

# **PVD Tree Plan**

Towards a Healthy, Resilient, and Equitable Urban Forest

### Fall 2023

The PVD Tree Plan lays out a vision and strategic pathway to a healthy, just, and resilient urban forest in Providence.

As we face the worsening impacts of the climate crisis, and deep inequities in how those impacts are felt across our city, an equitable and resilient tree canopy is an increasingly vital piece of community infrastructure. This plan outlines recommendations for maximizing the social, public health, economic and environmental benefits that tree canopy provides, and for making sure those benefits are equitably shared throughout Providence.

The PVD Tree Plan is a communityled initiative and the product of a multi-year collaboration among many individual, community, nonprofit, and City stakeholders.

Our urban forest is an interconnected network, and it takes an interconnected network to sustain and expand it.. While much work went into creating this plan, the real collaborative work of realizing its vision—and of planning, investing in, growing, managing, and maintaining our urban forest—is just beginning....

This plan is a blueprint and an invitation:

Join us, and together we will make our city healthier, greener, more resilient and more just!

### Lead Partners





The Nature Conservancy Rhode Island



### Supporters & Collaborators















WOONASQUATUCKET RIVER

WATERSHED COUNCIL





Consulting Group



### The PVD Tree Plan process was made possible by:

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## Land Acknowledgement

We call this place—at the head of the Narragansett Bay, where the Woonasquatucket, Moshassuck, and Seekonk Rivers converge and flow towards the sea—Providence. But this land has been here long before the city of Providence ever existed, and it will be here long after.

Since time beyond written record, this land has been home to Narragansett, Pokanoket, Nipmuc, and Wampanoag Peoples, who have stewarded it with care across generations. From the retreat of the ice sheet 16,000 years ago which carved this landscape, to the ecological and cultural violence of European colonization, the First Peoples of this land have seen it change drastically. But through these changes, they have carried their knowledge, traditions, and culture within their memories and communities, which are thriving today. And despite ongoing threats to Native sovereignty, they maintain sacred relationships with this land, its waters, and all their living things-including trees.

Narragansett, Pokanoket, Nipmuc, and Wampanoag Peoples have always practiced ways of relating to trees as elders, kin, and teachers. We learn with gratitude from these Indigenous ways of being as we work collectively to acknowledge and repair the harm that colonization has caused—for the land, its forests, and its First Peoples.

So we acknowledge the trees themselves, too...the maple and oak, beech and sassafras, ash and cedar and pine and birch and hickory and dogwood. We honor the ways they've cared for us, offering shade, food, oxygen, and beauty. We share gratitude for the pollinators that have helped seed each new generation, the soil and sunshine that have nourished their growth. We give thanks to the many people who have lovingly helped them thrive.

We make these acknowledgements to remind ourselves that we are accountable to the trees around us as fellow members of a living community bound together by interdependence. And we remind ourselves that we are accountable, too, to the First Peoples who have always known this. As we nourish our own relationships with this land and steward the trees that grow here now, we remember that we are temporary guests here, and we pay our respect to Narragansett, Pokanoket, Nipmuc, and Wampanoag elders of both past and present.<sup>1</sup>



### Jo Ayuso

Founding Director of Movement Education Outdoors



I would like to invite you to take a breath. Together, let's inhale...and exhale.... In taking this breath we are connecting not only to each other but to nature and particularly trees, which filter and oxygenate the air around us every day. As environmental justice scholar Caroline Finney reminds us, we are actually in nature right now.<sup>2</sup>

I'd like to invite you to imagine trees as Beings that you are in a relationship with. The idea that trees are a vital part of our communities as living beings is not a new idea, but rather an Indigenous way to think about trees.

So, as we imagine that, we must also honor Black and Indigenous people who have kept alive different ways of thinking about and working with trees....who have always and currently think of trees as our kin in the world.

The colonial idea of nature and the body as separate is at the core of the environmental catastrophes we face today. When this separation occurs, it's easy to keep distance, to not acknowledge our relatedness to the land, water, air, and non-human life.

Disconnection brings disrespect and disregard. This creates an opportunity to exploit a tree, mistreat and gain profit.

Many of us know certain benefits of trees: they shelter, filter, beautify and are the lungs of the Earth.

The question I will leave you all with today is: How will you be in relation to Trees?

<sup>2</sup> Black Faces, White Spaces: Reimagining the Relationship of African Americans to the Great Outdoors, Carolyn Finney (2014)

Photos by Dominique Sindayiganza

### **Tonay Gooday Ervin** Inventory Arborist and Massachusetts Certified Arborist



The idea of thanking the land and being respectful while in nature is closely tied to Indigenous concepts of reciprocity: where anyone can have a close relationship with animate things or spaces, as long as they care for the world around as it takes care of them.

To me, trees are not only culturally valuable, but they are also our kin. We need to change how dominant culture regards our ecosystems. Being in an urban setting does not disconnect us from the rest of life here in Rhode Island. The way I see it, we as humans are a single constituent in a massive democratic assembly with every other living and animate thing. As a Native person, this idea of living constituents includes rocks, lichen, plants, and even larger features like ponds and streams. This is a way of thinking I would like to see brought into the education of our young and our young at heart. It is a way of thinking I would also like to see in our legislature, and certainly it is a way of thinking that I would like to see when making tree planting decisions for the future.

The sector that I work in is dominated by white men who have a specific vision of what tree care looks like. While the white people dominating forestry acknowledge that my cultural teachings and my name as an Indigenous person are valuable, they still refuse to give my knowledge the weight and respect it deserves. My Indigenous cultural knowledge is not and should not be a free tool. It should be valued in the same way my work experience and my arborist certifications are.

I want to see people like Jo and Kufa and myself in positions of power, not just as consultants or in low-level positions. We need people with different experiences and from different backgrounds doing all sorts of environmental justice work. We need to see our experiences valued higher.

### Leandro Kufa Castro

Artist, Community Organizer, and Outreach, Recruitment & Leadership Coordinator with Building Futures



In 1994, my mother and her two kids moved to the South Side of Providence from the Dominican Republic. I always wonder when I now door-knock in the South Side, in the Bucket, or CF, if there is a family inside like mine was in the year '94—trying to keep our heads above water. My mom, two kids. Single mom, two jobs... What could a door knocker say about environmental justice for us to keep that door open? To be honest with you, it would have to be something to do with her kids' health or something that would affect her pockets.

As I grew up between Providence and Pawtucket, I can't say I noticed a lack of trees or lack of tree cover where I lived. I didn't notice that my project complex had hotter summers than other neighborhoods.

But now that I look back I remember that where my mom chose to bring us on a walk, or bring us to a park—it was always to a shadier, greener neighborhood. So these decisions started to create borderlines of access, which I didn't know were being drawn, to shape the way I interacted with status, diversity, and the environment here.

In 2018 I started working in Pawtucket with Groundwork RI, an environmental nonprofit, working on a project titled <u>"Climate Safe</u> <u>Neighborhoods</u>," a project that sought to change or influence policy to mitigate heat and flooding in Pawtucket and CF. But after going to City Hall and knowing how many Master Plans are collecting dust on their shelves, I knew that I had to return back to the people, organize, and listen.

We got together with teenage youth, shaded in red all the hottest places in our city, and started marking where we lived on that map, where we got our food, and where we waited for the bus. We overlaid redlining information on top of that and tree canopy cover data. And the more we layered, the more we noticed that all the Black and brown folks around the table lived on the blisters of heat on that map. So we stood over the map that painted in red our homes, our families, our lives, our health. We got emotional. How did we get here? We were angry, we felt the pulse of racism. We needed to vent and we needed to voice our frustrations. It was then that I understood that this work would take an emotional toll on us. When inviting frontline communities to the table, you're also inviting the trauma of history to the table. Understand that space needs to be given to process.

But I learned that voicing my frustrations and fears was an essential part of my healing process. I learned that without my voice on the table, not many would vouch for us. There wouldn't be a face, there wouldn't be a story attached to the data. My lived experience

Jo, Kufa, and Tonay are all members of the PVD Tree Plan project team.

They originally shared these words in their keynote speech for the 2022 Rhode Island Environmental Education Association Summit, **"Trees for the People: Environmental** Justice for Rhode Island's Frontline Communities."

View a recording of the original speech on RIEEA's YouTube channel **here**.



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## **Executive Summary**

### What is the PVD Tree Plan?

The PVD Tree Plan lays out a vision and strategic pathway to a healthy, just, and resilient **urban forest** in Providence. It is a community-led initiative and the product of multi-year collaboration among many individual, community, nonprofit, and City stakeholders, guided by a Steering Committee of **climate justice frontline community** representatives and urban forestry practitioners.

This plan is a blueprint and an invitation: join us, and together we will make our city healthier, greener, more resilient, and more just!

### Our urban forest today

More than 27% of Providence is covered by tree canopy.



That's over 3,221 acres of land and more than 415,000 trees.

And there's good news...our urban forest is growing! Thanks to a strong foundation of tree planting and maintenance programs, we've seen sustained increases in Providence's tree canopy in recent years. But this progress has done little to change the reality that our city's tree canopy is not evenly distributed. Trees are heavily concentrated in our city's wealthiest and whitest neighborhoods, excluding many low-income communities of color from experiencing the many benefits that our urban forest provides.

We need to make large-scale investments in our urban forest to protect our city's trees from the threats of increasing **development** and **climate disruption** and expand our tree canopy so that it serves everyone in our community.

VII

### Why trees? Why now?

As we face the worsening impacts of the climate crisis, and deep inequities in how those impacts are felt across our city, an equitable and resilient tree canopy is an increasingly vital piece of community infrastructure.

When we take care of the trees around us, they take care of us, providing a range of benefits that include:



### Key Terms:

#### **Urban forest:**

the collection of all the trees in the city and all the living things that rely on them.

### Tree canopy:

the layer of leaves, branches, and stems that cover the ground when viewed from above.

### Our urban forest is not equitable.

Tree canopy is unevenly distributed across Providence neighborhoods—and strongly correlated with both race and income.





This pattern is the result of decades of racist urban policy and systemic disinvestment in low-income neighborhoods home to people of color. It is evidence of how racism is built into our city's landscape, causing ongoing harm for Black, brown, and working-class people.

This is why Providence community members and organizations came together to create the PVD Tree Plan. And it's why the plan specifically centers the voices, needs, and priorities of climate justice frontline communities.

### Creating the PVD Tree Plan

Over the past three years, community members have engaged with the planning process and shaped our recommendations through:

- A community survey (which received 848 responses!)
- Presentations to community groups
- Sector-specific focus groups
- Citywide events, tabling, and canvassing
- One-on-one interviews and informal conversations

### Key Terms:

atk

Median Household

Income

#### **Tree equity:**

The fair, equitable distribution of trees and the resources required to sustain them across all neighborhoods in a city, so that everyone has equal access to the health, climate, and economic benefits of the urban forest.

#### Climate justice frontline communities:

The people—especially people of color—who are most impacted by overlapping crises of ecological, economic, and political injustice, experiencing the "first and worst" effects of the climate crisis.

### **Towards Tree Equity in Providence**

We envision a city where a thriving, healthy, and resilient urban forest supports thriving, healthy, and resilient people—and where those people support the urban forest in turn. By achieving tree equity, we can create a future where everyone in Providence experiences the health, climate, and economic benefits of our shared urban forest.

### Three overarching needs cut across the recommendations we developed to help us achieve this vision:

- **Coordination** We need structures for city-wide collaboration and communication to more effectively work together towards a shared urban forest vision.
- **Capacity building** We need stronger investment in the many people and organizations who care for our trees.
- Community leadership We need pathways for frontline communities to directly participate in both stewardship activities and management decisions at all levels.

### To guide our progress towards city-wide tree equity, we also developed an initial 25-year canopy target.

Meeting this target would require us to plant and maintain around 30,377 trees. Every year, these trees would:<sup>3</sup>

- Support 220.9 jobs
- Remove 38,228.1 pounds of pollution from the air we breathe
- Prevent 10.4 million gallons of polluted stormwater runoff from entering our waterways
- Provide \$437,336.43 in combined environmental benefits

We want to increase tree canopy in tree equity focus areas by 50% over the next 25 years, while maintaining existing canopy levels across the city.

Planting these trees—the only public infrastructure that increases in value over time would require an investment of at least \$2.5 million per year over ten years, paired with sustained investment in city-wide capacity-building and workforce training. We'll need all hands on deck...so join us!

<sup>3</sup> Benefits calculated using the <u>Tree Equity Score Analyzer</u> from American Forests.

### **Summary of Goals**

The PVD Tree Plan outlines an action plan to achieve tree equity—and transformative change in our communities' public health and quality of life. Our recommendations are broken down into goals and strategies for **six action areas**:

### **Community Leadership and Engagement**

- Foster leadership by and accountability to climate justice frontline communities
- Build community power across local movements
- Expand access to information and educational and training opportunities
- Celebrate residents' existing relationships with trees

### Planting

- Prioritize planting trees on private property
- · Plant trees, orchards, and "mini-forests" in community spaces
- Increase street tree plantings in tree equity focus areas
- Adopt coordinated city-wide approaches to plant for equity and resilience

### Maintenance and Management

- Nurture our young and newly planted trees
- Ease the burdens that trees create for our communities
- Protect existing canopy from short- and long-term threats
- Monitor the health of our urban forest and the activities that sustain it

### Workforce Development

- Introduce employment-seekers to tree industry career options
- Dismantle barriers to entry into the tree industry
- Support tree workers' professional growth and changing needs from training to retirement

### **Funding and Financing**

- Secure reliable funding streams for long-term investment
- Link urban forestry funding streams with funding streams for intersecting social and environmental equity initiatives
- Distribute resources according to the needs and priorities of climate justice frontline communities

### Policy and Planning

- Strengthen City policies to protect and equitably distribute the benefits of urban trees
- Coordinate urban forestry activities, policy, planning, and enforcement across municipal
  and state departments
- Develop state-level policies that eliminate barriers facing municipal urban forestry departments

### **Calls to Action**

Ready to help our urban forest thrive? *Here's what you can do:* 

### If you represent an organization or institution:

- Think about ways your group might connect to this work:
  - Do you own a property that needs more trees?
    - Could you help raise funds to increase tree equity in our neighborhoods?
    - Is your group able to volunteer on tree planting or stewardship projects?
    - Are there opportunities for shared advocacy?
- Look at the Implementation Dashboard and note which strategies are relevant to your organization.

Implementation Dashboard is located here!

### If you are a decision-maker or public official:

 Champion the PVD Tree Plan as whole, and promote specific recommendations and actions that are relevant to your role.

### If you are an individual community member:

- Talk to people about the importance of trees and tree equity! Tell them about the PVD Tree Plan.
- Consider joining with your neighbors, faith center, workplace, or community group to help plant, maintain, or advocate for trees!
- Visit <u>www.PVDTreePlan.org</u> and follow us on Instagram
  @PVDTreePlan to learn about unfolding opportunities to get involved.
- Take space to be mindful of the trees around you...notice where we have them and where we don't, what role they play in our neighborhoods, and how they make you feel. Share some appreciation and gratitude for our urban forest!

Want to talk? Reach out to us at hello@pvdtreeplan.org!



## Welcome to Our Future Urban Forest

Let's say it's June-the first day this year that really feels like summer. When you open the door and step outside, the air feels hot and heavy on your face. At the curb, a small tree greets you, the wind waving its limbs-still only a few feet off the ground, the branches aren't big or tall enough to really shade the sidewalk yet. But this tree wasn't always there. You remember when that patch of sidewalk was bare concrete, baking in the sun. When your neighbor organized a community tree planting on your block, you got this new tree, a cherry tree...you recognized it because they were always your mom's favorite. You've watched the baby cherry tree through your bedroom window: delicate pink flowers in the spring, green summer leaves that light up in blazing red and orange come fall. You've watched your younger neighbor grow alongside the tree, picking up a weekly tree watering job for some extra summer cash, then learning how to prune its quickly-spreading branches—she helps your other neighbors prune their trees now, too.

As you walk toward your bus stop on Narragansett Boulevard, the branches of older, bigger trees reach over your head—maybe your grandparents planted these trees. Maybe these trees' ancestors were cared for by the Narragansett people from whom this street gets its name. When you get to the bus stop and plop down, you're grateful for the cool relief the trees' shade provides. Next door, an auntie lounges under her backyard apple tree, cold drink in her hand while she bounces her giggling granddaughter on her knee. The tree's spring flowers are just starting to transform into tiny red fruits, and you wonder what treats they'll become in the fall. At Columbia Park, kids are darting around the tree-lined playground. A few are huddled in the corner,

building a small castle from the twigs and leaves that have fallen to the ground. The kids' shouts drift towards you, mingling with the songs of the birds hopping around the tree canopy, the hum of life, and the sound of trees' leaves as they rustle in the wind.

Wherever you step in Providence, you're in the urban forest. In fact, this sprawling forest extends beyond the borders of the city itself, into Cranston and Pawtucket and Central Falls. Throughout these cities, trees are our neighbors, and we live in relation with these incredible beings-along our streets, in our backyards, and in our parks. Trees are in our cemeteries, parking lots, school yards, and campuses. They grow along the river and along the highway. They grow where we plant them and sometimes where we don't plant them, climbing through chain link fences in empty lots. The term "urban forest" describes the collection of all these trees in the city and all the living things that rely on them....including all of us.

It can be easy to think that "nature" is something that only exists outside of the city. But living beings are everywhere in Providence—they're part of our community. The trees around us help us meet our needs, providing food and shade and cleaning our air and water. Without trees, what would our neighborhoods feel like? When we recognize these beings as our living neighbors, elders, and caretakers, we come to understand our responsibilities to care for them as they care for us, to exist in **reciprocity**.

CULTURE RISING

## **Our Vision**

We envision a city where a thriving, healthy, and resilient **urban forest** supports thriving, healthy, and resilient people—and where those people support the **urban forest** in turn. We envision an **urban forest** that is valued by its human residents, managed for the good of our community, and equally enjoyed by all residents of Providence. To make this vision a reality we must achieve what we describe as **tree equity**: the fair, equitable distribution of trees, and the resources required to sustain them, across all neighborhoods in our city. **Tree equity** means that everyone can experience the health, climate, and economic benefits of our shared **urban forest**.

Right now, we're a long way from tree equity in Providence: neighborhoods that are home to low income communities of color have far fewer trees than the whiter and wealthier neighborhoods of the East Side. It's not a coincidence that these same neighborhoods experience the hottest summer temperatures, the worst air quality, and the highest asthma rates in the state. Achieving our vision for tree equity requires us to undo centuries of structural racism that produced these injustices and dismantle the ways that our policies and practices continue to perpetuate that same structural racism today.<sup>4</sup> It can only happen if we center the experiences, needs, and priorities of those of us who are most impacted by low tree canopy: climate justice frontline communities.

What do we mean when we say "**climate justice frontline communities**?" We're talking about the communities that stand at the "frontlines" of

<sup>4</sup> For more on the history of tree inequity in Providence, see Looking Back: The Deep Roots of Tree Inequity. "When we tell them that the tree is not a who but an it, we make that maple an object; we put a barrier between us, absolving ourselves of moral responsibility and opening the door to exploitation... If a maple is an it, we can take up the chain saw. If a mpale is a her, we think twice."

- Robin Wall Kimmerer, Braiding Sweetgrass

climate disruption and are most vulnerable to its effects. Climate justice frontline communities are the people of color who are most impacted by overlapping crises of ecological, economic, and political injustice, including our Black, Indigenous, Latinx, and Southeast Asian communities here in Providence. Among the most vulnerable are those whose experiences lie at the intersection of multiple systems of oppression and marginalization, including low-income families, refugees and immigrants, children and elders, people with criminal records, LGBTQ+ folks, disabled folks, those who speak languages other than English, and those experiencing housing insecurity or houselessness.

In Providence, our **climate justice frontline communities** are the same communities that disproportionately experience the impacts of tree inequity, living in low-canopy neighborhoods, especially in southern and western Providence and along the Port. As the City of Providence's Climate Justice Plan expressed in 2019, "These communities are experiencing the impacts today. This is not an existential, long-term challenge; it is their daily survival."<sup>5</sup>

We chose to use the language of "climate justice frontline communities" or "frontline communities" to build on the work of the Climate Justice Plan here in Providence and to highlight that our work towards tree equity is grounded in a long lineage of environmental justice organizing by Black, Indigenous, Latinx, and other communities of color.

Tree equity cannot be the only solution to the overlapping ecological, economic, and political crises facing our frontline communities-but it as an important part of our movement's combined efforts, along with elimination of air and water pollution at the source, transformation of local energy systems to replace fossil fuels with locally-generated clean energy, large-scale shifts in urban land use to prioritize safe, dignified, and accessible housing and public green space, and dramatically expanded access to high-guality healthcare, fresh and healthy food, and meaningful, well-paying work. In these efforts, frontline community organizations—like the Racial & Environmental Justice Committee, People's Port Authority, and Roots 2 Empower—are leading the way.



<sup>5</sup> The City of Providence's Climate Justice Plan

Photo by Dominique Sindayiganza

## **About This Plan**

As **climate disruption** continues to threaten the health and safety of our communities, we need to nurture a healthy **urban forest** that equitably distributes the critical infrastructure of trees to all residents. We also need to develop the partnerships, programs, and resources that will enable us to do that. This is why Providence community members and organizations came together to create the PVD Tree Plan: a roadmap towards the future **urban forest** we collectively want to create.

At the state level, Rhode Island has identified urban reforestation as the top strategy for addressing climate mitigation and adaptation, and has partnered with American Forests to develop urban forestry tools and resources through the RI Urban Forests for Climate & Health Initiative. The PVD Tree Plan builds on this momentum, working from a strong foundation of state-of-the-art data telling us what our urban forest looks like today. We've incorporated rigorous analysis of tree canopy, environmental, social, and public health data, and mapped community assets, vulnerabilities, and opportunities for maximizing the benefits of a healthy urban forest. We've also built a broad network of organizations and individuals who have spent the past three years identifying the needs and priorities of our community members—especially those living in low-canopy neighborhoods—and building a shared vision for the future of our **urban forest**.

This plan isn't "owned" by any single entity. Instead, it's the product of deep collaboration across community-based organizations, the City of Providence, and members of our communities most impacted by environmental injustice and low **tree canopy**. Our community-led approach is intended to counteract the historic marginalization of communities of color in top-down planning and decision-making processes. And our three years of collaboration have fostered trusting relationships and joyful community within our project team.<sup>6</sup>

We hope that as this plan is implemented, the community we've created will continue to expand, activating a network of stakeholders working towards a shared vision for a vibrant **urban forest**. We hope this plan will highlight the role that each stakeholder can play in achieving that vision, facilitate communication and coordination among public and private partners, and mobilize funding and resources towards their work.

<sup>6</sup> For more on our project team and outreach process, see the "Our Process" section.

### How to Read This Plan

### The first part of this document provides context for this work, including:

- Information about why the urban forest is important,
- An assessment of the current state of our urban forest,
- A brief history of tree inequity in Providence,
- An overview of the activities and resources that shape our urban forest today,
- A description of the people and process behind this plan, and
- A summary of what we heard from the community in our **outreach** and engagement.

The urban forestry data and community input we share in the first part of this plan shaped the recommendations that follow in its second part.

These recommendations are divided into goals and strategies for six action areas:



Throughout this document, you'll find key terms and concepts in bold—these terms are defined in the glossary. You'll also find links to other resources that have guided our thinking and quotes from community members. We hope that this document can serve not only as a planning tool, but also as an educational resource for anyone looking to deepen their relationship with our city's trees.

## **Grounding Values**

"I don't want to be an owner of this just a joyful conduit."

> -adrienne maree brown, Emergent Strategy

These shared intentions have guided how our team has worked together to create this plan:

### We center equity and racial justice.

Our ultimate accountability is to the climate justice frontline communities who are impacted first and worst by **climate disruption**, **environmental racism**, and **tree inequity**. Through the creation and implementation of this plan, we strive to center the voices and needs of those who live and work in low-canopy neighborhoods and are most vulnerable to tree inequity's effects.

### We cultivate collective ownership.

This plan is not "owned" by any one person or entity. It grows from a participatory process and seeks to represent community priorities. It was collectively developed and we hope it will be collectively held—embraced by individuals and organizations across the city who share a commitment to our urban forest and accountability to our frontline communities.

### We honor trees as our living neighbors.

We learn with gratitude from Indigenous ways of thinking and cultivating sustainable and reciprocal relationships with the living beings of this land—including its trees. We respect trees as we respect people.

# We recognize and reinforce the interconnectedness of this work with other justice movements.

**Tree equity** intersects with many issues that affect the wellbeing of our communities: public health, energy burden & utility justice, climate mitigation & adaptation, air & water quality, anti-displacement & housing security, economic opportunity & community wealth building, cultural expression & creative placemaking, public transportation, food sovereignty & security...the list goes on. We strive to strengthen collaboration and connection across movements for justice in all of these areas. We know that our movements are like a tree: different branches from a shared trunk, and we aim to work together to address the root causes of systemic injustices.

## We heal from the past while we look to the future.

This work is intergenerational—the trees we plant today will be enjoyed by our children and grandchildren. We know that **environmental racism** produces **intergenerational trauma**, and we see our work towards **tree equity** as a reparative act. Together, we plant seeds for the health and healing of generations to come.

## We move with flexibility, adaptability, and humility.

This is a living document. Like a tree, over time it will grow and change in relationship to its environment. We strive to create room for this growth and adaptation, remaining accountable to the changing priorities and needs of our frontline communities.

Photo by Dominique Sindayiganza

## Why do we need trees?

In Providence, trees are our neighbors. And when we help them thrive, they take care of us in return. How?

#### Trees save us money, create economic opportunity, and help our communities build wealth.

Trees reduce our utility bills. Did you know that just one mature tree has the same cooling effect as 10 roomsized air conditioners?<sup>7</sup> Properly placed trees can reduce air conditioning costs by 30%. Trees can also keep our homes warm in the winter by blocking wind, saving energy used for heating by 20-50%<sup>8</sup>. A healthy **urban forest** helps protect families against rising utility rates. And, by reducing our energy consumption, trees also reduce the amounts of pollution and carbon that are emitted by power plants!<sup>9</sup>

<u>Trees help local businesses thrive.</u> Having more trees in a neighborhood can increase retail sales, attract shoppers from further away, and improve employee performance. Studies show that businesses on treelined streets have 20% higher income streams than businesses on streets without many trees.<sup>10</sup>

<u>Trees create jobs.</u> Tree care workers are employed by private tree companies, utility companies, and municipal governments to help keep our **urban forest** safe and healthy. Investing in our **urban forest** creates opportunities for people in our community to find family-sustaining careers.<sup>11</sup> Low-income households of color pay higher energy bills than whiter and wealthier households, despite using less energy.<sup>12</sup> Rising utility rates hurt lowincome Black and brown families the most...but trees have the potential to help.

Here in Rhode Island, the George Wiley Center has been campaigning for utility justice since 1981. Learn more about their work and check out their <u>Rhode Island</u> <u>Utility Consumer Rights Booklet at their</u> <u>website</u>.

<sup>7</sup> "Sustaining America's Urban Trees and Forests: A Forests on the Edge Report." U.S. Forest Service

- <sup>8</sup><u>"Tree Facts", Arbor Day Foundation</u>
- <sup>9</sup> Sustaining America's Urban Trees and Forests: A Forests on the Edge Report
- <sup>10</sup>22 Benefits of Urban Street Trees
- <sup>11</sup> "Jobs & Equity in the Urban Forest." Ecotrust and PolicyLink.
- <sup>12</sup>Neighborhoods With More People of Color Pay Higher Energy Bills.

The PVD Tree Plan

### **2** Trees protect and improve our health.

#### Trees remove pollution from the air. They

absorb ozone, sulfur dioxide, nitrous oxides, carbon monoxide, and other pollutants, and they trap particulate matter pollution which can lead to health problems like asthma, lung cancer, and heart attacks and trap them in their leaves and bark.<sup>13</sup> A single mature tree absorbs between 120 and 240 pounds of particulate air pollution every year, so particulate pollution levels can be 60% lower on tree-lined streets than on streets without trees.<sup>14</sup>

#### Trees release oxygen for us to breathe.

Every year, Providence's trees produce over 9,280 tons of oxygen for us to breathe.<sup>15</sup> Just one tree can produce enough oxygen for two people for the entire year.<sup>16</sup> So take a deep breath, then share some gratitude for the nearest tree.

**Trees reduce childhood asthma.** Research shows that an increase of 343 trees per square kilometer is associated with a 24% lower rate of asthma and a 26% lower risk of hospitalization as a result of asthma.<sup>17</sup> By reducing rates of childhood asthma, respiratory illness, heart disease, and other health problems that disproportionately impact low-income communities of color in Providence, planting trees can be a tool for repairing the effects of systemic racism.

#### "前人栽树,后人乘凉"

"One generation plants the trees in whose shade the next generation rests."

### -Chinese proverb



13 Common Air Pollutants and Their Effects

- <sup>14</sup> Coder, Rim D. "Identified Benefits of Community Trees and Forests."
- <sup>15</sup> Providence's Urban Forest: Structure, Effects and Values
- <sup>16</sup> Mounce Stancil, Joanna. "The Power of One Tree The Very Air We Breathe."
- <sup>17</sup>Lovasi et al. "Children Living in Areas with More Street Trees Have Lower Prevalence of Asthma."

## **7** Trees help protect us from the impacts of climate change.

The effects of climate change are already here, and they'll continue to become more severe over time. Here in Providence, we can expect to experience:

- Warmer temperatures: Temperatures in New England are projected to increase 3.5 to 8.5 °F by the end of the century.<sup>18</sup>
- Extreme weather events: Intense storms with heavy precipitation will become more frequent.
- Increased flooding: Sea level is projected to increase by 3 to 5 feet above 1990 levels in Rhode Island by 2100.<sup>19</sup> Combined with more frequent and intense storms, this will lead to increased flooding.

A healthy **urban forest** will help us withstand these changes.

What is stormwater runoff, and why can it be a problem? Check out this video!

<sup>18</sup> Runkle, Jennifer, and Kenneth E. Kunkel. <u>"Rhode Island State Climate Summary."</u>;
 <u>"Climate Change Impacts for New England.</u>" Adaptation Workbook.
 <sup>19</sup> "Sea Level Rise in Rhode Island: Trends and Impacts." Rhode Island Sea Grant.
 <sup>20</sup> "Benefits of Urban Trees." GreenBlue Urban.
 <sup>21</sup> "Trees Improve Water Quality." Vibrant Cities Lab.
 <sup>22</sup> "Trees and the Urban Heat Island Effect: A Case Study for Providence Rhode

Island." Brown University Center for Environmental Studies. <sup>23</sup> Allen, Jesse, and Robert Simmon. <u>"Urban Heat Island of Providence, Rhode Island.</u>";

Extreme Heat Impacts in Rhode Island Health Equity Zones

<sup>24</sup> Razzaghmanesh, Mostafa et al. <u>"Air Temperature Reductions at the Base of Tree</u> <u>Canopies."</u>

<sup>25</sup> <u>"Tree Facts</u>", Arbor Day Foundation

<sup>26</sup> Providence's Urban Forest: Structure, Effects and Values



#### Trees capture polluted stormwater runoff and prevent flooding. Just 100 trees

can capture over 300,000 gallons of rain water each year. <sup>20</sup> Trees also help remove pollutants from **stormwater runoff**, keeping these harmful chemicals from entering our waterways. Trees have been shown to filter up to 80% of phosphorus out of stormwater, for example. <sup>21</sup> This improves the health of the bay and reduces beach closures and fish advisories.

*Trees keep us cool.* Rising temperatures are already leading to dangerous summer heat waves, and the **urban heat island effect** means that cities like Providence are especially at risk.<sup>22</sup> NASA research has found that Providence already experiences surface temperatures almost 22°F hotter than its less urban surroundings.<sup>23</sup> But trees can lower the air temperature in city neighborhoods by 10 degrees.<sup>24</sup>

#### Trees take in carbon dioxide and reduce

our carbon footprint. Each year, a single acre of trees absorbs the amount of carbon produced by driving a car for 26,000 miles.<sup>25</sup> In Providence, our trees store over 124,000 tons of carbon, helping to reduce the amount of carbon pollution that enters our atmosphere to further contribute to climate change.<sup>26</sup>

### **Trees nourish our minds and** hearts.

#### Trees improve our mental health.

Spending time around trees reduces stress, lowers blood pressure, relieves muscle tension, and improves mood. Just looking at trees can reduce our levels of the stress-related hormones cortisol and adrenaline.<sup>27</sup> Especially for communities impacted by chronic stress due to marginalization and systemic racism, trees offer one way to help give our bodies a break.

Trees help young people learn. Being around trees has been shown to improve student focus, reduce ADHD symptoms, and help young people develop social skills.<sup>28</sup> Planting trees near high schools even improves standardized test scores and graduation rates.<sup>29</sup>

Trees are part of our communities, folklore, memories, and traditions.

They're in our stories, art, and recipes. And trees can connect us to the memory of home and the lives of our ancestors, even if our ancestral homes are far away.

### Trees help make neighborhoods safer and more enjoyable for all.

Trees prevent traffic accidents. Research shows that drivers speed less on tree-lined streets.<sup>30</sup> Planting street trees has been shown to help keep both pedestrians and drivers safe, reducing accidents by 5% to 20%.31

Trees reduce noise pollution. Tree canopy absorbs sound waves, and can reduce ambient neighborhood traffic noise by up to 50%.32

Trees create welcoming spaces for us to connect with our communities. They can give us beautiful, shady spaces to gather...and they can give us privacy when we want it. Research even shows that in buildings with trees, people report significantly better relationships with their neighbors.33

Trees help reduce crime. Areas with lots of trees and green space have fewer property crimes (like break-ins and vandalism) and less violent crimes than areas without trees.<sup>34</sup>

#### Trees provide homes for other living beings.

Many of our non-human neighbors rely on trees for shelter from the elements or nesting materials. Trees provide forage and food for animals and humans alike, supporting an abundance of life on our streets and in our backyards.

Tree equity directly connects to many of the issues that impact the daily lives of people living in Providence—especially low-income communities of color at the frontlines of climate change. Growing a healthy urban forest helps us move closer to justice in many forms: health justice, climate justice, economic justice, housing justice, racial justice, environmental justice. Caring for our urban forest is caring for our community.

Every day, the trees around us make our lives easier and our communities healthier, whether we realize it or not. We all live within the **urban forest**...so what would it look like to live in better kinship with its trees? How can we be better neighbors to them? How can we take care of them, as they take care of us?

- <sup>31</sup> Naderi, Jody. "Landscape Design in Clear Zone: Effect of Landscape Variables on Pedestrian Health and Driver Safety."
- <sup>32</sup> Ow, Lai Fern, and S. Ghosh. "Urban Cities and Road Traffic Noise: Reduction through Vegetation."
- <sup>33</sup> "Green Cities: Good Health." Urban Forestry/Urban Greening Research, University of Washington College of the Environment.
- <sup>34</sup> "Trees Improve Public Safety." Vibrant Cities Lab.

<sup>&</sup>lt;sup>27</sup> <u>"Immerse Yourself in a Forest for Better Health."</u> New York State Department of Environmental Conservation.

<sup>&</sup>lt;sup>28</sup> Smith, Holly, and Ryan Davis. "Why Schools Should Plant Trees."

<sup>&</sup>lt;sup>29</sup> Kuo, Ming et al. "Might School Performance Grow on Trees? Examining the Link Between 'Greenness' and Academic Achievement in Urban, High-Poverty Schools." <sup>30</sup>Naderi, Jody, Byoung-Suk Kweon, and Praveen Maghelal. <u>"The Street Tree Effect and Driver Safety.</u>"

## The State of Our Urban Forest

Our **urban forest** is always changing. Trees die from pests and disease. Trees are cut down by homeowners and **developers**. New trees are planted. **Existing trees grow bigger and stronger**.

To effectively manage this life-giving resource, we need to know what we have and how it's changing. Two main tools help us understand this:

**Tree inventories** count individual trees and collect basic information about each tree. Providence has completed inventories of its street trees in 1988, 2006, and 2017.

Providence Street Tree Inventory ITree Ecosystem Analysis

2

**Urban tree canopy assessments** analyze flyover **LiDAR** data that measures how much of the ground is covered by trees when looking down from above. This data was collected in 2008, 2011, and 2018.

Tree Canopy Assessment (UVM Spatial Analysis Lab, 2021) More than 27% of Providence is covered by tree canopy.



That's over 3,221 acres of land and more than 415,000 trees.

Together these tools help us measure the changes in our **urban forest** over time, assess the state of our **urban forest** today, and understand how we can nurture the growth of our **urban forest** to maximize its benefits for our community in the future. So...what do they tell us?

### Our trees make our communities healthier.

In 2013, data from 250 field plots located throughout Providence was analyzed using the i-Tree Eco model developed by the U.S. Forest Service. This assessment provided information about the overall structure and function of Providence's **urban forest** and used mathematical models to estimate the monetary value of the environmental benefits it provides.

Providence's Urban Forest: Structures, Effects and Values (i-Tree Eco System Analysis, 2014)

#### Every year, our urban forest...

- Removes 91 tons of pollutants from the air we breathe. (Estimated value: \$3.5 million/year)
- Prevents 31.5 million gallons of polluted stormwater runoff. (Estimated value: \$281 thousand/year)
- Saves us \$591 thousand in building energy costs.



Provides environmental benefits worth more than \$4.7 million.

### About these numbers:

1) At this point (in 2023), these estimates are 10 years old! However, since we know our overall canopy has increased since 2013, these values have also only increased.

2) Any attempt to determine the dollar value of our urban forest is complicated. For one thing, trees have cultural, historical, aesthetic, personal, and spiritual values that just can't be quantified. But the problems with this approach go even deeper...expressing the value of our urban forest in monetary terms contributes to harmful ways of thinking about trees as resources to be exploited for human gain, rather than our living kin.

So why do we include this information at all? Well, money talks. And we can't escape the reality that large-scale investment is needed to protect our communities from the effects of climate disruption. These numbers provide one way to begin to understand the role that urban forestry has to play.

Our **urban forest** also stores **124 thousand tons of carbon.** That's equivalent to the annual carbon emissions of 74,100 cars or 37,200 single-family houses (Estimated value: \$8.80 million).

Our **urban forest** has a structural value of more than \$582 million: that's more than the entire city's approved 2023 budget. The term "structural value" refers to the estimated value of the physical resource of the **urban forest** itself—essentially, what it would cost to replace every tree in the city with a similar tree.

## Investing in our urban forest pays off.

For every dollar spent on tree planting and maintenance, the city of Providence reaps at least \$3.33 in benefits.<sup>35</sup>

And, unlike other forms of urban infrastructure, well maintained trees actually increase in value as they age. Large, **mature trees** have exponentially greater leaf area and biomass than small trees. Environmentally, they're the "heavy lifters"—a large **mature tree** can remove up to 70 times more pollution from the air than a small or newly planted tree.<sup>36</sup> But it's up to us to help our young trees get there.



### Providence's urban canopy is increasing!

In 1999, just 18% of Providence was covered by **tree canopy**. By 2007, that number had increased to 23%. Between 2007 and 2018, Providence gained 183 more acres of trees, increasing our overall canopy from 23% to 27%.



This is a healthy sign that we're doing some things right! Trees face many barriers to survival in the city, from new **development** and pollution exposure to poor growing conditions and vulnerability to disease. Often, these challenges lead to steadily shrinking **urban forests**. Any amount of canopy growth is an accomplishment—many other cities in our region have experienced overall canopy loss in recent years.

But our **tree canopy** gains haven't just been a steady climb. Between 2011 and 2018, Providence *gained* 518 acres of canopy and *lost* 335 acres. Looking more closely at where we're gaining canopy and where we're losing it can help us tell a more complete story...and zero in on opportunities for future growth.

<sup>35</sup> Cicilline, D.N., R. McMahon, and D. Still. <u>"State of Providence's Urban Forest Report: The 2006 Street Tree Inventory, STRATUM</u> <u>Benefits Analysis, Urban Tree Canopy Study.</u>" 2006 Street Tree Inventory, STRATUM Benefits Analysis, Urban Tree Canopy <u>Study.</u>"

<sup>36</sup> Isaifan, Rima J., and Richard W. Baldauf. "Estimating Economic and Environmental Benefits of Urban Trees in Desert Regions."

n.

The PVD Tree Plan

# We've made especially strong progress along our streets.

In 1970, only 16,500 trees lined the streets of Providence. Since then, street tree planting and maintenance programs have helped our street tree population steadily increase to more than 27,000. This progress is a significant factor driving overall canopy growth throughout the city.



Because street tree planting efforts have ramped up significantly in recent decades, many of our street trees are relatively young and small in size. It's important to have many younger trees in our **urban forest**. They're the next generation, which will mature into our future **tree canopy**. But it's our older, larger trees that provide the most health and environmental benefits. *That means it's* especially critical for us to maintain and protect the large trees that we do have and invest in helping our young trees reach maturity.

### Street trees by the numbers:

Data from the 2017 Providence street tree inventory

27,396 street trees

- **273.9** acres of canopy coverage
- **115** different species
- 81.5% in "excellent" or "good" condition
- 36.8% less than 6" in diameter

# We're losing tree canopy on residential land.

Privately-owned residential land accounts for the highest percentage of **tree canopy** of any **land use** type in Providence. However, it's also where our most significant canopy losses are taking place. These losses on residential land are the single biggest driver of canopy loss for the city.



### There's plenty of space for future growth especially on residential land.

Cities are full of **impermeable surfaces** like asphalt, cement, and buildings that limit where trees can grow. Although 59% of Providence is covered by **impermeable surfaces**, 41% of our land area is permeable—and 16% of the city's area is currently "plantable." That's over 2,100 acres! Residential property is the **land use** category that accounts for the highest percentage of this potentially plantable area. This means that residential zones need to be a key focus area in our work towards tree equity.



Grass 2% Maintained Grass 21% Cement 8% Cement 8% Asphalt 30%

### But despite overall canopy increases, tree inequity in Providence is severe. Our trees are not evenly distributed across the city.

Urban **tree canopy** data—including street tree inventories and aerial mapping demonstrate this fact. But the people of Providence also hold this knowledge in our bodies and our experiences. You know this is true if you've felt the summer heat on Broad Street or Allens Avenue while inhaling the smell of asphalt and exhaust drifting from the Port and I-95. You also know this is true if you've enjoyed the shaded, tree-lined trails of Blackstone Park or Blackstone Boulevard.

Tree canopy ranges from more than 51% in Providence's wealthiest and whiter neighborhoods to less than 10% in lower income neighborhoods of color. Those who live and work in higher canopy areas of the eastern and northwestern parts of the city-predominantly white and affluent communities-benefit disproportionately from the gifts and services that trees provide. At the same time, other areas, like the industrial stretch along the Providence River's west side, have very few trees at all. Residents of these neighborhoodspeople of color, low-income families, renters, and immigrants, newcomers, and English language learners—don't get to experience all the benefits of the urban forest.

This is environmental injustice in action. Unequal distribution of **tree canopy** is a symptom of structural racism and it perpetuates inequities in health outcomes, climate change vulnerability, and neighborhood economic opportunity through the present and into the future.

Maps can help us tell this story. They illustrate the strong correlations between whiteness, wealth, and health in Providence and they testify to ongoing harm inflicted on Black, brown, and working class communities. As you look at these maps, ask yourself... How does your own experience line up with the story these maps tell?





### Median Household Income









## **Looking Back:** The Deep Roots of Tree Inequity

Trees have stories to tell. In their long lives, trees witness a lot—and they remember what they've seen. Hard winters and long growing seasons, powerful storms and years of encounters with insects and animals, including people, all leave their marks on a tree's rings, branches, and bark. As they grow, trees are shaped by what they experience; they come to embody history.

In Providence, our trees tell a story of human and tree communities that have always been tightly connected. The characteristics of our **urban forest** today were shaped by the same social and historical processes that have produced the city's landscape of racial injustice and inequity. How we got here is in large part a story of systemic environmental racism.

This is Indigenous land. It has been home to Narragansett, Wampanoag, and Pokanoket peoples since time immemorial.
For thousands of years, these First Peoples have lived in close relationship to these lands and waters, and the other living beings they shared them with—including trees. Native people have always honored their tree relatives as kin and passed down ways of being with trees that are grounded in respect and **reciprocity**.

For example, cultural burning (regular, controlled fires) helped produce forests rich in food for humans and other beings, nurturing large fire-tolerant nut-bearing trees like hickories and chestnuts and creating an abundance of blueberries and huckleberries in the understory. The people cared for the trees, and the trees took care of them in return.



When European colonizers arrived on this land, they claimed it as their own and violently displaced its Native people. They cut down trees to sell for lumber or burn as firewood and cleared forests to create fields for crops and livestock. Because they wanted to extract profit from the land, colonizers treated trees as economic resources, rather than as relatives.

By 1880, 90% of the forests had disappeared from the land that colonizers called New England. By removing trees, settlers laid claim to land as their own and disrupted the foodways that had always sustained Native people. Deforestation is an important part of the process of colonization.



Since European colonization of this land, a person's access to trees has often been closely linked to their power and privilege within racial and economic hierarchies, but the forms that this takes have shifted over time. As the city of Providence grew—in large part thanks to its participation in the trans-Atlantic trade of enslaved African people—its physical landscape transformed. Its residents leveled hills, redirected waterways, and filled parts of the Seekonk River and the Great Salt Cove to create entirely new land areas. They removed trees to make way for densely packed buildings and paved the soil with stone and brick, then cement and asphalt. And as a new ecological landscape emerged in Providence, so did new social landscapes of race-based segregation.

<sup>37</sup> For more on the Native history of this land, see the <u>First Peoples of Rhode Island self-guided tour</u> and endawnis Spears & Cassius Spears, Jr.'s lecture <u>Indigenous Landscapes: Narragansett Homeland & History</u>. Changes in the Land, by William Cronon, is also a classic study of how the process of colonization, and systematic disruption of Native ways of life, transformed the landscape of New England.

# Urban Policy, Housing Segregation, and Environmental Inequality

Race-based residential segregation—which provides the foundation for many environmental injustices in Providence, including tree inequity—has often been a direct result of urban policy. **Redlining** and **urban renewal** provide two examples.

# Redlining

This 1935 Home Owners Loan Corporation map of **Providence shows areas of** the city classified as "Best" (green), "Still Desirable" (blue), "Definitely Declining" (yellow), and "Hazardous" (red). The neighborhoods identified as "Hazardous" or "Declining"—including Fox Point, South Providence, West Elmwood, Lippitt Hill, and much of College Hillwere at the time low-income communities home to many people of color.



During the Great Depression, federal policy promoted race-based residential segregation in American cities by denying loans to residents of neighborhoods that were deemed "risky" (or "redlined") based on the quality of housing stock and the race and ethnicities of the people who lived there. **Redlining** practices limited property ownership and land access for people of color, creating racialized economic inequality that has spanned generations.

# **Urban Renewal**

Through the 1950s and 1960s, the City of Providence underwent a process of "urban renewal" in which planners used what they called "social pathology"—a combination of social factors like poverty, high density housing, and crime-to justify the demolition of entire neighborhoods. Between 1949 and 1960, the Providence Redevelopment Agency forced 14,000 people from their homes, targeting low-income communities and people of color. College Hill's transformation into the treelined, wealthy historic district that it is today came at the expense of vibrant Black and Cape Verdean communities who were displaced for its "redevelopment," and urban renewal also displaced Black communities in Mount Hope, Lippitt Hill, Fox Point, and Upper South Providence.

Highway construction has also played a pivotal role in shaping Providence's landscape of racialized segregation. When they were first built in the 1950s and 1960s, Interstates 95 and 195 cut directly through two Providence neighborhoods occupied largely by people of color: South Providence and Fox Point. While urban renewal advocates celebrated the elimination of "blighted" neighborhoods, the people of these communities lost their homes, small businesses, and places of employment. Today, these highways still physically divide our city, cutting off low-income neighborhoods of color located south and west of the highway from downtown and the wealthier, whiter neighborhoods of the east side.38

Racist urban policies like **redlining** and **urban renewal** haven't only impacted where our communities live—they've also shaped the physical environments of our neighborhoods. For example, research shows that neighborhoods' rankings under Depressionera redlining policies are still associated with the quality of community infrastructure and environmental characteristics including temperature, plantable space, air quality, and, of course... **tree canopy**.<sup>39</sup>



(Above) Providence City Plan Commission, Condition of Residential Structures by Block, 1960.



(Above) Providence City Plan Commission, Social Pathology Index Scores by Enumeration District, 1960.

Explore this story map to see how these relationships play out in the Providence metro area.

<sup>38</sup> Susaneck, Adam Paul. "Providence: Freeways & Urban Renewal."; Stokes, Keith W., and Theresa Guzmán Stokes. "<u>A Matter of Truth: The Struggle for</u> African Heritage & Indigenous People Equal Rights in Providence, Rhode Island (1620-2020)."

<sup>39</sup> Hoffman, Jeremy S., Vivek Shandas, and Nicholas Pendleton. <u>"The Effects of Historical Housing Policies on Resident Exposure to Intra-Urban Heat: A</u> <u>Study of 108 US Urban Areas.</u>"; Hoffman, Caroline. "Inside the Urban Melting Pot: Exploring the Effects of Redlining and Greenspace on Heat Distribution in Providence, Rhode Island."; Namin, S., W. Xu, Y. Zhou, and K. Beyer. <u>"The Legacy of the Home Owners' Loan Corporation and the Political Ecology of Urban Trees and Air Pollution in the United States.</u>"; Locke, Dexter H. et al. <u>"Residential Housing Segregation and Urban Tree Canopy in 37 US Cities.</u>"; Schwarz, Kirsten et al. <u>"Trees Grow on Money: Urban Tree Canopy Cover and Environmental Justice.</u>"

## How Tree Inequity is Maintained Today

Residential segregation and environmental injustice aren't just history: they're ongoing realities that impact our communities every day. These realities—and the harm they cause to Black and brown communities are actively upheld by current policies and practices, at large scales and small scales. So to understand why Providence residents do not have equal access to our **urban forest**, we have to look at much broader patterns of social and economic injustice.

# Systemic Disinvestment in Neighborhoods of Color

Patterns of race-based residential segregation have historically shaped the location of public investments in green infrastructure like trees and parks. The concentration of whiteness and wealth in certain neighborhoods—as well as the political power that comes with whiteness and wealth—can work over the long term to direct municipal investments into creating public parks, conducting street tree plantings, and maintaining existing trees in those areas.

Meanwhile, neighborhoods that are home to lower-income communities and communities of color have historically had less access to public investments in infrastructure improvements, including tree plantings and new parks. Political marginalization and disenfranchisement of these same communities means that they often have less influence over public spending over the long term. That's why a core goal of this plan is to create models for community governance and oversight to center the people most directly impacted by tree inequity in urban forestry decisionmaking. True tree equity requires justice to be centered in not only which urban forestry decisions are made, but also how they are made.

## Environmental Racism in Zoning and Development

Just as residential segregation has concentrated environmental benefits like trees and parks in wealthier and whiter neighborhoods, it has also concentrated environmental hazards in lower-income neighborhoods of color. Environmental racism in zoning policies means that industrial facilities that release harmful pollutants into the air and water are usually placed in locations where people of color live. This creates a landscape of uneven environmental risk and privilege across the city, in which the health of Black and brown bodies is sacrificed. Think, for example, of the difference between the waterfronts of South Providence and Washington Parkboth predominantly home to working class people of color-and Fox Point, which is now a gentrified, predominantly white neighborhood.

Differences in lot sizes and **land use** across neighborhoods can also put logistical limitations on tree planting. For example, industrial land uses are usually not conducive to tree planting or canopy cover because they require paved surfaces, which is especially problematic given the role that trees can play in absorbing and filtering the pollutants these facilities produce. In lower income neighborhoods, smaller lots leave less available space for tree planting, while whiter and wealthier neighborhoods consisting of single-family homes on larger lots have access to more space to plant and grow healthy trees.



## The Burden of Stewardship

Looking Back: Deep Roots of Tree Inequality

In urban environments, trees need extra support to survive and stay healthy. When tree planting and maintenance services are not provided as a public service, they require time and money from individuals, and this need for stewardship can be a burden for those with limited resources. While residents of wealthier neighborhoods are often able to invest in landscaping on their own properties, residents of lower-income neighborhoods instead have to prioritize necessities like rent, food, or transportation. Household investment in tree care is a luxury that isn't available to everyone.

Many programs for providing residents with trees are first-come first-served, require a **cost share** or that residents plant the trees themselves, or require residents to take responsibility for volunteer watering and young tree care. These models can create unintentional barriers to participation and exclude low-income communities, further contributing to tree inequity.

### Unequal Access to Homeownership

Most of Providence's trees grow on private property. But, like trees, property ownership isn't evenly distributed across the city. White residents of Providence own their homes at dramatically higher rates than residents of color.<sup>40</sup>

Renters—who are disproportionately people of color—have limited control over landscaping and maintenance decisions where they live. In non-owner occupied homes, property owners may be hesitant to invest in tree planting or maintenance, leaving tenants without access to the benefits of trees or a path to get them.

Renters are also most vulnerable to displacement by gentrification. Sometimes, trees and other green infrastructure can be a cause for gentrification, raising property values and pricing out the longterm residents who the infrastructure was intended to benefit—usually, disproportionately residents of color. <sup>41</sup> In this way, green gentrification contributes to ongoing tree inequity. This highlights the critical importance of anti-displacement strategies and policies as accompaniments to urban forestry investments.<sup>42</sup>

In short, it's not an accident that our neighborhoods look the way they do today. They've been shaped by urban policy, government and private investments, and landowner decisions—and it will take active changes to these policies, investments, and decisions to create an equitable **urban forest** in our city.

<sup>40</sup> <u>"2022 Housing Fact Book."</u> HousingWorks RI at Roger Williams University.

 <sup>41</sup> Donovan, Geoffrey H. et al. <u>"The Politics of Urban Trees: Tree</u> Planting Is Associated with Gentrification in Portland, Oregon."
 <sup>42</sup> Rigolon, Alessandro, and Jon Christensen. <u>"Greening without</u> Gentrification: Learning from Parks-Related Anti-Displacement Strategies Nationwide."; "Policy and Planning Tools for Urban Green Justice." European Research Council.; <u>"Greening in Place:</u> Protecting Communities from Displacement." Audubon Center at Debs Park.

# Homeownership Rates









American Indian and Alaska Native



# Our Urban Forestry Ecosystem Today:

Key Players, Activities, and Policies

An ecosystem isn't just a community of living beings: it's the set of relationships between those beings. And like any other ecosystem, our **urban forest** is sustained by a complex web of relationships. From individual residents to the City government to nonprofit organizations to private businesses, the people of this city work together to help its trees thrive.

This section provides an overview of some of the key players, activities, and policies that currently play a role in this work.

# **Key Players**

# **City Forestry Division**

The <u>City Forestry Division</u>, led by the City Forester, is housed within the Parks Department. The Forestry Division is responsible for managing all of the trees on public lands in the city—in the **right-of-way**, in parks, and on city-owned properties like public schools—for the benefit of the city. The Forestry Division is funded by the City budget.

# Nonprofit Organizations

Providence has a vibrant network of nonprofit and community-based organizations engaged in urban forestry work. The Providence Neighborhood Planting Program, supported by the Mary Elizabeth Sharpe PNPP Fund at the Rhode Island Foundation, partners with the Forestry Division to plant and steward street trees throughout the city. Other organizationsincluding Groundwork RI, Garden Time, Building Futures RI, the Woonasquatucket River Watershed Council, and Movement Education Outdoors-support tree planting and maintenance and urban forestry workforce development and education. However, there is currently no group dedicated to advocacy, engagement, or education with a specific tree lens, and programs dedicated to creating pathways into tree industry work are still in their pilot phases, without enough capacity to meet demand.

# **Private Sector**

### **Utility Companies**

Utility companies like Rhode Island Energy, Verizon, and Comcast have a protected right to prune or remove trees within a certain distance of utility infrastructure, including overhead electrical and cable wires. This applies to both public and private trees. Many utility companies rely on in-house forestry departments to perform this work, in addition to contracted services. Utility companies are required to coordinate their pruning activities with the City Forester.

### **Private Tree Care Companies**

Private tree care companies are contracted by the city, utility companies, and private (residential, commercial, and institutional) landowners to perform tree services throughout the city, including planting, pruning, treatment, and removal. Currently, entry-level employment by a private tree care company is the main pathway into the urban forestry industry, given the lack of available training and licensing programs.

# **Key Activities**

In Providence, we benefit from a strong foundation of programs in place to plant and maintain trees on public property. *These include:* 

# **Block Pruning Program**

Pruning of **public trees** takes place through the Forestry Division's Block Pruning program. The program runs on a 10-year cycle, pruning <u>10% of trees in each</u> <u>of the 15 City Council Districts</u> each year. It is funded by the Helen Walker Raleigh Tree Care Trust Fund of the Rhode Island Foundation.

# **Tree Service Requests**

Through Providence 311, residents can contact the Forestry Division to request a tree or stump removal, fallen branch pick-up, **risk assessment**, or other tree services for **public trees**.

# Providence Community Tree Keepers

The Providence Community Tree Keeper program, run jointly by the Providence Neighborhood Planting Program and Forestry Division, trains and certifies community members to prune and maintain young trees in parks and on streets.

# **Street Tree Planting**

Most street tree plantings occur through a public-private partnership between the Forestry Division and the Providence Neighborhood Planting program. Every spring and fall, residents can apply to hold a neighborhood group tree planting on their street. Trees are free, but volunteer time is required from residents to organize the planting, recruit neighbors, and water the trees after planting. Through this program, approximately 550 trees are planted on Providence streets every year.

### A smaller number of street trees are planted each year through other mechanisms:

- Resident permit applications to plant street trees at their own expense, or at half the cost through a limited match cost program
- Zoning ordinance requirements for developers
- City allocations of funds at the ward level, as available
- Grant-funded nonprofit projects

These mechanisms are limited, sporadic, and reliant on inconsistent funding.

However, these programs only apply to trees on public City property. On private property throughout Providence, trees are planted and maintained by property owners themselves or the tree care companies that they hire. No public or private programs exist to support maintenance of trees on private property in Providence—which comprise the majority of our urban forest.



Photos of Tree Stewardship Trainings:









# **Key Policies**

Providence's <u>Code of Ordinances</u> provides a policy framework for urban forestry efforts in the city to ensure that our trees are cared for and protected as a shared asset. These tree-related policies are grouped under two chapters of the city code:

# Chapter 23 1/2: "Trees"

In 1985, the city of Providence passed its first-ever tree ordinance. The ordinance establishes the City Forester position and outlines its duties, authority, and responsibilities. The ordinance also includes:

- Violations and penalties for unlawful damage or removal of public trees, including replacement requirements
- Permit requirements for tree planting and maintenance on public property
- Protection and pruning guidelines for public trees, including during development

## Chapter 27: "Zoning" (Article 15: Trees and Landscaping)

Article 15 of the Zoning Ordinance provides policies applying to trees on private land, including tree-related rules and requirements for private **development**. It establishes:

- A required tree canopy percentage, which obligates developers to maintain 30% canopy cover on sites in residential, healthcare, educational, public space, and conservation districts and 15% on sites in commercial, downtown, and industrial districts
- Protection for significant trees (trees over 32" in diameter) on both public and private land
- Requirements for interior parking lot landscaping, including shade trees

The Code of Ordinances assigns enforcement authority for these policies to the City Forester. However, in practice, these policies are often not enforced, due to a lack of capacity within the Forestry Division and the City Department of Inspections and Standards, and a lack of awareness among **developers** and contractors that they exist.

# At the State Level

Just as the roots and branches of the urban forest extend beyond the municipal borders of Providence itself, so do the policy frameworks that guide its management. State policy for urban forestry is detailed in Title 2 of the State of Rhode Island General Laws, "Agricultural and Forestry." The Rhode Island Department of Environmental Management's Division of Forest Environment directs the implementation of state forestry policy, including licensing and exams for arborists working within the state. DEM also manages the Energy Saving Trees Giveaway, which supports a limited number of free tree plantings on residential property statewide.

For an overview of statewide urban forestry activities, see the <u>Rhode Island Tree Equity:</u> <u>Funding, Financing, and Policy Guide.</u>

> This network of people, programs, and policies has helped our **urban forest** grow. But drought, extreme weather, pests, and development all threaten the progress we've made—and this progress still isn't enough to address the stark disparities that still exist across neighborhoods. For every resident of Providence to experience the benefits of our **urban forest**, we need to take urgent action. Everyone in our community has a role to play in this work, but it won't happen without coordination towards a shared vision shaped by those who are most directly impacted by tree inequity. That's why we created this plan.

# **Our Process**

Who created the PVD Tree Plan? A lot of people! Here's an overview of the team behind the development of this plan. For a list of the many specific organizations and individuals involved, see the Closing Acknowledgements!

# **The Steering Committee**

### **Role:**

Guide the overall planning process, engage networks in planning and priority-setting, and develop the plan's priorities and recommendations

### Members:

- 50% or more Community Participants: members of the public representing low-treecanopy neighborhoods and frontline **BIPOC** communities—who received stipends for their expertise and participation
- Up to 50% Practitioner Participants: people currently working in or near the realm of urban forestry in their professional or organizational capacity—who participated as part of their externally compensated work

# **Equity and Engagement Team**

### **Role:**

Share expertise in inclusive engagement, racial and **environmental justice**, and youth leadership and lead the design and implementation of an equity-focused community engagement strategy

## **Data and Research Working Group**

### **Role:**

Identify, aggregate, and develop research, data, and analysis of **tree canopy** metrics—as well as broader social, demographic, economic, environmental, and health datasets—to support and inform the planning process

# **Project Advisory Team**

### **Role:**

Offer subject-specific expertise related to the content and scope of the PVD Tree Plan (urban forestry, sustainability, public and environmental health, policy, funding, design, planning, implementation, etc.) as called upon by the Steering Committee

## **Project Coordination Team**

Role: Coordinate the administrative logistics of the process (non-decision-making)





Photos of the steering committee members.



# **Community Engagement Process**

The Equity and Engagement Team worked with community representatives on the Steering Committee to get out and talk to as many people as possible—with a focus on **climate justice frontline communities**—and learn about their tree-related needs, concerns, dreams, visions, and priorities. Over the past three years, community members engaged with the planning process through our....

## **Community Survey**

We developed a survey, translated it into the nine languages most commonly used in Providence, and spread it far and wide, promoting it on social media and radio stations, and offering prizes for participation.

## Presentations to Community Groups

We visited community groups in low-canopy neighborhoods to share information about **tree equity** and invite input in the planning process.

# **Citywide Events**

In November 2021, our public launch event featured performances from local artists, high school youth presentations, interactive booths with tree-related crafts and activities, and opportunities to learn and share ideas about **urban forest**.

# Tabling and Canvassing

At community events and gathering spaces—from weekend soccer games to farmers markets to school pick-up and drop-off lines—we showed up to guide people in completing the survey, teach about **tree equity**, and gather input.

## **Flyers and Posters**

We distributed flyers and left posters all over the city, at bodegas, restaurants, libraries, schools, churches, and senior centers.

## **Focus Groups**

We convened people working in specific sectors related to urban forestry—like maintenance and workforce development—to learn from the challenges they face in their work and discuss priorities for future action.

# One-on-One Interviews and Informal Conversations

Everywhere we went, we talked to people and asked lots of questions, collecting testimonials from community members to inform our work.





Photos of outreach sessions.









**Phase 1:** Assemble and align the team

(Late 2019 to August 2020)

### Phase 2:

Develop community engagement strategy & conduct urban forest research

(September 2020 - August 2021)

### Phase 3:

Community engagement and outreach

(September 2021 - August 2022)

### Phase 4:

Development of recommendations, review and finalization of plan

(September 2022 - December 2023)

## **Community Survey Responses**

**848 residents** of Providence shared their input through our community survey!<sup>43</sup>

### **59% of them live in highpriority** (low-canopy) neighborhoods.

**45% of them identified their race/ethnicity** as something other than white.

## 49% of them own their homes,

44% rent, 7% live in a dorm, and 0.7% are currently unhoused.

While most people chose the English language version, 172 replied in Spanish and 59 chose another language: in fact, people who responded to the survey speak 31 different languages at home!

<sup>43</sup> See the Appendix for the <u>full text of the</u> <u>community survey</u> and a <u>visualization of its</u> <u>results</u>.

### Thank you! Our community's enthusiastic participation in the survey has helped us better understand and communicate residents' priorities related to our **tree canopy**, programs, and practices.

We've analyzed the survey data both as a whole and broken down by race, neighborhood, and housing status. You can find these complete breakdowns <u>linked in the Appendix</u>—but here are some key takeaways:

### All demographic groups want more trees.

Only 1.5% of all respondents—and just 1% of respondents in high-priority neighborhoods—believe that their neighborhoods have enough trees.

# 27% of respondents said they don't experience any bothersome issues related to trees!

But that's not the case for everyone... Damage to sidewalks was the biggest concern—shared by 35% of respondents. Allergies and tree debris are also much bigger concerns for people of color and residents of high-priority neighborhoods than white people and residents of lowpriority neighborhoods.

# 98.3% of respondents think we should increase investment into Providence's trees! How should we prioritize that spending?

Overall preferences for funding priorities are mostly consistent across demographic groups: tree planting and giveaway programs and workforce development and job programs are most popular, especially among residents of high priority neighborhoods.

# Where should we plant more trees? The most popular responses are:

- Streets (79%)
- Parks (52%)
- Schoolyards (48%)

Comments told us that this preference for planting trees on public property comes partly from the challenges and expense of caring for trees on private residential property.

Planting trees in parks is especially popular among people of color, renters, and residents of high priority neighborhoods. 65% of people of color would prioritize planting in parks, compared to 45% of white respondents.

# **Common Themes**

Some common themes have come up again and again, in survey responses, resident stories, and community conversations—*so we've summarized what we keep hearing:* 

Residents of Providence have deep connections to trees, value their role in our city, and see their unequal distribution as an important environmental justice issue.

People love the trees that exist in their backyards and neighborhoods, and many community members have stories about how trees have impacted them.

Communities are grateful for trees' beneficial effects on **climate resilience**, extreme heat, and air quality.

Communities notice that **tree canopy** is not evenly distributed throughout the city and want that to change.

Residents highlight the connections between low **tree canopy** and the construction of parking lots, highways, and industrial facilities.

When trees are planted in low-income and low-canopy neighborhoods, they often don't survive because no one invests in maintaining them.



Residents are <u>ready to help our trees</u> <u>thrive</u>—but we need to <u>invest in</u> <u>supporting people</u> to do that.

Residents especially need support for planting and maintenance on private and residential property.

Community members have had positive experiences with community organizations and want to see them expand.

Existing tree planting and stewardship programs should be more accessible to residents.

Investment in urban forestry is an opportunity to support both youth and adults with shortterm and long-term employment.

There is high demand for accessible programs to provide training in urban forestry skills, including care of fruit trees, planting, and pruning.

# When trees are neglected, they can become a **burden for our communities.**

Disabilities or age can prevent residents from being able to care for trees.

Low-income families often do not have the time or funds to care for trees.

Damage to sidewalks limits accessibility for strollers and people with disabilities.

Poor maintenance of aging trees puts homes, property, and utility lines at risk.

City Forestry Division doesn't have enough capacity to maintain all city trees.

### Community members have been **excluded from urban forestry decisionmaking** and want better **tools to advocate for their needs.**

Community members want power to make decisions about their own neighborhoods.

**Developers** often remove trees and do not invest in caring for new ones, and this angers community members.

Renters lack power over landlord decisions, and absent or neglectful landlords often refuse to maintain trees when necessary or plant them when wanted.

Policy changes are needed to incentivize tree planting and maintenance on commercial and institutional property and in new developments.

Residents do not always know where to go to access information or services.

Increased opportunities for tree education—both for adult community members and in schools—will help foster leadership and advocacy.

Don't just take it from us... Throughout the rest of this document, you can find speech bubbles with direct quotes from community members sharing their thoughts in their own words. Increased investment in trees can create **new resources for our communities** to thrive.

- Planting trees with edible fruit and community food forests can foster community and food security
- Residents want us to plant native and indigenous plants—and involve Indigenous communities.
- Memorial and tribute tree planting programs can meaningfully honor valued community members.
- Parks and public green spaces are deeply valued gathering places.

# Recommendations

# **Setting a Canopy Target**

The ultimate goal of this work is to achieve true **tree equity** in Providence. We envision a future where healthy and resilient citywide tree canopy provides all residents of Providence with equal access to the health, climate, and economic benefits of our shared **urban forest**.

Right now, we have a long way to go. Achieving this vision will require sustained, long-term commitment, including significant increases in the scale of our financial investments and existing programs supporting urban forestry. To guide our work along the way, we've identified **tree equity** focus areas across the city and developed an initial canopy target for these areas.

We want to increase tree canopy in tree equity focus areas by 50% over the next 25 years, while maintaining existing canopy levels across the city.

### Meeting this target will involve:

- Adding 507 acres of new **tree canopy** to the current 1,015 acres in these neighborhoods
- Planting and maintaining around 30,377 trees: an average of 3,038 per year for the next 10 years
- Covering an additional 4% of the City's land area with tree canopy, increasing total canopy cover in Providence from 27% to 31%
- Preserving our existing canopy cover, nourishing its growth, and protecting it from threats
- Raising an additional \$2.5 million per year to fund planting and maintenance activities

# How did we determine the tree equity focus areas?

To establish priority areas for focused action, we zeroed in on locations throughout the city with low existing tree canopy, particularly those where health and climate impacts are most severely felt and where our most vulnerable communities live.

A tool called the <u>Tree Equity Score Analyzer</u> (TESA) helped guide this process. TESA offers up-to-date tree canopy and other environmental, climate, demographic, and health data at the census **block group** level. Working at the block group level—rather than with larger geographic units like census tracts or neighborhoods—allows us to account for inequity within neighborhoods, leading to more precise and equitable results.

With TESA, we developed a list of all block groups in Providence with less than 30% tree canopy coverage. We then filtered this list using six key indicators of environmental impacts and disproportionate vulnerability of residents to these impacts: the percentage of residents who are people of color, the percentage of residents experiencing poverty, the percentage of residents who are children and elders, heat disparity, health burden index, and the history of redlining.

But we didn't stop there, because quantitative data can only go so far towards capturing residents' lived experiences of our urban forest. It's our frontline communities who most deeply feel the effects of tree inequity in Providence-and who most intimately know where things need to change. As we collected survey comments and spoke with residents, we noted which streets and neighborhoods kept coming up. We also relied on the on-the-ground knowledge of Steering Committee members and urban forest practitioners as we refined the list of block groups we'd developed, ultimately settling on 87 block groups for priority investment. Together, we're referring to these 87 census block groups as our "tree equity focus areas." These areas are collectively home to more than 105,000 people: 80% people of color, 50% experiencing poverty, and 37% children and elders. You can find a list of these block groups linked in the appendix.

To develop a planting target for these focus areas, we considered two key limiting factors: plantable space and organizational planting capacity. We used data from **TESA** to determine the potential new canopy acres across all 87 block groups, confirming as necessary with on-site ground truthing. We drew on these numbers and current annual tree planting rates to craft a planting target that is both ambitious and achievable within a 10-year timeline. Achieving our initial target will require us to significantly scale up our planting activities, expanding the number of trees planted annually through mechanisms including zoning enforcement and nonprofit partners. However, achieving our initial target is also possible without drastic large-scale transformations to our existing built environment. A 10-year planting timeline accounts for the time it takes for newly planted trees to grow their canopy, ensuring that we will see real impacts on city-wide tree canopy—and on our frontline communities' health and **climate resilience**—within 25 years.

### Why does this target use canopy cover—instead of number of trees planted—as a metric?

Canopy cover is a better indicator of the benefits that trees actually provide for our communities. Young, newly planted trees don't immediately provide the full range of benefits—like shade, air filtration, and flood control—that older, more established trees do. It takes time and requires investment in maintenance and stewardship for a tree in the city to thrive and reach maturity. Limiting our focus to planting would obscure the importance of long-term care to ensure the survival of young trees and protection across the city of the valuable **mature tree** canopy that we already have.

Setting a canopy cover target directs our focus to the outcomes that actually improve community members' day-today lives, and it also leaves room for us to adjust our planting goals if unforeseen threats—like extreme storms or new pests or diseases—lead to sudden widespread canopy losses. Canopy cover is also measurable through aerial surveying, and doesn't require labor-intensive inventories, which will help us more effectively track our progress towards our target.

**Tree Equity Focus** 

Areas in Providence

American Forests, a national forestry organization, created **TESA**—with Rhode Island as its pilot state—to help municipalities leverage data to make informed urban forestry decisions.

TESA is free to use and open to the public! <u>Visit</u> the website to explore the interactive map and see how your neighborhood scores.

### What will meeting this target look like?

Successfully increasing tree canopy in tree equity focus areas by 50% will produce largescale environmental and economic benefits that tangibly improve the lives of Providence residents.

### Every single year, these trees will:

- Provide an estimated ecosystem service value of \$437,336.43
- Support 220.9 jobs
- Sequester 690,240.4 tons of carbon: This is equivalent to the output of 134,952 gaspowered cars or 78,864 homes!
- Prevent 10.4 million gallons of polluted stormwater runoff from entering our waterways: This is equivalent to 518.0 standard swimming pools!
- Intercept 34.6 million gallons of rainfall
- Remove 38,228.1 pounds of pollution from the air we breathe, including:
  - 1,253 pounds of PM2.5 pollution, equivalent to the output of 577 gas-powered cars
  - 4,924 pounds of PM10 pollution
  - 2,832.6 pounds of nitrogen dioxide pollution
  - 818.5 pounds of sulfur dioxide pollution
  - 28,400 pounds of ozone pollution

These benefits were calculated using the <u>Tree Equity Score Analyzer</u>. See the appendix for <u>information about where these common</u> <u>pollutants come from and how they affect our</u> <u>health</u>.

### Meeting our target would also increase the average tree canopy across the focus areas from 16% to 25%.

Here's the difference tree canopy can make in our neighborhoods:





But our work doesn't stop when we achieve our initial target. We envision a future **urban forest** where the cool shade and leafy beauty of Photo #2 can be a daily reality for everyone in our community. This will require us to transform the physical, social, and political conditions that currently limit canopy growth in our lowest canopy neighborhoods—depaving where plantable space is lacking, cultivating buy-in where property owners resist tree planting, and prioritizing land uses that help rather than harm the health of our **climate justice frontline communities**. Over time, we will create the conditions for trees and frontline communities to thrive together.

# **Recommended Action Steps**

To grow an urban forest that serves all residents equitably, we will need to expand our current activities and take new steps across a wide range of action areas—from Community Leadership and Engagement to Planting, Maintenance and Management to Workforce Development, Policy and Planning to Funding and Financing. For each of these six action areas, we've developed a list of recommendations, presented as goals and strategies:

**Goals** are broad outcomes we hope to achieve, which will support us in our mission to reach **tree equity**. They're the destination: where we want to go.

**Strategies** are the approaches we recommend to achieve our goals. They're the paths forward, guiding our progress towards the destination.

# Three overarching needs cut across the action areas, goals, and strategies we identified:

### Coordination

We need structures for city-wide collaboration and communication to work in closer alignment towards a shared **urban forest** vision. We need to be on the same page, from the big-picture cultivating collective investment in shared goals and values—to the nitty-gritty—including consistent technical standards and systems for tracking data. By deepening the relationships across the many people and organizations that care for our trees, we can draw upon our city's existing strengths and expertise, strategically leveraging those resources where they're needed most.

### **Capacity Building**

We need stronger investment in the many people and organizations who care for our trees. Our urban forest's most pressing needs—including maintenance of both young and old trees, enforcement of tree protection policies, and structures for ongoing advocacy—cannot be met without increased funding and staff capacity for the City Forestry Division and urban forestry community organizations. Residents should be supported with accessible opportunities to develop urban forestry skills, and pathways to translate those skills into tree industry careers.

### Community Leadership

We need pathways for frontline communities to directly participate in both stewardship activities and management decisions at all levels. From determining locations for tree plantings in their neighborhoods to guiding the allocation of city-wide urban forestry funds, residents—especially **climate justice frontline communities**—should have the power to shape the **urban forest** they live in. It's up to us to build structures to facilitate this type of self-determination.

# **Goals and Strategies**

Everyone has a role to play in this work, so our recommendations apply to a wide range of actors. For every strategy, we've listed the key partners who will need to advance the work of implementation. **These include:** 



### **City of Providence**

The Forestry Division of the Parks Department, the Board of Parks Commissioners, the Mayor's Office, City Council, public schools, and municipal departments including in particular the Department of Public Works, the Department of Planning and Development, and the Department of Inspections and Standards



### State of Rhode Island

The Governor's Office, Rhode Island legislature, and statewide agencies, such as the Department of Environmental Management and the Department of Transportation



### Nonprofit Urban Forestry Practitioners

Including the Providence Neighborhood Planting Program, Groundwork Rhode Island, the Woonasquatucket River Watershed Council, Garden Time, and other emerging programs

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### **Community-Based Organizations**

Nonprofit or grassroots organizations working within Providence or specific communities of Providence whose focus isn't explicitly urban forestry-related including faith centers, neighborhood associations, social service providers, and advocacy groups



### Private Urban Forestry Practitioners

Tree care and landscaping companies, utility companies, and other for-profit urban forest management actors and employers



### Large-Scale Property Owners

Residential and commercial developers, small- and large-scale landlords, and commercial and industrial landowners



### Institutions

Hospitals and healthcare institutions, educational institutions, labor organizations, and other institutions or entities whose mission or services intersect with urban forestry activities or outcomes. These institutions may overlap with large-scale property owners (see above), but also play additional roles in the community.

### **Foundational Actions**



These foundational actions are the "roots" of our plan and should be prioritized immediately, so they've been marked with this symbol.

We've also categorized each strategy as a short-term, long-term, or ongoing focus to help guide priorities for implementation.



These actions should take place in years one through five of implementation. Some might be completed within this time window, while others will be introduced within this time window and continued beyond it.



These actions are longer-term focuses, for implementation within ten years. They might be less urgent, or they might require other short-term actions to take place first.



These strategies describe ongoing approaches that should inform activities that take place throughout the entire implementation timeline—and indefinitely. Planting

Maintenance Managemen



Our climate justice frontline communities have deep relationships with trees, lived experience of the impacts of tree inequity, and knowledge about what their neighborhoods need...but these same communities tend to be excluded from the urban forestry planning and decision-making processes that directly affect them. We envision a fundamental shift in who holds power over the future of our urban forest. To guide the recommendations in this section, we've drawn on The Spectrum of Community Engagement to Ownership, which was created by Rosa González of Facilitating Power and adopted by the Racial and Environmental Justice Committee here in Providence.44 The goals and strategies that follow aim to uplift the deep knowledge already held within climate justice frontline communities and foster the broad participation in collective decision-making we need to move Providence from community engagement to community ownership in urban forestry management.

<sup>44</sup> González, Rosa. <u>"The Spectrum of Community</u> Engagement to Ownership."

# Foster leadership by accountability to climate justice frontline communities in urban forestry decision-making processes.



Establish an outside-government Urban Forest Community Advisory Board for the city of Providence to direct the implementation of this plan, guide Providence urban forestry management, and ensure ongoing accountability to changing community needs. Members should be compensated for participation, and this body should include both urban forestry practitioners and non-practitioners and maintain majority participation by **BIPOC** community members, youth, and residents of tree equity focus areas. The Advisory Board should be supported by and work closely with the City Forestry Division, Board of Parks Commissioners, and community organizations involved in urban forestry to guide decisions and activities related to tree planting, maintenance, funding, and policy-making.

and Engagement



Expand opportunities for ongoing direct input from large numbers of climate justice frontline community members on implementation and policy decisions, building community power to ensure that urban forestry decisions directly represent and are accountable to their interests. Hire organizers from low-canopy neighborhoods to identify resident priorities and needs at the neighborhood level through open planning forums, community polling, **participatory action research**, and **participatory budgeting**. **Community Quote:** 

"We need more trees in da hood!"

Short Term Long Term Ongoing

### 1.3

1.2

Follow community resourcing guidelines to meet the needs of historically excluded communities and eliminate barriers to participation in all community engagement meetings and events: compensate labor with stipends and meet other basic needs such as food, translation, child care, and accessible timing & location. **Goals and Strategies** 



# join the pvd family tree!

1 take a picture 2 decorate a frame 3. stick it on the tree!



Community Leadership and Engagement 1 2 3

4

City of Providence State of Rhode Island Θ Nonprofit Urban Forestry Practitioners Community-Based Organizations Private Urban Forestry Practitioners Institutions Large-Scale Property Owners 67 Foundational Actions

Short Term Long Term Ongoing

# **2** Build community power across the city and local movements for a healthy and equitable urban forest.

### 2.1

Invite residents, community organizations and other stakeholders to join a city-wide effort to cultivate broad support for Providence's **urban forest** and for **tree equity**. Coordinate across groups whose goals intersect with urban forestry activities to collectively campaign for transformative policy change—integrating urban forestry advocacy with racial, environmental, economic, health, transit, and housing justice organizing.

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2.2

Build capacity within existing urban forestry organizations to expand advocacy activities and strengthen community partnerships that reflect the interconnectedness of **tree equity** with other systemic issues impacting climate justice frontline communities. Pursue advocacy training programs to deepen community organizations' ability to effect urban forestry policy change and access resources.



Conduct capacity-building workshops with cultural, spiritual, and community groups to build the skills and expertise of staff and leaders around topics of tree equity, maintenance, planting, and other issues related to trees in the city. Equip these community groups to become hubs for residents to access information and resources about tree planting, maintenance, and jobs.





### Deepen our relationships with trees by expanding access **3** Deepen our relationships with trees 5, expension and opportunities for further learning and involvement.

### 3.1

Develop multilingual and multimedia outreach materials highlighting the benefits of urban trees and their relationships to environmental justice and community health.



3.2



### **Community Quotes:**

"I think PPSD could integrate street trees and the urban canopy into their science, humanities and arts curriculum at all age levels. I think children learn best when the content is accessible and relatable."

"Involve as many school aged children and schools as possible."

"We need education and inspiration for all. I know it can be hard to dedicate time and effort to take care of the trees and it also involves funding, so I myself would like to feel inspired and motivated to keep consistent!"

"I think community education is key to changing some of the negative opinions people have about trees. These educational opportunities should be happening in multiple languages.

"Necesitamos educar a las personas sobre la importancia de los árboles para el medio ambiente."

Ensure that youth and students in Providence have the opportunity to learn about the value and role of urban trees, tree equity, and its intersections with environmental justice. Invest in youth environmental education opportunities and connect youth to opportunities for action towards tree equity.

- Create and implement an interdisciplinary, locallyspecific tree equity and environmental justice curriculum for integration into K-12 school classrooms.
- Increase access to hands-on, experiential outdoor learning opportunities for youth of color and lowincome youth historically excluded from outdoor education programming.
- Engage young people in community science tree inventory and monitoring projects.
- Expand collaborations between out-of-school youth programs and urban forestry community organizations.
- Foster environmental leadership and advocacy by young people, especially in climate justice frontline communities.

Also see: 6.3, 12.1, 13.1

### 🚺 City of Providence State of Rhode Nonprofit Urban Forestry Practitioners Community-Based Organizations Private Urban Forestry Practitioners Institutions Large-Scale Property Owners Foundational Actions



Short Term ong Term Ongoing

See American Forests' Tree Equity Curriculum: Exploring Green STEAM Careers.

3.3

Also see: 14.2

Expand community education models—like the Providence Community Tree Keepers-that empower residents with the skills to care for and protect trees where they live. Address barriers to participation to improve accessibility, and introduce new training areas, including planting, species selection, young tree maintenance, recognizing disease and pests, and tree policy and zoning ordinances. Make the content of these inperson training workshops available to the public in written and video guides. Compile these guides into a "Tree Manual."

"Once trees are planted, how do you maintain them? I see sometimes "how to plant a tree," but then like what after? I wish there were better ways to learn that.'

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**Goals and Strategies** 



### Deepen our relationships with trees by expanding access **3** Deepen our relationships with trees by onperiods of a second stress of the second involvement.

3.4

Increase the accessibility of information about available programs, funding, and technical assistance for tree planting, maintenance, and workforce development in frontline communities.

- Host neighborhood-specific town halls to share information about how residents can access new street trees, new backyard trees, and resident assistance funds.
- Develop a centralized web portal directing residents to tree-related resources available from City, nonprofit, and commercial providers.
- Hire translation specialists to translate informational materials into additional languages.
- Expand outreach methods that do not require computer or internet access.

Also see: 2.3, 3.6

### **Community Quotes:**

"The disproportionate amount of trees on the east side vs the west side is absurd. Everyone should get to live in green spaces!!!"

1





Improve communication with residents in advance of tree work (including street tree planting, pruning, and removal) and expand Forestry Division capacity to communicate directly with community members and respond to requests, questions, and concerns.



Short Term Long Term Ongoing

### 3.6

Prioritize data transparency and availability.

- Develop a publicly accessible, interactive tree map with information about tree species, age, and health. Include upto-date information on the status of tree-related activities in parks and on streets, including requests for planting, pruning, and removal, newly planted trees, and planned tree maintenance by the City and utilities.
- Publicly share progress towards implementation and accountability metrics through Tree Plan "report cards."

Also see: 3.4, 12.1



"I would like to see data about where trees exist and where they're needed."

### Center, celebrate, and nourish our communities' existing 4 relationships with the urban forest.

## 4.1

Collaborate with Indigenous community organizations and knowledge keepers to promote and protect Native cultural and land-based practices and knowledge around trees.

# and Engagement 1 2

3 4

# 4.2

Partner with artists and culture-workers, particularly from BIPOC communities, to connect the work of tree planting and maintenance with arts and culture-based activities and programming relevant to communities of color in low-canopy neighborhoods.



### 4.3

Prioritize models for community education and skill-sharing that honor the tree knowledge-including transnational and generational knowledge-that is already held within climate justice frontline communities.

### **Community Quotes:**

"Los árboles son parte de nuestros recuerdos, celebraciones y familias."



Short Term Long Term Ongoing





### 4.4

Collect and share residents' stories and memories of trees. Consider including opportunities for residents to upload their own tree names, stories, and memories in a public interactive tree map.

"The trees in my neighborhood and around Providence are among the things I love and appreciate most about Providence."

"I love seeing and feeling our tree relatives!"

"Trees are my favorite part of our yard & neighborhood."

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The PVD Tree Plan
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121 112

12 pm SUNDAY JU5 TREE CELERATION !PLOAR JOINUS!

Photo by PNPP

4



# **4** Center, celebrate, and nourish our communities' existing relationships with the urban forest.

# 4.5

Facilitate opportunities for community gathering and joyful celebration of trees as living beings and valued neighbors, such as a city-wide Día de los Árboles celebration.

Explore possibilities for memorial and tribute tree planting

The Black Forest—which we've participated in!—provides

### **Community Quotes:**

"Planting trees is also a social event. Meet your neighbors who also care about our urban forest!"



### 4.6

programs.

one example of this.



"Trees as memorials is a great way to honor people in our community past, present, and future."



# 4.7

Expand access to public lands and green spaces, particularly in neighborhoods impacted by **redlining** and disinvestment.
Prioritize planning and infrastructure projects that create new green spaces and that improve physical access

(including both and public transit) to existing parks.
Invest in programs and infrastructure that help residents feel welcome, comfortable, and safe in public green spaces. "As a person who grew up in the Projects near Manton Ave., the only access to experiencing nature were at parks and nice neighborhoods. I believe that young humans need to experience nature from an early age. In a world where technology is our new playground, we need a reason again to be outside and for families to enjoy our roots."



Short Term
Long Term
Ongoing



Painting by Savonnara Alexander Sok
Planting

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Orce

"Neighborhoods where low income communities live are often overlooked for these sort of things. I live in a low income community and if we're planting more trees, we should be the priority because we're often the ones who need it most."

### Planting

There's a saying that "the best time to plant a tree is twenty years ago. The second best time is now." The trees we plant today shape the future of our **urban forest**—so achieving tree equity in the future means we have to dramatically scale up our planting efforts now. It also means those planting efforts must be accountable to the priorities and needs of our climate justice frontline communities and concentrated in tree equity focus areas. The goals and strategies in this section are intended to inspire new mechanisms for planting trees, expand opportunities for community members to directly participate in plantings where they live, and ensure that new tree plantings are determined by the collective vision of this plan—and not just where money and resources are already concentrated. Together, we can grow new tree **canopy** where we need it most.

### Prioritize planting trees on private residential property.



### 5.1

Develop and pilot a free yard-tree planting program that is collaboratively implemented by partner organizations across tree equity focus areas. The program should include technical assistance with species & site selection, full-service delivery, and in-person planting support.

Also see: 9.1, 9.2, 10.1, 18.5

### **Community Quotes:**

"I love being able to sit under a tree after being outside and being able to relax there. I love how trees look in the morning sun through my bedroom window."

"The city should be willing to pay for the removal

of yards covered with concrete. That way we can

have more green space

who gets a house with

an entire lot covered in

concrete."

that would be prohibitively

expensive for a homeowner

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5.2

green space.



### 5.3

Address barriers to planting trees on non-owner-occupied residential properties to ensure that renters have access to the benefits of yard trees.

Explore possibilities for residential de-paving programs to

facilitate residential tree planting and expand access to

- Educate property owners about yard tree benefits, incentives for tree planting, and available maintenance resources.
- Increase program capacity for partner organizations to communicate directly with property owners to secure permission to plant.

Also see: 3.4, 10.5, 11.3

"Please focus on neighborhoods that

have the fewest existing trees, and especially ones with higher amounts of renters since the people that live there have less personal control over the surroundings. I live in Smith Hill on a rougher street with very few trees and it's clear that if the city or community groups don't plant trees, no one will."

"We live in Providence and participated in the free tree program last year. The pickup location was located so far from the city center that it likely made it impossible for many people to get a tree."

5.5

5.4

Honor requests for food-bearing yard trees and provide residents with accessible technical assistance and training for fruit and nut tree care.

Modify the DEM Energy-Saving Trees program to increase

accessibility for climate justice frontline communities and

those living in tree equity focus areas. Consider partnering

with community-based organizations to distribute trees, offering additional pick-up locations (or a delivery option),

and shifting away from a first-come, first-served system.



### Short Term ong Term

Ongoing

The PVD Tree Plan

## **5** Prioritize planting trees on private commercial & institutional property.



### 5.6

Identify top non-residential private landowners in tree equity focus areas, and advance incentives and technical support to encourage planting and protect and increase tree canopy.





### **Community Quotes:**

"We need to increase commercial/corporate responsibility for planting trees on/near their sites, especially as it concerns parking lots and heat island effects."

"Too many mature trees are being cut down in South Providence and Washington Park, especially by businesses to protect their parking lot asphalt. The people who do this do not live in the neighborhood and don't care that they are harming our community."



### 5.7

Expand outreach to small business owners and other smallscale non-residential property owners and increase program capacity to provide technical support for small businesses to plant trees on commercial property.



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5.8

Educate commercial and institutional landowners about local zoning ordinances, including tree replacement requirements and canopy requirements, and partner with advocates within these institutions to increase accountability.

Also see: 11.3, 19.1-4, 20.1



new builds, etc."



Photo by Dominique Sindayiganza

# **6** Expand opportunities to plant trees, orchards, and "miniforests" in community spaces.



### 6.1

Identify parks and existing green spaces located in tree equity focus areas with potential for tree plantings and expand City funding to plant and maintain trees at those sites, particularly in neighborhoods impacted by **redlining**, **urban renewal**, and disinvestment.

Also see: 4.7



### 6.2

Invest in creating new small green spaces and "mini-forests" in tree equity focus areas, guided by community planning and participatory design processes. Balance reforestation of vacant city-owned land with urgent community needs for improved housing supply. Identify priority areas for reforestation that are city-owned, vacant, and not viable sites for housing construction, such as **paper streets**.

Also see: 4.7

"I work in a school and there is only one tree in the outdoor space and very little dirt in general. It's sad."

**Community Quotes:** 

HAVE ONE BLOCK OF

FOREST."

**'EVERY HOOD SHOULD** 

"What about remediated

lots turned into orchards, or

a community food forest?"

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### **6.3** Expa

Expand existing partnerships and program models to depave and plant at K-12 schools in frontline climate justice neighborhoods.

Also see: 3.2



Short Term

Long Term Ongoing



### 6.4

Develop replicable program structures—including funding sources, shared equipment, in-person assistance, and standard guidelines—for faith centers, community centers, and other local organizations to conduct their own tree plantings.



6.5

Establish protocols and supports for planting fruit trees, community orchards, and food & medicinal forests on public lands and in community spaces.

"We need fruit trees to be part of sustainable community gardens and public spaces. We could potentially be feeding our homeless and helping low income families with nutrition and food access."

"Me gustaría ver más árboles frutales el lugares públicos para que las personas tengan acceso a tener frutas frescas."

"I want a fruit/nut forest for all!"

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### Increase capacity for street tree planting in tree equity focus areas.



7.2

Resource the community organizations already planting street trees in tree equity focus areas to expand their activities.

Provide stipends for community "Tree Leaders" to conduct neighborhood outreach and organize group plantings, reducing reliance on unpaid community volunteers.



### **Community Quotes:**

"Coordination with existing programs is key. The Providence Neighborhood Planting Program has already been doing this for years. There is no need to re-invent the wheel. You just need to have them tell you how to do it and get them more money so they can outreach to more neighborhoods. It's silly to start all over."

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### 7.3

Empower climate justice frontline communities with the tools, training, funds, and opportunities to participate directly in plantings where they live.

### 7.4

7.5

Increase the annual City street tree planting budget and ensure that the number of trees budgeted for planting always exceeds the number removed in the previous year.

Manage infrastructure to maximize space available for

street tree planting. Collaborate with utilities to consolidate

overhead wires, remove overhead wires no longer in use,

and consider tree planting opportunities when placing

Also see: 16.1

underground wires.

Also see: 11.2, 20.4, 20.5

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Also see: 5.1

7.6

Prioritize setback tree plantings to maximize public benefits and canopy growth, using public funds to prepare sites and plant shade trees up to 20' from public right-ofways on private property (provided property owner consent is obtained), where they have more room to grow and a better chance of survival.

on College Hill. There is no reason why my neighborhood can't have the street tree density of College Hill."

"I live in a relatively low

(Wanskuck), but work

tree density neighborhood

"Street trees make an enormous difference in the feeling of the city. I'd like to support a massive increase in street trees."

# **Goals and Strategies**



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# 8 Adopt coordinated city-wide approaches to plant for equity and resilience.



### **Community Quotes:**

"Plant where requested by residents!"



### 8.2

Develop systems to track and coordinate planting activities across municipal departments, community organizations, commercial and institutional landowners, and other entities and ensure that planting projects are aligned with community priorities.

- Create an internal database to track planting priorities and projects across partner organizations and priority areas, on both public and private property.
- Create new staff capacity for data and inventory coordination, to track planting projects across urban forestry practitioner organizations and municipal departments.
- Develop accessible mechanisms and incentives for any entity planting trees to report their activities by submitting planting data.
- Establish shared best practices across practitioner groups, including recommendations for resident and community engagement.

Also see: 12.1, 20.10



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### 8.3

Develop and distribute updated city-wide guidelines for strategic species selection, considering:

- Native vs. non-native species
- Public health impacts, including allergenic quotient,
   VOC emissions, pollution absorption, and transpiration/ cooling effect
- Climate vulnerability, including hardiness, adaptability, and heat zone tolerance
- Climate benefits, including **carbon storage** and **sequestration**
- Lifespan and growth rate
- Pollution sensitivity and maintenance requirements
- Social and cultural significance
- Size
- "Right tree right place" guidelines, including sub-lists of species recommendations by site type

Build upon existing guidelines, including the <u>Climate and</u> <u>Health Species List for Rhode Island Urban Trees</u> and <u>Providence Tree List</u>. Establish targets for city-wide species diversity and commission a technical management plan to guide public and private partners across the city. "We need more trees EVERYWHERE, but all areas of the city need to be equally "tree-d" (Broad St., Cranston St., Smith Hill, Mt. Hope, etc.) before more trees are planted in places that already have an abundance (Blackstone, College Hill, etc.)"

"Providence needs more trees in all areas...not just the East Side."

"Por mi experiencia personal recomiendo que en las calles o casas familiares se planten árboles de tamaño mediano, y no grandes árboles que podrían terminar en accidentes y daños en las calles y casas. Los grandes árboles están bien para parques...y si se puede que sean árboles que no causen alergias."

"Please rewild and restore native species rather than import ornamentals. Our ecosystem needs it, and we owe it to the indigenous Narragansett people and other tribes that were displaced and oppressed from having a say in environmental stewardship of the larger region."

"The sidewalk issue is a big one, so looking for varieties that don't cause the sidewalks to buckle is a great plan."

Planting

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The PVD Tree Plan

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# 8 Adopt coordinated city-wide approaches to plant for equity and resilience.



### 8.4

Collaborate with Native Nations to develop planting practices that honor Indigenous relationships with native tree species, and appropriately compensate Indigenous knowledge keepers to lead this work.

# **8.5**

Use **succession planting** schedules as appropriate to promote age diversity of trees and improve our urban forest's resilience to stressors that impact trees at different life stages.



### 8.6

Create an updated handbook for city-wide use by practitioner organizations outlining standards for tree planting and maintenance based on site type, including: • Soil volume and tree pit requirements for street trees

- Tree planting techniques, tree stock, and mulching, staking, and pit-protection best practices
- Establishment care guidelines, including watering and pruning

### **8.7**

8.8

Place trees to strategically maximize their environmental and community benefits:

- Plant trees along transportation corridors, focusing on the 6/10 connector, I-95, and other major corridors cutting through tree equity focus areas.
- Plant trees along waterways to prevent polluted stormwater runoff from entering waterways, especially along the Woonasquatucket River and the Port of Providence.
- Encourage tree planting in energy-conserving locations, in highly polluted areas, and in heavily populated areas.
- Prioritize habitat creation and establishment of continuous green corridors.



Take proactive steps to ensure the long-term availability of large numbers of young trees for planting in Providence:

- Pursue further opportunities for contract growing and establish longer-term agreements with nurseries to grow desired species at the appropriate specifications.
- Advocate for a regional assessment of nursery stock and collaborate regionally to develop strategies to ensure sustainable inventory.
- Explore options for local cultivation of trees that are tied to workforce development programs, particularly in order to increase access to key hard-to-procure species.

### Also see: 8.3, 21.5

### **Community Quotes:**

"I think one of the priorities for trees in Providence should be thinking about native trees that can be planted and stewarded and how we can work with Indigenous communities to rework our relationship with the land we occupy."

"We need street trees on residential blocks near highways. These are high-risk areas for asthma due to pollution and lowincome people like me who live next to the highway deserve beautiful tree-lined streets just as much as everyone else."

"It would be great to see trees and shrubbery planted in areas where industrial & residential areas meet — near the hospitals, by the port of Providence, etc."

"I would like to see trees planted along streets that have a history of traffic issues, especially issues involving vehicles with pedestrians or bicyclists."

"As a resident of South Providence I would like to see more trees planted in my community. It is the hottest part of the city and having trees will provide more shade, resulting in less energy use for air conditioners, etc. I am concerned about the urban heat index increasing with climate change, so the more trees the better."

"I <3 trees and with severe asthma rates in our communities as well as the toxic port polluting our urban communities we need more trees now more than ever."

The PVD Tree Plan

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A resilient urban forest relies on people who value the care and protection of their trees. City trees need extra love and care from human neighbors to survive and grow big enough that they provide their full range of health and climate benefits, but the importance of this maintenance is often overlooked. We envision an approach to urban forest management that is grounded in reciprocity and animated by gratitude, appreciation, and respect for our trees and all they do for us. in which we care for our trees as valued members of our community. Following the goals and strategies outlined below will help our trees thrive from planting to maturity by ensuring that planting is always followed by maintenance and incorporating both proactive and reactive tree care measures. These recommendations advance community stewardship models that amplify the leadership of frontline communities in urban forest management activities—and equitably resource them for that work.

# Nurture our young and newly planted trees to survive and thrive into adulthood.



### 9.1

Direct resources to tree equity focus areas to compensate community members for **establishment care** following planting and remove barriers to long-term tree survival. Support residents who plant yard or street trees through PNPP or other partner programs with stipends, technical support, and/or equipment as needed to water and maintain those trees until they're established.



tree program to plant trees in my front yard along the street, but many of the trees in my neighborhood died within the first year. A system for supporting them for a year or two after being planted would probably increase survival rates and return on investment a lot."

"Trees in less affluent parts of PVD are planted and replanted, but neglected in terms of aftercare and ongoing stewardship."

"You plant trees then never take care of them until they fall down."





9.2

Invest in city-wide community stewardship models to provide **establishment care** for newly planted trees. Coordinate across partner organizations to train and pay community members to water and prune young trees in their own neighborhoods—including trees on streets, parks, residential property, commercial and institutional property, and community gardens and orchards—through jobs training, youth education, and short-term employment programs. Establish systems for large property owners to directly hire community stewards, and track **establishment care** activities across neighborhoods.

Also see: 5.1, 14.1



9.3

Also see: 12.1

Institute survival checks for trees planted by the City and partner organizations. Gather information on survival by species and site type, and apply management interventions and preventative maintenance where they're needed.

"Planting trees is not enough. Follow up care is as important. And woefully lacking."

Photo by Dominique Sindayiganza





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Ongoing



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Maintenance & Management

# **10** Ease the burdens that trees can create for our communities—especially the most marginalized.



Provide income-based financial assistance or **cost sharing** to support residents in caring for trees on private property. Offer maintenance services and technical assistance throughout the lifespan of a tree, including both **establishment care** (watering and structural pruning) and **mature tree** care (pruning, disease treatment, and removal). Partner with private tree care companies and community workforce development organizations to support trainees in building industry skills through this work.

Also see: 5.1, 14.1

### 10.2

Establish an emergency resident assistance fund for treerelated damage (including damage to homes, sewers, and other property). Prioritize low-income residents in tree equity focus areas and establish a process for accessing these funds that is accessible and low-burden.



### 10.3

Create programs for elderly and disabled community members to access free or low-cost landscaping services, including tree planting, tree maintenance, and leaf-raking. Strengthen intergenerational community support networks around tree care, developing structures for community members to request help from and offer support for their neighbors.



### **Community Quotes:**

"A community grant fund to help low income homeowners with tree maintenance would be fantastic. Or a job training program that provides low cost tree services to low income homeowners?"

"Please provide maintenance to existing trees, especially in low income communities where people have to work multiple jobs and are left with no time to care for the trees."

"I see people in the city remove their trees to reduce having to clean their yards and perhaps damage to the house. Perhaps if people both had more education but also more support in caring for their trees they might consider an alternative."

"My home of 18 years in Providence has a backyard with trees. Every year I watch cardinals, blue jays, robins, even a family of squirrels (that respectfully leave my garden alone!) But disease has gotten hold of some of the trees killing 4 and necessitating their removal. The trees also hang over my neighbor's property. I am terrified that the trees will fall and damage property. The other trees that are not damaged desperately need trimming (I found out 2 days ago that one tree's branches have damaged my roof.) I am a 70-year-old, semi-retired, low income minority woman. I live alone. Providence does not provide funding/any kind of assistance for trees on private property. And I did not plant the trees; they came with the property. How is it possible for the city to encourage trees/ greenery but not provide a way to care for them? How is it possible for the city to propose a budget and overlook this environmental issue? take care of my backyard, have planted a vegetable and herb garden and flowers to beautify the property, both in my backyard and front yard. Unless I receive an unexpected inflow of funds, it will take a long time for me to save enough money to take care of one tree. let alone four. In the meantime, I live with the hope that the trees don't fall and damage my and my neighbor's property."



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Maintenance & Management

# **10** Ease the burdens that trees can create for our communities—especially the most marginalized.



### 10.4

Collaborate with disabled community members and disability justice groups to develop best practices for managing conflicts between trees and sidewalk infrastructure that specifically center accessibility for disabled residents and equity for low-canopy neighborhoods of color that have experienced historical disinvestment.

Also see: 20.5



### 10.5

Establish low-burden pathways for renters to access maintenance services when property owners neglect tree care responsibilities. Increase program capacity for urban forestry organizations to communicate directly with property owners to share available maintenance resources and secure permission to perform maintenance.

Also see: 3.4, 5.3



### 10.6

Help residents who have the financial resources to pay for their own tree care access high-quality maintenance services on a timely basis. Provide educational resources on tree health and pruning best practices and a list of trusted tree care providers by neighborhood, including trainees in workforce development programs.



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### 10.7

Fund the Forestry Division to work through the current backlog of street tree pruning and removal requests, starting with tree equity focus areas, where long wait times can leave residents hesitant to welcome new trees to their neighborhoods. Modify the <u>block pruning schedule</u> to increase care for **mature trees** in tree equity focus areas, maintaining the baseline 10-year pruning cycle in high canopy neighborhoods while increasing the percentage of trees addressed annually in low canopy neighborhoods.

### **Community Quotes:**

"There are many areas in which tree roots make sidewalks inaccessible for people with disabilities and strollers. We need planning that includes people with mobility and visual impairments in planting plans and upkeep."

"Please work with disabled Rhode Islanders to improve sidewalk ADA compliance (it's causing horrible quality of life in me and other wheelchair users)."

"Include the voices of people with disabilities who deserve and need access to green spaces, as well as to be able to use un-busted sidewalks to get to work, school, social activities and healthcare."

"My neighbor, an absentee landlord, cut down MULTIPLE trees because they either don't want to clean up leaves or may plan to pave their backyard for parking. The absentee landlord also took down their street tree (a healthy tree). We were told they had complained its trunk leaned into the street, but that lean was negligible and did not get in the way of cars, that street tree should never have been removed; now it's just a stump. What can be done about such horrible property owners?"

"I'm so heartbroken to see so many mature trees in my neighborhood being cut down because of disease and neglect. I would love the city to provide resources to protect these trees. That being said, I live on the East Side and I feel like the neighborhoods with vulnerable populations need to be prioritized when getting access to trees and the city resources."

"I am a renter in Federal Hill, where many tree roots have overarown and damaaed sidewalks and property. My apartment used to have a tree in front of it, whose roots overgrew, uprooting the sidewalk and damaging my building's foundation. The process of getting the City to fix this issue took over 2 years, many emails to government officials and city councilors, and the help of lawyers. As much as I would like to see many more trees being planted (especially in my neighborhood and the West End), the City must address issues of overgrown tree roots and the damage they have caused."

# Goals and Strategies

# **11** Protect our precious existing canopy and cultivate an **urban forest** that is resilient to short-term and long-term threats.



### 11.1

Expand the capacity of Forestry Division management and crew to properly care for our **public trees**.

- Add new positions to increase in-house tree care capacity. To reduce response times and promote neighborhood-specific knowledge and relationship building among Forestry staff, divide the city into districts and assign a designated maintenance crew to each district.
- Expand the scope of Forestry activities to incorporate proactive tree care (including **risk assessment** and pest and disease monitoring) alongside reactive care. Increase funding as necessary to support this work.
- Resource Forestry to expand contract work—including both planting and maintenance— and add the internal administrative capacity necessary to manage those contracts.

### Community Quotes:

"I'd like to see the Providence City Forester have more resources."

"I would like the city to more proactively maintain trees and keep them healthy, or at least do so in response to resident requests."

"Most of the trees I see around the city are dead and sickly. Grass, shrubs, and trees are not maintained unless they are on 'important' grounds like a hospital or office building. The city deserves to have nature within it all throughout. It's so sad to see dying brown trees surrounded by cracked sidewalk with trash cluttering their patch of dry soil. It just makes the city feel sad."

### 11.2

Develop and implement a comprehensive engagement strategy to reduce conflicts between street trees and utility infrastructure.

- Identify which utilities in particular are non-compliant, non-collaborative, or do not use best management practices.
- Collaborate with utility companies—especially cable companies—to strengthen employee training protocols and compliance with Forestry Division standards.
- Hold utilities accountable for mechanical tree damage from underground utilities. Consider developing systems to mark critical root zones of existing street trees before digging activity occurs.
- Expand public education on proper tree pruning and streamline systems for residents to report noncompliant activities.

"National Crid does not do an adequate job of clearing and pruning trees near power lines."

"Tree pruning around telephone wires often leaves trees looking worse than ever. Might tree pruners be better educated about proper and healthier ways to prune trees?"

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11.3

Expand outreach to inform property owners and contractors about local tree ordinances to increase awareness of municipal tree policy among those responsible for managing and working with urban trees. Outreach efforts should specifically target property owners with significant trees, developers, private tree care companies, and paving companies.

Also see: 5.3, 5.8, 19.1-4, 20.1



### The PVD Tree Plan

# **11** Protect our precious existing canopy and cultivate an **urban forest** that is resilient to short-term and long-term threats.



### 11.4

Create and implement a plan of action to respond to insect and disease outbreaks that affect our **urban forest**.

- Assign formal responsibility to the City Forester to stay up to date on emerging insect and disease threats.
- Factor equity considerations into pest management solutions to prioritize treatment solutions in tree equity focus areas.
- Expand training in pest and disease identification for both community members and tree care workers.
- Incorporate pest and disease assessment and treatment into regular Forestry Division tree work.
- Identify funding streams for long-term pest management.
- Expand collaboration and resource-sharing with organizations that function beyond the city's borders, including state and federal agencies, nearby municipalities, the Rhode Island Tree Council, and other regional groups.
- Provide technical support and educational resources for residents of high-canopy neighborhoods to pay for treatment of trees on their properties.
- Collaborate with Pesticide Free PVD to prioritize pest management solutions that protect the health of both human and non-human communities.

### **Community Quotes:**

"I live in a triple decker on Providence's South Side, I've lived here for over 20 years. When we moved in we lost both our front yard tree and backyard tree to disease and storms, and the difference it's made to our heat and insulation is noticeable! Summers are unbearable, and even the most mild wind storms damage the siding. Both those trees aided in shielding us from the heat and wind but we had no way of getting help from the city to maintain them against disease. I've since had another planted, but it'll be years until they'll help my house."



Huge swaths of our urban forest are vulnerable to pest damage. In many ways, the threat that pests pose to our trees—and our communities—is a direct result of human activities. Many pests, like the emerald ash borer and spotted lanternfly, were introduced to this land by colonization and international trade. Climate disruption has also left many trees especially vulnerable to pest damage. To preserve the many benefits our urban forest offers us, we need to minimize the impacts of the harmful pests we've introduced. This involves both protecting our existing trees and prioritizing species diversity in our planting efforts.

See the Appendix for a <u>list</u> of common urban forest <u>pests</u>.

Maintenance & Management

9

# **11** Protect our precious existing canopy and cultivate an **urban forest** that is resilient to short-term and long-term threats.



11.5

Develop collaboration structures to minimize the spread of **invasive species** including both trees and other plants—that damage the health of our **urban forest**.

- Focus on strategic management of public roadsides, riparian zones, and wooded and wild areas.
- Coordinate across municipal departments to establish a city-wide no-planting list for both tree and non-tree invasive plant species.
- Adopt a holistic approach that considers **invasive species**' varied relationships with human and non-human communities, including both services and disservices.

See the glossary entry on invasive species for a note on alternatives to the term.



# III.6 Plan f sever •

Plan for tree-related emergencies as climate change increases the frequency and severity of extreme weather events.

- Develop a Community Forest Storm Mitigation Plan that includes both proactive and reactive measures and specifically prioritizes the safety of Providence's most vulnerable populations.
- Develop a plan to manage large pulses of wood waste resulting from storms or acute pest outbreaks. Work towards a self-sustaining wood waste management program that sells and distributes wood waste as a community resource and centers collaborations with community gardens, artists and makers, and other community members and organizations.

### Also see: 10.2

See the <u>Community Forest Storm Mitigation Planning Workbook</u> and <u>Urban Wood</u> <u>Use Action Guide</u> in the Appendix.







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Maintenance & Management

# **12** Monitor the health of our urban forest and the activities that sustain it.



- all publicly managed trees. Establish a data collection platform for use across municipal departments and urban forestry practitioner partners. Develop shared training processes and protocols for partners to upload and edit inventory data.
- Hire a data and inventory coordinator to manage collaborations across City and community partners, identify high-priority inventory areas, and ensure quality control.
- Integrate data updates into existing urban forestry activities, including block pruning.
- Resource community organizations to train and supervise participants of jobs training and youth education programs to perform tree inspections and inventories in their own neighborhoods. Prioritize climate justice frontline communities in these opportunities for skill-building and workforce development.
  - Expand the inventory beyond street trees to include trees in City-owned parks, open spaces, schools, and other public facilities, and work towards collecting data on setback trees and significant trees.
- Review existing inventory data for accuracy and establish quality control systems to review new data as it is collected.
- Provide online public viewing access to all inventory data, including information about the benefits provided by each tree, and establish clear pathways for residents to contact Forestry about inaccuracies.
- Explore opportunities to collect data from private sector companies that perform tree assessments, including utility companies, surveyors, property assessors, and private tree companies.

Also see: 3.6, 14.1

12.1





Conduct regular urban tree canopy assessments using available best practices and technology to provide a city-wide picture of urban forest structure and distribution and track progress towards our canopy target.

- Continue to invest in LiDAR and imagery to support these assessments and other mapping needs with high-quality, high-resolution data.
- Share all findings with the Urban Forest Community Advisory Board and the public.
- Set a desired frequency of assessment and include it in the city tree ordinance as a responsibility of the Forestry Division.

Also see: 3.6, 16.1

12.3





Conduct a STEW-MAP or network map assessment to inventory and map the relationships between the network of organizations and individuals doing urban forestry related or adjacent activities in Providence, and periodically revisit and remap to assess changes in the ecosystem of partners.

Goals and Strategies

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Maintenance & Management







GREEN REENTRY

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### Workforce Development

Sustaining a healthy and resilient urban forest takes a lot of work—and this can be a burden, especially for marginalized communities with limited resources. But when frontline communities are equitably trained and resourced, the burdens of tree care can be transformed into opportunities for trees and people to flourish together. The tree care industry offers opportunities for Providence residents to find fulfilling, family-sustaining work rooted firmly in improving the health of their communities. Despite ongoing shortages of forestry professionals, these jobs are frequently not accessible to the most marginalized among our communities. The goals and strategies in this section focus on how we can create jobs that sustain both our urban forest and our human communities. Investment in trees should always come with investment in the people who care for them.

# **13** Introduce employment-seekers to tree industry career options, supporting people in making informed decisions towards accessing work that sustains them.

### 13.1

Facilitate green career discovery opportunities for young people, introducing youth to employment options in the tree industry and related environmental fields. Build bridges from educational programming to urban forestry advocacy and career pathways. Resource youth-serving community organizations to provide tree care skill-building, initial training, and exposure to both short-term employment opportunities and longer-term workforce development programs, along with career and college counseling services.

Also see: 3.2, 14.1

13.2

Expand opportunities for students to pursue formal education in urban forestry and arboriculture.

- Explore development of an arboricultural training program at local vocational-technical high schools.
- Develop arboricultural certificates, course offerings, and degree programs at community colleges.
- Create a scholarship program for young people to pursue education towards work in arboriculture.

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**13.3** 

Consolidate and distribute information about existing treerelated career pathways, training programs, and support resources.

- Produce multimedia and multilingual outreach materials that speak to the day-to-day experience of tree industry work.
- Create transparent pay scales for private, municipal, union, and nonunion tree industry jobs.
- Offer information about scheduling and advancement to support long-term planning.

See American Forests' <u>Career Pathways Exploration Guide</u> for students and job seekers and <u>Career Pathways Action</u> <u>Guide</u> for employers.

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Dismantle barriers to entry into the tree industry for people of color, women, trans, and non-binary people, and others who have historically been excluded from the field.

### 14.1



Develop a city-wide structure to train and pay community members for flexible, low-commitment, hyperlocal work performing tree care and monitoring in low-canopy neighborhoods.

- Ensure that this framework can be adapted and customized by partner organizations working with different communities in different neighborhoods across the city, and that it can be adapted to support watering, pit maintenance, and pruning for street trees, park trees, and yard trees.
- Work with climate justice frontline communities to ensure that these opportunities are designed to center the needs of low-income people of color, youth, and formerly incarcerated community members.
- Coordinate across community organizations to train, supervise, and assign teams of trainees to provide young tree care in high priority areas.
- Consider offering same-day work and pay opportunities alongside more sustained commitments that can serve as "trial" jobs in arboriculture and provide an "on-ramp" to further training in the field.

Also see: 9.2, 10.1, 12.1, 16.4

14.2





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Increase support for community organizations to create and expand job training programs that help prepare residents—especially those from climate justice frontline communities—to access meaningful work in green careers.

- Structure training programs with multiple points of entry in mind.
- Establish consistent standards across training programs.
   Incorporate wraparound services including childcare, transportation financial planning and professional skills
- transportation, financial planning, and professional skills development.
- Support trainees beyond initial exposure to acquire advanced skills, access further training opportunities, and build connections with local employers.
- Incorporate peer mentorship opportunities, compensating mentors to provide personal guidance and a consistent point of contact for new trainees.
- Expand and resource arboriculture registered apprenticeship and paid externship opportunities in which non-profit partner organizations partner with private companies to pay program alumni for a trial period in the workforce.

See American Forests' <u>Arboriculture Pre-Employment Curriculum</u>.

### 14.3

Reassess job specifications for entry-level City forestry positions to expand the list of approved qualifications, remove initial barriers, and reward obtaining skills on the job.

- Ensure those with criminal records are not disqualified from employment.
- Establish a registered apprenticeship program within the City Forestry Division to provide an "on ramp" to a career in tree care, including opportunities to access further training on the job and "shadow" City **arborists**.
- Honor forms of knowledge—including Indigenous and cultural knowledge—and relevant educational backgrounds beyond technical arboriculture degrees.
- Create positions that don't require a commercial drivers license or **arborist** license and provide training for these employees to advance into forester positions.
- Prioritize applicants from climate justice frontline communities who have experience living and working in tree equity focus areas.

### **Community Quotes:**

"I think the city should create jobs for residents for tree maintenance, especially teenagers and young adults."

"We need better maintenance for trees—pruning, watering, etc. But this can be a dual win: a horticultural training opportunity for youth! It can then lead to potential employment in the city, state work, and DEM."

"I want to be a tree steward! That sounds so fun! But I don't want to pay for a training."

"I love the idea of a job training program for residents around arboreal care." **14** Dismantle barriers to entry into the tree industry for people of color, women, trans, and non-binary people, and others who have historically been excluded from the field.

**14.4** 

Increase the accessibility of the Rhode Island **Arborist** Licensing Exam:

- Translate the exam into Spanish and other commonly spoken languages.
- Offer opportunities for online testing.
- Create and resource informal, stipended, communitybased study groups, including designated spaces for people of color, women, trans and non-binary people, and people with other marginalized identities and backgrounds to build community and learn together.



### 14.5

Explore incentive structures for private tree care companies to develop equity-focused programs, including registered apprenticeships and externships, and collaborate with nonprofit workforce development programs.



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 Support tree workers' professional growth and changing needs from training to retirement, building continuous, family-sustaining career pathways with opportunities for advancement.



### 15.1

Provide support and incentives for tree industry workers, including Forestry Division staff, to pursue further training and qualifications that advance career mobility and portability.

- Encourage and resource all City tree care workers to become Rhode Island or International Society of Arboriculture licensed arborists and offer incentives in the form of promotions and pay increases.
- Support workers in accessing continuing and mid-career education by offering professional development credits for training on topics including local **zoning** ordinances, pest updates, **tree equity**, and environmental justice.
- Offer compensation and **wraparound** support for symposium and training attendance.



15.2

Extend the availability of **wraparound services** beyond the training phase, expanding programs that provide legal, tax, financial, and business succession support, child care assistance, mental health services, and retirement planning for tree industry workers.

See the Land & Sea Together Forestry Resource Collection.



### 15.3

Support mid- and late-career tree industry workers facing aging, physical limitations, and disability with positions that integrate non-physical work and meaningfully build on accumulated industry experience, including inventory management and community outreach.





### 15.4

Foster collaboration between tree industry workers and workers in other outdoor industries to develop standards and protections for outdoor workers subject to safety hazards including heat and sun exposure, noise, heavy equipment, and vector-borne diseases. Strengthen advocacy across industries for safe and dignified labor conditions to safeguard career sustainability.



Also see: 14.1, 14.3

Collaborate with industry labor representatives to create and expand access to union jobs in the tree care industry.

- Revisit and adjust existing agreements to support new positions and workforce training programs that lead to new union jobs.
- Advocate for a living wage for entry-level urban forestry jobs and for year-round, permanent public-sector forestry jobs.

**Community Quotes:** 

"PLEASE include and enroll unions in this essential process."

13

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### Funding and Financing

Equitable distribution of urban trees and their benefits requires equitable distribution of the financial resources needed to sustain those trees and the people who care for them. In Providence, we're lucky to have a strong foundation of existing resources in place to support this work. But to fully leverage that foundation and achieve city-wide benefits, we need to add large-scale investment in tree equity focus areas that have experienced historical disinvestment. This investment needs to extend beyond just planting to include maintenance and capacity building-and it will require increased up-front funding to shift from reactive to proactive spending. But by redistributing financial resources to our climate justice frontline communities, we can step towards repairing intergenerational harms and nurture a future where we all can flourish.

# **16** Secure reliable funding streams for long-term investment in tree planting and maintenance in tree equity focus areas.



### 16.1

Secure a multi-year dedicated City budget commitment for tree planting and maintenance projects, specifically prioritizing tree equity focus areas.

- Increase the Forestry Division budget to support the increases in staff capacity necessary to effectively manage our existing tree canopy, add new tree canopy, and implement the recommendations of this plan.
- Establish a budget line item to contract with community organizations to provide tree outreach, planting and maintenance services.
- Include dedicated funding for regular **urban forest** monitoring assessments.
- Develop benchmark formulas to ensure that Forestry Division budget allocations keep pace with increases in **tree canopy** over time. Use data on tree size, species, and age distribution patterns to inform funding levels for tree inspection and maintenance.

Also see: 7.4, 10.7, 11.1, 12.2

### **Community Quotes:**

"Maintenance is just as important as planting new trees. Creating a sustainable funding stream is critical."

"I hope Providence is ready to increase its investment in trees. More trees = increased quality of life, healthier air, slower neighborhood traffic, beauty, and property values."

"I would like to see more City resources and support for trees on private property."

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### 16.2

Direct fees from enforcement of zoning codes to support urban forestry activities in tree equity focus areas.

Also see: 19.2-4, 21.1



Expand private philanthropic support to increase nonprofit sector capacity for planting, stewardship, community engagement, and advocacy, including by matching municipal forestry investments. Adopt a redistributive approach, specifically directing funds towards tree equity focus areas and **climate justice frontline communities**.

### Also see: 18.3

### 16.4

16.3

Engage the private sector in financing urban forestry activities:

- Pursue opportunities for corporate and institutional sponsorship of urban forestry projects or programs where they align with community engagement or social responsibility priorities.
- Develop incentives for tree care companies to provide pro bono services for public benefit.
- Establish a process for corporate and institutional property owners to directly hire workforce program trainees for planting and maintenance activities.
- Explore partnerships with utility companies to sponsor plantings of energy-saving yard trees.

Also see: 14.1, 17.6

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# **17** Link urban forestry funding streams with funding streams for intersecting social and environmental equity initiatives.

### 17.1

Maximize federal funding opportunities for urban tree canopy, including Inflation Reduction Act funds, by expanding co-fundraising efforts between city and state public and non-profit partners.

17.2

Align forestry fundraising with other social and health equity goals to help leverage the wide range of existing state funding opportunities towards **tree equity**. Grants focusing on stormwater management, water quality, air quality, public health, economic development, climate change mitigation, and social equity should all be considered as potential funding sources for trees, which deliver these benefits. Prioritize urban canopy investments in state funding opportunities including green bonds, the Municipal Resilience Program, the Transportation Improvement Program, Section 319 Nonpoint Source Pollution Grants, Preventive Health Service Block Grants, Efficient Buildings Fund, and the Clean Water State Revolving Fund Green Project Reserve.



### **Community Quotes:**

"This is an incredibly low cost, low-maintenance option to combat climate change and improve the health of residents. It needs to be a priority."

### 17.3

Prioritize trees as critical public infrastructure within Providence's next <u>Capital Improvement Plan</u> by providing funds to support tree planting and maintenance on streets and in parks and implement solutions to reduce conflicts between trees and sidewalks.

Establish a **stormwater enterprise fund** to support the costs of stormwater management and green and gray infrastructure,

including tree maintenance and reducing conflicts between trees and infrastructure. Use the RI Infrastructure Bank's

Stormwater Project Accelerator as needed for bridge loans to implement programs faster and realize benefits sooner.



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17.5

17.4

Expand participation in the <u>City Forest Credits Carbon Credit</u> <u>program</u> for new tree planting and maintenance to generate ongoing revenue for program support, including long-term maintenance and other priorities identified by frontline community members.



Establish partnerships with health insurance companies, hospitals, and large healthcare institutions to financially support tree planting and maintenance initiatives that improve air quality and reduce healthcare expenses.

See "<u>Funding Trees for Health</u>," from The Nature Conservancy.

### Distribute resources according to the needs and 18 priorities of climate justice frontline communities most impacted by tree inequity.



### 18.1

Establish Urban Forest Community Advisory Board guidance over allocation of public and private urban forestry funds. Develop budgeting systems that enable flexibility and adaptation, ensuring that urban forestry spending responds to the changing needs of climate justice frontline communities.

Also see: 1.1

18.2



### **Community Quotes:**

"I think we need to make sure we are equitably investing in tree infrastructure and put the resources in the hottest, least dense tree areas first."



Design a participatory budgeting process at the neighborhood level for residents of tree equity focus areas, to center the voices of climate justice frontline communities in decisions about where and how trees are planted and maintained.

Also see: 1.2, 8.1



### 18.3

Follow collaborative governance guidelines for resource allocation through the implementation of this plan, allocating 80-100% of funds directly to community partners and community-driven processes. Prioritize resourcing community groups working in tree equity focus areas, especially those led by people of color, and support them in expanding capacity for further fundraising.



18.4

Directly and fairly resource climate justice frontline community members to participate in planting and maintenance activities through volunteer stipends and both formal and informal employment opportunities.

Also see: 7.3, 9.1, 9.2, 14.1





Leverage public and private funds to provide urban forestry services-including planting, maintenance, and training-for free or at a reduced cost in tree equity focus areas.

Also see: 5.1, 10.1, 10.2, 14.1, 14.2

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### Policy and Planning

Achieving tree equity in Providence will require planning that prioritizes urban forestry solutions, regulations that protect our trees from development and other threats, and policies that address the root causes of environmental injustice. It will also require broad, ongoing participation of historically marginalized and disenfranchised communities in advocacy and policy making efforts. The goals and strategies below outline steps for mutual accountability towards these goals: holding governments accountable to the needs and priorities of the communities they serve; holding developers, businesses, and other institutions accountable to regulatory oversight; and holding all of us accountable to the trees that share our city. To achieve this vision, we need to dismantle political silos and foster collaborations that reflect tree equity's interconnectedness with so many aspects of urban life and health.



### Strengthen City policies to better protect and more equitably distribute the benefits of urban trees.



19.1

Rewrite the city tree ordinance (Chapter 23 1/2 - Trees) to bring its content into alignment with the overall recommendations and priorities of the PVD Tree Plan. This rewrite should:

- Update the language used to describe the value of urban trees. Remove reference to the obsolete Mary Elizabeth Sharpe Street Tree Advisory Committee and instead require the city forester to work with an external Urban Forest Community Advisory Board to define urban forestry policies and priorities, including resource distribution. Explicitly expand the scope of this advisory body beyond street trees to include all publicly managed trees."
- Formally designate tree equity focus areas.
- Set guidelines for tree canopy assessment methods and frequency.
- Strengthen provisions for protection of existing trees and clarify restitution policies.

### Also see: 1.1

### 19.2

Expand protections for significant trees.

- Move provisions relating to significant trees from Section 1503B of the Zoning Ordinance to the City Tree Ordinance to provide for the City to recover the full appraised value of an illegally removed Significant Tree.
- Reduce the size of a Significant Tree to 24" diameter and increase Forestry Division enforcement capacity accordingly.
- Develop and adopt a new formula for assigning cost to a significant tree removed or damaged without a permit so that removal of trees in tree equity focus areas comes with a higher cost
- Adopt tree preservation requirements for the critical root zones of significant trees from adjacent properties that extend onto properties that are subject to grading permits.



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19.3

Adjust Article 15. Trees and Landscaping of the Zoning Ordinance to expand tree planting and replacement requirements for development.

- Adjust the Required Tree Canopy Percentage to reflect tree equity priorities. Currently, developers are required to maintain 30% canopy cover in residential/institutional areas and 15% in commercial/industrial areas (see 1503C). Increase these percentages to 40% and 20% for properties within tree equity focus areas.
- Require **developers** to provide an establishment care contract for newly planted trees. Develop a list of trusted establishment care providers by neighborhood, including trainees in workforce development programs.
- Require a one-year inspection for every approved development.
- Adopt replacement contracts for **developers**, requiring replacement of trees that die within the first two years of planting. Require replacement plantings to be of non-invasive species from an approved list.
- Add requirements for **developers** to document on-site tree canopy, entering both previously existing and newly planted trees into a citywide tracking database.
- Adjust mitigation options for tree removal to include a fee-in-lieu payment option to fund tree planting and care projects in tree equity focus areas.
- Adjust the tree planting mitigation option (which currently allows onor off-site planting within a 1/4 mile radius) to prioritize planting in tree equity focus areas.

### **Community Quotes:**

"My landlord makes a great effort to maintain healthy trees on our property, which really enhances my quality of life. Other buildings in my neighborhood are not so fortunate. I wonder if incentive programs for property owners in lower income neighborhoods to plant and maintain trees might help my neighbors to be able to enjoy the benefits of trees.

"Have a quota of how many trees can be taken down to build houses and business plazas. Near my house two houses were built. They destroyed all the trees in those two lands. When new houses come up no trees should be taken down."

"New development projects should be expected to allocate more resources for trees, landscaping, and stormwater capture to allow true climate resilience to happen on the ground."

"Stop new development property from cutting down trees and not replacing was they have done. I see this a lot recently in my Neighborhood."

### Strengthen City policies to better protect and more equitably distribute the benefits of urban

trees.

**(**) 19.4

Adjust parking requirements to slow the increase of **impermeable ground** covers and provide space for the urban canopy:

- Update **Zoning** Ordinance Section 1504 to decrease the parking lot size minimum (currently 20,000 gross square feet) requiring interior landscaping.
- Consider making adjustments to Article 14. Off-street Parking and Loading to encourage preservation of unpaved yards in multi-unit homes.
- Develop incentive structures for planting and de-paving in residential, commercial, institutional, and industrial zones.

### Also see: 17.4



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S.B	

### 19.5

Accompany new tree regulations and activities with robust anti-displacement strategies and policies, guided by community organizations advocating for housing justice. Defer to the priorities of the low-income communities of color most vulnerable to displacement to ensure that investments in tree equity actually benefit the communities they are intended to serve.

"How can you ensure this doesn't lead to increased property value -> increased rent -> pushing people out of their homes + gentrification?"

**Community Quotes:** 

"I know that more trees are necessary and I'd love

to see less asphalt and

especially on areas with

"Parking requirements for

existing trees and biggest

restrict the paving over of back yards for parking, and

impediments to planting

more trees. We need to

set parking maximums for new development to prevent the construction of

large parking lots."

residential and commercial properties are one of

parking lots, focusing

the biggest threats to

less income."

### What is green gentrification?

Green gentrification is a process in which neighborhood investments intended to improve environmental quality or increase access to green space end up increasing property values, attracting wealthier residents and leaving lowerincome, longer-term residents to face rising costs of living, vanishing community institutions, and displacement. Tree planting can be the first step on a path to green gentrification, but it doesn't have to be. By coupling urban forestry investments with anti-displacement policy and deferring to the priorities of our most marginalized communities, we can expand equitable access to our urban forest and create opportunities for community wealth building.



19 20 21





# 20 Coordinate urban forestry activities, policy, planning, and enforcement across municipal and state departments.

**(**) 20.1

Coordinate and strengthen enforcement of **zoning** violations (including paving and landscaping canopy requirements) across City departments and clarify responsibilities where ambiguous.

- Increase personnel capacity within the Forestry Division to review permit applications and enforce ordinances, ensuring that incentives and sanctions are applied when appropriate.
- Develop mechanisms to ensure ongoing compliance with canopy and landscaping requirements, so that inspection and enforcement are not only triggered when development activities occur. Create a database of property owners to whom requirements apply and build capacity to periodically analyze aerial imagery to identify non-compliant lots.

Also see: 11.1, 19.1-4

### 20.2

Incorporate the recommendations of the PVD Tree Plan within the upcoming <u>Comprehensive Plan</u> and integrate mutual alignment with other municipal and state plans, including:

- The Climate Justice Plan
- Anti-Displacement and Comprehensive Housing
   Strategy
- RI 2020 Forest Action Plan

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Foster collaboration and communication between the Urban Forest Community Advisory Board and existing municipal

- advisory bodies, including: <u>The Green and Complete Streets Advisory Council</u>
- The Sustainability Commission
- The City Plan Commission

### Also see: 1.1

20.4



Update standard design specifications in all new sidewalk renovation or construction projects in tree equity focus areas to include pre-cut tree pits or lawn strips and coordinate across municipal and nonprofit partners to install trees in them.

Also see: 8.6, 20.5

### **Community Quotes:**

"All the time I see asphalt parking lots illegally covering 100% of lots instead of 70%, the black surface and no permeability makes for overheating, and unsafe areas. The requirements need to be better enforced."

"My family has many arborists and gardeners in it, and has lived in Providence for 3 generations. The main problem with planting more trees in the city is that most neighborhoods are not designed with enouah space alona roadways and sidewalks for trees to adequately flourish. Cars are prioritized over pedestrians, wildlife, trees, and everything else. In the Mt. Pleasant neighborhood where I live, there is simply not that much unpaved space to put trees. It would take a radical redesign of many sidewalks and roads to carve out that space. One of my biggest hopes and dreams is that the city designs a pathway to transforming commercial properties that have been empty for a number of years into public parks, community gardens, or other public-use spaces."

"RIPTA has bus stops everywhere... a tree, a bench and a bulletin board at every stop?"

"If we could turn the buffer area along the improved bike paths into better green spaces that would be awesome."

"We need more trees to shade bus stops. Some stops are completely exposed to the hot sun and rain."

"I love street trees but some streets have to be redesigned to adequately provide root and growth space; the sidewalk tree coffins aren't always good enough."

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### Coordinate urban forestry activities, policy, planning, and enforcement across municipal and state departments.



Develop interdepartmental protocols for preventing and responding to sidewalk conflicts, drawing on the "PVD Trees <u>& Infrastructure Conflict Avoidance Guide</u>" guide produced by the Southeast New England Program.

- Educate City Councilors and staff across departments about the solutions presented.
- Identify low-cost options to integrate into City planning guidelines and regular activities.
- Raise funds to pilot existing or new strategies, including permeable paving, structural soil, and tree pit expansion.
- Identify and prioritize locations that would benefit from intervention and apply solutions as appropriate.
- Hire a designated employee to coordinate with contractors.

Also see: 8.6, 10.4

### **Community Quotes:**

"Since trees are proven to be a financial benefit to the city, there should be money set aside to deal with people who want a tree removed due to a sewer or sidewalk issue. Fix the sewer line, don't remove the tree. This also goes for lifted sidewalks. Fix the sidewalk, don't remove the tree."

## 20.6

Increase communication across state and municipal governments to improve maintenance, regulation, and enforcement where state and municipal lands meet or where both state and municipal work occurs.

- Formalize the relationship between RIDOT and the City of Providence regarding tree planting and maintenance on state roads and clarify responsibilities and authority.
- Focus specifically on under-maintained transportation corridors in tree equity focus areas.

Also see: 8.7

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Establish consistent standards for parks maintenance activities that affect tree health and collaborate across Parks Divisions to train employees in these standards.





### 20.8 E 4

Proactively update old infrastructure at risk of damage by tree roots. Establish city-wide programs to replace clay sewer pipes, prioritizing tree equity focus areas.

### 20.9

Incorporate urban reforestation and strategic tree plantings into the State Implementation Plan for Clean Air Act compliance.

# 20.10

Improve and centralize data collection practices, integrating data sets across municipal departments and platforms as appropriate to streamline coordination.

Also see: 3.6, 8.2, 12.1, 12.2

"Other infrastructure needs to include and respect room for trees and green space."

21 Develop state-level policies and plans that eliminate barriers facing municipal urban forestry departments and support tree planting and maintenance at the scale needed to realize climate benefits and achieve tree equity.



Advance Rights of Nature legislation honoring the personhood of trees and other non-human beings and their legal rights to exist, thrive, and regenerate.

### 21.2

Work with Native Nations and Tribal Councils to secure legal protections for Indigenous land sovereignty and cultural practices through strategies including cultural easements, land acquisition, and co-management.



### 21.3

Develop a statewide legislative framework enabling adoption of robust anti-displacement strategies and policies at state and municipal levels.

Also see: 2.1, 19.5



### 21.4

Develop statewide infrastructure for sharing and replicating successful models for urban tree planting, maintenance, and stewardship and coordinating best practices for tree health and community-based urban forestry.

- Foster collaborations where landscape features like urban forests and watersheds cross municipal borders and jurisdictions.
- Convene municipalities statewide for an annual urbanfocused pest update.

Also see: 8.8, 11.4



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### 21.5

Establish statewide partnerships for urban forestry research and monitoring, including higher education institutions, tree managers, and elementary and secondary education STEM programs.

Also see: 3.2, 12.1, 12.2, 13.2, 21.5



### **Community Quotes:**

"Like all living things, trees need care. Our region is very green so many people aren't attuned to the value of trees. Conditions in Providence are friendly to growing trees but too many suffer abuses which greatly shorten their lifespan, beauty and value. Increasing the sensitivity of all people to trees, and ensuring the means for long term care by people in all sectors seems the way to go."

### **Timeline & Accountability**

Implementing the vision of the PVD Tree Plan will require close coordination and collective buy-in from a wide range of partners. To facilitate this coordination, we've compiled an <u>Implementation</u> <u>Dashboard</u> listing all actions in the plan, the timeline on which they should be implemented, and the partners who should implement them. We hope this dashboard will serve as a checklist and roadmap to guide ongoing action.

Throughout the implementation phase, consistent data collection will be necessary to track progress towards our goals and promote accountability for project partners. Data should be collected using the methods described in the recommendations section, including an ongoing community inventory of publicly managed trees, centralized reporting of trees planted and maintained through new programs, and periodic urban tree canopy assessments. This data should be available to the public on an ongoing basis.

Every five years, the Tree Equity Community Advisory Board should develop and distribute a Tree Plan Report Card to evaluate how successfully implementation efforts have fulfilled the goals outlined in this plan. The Report Card should assess:

- Which strategies have been implemented, which need further attention, and which partners should be responsible
- Progress towards the tree canopy target—This should include up-to-date data for key metrics, analyzed city-wide and specifically for tree equity focus areas:
  - Number of trees planted
  - Number of trees maintained
  - Percent canopy coverage
- Progress towards community urban forestry leadership—This should consider the types of strategies employed to facilitate community power, from community planning forums to **participatory budgeting**, as well as the range of organizations engaged in implementation efforts.

Establishment of an Urban Forest Community Advisory Board should be the highest priority of the first year of implementation. This independent decision-making body is essential to ensure that frontline communities guide Providence's path towards **tree equity**, and establishing it will lay the groundwork for community-based urban forestry management in Providence for years to come. But to meaningfully remain accountable to our frontline communities, we need to pair this initial investment with investments in the organizational capacity and coordination structures that are necessary to respond to the needs they identify.



### **Conclusion:** Seeing the Forest the Trees

Every day, our climate justice frontline communities feel the effects of deeply entrenched structural racism that has produced stark disparities in health and quality of life across racial and socioeconomic lines. And as **climate disruption** continues to intensify, so do these disparities. Achieving **tree equity** will help our communities heal, creating a healthier environment for future generations to thrive.

But even once we achieve **tree equity**, our work won't be over....Well beyond the timeline of this plan, we will need to continue to care for the trees around us with gratitude and respect for all they give us. As trees age and die, we'll need to continue to seed future generations, sustaining our **urban forest** and all its gifts for those who come after us.

And to truly honor our commitment to the health of our most vulnerable communities, we need to look beyond equity to justice, eliminating the root causes of tree and environmental inequity in all forms. Planting trees shouldn't create a free pass for polluters—we need to hold polluters accountable and stop pollution at the source. Neighborhood greening shouldn't open the door to gentrification and displacement—we need to prioritize safe, affordable, and reliable housing for all. Trees are one piece of a bigger puzzle, and long-term investments in urban forestry have to happen in conjunction with broader, transformative policy change to truly serve our frontline communities in the long term.

The process of creating this plan has been a lesson in interconnectedness. It has highlighted the interconnectedness of the issues affecting our city and inspired us to lean into our own interconnectedness as we work to solve them, learning to be in closer relation to our trees, our neighbors, and our communities.

In doing so, we take inspiration from the trees themselves. In a forest, individual trees are connected to one another by a vast network of mycelium—tiny threads of fungal organisms that tap into their roots and help them absorb and transfer water and nutrients. Research suggests that trees might use these networks to communicate and cooperate with one another, sending warning signals when pests arrive and redistributing sugar and other nutrients from older, more established trees to young seedlings to nurture their growth. These trees show us what it looks like to connect to something larger than ourselves, recognize our entangled roots, and practice community care as we help each other thrive. How can we learn from them?

"I am so thankful for this initiative. If we could think of this program as not singular tree planting, but developing a connected, diverse, ecological urban forest that is designed to support the vitality of humans AND other living things — that would be incredible."

"I'm so grateful that Providence is focused on protecting our urban forest!"

"I am very excited for trees to be spread more equitably across the city of Providence. Trees are life and provide a sense of grounding and belonging that all residents deserve."
# Closing Acknowledgements

This plan has built on the foundation laid by generations of environmental justice thinkers and organizers. In Providence specifically, we're indebted to the **Racial and Environmental Justice Committee** for their leadership in developing the <u>Just</u> <u>Providence Framework</u> and the <u>Climate Justice Plan</u>, which provided a community engagement model and inspiration, and to the many community members and organizations who have been working towards a healthier, greener, more just Providence since long before the PVD Tree Plan was even a seed of an idea.

So many individuals and groups have since played a role in helping that seed take root and sprout into the vision laid out in this document—contributing their invaluable expertise, guidance, technical support, vision and insight to different stages of the planning process. It is with gratitude to every one of them that we look ahead to the next chapter of Providence's urban forest.

### In alphabetical order, with specific project roles indicated by symbols:

- Steering Committee
- Equity & Engagement Team
- Project Coordination
- **O** Project Advisory Team
- △ Data & Research Working Group

Robert "Lou" Allard, RIDEM's Division of Forest Environment O Sue Anderbois, The Nature Conservancy in RI Joann Ayuso, Movement Education Outdoors C Robert Azar, Providence Department of Planning & Development Leah Bamberger, City of Providence Office of Sustainability O Johanna Bartenmaier-Payne, Rhode Island School of Design O Eugenie Rose Belony, Youth in Action O Olivia Bemis-Driscoll, Brown University Tee Jay Boudreau, RIDEM's Division of Forest Environment Paige Brochu, Boston University's Urban Biogeoscience and Environmental Health Program  $\Delta$ April Brown, Racial & Environmental Justice Committee Laura Brown-Lavoie Brian Byrns, Providence Parks Department Rachel Calabro, RI Department of Health  $O\Delta$ Leandro Kufa Castro Priscilla Cintron, Providence Housing Authority Cinthia Colon Nicole Cruz Chris David, American Forests Roger Gray Fox Desrosiers, Pokanoket Tribe Safia Diaz, The Nature Conservancy in RI Sheila Dormody, The Nature Conservancy in RI David dosReis, City of Providence GIS Program Jonah Dunston Ditra Edwards, Sista Fire A.J. Elton, Providence Parks Department's Forestry Division Viola Everett, Groundwork RI's Youth Green Team Mike Galvin, Sav-A-Tree  $O\Delta$ Fraser Gilbane, Providence Neighborhood Planting Program Tonay Gooday-Ervin 🔳 🔵 Steve Hamburg, Environmental Defense Fund Sarah Hashem Molly Henry, American Forests  $O\Delta$ Craig Hochman, Providence Department of Public Works Monica Huertas, People's Port Authority/Racial & Environmental Justice Committee • O Aisha Isabel, Youth in Action Kimberly Korioth, RI Infrastructure Bank Olive Krupinska, Providence Neighborhood Planting Program Alicia Lehrer, Woonasquatucket River Watershed Council Jasmine Li, Brown University Elizabeth Malloy Lauri Mann, Providence Parks Department's Forestry Division Beatrice McGeoch, Community College of Rhode Island Jose Menendez, RISD / Buena Gráfica Social Studio 🔿 Sophia Merchant, Groundwork RI Youth Green Team Vethlie Milcette, Youth in Action Gloria Morales 🔳 🌑 Miriam Morales 🔳 🔴 Tim More, Providence Neighborhood Planting Program Elsie Sunflower Morrison, Pokanoket Tribe Sara Morrison, Fuss & O'Neill

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Brown University's Urban Agriculture/Engaged Scholars class participants RISD Landscape Architecture Department's "Physical Narrative Environment" Graduate Seminar

Woonasquatucket River Watershed Council's Nuevas Voces Cohort 🗖

And YOU! Our infinite gratitude to everyone who attended a Zoom meeting, participated in a stakeholder focus group, talked to us in the park or at a community event, filled out our survey, participated in a pilot program initiative, shared your input, concerns, hopes and ideas- and/or are reading this Plan right now!

### Plan Visuals and Design:

Plan Design - **Ananda Gabo** Illustration - **Hilary Nestor** Photography - **Dominique Sindayiganza** 

### Glossary

### Arborist

An arborist is someone who specializes in the care of trees, and arboriculture is the cultivation and management of trees and shrubs.

### BIPOC

The acronym "BIPOC" stands for Black, Indigenous, and people of color. It includes all people of color while calling specific attention to the violence, structural racism, and cultural erasure faced by Black and Indigenous people in the United States.

### **Block group**

Block groups are geographic units used by the United States Census Bureau. Every census tract is divided into block groups, and block groups usually have a population of 600 to 3,000 people. There are 153 block groups in Providence.<sup>53</sup>

### **Carbon Footprint**

A carbon footprint is the total amount of carbon pollution (including carbon dioxide and methane) that are generated by our actions. <sup>54</sup>

### **Carbon sequestration**

Carbon sequestration is the removal of carbon dioxide from the air by plants. Trees reduce the amount of carbon in the atmosphere by taking in carbon and storing it in the form of wood. The amount of carbon sequestered each year increases with the size and health of a tree.

<sup>53</sup> U.S. Census Glossary.
 <sup>54</sup> Adapted from <u>The Nature Conservancy</u>.
 <sup>55</sup> U.S. Climate Resilience Toolkit.

### **Carbon Storage**

Carbon storage is the total amount of carbon bound up in the above-ground and below-ground parts of woody plants.

## Climate justice frontline communities

Climate justice frontline communities are the people of color who are most impacted by overlapping crises of ecological, economic, and political injustice, including our Black, Indigenous, Latinx, and Southeast Asian communities here in Providence. Among the most vulnerable are those whose experiences lie at the intersection of multiple systems of oppression and marginalization, including lowincome families, refugees and immigrants, children and elders, people with criminal records, LGBTQ+ folks, disabled folks, those who speak languages other than English, and those experiencing housing insecurity or houselessness.

### **Carbon Storage**

Carbon storage is the total amount of carbon bound up in the above-ground and below-ground parts of woody plants.

### **Climate resilience**

Climate resilience is the ability of a community to prevent, prepare for, withstand, respond to, and recover from the harmful effects of climate disruption.<sup>55</sup>

### **Climate Disruption**

Climate disruption refers to long-term shifts in global temperatures and weather patterns resulting from human activity, especially the burning of fossil fuels like coal, oil, and gas. We use the term "climate disruption" rather than "climate change" to emphasize that these changes are not natural, and instead represent a profound departure from business-as-usual with the power to dramatically disturb political, economic, and ecological systems. Α

### Development

"Development" in this context refers to changes in the physical form or social and economic functions of urban space. It can include the construction of new structures, alteration, demolition, or removal of existing structures, changes in land use or zoning, and changes to the natural environment (including trees and soil).

### Developer

A developer is a person or company that makes money through development activities, such as buying land, building new houses or offices, or changing existing buildings to sell or rent for residential or commercial use.

### **Environmental Justice**

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.<sup>56</sup> The environmental justice movement began with Black, Indigenous, and other people of color advocating for the health and safety of their communities.

### **Environmental Racism**

Environmental racism is intentional or unintentional racial discrimination in environmental policy-making, enforcement of environmental regulations and laws, and targeting of communities of color for toxic waste disposal and siting of polluting industries. The term was coined by Black environmental justice leader Dr. Benjamin Chavis, who helped organize a community movement against toxic waste disposal in Warren County, North Carolina, which helped inspire environmental justice organizing nationwide.

### **Establishment care**

Establishment care is the care that a tree needs, including watering, mulching, and pruning, to help it survive after planting.

### Fee-in-lieu

Fee-in-lieu refers to a payment of money in place of meeting all or part of the standards (for example, tree replacement requirements) required by an ordinance.

### **Green gentrification**

Green gentrification is a process in which neighborhood investments intended to improve environmental quality or increase access to green space end up increasing property values, attracting wealthier residents and leaving lower-income, longerterm residents to face rising costs of living, vanishing community institutions, and displacement.

### Impermeable vs. permeable surfaces

Permeable surfaces (also known as porous or pervious surfaces) allow water to percolate into the soil to filter out pollutants and recharge the water table. Examples include grass, planting beds, bare soil, mulch, gravel, permeable pavers, and turf. Impermeable (or impervious) surfaces are solid surfaces that don't allow water to penetrate, forcing it to run off. Examples include asphalt, concrete, buildings, and traditional stone, brick, or concrete pavers. Permeable and impermeable ground covers can have an impact on many environmental factors, from water run-off distribution to available area for vegetation growth. Providence's ground cover is 59% impermeable.

### Intergenerational trauma

Intergenerational trauma occurs when the physical and psychological effects of trauma are passed down between generations. It can result from negative experiences at the family and individual level, such as abuse, or at the societal level, such as systemic oppression, racism, colonization, war, or genocide.<sup>57</sup>

 <sup>56</sup>Adapted from EPA
 <sup>57</sup>Adapted from the <u>Administration for Children</u> and Families. Х

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### **Invasive species**

An invasive species is a plant, animal, or other organism that becomes overly abundant after it is introduced to a new environment, causing harm to that environment. While "invasive species" is the most commonly used term, these species are sometimes also referred to as "introduced," "transplanted," "displaced," or "overabundant" species. This alternative language can help to prevent xenophobic associations between foreign "invasion" and local harm, and it also more accurately highlights the true forces behind damage from "invasive" species: human systems of global trade and colonization.

### Land use

Land use is how we, as humans, make use of a piece of land. Land use is different from land cover. While land cover refers to the landscape features, such as the trees, buildings, paved surfaces, and waterways in the area, land use describes the primary purpose of the land, such as residential, agricultural, commercial, or industrial. For example, residential land use can contain tree, building, impermeable, grass, and other land cover features. Land use can significantly influence the amount of tree canopy and the room available to establish new tree canopy.

### LIDAR

LiDAR= Light Detection and Ranging. LiDAR is a remote sensing method used to generate precise, threedimensional information about the shape of the Earth and its surface characteristics, including tree height and canopy coverage.

### Mature tree

Mature trees are trees that have reached or are close to their full height and canopy size. They provide food, shelter and other services that younger trees cannot.

### **Native species**

A native species is an organism that currently lives in an area due to naturally occurring processes without any human intervention.

### **Paper streets**

Paper streets are streets that were laid out on officially adopted plans or maps, but have never been built.

### Participatory action research

Participatory action research is an approach to research that emphasizes participation and action by members of communities affected by that research. It "prioritizes the value of experiential knowledge for tackling problems caused by unequal and harmful social systems, and for envisioning and implementing alternatives."<sup>58</sup> It also emphasizes iterative cycles of research, action, and reflection.

### **Participatory budgeting**

Participatory budgeting is a democratic process in which community members decide how to spend all or part of a public budget.<sup>59</sup>

### **Public trees**

Public trees are all the trees managed by the City of Providence, rather than private landowners. This includes street trees, park trees, and trees on City property, like public schools.

### Reciprocity

Reciprocity describes a process of mutual care. It is grounded in the idea that for the Earth to stay in balance and for its gifts to continue to flow, we must give back in equal measure for what we take. Reciprocity is rooted in the understanding that we are not alone, that the Earth is populated by non-human persons, wise and inventive beings deserving of our respect.<sup>60</sup>

<sup>58</sup> Adapted from Flora Cornish et al, <u>"Participatory Action Research."</u>

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<sup>&</sup>lt;sup>59</sup>Adapted from <u>ParticipatoryBudgeting.org.</u>

<sup>&</sup>lt;sup>60</sup> Adapted from Robin Wall Kimmerer, <u>"Returning the Gift."</u>

### Redlining

Redlining is the racist practice of restricting or denying access to loans, mortgages, and other financial resources based on race, class, and location. Federal redlining practices historically limited property ownership and land access for people of color, creating racialized economic inequality that has spanned generations.

### **Right-of-Way**

The right-of-way (ROW) refers to the property owned by a town or city along a street. In addition to the street itself, this usually includes the shoulder, median, and sidewalk.

### **Risk Assessment**

Risk assessment involves the identification and evaluation of trees for the likelihood of failure (such as fallen limbs or uprooting) and the severity of consequences of those potential failures, including damage to property or people.<sup>61</sup>

### Setback Tree Planting

Setback planting is the practice of planting public trees, for the common good, beyond the public right-of-way on private property.

### Stormwater runoff

Stormwater runoff is rain and melting snow that flows off building rooftops, driveways, lawns, streets, parking lots, and other urban land. Areas that are covered by buildings and pavement do not allow water to soak into the ground, increasing the amount of stormwater runoff that occurs. As it flows, runoff can pick up harmful pollutants such as trash, chemicals, and sediment from lawns, construction sites, and hazardous waste sites—eventually depositing these pollutants into streams, rivers, lakes, and groundwater.<sup>62</sup>

### **Stormwater Enterprise Fund**

A stormwater enterprise fund, or stormwater utility, collects a fee from property owners that is used to recover the cost of safely collecting, treating, and disposing of stormwater coming off their land. Stormwater utility fees are usually based on a parcel's amount of impermeable surface coverage and level of contribution to stormwater issues. A stormwater enterprise fund can incentivize tree planting by offering fee reductions for trees planted on site.

### **Succession Planting**

Succession planting is a way to promote age diversity in an urban forest by intentionally staggering tree planting dates over the course of many years and planting species with a range of different lifespans.

### TESA

TESA = Tree Equity Score Analyzer, a tool developed by the national nonprofit American Forests to help cities and states to make more informed and equity-driven urban forestry decisions using demographic and canopy data.

### Transpiration

Transpiration is when plants take up liquid water from the soil and release water vapor into the air through their leaves. When this process occurs, it absorbs energy from the air and cools its temperature.

### **Tree Canopy**

Tree canopy is the layer of leaves, branches, and stems that provide tree coverage of the ground when viewed from above. Another way to think about tree canopy is how much ground would be shaded if the sun were directly above in the sky. Many environmental benefits of trees are closely correlated with canopy coverage and the amount of healthy leaf surface area.

<sup>61</sup>Adapted from <u>Urban Forest Analytics</u>. <sup>62</sup>Adapted from the <u>EPA</u>. A

# Glossary

### **Tree Equity**

Tree equity is the fair, equitable distribution of trees and the resources required to sustain them across all neighborhoods in a city, so that everyone has equal access to the health, climate, and economic benefits of the urban forest.

### Urban Forest

The term "urban forest" describes the collection of all the trees in the city and all the living things that rely on them. city. It includes the trees on public and private land, on our streets, in our parks, and in back yards. Trees and shrubs in commercial parking lots, cemeteries, school yards and campuses. Volunteer "weed trees" growing up through chain link fences in empty lots, and natural areas along rivers. The humans and animals that live in the city are all creatures of the urban forest.

### Urban heat island effect

Heat islands are urbanized areas that experience higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies. Urban areas, where these structures are highly concentrated and greenery is limited, become "islands" of higher temperatures relative to outlying areas.63 In Providence, NASA research has found that the city experiences surface temperatures almost 22°F hotter than its less urban surroundings.

### **Urban Renewal**

"Urban renewal" involves the clearing out of neighborhoods considered "blighted" or "slums" to create higher class housing, major transportation corridors, or other revenue-generating developments. Historically, it has contributed to widespread displacement of low-income people of color and other marginalized communities.

### voc

Volatile organic compounds, or VOCs, are organic chemicals that turn into vapor easily. Trees and other plants produce hundreds to thousands of these compounds. While these chemicals are natural and play an important role in plant defense and survival, certain VOCs can also react with pollutants present in the atmosphere to form ozone, a component of smog that can cause respiratory health issues.

### Workforce Development

A local workforce development system encompasses the organizations and activities that prepare people for employment, help workers advance in their careers, and ensure a skilled workforce.<sup>64</sup>

### Wraparound Services

Programs with wraparound services provide comprehensive, coordinated, individualized services to meet the needs of community members facing overlapping barriers to access. These services might include transportation, childcare, translation, and one-on-one mentoring.

### Zoning

Zoning - Zoning is the way governments manage the physical development of land and the kinds of uses to which each individual property may be put. Zoning laws typically specify the areas in which residential, industrial, recreational or commercial activities may take place. Zoning Ordinances provide a set of land use and development regulations, organized by zoning district. A Zoning Map identifies the location of the zoning districts, thereby specifying the land use and development requirements affecting each parcel of land within the City.<sup>65</sup>

<sup>63</sup> Adapted from the <u>EPA</u>.
<sup>64</sup> Adapted from the <u>Urban Institute</u>.
<sup>65</sup> Adapted from the <u>City of Providence Zoning</u> <u>Ordinance User's Manual</u>. A

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# Appendix



### Providence Urban Forest Snapshots, 2023

These snapshots provide a brief overview of the importance of the urban forest and the state of our urban forest in Providence. With bilingual text in English and Spanish, they were created as an outreach tool during the PVD Tree Plan process.



### Tree Canopy Assessment, 2021 and supplemental graphs

This city-wide tree canopy assessment was commissioned by the City of Providence and performed by the Spatial Analysis Laboratory of the University Vermont. It used **LiDAR** data from 2011 and 2018 to illustrate the city's existing tree canopy and analyze changes in tree canopy over seven years.



### Providence Street Tree Inventory iTree Ecosystem Analysis, 2017

This presents the results of Providence's most recent citywide street-tree inventory, which was completed in 2017. It uses the U.S. Forest Service i-Tree Eco methodology to estimate the benefits offered by the 27,396 street trees surveyed in 2017.



### Providence's Urban Forest: Structure, Effects and Values, 2014

This study used data from 250 random field plots located on public and private land throughout Providence to make estimates about the structure of our entire urban forest, and applied the U.S. Forest Service i-Tree Eco model to estimate the monetary value of the environmental benefits our urban forest provides.



### Mapping Tree Equity Zine, 2022

This zine uses maps to illustrate the connections between tree canopy and environmental racism in Providence. It was created by Movement Education Outdoors as an outreach tool during the PVD Tree Plan process.



### PVD Trees & Infrastructure Conflict Avoidance Guide, 2022

This guide was produced with support from the Southeast New England Program Network to accompany the PVD Tree Plan. It presents potential tools, solutions, and recommendations to reduce conflicts between tree roots and sidewalks.



### Stormwater Tree Trench Design Options Guide, 2021

This design guide was collaboratively developed by partners including the Providence Parks Department and Stormwater Innovation Center. It outlines best practices for using trees to manage stormwater and offers guidance for incorporating tree trenches in green infrastructure projects.



#### CLIMATE JUSTICE PLAN



### Providence Climate Justice Plan, 2019

This plan, developed jointly by the Racial and Environmental Justice Committee and the City of Providence, outlines priorities for climate justice action in Providence. It served as a model for community engagement and collaborative governance in the development of our plan, and the PVD Tree Plan's recommendations align closely with its goals, especially around community health.



### PVD Great Streets Plan, 2020

This plan was developed by the City to guide Providence towards safe, clean, healthy, inclusive, and vibrant streets. It acknowledges and prioritizes street trees as critical green infrastructure.



### <u>Heat Watch Report,</u> 2020

This report presents the results of a summer 2020 Urban Heat Watch study conducted in Providence, East Providence, Pawtucket, and Central Falls, which mapped the inequitable distribution of extreme summer temperatures.



### Report of the Providence Municipal Reparations Commission, 2022

This report outlines recommendations for city-wide reparations intended to close the racial wealth and equity gap between Providence residents and neighborhoods. Investment in green infrastructure and workforce development for frontline communities in lowcanopy neighborhoods aligns with the report's 11-Point Investment Plan.



### Providence Multi-Hazard Mitigation Plan, 2019

This plan outlines strategies for reducing risks to people and property posed by a range of hazards, including natural hazards like hurricanes, snowstorms, and drought that affect our urban forest. The recommendations of the PVD Tree Plan advance several of the mitigation strategies presented.



### Anti-Displacement and Comprehensive Housing Strategy Report, 2021

This report offers a plan for housing policy and investment to expand access to safe, healthy, and affordable housing throughout Providence. Our recommendations for tree planting and maintenance on private and residential property align closely with this work—and need be accompanied by robust anti-displacement policy action.



### RI Forest Action Plan, 2020

This plan, produced by the Department of Environmental Management, outlines priorities, goals, and strategies for the management of forest land across the state of Rhode Island, highlighting urban and community forestry as a key action area.



### Community Forest Storm Mitigation Planning Workbook

This workbook was adapted for Rhode Island communities to help them assess their community forest storm readiness, mitigate tree risk, and develop a community forest storm mitigation plan. It has informed the recommendations of the PVD Tree Plan.



### Climate and Health Species List of Rhode Island Urban Trees, 2022

This list was developed as part of the <u>RI Urban Forests</u> for <u>Climate & Health Initiative</u> to aid community forestry practitioners in selecting trees to reduce climate change vulnerability, reduce atmospheric carbon dioxide, and provide benefits to human health.



### Rhode Island Guide for Developing Municipal Street Tree Ordinances

This guide was developed by the state's Urban & Community Forestry Program to assist Rhode Island municipalities in developing or updating their basic street tree ordinances.

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### Land & Sea Together Forestry Resource Guide, 2022

This document offers a collection of practical, upto-date financial and mental health resilience resources available for forestry and arborist businesses and individuals in the state of Rhode Island.

### Materials related to the PVD Tree Plan process:

- PVD Tree Plan community survey
- Visualization of community survey results
- List of census block groups in tree equity focus areas
- Implementation dashboard
- Explanation of cost projections

## Current documents guiding Providence urban forestry:

- Providence Code of Ordinances <u>Chapter 23 ½:</u> <u>"Trees"</u>
- Providence Zoning Ordinance <u>Article 15: Trees and</u> <u>Landscaping</u>
- Providence Tree List: This list outlines tree species recommended by the City Forester for planting in Providence, with limited notes to inform selection based on site type and characteristics. It was last updated in 2011—a key recommendation of this plan is to update this list to better reflect current urban forestry best practices and community priorities.
- <u>Block Pruning Program Diagram:</u> This map illustrates the blocks scheduled to be pruned in each year of the city's current 10-year block pruning cycle.

## Publicly available interactive maps:

- Tree Equity Score Analyzer American Forests, a national forestry nonprofit, has created several interactive map tools to help guide municipalities towards equity-focused urban forestry management.
  - You can use the <u>national explorer</u> tool to find your neighborhood's tree equity score and view up-todate tree canopy information and demographic, health, and climate data at the census block group level.
  - You can also set up a free account to use the Rhode Island <u>tree equity</u> <u>score</u> analyzer to create custom tree planting scenarios at the property level.
- Climate & Economic Justice Screening Tool

This tool was created by the National Council on Environmental Quality to identify communities that face disproportionate environmental burdens. It highlights "disadvantaged" census tracts based on climate, energy, health, housing, pollution, transportation, water, and workforce development data.

### **EJScreen**

This national environmental justice screening and mapping tool from the EPA powerfully displays a wide range of environmental and demographic data sets, including:

- Pollution levels and sources

  - Socioeconomic indicators including race, income, unemployment, and age Health disparities in life expectancy, heart disease, asthma, cancer, and disability Climate vulnerabilities, including flood risk, wildfire risk, and sea level rise

  - Gaps in services including broadband, health insurance, transportation, and food access

It can also accommodate custom filters and areas of concern, compare those locations to the rest of the state, region, or nation, and overlay the locations of facilities such as schools, prisons, hospitals, public housing, and parks.

Extreme Heat Impacts in Rhode Island Health Equity Zones This story map from the Rhode Island Department of Health shows heat vulnerability across the state's Health Equity Zones, combining data on heat exposure and sensitivity.

Mapping Inequality: Redlining in New Deal America This national project provides interactive, digitized copies of Home Owners Loan Corporation redlining maps for cities across the country, including Providence.

### **General resources from American Forests:**

- Tree Equity Curriculum: Exploring Green STEAM Careers: a modular curriculum intended to engage high school students (9th-12th grade) in inquiry-based learning processes by applying knowledge they've acquired in science, technology, engineering, the arts and mathematics (STEAM) courses to generate solutions to real world problems.
- Urban Wood Use Action Guide: a workbook offering step-by-step instructions to use recovered and fresh-cut urban wood for community benefit.
- Arboriculture Pre-Employment Curriculum: a tree industry training curriculum designed for those who face barriers to traditional employment, those who have little-to-no knowledge or experience in arboriculture, and people living in low income areas.
- Career Pathways Exploration Guide for students and job seekers: a guide, geared toward high school and post-secondary students, providing a snapshot of the qualifications needed for various urban forestry jobs.
- Career Pathways Action Guide for employers: an explanation of 12 best practices for designing inclusive arboriculture job-training programs to retain diverse talent and support people moving up the career ladder.

### Additional information:

- Common air pollutants and their effects
- Urban forestry policy precedents
- Urban forest pest descriptions

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# Digging Deeper, Finding Nourishment

**Recommendations from the Steering Committee** 

These resources informed our thinking, guided our approach to this plan, and brought us joy and inspiration throughout the planning process. You might enjoy them too!

Poems	<ul> <li>"Instructions on Not Giving Up" and "61 Trees," by Ada Limón</li> <li>"A Small Needful Fact" and "To the Fig Tree on 9th and Christian," by Ross Gay</li> <li>"generations," by Lucille Clifton</li> <li>"For Saundra" and "Walking Down Park," by Nikki Giovanni</li> <li>"Speaking Tree," by Joy Harjo</li> <li>"The Second Olive Tree," by Mahmoud Darwish</li> </ul>
Books	<ul> <li>The Book of Delights and Catalog of Unabashed Gratitude, by Ross Gay</li> <li>Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants, by Robin Wall Kimmerer</li> <li>Dawnland Voices: An Anthology of Indigenous Writing from New England, edited by Siobhan Senier</li> <li>Emergent Strategy: Shaping Change, Changing Worlds, by adrienne maree brown</li> <li>Árboles Nuestros Para La Supervivencia, by María Benedetti</li> <li>How I Became a Tree, by Sumana Roy</li> <li>The Language of Trees: A Rewilding of Literature and Landscape, by Katie Holten</li> <li>Lessons from Plants, by Beronda L. Montgomery</li> <li>Old Growth: The Best Writing About Trees, from Orion Magazine</li> <li>Through Our Eyes: An Indigenous View of Mashapaug Pond, edited by Dawn Dove and Holly Ewald</li> <li>Tree Planting: The Good, The Bad, and the Ugly, from Movement Education Outdoors</li> </ul>
Article	• <u>"Tree Thinking,"</u> by Shannon Mattern
Podcast	All My Relations, hosted by Matika Wilbur and Adrienne Keene
Zine	<ul> <li><u>"Tree Planting: The Good, The Bad, and the Ugly,"</u> from Movement Education Outdoors</li> </ul>
Music	<ul> <li>"Vamonos," by Kufa Castro</li> <li>"Pa Que Suba," by Richie Oriach</li> <li>"Our Roots Run Deep," by Dominique Fils-Aimé</li> <li>"BreathBox," by Climbing Poetree</li> <li>"Journey Through the Secret Life of Plants", by Stevie Wonder</li> </ul>