

# Olympia's Urban Forest Management Strategic Proposal

FINAL DRAFT – April 13, 2015

## Executive Summary

The City of Olympia has a long and successful history in committing to take care of its urban forest. Several projects and programs were developed through the years and efforts to plan for and manage the valued resource are evident in policy and action. However, as a result of significant annual budget cuts, some critical elements are now missing and necessary tasks left undone due to limited resources disproportionate to program needs. Upon review of the situation in relation to city policies and components needed for a sustainable urban forestry program, four major challenges were identified:

- A. *Increase the knowledge and understanding of Olympia's urban forest to direct its management.*
- B. *Develop and implement a comprehensive management plan.*
- C. *Clarify roles and responsibilities throughout the City and identify resource gaps and program needs.*
- D. *Involve the citizens in resource management where appropriate.*

To address these challenges, a few initial strategies are identified that can be employed with little or no additional funding (outside of grants), but would require more effort and coordination amongst the city stewards of the urban forest in the Planning, Parks, and Public Works Departments. The most critical actions involve re-evaluating the duties of the City's Urban Forester and establishing an interdepartmental Urban Forest Team. This Team would be directed to creatively collaborate on developing the systems and tools, such as the initial stages of a comprehensive management plan, to better manage the urban forest community-wide. The process would be guided by the objectives identified by the Team from a sustainable urban forestry model utilized during the strategic planning process, along with current city plans and policies in place.

## Introduction

There are many definitions for an *urban forest*, but it most commonly refers to all the trees and associated vegetation in a community, both on public and private property. Often trees are planted individually in the suburban and urban environment, though many preserved natural areas in a city have native forest remnants. Vegetation in residential and commercial landscapes also contributes to the urban forest. No matter the diverse origins of planned or naturally occurring trees, they all depend upon, and interact with, the natural mediums of local soil, water and climactic conditions. Therefore, a healthy urban forest is best managed as an entire forest ecosystem.

Like other progressive municipalities, Olympia has a goal to sustainably manage its urban forest; the City emphasized this commitment with a long-running urban forestry program and successful projects and partnerships throughout the last two decades. Currently the city has thousands of

trees that provide tremendous benefits and have high value, but no cohesive plan for managing these assets. Realizing its limited resources, the City sought assistance in developing a strategic plan toward a more sustainable urban forestry program. With a grant from the Washington State Department of Natural Resources, in partnership with the USDA Forest Service, the City sought a clear direction for a more effective and cost-efficient management of public trees and the urban forest. Terra Firma Consulting was contracted to work with City staff to help develop a strategies that address how to manage and enhance all aspects of the urban forest and lead the City to more specific action plans and budgets over time.

Elizabeth Walker of Terra Firma Consulting comes with nearly 25 years experience in municipal forestry assisting several communities in Western Washington, either as staff urban forester (Vancouver, WA and Kirkland) or as contract consultant or on-call city arborist. Walker has developed programs from the ground up and has worked in and with city Public Works, Parks and Planning departments, adopting and administering code and policy and engaging the public. Her expertise in facilitation and strategic planning has given her the ability to help communities develop successful strategic and management planning documents for their urban forestry program.

An urban forest strategic management plan is considered a living document that outlines where the community wants to go regarding its urban forest, and ideas of how to get there. When it's developed, the plan should include an overarching mission and vision statements under which all goals and strategies align. Language for these statements is easily found in the City's Comprehensive Plan. In concert, an effective plan should incorporate a sustainable urban forestry model to demonstrate the comprehensive nature of resource management, to identify feasible goals to strive for, and to outline key priorities in which to focus short-term action steps.

While this strategic planning process with the grant did not result in an adopted plan *per se*, the recommended strategies can guide the community over the next ten years regarding planning, management and maintenance of public and private trees based on future identified goals and priorities and dependent on funding and resource commitment. These strategies are organized based on the various requested budget scenarios, and as budget and resources become dedicated to a more formal city urban forestry program, annual work plans with budget implications could be generated from this proposal.

The exercise in examining current conditions with possible strategies during this process also intended to help promote a more unified effort to manage the entire urban forest within and between the City and other stakeholders (residents, business owners, utilities, tree stewards) in the community. Longer-term strategies can be developed to give further direction as the plan evolves and goals are identified and achieved. The foundation of these recommended strategies ensures that Olympia's urban forestry program can become more sustainable over time.

## The Urban Forest as a Natural Resource

The City of Olympia understands that it needs to manage its trees and urban forest. There are numerous policy statements throughout the Comprehensive Plan to confirm this commitment. Both staff and community make the connection that it's prudent to manage trees as assets because they provide many tangible benefits to the community. Some of the benefits from Olympia's urban forest\* is that it:

- Reduces stormwater runoff and erosion
- Provides shade and cooling for fish-bearing streams
- Improves air quality and mitigates wind effects
- Provides wildlife habitat
- Increases property values

\* For more information, see [Appendix A](#).

Every tree also has a monetary value. For example, if one is damaged by a car crash, there is a landscape value that is considered in its replacement cost. Trees, like other assets, also have maintenance costs, such as pruning young trees for structural integrity or for clearance on roadways and trails. Trees also have public safety liabilities that must be accounted for, for instance, when they become structurally unsafe or die, fall into the road or onto a park trail or sports field, and impact sidewalks and other infrastructure. A proactive mitigation program with high risk trees, which includes removal, replacement, and where appropriate, leaving habitat snags, is responsible stewardship of the urban forest.

## History of Urban Forestry in Olympia

As early as 1897 the City of Olympia had ordinances on the books related to the management of street trees. The first known formal program was a shade tree commission that was organized in the mid-1950's by Margaret McKinney in response to the removal of the street trees on Capitol Way. This shade tree commission included a well-known forest scientist by the name of Jack W. Duffield. The group was commissioned by then Mayor Amanda Smith.

Around 1988 the City working with Thurston Regional Planning Commission (TRPC) applied for an Urban Forestry Grant from the Washington State DNR. This grant was used to perform a volunteer based "significant" tree inventory. This inventory included trees on both public and private property. The intent of the inventory was to document trees over a specific size. The work was performed by volunteers and coordinated by a TRPC intern with professional planning support.

In addition to the inventory, the City established a Tree Advisory Board (later to become the Urban Forestry Advisory Board). This board was tasked with developing the foundation for an urban forestry program. This included the development of an Urban Forestry Chapter in the City's Comprehensive Plan, the crafting/adoption of the Landmark Tree Ordinance (OMC 16.56) and the crafting/adoption of the Tree Protection and Replacement Ordinance (OMC 16.60). The Tree protection and replacement ordinance, which regulated the removal of trees on private property

included an exhaustive and at times contentious public engagement process, but ultimately resulted in the adoption of the ordinance in early 1992.

The legitimacy and significance of Olympia's Urban Forestry Program greatly expanded in October 1992, when the City's first Urban Forester was hired. This person was tasked with administration and enforcement of the Tree Protection and Replacement ordinance (OMC 16.60), the Landmark Tree Protection ordinance (OMC 16.56) as well as further development of the Urban Forestry Program. The basic elements of the program as envisioned at that time were described within the Urban Forestry Chapter of the Comprehensive Plan, and all were developed to some level during this time until 2008, namely, ordinance administration, code development, a Master Street Tree Plan, and interdepartmental collaboration on several major street tree installations.

Regarding volunteer-based activities, the NeighborWoods volunteer program was funded 1997-2008 and successfully engaged residents in planting and establishing over 5,000 street trees throughout the community. The training and coordination of the program was done with contract staff. The program is currently considered *on hold*.

For the next three years, the Urban Forester's work was focused on the administration of Tree Protection and Replacement ordinance, hazard tree assessments, implementing the Legion Way long-term tree management project, and assistance to other departments. As a result of severe budget cuts to the program, temporary and contract staff was then used to fulfill minimal urban forestry duties, primarily development review and hazard tree abatement, until a part-time employee was hired in 2012. Contract work continues to be utilized to perform some of the tasks, and the staff position has just recently regained full-time status (1.0 FTE).

## **Existing Conditions**

There are several components of a city urban forestry program that have been identified and developed through the many years and have distinguished Olympia as one of the more progressive communities in the region for its commitment to the valuable resource.

### Policies, Code, and Plans

The chief guiding document for the major development of Olympia's urban forestry program was the Chapter Ten: Urban Forestry (Appendix B) of the Comprehensive Plan (1991). This chapter outlined the major elements for a new program, and it was effectively used to develop several of the components we see today:

- Tree Protection and Replacement Ordinance (last updated 1994)
- Landmark Tree Protection Ordinance (1991)
- Development of street tree standards in Engineering Design & Development Standards (1995); Green Cove Basin Residential Low Impact tree standards
- Public Tree Ordinance (1998)
- Tree-related code in Landscaping Ordinance (1995) and Critical Areas Ordinance (2005)

- Master Street Tree Plan for the Master Street Plan (2002-2011)
- Urban Forestry Manual to accompany the Tree Protection and Replacement code (1994)

To date, much needed review and revisions have not been done to any of these materials.

### ***Current Comprehensive Plan***

In the current version of the City’s Comprehensive Plan (2014), policy statements relating to the value and importance of trees and canopy are readily found throughout the document. Reference to the urban forest riddles most all of the elements, particularly the Natural Environment, Land Use and Urban Design, and Transportation with some presence in Economy and Public Health, Parks, Arts & Recreation (**Appendix C**). Several policy statements directly support the objectives and strategies presented in this Plan and are shown in the “Program Challenges” section.

Notable language in the Comprehensive Plan can be considered for program mission and vision statements.

“Vision” statements:

*A healthy and diverse urban forest is protected, expanded, and valued for its contribution to the environment and community.* [Natural Environment Goal 3]

*As a result of cooperative effort, Olympia will enjoy a dense tree canopy that will beautify our downtown and neighborhoods, and improve the health, environmental quality and economy of our city.* [Our Vision for the Future: Our Natural Environment]

“Mission” statements:

*Continuing the City’s role as caretaker of Olympia’s urban forest, a diverse mix of native and ornamental trees that line our streets, shade our homes, and beautify our natural areas.* [Community Values & Vision, Key Challenge and a way to minimize negative environmental impacts]

*Natural resources and processes are conserved and protected by Olympia’s planning, regulatory, and management activities.* [Natural Environment Goal 1]

### ***Parks, Art & Recreation Plan***

In 2010, the City produced *Olympia Parks, Arts & Recreation Plan*, a management plan for a sustainable park, arts and recreation system that “meets the needs of the community.” As the Director states in the Introduction, “*As needs change, so does the role of the Parks, Arts & Recreation Department. Most notable is our increasing commitment to the environment...it is our job to preserve the urban forests, wetlands, and shorelines that we manage.*” Along with landscape trees and vegetation in neighborhood and community parks, the primary contributor in the parks system to

the urban forest is the open space. To further illustrate the value of this urban forest component, under the Natural Resource Management (p. 28):

*The Parks, Arts & Recreation Department is responsible for managing 963 acres of park land, which includes 15 miles of trails, 736 acres of open space and 23,466 lineal feet of waterfront. These properties are rich in wildlife and thousands of trees that [at least] absorb carbon dioxide, enhancing Olympia's air quality. We are charged with the dual tasks of preserving the delicate balance between active and passive recreation uses while being sensitive to the needs of the living infrastructure that makes our parks valued. OPARD will need to dedicate funds towards natural resource management to ensure that these natural areas will remain healthy. The Volunteers in Parks (VIP) program provides volunteer opportunities for environmental restoration projects such as tree plantings and invasive plant removal.*

According to an Open Space Demand Analysis in the Plan, the number one response to “What parks, arts or recreation experience do you value most?” was “nature.”

In addition to the trees and associated vegetation in the park system, the Department is also committed to maintain street trees in the Downtown and along arterials. According to the 2010 *Olympia Parks, Arts, and Recreation Plan*, they maintain 1,758 trees, which according to 2008 annual labor costs, required 14% of the department's total maintenance labor.

### ***Habitat and Stewardship Strategy***

The Water Resources Environmental Services Habitat Program is beginning to implement a City of Olympia 2013 *Habitat and Stewardship Strategy* with strategies based on land use and size classes, as well as stewardship tools of protection, technical assistance, incentives, partnerships, and education. These strategies include a vegetation management component that can be adopted by other entities such as Parks, Arts & Recreation with their open space management and private homeowners associations with their own stormwater facilities and/or tree tracts.

### **Projects & Programs**

Along with the existing management responsibilities and operations, the following projects and programs are currently in place:

- Hazard tree program – assessment and abatement of hazardous street trees and park/trail trees.
- Legion Way Tree Management Program – annual work for removal and replanting efforts
- Street Tree Planting Projects – Downtown and arterial street trees with WA DNR Restoration Grant as awarded.
- Tree City USA Program and annual Arbor Day celebration
- Park Stewardship Program in Parks, Art & Recreation – Volunteer in Parks

## Resource Management

During this strategic planning process, the Staff Team helped identify all the tasks and participating parties for each program component. The outcome was a spider web of mixed services and duties (Appendix D). The main management categories are Street Trees, ROW Trees, Park Trees, Private Trees, and Program Management. In order to better illustrate the linkages, while realizing gaps in resource to provide needed services, Table 1 was produced. It is important to note that this table is the first attempt to portray the interdepartmental relationships in regard to the various urban forest related activities. It requires continued discussion amongst the parties to confirm and clarify understandings and agreements around these tasks and exploration of how to address gaps and opportunities for efficiency.

## Staffing Resources

The urban forestry program, if one considers all aspects of the city program, has evolved to become quite complex and rather inefficient in depending on basically 1.0 FTE. Without some collaborated long-range visioning and resource sharing, the program cannot be either sustainable or effective. Currently, the status of staff resources by department is as follows:

- CP&D - 1.0 FTE Associate Planner/Urban Forestry Program, soon to be Certified Arborist
- Parks – 0.25 FTE Field Crew Leader, who is a Certified Arborist and soon to be Qualified Tree Risk Assessor performs park/trail tree risk and maintenance assessment, as needed; No dedicated staff for street tree management.
- Public Works – No dedicated staff for Transportation (ROW trees); Water Resource Habitat Program sufficiently staffed to manage the urban forest in Stormwater/Aquatic

In addition, contracts for:

- Legion Way annual tree management program
- Restitution cases with Legal
- Street and ROW tree risk assessments

## Other Recent Program Analysis

In 2014, a planning intern assessed the City's regulations and urban forestry program administration regarding trees in the right-of-way to identify challenges and make recommendations for strategies to improve the city program (Appendix E). The assessment is quite useful and generally reflects the challenges and issues revealed in this strategic planning process.

Additionally, the Parks and Recreation Advisory Committee (PRAC) formed a sub-committee in 2014 to better understand the current conditions of the Urban Forestry Program and formulate recommendations for how best to move the program forward. After conducting their research and holding several meetings to discuss their findings with staff and among one another, the group



submitted a “Final Report” (Appendix F) in March of 2014 to the City Council. Included in the report were the following recommendations:

1. Strengthen and improve our long-term planning for the urban forest.
2. Re-establish our landmark tree program to protect and showcase historic and spectacular trees in the city.
3. Develop neighborhood teams of volunteers to support the City’s urban forestry goals in a variety of ways.
4. Support tree planting and care on private property that contributes to the City’s forestry goals.
5. Support acquisition of green space to help ensure that the City can maintain a healthy tree canopy cover as future development occurs.

Along with these recommendations, they offered some possible strategies to consider. They also emphasized the need to clarify the departmental roles for managing trees and urban forestry.

## Strategic Planning Process

In order to begin the conversation about a sustainable urban forestry program for the City of Olympia, an “urban forest sustainability” matrix was used. The three categories - vegetative resource, resource management, and community framework, along with a performance indicator spectra and key objectives- are based on a sustainability model developed by Clark, et al (1997). The criteria in each category are comprehensive, demonstrating all the aspects of an urban forestry program to consider when setting goals and priorities.

The matrix was distributed to City staff and members of the PRAC subcommittee on Urban Forestry in December 2014 to introduce these concepts. The designated Staff Team participants that met with the consultant throughout the process were:

- Leonard Bauer, Community Planning Deputy Director
- Steve Friddle, Principal Planner
- Joe Roush, Public Works, Habitat Program Planning Supervisor
- Stacey Ray, Senior Planner – Long Range Planning
- Dave Hanna, Parks and Recreation Associate Director
- Michelle Bentley, Associate Planner/Urban Forestry Program

Representatives for entire departments, such as for Public Works Transportation and Stormwater and for Parks, were requested to distribute the matrix to appropriate department staff members for their feedback. Each recipient was instructed to indicate on each criterion spectrum where they see the City is *currently*, and which level is the *desired* performance benchmark to achieve for Olympia. They were also asked to consider which of the 24 key objectives would be potential top priorities to focus on short-term.



**TABLE 1: City’s Current Tasks & Duties**

	<b>Task</b>	<b>CP&amp;D</b>	<b>Public Works</b>	<b>Parks, Art &amp; Rec</b>	<b>Public</b>
<b>Street Trees</b>	<b>Downtown /Arterials</b>		<b>Transportation</b>		
	Customer service calls – problems, new trees, possible hazard	UF initial	Follow up	Follow up	
	Hazard tree assessment and removal	UF contracts assessment	Contract work	Hazard removals, has equipment	
	Legion Way street tree management	UF contracts annual assess	Contract work	Annual maintenance	
	Tree removal and maintenance	UF initial	Some contracting	Some work	
	Infrastructure damage	UF initial	Repair	support	
	Plantings projects	UF w/grant		Supervises WCC Crew	
	Emergency Response (Storm)		Primary responder	Some	
	Inspection and restitution matters	Legal/UF + contractor	Initial and/or Follow up	Initial and/or follow up	
	Street Project review and street tree plans for private development (commercial, residential, etc.)	UF			
<b>ROW Trees</b>	<b>Non-arterials, unopened, unimproved</b>		<b>Transportation</b>		
	Maintenance of adjacent to property				Implied
	Customer service calls – problems, new trees, possible hazard	UF initial + contractor		Assist if in area	
	Maintenance of unopened ROW				
	Hazard tree assessment & removal	UF contracts assessment	Mainly debris removal	Hazard removals, has equipment	
	Emergency Response		First responder	Assist if in area	
<b>Park Trees</b>	<b>Parks, open space, trails</b>		<b>WR - Habitat</b>		
	Tree maintenance			Crew	
	Hazard tree removal			Crew	
	Volunteer stewardship program Open space stewardship		Assisting w/ strategies	Management/ Admin	
	Emergency Response			Crew	

<b>Storm/Aquatic</b>	<b>Stormwater facilities</b>		<b>WR - Habitat</b>		
	Manage facilities and open space		WR - Habitat		
	Habitat restoration		WR - Habitat		
	Stewardship strategy implementation		WR - Habitat		
<b>Private Trees</b>	<b>On private property (residential, commercial/ industrial), tree tracts</b>				
	Plan review – tree code administration	UF			
	Tree Tract – inspection, maintenance	UF consult and review HOAs			Developer design, HOA maintains priv.
	Critical Areas – forestry review	UF			
	Conversion Option Harvest permits	UF review			
	Tree removal permits incl. vacant lots	UF			
	Inspect, enforcement and restitution	UF + contract			
	Customer service calls – problems, new trees, possible hazard/nuisance	UF			
	Technical Assistance and Incentives		WR – Habitat for stormwater		
<b>Program Management</b>					
	City-wide Management Plan				
	Code/Plan adoption incl. updates	Assign to UF			
	Review EDDS - projects	UF			
	Education and outreach – website, brochures/manual, volunteer recruit	Assign to UF			
	Tree resource – inventory, canopy				
	Grants application & proj. management	UF			
	Tree City USA annual submittal	UF			
	Arbor Day – annual celebration	Coordinate	Coordinate	Coordinate	Participate
	Landmark Tree Protection program				

The responses were combined onto one matrix template that was presented back to the Team on January 27, 2015. Each criterion in the three categories was discussed as well as possible varying desired levels (goals) and top objectives (priorities) for a strategic plan to focus on for short-term strategies. During these discussions, there was no emphasis on budget implications, required resources, or timeline for any item, as the intent of the process was to identify direction and immediate need.

With this valuable feedback from the matrix exercise, along with review and inquiry of existing policies, programs, and resources, the consultant identified five major challenges that need to be addressed for the success of Olympia's urban forestry program. Key objectives from the matrix and current city policy statements are linked with these challenges to help identify critical strategies that could be implemented based on the various budget scenarios.

The first draft of this Strategic Proposal was submitted to the City February 20, 2015 for review following a work session with the consultant on March 9th. The Team discussed the findings and recommendations, and the Proposal was finalized March 20<sup>th</sup>. The final report was presented to City Council on April 21, 2015.

### Matrix Survey Results

With the review of the matrix survey results received from both the City staff and the Urban Forestry sub-committee ([Appendix G](#)), the following are the suggested priorities from the matrix for Olympia's urban forestry program:

1. Compile a comprehensive inventory of the tree resource to direct its management
  - 1.1 Detailed understanding of the condition and risk potential of all publicly-managed trees.
  - 1.2 All publicly-owned, highly-managed trees are maintained to maximize current and future benefits.
2. Develop and implement a comprehensive urban forest management plan
  - 2.1 All publicly-owned trees are managed with safety as a high priority
  - 2.2 Urban forest renewal is ensured through a comprehensive tree establishment program driven by canopy cover, species diversity, and species distribution objectives.
3. Develop and maintain adequate funding to implement a city-wide urban forest management plan.
4. Employ and train adequate staff to implement the city-wide urban forest plan
  - 4.1 Ensure all city departments cooperate with common goals and objectives.
5. Protect the ecological structure and function of all publicly-owned natural areas and where appropriate, enhance.
  - 5.1 Preservation and enhancement of local natural biodiversity

6. Educate the general public to understand the role of the urban forest.
  - 6.1 At the neighborhood level, citizens understand and cooperate in urban forest management.

## Program Challenges

With the analysis of the identified priorities from the matrix and the current state of the city's program, there are four major challenges that must be addressed. Included in this section are the supporting key objectives from the matrix and city policies from the Comprehensive Plan.

### ***A. Increase the knowledge and understanding of Olympia's urban forest to direct its management.***

Currently the vegetative resource has not been captured or assessed comprehensively to know the existing condition or composition of the urban forest and what would be the suitable goals to be set for the community. Priorities of inventory and canopy cover assessment are first level strategies to meet this need.

#### Supporting Key Objectives (Matrix) and City Policies (Comp Plan)

- Achieve climate-appropriate degree of tree cover, community-wide [Policy PN3.2: *Measure the tree canopy and set a city-wide target for increasing it through tree preservation and planting.*]
  - High resolution assessments of the existing and potential canopy cover for the entire community. [Policy PL7.4: *Increase the area of urban green space and tree canopy with each neighborhood proportionate to increased population in that neighborhood.*]
- Establish a diverse public tree population suitable for the urban environment and adapted to the region.
  - Build a comprehensive inventory of the tree resource to direct its management [Policy PL22.2: *Identify, protect and maintain trees with historic significance or other value to the community or specific neighborhoods.*]
    - All publicly-owned, highly-managed trees are maintained to maximize current and future benefits. [Policy PT1.12: *Recognize the value of street trees for buffering pedestrians from motor vehicle traffic, to capture vehicle emissions, shade sidewalks, and protect asphalt from heat. Proper selection, care and placement are critical to long-term maintenance of trees along streets, street pavement and sidewalks.*]
    - Detailed understanding of the condition and risk potential of all publicly-managed trees. [Policy PN3.6: *Protect the natural structure and growing condition of trees to minimize necessary maintenance and preserve the long-term health and safety of the urban forest.*]
    - All publicly-owned trees are managed with safety as a high priority.

## **B. Develop and implement a comprehensive management plan**

A critical component that is lacking for Olympia's urban forestry program is a city-wide management plan. This guiding document would help formalize the coordination of policy, management, and outreach around the urban forest.

### Supporting Key Objectives (Matrix) and City Policies (Comp Plan)

- Develop and implement a comprehensive urban forest management plan [Policy PN3.1: *Manage the urban forest to professional standards, and establish program goals and practices based on the best scientific information available.*]
- Urban forest renewal is ensured through a comprehensive tree establishment program driven by canopy cover, species diversity, and species distribution objectives.
- Protect the ecological structure and function of all publicly-owned natural areas are protected, and where appropriate, enhanced. [Policy PN3.4: *Evaluate the environmental, ecologic, health, social and economic benefits of the urban forest.*]
  - Preservation and enhancement of local natural biodiversity [Policy PN11.5: *Foster a sense of place and community pride by carefully stewarding the trees, plants, and wildlife unique to Puget Sound.*]

## **C. Clarify roles and responsibilities throughout the City and identify resource gaps and program needs.**

When performing a quick gap analysis utilizing Table 1, it is apparent that Olympia is not able to meet the current needs of an urban forestry program. It would be beneficial to gain clarity on program needs by understanding the roles and responsible parties while identifying the priority tasks and immediate ways to meet the program needs. If the City cannot increase capacity to adequately address the needs, at least there is acknowledgement of what can and cannot be done without additional resources.

### Supporting Key Objective (Matrix)

- Ensure all city departments cooperate with common urban forest goals and objectives.

From the consultant's perspective, the workload to manage Olympia's urban forest has increased without sufficient resources committed to ensure sustainable management. As illustrated in Table 1, the 1.0 FTE position is expected to perform both front line duties (code enforcement, inspections, hazard tree assessment, ROW tree maintenance coordination, etc.) along with code and program development, administration, education, contract management, and long-range program planning. This wide array of duties requires an experienced and knowledgeable individual in both arboriculture and urban forestry. More importantly, the needed skills are one of a program manager and include project management, long-range planning, code development and adoption, customer service, communications, and program development.

### Supporting Key Objective (Matrix)

- Employ and train adequate staff to implement the city-wide urban forest program.

The other major resource to contend with is the current limited funding for the urban forestry program. Table 1 assists in the conversation around priority tasks and possibly explore existing budget and resources to sustain these items for the short-term.

### Supporting Key Objectives (Matrix) and City Policies (Comp Plan)

- Develop and maintain adequate funding to implement a city-wide urban forest management plan. [Policy PR6.2: *Establish a dedicated and sustainable funding source for maintaining City parks, landscape medians, roundabouts, entry corridors, street trees, City buildings, and other landscaped areas in street rights-of-way.*]

### ***D. Involve the citizens in resource management where appropriate.***

The intersection of the public with urban forestry is throughout the whole community, both on public and private property. Education and outreach are critical pieces for a successful and sustainable program, and therefore, appropriate resources must be committed to meet this challenge.

### Supporting Key Objectives (Matrix) and City policies (Comp Plan)

- The general public understands the role of the urban forest. [Policy PN11.4: *Provide education and support to local community groups and neighborhoods who want to monitor and care for their local park or natural area.*]
  - At the neighborhood level, citizens understand and cooperate in urban forest management. [Policy PN11.2: *Give all members of the community opportunities to experience, appreciate, and participate in volunteer stewardship of the natural environment.*]

## Recommended Strategies

Below are recommended strategies to address the challenges and needs identified in the previous section. These strategies are also captured in the Budget and Timeline Table ([Table 2](#)).

### ***A. Increase the knowledge and understanding of Olympia's urban forest to direct its management.***

As mentioned before, no measurable targets about canopy cover, composition or condition have been set for Olympia. Part of the reason is that the make-up of the urban forest is unknown without comprehensive inventory or mapping data.

Strategies:

- Map urban tree cover using aerial or satellite imagery (or LIDAR) and include in city-wide GIS. There may be existing mapping tools and resources available in-house to begin assessment and analysis of the tree canopy.
- Consider setting a relative canopy cover target, both city-wide and at neighborhood level to determine if appropriately meeting Land Use Policy 7.4.
- Develop a city tree inventory system:
  - Compile existing inventory data to identify gaps and needs.
  - Utilize existing Asset Management System to capture street tree data as maintenance (including removal and planting) is done; incorporate a risk rating attribute in the inventory system.
  - Consider purchasing tree inventory software that integrates with GIS. Data can be migrated into the city's Asset Management System or managed separately.
  - Apply for WADNR tree inventory grant (limited data collection to ~ 2,000 trees)
  - Consider a NeighborWoods program to have volunteer groups collect tree data.
  - Consider a student internship to perform the data collection
- Compare species and age distribution and suitability from inventory data to performance indicators and set goals.

### ***B. Develop and implement a comprehensive management plan.***

A city-wide urban forest management plan is the key document to connect city policies to program goals, priority actions, annual work plans with budget, responsible parties, and sufficient committed resources (funding and staffing) for implementation. The development of such a plan must be coordinated with the responsible City departments.

The task of developing such a plan is a major undertaking however there are several pieces in place that can be assembled to identify priority work to tackle with sufficient funding and support.



Strategies:

- Evaluate and prioritize existing plans and standards; consider minor updates as short-term tasks; refer to planning intern recommendations (Appendix E).
- Utilize this suggested working framework for a city-wide plan:
  1. Public Tree and Urban Forest Resource
    - a. Urban Tree Canopy Assessment (LIDAR)
    - b. Street tree inventory
    - c. Park tree resource analysis
  2. Street Tree Management Plan
    - a. Street Tree Ordinance (Code) and policy
    - b. Legion Way Tree Management Program
    - c. Hazard Tree Assessment and Removal Program
    - d. Street Tree Master Plan -
      - i. City Tree list and EDD Standards
    - e. Street tree planting projects
  3. Park Tree Management
    - a. Hazard tree assessment and removal
    - b. Stewardship Plan – planting, invasive removal
    - c. Park/Tree Stewardship volunteer program
    - d. Habitat Strategy
  4. Public Tree Management (ROW, Stormwater, public facilities)
    - a. Public Tree Ordinance
    - b. Habitat Stewardship Strategy
    - c. City Tree Nursery?
  5. Private Tree Management
    - a. Tree Protection and Replacement Ordinance
    - b. Landscaping Ordinance
    - c. Critical Areas Ordinance
    - d. Green Cove Basin Residential Low Impact Tree Standards?
    - e. Urban Forestry Manual
    - f. Tree Planting
  6. Urban Forestry Program
    - a. Strategic program planning and visioning (veg. resource goals)
    - b. Olympia Urban Forest Team (**OUFF!**)
    - c. Education/Outreach (internal/public)
    - d. Grant application and management
    - e. Landmark Tree Protection ordinance
    - f. NeighborWoods volunteer program
    - g. Emergency Response Plan (city-wide)

***C. Clarify roles and responsibilities throughout the City and identify resource gaps and program needs.***

A key to improve program implementation is coordination among the City departments. Furthermore, upon review of the existing staff resources and division of duties, a re-assessment of the division of labor across the board is advisable in order to effectively accomplish priority tasks.

Strategies:

- Refine the city-wide task and roles table (Table 1) to accurately reflect reality and identify resource and service gaps.
- Establish urban forestry priorities to meet program needs.
- Establish an interdepartmental Urban Forest Team to ensure all city departments cooperate with common urban forest goals and objectives.
  - Members are from CP&D, Parks, Arts & Recreation, Public Works – Transportation, and Public Works – Stormwater and Facilities.
  - The Team meets regularly for project coordination, information and resource-sharing, and ideally, to collectively develop the city-wide program goals, needed public tree code and policy, and work plans.
  - Suggested Team projects:
    - Assemble and review existing documents for a city-wide management plan; needs analysis and prioritize.
    - Inventory and canopy cover data and mapping projects
    - Craft Street Tree Ordinance (review 1999 version)
    - Update Street Tree Master Plan
    - Coordinate stewardship plans and programs
    - Update public tree code and standards – Public Tree Ordinance, EDDS, City Tree List, etc.
    - Emergency Response Plan
- Clarify role of the City’s urban forester position as a program manager. Primary duties would be:
  - UF Team Administrator – schedule, facilitate meetings, agenda, follow-up
  - Program development, administration and management
    - City-wide program visioning, planning, communication
    - Public education and outreach (Arbor Day, Tree City USA, educational materials, volunteer training, Landmark Tree Protection program)
    - Internal education/training
    - Urban forest code and plan review (including amendments)
    - Grant application and management
    - Program webpage management
    - Professional training & development (CTMI, Municipal specialist)

- If the position remains in CP&D, include Planning Arborist duties (with departmental assistance i.e., building, zoning inspectors)
  - Project permit forestry review (including PW plan review)
  - Tree removal permit inspections (on private property)
  - Code enforcement and development-related inspections
- Evaluate staff resources in other departments and coordinate priority workload through the UF Team.
  - Other departments should consider assuming the front line duties in maintaining the public trees (pruning, removal, replacement, watering, etc.), particularly the street trees.
  - Project/contract management – Legion Way tree management plan, hazard tree assessment and removal program (contract management and initial response), street tree planting projects, street tree inventory project, Street Tree Master Plan update, etc.
  - Volunteer program coordination (For example, Parks could recruit and coordinate volunteers under their Forest Stewards program while the Urban Forester provides training, and PW and Parks provide support, equipment, supplies.)
  - Revisit the City Tree Nursery program.

***D. Involve the citizens in resource management where appropriate.***

According to the Urban Forest sub-committee, it appears that a part of the community wants to participate in the management of the urban forest.

Strategies:

- Stewardship opportunities in the Parks, Arts & Recreation Department.
- Adoption of a Street Tree Ordinance that will clarify roles, including property owners' responsibilities, and develop public education materials to enable them to be good tree stewards (watering, selection, planting, hazard tree determination, pruning, etc.)
- Renew a NeighborWoods-type program as a volunteer training opportunity to help citizens become involved in managing the urban forest (parks, street trees). With the extensive planting efforts in the past, the focus of the program could be more on proper maintenance, mature tree care, basic hazard tree assessment, etc. This may include assistance in the City Tree Nursery program.
- Consider Coalition of Neighborhood Associations as partner (*Mission: to promote and enhance the quality of life in our neighborhoods by providing a forum to collaborate to achieve common goals.*)

**Table 2: Olympia Strategies with Budget Indicators & Timeline**

	<b>STRATEGY</b>	<b>First Action No New \$</b>	<b>Short Term (1-5 years)</b>	<b>Long Term (6-10 yrs)</b>	<b>Ongoing cost</b>
	<b><i>Challenge A: Increase knowledge and understanding of urban forest to direct its management.</i></b>				
1	Map Urban Tree Cover		\$		
2	Set Relative Canopy Cover Targets		\$		
3	Develop City Tree Inventory		\$\$		Ongoing
4	Set Performance Indicators and Goals		\$		
	<b><i>Challenge B: Develop &amp; implement a comprehensive management plan</i></b>				
5	Evaluate and Prioritize Existing Plans and Standards	√			
6	Develop Management Plan		\$\$		
	<b><i>Challenge C: Clarify roles &amp; responsibilities; identify gaps and needs</i></b>				
7	Define Tasks and Roles – Resource Gaps	√			
8	Establish Priorities	√			
9	Establish Urban Forestry Team	√			
10	Clarify Urban Forestry Manager Roles and Responsibilities	√			
11	Coordinate Workload Through Urban Forestry Team		\$\$		Ongoing
	<b><i>Challenge D: Involve the community in resource management where appropriate</i></b>				
12	Coordinate Volunteer Stewardship Through Parks Program		\$		Ongoing
13	Clarify Property Owners Role in Maintaining Street Trees		\$		
14	Renew NeighborWoods Program			\$\$	Ongoing
15	Partner with CNA	√			

**\$ = low cost or additional resource      \$\$ = higher cost; budget implication**

## Conclusion

The City of Olympia has a long and successful history in committing to take care of its urban forest. Several projects and programs were developed through the years and efforts to plan for and manage the valued resource are evident in policy and action. However, as a result of significant annual budget cuts, some critical elements are now missing and necessary tasks left undone due to limited resources disproportionate to program needs. Upon review of the situation in relation to city policies and components needed for a sustainable urban forestry program, four major challenges were identified:

- A. Increase the knowledge and understanding of Olympia's urban forest to direct its management.*
- B. Develop and implement a comprehensive management plan.*
- C. Clarify roles and responsibilities throughout the City and identify resource gaps and program needs.*
- D. Involve the citizens in resource management where appropriate.*

To address these challenges, a few initial strategies are identified that can be employed with little or no additional funding (outside of grants), but would require more effort and coordination amongst the city stewards of the urban forest in the Planning, Parks, and Public Works Departments. The most critical actions involve re-evaluating the duties of the City's Urban Forester and establishing an interdepartmental Urban Forest Team. This Team would be directed to creatively collaborate on developing the systems and tools, such as the initial stages of a comprehensive management plan, to better manage the urban forest community-wide. The process would be guided by the objectives identified by the Team from a sustainable urban forestry model utilized during the strategic planning process, along with current city plans and policies in place.

# APPENDIX A

## ***Urban Tree Benefits***

The benefits of urban trees, sometimes called “ecosystem services”, include environmental, economic, and social values. These are direct or indirect benefits provided by urban forests and individual trees that are often dismissed or underrepresented when valuing infrastructure because they don’t readily have an associated dollar value. Types of tree benefits are listed and briefly described below. While none alone are a “silver bullet”, when combined, trees and the collective urban forest are an impressive part of the solution for sustainability during urban planning and community development.

### **Environmental “Services” of Urban Trees:**

- 🌳 Air Quality – trees absorb, trap, offset and hold air pollutants such as particulate matter, ozone, sulfur dioxide, carbon monoxide, and CO<sub>2</sub>.
- 🌳 Greenhouse Gases (GHGs) and Carbon – trees store and sequester carbon through photosynthesis as well as offset carbon emissions at the plant due to energy conservation.
- 🌳 Water Quality and Stormwater Runoff Mitigation – trees infiltrate, evapo-transpire, and intercept stormwater while also increasing soil permeability and ground water recharge.
- 🌳 Erosion control – tree roots hold soil together along stream banks and steep slopes, stabilizing soils and reducing sedimentation issues in water bodies.
- 🌳 Urban heat island effect – trees cool the air directly through shade and indirectly through transpiration, reducing day and nighttime temperatures in cities.
- 🌳 Increased wildlife habitat – Trees create local ecosystems that provide habitat and food for birds and animals, increasing biodiversity in urban areas.

### **Economic “Services” of Urban Trees:**

- 🌳 Property value – numerous studies across the country show that residential homes with healthy trees add property value (up to 15%).
- 🌳 Energy conservation – trees lower energy demand through summer shade and winter wind block, additionally offsetting carbon emissions at the power plant.
- 🌳 Retail and Economic Development – trees attract businesses, tourists, and increase shopping.
- 🌳 Stormwater facilities – trees and forests reduce the need for or size of costly gray infrastructure.
- 🌳 Pavement – tree shade increases pavement life through temperature regulation (40-60% in some studies).

### **Social “Services” of Urban Trees:**

- 🌳 Public health – trees help reduce asthma rates and other respiratory illnesses.
- 🌳 Safe walking environments – trees reduce traffic speeds and soften harsh urban landscapes.
- 🌳 Crime and domestic violence – urban forests help build stronger communities. Places with nature and trees provide settings in which relationships grow stronger and violence is reduced.
- 🌳 Connection to nature – trees increase our connection to nature.
- 🌳 Noise pollution – Trees reduce noise pollution by acting as a buffer and absorbing up to 50% of urban noise (U.S. Department of Energy study).

From: Benefits of Trees and Urban Forests: A Research List

[http://www.actrees.org/files/Research/benefits\\_of\\_trees.pdf](http://www.actrees.org/files/Research/benefits_of_trees.pdf), Published August 2011

# CHAPTER TEN: URBAN FORESTRY

*NOTE: An asterisk (\*) denotes text material adopted by Thurston County as the joint plan with Olympia for the unincorporated part of the Olympia Growth Area.*

## BACKGROUND

There are cities whose reputation for attractiveness and livability rests heavily on the abundance of "stately trees" and "tree-lined streets." Such reputations do not come easily. They are born of appreciation, care, and effort over many years. Olympia can and should be such a community: a "City of Trees" with many large old trees bearing witness of the heritage we leave for our children.

Olympia is still a city of many grand trees, though their numbers are declining. The City lost approximately 430 acres of wooded areas between 1980 and 1990. To stem the loss of trees and to encourage replanting, this chapter of the Comprehensive Plan sets policies for the protection and replacement of our urban trees. One of the most urgent concerns is to encourage preservation and appreciation of the magnificent trees that still remain. In so doing, we hope to awaken our citizens to the many important contributions trees make to the city's quality of living. Trees contribute to cleaner air and water, flood and erosion control, summer shade, beauty in bud, bloom, leaf, and structure. Often overlooked or ignored is the contribution of trees to the serenity of natural silence because they absorb or mask noise from surrounding sources. And, somewhat less tangible, they give a sense of continuity with forms of life which began long before our own, and which will carry on long after our passing.

Urban areas--especially older, established ones--offer a rich assortment of trees not only in terms of size and maturity but also in terms of species. Along with trees native to the region, such areas abound in a wide variety of non-native trees, planted by immigrants bringing seeds and seedlings as living reminders of flora they had left-behind. Such trees, tenderly cared for, are now ours to enjoy in the magnificence of their maturity. As we enjoy them it is well to consider that they represent in part our forebears' tenuous hold on immortality. As we care for them and add to them, we shape an important part of our lives, and leave a legacy for our descendants.

## VISION

This is the vision of Olympia in our future:

*Trees of various species, ages, and sizes are growing in all parts of the city, contributing to a green and healthy community. Tall slender conifers accentuate and add beauty to the skyline. Graceful tree branches arch over busy thoroughfares and quiet residential streets. Wooded corridors weave through the city, providing for coexistence of wildlife habitat, play areas for children and recreational space for all citizens. These trees give character to the City's neighborhoods and shopping areas. Trees create streets friendly to walkers and a buffer between people and the hard edges of buildings and roads. People of all ages and walks of life are active in planting and caring for trees, demonstrating their faith in, and commitment to, posterity. Evergreen trees grow throughout the city, a visual reminder of the special character of the Pacific Northwest. Deciduous trees mark the seasons, connecting us visually with the passage of time. Shady areas in public places welcome citizens on a summer's day and provide shelter from the rain. These trees help ensure that this Olympia of the future will remain a most livable community.*

## THE VALUE OF AN URBAN FORESTRY PROGRAM

Trees are a valuable public resource, an important element of our daily lives. They enhance the quality of our working environment, and are an important backdrop to our activities with family and friends. They help to provide visual buffers and natural beauty, preserve the natural character of an area, and soften the impact of buildings and streets. They help reduce air pollution, noise and glare. They cool us in summer and insulate us in winter. They prevent soil erosion, and reduce siltation and flooding. They provide habitat for wildlife, and are a source of food and materials for human habitation as well.



The City of Olympia should preserve and enhance this natural resource, by encouraging the preservation and maintenance of trees on public and private lands, protecting trees from unnecessary removal or damage during development, and promoting the planting of new trees. The City should be a leader in urban forestry practices, including the development of state-of-the-art standards and criteria for design, planting and maintenance, for both public and private development projects.

It is also important to plant or preserve "the right tree in the right place." With respect to overhead utilities, for example, an appropriate tree for retention would be one which either has a very low potential for failure; or one which, if it were to fall or blow over, would not land on overhead utilities. An appropriate tree for planting near overhead utilities would be one which would not need excessive pruning to allow for the proper clearance of power and other utility lines. This can include short-growing trees that are not expected to grow tall enough to need clearance pruning. It can also include narrow columnar trees which, when planted to one side of the utility lines, will not need excessive clearance pruning.

When people appreciate the value and contribution of trees, they are more likely to protect them. The City should therefore emphasize public education regarding the benefits derived from trees, bringing the issues relating to trees to public attention, and reinforcing the value of trees to the public and to property owners. Ordinances will be needed to ensure appropriate and equitable management of the urban forest. Good planning and design, and the efforts of many people, will be needed to make the vision a reality. Recognition and encouragement should be given to residents, developers, and other citizens who enhance the urban forest. All these will be important in making Olympia truly a "City of Trees."

## GOALS AND POLICIES

**GOAL TREE1. To recognize and use trees in the city to help achieve our other land use goals.**

### POLICIES:

- TREE 1.1 Existing trees and new tree plantings should be a significant part of Olympia's visual identity, contributing to a special "sense of place" within the Pacific Northwest.
- TREE 1.2 Incompatible land uses and activities should be separated by preserving wooded areas or by planting

appropriate new trees to create a wooded buffer area.

- TREE 1.3 Residential neighborhoods should be buffered from the adverse effects of adjoining roadways and development by using stands of existing or planted trees.

**GOAL TREE2. To make Olympia a beautiful place to live in or visit by lining our High Density Corridors and our entry and exit corridors with trees.**

### POLICIES:

- TREE 2.1 Street trees should be a high priority for any public improvements within Olympia's High Density and Entry/Exit Corridors. Tree plantings in both public and private development should adhere to the design guidelines for those corridors.
- TREE 2.2 New tree plantings within the Corridors, including both street trees and trees on private development, should create a pattern of visual continuity and a sense of visual order, define a strong edge to the street corridor, and reinforce the sense of gateway or entrance to the City.

**GOAL TREE3. To bring a sense of natural beauty into the Downtown, our most urban area, by planting trees.**

### POLICIES:

- TREE 3.1 A coordinated pattern of street trees should be planted and maintained within the Downtown, with consideration given to impacts on views, utilities, and pedestrian/vehicular traffic.
- TREE 3.2 Tree plantings should be designed to lend variety and provide a sense of human scale to the street, enhancing the pedestrian environment.
- TREE 3.3 The few remaining large trees in downtown, such as those in Sylvester Park and along Legion Way, should be given special care and protection.
- TREE 3.4 Other tree plantings should adhere to the Downtown Area Design Guidelines.

TREE 3.5 The City should work with downtown groups on public/private cooperative efforts in tree planting and preservation.

TREE 3.6 In the vicinities of the Port and West Bay Drive, trees should be used to create a buffer between terminal or industrial operations and adjacent land uses (without blocking views).

**GOAL TREE4. To recognize the special requirements for preserving and enhancing the urban forest so that the human environment can exist in harmony with nature.**

**POLICIES:**

TREE 4.1 An urban forestry program should be established to provide education, encouragement and assistance for planting and preserving trees on private property and street frontages.

TREE 4.2 Public entities and private interests should work together on a city-wide beautification program.

TREE 4.3 The City should encourage design and installation using tree species appropriate to an urban setting. Tree placement, size and species selection should consider hardiness, traffic safety and sightline restrictions, pedestrian safety, potential for damage to property, impacts on existing and proposed utilities, and contributions to habitat. *[See also utility policies U 9.1 and U 9.2 in Chapter Five, Utilities and Public Services.]*

TREE 4.4 Placement of new overhead wires, sidewalks and underground utilities should be designed to minimize impact on existing or proposed trees, within public rights-of-way and on private development. *[See also utility policies U 9.1 and U 9.2 in Chapter Five, Utilities and Public Services.]*

TREE 4.5 All land development and site work should be conducted in a manner which preserves appropriate existing vegetation and trees.

TREE 4.6 Existing trees within a development project should be an important factor in its site planning, including determination of building and parking

locations and their specific configuration.

TREE 4.7 In order to preserve existing trees, buildings, parking and other development should minimize grading or terrain alteration around or within the dripline of such trees, using structural alternatives to minimize disturbance where needed.

TREE 4.8 Native tree species should be used to enhance the habitat as appropriate in new project landscaping.

TREE 4.9 Opening up views, or protecting views, should be one consideration in deciding whether to preserve or plant trees.

TREE 4.10 Sizes, densities and placement of trees should be commensurate with the scale of parking areas and should help reduce their visual impact.

TREE 4.11 Sizes, species and locations of trees should foster a sense of human scale and enhance the urban street environment.

TREE 4.12 Design of tree planting and preservation plans should reflect current professional standards.

TREE 4.13 On lands being converted from timber production, a variety of appropriate tree species in naturalistic settings should be preserved for use in future development of the property.

TREE 4.14 Planting and preservation designs for public and private development should consider the environmental benefits of trees, such as reduction of soil erosion and flooding, aquatic habitat protection, replenishment of oxygen, filtration of dust and air pollutants, and reduction in the rate of global warming. (Ord. #6140, 08/28/01)

**GOAL TREE5. To take advantage of the economic value contributed to the City by its trees.**

**POLICIES:**

TREE 5.1 Requirements for protecting existing trees and planting new ones should recognize the role trees play in enhancing the value of private property.

TREE 5.2 Trees should be an important part of public investments being made for

economic development and redevelopment activities.

TREE 5.3 Substantial tree plantings will contribute to Olympia's natural beauty and potential for tourism, and should form an important part of a network of scenic roadways and streets.

**GOAL TREE6\*. To manage the urban forest to maximize its contribution to wildlife habitat and recreational opportunities.**

**POLICIES:**

TREE 6.1 Projects should be designed so that stands of existing and planted trees on contiguous property are linked, wherever possible, to provide a continuity of habitat for the movement of wildlife throughout the city.

TREE 6.2\* Existing and planted trees should be a significant part of a system of pedestrian walkways, bike paths, urban trails and other open space corridors linking neighborhoods in Olympia and its Growth Area with each other and with nearby communities.

**GOAL TREE7. To manage the urban forest in a way that recognizes its effect on wise energy use.**

**POLICIES:**

TREE 7.1 Allowing for appropriate levels of solar access, wind protection, or shade to living spaces within a development and/or on adjacent property should be considered in decisions to preserve existing trees or plant new trees.

**GOAL TREE8. To maintain strong and healthy neighborhoods by planting and protecting trees.**

**POLICIES:**

TREE 8.1 Tree plantings within neighborhoods should be used to help foster a sense of neighborhood identity.

TREE 8.2 Existing trees with historic significance or other value to the whole community, as well as to specific neighborhoods, should be identified, protected and maintained.

**ELEMENTS OF AN URBAN**

**FORESTRY PROGRAM**

To implement Olympia's Urban Forestry Policies, an Urban Forestry Resource Management Program, incorporating elements such as the following<sup>1</sup>, may be developed and implemented by the City:

- An Urban Forestry Management Plan for Olympia, to include capital improvements, on-going maintenance, programs, and public events coordination, design review, development of design manuals and educational materials, and enforcement. Public and private utilities should be invited to participate in the development of the Urban Forestry Management Plan.
- A Landmark Tree Protection Ordinance to apply to trees which have been identified by the community as needing protection due to their special value in that they are irreplaceable by any means.
- A Tree Protection and Replacement Ordinance to apply to private and public development, restricting land clearing and requiring use of state of the art techniques in site design, grading design, tree protection, and mitigation of construction impacts.
- Modifications to the existing Landscape Ordinance to encompass new tree planting and tree replacement requirements which enhance habitat.
- A new Street Tree Master Plan for Olympia, to include major arterials, the downtown area and neighborhoods.
- Funding mechanisms to ensure full implementation of the Urban Forestry Management Plan.
- Professional staffing needed to implement the Management Plan, providing appropriate expertise in the fields of urban forestry, landscape architecture and arboriculture.

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<sup>1</sup>Although the ultimate names or organizational format may change, each of these elements may be included in the Urban Forestry Resource Management Program.

- Training programs for City staff and the development community to increase their effectiveness in planting and preserving trees in an urban setting.
- A public involvement program to encourage volunteer participation in planting and caring for trees.
- An Interdepartmental Coordination System, to include Parks, Public Works, Community Development and Planning, as well as all appropriate public and private utilities.
- Standards and Criteria Manuals for design, implementation and maintenance, incorporating best management practices (BMP's) from the fields of urban forestry, landscape architecture and arboriculture.
- Educational material for the public and for design professionals, such as a Citizens Street Tree Guide, a List of Recommended Species, Techniques for Tree Planting and Maintenance, and Plantings which Enhance Wildlife Habitat.

wp60.urban-fo.cle

# APPENDIX C

## Community Values & Vision

The Natural Environment element description “Focused on elements of the community's environment that were not built by people; it includes the City's shoreline goals and policies, and addresses means of reducing land use impacts on the natural environment - **such as urban forestry.**”

### What Olympia Values: Our Natural Environment

*Olympians value our role as stewards of the water, air, land, vegetation, and animals around us, and believe it is our responsibility to our children and grandchildren to restore, protect, and enhance the exceptional natural environment that surrounds us.*

### Our Vision for the Future:

*A beautiful, natural setting that is preserved and enhanced.*

Olympia's unique natural setting will continue to make Washington State's capital city great. By working closely with surrounding governments we can successfully preserve, protect and restore the natural heritage we share.

As a result of this cooperative effort, Olympia will enjoy a dense tree **canopy** that will beautify our downtown and neighborhoods, and improve the health, environmental quality and economy of our city.

### Key Challenge:

**A growing population** will put more pressure on these resources; **to remove trees**, to replace natural land surfaces with roads, buildings, and parking lots, and to encroach on environmentally sensitive areas

As Olympia continues to grow, it will be essential to reach a careful balance between planning for growth and maintaining our natural environment.

As a key land steward, the City's role is to encourage and regulate new development and land management practices in a way that minimizes negative environmental impacts by:

- Continuing the City's role as caretaker of Olympia's **urban forest**, a diverse mix of native and ornamental trees that line our streets, shade our homes, and beautify our natural areas.

**GN1: Natural resources and processes are conserved and protected by Olympia's planning, regulatory, and management activities.**

**GN3: A healthy and diverse urban forest is protected, expanded, and valued for its contribution to the environment and community.** 

**PN3.1** Manage the urban forest to professional standards, and establish program goals and practices based on the best scientific information available.


**PN3.2** Measure the **tree canopy** and set a city-wide target for increasing it through tree preservation and planting.

**PN3.3** Preserve existing mature, healthy, and safe trees first to meet site design requirements on new development, redevelopment and city improvement projects.

**PN3.4** Evaluate the environmental, ecologic, health, social and economic benefits of the urban forest.

**PN3.5** Provide new trees with the necessary soil, water, space, and nutrients to grow to maturity, and plant the right size tree where there are conflicts, such as overhead utility wires or sidewalks.

**PN3.6** Protect the natural structure and growing condition of trees to minimize necessary maintenance and preserve the long-term health and safety of the urban forest.

**GN11: All members of the community can experience the natural environment through meaningful volunteer experiences, active recreation, and interactive learning opportunities.** 

**PN11.1** Ensure that all members of the community have access to a nearby natural space that gives them opportunities to see, touch, and connect with the natural environment.

**PN11.2** Give all members of our community opportunities to experience, appreciate, and participate in volunteer stewardship of the natural environment.

**PN11.3** Provide environmental education programs, classes, and tours that teach outdoor recreation skills and foster an understanding and appreciation for the natural environment.

**PN11.4** Provide education and support to local community groups and neighborhoods who want to monitor and care for their local park or natural area.

**PN11.5** Foster a sense of place and community pride by carefully stewarding the trees, plants, and wildlife unique to Puget Sound.

## Land Use and Urban Design

### Urban Design

In particular, **trees** provide a valuable public resource, enhance the quality of the environment, provide visual buffers and natural beauty, preserve the natural character of an area, and soften the impact of buildings and streets. **Trees** and other landscaping help reduce air pollution, noise and glare, provide cooling in summer and wind protection in winter, and in some cases provide materials and food for wildlife and humans.

**GL3: Historic resources are a key element in the overall design and establishment of a sense of place in Olympia.** 

**PL3.2** Preserve those elements of the community which are unique to Olympia or which exemplify its heritage.


**PL3.7** Identify, protect and maintain historic **trees** and landscapes that have significance to the community or a neighborhood, including species or placement of **trees** and other plants.

**GL6: Community beauty is combined with unique neighborhood identities.**

**PL6.11** Plant and protect trees that contribute to Olympia's visual identity and sense of place.

**PL6.12** Separate incompatible land uses and activities with treed areas, including buffering residential areas from major streets and freeways.




**GL7: Urban green space is available to the public and located throughout the community and incorporates natural environments into the urban setting, which are easily accessible and viewable so that people can experience nature daily and nearby.** 

PL7.1 Provide urban green spaces in which to spend time. Include such elements as **trees**, garden spaces, variety of vegetation, water features, “green” walls and roofs, and seating.

PL7.4 Increase the area of urban green space and tree **canopy** within each neighborhood proportionate to increased population in that neighborhood.

## Urban Corridors

Portions of our major arterial streets are lined with low-density residential and office uses and typical strip-commercial development. Driveways to each business interrupt and slow the flow of vehicular and pedestrian traffic; the pattern of buildings behind parking lots makes pedestrian access difficult and uninviting; and the disjointed signage, landscaping, and building designs are often unattractive. As a result, these areas have limited appeal as places to live, work, and shop.

Over time, thoughtful planning will change some of these sections of major streets into 'urban corridors' that will have a mix of high-density uses, and where people will enjoy walking, shopping, working, and living. See [Transportation Corridors Map](#). Urban corridors like this are key to avoiding sprawl by providing an appealing housing alternative for people who want to live in an attractive, bustling urban environment close to transit, work and shopping. Redevelopment along these corridors will be focused in areas with the greatest potential for intensive, mixed-use development so that public and private investment will have maximum benefit. These corridors, first described in the [1993 Thurston Regional Transportation Plan](#) , also should include land uses that support the community, such as community centers, day care centers, social service offices, educational functions, parks, and other public open space.

In cooperation with Lacey, Tumwater and Thurston County, this Plan calls for gradually redeveloping these urban corridors (listed below) with:

- Compatible housing, such as apartments and townhouses, within or near commercial uses
- Excellent, frequent transit service
- Housing and employment densities sufficient to support frequent transit service
- Wide sidewalks with **trees**, attractive landscaping, and benches
- Multi-story buildings oriented toward the street rather than parking lots
- Parking spaces located behind the buildings or in structures

The land use designations along these streets vary (see [Future Land Use Map](#) at the end of this chapter), to promote a gradual increase in density and scale of uses that supports and remains in context with the adjacent neighborhoods. Slightly less intensive land uses at the fringes of these corridors will create a gradual transition from the activity of the major street edge to less-dense areas in adjacent neighborhoods. Similarly, areas furthest from the downtown core are expected to infill and redevelop with excellent support both for cars and for those who walk, bike and use public transit.

These outer reaches of the urban corridors will feature buildings and walkways with safe and easy pedestrian access. Walkways will link those on foot to bus stops, stores, neighboring residences, free-standing businesses on corners, and perimeter sidewalks.




"Gateways" to Olympia are to be located at the entry/exit points of landscaped "civic boulevards," at city boundaries, topographical changes, transition in land use, and shifts in transportation densities. Three of the eight gateways are located at the city limits and may include "Welcome to Olympia" signage. Gateways provide a grand entrance into the capital city of the State of Washington. Gateways are to be densely planted with **trees** and native understories; consideration will be given to the maximum landscaping and amenities feasible. Each civic boulevard will have a distinctive special environmental setting that is shaped by a public planning process that involves citizens, neighborhoods, and city officials. Civic boulevards are to be densely planted with **trees** and native understory; consideration will be given to the maximum landscaping and amenities feasible.

**GL13: Attractive urban corridors of mixed uses are established near specified major streets.**

PL13.3 Transform urban corridors into areas with excellent transit service; multi-story buildings fronting major streets with **trees**, benches and landscaping; parking lots behind buildings; and a compatible mix of residential uses close to commercial uses.

**GL18: Downtown designs express Olympia's heritage and future in a compact and pedestrian-oriented manner.**

PL18.7 Plant, maintain, and protect downtown **trees** for enjoyment and beauty; coordinate planting, with special attention to Legion Way and Sylvester Park and a buffer from the Port's marine terminal.

**GL22: **Trees** help maintain strong and healthy neighborhoods.** 

PL22.1 Use **trees** to foster a sense of neighborhood identity.

PL22.2 Identify, protect and maintain **trees** with historic significance or other value to the community or specific neighborhoods.

PL22.3 Encourage the use of appropriate fruit and nut **trees** to increase local food self-sufficiency.

## Economy

**GE3: A vital downtown provides a strong center for Olympia's economy.**

PE3.4 Protect existing **trees** and plant new ones as a way to help encourage private economic development and redevelopment activities.

## Transportation

### Complete Streets

Streets with wide sidewalks and **trees** invite us to walk to the store or a friend's house. Bike lanes make biking to work more appealing and convenient. The way we design our streets will create new opportunities for how we travel within our city, and how we interact with one another.

**GT1: All streets are safe and inviting for pedestrians and bicyclists. Streets are designed to be human scale, but also can accommodate motor vehicles, and encourage safe driving.**

PT1.4 Reduce the impact of traffic on pedestrians by creating buffers such as on-street parking, **trees**, planter strips, wide sidewalks, and creating interest along the street with amenities and building design.

PT1.5 Create attractive streetscapes with sidewalks, **trees**, planter strips, and pedestrian-scale streetlights. In denser areas, provide benches, building awnings, and attractive and functional transit stops and shelters.

PT1.12 Recognize the value of street **trees** for buffering pedestrians from motor vehicle traffic, to capture vehicle emissions, shade sidewalks, and protect asphalt from heat. Proper selection, care and placement are critical to long-term maintenance of **trees** along streets, street pavement and sidewalks.

### Walking

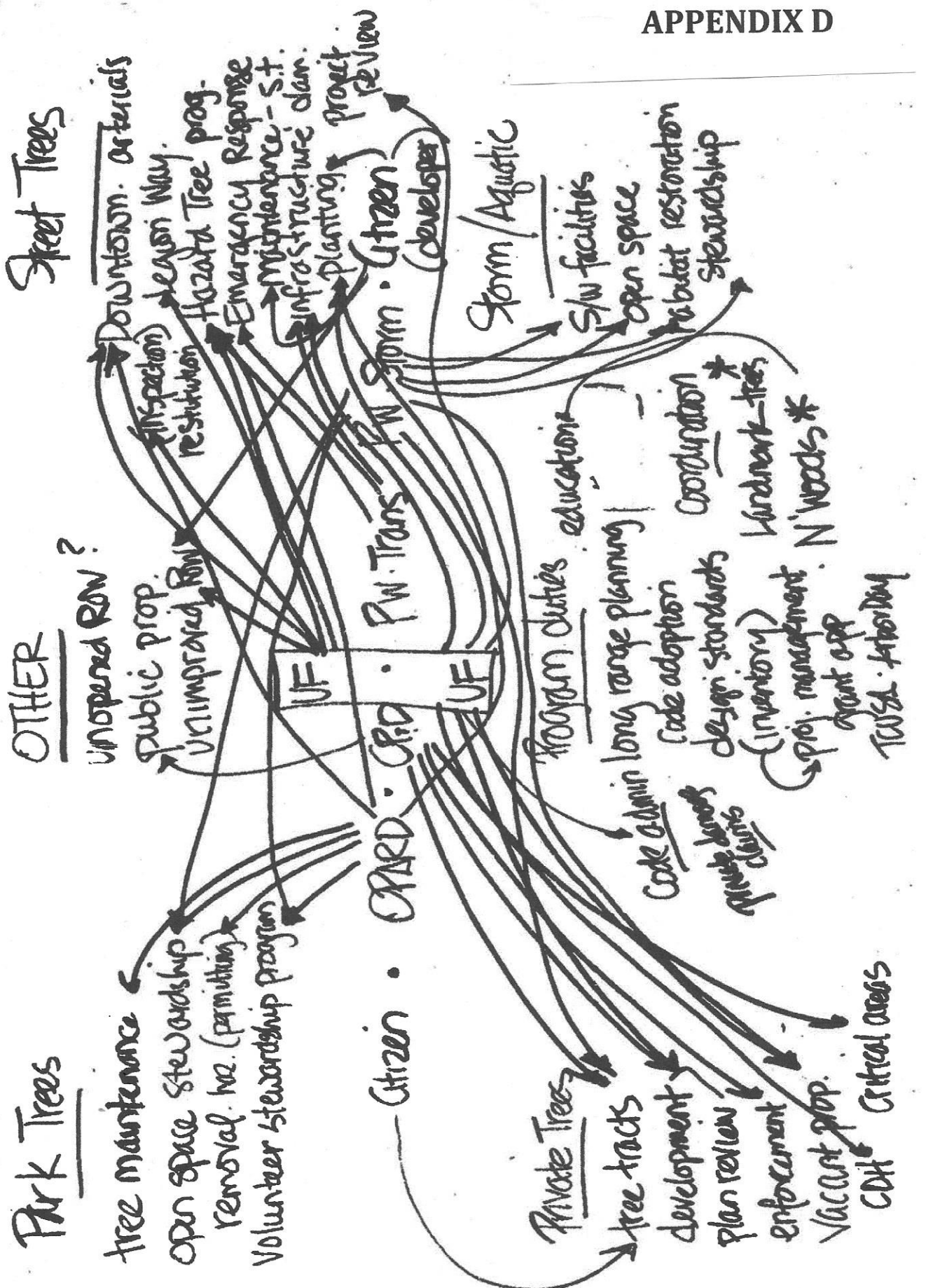
This plan aims to make streets safe and inviting for walking for more people. The City can accomplish this over time by designing streets that are "human scale," places where people can enjoy walking, sitting and interacting with others. Building and retrofitting streets by planting **trees**, creating landscaped strips and installing decorative lighting can encourage people to walk and create an active street life.

When streets are designed for people, rather than dominated by cars, neighbors interact, businesses thrive, and people feel more engaged in their community. All of this can stimulate activity, attract development, and improve the quality of life, even as the population increases.

## Public Health, Parks, Arts and Recreation

**GR6: Olympia's parks, arts and recreation system investments are protected.**

PR6.2 Establish a dedicated and sustainable funding source for maintaining City parks, landscape medians, roundabouts, entry corridors, street **trees**, City buildings, and other landscaped areas in street rights-of-way.



OTHER

Park Trees

Street Trees

unopened ROW?  
 Public Prop.  
 unimproved ROW  
 Downtown - arterials  
 Hazard Tree prog.  
 Emergency Response  
 Maintenance - S.T.  
 Infrastructure plan.  
 planting project  
 review

UF  
 Citizen • OPARD • CRID  
 P.W. Trans • P.W. Storm • Citizen (developer)

Storm/Aquatic  
 S/W facilities  
 open space  
 habitat restoration  
 stewardship  
 Program duties: education  
 Code admin long range planning  
 code adoption  
 design standards  
 inventory  
 proj. management  
 grant app  
 TCUSA - ArborDay  
 Code admin's  
 quiet claims  
 Coordination  
 Hardwork - trees  
 N' Woods \*  
 CDH Critical areas

Private Trees

tree tracks  
 development  
 plan review  
 enforcement  
 vacant prop.  
 CDH Critical areas

## APPENDIX E

### Olympia Urban Forestry Program Review, Findings, Recommendations By Planning Intern, Kate Haeefele August 14, 2014

#### **PROJECT GOALS**

Assess the City of Olympia regulations and urban forestry program administration regarding trees in the right of way.

- What are the existing conditions?
- What are the challenges?

Research and summarize options for meeting these challenges.

- What have other cities done to solve these challenges? What model plans and ordinances are available?
- Make recommendations for strategies to improve. Prioritize strategies for various funding scenarios.

#### **EXISTING CONDITIONS**

**1) The City has easements on the rights-of-way. The City can use the ROW for the public good (roads, utilities etc.) and the public can travel over the land, but it belongs to the adjacent property owner.**

[OMC 18.02.180](#) defines easement as: “A right of one owner of land to make lawful and beneficial use of the land of another, created by an express or implied agreement,” and right of way as: “The right of one to use or pass over the property of another.”

**2) The City transfers the responsibility for tree maintenance and hazard mitigation to the adjacent property owner.**

[EDD 4B.020](#), Table 2, Footnote 4: “Unless otherwise agreed upon by the City of Olympia, maintenance of [street trees](#), turf or other landscaping within the [planting strips](#) is the responsibility of the adjacent landowner.”

**3) It is the responsibility of the City to maintain the safety of the ROW.**

When the City becomes aware of a risk/potential risk, it becomes liable for any consequences that occur before it takes action to mitigate. Therefore it is in the City’s interest to respond to known hazard trees with pruning or removal. In practice, the City will sometimes ask the adjacent property owner to mitigate hazards. The City will act on hazards if the property owner will not, or if the hazard is imminent.

**4) The City assumes responsibility for street tree maintenance downtown, the major arterials and median strips.**

The Master Street Plan, 2001-2011 (pages 5-10) lists the specific areas the City is responsible for maintaining. The 1998 Draft Street Tree Ordinance calls these areas Streetscape Enhancement Areas (page 2).

**5) Responsibility for ROW tree-related work spread across 3 City departments.**

The Master Street Tree Plan (page 16) specifies the responsibilities for each department

- Community Planning and Development

## APPENDIX E

Urban Forester – Administration of Tree Protection and Replacement ordinance; streetscape project management; hazard tree evaluation and abatement; education and public relations

- Parks, Arts and Recreation

Maintenance II Worker/Arborist – Street tree maintenance in Streetscape Enhancement Areas

- Public Works

Street section – emergency cleanup after storms

### **6) The City grants utility companies (ex. PSE) the right to construct and maintain facilities in the rights of way, including trimming trees to preserve line clearances.**

PSE is required to notify the Urban Forester about pruning activities and adhere to International Society of Arboriculture pruning standards. PSE spends lots of money topping street trees, and it is in their best interest to remove existing tall trees under power lines and replace with appropriate species.

### **7) Street trees can be problematic for sidewalks.**

Tree roots can buckle sidewalks, causing a hazard and complicating the division of responsibility and risk in the ROW. Sidewalks are technically the adjacent property owner's responsibility to maintain.

## **CHALLENGES**

### **1) Lack of staff/resources**

The Urban Forester position is currently half-time, which only allows time for reacting to problem situations and keep up with current development. Staff cannot monitor known hazards, enforce code, secure program funds, oversee public information and volunteer recruitment campaigns, or plan program innovations.

### **2) Lack of functioning hazard tree program**

There is not a functioning hazard tree program, which exposes the City to excessive liability. Staff are not able to be proactive by mitigating imminent hazards in a timely fashion, regularly monitoring known problem trees, and inventorying the urban forest to identify others. Asking property owners to mitigate hazard trees can be ineffective, as many owners cannot afford to have the work done, or may refuse to comply. Piecemeal communication with owners can cause conflict. In general there is an inefficient and inconsistent response to tree hazards.

### **3) Lack of clarity in the regulations**

The regulations about trees in the right of way are difficult to understand and interpret, and therefore, enforce. Critically, the responsibilities of the City and the adjacent property owner for tree maintenance and hazard abatement are ambiguous. This exposes the City to excessive liability.

Unclear regulations also result in a loss of institutional knowledge and case-by-case approach to judgments about ROW trees. This is an inefficient use of public resources, and makes enforcement difficult and inconsistent, and can cause conflict in communication with property owners.

## APPENDIX E

List of vague or out of date regulations:

- A) Responsibilities of City and property owners not specified in tree ordinances, and are only stated in an obscure part of the EDD (EDD 4B.020, Table 2, Footnote 4)
- B) EDD 4B.020, Table 2, Footnote 4 states that it is the property owners responsibility to maintain street trees, but does not explicitly state hazard mitigation, but that is what the City has been sometimes asking property owners to do
- C) The Master Street Tree Plan implies that there are specifies areas (downtown, arterials etc.) where the City is responsible for maintaining street trees, but it is not explicitly stated in the MSTP or anywhere else, and there are no clear maps of these areas
- D) Regulations do not specify whether property owners have the right to maintain trees in Streetscape Improvement Areas to City standards, or whether they have no rights at all to work on trees
- E) No definition of which actions constitute maintenance (property owners responsibility) vs. hazard abatement (City's responsibility)
- F) Tree planting process is not specified. It is unclear who has the right to plant a tree, which type of tree, and in what way
- G) Nothing written in any tree regulation about utility pruning
- H) "Public trees" not defined in 16.60 or 12.44
- I) "Fee-simple" not defined in 16.58
- J) Definition of "street tree" unclear/missing
  - o 16.58.020: "Street Tree. Trees growing within the City's rights-of-way."
  - o 16.60.020: "'Street trees' is trees located within the street rights-of-way, adjacent to public or private streets, including undeveloped areas."
  - o 12.44: no definition
- K) 16.60.170 and 16.60.180(Specimen Tree Evaluation and Pruning Standards for Public Trees) refer to public trees, but are in the Tree Protection and Replacement chapter
- L) OMC 12.44.070 "Trimming or pruning of trees" contains out-of-date regulations and is different than OMC 16.60.180 "Tree pruning standards for Public Trees"
- M) Confusion about what is a street tree, which trees are the City's responsibility, and which trees are public property. According to 12.44, only trees that have been planted are street trees, and that they are public property. According to 16.58, any tree in the ROW is a street tree, but only ones on fee-simple land are public. 16.60 includes undeveloped land, which creates confusion about whether trees in unopened ROWs are street trees. Volunteer trees are another grey area. Since they were not intentionally planted, are they street trees?
  - o 12.44.060 states that trees "All ornamental, shade or other trees which have been planted and are now situated in the streets or parking strips within the city are declared to be public property and subject to the control of the city."
  - o 16.58.020 states that a "Street Tree" is "growing in the City's rights-of-way," and a "Public Tree" is "growing on property owned fee-simple by the City of Olympia."

## APPENDIX E

- 16.60.020 states that “street trees” are “located with the street rights-of-way, adjacent to public or private streets, including undeveloped areas.”

### **4) Lack of clarity about which City departments are responsible for trees**

The Master Street Tree Plan (page 16) specifies the responsibilities for CPD, PARD and Public Works for street trees, but it is years out of date. The current arrangement appears to contribute to conflict between the departments and is impacting the City’s ability to perform tree work in a timely and efficient manner.

### **5) Citizens/property owners don’t understand their responsibility for street trees**

The City has not communicated with the public. There is a large misconception that the rights of way are public and therefore street trees are the City’s responsibility to maintain. Piecemeal response to calls about tree ownership is inefficient, and the lack of prior knowledge and information can cause conflict in communicating with property owners.

- N) City of Olympia Urban Forestry website is very out of date, past Urban Forester is named as contact
- O) Lack of public education about right of way easements, trees, views and property
- P) Lack of outreach to commercial tree and landscape services about right of way easements, trees, views and property

### **6) Lack of current guiding documents about street trees**

The Master Street Tree plan is out of date. The Urban Forestry Manual lacks standards for proper tree planting and pruning practices. This leaves staff without up to date guidance for program operations

### **7) Tree management practices called for in ordinances are not up to current best management practices**

Unclear definitions and out of date recommendations make code enforcement difficult and inefficient

- Q) 16.60.180 pruning standard unclear/out of date
- R) Definition of “hazard tree” in 16.58.020 and 16.60.020 is one with “a combination of structural defect and/or disease (which makes it subject to a high probability of failure) and a proximity to persons or property which makes it an imminent threat”. “High probability of failure” is vague

### **8) Forms are difficult to understand and interpret**

The “Builders Guide to Olympia’s Tree Protection Ordinance,” and especially the “Homeowners Guide to Olympia’s Tree Protection Ordinance” and the information on the City website are confusing. They do not clearly define “tree units”. Helping users to understand and use forms is an inefficient use of staff resources and unclear forms contribute to poor public image and customer dissatisfaction



## APPENDIX E

### RECOMMENDATIONS

#### 1) **Commit adequate resources for a full time urban forester and hazard tree program**

Restore Urban Forester to a full time position. A full time Urban Forester will be able to track and monitor known hazards, enforce code, secure program funds, oversee public information and volunteer recruitment campaigns, participate in the planning process, design program innovations, and other activities necessary for successful urban forestry program.

#### 2) **Design and implement hazard tree monitoring program**

A hazard tree program would facilitate timely and consistent response to hazards, reducing the City's liability and potentially reducing insurance costs. It would also give structure to the City's response to hazard trees, minimizing conflict and improving customer service and public image. Urban Forestry staff should work with City risk managers to design the program. (See "The Natural Tree Hazard Management Strategy" from the City of Surrey and "The Urban Tree Risk Management Guide" from USFS ).

A hazard tree program should at minimum:

- facilitate a quick response to imminent hazards
- maintain a database of known hazard trees
- schedule regular monitoring of known hazard trees

A model program would also:

- seek to reduce the creation of hazard conditions through maintenance and design standards
- inventory the urban forest to identify previously unknown hazards

#### 3) **Consolidate and clarify tree ordinances**

Clear regulations would simplify interpretation and enforcement, facilitating efficient use of resources and easier public interactions. First priority in a rewrite would be to reduce the City's liability by explicitly stating the responsibilities of the City, the adjacent property owner and utilities and clearly and consistently defining terms. Rewritten regulations would also provide structure for decision making, clarify relationships between City departments and confer responsibility and authority to the Urban Forester and other staff. (See "Guidelines for Developing and Evaluating Tree Ordinances," from Phytosphere Research)

Consolidate ordinances about trees into either:

- One Chapter under Title 12 that combines 16.58 and 12.44, and provides a reference to 16.60 in a section on street tree protection (in this case, 16.60 should also be updated to clarify definitions) -OR-
- A separate Title devoted exclusively to trees that combines 12.44, 16.58 and 16.60

## APPENDIX E

One ordinance is straightforward and easy for developers, citizens and staff to understand, and makes it less likely for sections to be overlooked in the updating process and for inconsistencies to develop. It also means that tree ordinances may be unnoticed by developers and property owners if they are not referenced in related sections of the code.

The consolidated ordinance should (in order of priority):

- A) Provide separate sections explicitly stating the responsibilities of:
  - o The City (hazards and maintenance in the Streetscape Improvement Areas)
  - o Property owners (regular maintenance)
  - o Utilities (maintaining line clearances)(See Moscow, ID municipal code, Title 5 Sec. 8-9, and Vancouver, WA municipal code, Secs. 12.04.060 and 12.04.070)
- B) Define street tree consistently in all regulations, explicitly include trees in all unopened rights of way, include all trees in the ROW regardless of how and by whom they were planted (this will include volunteer trees, which will make hazardous volunteer trees in the ROW the City's responsibility. The clarity that assuming this responsibility provides outweighs this extra responsibility)
- C) Explicitly state the responsibilities and authority of the Urban Forester
- D) Explicitly state the responsibilities of the City departments involved in tree related work
- E) Clearly define (and ideally map) the Streetscape Enhancement Areas
- F) Define exactly which activities property owners have the right to do in Streetscape Improvement Areas
- G) Clarify the all definitions listed in Item 1 in the Challenges section above
- H) Reference best management practices for pruning, planting and maintenance in the updated Urban Forestry Manual
- I) Explicitly state that the City does not prune or remove trees in critical areas or the rights of way to improve views
- J) Clarify the distinction between public (park) trees and street trees
- K) Explicitly forbid topping and use of spurs for pruning in all street and public trees, with exceptions at the discretion of the Urban Forester
- L) Staff should consider adding to the ordinance:
  - o Requirement for property owner to show through inspection by a qualified professional that a tree is causing property damage in order to claim it is a nuisance. This is to make the property owner responsible for proving a nuisance situation, reducing the workload of urban forestry staff
  - o A City-wide licensing and certification program required for all for-fee tree services, and a permitting process for fee and non-fee tree work to control topping and other damaging practices (See Moscow, ID municipal code Sec. 8-7)
  - o A no-fee permit requirement for planting trees in the right of way, to control species selection and provide an opportunity to educate about proper tree selection and planting practices

## APPENDIX E

### 4) Clarify the roles and responsibilities between CPD, PARD and Public Works

Clearly defined roles would facilitate efficient resource use, timely response to tree work needs, and easier coordination and communication between departments (See “Protecting and Developing the Urban Tree Canopy” from the United States Council of Mayors for survey results about other cities organization of urban forest work)

- A) Develop an Urban Forestry Strategic Plan that includes new organizational strategies for the three departments
- B) In the street tree ordinance or some other appropriate official document, explicitly state the roles and responsibilities of the Urban Forester and PARD and Public Works staff for tree-related work
- C) Consider a tree advisory board with members from all three departments and interested citizens. Advisory boards can help integrate and advocate for urban forestry goals across departments, and encourage public interest and participation in urban forestry. However, they can be costly. Investigating the cost benefit analysis of such a board is a necessary first step.

### 5) Create a public education program about City regulations and property owners' responsibilities for street trees

Public education would help address misconceptions about responsibility for street trees. Prior notification of property owner responsibility could help limit the City's liability and reduce conflict in communicating with property owners.

- A) Update the City's Urban Forestry website with information about ROW easements, property owner responsibilities for street tree maintenance and current staffing contacts
- B) Create a brochure/mailer about easements and property owner maintenance responsibilities for distribution at City Hall and an annual mailing. Include anti-tree topping information and an explanation of regulations regarding removal and pruning in critical areas and the ROW regarding views and any other topics that are frequently problematic for staff
- C) Develop educational strategies for commercial tree and landscape services about property owner responsibilities for trees in the right of way, so that they can educate their clients and perform work according to code

### 6) Perform a street tree inventory

A current inventory would provide data for the Urban Forest Management Plan and the hazard tree program

### 7) Develop an Urban Forest Management Plan

An up to date plan would help ensure the long term health and stability of the urban forest, and provide structure for decision making and program evaluation. The process of writing the plan would also provide an opportunity for goal setting, program assessment, and public involvement and education

- A) Set City-wide and sub-area canopy cover, species diversity and green space goals

## APPENDIX E

- B) Consider including a preference for evergreens for their benefits to stormwater management, and represent them in species selection lists accordingly
- C) Develop design guidelines for development and planting plans for infill areas
- D) The Hazard Tree Program may be a part of this Plan

In the Urban Forest Management Plan, or a chapter of the Downtown Plan

- E) Develop maintenance schedule and planting plan for street trees in the Streetscape Enhancement Areas

### 8) Update the Urban Forestry Manual

There may be overlap in the requirements set by the Manual and the Management Plan. The Management Plan is a broad document which sets goals and strategies for the entire urban forest across scales, while the Manual is designed to guide current development at the site scale. An up to date manual would provide structure for code enforcement, and ensure that site design and planning support the overall canopy cover and tree protection goals set in the Management Plan. Where appropriate, specific guidelines in the Plan should be written into the Manual and vice versa.

- A) Specify ANSI A300 Standards, Part 1 for pruning and Part 6 for planting and transplanting. This is the industry standard for tree work and will continue to be updated to reflect the best available science
- B) Define “hazard tree” using the Tree Risk Assessment Qualification. This will add a barrier to hiring employees and consultants, but TRAQ is the industry standard and is very rigorous. Adopting the standard may limit liability and will help push the green industry forward in its use of performance measures
- C) Consider minimum soil volume and quality requirements in design and planting guidelines

### 9) Look for ways to create or strengthen relationships with partner organizations and leverage resources to make the most of the program with what’s available

- A) Consider partnering with Evergreen/SPSCC faculty
  - o Natural resources/science students for internships
  - o Arts students for an arts-based public information campaign about property owner responsibilities and proper tree care
  - o GIS students for mapping projects
  - o Horticulture students for young tree maintenance work
- B) Locate organizations with volunteers and interest in tree planting and *especially* maintenance
  - o Consider a stewardship mapping project to locate organizations and organize outreach (See “Stewardship Mapping: Understanding the Groups That Work for Urban Greening” from Arborist News)
- C) Reach out to local tree care companies for pro-bono citizen training in exchange for good press –tree pruning workshop for neighborhood volunteers to prune young street trees

## APPENDIX E

- D) Consider other outreach strategies to build citizen interest in urban forestry and create an energetic volunteer base

### **10) Rewrite tree protection forms and website materials**

Clearly written forms will reduce staff time spent answering questions and helping customers.

- A) Explicitly define and explain “tree units” at the top of the form in everyday language

### **11) Perform canopy cover, ecosystem services and urban forest appraisal survey(ies)**

Assessment of the services and economic value of the urban forest could be used to encourage interest in urban forestry from the public and decision makers. It could also be used to identify areas for improvement, set goals and evaluate the performance of the urban forest and the program.

## ***FUNDING SCENARIOS***

Without further knowledge of City structure and operations, recommendations for improving the program at current levels of funding cannot be addressed here. Based on the research and interviews done in the course of writing this document, these changes are recommended to improve the program at three potential funding levels. Priority is placed on risk management.

### **1) Minimum program operations (City assumes responsibility for only imminent hazards)**

- A) Restore Urban Forester to full time
- B) Develop/implement database and monitoring program for known hazard trees
- C) Develop/implement plan to mitigate imminent hazards
- D) Communicate responsibility to property owner to mitigate other hazard trees
- E) Develop/implement Urban Forestry Strategic Plan to provide organizational strategies for the departments involved in tree work

### **2) Program adhering to current best management practices (City assumes responsibility for all hazards)**

- A) Restore Urban Forester to full time
- B) Develop/implement database and monitoring program for known hazard trees
- C) Develop/implement plan to mitigate hazards, prioritizing to minimize risk
- D) Develop/implement Urban Forestry Strategic Plan to provide organizational strategies for the departments involved in tree work
- E) Perform street tree and hazard tree inventory
- F) Develop/implement Urban Forestry Management Plan
- G) Update Urban Forestry Manual
- H) Clarify and consolidate ordinances

### **3) Model program operations**

All in Item 2 above, and:

## APPENDIX E

- I) Identify volunteer organizations and develop programs to utilize volunteer labor for tree planting and maintenance. Consider a stewardship mapping project.
- J) Perform City-wide canopy inventory and ecosystem services survey using i-Tree and GIS
- K) Update tree density requirements for development according to percent canopy cover rather than trunk diameter at breast height
- L) Create a tree advisory board to advocate for urban forestry goals across City departments and encourage public interest and participation in urban forestry; include staff from all three departments involved in tree work, and interested citizens
- M) Partner with local educational institutions to recruit interns and mentor students in urban forestry
- N) Require a City-wide licensing and certification program required for all for-fee tree services, and a permitting process for fee and non-fee tree work
- O) Require no-fee permit for tree planting in the right of way

### **RESOURCES**

#### **Planning and Ordinance Guides**

Swiecki, T. J., Bernhardt, E. A. Guidelines for Developing and Evaluating Tree Ordinances. Phytosphere Research, Vacaville, CA. <http://phytosphere.com/treeord/index.htm>.

Saved on calvin: [TreeOrdinanceGuidelines.pdf](#)

(Step by step guide for writing and evaluating ordinances, with lots of examples from other cities)

Schwab, James C. Planning the Urban Forest: Ecology, Economy and Community Development. American Planning Association. Planning Advisory Service Report Number 555.

[http://na.fs.fed.us/urban/planning\\_uf\\_apa.pdf](http://na.fs.fed.us/urban/planning_uf_apa.pdf)

Saved on calvin: [APA Planning Urban Forest.pdf](#)

(Thorough planning guide with discussion of integrating green infrastructure into planning)

Pokorny, Jill D. Urban Tree Risk Management: A Community Guide to Program Design and Implementation. USDA Forest Service, Northeastern Area.

[http://www.na.fs.fed.us/spfo/pubs/uf/utrm/urban\\_tree\\_risk\\_mgmt.pdf](http://www.na.fs.fed.us/spfo/pubs/uf/utrm/urban_tree_risk_mgmt.pdf)

Saved on calvin: [Ordinance and Planning Guides\USFS Urban Tree Risk Mgmt.pdf](#)

(Discussion of program design and implementation looks especially useful)

Protecting and Developing the Urban Tree Canopy. The United States Council of Mayors.

Saved on calvin: [Ordinance and Planning Guides\Mayors Council Planning UF.pdf](#)

(Includes surveys of mayors across the country about the structure of their programs)

Wolf, K.L. 2013. Stewardship Mapping: Understanding the Groups That Work for Urban Greening. Arborist News 22, 6: 54-58.

## APPENDIX E

(Discusses strategies for using GIS to identify and map potential volunteer organizations for stewardship of the urban forest)

### Example Plans and Ordinances

Gurney, S., Ward, G., Wegner, D. Natural Tree Hazard Management Strategy. City of Surrey, Parks, Recreation and Culture. <http://www.surrey.ca/files/TreeHazardStrategy.pdf>

Saved on calvin: [Other Cities Ordinances and Plans\TreeHazardStrategy\\_Surrey.pdf](#)

(Outlines risk management strategy used by Surrey, BC, Canada)

Moscow Municipal Code Title 5, Chapter 8

Saved on calvin: [Other Cities Ordinances and Plans\Moscow\\_T05,C08.pdf](#)

Vancouver Municipal Code Chapter 12.04

Saved on calvin: [Other Cities Ordinances and Plans\Vancouver\\_012.004.pdf](#)

## APPENDIX F

### **Parks and Recreation Advisory Committee's Subcommittee on Urban Forestry Final Report March 26, 2014**

From: Robert Dengel (Chair); Judy Bardin, Thad Curtz, David Hanna, Micki McNaughton, and Jim Nieland

#### **Vision Statement**

**Build an urban forestry program that protects and multiplies Olympia's trees to benefit our community, our environment and future generations.**

#### **Introduction -**

The Olympia Master Street Tree Plan adopted by Council in 2002 clearly articulated some of the reasons that trees are an important and valuable feature in the City's life, an important asset that the government should protect and develop:

Trees save energy and reduce noise pollution. They shade buildings, cool the air, provide protection from the wind and absorb unwanted noise.

Trees improve water and air quality. They reduce erosion and filter pollutants out of the air, water and soil.

Trees beautify our community, enhance property values and provide wildlife habitat.

Trees provide a connection to nature, healthy ecosystems, and places to recreate and rejuvenate.

Since then, other aspects of the benefits urban forests provide have come into sharper focus for us. Areas that attract people to get out and walk improve their physical and mental health. The City's trees (particularly its evergreens) provide a range of ecosystem services, playing a significant role in reducing stormwater levels, shading and helping to preserve asphalt in the summer, and reducing CO<sub>2</sub> levels by capturing and holding carbon as they grow. A wide variety of research about the ways in which urban forests benefit cities is available through:

Green Cities: Good Health ([www.greenhealth.washington.edu](http://www.greenhealth.washington.edu))

Green Cities Research Alliance (<http://www.fs.fed.us/pnw/research/gcra/>)

Human Dimensions of Urban Forestry and Urban Greening (<http://www.naturewithin.info/>)

#### **Comprehensive Plan Goals and Policies**

The final draft of the update to the Comprehensive Plan emphasizes the importance our community attaches to its trees in a new section dedicated to the City's urban forest. The sections on the Natural Environment as well those on Land Use, Transportation, Utilities and even Economy contain policies related to trees.



In particular, a new section on the urban forest in the Natural Environment establishes a clear long term policy vision for this area:

GN3. A healthy and diverse urban forest is protected, expanded through planting new trees, and valued for its contribution to the environment and community residents.

PN3.1 Manage the urban forest to professional standards, and establish program goals and practices based on the best available science.

PN3.2 Measure the tree canopy and set a city-wide target for increasing it through tree preservation and planting.

PN3.3 Preserve existing mature, healthy, and safe trees first to meet site design requirements on new development, redevelopment and city improvement projects.

PN3.4 Evaluate the environmental, ecologic, health, social and economic benefits of the urban forest.

PN3.5 Provide new trees with the necessary soil, water, space, and nutrients to grow to maturity, and plant the right size tree where there are conflicts, such as overhead utility wires or sidewalks.

PN3.6 Protect the natural structure and growing condition of trees to minimize necessary maintenance and preserve the long-term health and safety of the urban forest.

Planning Commission Recommendation,  
Introduction to the Comprehensive Plan

## **Brief History**

As the final draft of the Comprehensive Plan points out, our citizens have expressed basically the same vision and desires since the beginning of comprehensive planning in the State:

...during community outreach for the 1994 plan, citizens expressed a desire for Olympia to become a "City of Trees." In response, the community developed several goals and policies to guide a new Olympia Urban Forestry Program. Since then, we've planted thousands of street trees, and been consistently recognized by the National Arbor Day Foundation as a Tree City USA.

Planning Commission Recommendation,  
Natural Environment

However, since 2007, as one of the responses to its ongoing budget shortfall, the City has progressively reduced the staff and resources available to support this vision. The urban forestry program's budget has shrunk dramatically. Three FTE have been eliminated, leaving one half time City Forester to try to cope with ongoing needs and issues that kept several full time staff busy a few years ago. Currently, the Forester is so overworked than her voice mail warns callers that she may not be able to respond to questions about clearing, planting or removing hazardous trees for a couple of weeks, due to her backlog of calls, and that the City cannot provide any

more ordinary support for questions about identifying or caring for trees. This is not an acceptable level of service.

Over the last several years, the City has devoted a lot of time, money and energy to *Imagine Olympia!*, developing an updated Comprehensive Plan articulating the vision and policies to govern the City's growth over the next decades. Our budget has stabilized, and seems likely to grow stronger over the next few years. As part of the upcoming Action Plan to develop practical plans to realize the new Comprehensive Plan's goals, we need to take a number of steps to reestablish and strengthen our programs to protect and develop the City's urban forest.

## **1. Strengthen and improve our long-term planning for the urban forest.**

### **a. Change the City's budget processes to treat the City's trees on the same basis as other infrastructure assets, and track its condition through the new asset management system (if that's a suitable tool).**

According to the 2012-2017 Capital Facilities Plan, Council has established “Maintenance or general repair of existing infrastructure,” as the top priority in its general guidelines for prioritizing Capital projects. However, the pruning and replacement of the City's deteriorating urban forest, and the removal of invasive species which threaten large areas of trees is not currently a priority at anything like the same level as re-roofing or patching asphalt.

(Since 1994, Seattle has defined its trees as infrastructure, and funded a good deal of its ambitious urban forestry program from the City's Cumulative Replacement Fund.) We should adopt this practice, and include the City's trees in our regular budget processes for maintaining and developing the City's capital facilities.

### **b. Reestablish a citizen's advisory committee to make ongoing recommendations to the Council on urban forest issues.**

This might be constituted by bringing together a representative from other relevant advisory committees, such as PRAC, the Heritage Commission, and the UAC, or might be a separate committee, like the Tree Advisory Committee which fulfilled this role for a number of years.

Over the next couple of years, this committee should be charged with reviewing and making recommendations to the Council on ongoing issues about the City's trees, including:

- i. Implementing the new comprehensive plan's policies relating to urban forestry, urban green space, and Gateways to the City. These policies all address increasing the number of trees and the extent of the tree canopy in Olympia.
- ii. Reducing the City's potential liability from hazard trees on City property.
- iii. Improving development regulations to maintain or provide trees close to new houses as well as in tree tracts somewhere on the margins of new developments.
- iv. Developing an easement program to create adequate growing space for really large trees in the right of way in residential neighborhoods by curving the sidewalk out into what would otherwise be private front yards.
- v. Exploring contained bamboo plantings as an evergreen tool for stormwater management.
- vi. Exploring tree plantings in combination with stormwater ponds, like the pond behind the

school garden at Stevens Field.

vii. Exploring the possible need for solar easements in the future.

viii. Putting any future wires that are not undergrounded on the south side of the street, to reduce the chance that people will not want to plant larger trees where the wires allow it because they do not want the shade falling directly on their houses and front yards.

ix. Exploring the extent to which the City's current arrangements for monitoring and enforcing the regulations on land clearing and tree removal, as well as the long term agreements for the maintenance and protection of tree tracts are (or are not) functioning effectively.

x. Exploring ways to increase the percentage of evergreens in the City's tree tracts, neighborhoods, and urban forest over the long run, so as to increase the benefits canopy foliage provides for stormwater management during the periods of heavy rain when we need them the most.

xi. Exploring changes in regulations and incentives to increase the number of spaces for really large trees in the city, such as requiring planting spaces in the corners of parking lots that are deeded to the City and used for planting and protecting such trees over time, and having areas in each City park and on school grounds dedicated to such trees.

xii. Expanding the coverage requirements of the Green Cove Creek area to the basin of the City's next most healthy stream, probably Ellis Creek.

xiii. Exploring collaborating with the Port to replace the parking lot at the mouth of Moxlie Creek with a short stretch in which the creek is open to the air and surrounded by trees.

xiv. Exploring developing a pocket park program to maintain at least one lot every few blocks in forest cover.

**c. Draw on these recommendations to create or revise an Urban Forestry Master Plan for the entire City through collaboration between staff, interested citizens, and other significant landowners, particularly the State.**

The 2000-2011 Master Plan for Street Trees has expired. We need an updated, revised and expanded plan, one that also provides long-term planning for the health of the City's entire forest, considered as an ecosystem including the trees in the City's parks and open spaces and those on private land. (Ideally, we should include State and Port land in the City in our strategic thinking as well.) The new urban forestry plan should include quantified yearly performance targets for forestry needs such as street tree planting and replacement, invasive species control, and the identification and removal of diseased and hazard trees which pose risks to the public or the health of the ecosystem. The effort should also address the roles and responsibilities for how urban forestry is managed across the City's departments, in order to ensure better coordination and collaboration.

**2. Reestablish our landmark tree program to protect and showcase historic and spectacular trees in the city.**

See the website for Portland's Heritage Tree program,

<http://www.portlandoregon.gov/parks/40280>

for example. (It recognizes over 300 trees for their “unique size, age or historical or horticultural significance,” and provides a number of resources for learning more about them, including a slideshow with handsome photographs.)

In fact, our Council established a program like this in 1991, which is codified in Chapter 16.56 of our Municipal Code. This landmark tree program called for the creation within a year of an inventory of trees of exceptional value to the community because of factors like their association with historic figures, events, or properties; their being examples of rare or unusual species, or their exceptional aesthetic quality. It also established a system for protecting them. Unfortunately, the program it set up has not yet been carried out.

### **3. Develop neighborhood teams of volunteers to support the City's urban forestry goals in a variety of ways.**

For the foreseeable future, the City will not have anything like the resources it would need to have staff alone successfully deal with the maintenance and development of the City's trees. (In 2006, to take one example, the Street Tree Master Plan estimated that we had 28,497 spaces available for street trees in the City, a stocking level of 21%, compared to average levels of 60% to 80% around the country and the state.) We must find effective ways to leverage staff efforts through collaboration with neighborhood associations and volunteers. The dramatic results of the Plant One Thousand Trees Day some years ago suggest that a great deal can be achieved that way.

**a. Recruit volunteers to update and expand the City's inventory of its trees, so it includes the rest of the City's street trees, trees in parks, trees on state land, and trees on private property.** (The City's current inventory only includes data on the street trees downtown from several different surveys between 2002 and 2011, and a 2007 survey of street trees in two neighborhood areas.) In addition to providing the foundation for long term planning and maintenance, a complete inventory would necessary for FEMA damage reimbursement in the event of large scale tree losses.

See, for example, Portland's Tree Inventory Program, through which volunteers have mapped, measured and identified 40,000 street trees:

<http://www.portlandoregon.gov/parks/53181>

An impressive free open source program, OpenTreeMap, is being used by a number of cities, including San Francisco, Philadelphia, and Seattle, to support deep community engagement with those cities' forests.

<http://www.seattletreemap.org>

**b. Recruit, train and support volunteers to plant and maintain neighborhood trees, and to keep City staff informed about needs for more professional maintenance.**

See Portland's Neighborhood Tree Steward program as an example:

<http://www.portlandoregon.gov/parks/45124>

And Portland's Friends of Trees for another:

<http://www.friendsoftrees.org/plant/neighborhood-trees>

**c. Create and support neighborhood fruit tree teams, on the model of Portland's Fruit Tree Project.**

These volunteers cared for local trees, picked 70,000 pounds of fruit which might otherwise have ended up on sidewalks and in storm drains, and shared that harvest with over 9,000 families. The Project also maintains three community orchards. See:

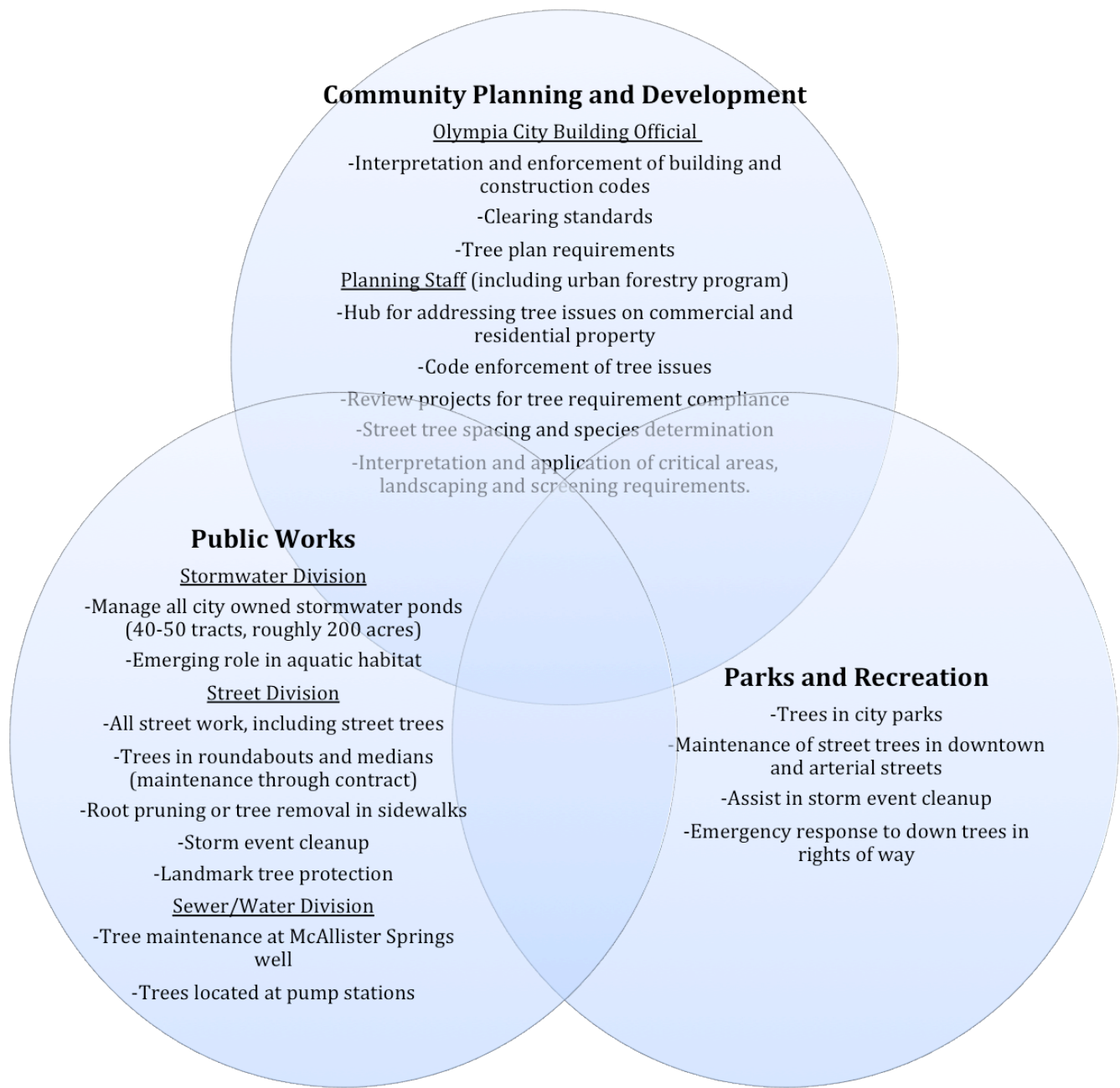
<http://media.portland.indymedia.org/images/2013/11/425884.jpg>

**Clarify Management of Urban Forestry**

Currently the City of Olympia does not have clearly defined departmental roles for managing trees and urban forestry. With regard to street trees, for example - Community Planning and Development (CPD) is in charge of determining tree spacing and species, Public Works (PW) is in charge of overseeing tree maintenance as a whole, and Parks and Recreation (PR) undertakes major portions of the work involved in maintaining arterial street trees. This ambiguity is one result of budget reductions and staff from other departments doing their best to respond to the ongoing losses in urban forestry. However, at the outset of our subcommittee's meetings it was clear that communication between departments about urban forestry could be improved.

There seem to be some general rationales for the departments' different tasks and responsibilities. CPD has been in charge of code enforcement and developed the previous tree plan. PR appears to take on more of a land manager role, predominately managing trees on most of the City's major open and green spaces. PW performs a hybrid role, with responsibility for enforcing regulations about clearing and landmark trees, as well as managing the trees in the areas around city wells and stormwater facilities. A clearer definition of roles and better communication and coordination among the departments could be beneficial in urban forestry efforts.

This diagram illustrates the current roles and responsibilities of City departments:



**4. Support tree planting and care on private property that contributes to the City's forestry goals.**

- a. Provide ongoing professional development opportunities for local tree workers.**
- b. Create a voluntary City professional certification program for tree workers, and/or business license requirements for tree work.**

See Portland's Local Tree Care Providers' Workshop program:

<http://www.portlandoregon.gov/parks/article/424016>

- c. Incentivize adding and maintaining trees with public value on private property**

**through purchase rebates, cost sharing for work by arborists, free City nursery stock for planting, property tax reductions, etc.**

**d. Create neighborhood tree plans that provide suggestions and advice for possible tree plantings and care that will contribute to the long term development and maintenance of a beautiful urban forest experience in each neighborhood. Promote equal distribution of trees among neighborhoods, with special attention to maintaining equity for dense urban neighborhoods, where finding good planting spaces and protecting trees is harder.**

**e. Based on the tree inventory process, clarify the ownership and maintenance responsibilities for the trees in the right of way on each property.**

**f. Provide public educational workshops and materials, like suggestions about appropriate local trees for particular situations, regardless of whether participants wish to commit to volunteer work.**

**5. Support acquisition of green space to help ensure that the City can maintain a healthy tree canopy cover as future development occurs.**

# APPENDIX G

24-Jan-15

## Vegetative Resource Criteria and Indicators



Current Level



Desired Level

Criteria	Performance Indicator Spectrum				Priority	Key Objective
	Low	Moderate	Good	Optimal		
<b>1. Relative Canopy Cover</b>	The existing canopy cover equals 0-25% of the <u>potential</u> .	The existing canopy cover equals 25-50% of the potential.	The existing canopy cover equals 50-75% of the potential. <b>(4)</b>	The existing canopy cover equals 75-100% of the potential. <b>(3)</b>	<b>1</b> *	Achieve climate-appropriate degree of tree cover, community-wide
<b>2. Age distribution of trees in the community</b>	Any relative diameter class (size range equating to age) represents more than 75% of the tree population.	Any diameter class represents between 50% and 75% of the tree population. <b>(2)</b>	No diameter class represents more than 50% of the tree population. <b>(1)</b>	25% of the tree population is in each of four diameter classes. <b>(2)</b>		Provide for uneven-aged distribution city-wide as well as at the neighborhood/ROA level.
<b>3. Species suitability</b>	Less than 50% of trees are of species considered suitable for the area.	50% to 75% of trees are of species considered suitable for the area.	More than 75% of trees are of species considered suitable for the area. <b>(3)</b>	All trees are of species considered suitable for the area. <b>(2)</b>	<b>1</b>	Establish a tree population suitable for the urban environment and adapted to the regional environment.
<b>4. Species distribution</b>	Fewer than 5 species dominate the entire tree population city-wide.	No species represents more than 20% of the entire tree population city-wide.	No species represents more than 10% of the entire tree population city-wide. <b>(5)</b>	No species represents more than 10% of the entire tree population at the neighbourhood level.	<b>1</b>	Establish a genetically diverse tree population city-wide and at the neighborhood level.
<b>5. Condition of Publicly-managed Trees (including ROW trees)</b>	No tree maintenance or risk assessment. Request based/reactive system. The condition of the urban forest is unknown	Sample-based inventory indicating tree condition and risk level is in place.	Complete tree inventory which includes detailed tree condition ratings. <b>(2)</b>	Complete tree inventory which includes detailed tree condition and risk ratings. <b>(6)</b>	<b>4</b>	Detailed understanding of the condition and risk potential of all publicly-managed trees

\* Subcommittee priority



## APPENDIX G

**6. Publicly-owned natural areas (e.g. woodlands, sensitive areas, etc.)**

<p>No information about publicly-owned natural areas.</p>	<p>Publicly-owned natural areas identified in a “natural areas survey” or similar document [PROS plan].</p>	<p>The level and type of public use in publicly-owned natural areas is documented <b>(1)</b></p>	<p>The ecological structure and function of all publicly-owned natural areas are documented through an Urban Tree Canopy Analysis and included in the city wide GIS <b>(7)</b></p>	<p>2 *</p>	<p>Detailed understanding of the ecological structure and function of all publicly-owned natural areas.</p>
<p>No program of integration</p>	<p>Voluntary use of native species on publicly and privately-owned lands; invasive species are recognized.</p>	<p>The use of native species is encouraged on a project-appropriate basis in actively managed areas; invasive species are recognized and discouraged; some planned eradication. <b>(4)</b></p>	<p>The use of native species is required on a project-appropriate basis in all public and private managed areas; invasive species are aggressively eradicated. <b>(3)</b></p>	<p>4</p>	<p>Preservation and enhancement of local natural biodiversity</p>

**7. Native vegetation**

# APPENDIX G

24-Jan-15

## Resource Management Criteria and Indicators

Current Level

Desired Level

\* Subcommittee Priority

Criteria	Performance Indicator Spectrum						Key Objective
	Low	Moderate	Good	Optimal	Priority		
<b>1. Tree Inventory</b>	No inventory / Partial inventory	Complete or sample-based inventory of publicly-owned trees	Complete inventory of publicly-owned trees AND sample-based inventory of privately-owned trees. <b>(2)</b>	Complete inventory of publicly-owned trees AND sample-based inventory of privately-owned trees included in city-wide GIS <b>(7)</b>	3 *	Comprehensive inventory of the tree resource to direct its management. This includes: age distribution, species mix, tree condition, risk assessment.	
<b>2. Canopy Cover Assessment</b>	No inventory	Visual assessment	Sampling of tree cover using aerial photographs or satellite imagery; I-Tree;	Mapped urban tree cover using aerial photographs or satellite imagery included in city-wide GIS <b>(7)</b>	2	High resolution assessments of the existing and potential canopy cover for the entire community.	
<b>3. City-wide management plan</b>	No plan	Existing plan limited in scope and implementation	Comprehensive plan for publicly-owned, intensively- and extensively-managed forest resources accepted and implemented <b>(3)</b>	Strategic multi-tiered plan for public and private intensively- and extensively-managed forest resources accepted and implemented with adaptive management mechanisms. <b>(5)</b>	*	Develop and implement a comprehensive urban forest management plan for private and public property.	
<b>4. Municipality-wide funding</b>	Funding for only emergency reactive management	Funding for some proactive management to improve the public portion of urban forest.	Funding to provide for a measurable increase in urban forest benefits. <b>(3)</b>	Adequate private and public funding to sustain maximum urban forest benefits. <b>(6)</b>	6 *	Develop and maintain adequate funding to implement a city-wide urban forest management plan	

## APPENDIX G

<p><b>5. City staffing</b></p> <p>No staff.</p>		<p>Limited trained or certified staff.</p>	<p>Certified arborists and professional foresters on staff with regular professional development. <b>(3)</b></p>	<p>Multi-disciplinary team within an urban forestry program. <b>(7)</b></p>	<p>6*</p>	<p>Employ and train adequate staff to implement city-wide urban forestry plan</p>
<p><b>6. Tree establishment, planning and implementation</b></p> <p>Tree establishment is ad hoc (no plan or budget)</p>		<p>Limited tree establishment occurs on an annual basis with minimal budget.</p>	<p>Tree establishment is directed by needs derived from a tree inventory or strategy <b>(2)</b></p>	<p>Tree establishment is directed by needs derived from a tree inventory and is sufficient to meet canopy cover objectives (see Canopy Cover criterion in Table 1) <b>(8)</b></p>	<p>1</p>	<p>Urban Forest renewal is ensured through a comprehensive tree establishment program driven by canopy cover, species diversity, and species distribution objectives</p>
<p><b>7. Maintenance of publicly-owned, intensively managed trees (not open space)</b></p> <p>No maintenance of publicly-owned trees</p>		<p>Publicly-owned trees are maintained on a request/reactive basis. No systematic (block) pruning.</p>	<p>All publicly-owned trees are systematically maintained on a cycle longer than five years. <b>(3)</b></p>	<p>All mature publicly-owned trees are maintained on a 5-year cycle. All immature trees are structurally pruned. <b>(7)</b></p>	<p>4</p>	<p>All publicly-owned, intensively managed trees are maintained to maximize current and future benefits. Tree health and condition ensure maximum longevity.</p>
<p><b>8. Tree Risk Management</b></p> <p>No tree risk assessment/remediation program. [Request based/reactive system?] The condition of the urban forest is unknown</p>		<p>Sample-based tree inventory which includes general tree risk information; Request based/reactive risk abatement program system. <b>(3)</b></p>	<p>Complete tree inventory which includes detailed tree failure risk ratings; risk abatement program is in effect eliminating hazards within a maximum of one month from confirmation of hazard potential. <b>(3)</b></p>	<p>Complete tree inventory which includes detailed tree failure risk ratings; risk abatement program is in effect eliminating hazards within a maximum of one week from confirmation of hazard potential. <b>(4)</b></p>	<p>6</p>	<p>All publicly-owned trees are managed with safety as a high priority.</p>


## APPENDIX G

<p><b>9. Tree Protection Policy Development and Enforcement</b></p>	<p>No tree protection policy</p>	<p>Policies in place to protect public trees.</p>	<p>Policies in place to protect public and private trees <u>[with enforcement desired]</u>. <b>(2)</b></p>	<p>Integrated municipal wide policies that ensure the protection of trees on public and private land are consistently enforced and supported by significant deterrents <b>(7)</b></p>	<p><b>2</b> <b>*</b></p>	<p>The benefits derived from large-stature/mature trees are ensured by the enforcement of municipal wide policies.</p>
<p><b>10. Publicly-owned natural areas management planning and implementation</b></p>	<p>No stewardship plans or implementation in effect.</p>	<p>Reactionary stewardship in effect to facilitate public use (e.g. hazard abatement, trail maintenance, etc.)</p>	<p>Stewardship plan in effect for each publicly-owned natural area to facilitate public use (e.g. hazard abatement, trail maintenance, etc.) <b>(2)</b></p>	<p>Stewardship plan in effect for each publicly-owned natural area focused on sustaining the ecological structure and function of the feature. <b>(7)</b></p>	<p><b>3</b> <b>*</b></p>	<p>The ecological structure and function of all publicly-owned natural areas are protected and, where appropriate, enhanced.</p>

# APPENDIX G

24-Jan-15

## Community Framework Criteria and Indicators

 Current Level

 Desired Level

\* Subcommittee Priority

Criteria	Performance Indicator Spectrum						Subcommittee Priority	Key Objective
	Low	Moderate	Good	Optimal				
<b>1. Public agency cooperation (inter-departmental and with utilities)</b>	No communication or conflicting goals among departments and or agencies.	Common goals but no coordination or cooperation among departments and/or agencies.	Informal teams among departments and or agencies are functioning and implementing common goals on a project-specific basis. <b>(6)</b>	Municipal policy implemented by formal interdepartmental/ interagency working teams on ALL municipal projects. <b>(3)</b>			4*	Ensure all city department cooperate with common goals and objectives.
<b>2. Involvement of large institutional land holders (ex. hospitals, campuses, utility corridors)</b>	No awareness of issues	Educational materials and advice available to landholders.	Clear goals for tree resource by landholders. Incentives for preservation of private trees. <b>(6)</b>	Landholders develop comprehensive tree management plans (including funding). <b>(1)</b>			*	Large private landholders embrace city-wide goals and objectives through specific resource management plans.
<b>3. Green industry cooperation</b>	No cooperation among segments of the green industry (nurseries, tree care companies, etc.) No adherence to industry standards.	General cooperation among nurseries, tree care companies, etc.	Specific cooperative arrangements such as purchase certificates for “right tree in the right place” <b>(3)</b>	Shared vision and goals including the use of professional standards. <b>(5)</b>			2	The green industry operates with high professional standards and commits to city-wide goals and objectives.
<b>4. Neighborhood action</b>	No action	Neighborhood associations/HOA's exist but are minimally engaged or a limited number are engaged. <b>(2)</b>	City-wide coverage and interaction. <b>(3)</b>	All neighborhoods/HOA's organized and cooperating. <b>(4)</b>			2*	At the neighborhood level, citizens understand and cooperate in urban forest management.

## APPENDIX G

<b>5. Citizen-municipality-business interaction</b> Conflicting goals among constituencies		No interaction among constituencies.		Informal and/or general cooperation. <b>(3)</b>		Formal interaction e.g. Tree board with staff coordination. <b>(5)</b>		<b>1</b>	All constituencies in the community interact for the benefit of the urban forest.
<b>6. General awareness of trees as a community resource</b> Trees not seen as an asset, a drain on budgets.		Trees seen as important to the community.		Trees acknowledged as providing environmental, social and economic services. <b>(1)</b>		Urban forest recognized as vital to the communities environmental, social and economic well-being. <b>(6)</b>		<b>2*</b>	The general public understanding the role of the urban forest.
<b>7. Regional cooperation</b> Communities independent. <b>(2)</b>		Communities share similar policy vehicles. <b>(2)</b>		Regional planning is in effect		Regional planning, coordination and /or management plans <b>(2)</b>			Provide for cooperation and interaction among neighboring communities and regional groups.