopy Coverage:** Focus on areas with the least existing tree coverage.
2. **Environmental Justice Communities:** Prioritize neighborhoods with vulnerable populations.
3. **High Heat Areas:** Target zones with the highest summer temperatures that impact environmental justice communities near parks.



Tree planting is categorized into three priority levels:

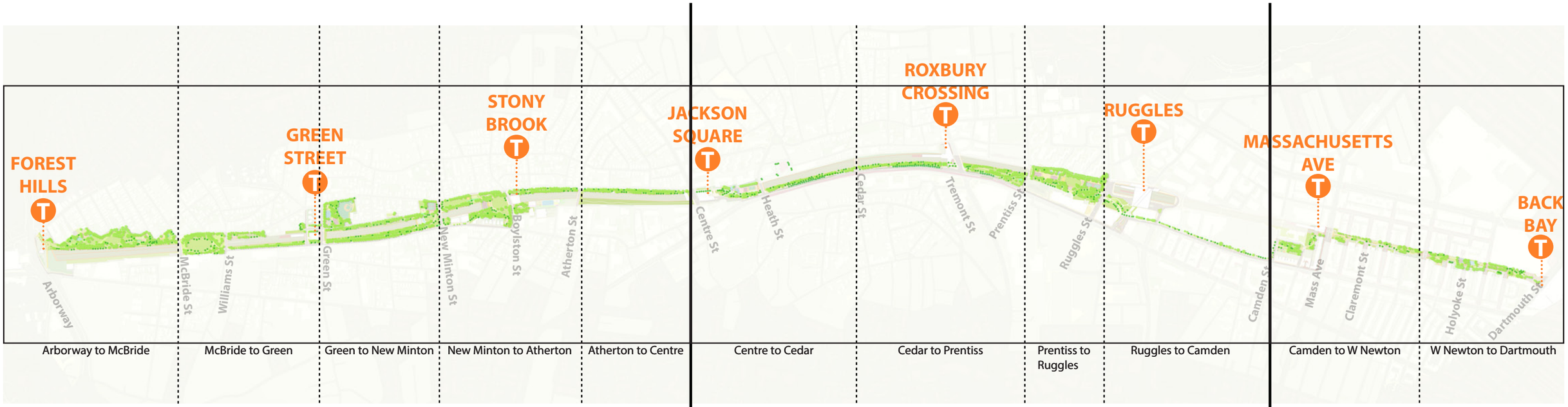
- **Priority 1:** Environmental justice neighborhoods with the highest heat and the lowest tree canopy coverage. These areas are the highest priority.
- **Priority 2:** Areas that may have either high heat or low tree canopy coverage but are not as critically affected as Priority 1.
- **Priority 3:** Regions where tree planting is beneficial but not as urgently needed as in Priority 1 and Priority 2 areas.

By focusing on these criteria, the plan aims to strategically improve the urban forest, addressing both environmental and social equity goals.

Planting Plans

Planting plans recommending new tree planting are shown on the next 11 plans. New trees are recommended to achieve several objectives:

1. **Increase the Tree Canopy:** Expanding the tree canopy enhances the environmental benefits provided by the park, such as improved air quality and reduced urban heat island effects.
2. **Replace Removed, Dead, or Unhealthy Trees:** Ensuring that the park maintains a healthy and vibrant tree population by replacing trees that have been removed or are no longer thriving.
3. **Provide Shade:** Increasing shade within the park to improve comfort for park users and protect them from excessive sun exposure.
4. **Provide Spatial Definition:** Using trees to define spaces within the park, creating a more structured and aesthetically pleasing environment.
5. **Line the Dual Path System:** Planting trees along the paths to enhance the visual appeal and provide shade for pedestrians and cyclists.
6. **Create a More Diverse Urban Forest:** Introducing a variety of tree species to enhance biodiversity, increase resilience to pests and diseases, and promote ecological balance.



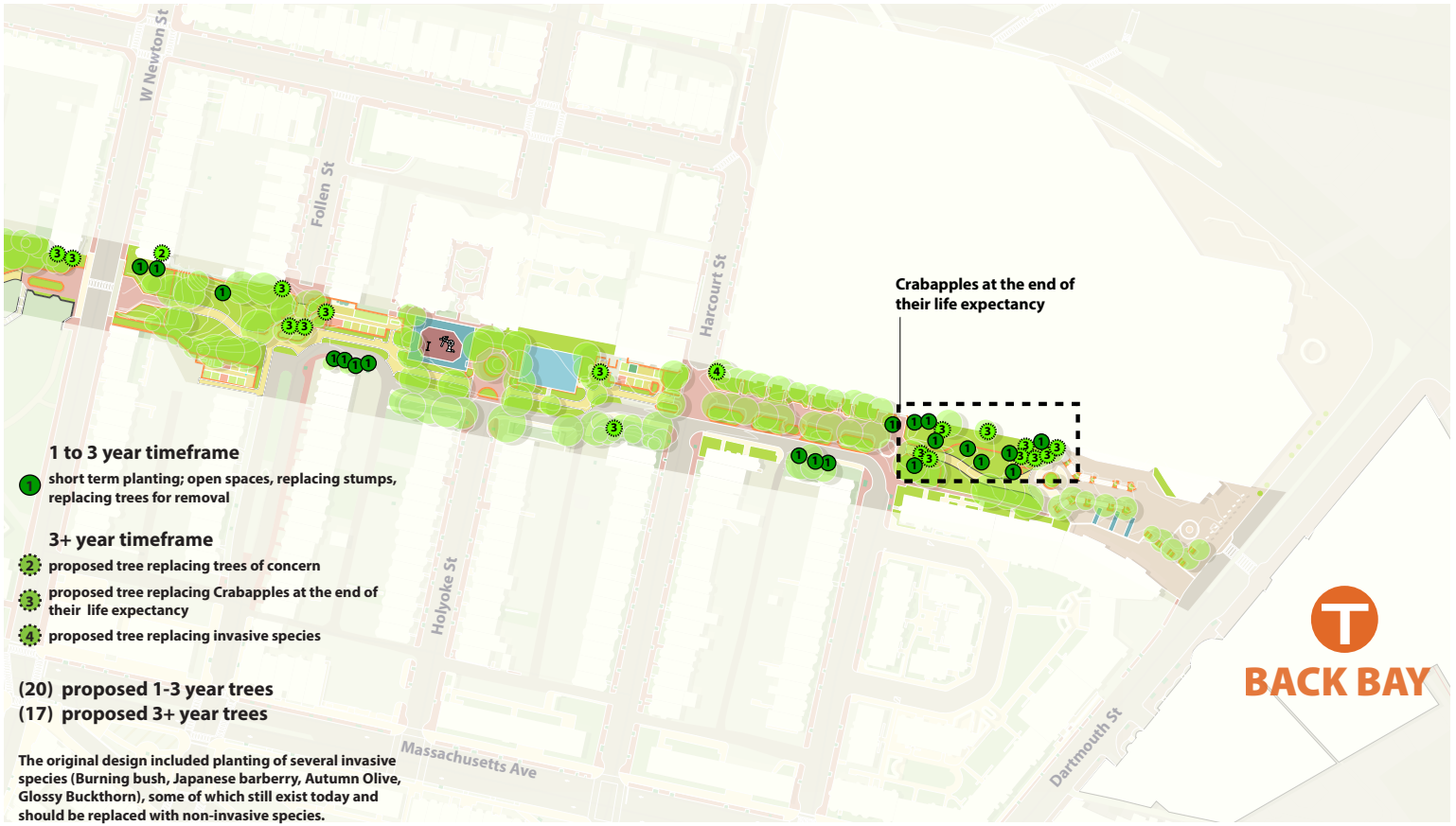
Jamaica Plain
(189) proposed 1-3 year trees
(66) proposed 3-10 year trees(trees of concerns)
(113) proposed 3-10 year trees(Crabapple)
(21) proposed 3-10 year trees(invasive trees)

Roxbury
(174) proposed 1-3 year trees
(35) proposed 3-10 year trees(trees of concerns)
(99) proposed 3-10 year trees(Crabapple)
(29) proposed 3-10 year trees(invasive trees)

South End
(41) proposed 1-3 year trees
(2) proposed 3-10 year trees(trees of concerns)
(32) proposed 3-10 year trees(Crabapple)
(1) proposed 3-10 year trees(invasive trees)

West Newton to Dartmouth

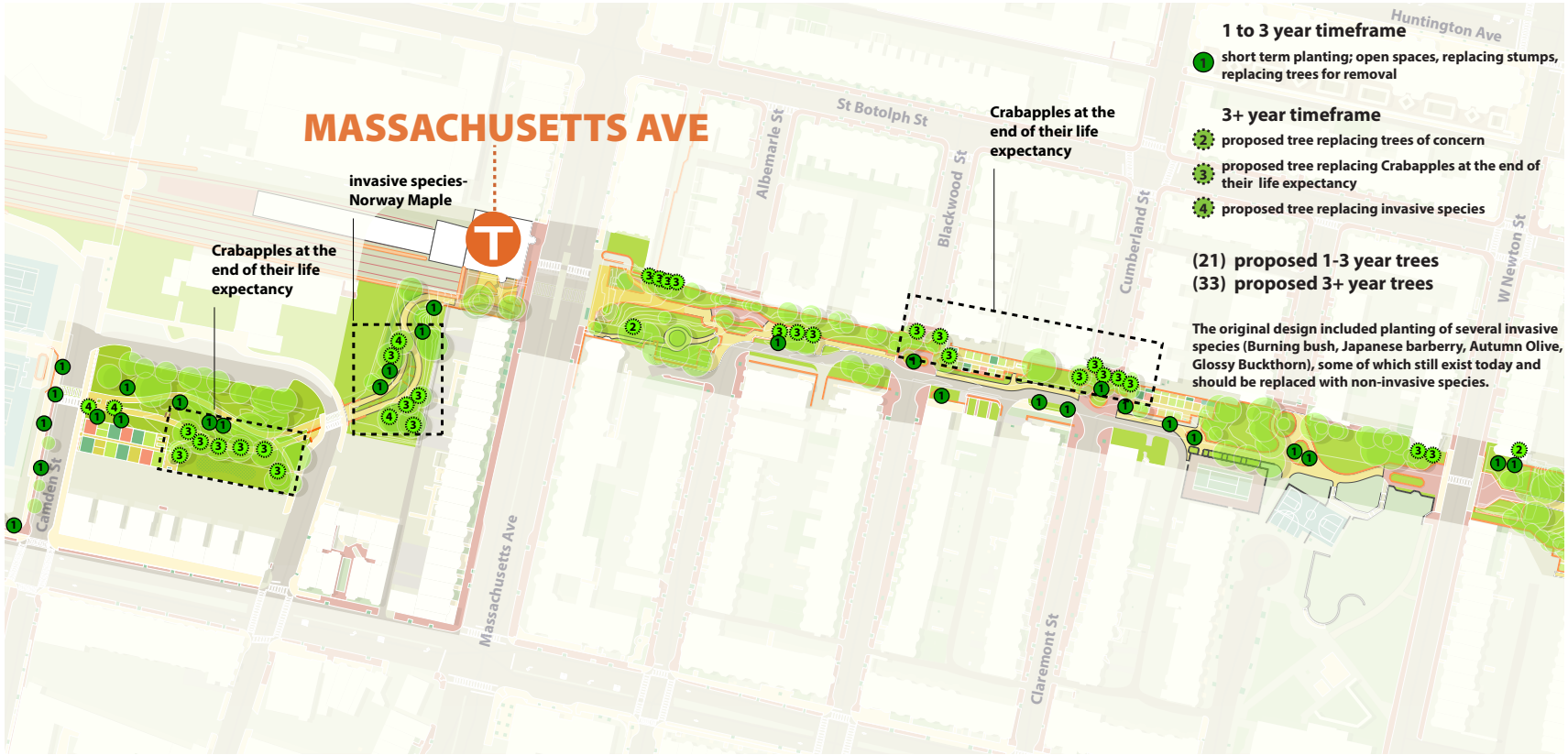
The South End vegetation is lush and diverse thanks to the efforts of the Southwest Corridor Park Conservancy, which provides funding and volunteers to care for this portion of the park. The entire portion of the park from Massachusetts Avenue to Dartmouth Street is constructed on structure over the rail corridor, making the management of the landscape that much more challenging. From West Newton Street to Yarmouth Street, the landscape is gardenesque, featuring shade trees, ornamental trees, shrubs, perennials, and bulbs. The Conservancy is interested in having the corridor certified as a Level 1 Arboretum with the Arbnet. However, between Yarmouth and Dartmouth Street, the landscape, managed by the adjacent developer, suffers from dead or failing trees and little to no ground cover. The poor quality of this landscape detracts from the park entrance. Outreach to the developer is needed to urge improvements to this area and enhance the overall aesthetic and environmental quality of the park.



Camden to West Newton

Supporting the Conservancy to continue their efforts will help sustain the quality of this landscape. The yew shrubs along the path leading to Massachusetts Avenue should be replaced with plants that offer better seasonal interest and diversity. Additionally, new park entrances are recommended to be added at Blackwood and Cumberland Streets. This will necessitate the removal and reconfiguration of granite block walls and the introduction of new plantings.

From Massachusetts Avenue to Camden Street, the gardenesque quality of the South End landscape is lost, giving way to a more utilitarian landscape of shade trees, yew shrubs, and lawn. Extending the quality and character of the South End landscape to Camden Street would enhance this area significantly. If the Conservancy has the capacity to implement and maintain these improvements, it would be beneficial to transform this section to reflect the lush and diverse plantings seen in the South End. This would create a cohesive and visually appealing landscape throughout this portion of the corridor.



Ruggles to Camden

From Ruggles Street to the Ruggles MBTA station, the barren landscape should be transformed with an influx of tree planting to provide shade and spatial definition. This will enhance the visual appeal and comfort of the area, making it more inviting for park users.

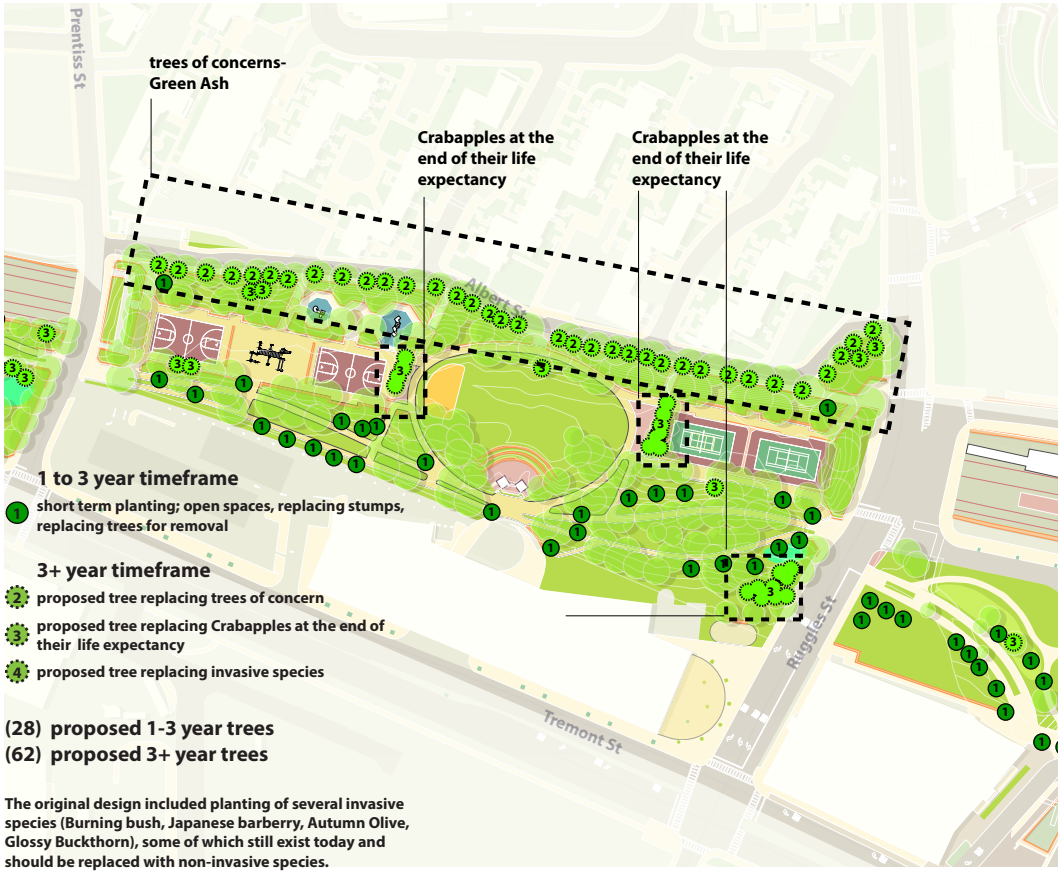
From the MBTA station north to Camden, the park is maintained by Northeastern University and the City of Boston. This section features a dual path system with trees planted in tree pits, raised planters, structural soil, or tree lawns. However, in front of Carter Playground, many trees have been lost to age or construction activities. Coordination with the City of Boston is needed to support new tree planting in this area to restore the landscape and ensure a healthy, green environment for park users.

Prentiss to Ruggles

The center spine of this landscape is constructed on a structure over the rail corridor. East and west of that structure are well-established landscapes with deciduous and evergreen trees. Infill tree planting is needed to replace poor condition or lost trees that line the path system, ensuring continuity and health of the tree canopy.

Raised planters punctuate and help separate spaces with ornamental shrub planting. While maintaining these shrubs presents a challenge for the DCR, they are essential for providing diversity and seasonal interest.

The Roxbury portions of the park would greatly benefit from stewardship from the friends groups. Other portions of the park have volunteers raising funds and maintaining the park.

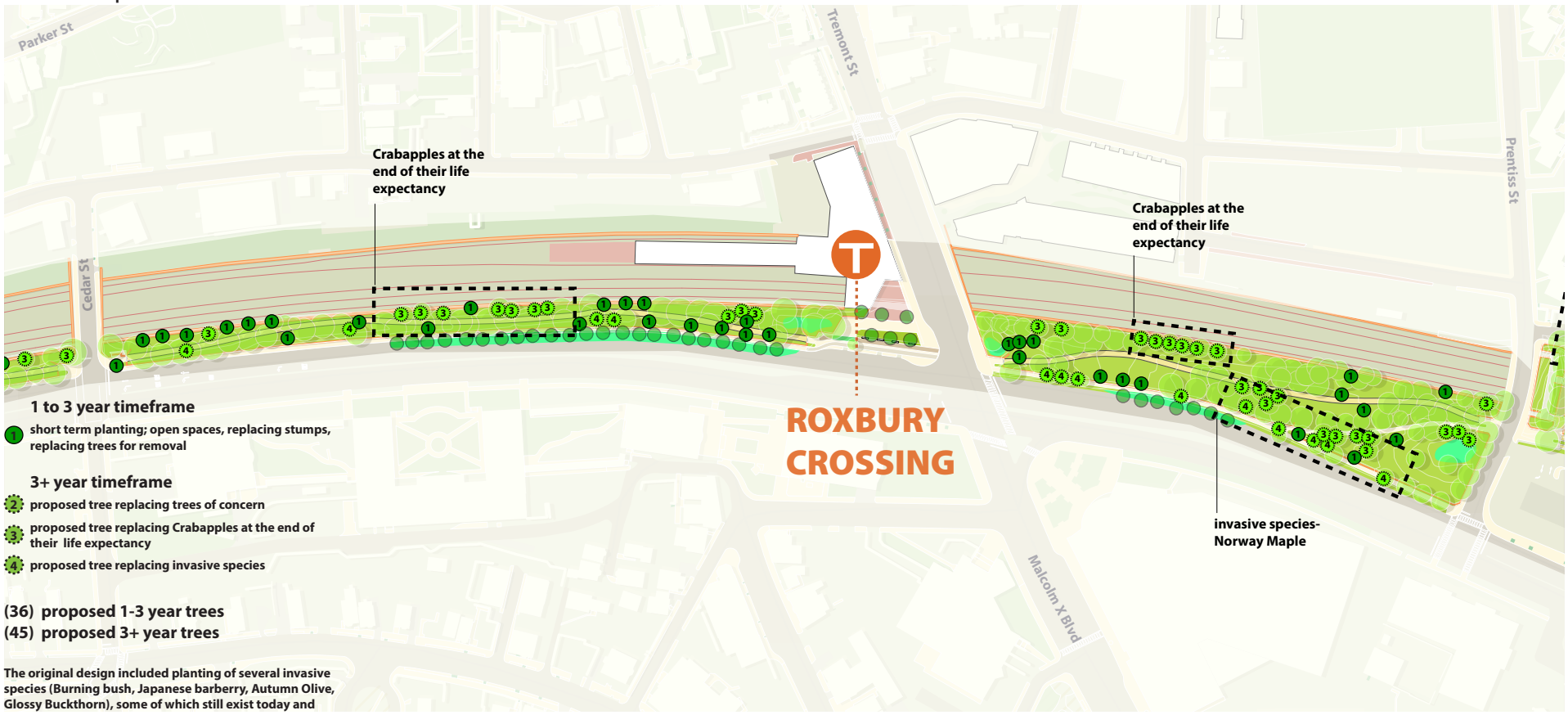


Cedar to Prentiss

As the park crosses through Roxbury, it becomes a very narrow corridor, just wide enough for the dual path system. Trees struggle in these challenging conditions, but maintaining a robust tree canopy is critical for the surrounding community and for the comfort and enjoyment of park users. Greater emphasis is needed in this area for new tree planting and aftercare, including existing tree pruning, watering, soil decompaction, and amendment.

The Columbus Avenue Bus Lane project, being designed by the City of Boston and the MBTA, will help calm traffic and introduce green infrastructure. This project will include long lines of trees that will buffer the park, providing additional shade and environmental benefits.

This project will also address the MBTA plaza tree planting, where successful trees are needed to provide shade and mitigation from heat for MBTA and park users.

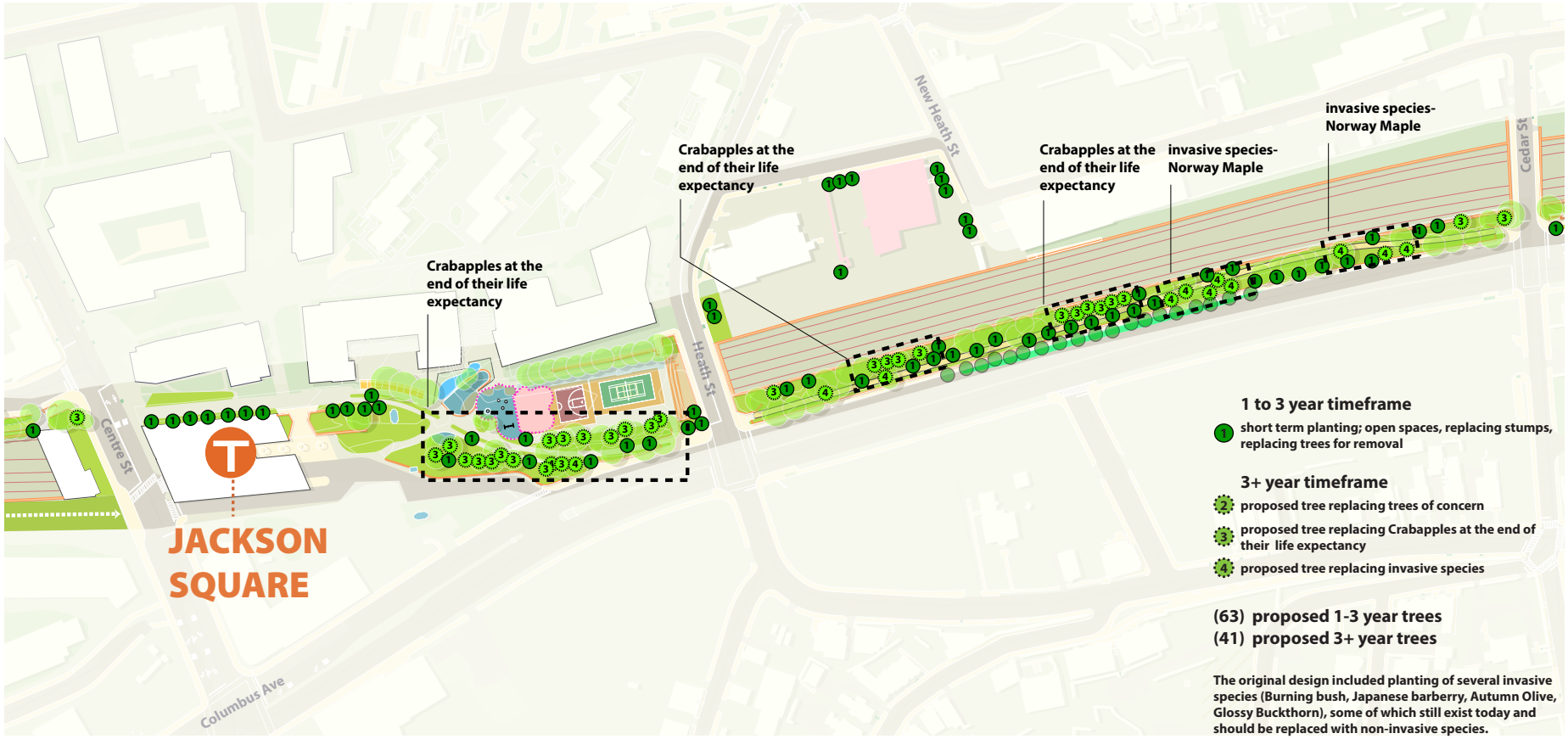


Centre to Cedar

From Heath Street to Cedar Street, the very narrow corridor requires an emphasis on new infill tree planting with thorough aftercare, including tree pruning and watering of existing trees. Soil decompaction and amendment are crucial to improve growing conditions in this area.

The Columbus Avenue Bus Lane project will add green infrastructure and street trees, providing buffering from traffic, environmental benefits, and shade. At Jackson Square, tree planting follows the path system and accents the hardcourts and playground that span the rail corridor, enhancing the recreational spaces.

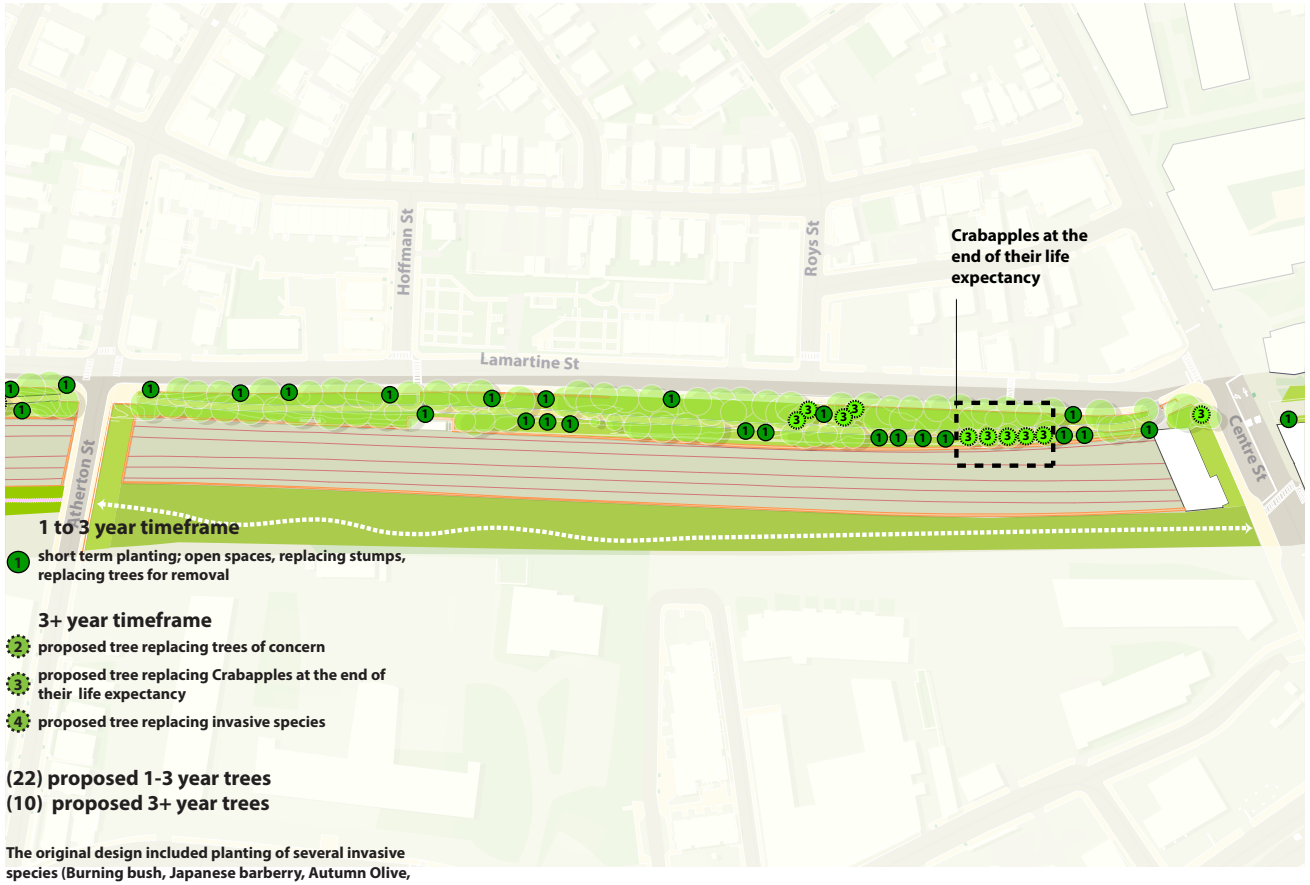
The redevelopment of Mildred Hailey Housing, once complete, will introduce new circulation patterns, shade from buildings, and new landscaping that will impact the corridor.



Atherton to Centre

While the narrow corridor from Atherton to Centre is similar to other parts of the park in Roxbury, the trees are in better condition, likely because the adjacent street is a local street and the surrounding land use is residential. Infill planting is needed to replace trees in poor condition or that have been removed. Additionally, shrubs, hedges, and vines help break up the rail corridor fencing, enhancing the visual appeal and providing ecological benefits. However, invasive vegetation species can become established in these areas and require regular monitoring and management.

East of the rail corridor, the Jackson Square Greenway is being developed by private developers, who will manage this landscape.



New Minton to Atherton

Volunteers in the Jamaica Plain neighborhood plant and maintain stewarded gardens that enhance park entrances and features. These gardens, with their great variety, significantly contribute to the character of the park, and DCR should continue to support these efforts.

From Boylston Street to Atherton, infill tree planting is needed to replace trees in poor condition or that have been removed. Pruning or removal of shrubs that obstruct path sight lines near the Stony Brook MBTA station is necessary for safety and visibility. New tree and shrub planting is also needed as new path connections from Boylston to Atherton are developed, better connecting the Kelly Rink to the rest of the park. Additionally, a significant stand of invasive Japanese Knotweed should be managed east of the Kelly Rink.

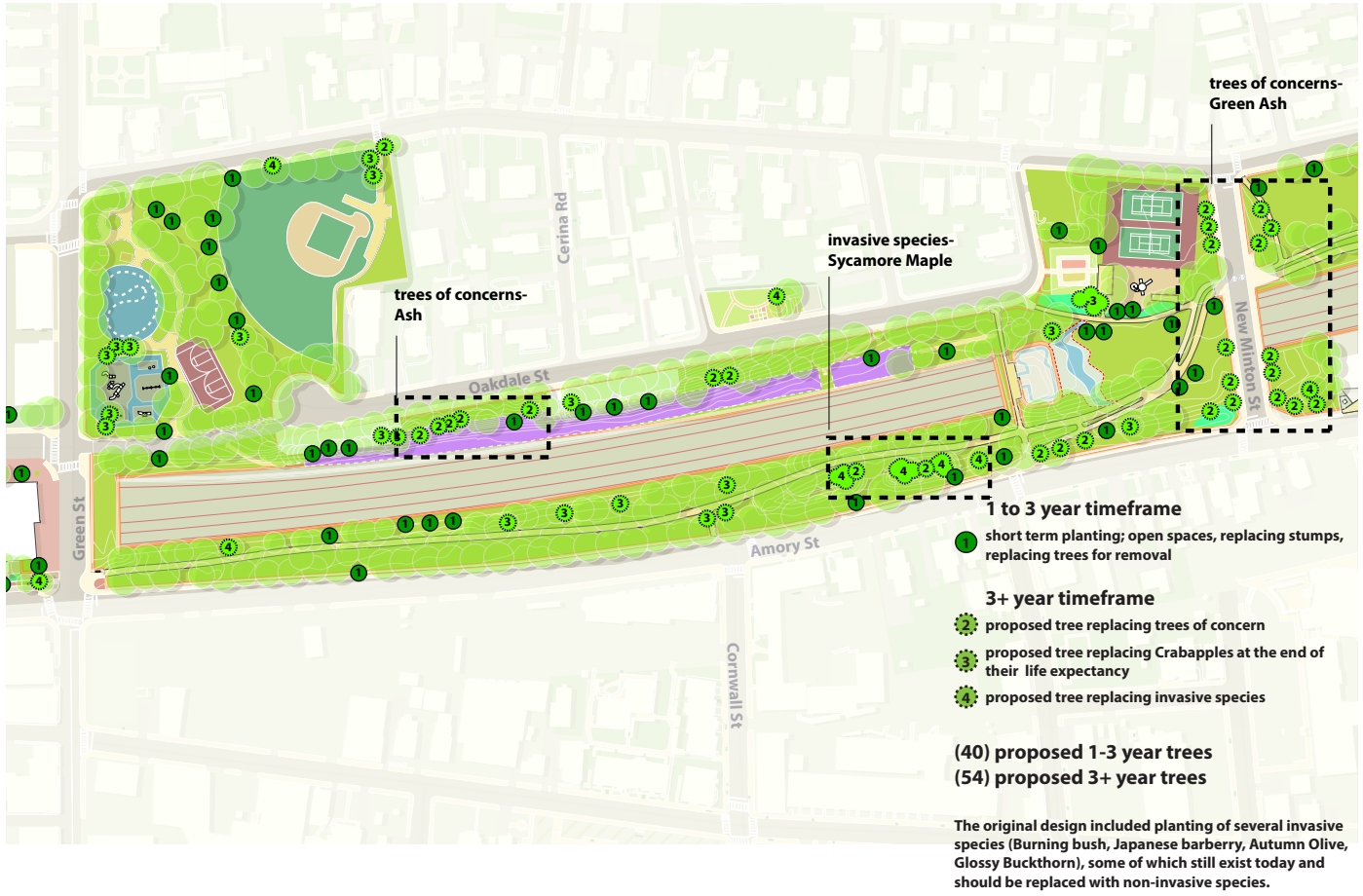
The landscape east and west of the decked area is in good condition and only requires a few new trees to replace those in poor condition or that have been removed.

Green to New Minton

Within Johnson Park, continued care for the large, mature trees is crucial to maintaining their health and longevity. Some infill tree planting would enhance the landscape between the splash pad and the baseball/softball field, improving both aesthetics and functionality.

Between Oakdale Street and the rail corridor, as a new stonedust path is added, tree planting is needed to provide shade and spatial definition. To ensure safety and functionality, trees should be planted no closer than 15 feet from the new light poles.

At New Minton Street and Amory Street, a number of existing trees will be removed as part of the 267 Amory Street project. The private developer is responsible for both the removal and replacement of these trees.



McBride to Green

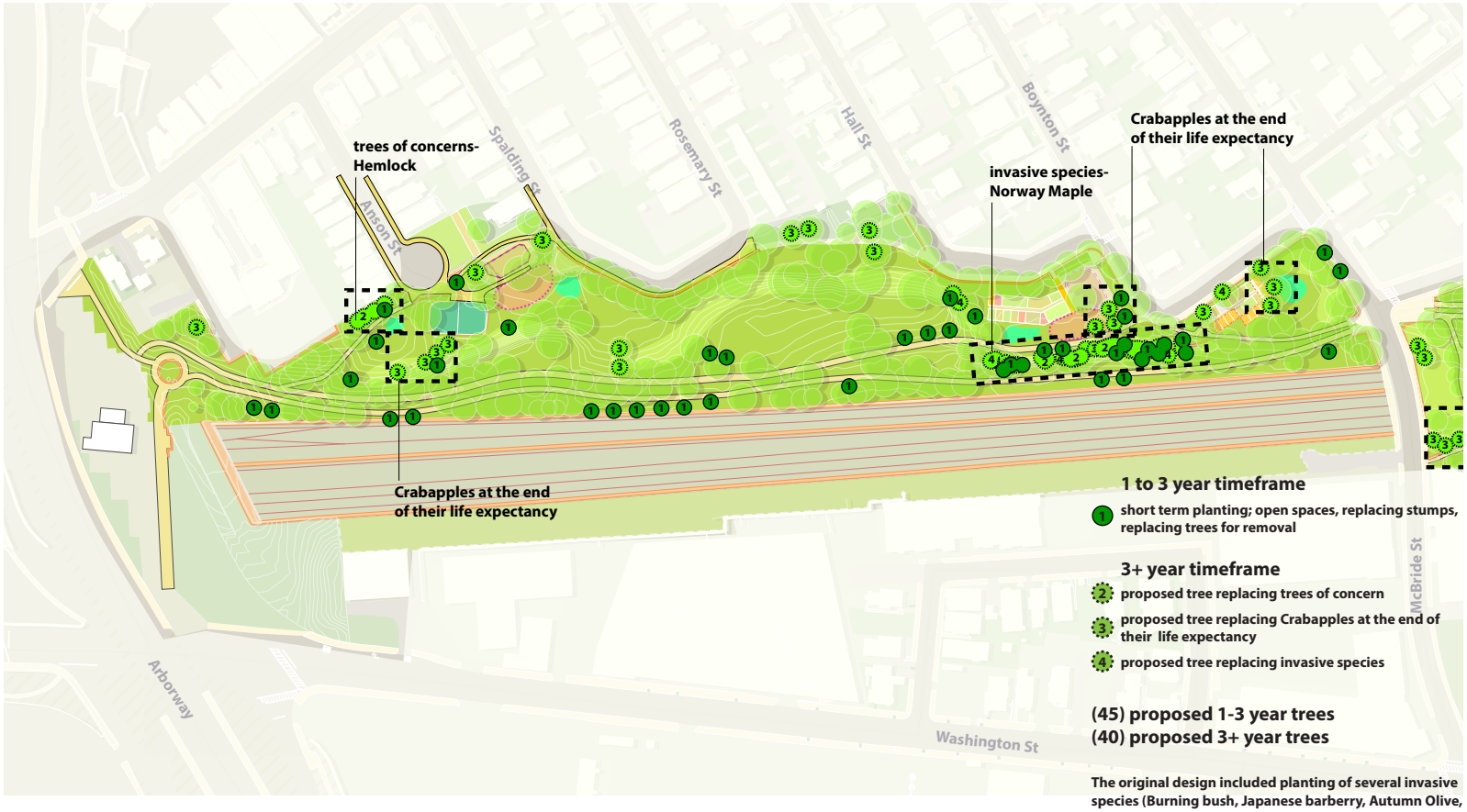
New trees should be planted around the large oval lawn between McBride and Williams Street to offer additional shade for park users. This will enhance the comfort and usability of the space. Additionally, existing trees lining the paths need to be pruned to provide adequate clearance for both park users and maintenance vehicles.

The small pocket park at Gordon Street and Woolsey Square should be improved with the addition of a path and benches, complemented by more diverse planting, including pollinator species. This will enrich the park's ecological value and provide a more inviting space for visitors.

In the MBTA plaza, planting efforts require a larger renovation by the MBTA, including a commitment to providing sufficient soil volume to support the growth of trees

Arborway to McBride

There are several invasive species and other species of concern where a succession plan is necessary. Additionally, steep slopes should have turf converted to meadow to prevent erosion caused by mowing equipment.



Planting Typology Zones

Planting Areas found throughout the Southwest Corridor Park

Plantings by Neighborhood

South End
Roxbury
Jamaica Plain

Plantings by Typology

Street Tree Zones
Planting on Structure Zones (limited soil volume areas)
Entry Planting Zones
Amenities Plantings Zones (i.e programming features)
Buffer Zones
Erosion Prevention Zones
Hillside Areas
Stormwater Management Areas








Planting Typology Zones: Arborway to McBride

Planting Typology Zones: McBride to Green

Shrubs and Vines

Shrubs in the SWCP are used in the following ways:

- To accent and identify park entrances
- To visually break up the fencing along the rail corridor
- To border the perimeter of playgrounds
- To enhance the edges of community gardens
- As a groundcover within large-scale plant beds in the South End

Vines grow on the rail corridor fencing providing seasonal interest and a visual buffer to fencing and trains.

Both shrubs and vines are a challenge for DCR staff to maintain. As time allows, DCR staff will prune shrubs and will remove trash and leaves from under the branches.

Volunteers steward shrubs throughout the South End and in the curated gardens in Jamaica Plain.

Shrubs and vines are an important part of the park landscape, and need more support to maintain them.

Plan example illustrating the uses of shrubs and vine in the SWCP.

Plant Species

Species selection for the Southwest Corridor Park will be a vital process to ensure the success of the park for the foreseeable future. Increasing the diversity and the number of genus and species found within the park, will help combat the challenges of climate change, pest and soil borne ailments and tough growing conditions that a modern day urban park faces.

In addition to these sets of prerequisites, understanding the current soil conditions, limited soil volumes, and unique setbacks from the MBTA tracks will be reflective in the comprehensive species lists.

As present-day urban park challenges seem to increase, new opportunities also present themselves, in the form of modern day cultivars. With maintenance of urban parks always being a concern for the longterm appearance, native cultivars that require less maintenance than straight native species provide an opportunity for DCR to allocate maintenance funding in other forms.

In conclusion, the proposed plant list needs to be one that showcases durable, hardy plants that require minimal watering, once established, and will thrive in urban soils. The list shall utilize and feature native cultivars that will require less pruning efforts from DCR staff. If this thinking can be implemented to the Southwest Park Corridor over time, than the park will be adaptive and well suited to withstand the ever-changing environment.

Species

Tree Plant List

Botanical Name	Common Name	Shallow Roots	Medium Depth	Deep/Taproot	Salt Tolerant	Wet Soil Tolerant	Planted in SWCP
Abies balsamea	Balsam Fir	X					
Abies concolor	Concolor Fir		X				
Acer rubrum	Red Maple	X			X	X	Y
Acer x fremanii	Freeman's Maple	X			X	X	Y
Amalanchier arborea	Downy Serviceberry	X			X		
Amalanchier canadensis	Canadian Serviceberry	X			X		Y
Betula alleghaniensis	Yellow Birch	X					
Betula lenta	Sweet Birch	X				X	
Carpinius caroliniana	American Hornbeam		X	X			
Celtis occidentalis	Hackberry	X	X	X	X	X	Y
Cercis canadensis	Eastern Redbud		X				Y
Cladrastis kentukea	Yellowwood			X			Y
Cornus florida	Flowering Dogwood	X			X		Y
Gleditsia triacanthos	Honeylocust		X	X	X		Y
Gymnocladus dioicus	Kentucky Coffeetree						
Juniperus virginiana	Eastern Redcedar	X			X	X	Y
Liquidambar styraciflua	American Sweetgum	X	X		X	X	
Liriondendron tulipifera	Tuliptree	X				X	Y
Nyssa sylvatica	Tupelo			X	X	X	
Ostrya virginiana	American Hophornbeam	X					
Picea abies	Norway Spruce	X					
Picea glauca	White Spruce		X			X	Y
Picea pungens	Blue Spruce	X			X		Y
Platanus occidentalis	American Planetree	X			X		
Quercus bicolor	Swamp White Oak	X			X	X	Y
Quercus imbricaria	Shingle Oak		X				
Quercus macrocarpa	Bur Oak		X			X	
Quercus palustris	Pin Oak	X			X	X	Y
Quercus phellos	Willow Oak	X					
Taxodium distichum	Bald Cypress		X		X	X	
Tilia americanan	Basswood	X	X		X		Y
Ulmus americana 'Jefferson'	Jefferson Am. Elm	X			X		Y
Umlus americana 'Valley Forge'	Valley Forge Am. Elm	X			X	X	Y

Species

Shrub Plant List

Botanical Name	Common Name	Salt Tolerant	Tolerates Poor Soils	Drought Tolerant	Wet Soil Tolerant
Aronia arbutifolia	Red Chokeberry	X	X	X	
Aronia melanocarpa	Black Chokeberry	X	X	X	
Calycanthus floridus	Carolina allspice				
Ceanothus americanus	New Jersey Tea				
Clethra alnifolia	Sweet Pepperbush	X	X	X	
Comptonia peregrina	Sweet Fern				X
Cornus racemosa	Gray Dogwood		X	X	X
Cornus sericea	Red-Osier Dogwood	X	X	X	X
Cotoneaster horizontalis	Cotoneaster		X	X	
Diervilla trifida	Bush Honeysuckle		X	X	
Fothergilla gardenii	Dwarf Witch-alder			X	
Hamamelis virginiana	Witchhazel				
Hydrangea arborescens	Smooth hydrangea				
Hypericum prolificum	Shrubby St. John's Wort				
Ilex Glabra	Inkberry	X	X	X	X
Ilex verticillata	Winterberry	X	X	X	X
Itea virginica	Sweet spires; Virginia willow	X		X	X
Juniperus horizontalis	Creeping juniper	X	X	X	
Juniperus horizontalis 'Bar Harbor'	Bar Harbor juniper	X		X	
Leucothoe racemosa	Sweetbells Leucothoe				
Lindera benzoin	Common Spice Bush	X	X	X	X
Myrica Gale	Sweetgale	X	X	X	X
Myrica pennsylvanica	Bayberry	X	X	X	X
Physocarpus opulifolius	Ninebark	X	X	X	X
Potentilla fruiticosa	Bush Cinquefolis		X	X	
Rhus aromatica	Fragrant Sumac	X		X	X
Rosa carolina	Carolina Rose		X	X	
Sambucus canadensis	Elderberry				X
Spiraea latifolia	Meadowsweet		X	X	
Spiraea prunifolia	Bridal Wreath Spiraea		X	X	
Spiraea tomentosa	Steeplebush		X	X	
Vaccinium angustifolium	Lowbush Blueberry	X	X		X
Viburnum acerifolium	Mapleleaf Viburnum			X	X
Viburnum carlesii	Korean Spice Viburnum			X	
Viburnum dentatum	Arrowwood Viburnum			X	
Viburnum opulus	Highbush Cranberry				X
Viburnum plicatum var. tomentosum	Doublefile viburnum			X	

Species

Perennial and Grasses Plant List

Botanical Name	Common Name	Salt Tolerant	Tolerates Poor Soils	Drought Tolerant	Wet Soil Tolerant
Achillea millefolium	Yarrow	X	X	X	
Agastache foeniculum	Anise Hyssop	X	X	X	X
Allium cernuum	Nodding Onion	X	X	X	
Amsonia hubrictii	Blue Star	X	some	some	X
Andropogon gerardii	Big Bluestem	some	X	X	some
Anemone sp.	Windflower sp.			X	
Asarum canadense	Wild Ginger				X
Asclepias purpurasecens	Purple Milkweed	some	X	X	some
Aster virginiana	Aster	X		X	some
Carex pensylvanica	Pensylvania sedge	some	some	X	some
Coreopsis verticilata 'Zagreb'	Threadlead coreopsis	some	X	X	
Chrysanthemum leucanthemum	Field Daisy	X	X	X	
Clematis virginiana	Virgin's bower		X	X	some
Dianthus barbatus	Sweet William			some	
Digitalis purpurea	Foxglove	X	X		some
Galanthus nivalis	Snowdrop				some
Helianthus annus	Sunflower	some	X	X	
Hemerocallis flava (and fulva)	Day Lily	X	X	X	
Iris siberia	Siberian Iris	X	X	X	X
Iris versicolor	Iris	X	X	X	X
Lathyrus ororatus	Garden Sweetpea	X			
Lavendula vera	Lavendar		X	X	
Lobelia cardinalis	Cardinal flower		X		X
Muscari botryoides	Grape Hyacinth			X	
Panicum virgatum	Switchgrass	X	X	X	
Phlox (spp)	Phlox	some	X	X	
Rudbeckia hirta	Black-Eyed Susan	X	X	X	X
Saliva officinalis	Sage	X	X	X	
Santolina chamaecyparissus	Lavendar-cotton	X	X	X	
Sedum (spp)	Sedum	some	X	X	
Solidago sp.	Goldenrod sp.	X	X	X	X
Vinca major (and minor)	Periwinkle	X	X	X	some
Viola tricolor	Violets		X	X	
Wisteria frutescens	Carolina Kidney-bean Tree; native Wisteria		X	X	

Species

Seed Mix Plant List

New England Conservation/Wildlife Mix

Seed Mix is used predominately for erosion control and to increase wildlife habitat value

Botanical Name	Common Name
Elymus virginicus	Virgina Wild Rye
Schizachyrium scoparium	Little Bluestem
Andropogon gerardii	Big Bluestem
Festuca rubra	Red Fescue
Sorghastrum nutans	Indian Grass
Panicum virgatum	Switch Grass
Chamaecrista fasciculata	Partridge Pea
Desmodium canadense	Showy Tick Trefoil
Asclepias tuberosa	Butterfly Milkweed
Bidens frondosa	Beggars ticks
Eupatorium purpureum	Purple Joe Pye Weed
Rudbeckia hirta	Black Eyed Susan
Aster pilosus	Heath Aster
Solidago juncea	Early Goldenrod

New England Erosion Control/Restoration Mix for Dry Sites

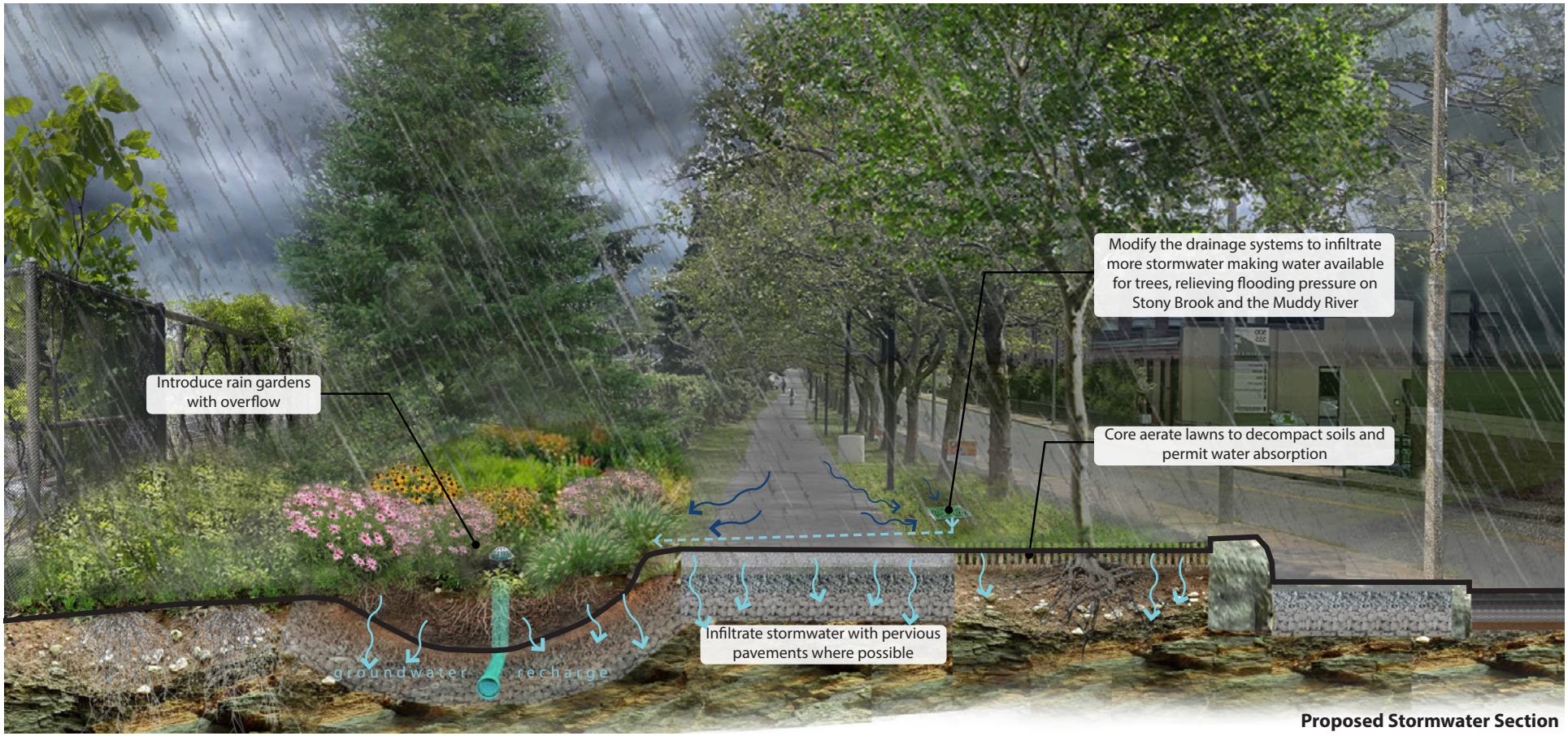
Seed Mix is used predominately for erosion control and to increase wildlife habitat value

Botanical Name	Common Name
Elymus canadensis	Canada Wild Rye
Festuca rubra	Red Fescue
Lolium multiflorum	Annual Ryegrass
Lolium perenne	Perrenial Ryegrass
Schizachyrium scoparium	Little Bluestem
Panicum virgatum	Switch Grass
Sorghastrum nutans	Indian Grass

Stormwater Management

This shift in approach necessitates several modifications to traditional park infrastructure. Changes may include:

1. **Modifying Park Drainage Structures:** Adapting existing drainage systems to facilitate on-site infiltration and treatment.
2. **Altering Grading:** Adjusting the park's topography to promote natural water flow and infiltration.
3. **Introducing Rain Gardens and Bioswales:** Installing these features to capture, filter, and infiltrate stormwater, reducing runoff and enhancing water quality.
4. **Utilizing Permeable Pavements:** Incorporating materials that allow water to pass through and be absorbed by the ground, decreasing surface runoff.
5. **Decompacting Soils:** Improving soil structure to enhance its ability to absorb water, reducing runoff and promoting groundwater recharge.

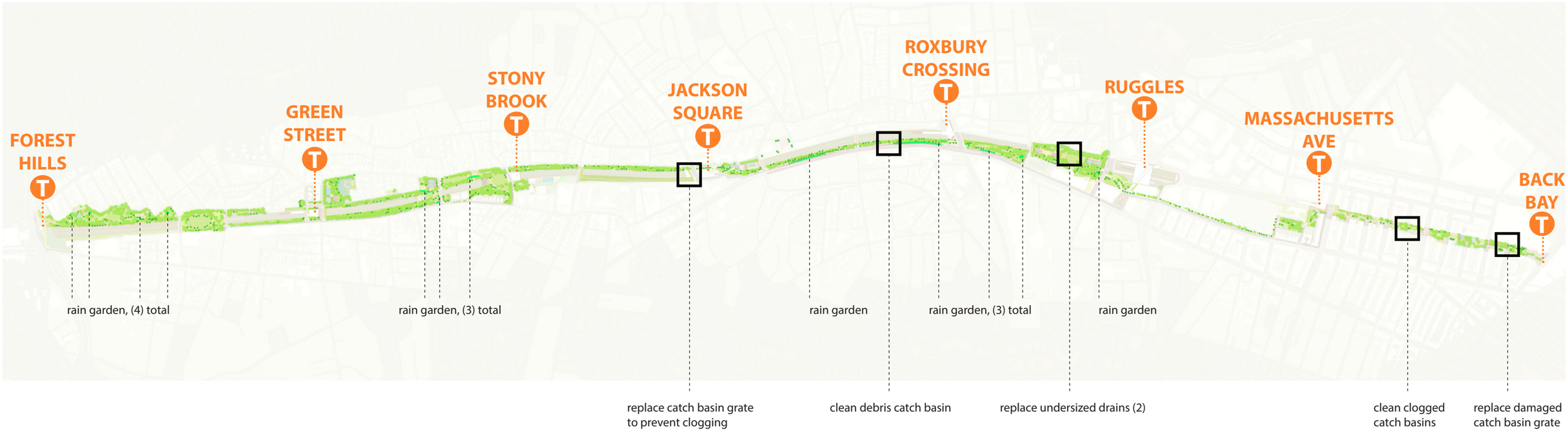


Proposed Stormwater Section

Stormwater Management

Urban park stormwater management involves strategies and practices designed to handle and mitigate the impacts of stormwater runoff within park settings. Effective stormwater management in urban parks helps reduce flooding, improve water quality, and enhance the health of natural ecosystems.

Historically, park stormwater was directed to drainage structures, which conveyed it to stormwater pipes and eventually to bodies of water such as Stony Brook, the Muddy River, and the Charles River. However, current stormwater management strategies focus on infiltrating and treating stormwater on-site. The goal is to retain water to recharge groundwater and make it available for the landscape.



Erosion Repair and Prevention

Erosion in the SWCP is a concern due to its potential to impact both the environment and the usability of the park. Erosion in the park is causing soil loss, reduced vegetative cover, decreased water quality, infrastructure damage, and visual degradation.

These issues can be addressed through regrading, establishing vegetative cover, changing mowing practices, changes to grading and drainage, and through park design.