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# GROWING AN EQUITABLE URBAN FOREST IN SALT LAKE CITY

Action plans take a comprehensive view of a topic to address interconnected challenges, develop priorities, find solutions, and build a long-term plan of action. Policymakers, planners, and community members create and implement action plans to unite a broad range of community stakeholders, non-profit organizations, private interests, institutions, and governmental agencies around a shared cause.

Given the nature of action plans, the proposals in this chapter will necessarily require collaboration between and within City departments, as well as collaboration between Salt Lake City and outside actors.





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## ABOUT THIS CHAPTER

This chapter outlines the strategic direction, goals, objectives, and actions for Salt Lake City's Urban Forest based on the information analyzed and the needs identified in previous chapters. The actions described are intended to promote the successful protection and equitable expansion of the urban forest.

**The actions described have different timelines, proposed as:**

| Near-Term Action (5 years) | Mid-Term Action (10 years) | Long-Term Action (20 years) |
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## DEFINITIONS

**Strategic Direction:** An essential line of progress along which the city seeks to move in the long run, and with which it seeks to align its resources and actions, to realize its mission more fully.

**Goal:** A major aspiration that the city intends to realize under a given strategic direction.

**Objective:** A concrete, measurable milestone on the way to achieving a goal.

**Action:** A single step, or a coherent set of steps, that must be taken to reach an objective.

STRATEGIC DIRECTION

# THE URBAN FOREST IS PUBLIC INFRASTRUCTURE

Salt Lake City should strive for a balance in preserving its urban forest, which can be achieved by viewing the urban forest through the lens of infrastructure. As cities grow and change, there are always trade-offs and accommodations made to increase housing, transportation, and employment choice for residents while balancing the rights and responsibilities of private property owners. Well-managed infrastructure systems make our cities healthy, livable places, and require funding to build and maintain. At the same time, infrastructure systems regularly adapt and change in response to new technologies or growth. By valuing the urban forest as public infrastructure with a wide range of benefits, the City can make better, more informed decisions about when and how to remove trees, and when and where to plant them.

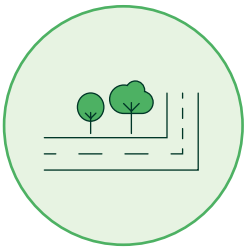


GOAL

## DEVELOP AN INTEGRATED SYSTEMS APPROACH TO PUBLIC INFRASTRUCTURE

All cities contain multiple, overlapping infrastructure systems, many of which occupy the same space: for example, transportation, utilities, and stormwater infrastructure systems all use rights-of-way, as does 75% of Salt Lake City's Urban Forest. By integrating management of the Urban Forest's ecosystem services into the management other municipal infrastructure systems, the City can meet its sustainability and livability goals while reducing costs. Increased interdepartmental collaboration would be necessary to achieve these goals and would result in a clearer view of how and where these systems overlap and connect, thereby reducing both costs and redundancies in these systems.

BENEFITS



*This goal will provide environmental and community benefits.*

**OBJECTIVE: AFFIRM SOCIAL AND ENVIRONMENTAL VALUE OF SALT LAKE CITY'S URBAN FOREST.**

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| **Near-Term Action** | *Adopt resolution declaring that the urban forest as a fundamental part of Salt Lake City's infrastructure.* |
| | *Develop asset management plan for Salt Lake City's Urban Forest that incorporates inspection and preventative maintenance.* |
| **Mid-Term Action** | *Consider where Urban Forestry should be housed within the City's Departmental Structure, considering the location of its assets, impacts to City-owned infrastructure, and most viable funding sources.* |

**OBJECTIVE: CREATE INTERNAL COORDINATION STRUCTURE BETWEEN MANAGERS OF THE CITY'S LIVING AND BUILT INFRASTRUCTURE SYSTEMS AND DESIGNATE DUTIES AND AUTHORITY-HOLDERS.**

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| **Near-Term Action** | *Create core team of program managers to coordinate on projects that impact the urban forest. Initial responsibilities of core team to include:*<br>• *Create annual work plan to describe areas of focus and report on progress.*<br>• *Develop "tree protection basics" training video to become required viewing for all existing and new employees engaged in site plan review and ROW operations.* |
| **Mid-Term Action** | *Create urban forest management policies and guidelines to be used by all City departments and divisions working in the public right-of-way and in City parks and golf courses.* |

**OBJECTIVE: INCLUDE THE VALUE OF URBAN FOREST ECOSYSTEM SERVICES AND "LOST BENEFITS" IN TREE REPLACEMENT COSTS INTO TREE PRESERVATION ORDINANCE, TO CAPTURE FULL VALUE WHEN TREES ARE REMOVED.**

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| **Near-Term Action** | *Using commercially available software platforms to quantify urban forests benefits, develop a new fee structure for tree replacement or payment in lieu of tree replacement.* |
| | *Incorporate "lost benefits" into calculation of fines for violations of tree protection ordinances.* |

GOAL

## IMPROVE GROWING CONDITIONS FOR THE URBAN FOREST IN CHALLENGING SITES

A "one-size-fits-all" approach to growing conditions is not an optimal strategy for the urban forest. The two most important factors are soil volume and adequate water. A soil volume ordinance, for example, would ensure that adequate growing space for trees is preserved, and prioritize tree health and full canopy coverage in the ROW.

By providing a range of options for achieving optimal soil volumes, such as suspended pavement systems, developers could have different price points to meet the requirement. This would also enable Salt Lake City to grow large, healthy trees in highly paved areas that retain the most heat and are typically most impacted by flooding.

BENEFITS

*This goal will provide environmental, community and economic benefits.*

**OBJECTIVE: AMEND THE CITY CODE TO STRENGTHEN TREE PROTECTION AND CODIFY ECOSYSTEM SERVICE VALUE.**

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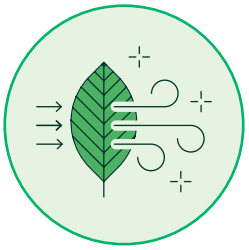
| **Near-Term Action** | *Recommend changes to the zoning code to increase trees where they will mitigate environmental impacts.* |
| | *Reconcile contradictions in City Code.* |
| | *Consider and account for impacts to the urban forest into policies governing International Fire Code adoption.* |
| | *Develop soil volume requirements for all projects using RDA funding sources.* |
| **Mid-Term Action** | *Set minimum annual tree maintenance thresholds (% of urban forest pruned annually) to cultivate healthier, longer-lived, and safer public trees.* |
| | *Amend zoning and subdivision ordinance to enhance urban forest protections, including:*<br>• *Evaluating sign regulations to provide options to business owners when tree growth is temporarily blocking building signage and creating more opportunities for pedestrian-scale signs.*<br>• *Incorporate soil volumes and soil quality requirements into zoning code and city policies.* |
| | *Develop an equitable strategy and fee structure to address negative environmental impacts related to development in the Northwest Quadrant and their exemption from planting trees. For example, cash payments in lieu of trees could be used to fund tree planting in impacted parts of the City.* |

GOAL

## PROTECT TREES ON CITY-OWNED LAND AND IN THE ROW

According to the American Public Works Association, the best tree preservation mechanisms are found "within zoning and subdivision regulations for inspection and enforcement" of urban forest protections. These regulations should identify enforcement procedures and clarify authority and powers (APWA, n.d.) In addition, more urban forestry plan reviewers, inspectors, and enforcement staff trained in urban forestry, would strengthen the City's ability to protect the urban forest.

BENEFITS



*This goal will provide environmental and community benefits.*

**OBJECTIVE: DEVELOP REALISTIC MEANS TO ENFORCE TREE PROTECTION REGULATIONS AND FACILITATE TREE SURVIVAL OF NEWLY PLANTED TREES**

Empowering the Urban Forestry Division to enforce tree protection ordinances would contribute to the growth of the urban forest by increasing the likelihood of compliance during construction.

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| **Near-Term Action** | *Empower the Urban Forestry Division to issue stop work orders during construction activity.* |
| **Mid-Term Action** | *Require a cash bond for tree preservation at the beginning of development, which can be drawn from for violations of the tree preservation plan. If there are no violations, the bond will be returned to the developer.*<br>• *Hold bond for 3 years after Certificate of Occupancy is issued to ensure that trees are watered during establishment periods.* |

**OBJECTIVE: CREATE REGULATIONS AND PROCESSES TO RESOLVE INFRASTRUCTURE CONFLICT**

Developing new regulations for utility placement, such as requiring vaults and conduit, would help deliver the necessary conditions for the urban forest to grow and thrive. A strategic approach to locating utility corridors and a system to resolve inevitable utility and tree conflicts would save staff time and provide a data-based, transparent approach to share with City residents concerned about the loss of public trees

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| **Near-Term Action** | Develop a policy to prioritize infrastructure functions in the right-of-way. |
| | Develop decision-making protocols to assist ROW managers. |
| | Empower a clear final decision maker for ROW land use conflicts. |
| | Develop process to proactively use GIS and other relevant technologies to anticipate and resolve infrastructure conflicts on city-owned land. |
| | Develop an “infrastructure solutions toolkit” along with a process to determine when and where to apply a given solution. |
| | Develop policy to incentivize burying overhead utility lines in vaults while maintaining or creating adequate soil volumes for trees. |
| | Require (rather than recommend) alternatives to impervious surfaces (such as stabilized, waterwise turf) on fire access routes other than existing public roadways. |
| | Create standard details for pervious surfaces that meet fire code requirements to provide to contractors. |
| | Incorporate tree locations into project planning, and budget for utility protection measures in high-priority locations. |
| | Create a decision-tree and process for prioritization to implement mitigation measures described below. |
| **Mid-Term Action** | Develop MOU with non-City agencies working in the public right-of-way and utility providers regarding urban forest preservation. |



## IMPACTS OF UNRESOLVED UTILITY CONFLICTS

GIS analysis demonstrates that there are nearly 10,000 available vacant tree planting locations in the public right of way that that do not conflict with the SLC Public Utilities regulations regarding proximity to water and sewer lines. This number represents a 58% decrease from the total vacant planting sites (24,000) identified in the 2019 Urban Forest Resource Analysis, which did not account for utility location.

But when the strategic policy direction to maximize the urban forest’s ROI is applied (selecting planting locations using criteria to reduce urban heat island impacts, improve urban design, and conserve energy), that number declines to 200 tree planting locations—less than 1% of vacant locations otherwise available.

By proactively planning for tree planting, land managers can anticipate and resolve conflicts with utilities by ensuring adequate funding to mitigate existing or future conflicts.

## MITIGATION MEASURES FOR UNDERGROUND UTILITIES INCLUDE A RANGE OF ACTIONS AND TECHNOLOGIES

1. Locate utilities in a designated utility corridor that will not conflict with tree roots.
2. Place utility lines in the street instead of the park strip (particularly as opportunities become available during road reconstruction projects).
3. If cities must locate utilities in park strips (without existing trees, they should place utilities directly behind the curb and not in the center of the park strip, where trees are typically planted.
4. Place conduit that resists tree-roots during new construction to accommodate current and future proposals for utility lines as technologies change.
5. Plant trees with non-invasive roots or trees with a small root ball.
6. Use physical or (non-toxic) chemical barriers near utility lines to inhibit root growth. (Teske, 2013).
7. Combine utilities by using suspended pavement systems for stormwater management and planting trees. (In locations with clayey subsoils, an underdrain for overflow stormwater can be placed below the tree root zone).
8. Consolidate utilities and stack them vertically in one predictable location (City & County of San Francisco, 2015).
9. Place utilities in precast concrete vaults underground.

### OBJECTIVE: DEVELOP URBAN FOREST DESIGN MANUAL WITH CONSTRUCTION DETAILS

An urban forest design manual, which could be a chapter of a comprehensive sidewalk design manual, could incorporate specific construction details for methods that would provide adequate soil volumes along with water conservation technologies and practices.

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| **Near-Term Action** | *Develop a range of precedent design manuals from cities with similar climates.* |
| | *Engage a consultant team with appropriate expertise to create a design manual for tree planting that includes:*<br>• *climate-specific concerns*<br>• *water-conserving irrigation techniques*<br>• *pavement details to accommodate tree roots*<br>• *construction details for suspended pavement systems*<br>• *flexibility to expand or change as needed to accommodate emerging best practices and lessons learned from implementation.* |

## GOAL

## DEVELOP COMMUNICATION CAMPAIGN ABOUT THE IMPORTANCE OF THE URBAN FOREST

Communication and education about the urban forest and its benefits is a crucial aspect of gaining public participation in the work of stewardship. Information about the Urban Forest's value to multiple parts of community health and wellbeing should be disseminated to all City departments, plan reviewers, developers, and Salt Lake City residents.

## BENEFITS

*This goal will provide community and economic benefits.*

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| **Near-Term Action** | *Document and disseminate information on the benefits of Salt Lake City's urban forest to communicate to the public.* |
| | *Sustainability and Public Utilities to develop communications to the public that explain and clarify the role of trees in water conservation* |
| | *Ascertain and share lessons learned from other cities and engage communities early to determine needs and priorities before planting trees.* |


**Selecting the correct tree form in urban environments can create "outdoor rooms" on the sidewalk.**



STRATEGIC DIRECTION

# MAXIMIZE THE URBAN FOREST'S RETURN ON INVESTMENT (ROI)

The living infrastructure of Salt Lake City's urban forest provides economic, environmental, and community returns much greater than any single built infrastructure system. To responsibly steward taxpayer dollars, the City can apply the investor metric of return on investment (ROI) to determine infrastructure efficiently. Recent analysis demonstrates that for every single dollar invested directly into the urban forest, the City receives $ 3.40 in annual benefits returned. Policy and planning decisions made to maximize these returns should guide the City's investments in the preservation and growth of the urban forest.

| GOAL | BENEFITS |
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## INCORPORATE THE URBAN FOREST INTO ALL OF SALT LAKE CITY'S PLANNING AND PROJECT IMPLEMENTATION EFFORTS TO MITIGATE ENVIRONMENTAL IMPACTS.

The urban forest intersects with all land use types in Salt Lake City. By acknowledging impacts to and from the urban forest within all the City's master, area, and system plans, we can create conditions for the City to achieve the urban forest vision outlined in Plan Salt Lake. Coordinating plans for expanded tree canopy with those for active transportation routes, for example, will increase the attractiveness and comfort of pedestrian and bicycle routes and can assist the City reducing emissions. Proactive planning between the departments should incorporate the total value of the urban forest in decision-making.

*This goal will provide environmental, community and economic benefits.*

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| **Near-Term Action** | *Assess all plans and implementation projects in or adjacent to the ROW alongside the tree inventory.* |
| | *Integrate urban forest expansion with active transportation project planning from the earliest stages of planning.* |
| | *Collaborate with SLC Public Utilities stormwater quality program managers to incorporate urban forestry into stormwater management policies and protocols, including the use of suspended pavement systems in areas with small or no park strips.* |
| **Mid-Term Action** | *Incorporate canopy cover (or tree stocking) goals into all new master and area plans.* |
| | *Update the 2010 Salt Lake City Open Space Acquisition Strategy to incorporate more specific guidance related to trees. Base guidance on the findings of more recent analyses of the urban forest and goals established in this Action Plan.* |
| | *Investigate the feasibility of reducing asphalt or other street surfaces during road reconstruction and replacing paved area with trees, tree wells, bioswales (stormwater infiltration galleries) or other types of green infrastructure that can improve water quality.* |

# CREATING AN URBAN FOREST MASTER PLAN

A Master Plan (or master plan) for the urban forest that integrates goals developed in partnership with communities is foundational to maximizing urban forest benefits. The plan should incorporate these actions:

- Create quantifiable strategies to mitigate negative environmental impacts and associated adverse public health outcomes.
- Create performance metrics and targets based on Salt Lake City Urban Forest Resource Analysis and livability assessment in this plan, along with a schedule for data analysis and dissemination.
- Develop metrics and performance goals for planting trees in areas with high rates of respiratory and heat-related illness.
- Investigate feasibility of increasing access to fruit trees on public lands in areas with high rates of poverty and health disparities.
- Examine feasibility of creating urban forest corridors linking the City Creek, Red Butte, Emigration, and Parley's Canyons to the Jordan River.
- Develop Inventory of Urban Forest Assets in parks, golf courses, and other City-owned land outside of the right of way.
- Evaluate and prioritize strategies for drought-mitigation and efficient water use for trees in parks, golf courses and other City-owned land outside of the right of way.
- Make recommendations for tree water-use zones in golf courses and parks.
- Incorporate plans for cooling islands in parks and golf courses into an Urban Forest Master Plan.
- Investigate feasibility of adding urban foresters to Golf Division to maintain and expand tree cover in appropriate locations on golf courses.
- Prioritize shaded food access routes in under-served areas of the city that have low access to healthy and affordable food.
- Identify potential partners holding private and institutional lands where an expanded, biodiverse urban forest would create significant community benefits for future collaboration.

## POTENTIAL INSTITUTIONAL OR AGENCY PARTNERS

**Church of Jesus Christ of Latter-day Saints**

**Salt Lake City School District**

**Salt Lake Community College**

**State of Utah**

**Utah Department of Transportation**

**University of Utah**

**Utah Transit Authority**

- Investigate feasibility and needed resources to create a range of thriving partnerships.
- Identify City Departments to partner with public agencies, non-profits, and institutions with missions related to urban forestry, education, sustainability, and public health to expand the urban forest.

**These partnerships could include collaboration with:**

- *USU Forestry Extension to offer "Tree Steward" or "Citizen Forester" training and certification to residents.*
- *Tree-related non-profit organizations to offer "Junior Forester," programming to school-age children.*
- *Local affordable housing non-profits to seek grant funds to increase tree canopy on their properties, or to obtain funding for efficient irrigation infrastructure in park strips adjacent to their properties.*
- *Salt Lake County Storm-water Coalition to quantify and evaluate impacts and to maximize benefits of urban trees on water quality.*
- *National non-profits, such as American Forests or The Nature Conservancy to expand canopy cover or tree stocking goals.*

## OBJECTIVE: INCORPORATE MITIGATION TECHNIQUES INTO URBAN FORESTRY'S PLANTING STRATEGIES

While planning is necessary to maximize the urban forest return on investment (ROI), the urban forest is already delivering ecosystem services to which we can optimize access. A combined approach that evaluates existing public land and rights-of-way in tandem with high-need locations to mitigate urban heat island effect and poor air quality could dramatically increase the benefits of the urban forest where they are most needed.

Using the analysis gathered for this Action Plan, Salt Lake City can focus its existing programming and prioritize resources in the short-term to work with communities and non-profits to develop and implement planting and stewardship programs.

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| **Near-Term Action** | *Prioritize the Westside 1000 Trees Initiative in census tracts identified in this action plan with the highest rates of adverse health impacts and numbers of children.* |
| | *Use the GIS analysis created for this Action Plan to prioritize planting sites that mitigate adverse environmental and public health impacts.* |
| | *Perform GIS analysis identify parks and golf courses where additional trees would provide cooling.* |
| | *Identify and prioritize large park strips that would give ample space for large trees, even alleés (double rows) of trees.* |
| | *Plant large evergreens property bordering freeways to mitigate air pollution.* |
| | *Implement a timeline for regular GIS analysis of water and sewer lines scheduled for abandonment and plant trees in those locations.* |
| | *Partner with Sustainability Department to perform GIS analysis of canopy potential and solar energy potential in Salt Lake City. Identify areas of potential conflict and develop planting strategies to accommodate both shade trees and solar panels in those areas.* |
| | *Partner with Planning and Economic Development to develop incentives for using suspended pavement systems in Downtown and other highly-paved areas.*<br>• *Ensure balanced, equitable incentives such as additional height for trees in suspended pavement. Trees planted in grates (directly into soil) do not provide adequate mitigation in paved areas.* |
| **Mid-Term Action** | *Plant new trees in the Glendale Golf Course adjacent to streets and residential and commercial zoning districts bordering the golf course to create cooling islands.* |
| | *Plant new trees in the Rose Park Golf Course near streets and residential and manufacturing zoning districts bordering the golf course to create cooling islands and mitigate air pollution.* |
| | *Plant trees in Rosewood Park along park edges, along pathways, and to shade paved surfaces within the park to harness cooling island effect.* |
| **Long-Term Action** | *Plant deciduous trees on the north and east sides of streets to conserve energy (blocking the southern and western sun in the summer and allowing it to passively warm buildings in the winter).* |

## OBJECTIVE: ADOPT A STRATEGIC APPROACH TO MINIMIZING AND AVOIDING PROPERTY DAMAGE CAUSED BY TREES

Property damage caused by falling tree limbs can be minimized by adequate funding for pruning and preservation. Proactive planning and investment in protective technologies can also minimize damage to other City-owned infrastructure and private property.

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| **Near-Term Action** | *Investigate feasibility of using root barriers to protect sidewalks from upheaval.* |
| | *Investigate equitable approaches to sidewalk repair for lower-income residents through low- or no-interest loans or grant programs.* |
| **Mid-Term Action** | *Incorporate funding for sidewalk protection strategies into project budgets during planning phases.* |
| | *Develop funding sources for regular urban forest maintenance to avoid costs incurred for property damage.* |
| | *With adequate funding in place, Urban Forestry to collaborate with Streets Division to develop inspection protocol and maintenance to proactively avoid potential tree and equipment conflicts prior to street sweeping, snow removal, and paving.* |
| | *With adequate funding in place, Urban Forestry to collaborate with Transportation Division to ensure adequate sight distances are maintained at high-traffic intersections, and that signage and signals are visible.* |
| **Long-Term Action** | *Develop a program to fund the repair and mitigation of (tree caused) sidewalk and private property damage at 100% to preserve trees and relieve cost burdens on lower-income residents.* |

## OBJECTIVE: MITIGATE THE IMPACTS OF LEAF LITTER ON JORDAN RIVER WATER QUALITY

There are multiple design and engineering solutions to prevent leaf litter entering the Jordan River, which all have a range of costs and impacts. These solutions would all likely require policy changes and additional funding sources.

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| **Near-Term Action** | *Convene relevant Departments and Divisions (Public Lands, Public Services, Public Utilities, Sustainability, and Urban Forestry) to develop policies and protocols to mitigate leaf litter impacts.* |
| | *Perform an embodied energy analysis of increased street sweeping to mitigate water quality impacts.* |
| **Mid-Term Action** | *Investigate leaf litter collection incentives for residents and offer composted leaf mulch free of charge.* |
| | *Create seasonal leaf cleanup crews and prioritize areas where excess leaf litter is most likely to contribute to flooding or stormwater pollution.* |
| **Long-Term Action** | *During ROW reconstruction projects, implement redesigned park strips to collect leaf litter and allow it to decompose in place.* |

GOAL | BENEFITS

## DEVELOP ROBUST URBAN FOREST OVERSIGHT

In its current form, Urban Forest oversight is provided by the Parks, Natural Lands, Urban Forest, and Trails Advisory Board. The urban forest is a system, and its oversight should be guided by an approach that accounts for its interaction with other systems. Because 75% of Salt Lake City's urban forest is in public rights-of-way, adjacent to a range of land uses and impacts, its management and oversight needs often differ significantly from that of parks and natural lands.

*This goal will provide environmental and community benefits.*

### OBJECTIVE: CREATE A SUPERVISORY BODY FOCUSED ON THE SALT LAKE CITY'S URBAN FOREST.

A supervisory body which focuses on the urban forest as a living infrastructure system, including its impacts to and from built infrastructure can provide specific guidance to meet the City's strategic direction. In addition to members with professional expertise in arboriculture, landscape architecture, ecology, land management, and sustainability, and environmental backgrounds supervisory bodies should include residents from historically underserved neighborhoods and/or community-based organizations working with underrepresented and underserved residents. and/or someone from the Mayor's Equity & Inclusion Team

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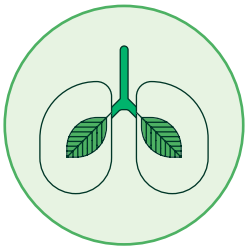
| **Near-Term Action** | *Create an Urban Forest Subcommittee to the Parks, Natural Lands, Urban Forest, and Trails Advisory Board empowered to:*<br>• *Review public projects that impact the urban forest.*<br>• *Review, rank, prioritize, and make recommendations on capital improvement program funding applications related to the urban forest*<br>• *Provide guidance on an urban forest master plan (see below).*<br>• *Provide advice and expertise on urban forestry issues to other boards, such as the planning commission and transportation advisory board.*<br>• *Develop guidance and training materials for Community Councils*<br>• *Develop criteria for equity and inclusion in partnership with the administration.* |
| **Mid-Term Action** | *Evaluate the effectiveness and impact of the Urban Forest Subcommittee to determine its effectiveness and determine if an Urban Forestry Board with a wider scope of duties is needed.*<br>• *Questions to evaluate include specific roles and responsibilities of the Board, the composition of the board, and the scope of its authority.* |

GOAL

## INCORPORATE PUBLIC HEALTH OUTCOMES INTO URBAN FOREST PLANTING AND PRESERVATION STRATEGIES

In July 2021, Salt Lake City adopted a resolution declaring racism a public health crisis. The City resolved to work with County health officials and data partners to report and review public health data. As a further step to acknowledge the legacy of disinvestment in formerly redlined areas, the City can plant trees in communities with low canopy cover that have higher numbers of residents who are people of color and higher rates of respiratory disease (see Chapter 3: Livability and the Urban Forest in Salt Lake City for additional detail on the correlation between historic redlining practices and lower levels of urban forest canopy).

BENEFITS



*This goal will provide environmental, community and economic benefits.*

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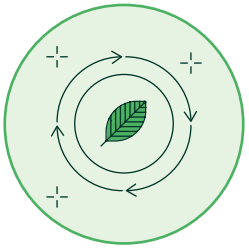
| **Mid-Term Action** | *Using metrics developed in an Urban Forest Master Plan, partner with public health agencies and health care providers to meet goals for planting trees in areas with high rates of respiratory and heat-related illness and to provide healthy food access in areas with higher rates of diet-related diseases.* |
| | *Work with partner agencies to monitor rates of respiratory and heat-related illness and food access correlate data with increased tree cover to determine if goals are being met.* |
| | *Develop programs and policies to create "edible landscapes for all." (For more information, visit: https://www.slc.gov/sustainability/rfea-2020-2021/* |
| | *Develop community outreach program on urban forest benefits and stewardship with resident ambassadors, partner agencies, and community-centered non-profits, including the Salt Lake County Health Department and institutional partners such as the University of Utah.* |

GOAL

## PROVIDE STABLE, ADEQUATE FUNDING FOR THE URBAN FOREST TO MEET OR EXCEED LONG-TERM CANOPY COVER (OR TREE STOCKING) GOALS.

The urban forest's return on investment grows as the trees mature, and communities that are aware of the full range of benefits that trees can provide are more likely to support efforts to create stable funding streams. By quantifying the value of environmental, economic, and community returns and communicating these regularly, residents may take more interest in the stewardship of public trees.

BENEFITS



*This goal will provide environmental and community benefits.*

### OBJECTIVE: UNDERTAKE AN ECONOMIC FEASIBILITY STUDY TO DETERMINE COSTS AND INVESTIGATE POTENTIAL FUNDING STREAMS FOR EXPANDING THE URBAN FOREST

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| **Near-Term Action** | *Public Utilities to determine applicability of charging impact fees for the urban forest, particularly as related to stormwater management.* |
| | *Sustainability and RDA to investigate and create development incentives to provide for adequate soil volumes Downtown.* |
| | *Engineering to update Roadway Impact Fee Facilities Plan (IFFP) to include suspended pavement systems in highly paved areas of the City.* |
| | *Public Lands to create an adopt-a-tree or tree memorial program in parks.* |
| | *Investigate using capital improvement funds to underwrite urban forestry programming.* |
| | *Investigate using a portion of tax receipts to fund the urban forest.* |
| **Mid-Term Action** | *Allocate a percentage of tax increment financing (TIF) toward urban forest expansion in RDA project areas.* |
| | *Using data gathered in feasibility study, place a general obligation bond on the ballot to allow voters to decide on expanded urban forest maintenance, watering, and planting.* |
| | *Develop a public-private partnership to fund trees and suspended pavements downtown (like the Urban Forest Initiative of the Downtown Denver Partnership).* |

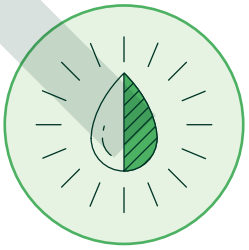
# PARTNER TO EQUITABLY DISTRIBUTE URBAN FOREST BENEFITS

To implement the growth and maintenance of the urban forest at the scale needed to mitigate environmental and public health impacts, partnership between the City with a range of organizations and agencies should be explored. At the same time, investigating and implementing new and expanded mechanisms for funding the urban forest will increase the equitable distribution of its benefits.

## GOAL

### COORDINATE WITH REGIONAL AGENCIES AND NEIGHBORING MUNICIPALITIES ON URBAN FOREST PLANNING AND EXPANSION TO IMPROVE AIR AND WATER QUALITY.

## BENEFITS



*This goal will provide environmental, community and economic benefits.*

**OBJECTIVE: CREATE FRAMEWORK FOR PARTNERSHIPS BETWEEN MUNICIPAL AND STATE AGENCIES, NONPROFITS, AND VOLUNTEERS TO EQUITABLY PRESERVE AND GROW THE URBAN FOREST.**

Urban ecosystem boundaries, like all ecosystems, rarely conform to political boundaries. The greatest urban forest benefits will be realized when we prioritize ecosystem service delivery regionally. Convening regional, municipal, non-profit, and institutional stakeholders within water and airshed boundaries to establish benchmarks for urban forest expansion and establishing a regular schedule for updates can enhance the urban forest benefits to Salt Lake City residents and neighboring municipalities.

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| **Near-Term Action** | *Partner for grant funding with urban forest non-profits to provide technical assistance and capacity-building to City residents in underserved areas.* |
| **Mid-Term Action** | *Sustainability Department to create a public-private partnership to develop and maintain neighborhood-based community orchards, prioritizing underserved areas of the city that have low access to healthy and affordable food.* |
| | *Youth and Family Services to partner with the Salt Lake City School District to promote tree planting on school property. Students participating in the "Junior Forester" program could serve as ambassadors.* |
| **Long-Term Action** | *Partner with neighboring municipalities to add trees to high-volume traffic corridors, or other shared areas with poor air quality.* |
| | *Partner with owners of large parcels of land within City boundaries to increase canopy cover in strategically important locations.* |

**OBJECTIVE: EXPAND THE URBAN FOREST ON PRIVATELY-OWNED AND INSTITUTIONAL LAND IN SALT LAKE CITY**

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| **Near-Term Action** | *Economic Development to create incentives to preserve trees and grow the urban forest on and adjacent to privately-owned land.* |
| | *Planning to create policies and incentives to expand the urban forest on private land, including parking lots, using existing regulations in the City code), including amendments to the City Code where feasible.* |
| **Mid-Term Action** | *Sustainability and Community and Neighborhoods to partner with private landowners to implement solutions in challenging locations with significant environmental impact mitigation potential (for example, on steep slopes adjacent to freeways).* |
| | *Regional stakeholder to convene institutional partners to develop goals, objectives, actions, and funding strategies to expand the urban forest on their lands.* |

GOAL

## IMPLEMENT EQUITY THROUGH IRRIGATION DISTRIBUTION

There are a range of opportunities in Salt Lake City related to efficiently irrigating public trees, which should be evaluated for cost and benefit. Because the City currently requests that residents water trees, this can create a burden on lower income households which may lack the means to install a sprinkler system or simply lack the time to water trees. Because properties change hands and tenants move, there is also less consistency in tree watering, which negatively impacts the health of the urban forest.

BENEFITS

*This goal will provide environmental, community and economic benefits.*

**OBJECTIVE: PUBLIC UTILITIES TO PROMOTE AND DEVELOP REBATE AND LOAN PROGRAMS FOR EFFICIENT SPRINKLER SYSTEMS ON PRIVATE PROPERTY AND IN PARK STRIPS.**

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| **Near-Term Action** | *Promote California Avenue and Concord Street demonstration project of waterwise tree species and efficient irrigation. Create a "video tour" of the project to share with Community Councils, other interested community groups, and on social media.* |
| | *Promote 900 South Stormwater Wetland (900 S and 900 West) demonstration project of waterwise tree species and efficient irrigation* |
| | *Develop a regular schedule to promote www.slcgardenwise.com on social media, including information on watering trees.* |
| | *Promote existing rebates program on efficient sprinkler nozzles and rain shut off sensors.* |
| **Mid-Term Action** | *Develop low or zero-interest loan program for homeowners to purchase and install efficient irrigation systems.* |
| | *Partner with non-profits to develop sprinkler installation program.* |

**OBJECTIVE: THE CITY ASSUMES IRRIGATION RESPONSIBILITY FOR ALL PARK STRIP TREES, BEGINNING IN THE MOST IMPACTED NEIGHBORHOODS.**

Delivering water to public trees would assist the City in accomplishing two of its foremost goals: conserving water and improving air quality (through ensuring trees get the water they need to thrive and provide ecosystem services). It is likely the costliest option, not only related to irrigation infrastructure and water costs, but also the high level of coordination with residents required as the City made this shift. This would be an equitable solution, however, and will take time and significant planning and allocation of resources to implement.

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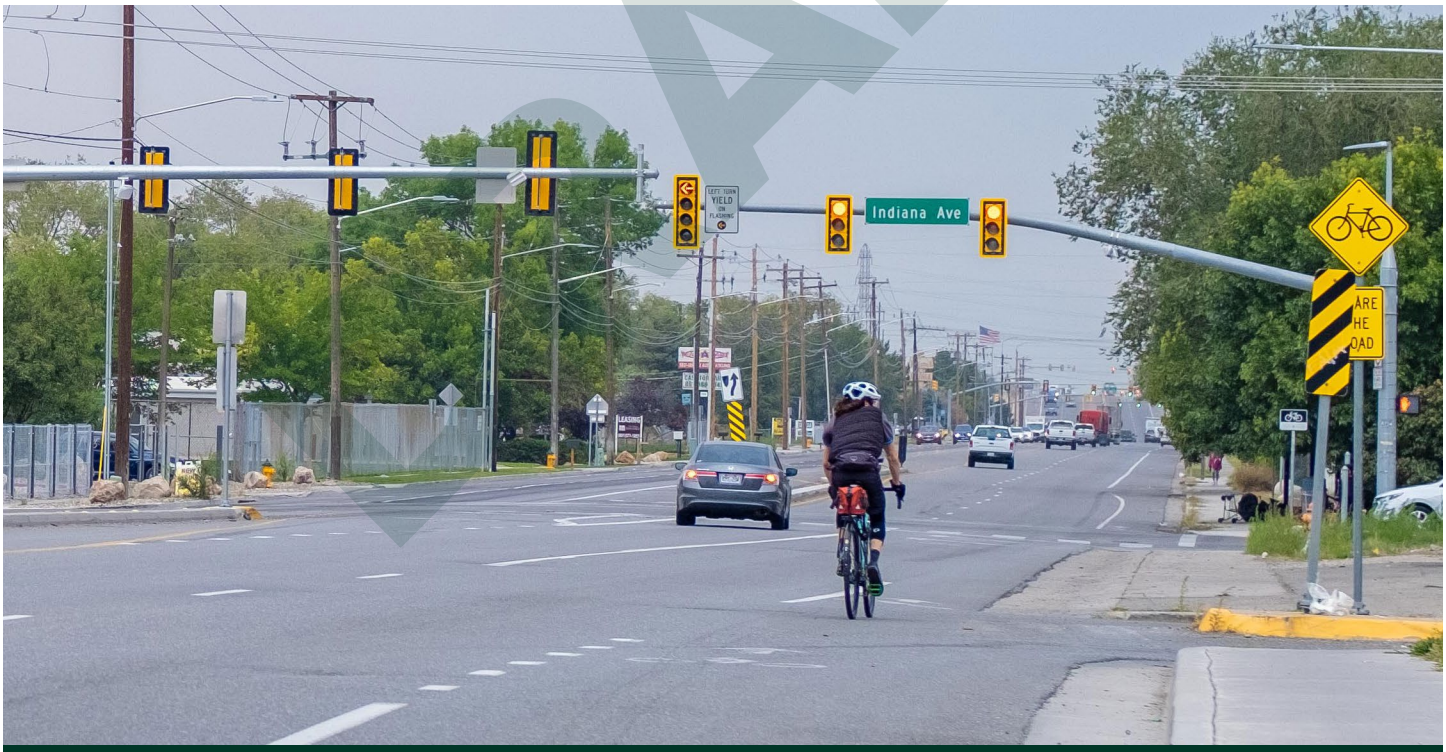
| **Near-Term Action** | *Explore the costs of engaging a third party to water newly planted trees throughout the establishment period where developers are required to plant trees and integrate these costs into impact fees.* |
| **Mid-Term Action** | *Develop efficient irrigation plan and feasibility study to investigate costs and implications of City control of irrigation in park strips.* |
| | *Assume responsibility for watering park strip trees in locations where local urban heat island effects are greatest.* |
| **Long-Term Action** | *Based upon the outcome of the master plan and feasibility study, the City assumes responsibility for park strip irrigation infrastructure and watering.* |
| | *Develop block length watering zones in park strips on existing residential blocks for improved irrigation efficiency to conserve water.* |




**Providing shade over bike lanes makes them a more attractive option in the summer months.**

# PLAN AND DESIGN THE URBAN FOREST IN THE PUBLIC INTEREST

Planning for the urban forest with an approach that combines urban design principles for creating inviting, attractive, and comfortable places for people with environmental impact mitigation strategies is a central method to maximize urban forest returns. As the City grows, public spaces (sidewalks, streets parks, and plazas) will become increasingly critical to maintaining livability. Designing the urban forest to enhance its aesthetic and environmental benefits in our public spaces can also provide identity and imageability to Salt Lake City's neighborhoods and business districts.

## GOAL

### PLAN FOR EQUITABLE URBAN FOREST EXPANSION IN NEIGHBORHOODS AND BUSINESS DISTRICTS

Reassessing the City's existing tree planting program and partnering with nonprofits and residents to expand the urban forest in residential areas and business districts with greater population densities and lower tree canopy rates can facilitate equitable outcomes.

## BENEFITS

*This goal will provide environmental, community and economic benefits.*

#### OBJECTIVE: INVESTIGATE CANOPY POTENTIAL AND CREATE CANOPY COVER GOAL AND DEVELOP REGULAR PROGRESS ASSESSMENT PROCESS

The creation of a city-wide canopy cover goal will allow the City to create benchmarks for mitigating air quality impacts, provide discrete milestones to work towards, and a create a basis for the equitable distribution of urban forest benefits. This would need to be a collaboration between multiple departments, including Sustainability, Public Lands, Community and Neighborhoods, and the City's GIS specialists.

Golf courses and parks should be included as key contributors to tree canopy and planned for strategically to capture and enhance the benefits they deliver to surrounding land uses.

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| **Near-Term Action** | *Develop GIS analysis of tree canopy potential using existing conditions and evaluate effects of improved soil conditions through modeling.* |
| | *Schedule and budget for a citywide remote sensing LIDAR (Light Detection and Ranging) survey every five years to assess progress towards tree canopy goal.* |
| | *Develop a schedule to assess canopy cover expansion in areas of identified need to measure progress.* |
| **Mid-Term Action** | *Provide canopy data to partner organizations and private property owners.* |

**OBJECTIVE: DEVELOP CRITERIA FOR NEIGHBORHOOD AND DISTRICT TREE PLANTING STRATEGIES**

Given the wide range of benefits trees deliver, a strategic approach to planting based on environmental and social criteria can reap multiple dividends.

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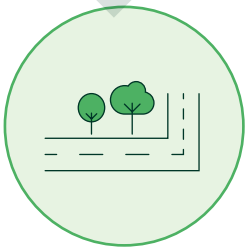
| **Near-Term Action** | *Develop localized tree age-distribution criteria to provide stable canopy cover that can maintain air quality improvements over the long term.* |
| | *Plant large canopy tree species in areas prone to flooding to intercept rainwater.* |
| | *Plant trees to create microclimates that increase access to summer shade and winter sun.* |
| | *Plant trees to strategically provide shade on roadways to increase asphalt lifespan.* |

GOAL

## RETHINK ROW TO ALLOCATE MORE SPACE FOR TREES & PEDESTRIANS

Salt Lake City's rights-of-way represent our largest and most widely distributed public spaces throughout the municipality. Integrating space for trees and people and reducing space for private vehicles will prioritize the quality of life in these public spaces and can produce positive social and environmental outcomes. A combined approach that evaluates existing public land and underutilized roadways in tandem with the high-need locations to mitigate urban heat island effect and poor air quality could dramatically increase the benefits of the urban forest where they are most needed. A strategic approach to increased plantings in underutilized roadways in Downtown, for example, could increase cooling and decrease energy demand where air temperatures are highest in the summer.

BENEFITS



*This goal will provide environmental, community and economic benefits.*

**OBJECTIVE: ON STREETS WITH LOW TRAFFIC VOLUMES, CREATE A STRATEGY TO REDUCE VEHICLE LANES, AND LANE WIDTHS, WHERE SUPPORTED BY FUTURE TRAFFIC PROJECTION DATA.**

Reclaiming public space from cars for the urban forest may reduce tree and utility conflicts. This process of reclaiming public space could be made equitable, in part through a data-driven plan which re-allocates that street space based on both the socio-economic and environmental health needs of the neighborhood, as well as the role of a given street within the larger transportation network.

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| **Near-Term Action** | *Create a "tree benefit score" for streets based on an analysis of public health, environmental health, population density, and energy conservation criteria to apply to all streets wider than 30 feet.* |
| | *As street reconstruction projects are planned, apply tree benefit score to determine space to allocate for trees.* |
| | *Budget for tree planting and irrigation at the beginning of street reconstruction projects.* |
| | *Consider required soil volumes during the initial phases of street project planning and design development.* |
| **Mid-Term Action** | *Develop plan for reducing lanes on City streets using existing and projected traffic volumes.* |

GOAL

## ENHANCE CITY'S IMAGE AND LIVABILITY THROUGH INCORPORATING PEDESTRIAN-FIRST STREETSCAPE DESIGN.

Salt Lake City's current approach to spacing is based on zoning requirements to include a street tree for every 30 feet of building frontage. This approach does not fully consider growing needs and pedestrian comfort. Development of more robust regulations based on urban design best practices for regular architectural rhythm (spacing) for creation of continuous canopies, visual separation from moving vehicles for improved perception of safety, and alignment of trees to create sidewalk spaces that mediate between the human and building scale will improve Salt Lake City's imageability.

BENEFITS

*This goal will provide environmental, community and economic benefits.*

**OBJECTIVE: AMEND ZONING CODE TO INTRODUCE NEW URBAN DESIGN CRITERIA FOR SPACING AND SCALE OF TREES**

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| **Near-Term Action** | *Recommend new tree spacing requirements based on environmental benefit and urban design criteria.* |
| | *Recommend tree height and scale at maturity requirements based on average heights in zoning districts.* |
| | *Recommend including shade on all active transportation routes in the City's revised Complete Streets ordinance.* |
| | *Require additional trees at transit stops and along transit routes.* |

GOAL

## DEVELOP URBAN FOREST DISTRICTS THROUGHOUT RESIDENTIAL AND COMMERCIAL AREAS TO ENHANCE SENSE OF PLACE.

Designing the urban forest with forms, scales, colors, and textures that change as neighborhoods do will enrich the public realm and provide a visual and perceptible sense of place that reinforces neighborhood identity.

BENEFITS

*This goal will provide environmental, community and economic benefits.*

### OBJECTIVE: DEVELOP URBAN FOREST DESIGN GUIDELINES

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| **Near-Term Action** | *In partnership with Mayor's Office of Equity and Inclusion, Urban Forestry Division to develop criteria for public priority ranking based on the full range of urban forest benefits to distribute as a survey to residents.* |
| | *Develop analysis of formal and informal neighborhood and business district boundaries paired with public health and environmental impact data to develop preliminary urban forest district boundaries.* |
| | *Create three alternative urban forest district maps for public review and selection that incorporate different combinations of urban forest priorities selected by residents.* |
| | *After urban forest district map is selected by residents, develop community engagement process using Melbourne, Australia as a key precedent.* |
| | *Host charette-style workshops with Community Councils, neighborhood groups, and develop guidance on form, scale, color, and seasonal change for each urban forest districts.* |
| | *Create district-specific tree lists that:*<br>• *meet community criteria (form, scale, and color)*<br>• *enhance environmental impact mitigation*<br>• *provide adequate shade*<br>• *enhance biodiversity*<br>• *enhance perceptible changes to place between one district and the next.* |
| | *Incorporate shade structures into design guidelines as both interim and permanent shade strategies* |
| | *: Develop decision-making criteria for proposed time frame for shade structure implementation (i.e., temporary or permanent).* |
| | *Incorporate feedback from SLC Arts Council on implementation strategies for shade-producing art installations that can educate about the need for urban cooling.* |

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