



City  
of  
Tigard

# Urban Forestry Master Plan



November 2009



City of Tigard

# Urban Forestry Master Plan

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## Executive Summary



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*Tigard’s urban forest is valued and protected by City residents as a thriving interconnected ecosystem managed to improve quality of life, increase community identity, and maximize aesthetic, economic, and ecological benefits.*

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This Urban Forestry Master Plan (UFMP) sets a course of action for the City of Tigard’s urban forestry program from the time of its acceptance by Council until the year 2016. The Plan has been developed through a public process involving community outreach and surveys, urban forestry stakeholder interviews, departmental coordination meetings, and review of current City policies and programs. Based on the information received throughout this process, the UFMP Citizen Advisory Committee (CAC) recommends the following implementation goals:

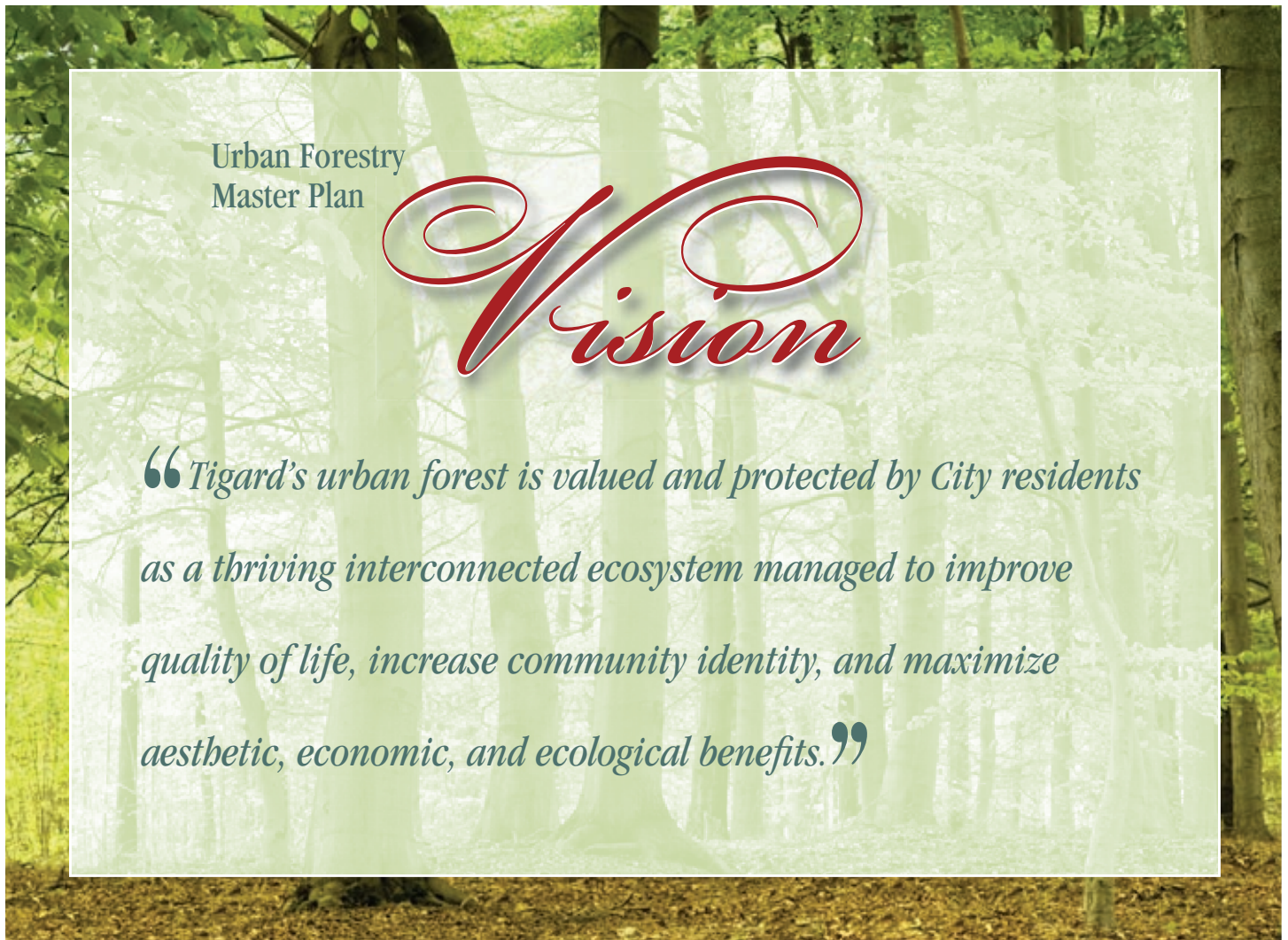
1. Revise Tigard’s tree code (Chapter 18.790, includes development regulations and mitigation).
2. Revise Tigard’s landscaping code (includes street trees, parking lot trees, and other required landscape trees).
3. Develop a tree grove protection program.
4. Develop a hazard tree identification and abatement program.
5. Improve the management of the City’s urban forestry program.
6. Develop an urban forest stewardship program.

It is further recommended that the achievement of the above implementation goals occur through a series of sub-goals and action measures which are outlined in the implementation matrix. Implementation goals, sub-goals, and action measures are intended to frame future urban forestry code and program development and set a timeline for both. Tigard’s Tree Board will be charged with overseeing the implementation of the UFMP as part of their annual work plan.

# Implementation Matrix

The following implementation matrix contains all six UFMP implementation goals (highlighted in orange), their associated sub-goals (e.g. 1.1, 1.2, 1.3...), and a series of action measures with the necessary level of detail needed to implement the goals and sub-goals. For each action measure the lead City division, applicable Comprehensive Plan policies, staff and financial resources required, and implementation schedule are included.

Through implementation of the goals, sub-goals, and action measures in this Plan, progress will be made towards the adopted vision of the UFMP CAC:



Implementation Goals		Lead Division	Comp Plan Policies	City Staff Resources*	City's Cost**	Begin Implementation	Complete Implementation
<b>1. Revise Tigard's tree code (Chapter 18.790, includes development regulations and mitigation).</b>							
1.1 Revise tree code to allow for more flexibility and ensure a qualitative approach to tree preservation.							
a.	Determine the most appropriate placement for future tree code provisions within the Tigard Development and Municipal Code chapters.	Long Range Planning	2.2.1, 2.2.2, 2.3.1, 2.3.2, 2.3.3, 2.3.6, 2.3.7, 2.3.9, 2.3.10, 2.3.11	Low	\$	2010	2011
b.	Modify code to focus less on mitigation and more on preservation of long-lived evergreen and broad-leaf deciduous tree species, native and indigenous trees, and other trees identified as of high importance.	Long Range Planning	2.2.1, 2.2.2, 2.2.9, 2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.3.6, 2.3.7, 2.3.9, 2.3.11	High	\$\$	2010	2011
c.	Require private arborists to be involved in the development process from site planning through landscape installation.	Long Range Planning	2.2.1, 2.3.1, 2.3.3, 2.3.6, 2.3.7, 2.3.8, 2.3.9	Low	\$	2010	2011
d.	Develop and implement regulations, standards, and incentives for transferring density and seeking variances and adjustments to preserve trees identified as being of high importance.	Long Range Planning	2.2.1, 2.2.2, 2.3.1, 2.3.3, 2.3.6, 2.3.8, 2.3.9, 2.3.11	High	\$\$	2010	2011
e.	Provide incentives for preserving smaller diameter trees that have a higher ability to withstand development impacts.	Long Range Planning	2.2.1, 2.2.2, 2.2.9, 2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.3.6, 2.3.7, 2.3.9, 2.3.11	Low	\$	2010	2011
f.	Ensure invasive trees are exempt from preservation requirements through the adoption of an inclusive invasive species list.	Long Range Planning	2.2.1, 2.2.2, 2.2.7, 2.2.8, 2.2.9, 2.3.1, 2.3.7, 2.3.8, 2.3.11	Low	\$	2010	2011
g.	Develop standards and procedures for tree code enforcement.	Long Range Planning	2.2.1, 2.2.2, 2.2.3, 2.2.6, 2.3.1, 2.3.8, 2.3.9, 2.3.11	Med.	\$\$	2010	2011
h.	Develop procedures detailing when and how protected trees will be inventoried and permit activities tracked.	Current Planning	2.2.1	Med.	\$\$	2011	2012
i.	Develop and maintain, as part of the City's GIS and permit systems, a publicly accessible inventory of protected trees.	Current Planning	2.2.1	Med.	\$\$	2011	Ongoing
j.	Create a tree manual with drawings and specifications for development related tree inventory and protection standards, and preferred species/tree types for preservation.	Current Planning	2.2.1, 2.2.2, 2.2.8, 2.2.9, 2.3.1, 2.3.2, 2.3.3, 2.3.6, 2.3.7, 2.3.8, 2.3.9	High	\$\$\$	2010	2011

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Implementation Goals		Lead Division	Comp Plan Policies	City Staff Resources*	City's Cost**	Begin Implementation	Complete Implementation
1.2 Revise tree code so that standards do not solely impact those property owners with trees.							
a.	Develop canopy cover or tree density standards for all lots to be met by either preserving existing trees, or planting new trees.	Long Range Planning	2.2.1, 2.2.2, 2.2.4, 2.2.9, 2.3.1, 2.3.2, 2.3.6, 2.3.7, 2.3.9, 2.3.11	High	\$\$	2010	2011
b.	Investigate possible funding mechanisms to help support an ongoing tree and urban forest enhancement program.	Current Planning	2.2.1, 2.2.2, 2.2.7, 2.3.8	High	\$\$	2011	2012
<b>2. Revise Tigard's landscaping code (includes street trees, parking lot trees, and other required landscape trees).</b>							
2.1 Revise street tree planting, maintenance, and removal requirements.							
a.	Revise parking lot design requirements to incorporate stormwater management techniques and methods that support increased tree canopy.	Current Planning	2.2.1, 2.2.2, 2.2.4, 2.2.7, 2.2.8, 2.2.10, 2.3.5, 2.3.7, 2.3.8, 2.3.11	Med.	\$\$	2010	2011
b.	Revise Tigard Municipal Code to establish a permit system for planting, removal, and replacement of required trees.	Long Range Planning	2.2.1, 2.2.2, 2.2.4, 2.2.5, 2.2.6, 2.2.8, 2.2.9, 2.2.10, 2.3.5, 2.3.7, 2.3.10, 2.3.11	Med.	\$\$	2010	2011
c.	Incentivize the use, retention, and replacement of long lived evergreen and broad-leaf deciduous tree species, native and indigenous trees, and other trees identified as of high importance.	Current Planning	2.2.1, 2.2.2, 2.2.4, 2.2.5, 2.2.6, 2.2.7, 2.2.8, 2.2.9, 2.2.10, 2.3.1, 2.3.5, 2.3.7, 2.3.8, 2.3.11	Med.	\$\$	2010	2011
d.	Allow required landscape trees to count towards mitigation, canopy cover, and/or tree density standards.	Long Range Planning	2.2.1, 2.2.2, 2.2.4, 2.2.6, 2.2.7, 2.2.8, 2.2.9, 2.2.10, 2.3.5	Low	\$	2010	2011
e.	Require landscape architects to develop landscape plans for projects of a certain type and/or size.	Long Range Planning	2.2.1, 2.2.2, 2.2.7, 2.2.10, 2.3.5, 2.3.7, 2.3.11	Low	\$	2010	2011
f.	Create a design and maintenance manual with drawings and specifications for species selection, planting, and maintenance.	Current Planning	2.2.1, 2.2.2, 2.2.4, 2.2.5, 2.2.6, 2.2.7, 2.2.8, 2.2.9, 2.2.10, 2.3.5, 2.3.7, 2.3.8, 2.3.11	High	\$\$\$	2010	2011
g.	Clarify jurisdictional requirements along ODOT right-of-ways (Highway 99W, Highway 217, and Interstate 5).	Current Planning	2.2.1, 2.2.2, 2.2.4, 2.2.5, 2.2.6, 2.2.7, 2.2.8, 2.3.5, 2.3.8	Low	\$	2010	2011

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Implementation Goals		Lead Division	Comp Plan Policies	City Staff Resources*	City's Cost**	Begin Implementation	Complete Implementation
h.	Do not require new technologies that are cost prohibitive.	Current Planning	2.2.1, 2.2.4, 2.2.7	Low	\$	2010	Ongoing
2.2 Develop an inventory of tree plantings, removals, and replacements.							
a.	Develop procedures for when and how trees will be inventoried and permit activities tracked.	Current Planning	2.2.1	Med.	\$\$	2011	2012
b.	Develop and maintain, as part of the City's GIS and permit systems, a publicly accessible inventory of tree plantings and permitted removals.	Current Planning	2.2.1	Med.	\$\$	2011	Ongoing
3. Develop a tree grove protection program.							
3.1 Focus on preserving large groves of native trees.							
a.	Establish standards and procedures for identifying and inventorying large groves of native trees.	Long Range Planning	2.2.1, 2.2.2, 2.2.3, 2.2.6, 2.2.7, 2.3.1, 2.3.2, 2.3.8, 2.3.9, 2.3.11	High	\$\$\$\$	2010	2011
b.	Develop preservation and maintenance standards and procedures for tree groves identified for protection while allowing for the full development of property under current zoning.	Long Range Planning	2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.6, 2.2.7, 2.2.8, 2.2.9, 2.3.1, 2.3.2, 2.3.3, 2.3.5, 2.3.6, 2.3.7, 2.3.8, 2.3.9, 2.3.11	High	\$\$\$	2011	2012
3.2 Develop a flexible and incentive based grove preservation program that meets the needs of affected property owners.							
a.	Reach out to property owners with identified tree groves early in the process to allow them ample opportunity to participate in the development of regulations.	Long Range Range	2.3.8, 2.3.11	Med.	\$\$	2010	2012
b.	Ensure any future tree grove regulations have flexibility and incentives built in.	Long Range Planning	2.2.1, 2.2.2, 2.2.4, 2.3.6, 2.3.8, 2.3.11	Med.	\$\$	2011	2012
4. Develop a hazard tree identification and abatement program.							
4.1 Establish City storm and hazard tree response protocols.							
a.	Prior to land acquisition conduct a tree hazard assessment.	Parks	2.2.1, 2.2.2, 2.3.4, 2.3.8	Med.	\$\$	2010	Ongoing
b.	Develop and implement a formal emergency response system for tree hazards on City streets.	Streets	2.2.1, 2.2.2, 2.3.4, 2.3.8	Low	\$	2010	Ongoing
c.	Develop and implement a formal emergency response system for tree hazards in City parks/greenspaces.	Parks	2.2.1, 2.2.2, 2.3.4, 2.3.8	Low	\$	2010	Ongoing

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Implementation Goals		Lead Division	Comp Plan Policies	City Staff Resources*	City's Cost**	Begin Implementation	Complete Implementation
<b>4.2 Establish a City program to facilitate tree hazard identification and abatement on private property.</b>							
a.	Revise Tigard Municipal Code to grant authority to the City to become involved in private property tree hazards.	Long Range Planning	2.2.1, 2.3.4, 2.3.8, 2.3.11	High	\$\$	2010	2011
b.	Develop and maintain criteria for what constitutes a tree hazard using the Tree Risk Assessment methodology developed by the PNWISA.	Current Planning	2.2.1, 2.2.2	Med.	\$\$	2010	2011
c.	Develop and maintain criteria for hazard abatement and risk mitigation.	Current Planning	2.2.1, 2.2.2, 2.3.4, 2.3.11	Med.	\$\$	2010	2011
d.	Develop procedures for mediating disputes including assigning responsibility.	Long Range Planning	2.3.4, 2.3.11	High	\$\$\$	2010	2011
e.	Make information about hazard tree identification and abatement program available to the public.	Current Planning	2.3.4, 2.3.8	Med.	\$\$	2010	2011
<b>5. Improve management of the City's urban forestry program.</b>							
<b>5.1 Begin developing a tree and urban forest inventory.</b>							
a.	Develop procedures for when and how protected trees, tree groves, street trees, heritage trees, and required landscape trees will be inventoried and permit activities tracked.	Current Planning	2.2.1	Med.	\$\$	2011	2012
b.	Develop and maintain, as part of the City's GIS and permit systems, a publicly accessible inventory of protected trees, tree groves, street trees, heritage trees, and required landscape trees.	Current Planning	2.2.1	Med.	\$\$	2011	Ongoing
c.	Develop and maintain, as part of the City's GIS system, a publicly accessible inventory of sites where urban forestry fees are being utilized. Link sites with the City's accounting system so detailed analyses of urban forestry expenditures can be obtained.	Current Planning	2.2.1, 2.2.2, 2.2.7	Med.	\$\$	2011	Ongoing
<b>5.2 Improve management of City owned trees and forests.</b>							
a.	Create and route a budget sheet to appropriate divisions prior to park and greenspace acquisitions so anticipated costs and benefits can be identified and evaluated.	Parks	2.2.1, 2.2.2, 2.2.7, 2.3.4	Low	\$	2010	2011

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Implementation Goals		Lead Division	Comp Plan Policies	City Staff Resources*	City's Cost**	Begin Implementation	Complete Implementation
b.	Create a greenspace coordinator position to manage City owned natural areas and develop a proactive hazard tree identification and abatement program for those areas.	Parks	2.2.1, 2.3.4, 2.3.8	High	\$\$\$\$	2011	2011
c.	Develop a written set of urban forestry standards and specifications for City projects.	Current Planning	2.2.1, 2.2.2, 2.2.5, 2.2.6, 2.2.7, 2.3.1, 2.3.3, 2.3.7, 2.3.9	High	\$\$	2011	2012
d.	Identify and secure long term funding sources for urban forestry projects as mitigation funds decline.	Current Planning	2.2.1, 2.2.2, 2.2.7	Low	\$	2014	2016
e.	Designate City Arborist as lead coordinator for implementation of the Urban Forestry Master Plan.	Current Planning	2.2.2, 2.2.6, 2.2.11, 2.3.4, 2.3.7	Low	\$	2010	Ongoing
<b>6. Develop an urban forestry stewardship program.</b>							
<b>6.1 Develop and provide urban forestry outreach materials.</b>							
a.	Provide Tigard citizens with pertinent urban forestry outreach information such as workshops, flyers, online tools, “ask the arborist” service, etc.	Current Planning	2.2.7, 2.3.8	Med.	\$\$	2012	2013
b.	Maintain a list of invasive trees and other plants, discourage their sale and propagation, and promote their removal.	Current Planning	2.2.1, 2.2.7, 2.2.8, 2.2.9, 2.3.8, 2.3.11	Low	\$	2012	2013
<b>6.2 Fund urban forestry projects for private property owners.</b>							
a.	Utilize mitigation and other funding sources for tree planting and urban forest management on public and private property and public right-of-way.	Current Planning	2.2.7, 2.3.8	High	\$\$\$	2013	2014
b.	Present a cost/benefit study for a leaf pickup program for Council’s consideration.	Current Planning	2.2.7, 2.3.8	Low	\$	2013	2013
<b>6.3 Prevent pre-development clearing of lots.</b>							
a.	Develop standards that require tree removal permits prior to the removal of a specified number of trees per year.	Long Range Planning	2.2.1, 2.2.2, 2.2.7, 2.3.1, 2.3.8	Med.	\$\$	2010	2011

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Implementation Goals		Lead Division	Comp Plan Policies	City Staff Resources*	City's Cost**	Begin Implementation	Complete Implementation
6.4 Regularly update the Urban Forestry Master Plan, set achievable goals, and continually monitor progress.							
a.	Strive to achieve no net loss in citywide tree canopy from 2007–2015.	Current Planning	2.2.7, 2.2.11, 2.3.8	Low	\$	2015	2015
b.	Strive to achieve 32% citywide tree canopy by 2027	Current Planning	2.2.7, 2.2.11, 2.3.8	Low	\$	2027	2027
c.	Strive to achieve 40% citywide tree canopy by 2047	Current Planning	2.2.7, 2.2.11, 2.3.8	Low	\$	2047	2047
d.	Update Urban Forestry Master Plan every 5–7 years.	Current Planning	2.2.1, 2.2.2, 2.2.11, 2.3.1, 2.3.8	High	\$\$\$	2015	2016
e.	To help inform future Plan updates, collect baseline tree inventory data in addition to canopy cover data.	Current Planning	2.2.1, 2.2.7, 2.2.11	High	\$\$	2014	2015

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# Basis for Decision Making

The following information was used as the basis for decision making when formulating goals, sub-goals, and action measures for the UFMP.

## Urban Forestry Survey

An independent, scientific telephone survey of 400 randomly selected citizens about their attitudes towards existing and potential urban forestry policies and programs was completed by Steve Johnson and Associates in December of 2008. The survey was funded in part by a grant from the Oregon Department of Forestry and the USDA Forest Service. The purpose of the survey was to gain a more detailed understanding of community attitudes towards urban forestry issues in Tigard. Exact questions and complete results from the survey are included in Appendix A.



## Canopy Analysis

In cooperation with Metro, Tigard's tree canopy from 1996 and 2007 was identified and mapped using aerial photography. This has allowed for easy identification of where the urban forest is increasing, decreasing, and remaining the same. It will also allow for continual tracking of canopy change in the future as Metro runs the software that can detect the presence of tree canopy cover every two years. Using the results, management decisions were made such as where preservation and planting efforts should be targeted. Full results of the canopy analysis are in Appendix B.

## Stakeholder Interviews

City staff interviewed major community stakeholder groups and jurisdictions that regularly contribute to and/or are affected by the management of Tigard's urban forest. The full stakeholder interview notes are included in Appendix C.

## City of Tigard, Internal Coordination Meetings

The City of Tigard has multiple departments, divisions, boards, and committees that administer and implement the City's urban forestry

program. Key City staff members with roles in coordinating and implementing Tigard’s urban forestry programs, policies, and codes met to discuss urban forestry coordination needs and to identify solutions. The purpose of this coordination is to provide for more effective administration of the urban forestry program and to inform recommendations made in the UFMP. Full results of the internal coordination meetings can be found in Appendix D.

## Review of Current and Historical Urban Forestry Codes, Polices, and Programs

A thorough review and analysis of urban forestry related laws, codes, policies, and programs was undertaken to inform recommendations in the UFMP. Particular attention was paid to the Urban Forest Section of the Comprehensive Plan (Appendix E) which contains the goals, policies, and action measures that guide Tigard’s urban forestry program. Appendix E also provides examples of the social, ecological, and economic benefits of urban trees and forests.

Appendix F contains a historical timeline relative to urban forestry in Tigard. Appendix G contains a review and analysis of the major Federal, State, and Regional policies that provide a framework for Tigard’s urban forestry program. Appendix H is a review and analysis of current urban forestry related City codes.

## UFMP CAC

The UFMP CAC was comprised of the Tree Board plus four additional residents/business interests at large including two certified arborists, one homebuilder, and one resident with expertise in public administration. They met every other month to receive information as it was being collected and advised staff on Plan development.

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*City staff interviewed major community stakeholder groups and jurisdictions that regularly contribute to and/or are affected by the management of Tigard’s urban forest. The full stakeholder interview notes are included in Appendix C.*

”

## CHAPTER 1:

# Development Regulations and Mitigation Requirements



### Implementation Goal 1:

**Revise Tigard’s tree code (Chapter 18.790, includes development regulations and mitigation).**

Revising Tigard’s tree code is purposely listed as Goal 1 due to strong dissatisfaction with the existing code by those both inside and outside of the development community.

Tigard’s existing tree code is located in Chapter 18.790 of the Tigard Development Code. This Code requires certain types of development projects to prepare a tree plan and identify trees to be preserved and removed during construction. Tree replacement, or mitigation, is required on an “inch for inch” basis. This means that if a tree with a trunk that is 12 inches in diameter is removed, it needs to be replaced with 6, 2-inch diameter replacement trees. If a developer chooses not to replant trees, then the City requires a “fee-in-lieu payment” to the Tigard Tree Fund at the current rate of \$125 per diameter inch (2009).

Some of the criticism of the tree code from stakeholders is that the mitigation structure promotes overplanting, it does not require preservation of quality trees, and it encourages the retention of large diameter trees that are less likely to survive development impacts. The Home Builder’s Association of Metropolitan Portland (HBAMP) position is that the fee-in-lieu of mitigation is excessive and that the tree code does not adequately reward the preservation of high quality trees. The HBAMP and other stakeholders agree that the tree code unfairly penalizes those property owners with existing trees more than those owners without trees. For the City, the tree code is also administratively difficult to implement because it is challenging to track protected and replacement trees in the years and decades following development.

The previous tree code that went into effect in 1983 was more preservationist than today’s code because it required a permit prior to the removal of any tree on all undeveloped land, developed commercial and industrial land, and public land. In 1997 Tigard’s tree code was revised to

its current form. The code currently allows any or all trees to be removed as long as they are replaced. Due in part to dissatisfaction with the existing tree code, the Tigard Tree Board was charged with developing a “City Tree Stewardship and Urban Forest Enhancement Program” in 2007. Following over a year of work by the Tree Board, a comprehensive plan for the urban forest was developed in 2008. The Urban Forest section of the Comprehensive Plan (Appendix E) contains two goals to be implemented by 22 policies. The goals and policies in the Comprehensive Plan guide the recommendations made in this Plan.

While many are unhappy with the current tree code, the UFMP community survey confirmed Tigard residents want the City to require some trees are preserved and new trees planted during development (~88% support). A majority (~57%) of respondents say they support new development regulations even if they limit the size and extent of potential buildings or profits. Approximately 32% of respondents oppose tree regulations limiting development. (See Figure 1 at right).

Protecting Tigard’s urban forest on developable land must be balanced with State, Metro, and City planning goals and regulations which favor density in urban areas. Specifically, development regulations must be clear and objective, and not discourage needed housing through unreasonable cost or delay according to State law. Only 7% of Tigard’s land area and 12% of its citywide tree canopy are on developable property so a comprehensive urban forestry code and program must address areas outside of development.

Direction received from the community and stakeholders regarding tree code revisions have been folded into several sub-goals and implementation measures. Major recommendations include:

- Determining the most appropriate placement for future tree code provisions to improve administration and address situations outside development;
- Less focus on mitigation and more on preserving high quality trees;
- Revising tree preservation incentives so that they are more attractive to developers; and
- Not unfairly penalizing those property owners with trees.

Also included in the recommendations are steps the City should take to better track protected and replacement trees after development is complete.

Would you strongly support, support, oppose, or strongly oppose tree removal regulations during property development, even when they limit the size and extent of potential buildings or profits?

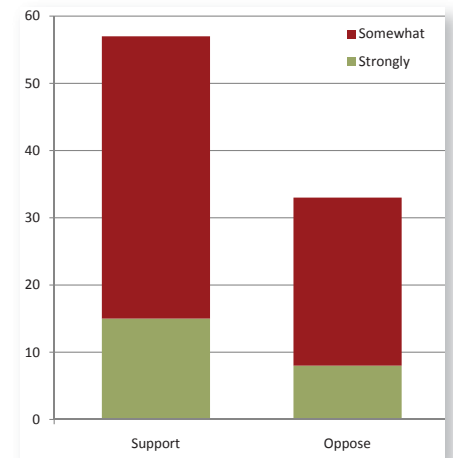


FIGURE 1

## CHAPTER 2:

# Landscaping Requirements

“

*Stakeholder interviews highlighted the need for requirements addressing the planting of high quality trees and ensuring that design and maintenance of areas such as parking lots and street side plantings are sustainable and aesthetically pleasing.*

”

### Implementation Goal 2: Revise Tigard’s landscaping code (includes street trees, parking lot trees, and other required landscape trees).

Revising Tigard’s landscaping code is the second goal of the UFMP. The intention of the revisions is to improve the quality and protection of the City’s streetscapes and commercial and industrial landscapes.

Tigard’s existing landscaping codes are scattered throughout the Development and Municipal Codes. Many of the provisions in the landscaping codes lack specificity, are conflicting, and present administrative challenges for the City. Also, the City’s standards and design guidelines do not specify industry accepted installation and maintenance requirements for trees.

Stakeholder interviews highlighted the need for requirements addressing the planting of high quality trees and ensuring that design and maintenance of areas such as parking lots and street side plantings are sustainable and aesthetically pleasing. The Oregon Chapter of the American Society of Landscape Architects (OASLA) suggested Tigard create a tree and landscape design manual with drawings and specifications so that landscape architects have a clear idea of the City’s overall tree and landscape vision. Such a tree and landscape design manual could also address the Tree Board’s request to translate Code revisions into something the public can understand.

Internally, the lack of a comprehensive tree inventory has led to difficulty tracking street trees and required landscape trees.

Although the UFMP community survey revealed that Tigard citizens are highly satisfied with the current overall state of Tigard’s urban forest, 74% of respondents believe more street trees will be good for the City. Tigard’s canopy analysis supports this, as street trees currently provide only 9% canopy in City street right-of-ways. The canopy analysis also found that the City’s parking lot tree standards are not effective due to the relatively low tree canopy in parking lots. (See Figure 2 on next page.)

Direction for revising Tigard’s landscaping code is included in the sub-goals and implementation of section two of the matrix. Specific

recommendations include developing a landscape design manual with drawings and specifications, improving parking lot design, establishing a permit system for the planting, replacement, and removal of required trees, and improving the tracking and inventorying of street trees and other required landscape trees.



Based on a random sample, Tigard parking lots (outlined in yellow) are covered by approximately 6% tree canopy (areas highlighted in green).

FIGURE 2

## CHAPTER 3:

# Tree Grove Protection



### Implementation Goal 3: Develop a tree grove protection program.

The third goal of the UFMP is to develop a tree grove protection program which creates mechanism for protecting Tigard’s remaining groves of native trees while allowing for the full development of property under current zoning.

Many tree groves in Tigard are currently afforded some level of protection due to their location in sensitive lands (stream corridors, steep slopes, significant habitat areas, wetlands, and floodplains) as defined by the Tigard Development Code. Tigard’s Development Code limits the type and intensity of development within sensitive lands, and requires permits for tree removal in these areas. However, the Development Code does not explicitly protect tree groves in sensitive lands, and tree removal permits are automatically issued if an erosion control plan is provided. Also, currently there are no protections for tree groves located outside of sensitive lands. Prior to enacting any regulations protecting tree groves, the City must comply with Federal, State, and Regional regulations (see Appendix G). Particular attention shall be paid to State laws including the requirements for an economic, social, environmental, and energy (ESEE) analysis prior to protecting “Goal 5” (natural) resources.

Some of the stakeholders interviewed for the UFMP such as the Pacific Northwest Chapter of the International Society of Arboriculture (PNWISA), the OASLA, the Tualatin Riverkeepers and Clean Water Services, support the City’s efforts to preserve and maintain native trees and groves in Tigard. Multiple stakeholders also suggest the City take a leadership role in tree grove protection by hiring a greenspace coordinator to provide long term maintenance of City-owned natural areas. The HBAMP suggested affected property owners be directly notified about regulations and incentives proposed for incorporation into any City code calling for the preservation of tree groves.

The UFMP community survey shows that Tigard residents support future regulations to protect native tree groves. Most residents (~55%) would like to see regulations focused on larger groves of native trees as opposed to individual trees of significant size (~28% support). In addition, 37%

of respondents said they prefer to see new tree regulations focused on natural areas as opposed to ornamental trees (~3% support). However, approximately 48% said they would like to see regulations applied to natural areas and ornamental trees equally. (See Figure 3 at right.) 73% of respondents said the decision of whether to preserve trees should not be left solely to the developer, and a majority (57%) said they support tree regulations even if they limit the size and extent of potential buildings or profits.

While residents prioritize grove protection, the canopy analysis revealed that Tigard’s tree groves are disappearing. In 1996, there were 63 canopy clusters greater than 5 acres in size within the City limits. In 2007, there were 48 canopy clusters greater than 5 acres in size. This represents a 24% decline in large sized canopy clusters in eleven years. (See Figure 4 on next page.)

As a result of trends shown in the canopy analysis, community preference, and stakeholder input, the UFMP developed a number of sub-goals and action measures to guide the development of a tree grove protection program that is compliant with Federal, State, Regional, and Local requirements. Included are recommendations to contact all property owners that would be impacted by a tree grove protection program and providing grove preservation incentives.

If the City were to enact new tree protection measures, would you like to see them focused on natural areas, ornamental landscape trees, both types equally, or on something else.

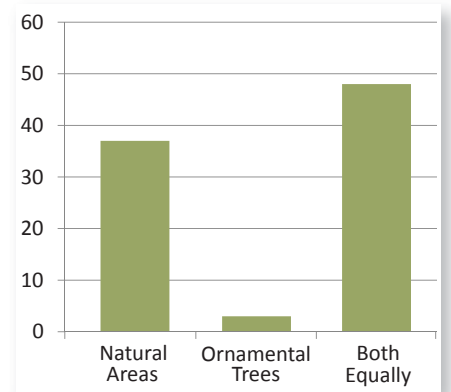
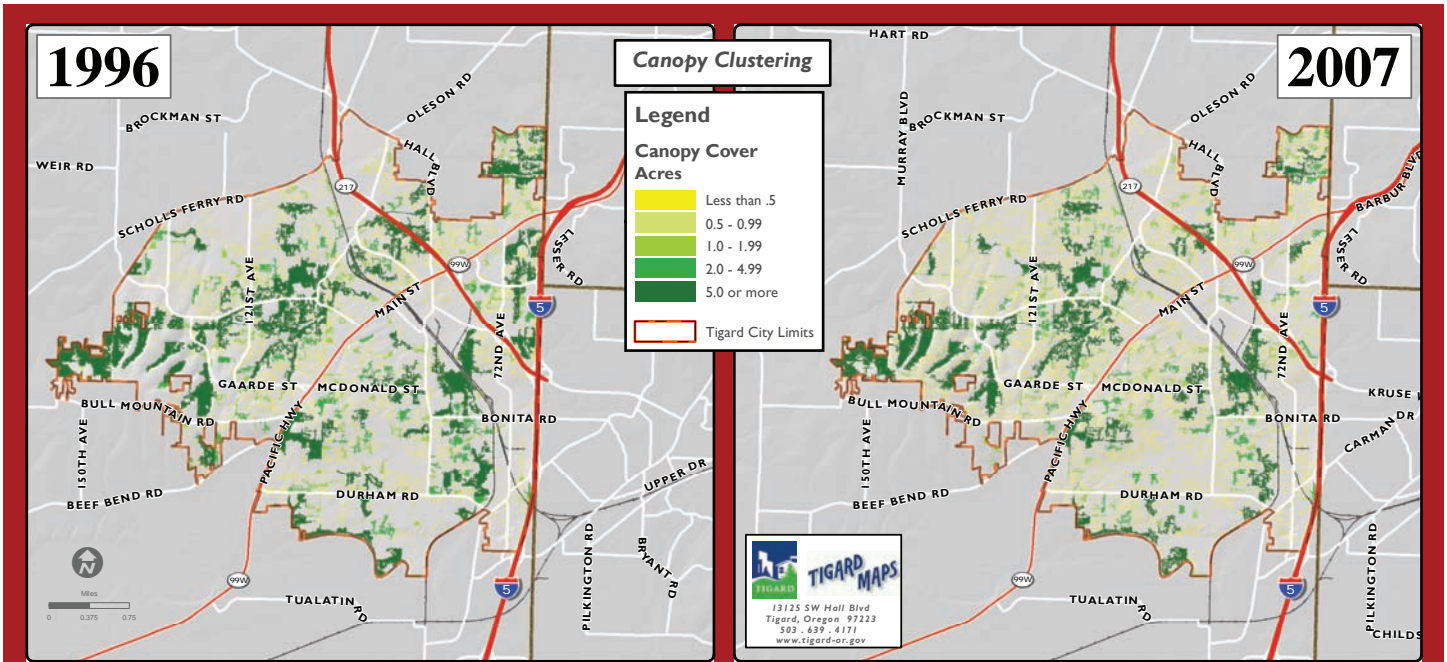


FIGURE 3



Map created: August 13, 2009

### Canopy Clustering Summary

Canopy Cluster Size Class	1996				2007			
	Total Acres of Canopy Cover	Acres as a % of Total Canopy Cover	No. of Clusters	No. of Clusters as a % of Total	Total Acres of Canopy Cover	Acres as a % of Total Canopy Cover	No. of Clusters	No. of Clusters as a % of Total
Less than .5 acres	366.55	18.77%	4356	90.94%	584.3	31.54%	7231	93.86%
0.5 to .99 acres	135.76	6.95%	197	4.11%	167.25	9.03%	242	3.14%
1.0 to 1.99 acres	159.25	8.16%	113	2.36%	177.88	9.60%	131	1.70%
2.0 to 4.99 acres	190.86	9.77%	61	1.27%	157	8.47%	52	0.67%
5.0 or more acres	1100.33	56.35%	63	1.32%	766.26	41.36%	48	0.62%
<b>Total</b>	<b>1952.75</b>	<b>100%</b>	<b>4790</b>	<b>100%</b>	<b>1852.69</b>	<b>100%</b>	<b>7704</b>	<b>100%</b>

FIGURE 4

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## CHAPTER 4:

# Hazard Trees

### Implementation Goal 4: Develop a hazard tree identification and abatement program.

The fourth goal in the UFMP is to develop a hazard tree identification and abatement program that adequately addresses tree hazards on both public and private property.

Currently Tigard’s Municipal Code prohibits hazard trees, but there is a lack of specificity on what constitutes a hazard and what the mechanism is for abating hazards in a timely manner. There is also no formal process for identifying and abating tree hazards on City property.

During the stakeholder interviews the Tree Board suggested that the City increase communications between departments. Interdepartmental communication is integral to effectively addressing tree hazards in a timely manner. Other stakeholders suggested that the City hire a greenspace coordinator who could provide proactive management of tree hazards in City parks and greenspaces. The HBAMP said the City should allow private property owners to manage their land as they see fit, which implies the City should have no involvement in private property tree hazard issues.

As a result of the City’s internal coordination meetings, specific methods for responding to public tree hazards were developed and are detailed in Appendix D. The Parks Division echoed the stakeholders by highlighting the need to hire a greenspace coordinator to proactively manage tree hazards on City property.

The community survey results indicate public support for a hazard tree identification and abatement program. Approximately 76% of residents think more resources should be directed to better maintain and protect existing trees. A majority of residents said they would support additional funding from increased city fees, charges, or property taxes to fund a more comprehensive tree program in Tigard parks and open spaces (~56% support, ~39% oppose). A portion of that funding could be used by the City for a hazard tree program. Finally, a majority of residents said they would support the creation of a program where the City would become involved in disputes between neighbors regarding hazardous trees on private property (60% support, 38% oppose). (See Figure 5 at left.)

Currently, if there is a dispute between neighboring property owners regarding a potentially hazardous tree, the City does not get involved, and instead directs the neighbors to work out a solution through civil means. Would you strongly support, support, oppose, or strongly oppose the creation of a program where the City would become involved in disputes between neighbors regarding hazardous trees?

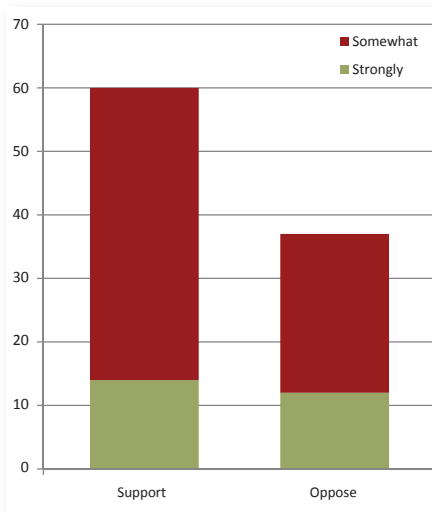


FIGURE 5

The sub-goals and implementation measures recommended in the UFMP support the creation of a hazard tree identification and abatement program for public and private property. The recommendations include formalizing the City's hazard response protocols, hiring a greenspace coordinator to help manage tree hazards on City property, and developing a process whereby the City would have authority to become involved in tree hazards on private property. In order to provide consistency in tree hazard identification and abatement, it is recommended that the City adopt the PNWISA Tree Risk Assessment methodology as its standard.



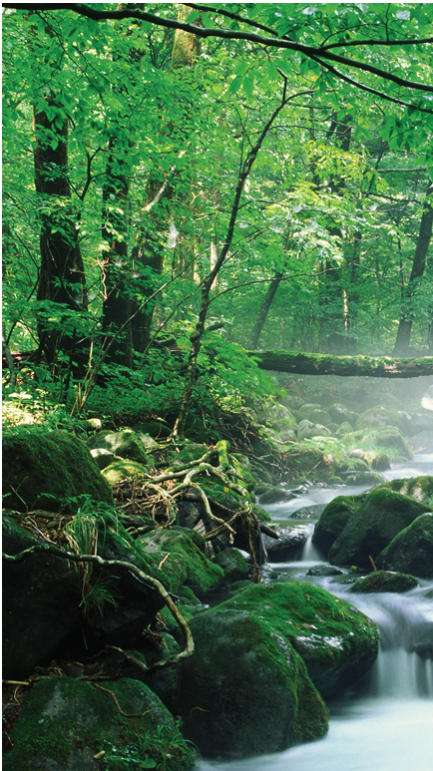
## CHAPTER 5:

# Urban Forestry Program Management

“

*The public showed a preference for urban forestry efforts to focus on streamside trees and other natural forested areas.*

”



### Implementation Goal 5: Improve the management of the City’s urban forestry program.

Implementation Goal 5 was developed to improve the coordination and management of the City’s urban forestry program.

Tigard’s urban forestry program is currently implemented by multiple City departments and divisions. In addition, code provisions relating to urban forestry are scattered throughout the Municipal and Development Codes. Management of City-owned tree and forest resources has been declining as more land is acquired without additional funding for maintenance and proactive management. Improved communication between City departments and divisions, unifying urban forestry related Code provisions, and providing adequate staffing is needed for more effective management of the City’s urban forestry program. Also, securing a sustainable funding source will be necessary to provide long term support of the urban forestry program as the Tree Fund declines due to less future development.

Stakeholders such as the PNWISA and Clean Water Services suggested that the City hire a greenspace coordinator to proactively manage City tree and forest resources. The Tualatin Riverkeepers said the City needs to establish a sustainable source of funding for its urban forestry program to assist in the long term management of invasive species. The Tree Board suggested that there needs to be more coordination between City departments and divisions when administering the urban forestry program. Although a minority view, the HBAMP’s position is that there should be no urban forestry program because the costs outweigh the benefits of such a program.

The City’s internal coordination meetings highlighted the need for more communication between departments and divisions. More communication would improve the management of tree hazards, ensure City development projects are adhering to applicable Code requirements, improve the tracking of trees after development, and provide more transparency as to how and where the Tree Fund is being utilized. The internal coordination meetings also highlighted the need for a written set of tree protection

and replacement standards for City projects so that the City can take a leadership role in urban forestry.

The community survey results demonstrate public support for increased funding through fees and taxes for the City’s urban forestry program (~56% support, ~39% oppose). (See Figure 6 at right.) The public showed a preference for urban forestry efforts to focus on streamside trees and other natural forested areas. These results indicate that residents would support the hiring of a greenspace coordinator to directly manage the nearly 180 acres of City-owned tree canopy in Tigard.

The sub-goals and implementation measures recommended in the UFMP to support the goal of improved City management include developing methods for inventorying and tracking trees and urban forestry related expenditures, developing a written set of urban forestry standards for City projects, securing a sustainable funding source for urban forestry, and hiring a greenspace coordinator to manage the City’s natural areas.

Would you strongly support, support, oppose, or strongly oppose additional funding from increased City fees, charges or property taxes to fund a more comprehensive tree planting and maintenance program in Tigard parks and open spaces?

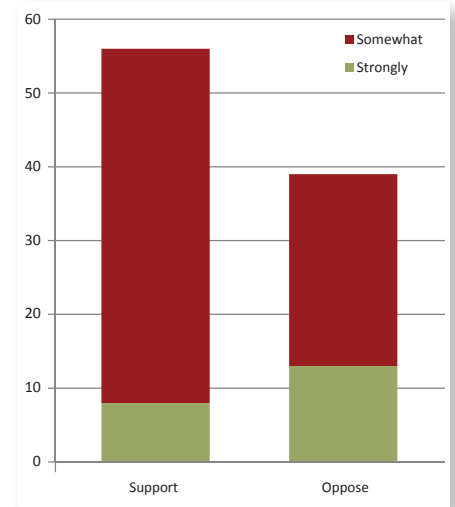


FIGURE 6



Abbreviation	Forest Type	Vegetation Type
<b>FF</b>	Closed forest; Upland	Douglas fir forest, often with bigleaf maple, grand fir, dogwood, hazel, yew. No other conifers present. No Oak.
<b>OFZ</b>	Woodland	Douglas fir woodland or “timber” often with bigleaf maple, alder or dogwood. No oak, hemlock or cedar. Brushy undergrowth of hazel, vine maple, young Douglas fir, bracken etc.
<b>OFOPZ</b>	Woodland	“Scattering” or “thinly timbered” Douglas fir-white oak-ponderosa pine woodland, with brushy undergrowth of hazel, bracken, etc. May include small openings.
<b>FFP</b>	Closed forest; Upland	Douglas fir-ponderosa pine forest; no oak, includes ash, red alder, hazel, Oregon grape, vine maple.
<b>FALW</b>	Closed forest; Riparian & Wetland	Ash-alder-willow swamp, sometimes with bigleaf maple. Often with vine maple, ninebark, hardhack, cattails. Ground very soft, mirey or muddy, usually with extensive beaver dams.
<b>OFOZ</b>	Woodland	Scattering or thinly timbered Douglas fir-white oak woodland. May contain bigleaf maple; brushy understory of hazel, young oaks, oak brush, young fir, bracken. No pine.
<b>FFHPP</b>	Closed forest; Upland	Mixed conifer forest, with ponderosa pine. May include Douglas fir, red cedar, western hemlock, bigleaf maple, white oak, red alder, dogwood, vine maple.
<b>OFHC</b>	Woodland	Conifer-dominated woodland; various combinations of Douglas fir, red cedar, hemlock, bigleaf maple, white oak, red alder, dogwood. No ash present.
<b>FFHCbu</b>	Closed forest; Upland	FFHC, but burned, often with scattered trees surviving fire.
<b>FFHC</b>	Closed forest; Upland	Mesic mixed conifer forest with mostly deciduous understory. May include Douglas fir, western hemlock, red cedar, grand fir, bigleaf maple, yew, dogwood, white oak, red alder.
<b>FFO</b>	Closed forest; Upland	Douglas fir-white oak (bigleaf maple) forest, with brushy understory of hazel, young oak, oak brush, oak sprout, bracken, briars, sometimes willow.
<b>FFA</b>	Closed forest; Riparian & Wetland	Ash-mixed deciduous riparian forest with combinations of red alder, bigleaf maple, black cottonwood, white oak, dogwood. Conifers may be present in small quantities.

As Tigard became settled, native forests were cleared for agricultural uses and timber to help support development. After Tigard was incorporated in 1961, the City began passing codes to manage the urban forest beginning in 1967 with street tree planting requirements, and continuing in 1983 and 1997 with the passage of codes that regulated tree removal. The City hired its first urban forester in 1998 and created the Tree Board in 2001. The City of Tigard has been named a Tree City USA every year since 2001 and was awarded the Tree City USA Growth Award in 2009 for its expanded urban forestry efforts.

In 2007, Tigard had 24% citywide tree canopy which is well below American Forests’ target recommendation of 40% for Pacific Northwest



Logging in Tigard area — 1904



The Hunziker Dairy Farm near Garden Home. Mr. Hunziker is in center of picture wearing hat and coat.

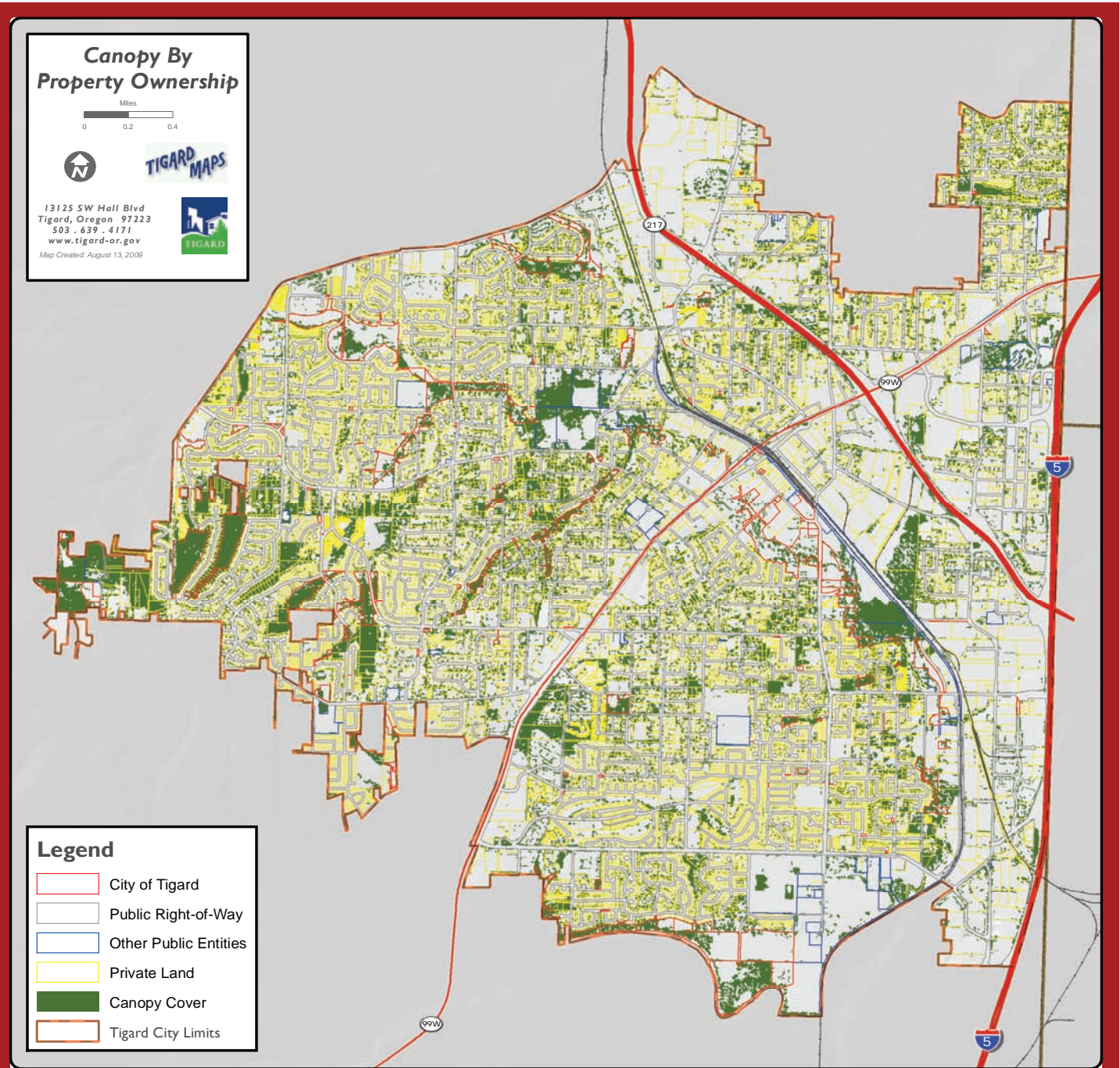
“

*The City of Tigard has been named a Tree City USA every year since 2001 and was awarded the Tree City USA Growth Award in 2009 for its expanded urban forestry efforts.*

”

cities. An analysis of existing tree canopy combined with plantable locations confirmed that 40% citywide tree canopy cover is achievable in Tigard. While citywide tree canopy is currently stabilized (1% decrease from 1996–2007), it is becoming increasingly fragmented (larger groves are being replaced by individual trees). (See Figure 8, next page.) Because 78% of Tigard’s tree canopy is on private property and only 7% of Tigard’s land area is on buildable lands, it is critical to develop an urban forest stewardship program that includes all residents and property owners in the City.





### Canopy/Property Ownership Summary

Taxlot Ownership	May 13, 2008 Taxlots		2007 Canopy Cover	
	Number of Taxlots	Total Acres	Acres of Canopy Cover in 2007	Percent Canopy Cover in 2007
City of Tigard	235	388.41	179.18	46.13%
Public Right-of-Way	n/a	1,288.30	117.45	9.12%
Other Public Entity	79	431.65	105.1	24.35%
Private	15,880	5,447.64	1,450.96	26.63%
<b>Total</b>	<b>16,194</b>	<b>7,556.00</b>	<b>1,852.69</b>	<b>24.52%</b>

FIGURE 8

Most stakeholder groups support the goal of developing and participating in an urban forest stewardship program. The Tree Board wants future urban forestry codes to address areas outside development and provisions translated into something the public can understand. They also want more community education on urban forestry issues, and for the City to continually measure progress on canopy changes and community attitudes so that policy effectiveness can be easily evaluated in the future.

Portland General Electric and the Tigard-Tualatin School District have offered to partner with the City on tree planting and maintenance projects. The Tualatin Riverkeepers and Clean Water Services would like more focus on managing invasives in natural areas and have offered to assist the public on long term resource management.

Although there is a high level of satisfaction with the current state of Tigard’s urban forest, survey results show the public would support an urban forest stewardship program with 76% of residents wanting more resources directed towards maintaining and protecting existing trees. (See Figure 9.) Many would be willing to become directly involved with 52% of residents saying they would prefer volunteering to plant and maintain trees rather paying a fee to the City to do it. Residents also want to protect the trees in their existing neighborhoods with 75% saying they would support regulations for developed private property that would protect large, healthy trees. (See Figure 10.)

The sub-goals and implementation measures in the UFMP that support the goal of developing an urban forest stewardship program include increasing urban forestry outreach materials, utilizing funding for tree planting and maintenance on public and private property, and developing regulations to prevent clear cutting. Also, long term objectives include periodically updating the Urban Forestry Master Plan in order to track progress and set new goals, achieving not net loss of tree canopy between 2007 and 2015, and achieving 32% and 40% citywide tree canopy by 2027 and 2047 respectively.

It would benefit the City if more resources could be directed to better maintain and protect existing trees.

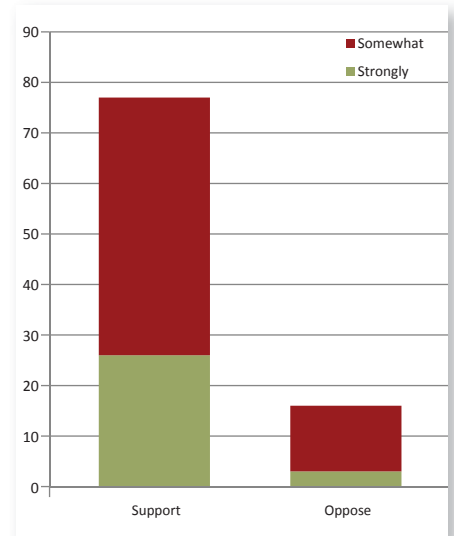


FIGURE 9

Would you strongly support, support, oppose, or strongly oppose city regulations that would provide some level of protection for large, healthy trees on developed private property? This would apply to all current private property.

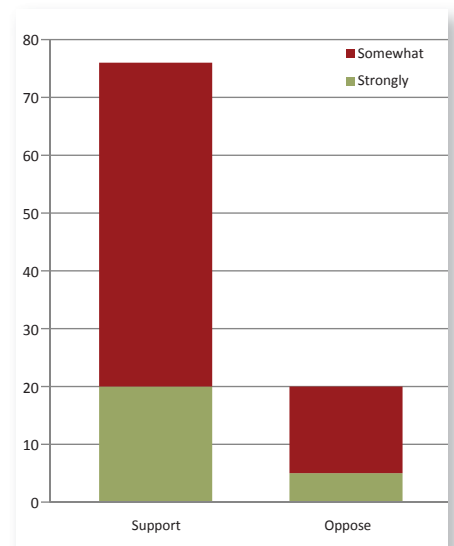
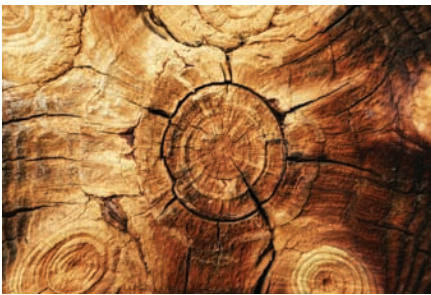


FIGURE 10

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# Glossary



**Buildable Lands Inventory (BLI)** — The Tigard BLI defines buildable land as: 1) privately owned taxlots that are vacant; or 2) larger privately owned taxlots that are developed but with  $\frac{1}{4}$  acre or greater of the taxlot vacant. Additionally, publicly owned land, sensitive lands, water quality tracts, and homeowner association owned lots within subdivisions are not included. Platted, vacant lots within subdivisions are considered buildable until development has occurred.

**Canopy Cluster** — A contiguous area of canopy cover created by a group of trees. Using Feature Analyst software on aerial photos of Tigard, a canopy layer was created in Tigard’s GIS database. This layer was used to analyze the size and location of canopy clusters in Tigard.

**Canopy Cover** — The area above ground which is covered by the trunk, branches, and foliage of a tree or group of trees’ crowns.

**GIS (Geographic Information System)** — An integrated collection of computer software, and data used to view and manage information about geographic places, analyze spatial relationships, and model spatial processes. A GIS provides a framework for gathering and organizing spatial data and related information so that it can be displayed and analyzed.

**Invasive** — Species that spread at such a rate that they cause harm to human health, the environment, and/or the economy.

**Ornamental Trees** — Trees cultivated primarily for aesthetics and other direct human benefits.

**Sensitive Lands** — As defined by the Tigard Development Code, lands potentially unsuitable for development because of their location within:

1. The 100-year floodplain or 1996 flood inundation line, whichever is greater;
2. Natural drainageways;
3. Wetland areas which are regulated by the other agencies including the U.S. Army Corps of Engineers and the Division of State Lands, or are designated as significant wetland on the City of Tigard “Wetland and Stream Corridors Map”;
4. Steep slopes of 25% or greater and unstable ground; and
5. Significant fish and wildlife habitat areas designated on the City of Tigard “Significant Habitat Areas Map.”

**Tree Density** — The number of trees per unit area.

**Tree Fund** — A fund created by the City of Tigard for the purpose of replacing trees that are removed during development activities. It is funded by development projects that do not plant replacement trees, and is used by the City to cover its costs of planting an equivalent amount of trees elsewhere.

**Tree Grove** — A group of trees, often with contiguous crowns, which form a visual and/or biological unit.

**Tree Hazard Assessment** — A systematic process of identifying tree hazards.

**Tree Risk Assessment** — A systematic process to determine the level of risk posed by a tree, tree part, or group of trees.

# Appendix



## APPENDICES

<b>Appendix A:</b> Urban Forestry Survey Results	<b>a1</b>
<b>Appendix B:</b> Canopy Analysis	<b>a16</b>
<b>Appendix C:</b> Stakeholder Interview Notes	<b>a24</b>
<b>Appendix D:</b> City of Tigard, Internal Coordination Meeting Notes	<b>a39</b>
<b>Appendix E:</b> Urban Forest Section of the Comprehensive Plan	<b>a46</b>
<b>Appendix F:</b> Tigard Urban Forestry Historical Timeline	<b>a55</b>
<b>Appendix G:</b> Review of Current Federal/State/Regional Urban Forestry Policy Framework	<b>a56</b>
<b>Appendix H:</b> Review of Current City of Tigard Urban Forestry Policy Framework	<b>a63</b>
<b>Appendix I:</b> Resolution No. 09-69 — A Resolution Accepting the City of Tigard’s Urban Forestry Master Plan	<b>a71</b>

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**CITY OF TIGARD**

**2008 URBAN FORESTRY SURVEY**

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**STEVE JOHNSON & ASSOCIATES \* P. O. BOX 3708 \* EUGENE, OREGON 97403**

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**TOPLINE FREQUENCIES**

*\*\*Topline results include the text of each question, the response categories, and the number and percent of responses in each category. All questions include categories for Refused (7 or 97), Don't Know (8 or 98) and No Answer (9 or 99). In the interest of space, responses such as "I don't know," "I can't think of anything," and "no comment" have been removed from the document. The "open answers" are recorded verbatim. They have been corrected for spelling but not grammar.*

**HELLO1** Hello, I'm calling on behalf of the City of Tigard. They have asked us to conduct a survey of residents 18 and older about trees in the city and urban forestry. The survey takes about ten minutes and is voluntary and anonymous. I'd like to start now.

[INTERVIEWER NOTE: IF RESPONDENT SELF IDENTIFIES AS UNDER 18 ASK FOR SOMEONE OVER 18. IF NO ONE IS AVAILABLE TRY AND SCHEDULE CALL BACK. IF THIS IS THE LAST DIAL ATTEMPT GO TO NOQUAL]

PRESS START TO BEGIN – OR – PRESS DISPO TO SCHEDULE CALLBACK

\*INTRO FOR PARTIALS: Hi, I'm calling back to finish an interview for the City of Tigard that we began earlier. Is that (you/person available)?

**SATIS1** I'd like to begin by asking if you are very satisfied, satisfied, dissatisfied or very dissatisfied with the quantity and quality of trees in the following locations. First, what about the trees on your street?

PROBE: Are you very satisfied, satisfied, dissatisfied, or very dissatisfied with the quantity and quality of trees on your street?

1 VERY SATISFIED	103	25.75%
2 SATISFIED	246	61.5%
3 DISSATISFIED	32	8%
4 VERY DISSATISFIED	10	2.5%
7 REF/ 8 DK/ 9 NA	<u>9</u>	<u>2.25%</u>
	400	100%

**SATIS2** What about the trees in your neighborhood?

PROBE: Are you very satisfied, satisfied, dissatisfied, or very dissatisfied with the quantity and quality of trees in your neighborhood?

## APPENDIX A

1 VERY SATISFIED	104	26%
2 SATISFIED	242	60.5%
3 DISSATISFIED	43	10.75%
4 VERY DISSATISFIED	5	1.25%
7 REF/ 8 DK/ 9 NA	<u>6</u>	<u>1.5%</u>
	400	100%

**SATIS3** What about trees in the city as a whole?

PROBE: Are you very satisfied, satisfied, dissatisfied, or very dissatisfied with the quantity and quality of trees in the city as a whole?

1 VERY SATISFIED	61	15.25%
2 SATISFIED	251	62.75%
3 DISSATISFIED	59	14.75%
4 VERY DISSATISFIED	10	2.5%
7 REF/ 8 DK/ 9 NA	<u>19</u>	<u>4.75%</u>
	400	100%

**HOOD** Does your neighborhood need more trees and landscaping to improve its appearance and environmental quality?

1 YES	101	25.25%
2 NO	294	73.5%
7 REF/ 8 DK/ 9 NA	<u>5</u>	<u>1.25%</u>
	400	100%

**IMPORT1** Now I would like to read you some statements people have made about trees. For each one, would you tell me if you strongly agree, agree, disagree, or strongly disagree. First, trees are important to a community's character and desirability as a place to live.

PROBE: Do you strongly agree, agree, disagree, or strongly disagree?

1 STRONGLY AGREE	249	62.25%
2 AGREE	138	34.5%
3 DISAGREE	10	2.5%
4 STRONGLY DISAGREE	1	0.25%
7 REF/ 8 DK/ 9 NA	<u>2</u>	<u>0.5%</u>
	400	100%

**IMPORT2** It is important to me to have a view of trees from my home.

PROBE: Do you strongly agree, agree, disagree, or strongly disagree?

1 STRONGLY AGREE	218	54.5%
------------------	-----	-------

## APPENDIX A

2 AGREE	148	37%
3 DISAGREE	28	7%
4 STRONGLY DISAGREE	4	1%
7 REF/ 8 DK/ 9 NA	<u>2</u>	<u>0.5%</u>
	400	100%

**IMPORT3** Trees contribute to the value of residential property.

PROBE: Do you strongly agree, agree, disagree, or strongly disagree?

1 STRONGLY AGREE	200	50%
2 AGREE	170	42.5%
3 DISAGREE	19	4.75%
4 STRONGLY DISAGREE	3	0.75%
7 REF/ 8 DK/ 9 NA	<u>8</u>	<u>2%</u>
	400	100%

**IMPORT4** Trees contribute to the value of commercial property.

PROBE: Do you strongly agree, agree, disagree, or strongly disagree?

1 STRONGLY AGREE	125	31.25%
2 AGREE	205	51.25%
3 DISAGREE	45	11.25%
4 STRONGLY DISAGREE	3	0.75%
7 REF/ 8 DK/ 9 NA	<u>22</u>	<u>5.5%</u>
	400	100%

**IMPORT5** More street trees would be good for the City.

PROBE: Do you strongly agree, agree, disagree, or strongly disagree?

1 STRONGLY AGREE	97	24.25%
2 AGREE	202	50.5%
3 DISAGREE	62	15.5%
4 STRONGLY DISAGREE	9	2.25%
7 REF/ 8 DK/ 9 NA	<u>30</u>	<u>7.5%</u>
	400	100%

**IMPORT6** It would benefit the City if more resources could be directed to better maintain and protect existing trees.

PROBE: Do you strongly agree, agree, disagree, or strongly disagree?

1 STRONGLY AGREE	102	25.5%
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**APPENDIX A**

2 AGREE	203	50.75%
3 DISAGREE	50	12.5%
4 STRONGLY DISAGREE	10	2.5%
7 REF/ 8 DK/ 9 NA	<u>35</u>	<u>8.75%</u>
	400	100%

**IMPORT7** The City should require that some trees be preserved and new ones planted on sites that are being developed.

PROBE: Do you strongly agree, agree, disagree, or strongly disagree?

1 STRONGLY AGREE	160	40%
2 AGREE	193	48.25%
3 DISAGREE	30	7.5%
4 STRONGLY DISAGREE	9	2.25%
7 REF/ 8 DK/ 9 NA	<u>8</u>	<u>2%</u>
	400	100%

**FOREST1** All cities have an urban forest. The urban forest in Tigard consists of the trees in parks, along streets, in yards, on empty lots and in forested areas. Do you think the overall quality of Tigard’s urban forest has increased, decreased or stayed the same in the last 10 years?

1 INCREASED	73	18.25%
2 DECREASED	166	41.5%
3 STAYED THE SAME	117	29.25%
7 REF/ 8 DK/ 9 NA	<u>44</u>	<u>11%</u>
	400	100%

**FOREST2** In the future, do you expect the overall quality of Tigard’s urban forest to increase, decrease, or stay the same?

1 INCREASED	113	28.25%
2 DECREASED	126	31.5%
3 STAYED THE SAME	138	34.5%
7 REF/ 8 DK/ 9 NA	<u>23</u>	<u>5.75%</u>
	400	100%

**FOREST3** On a scale of 1-10, where one is poor and 10 is excellent, how would you rate the extent and appearance of trees in Tigard?

1 ONE	3	0.75%
2 TWO	0	0%
3 THREE	14	3.5%
4 FOUR	11	2.75%

APPENDIX A

5 FIVE	61	15.25%
6 SIX	48	12%
7 SEVEN	96	24%
8 EIGHT (GO TO TAX1)	119	29.75%
9 NINE (GO TO TAX1)	19	4.75%
10 TEN (GO TO TAX1)	24	6%
7 REF/ 8 DK/ 9 NA	<u>5</u>	<u>1.25%</u>
	400	100%

**FOREST4** What could be done to improve the appearance and quality of trees in Tigard?

OPEN ENDED – RECORD EXACT RESPONSE

- Not cut them all. They are cutting out more than they are putting in. They should require developers to keep some of the existing trees.
- Better maintenance.
- More variety.
- They need to plant more trees when they remove them. Do not just plant commercialized trees.
- Maintain the trees. Trimming them and things like that.
- Ask the people to clean up more. During the fall, clean up sidewalk areas like they should.
- More maintenance,
- I say plant more, just preserve the ones that are there.
- Certain areas. Save certain trees.
- Taken care of the trees.
- I don't have any good ideas. Don't cut down more big trees.
- Trimmed when it comes to wires, and in areas with no trees new ones could be planted. When they are doing commercial development they should plant trees when they are done building.
- In the vast expanses of parking lots there should be shade trees for the cars. It would help with gas so people don't have to use the AC. Shade trees help a lot.
- Public awareness.
- Developers not remove existing trees as much.
- One thing I don't like is the power company coming along and trimming them to look stupid.
- Better trees that don't tear up streets and utilities.
- Don't do anything. They'll grow by themselves. No sense in paying tax payers' money on trees that can take care of themselves.
- High quality maintenance.
- Let the trees get older.
- You know you do a good job. Keep up the good work.
- Add trees along Durham Road and downtown Main Street.
- More fir trees or pine green trees.
- Plant more, I guess.
- I think more of them. And better maintenance of the area around the trees.
- Plant more trees; take care of them.
- They don't have a nice setup in Tigard, lack of parks.

## APPENDIX A

### Maintenance

More maintenance from landowners and the city.

Better protection of the exciting trees in areas.

Keeping them clean, away from street signs and pruning them.

Quit cutting them down I think.

They could be taken care of.

Trimming.

Quit cutting them down.

They can be trimmed up so they can plant more trees.

Plant more trees.

Prevent cut down of existing ones, plant more trees.

They could put the areas back that used to be there, that are gone.

Plant more.

I think if they planted the proper trees so that the roots would not appear and break up the sidewalks. I think people either put them down and don't pull out the roots.

Ones left are well maintained, pick up leaves off sidewalks and streets for bikers.

To trim them.

Plant more street trees on Greenburg Road.

Not letting people cut them down.

Grow more.

There are places where there are a lot of trees and places where there are none, trees should be everywhere, especially where there are none. It would also be good to discuss the things people don't want to see, especially industrial areas. Trees should be used to shield them from their neighbors.

Streets be lined with trees.

Leave them alone.

Basic maintenance.

I think if there is some sort of a plan. When you build new housing areas and existing areas you should have a comprehensive plan about the comprehensive trees. Whether the city is going plant the trees or it is going to be left to individuals.

In some areas I think you need to have management people that know what is going on.

Placement of trees and people with knowledge of what is going on. It would be more beneficial to have more parks. Percentage of parks in a residential area.

Protection of some of the areas, like stream land from development.

Maintenance around power lines.

More trees. Nothing else.

Trees aren't taken care of well, trees in vacant lots should become less neglected.

Fertilize.

Find a way to keep away all the leaves.

Pruning and maintained health, be maintained better.

More volunteers to maintain them.

Plant more trees! Plant more quality trees.

I think that we need to keep the landscaping up. We need to maintain our trees. If we have more trees we will have a better community.

## APPENDIX A

Put them in strategic locations like downtown. They should put a ton of trees downtown.  
 They want to improve downtown they should put in good trees. Don't put them there for no reason.

Just so much building going on more regulations about what trees need to remain.  
 Probably the amount.

There could be more of them on major highways. Highway 99 has none on that road.  
 Plant more trees.

More placed in better locations, not be so messy.  
 Add more trees, keep the exciting trees.  
 Better pruning with trees along the streets a lot that have grown big and unruly.  
 Better maintenance. I think that some of the street trees get in the way.  
 Probably just more attention to them. The property owners need to pay more attention to their trees probably. If we are going to have trees, they need to be maintained.  
 Not be willing to cut so many when they are developing.  
 Don't know, maintain them.  
 Get the city counsel in the city forest, they should be running the city not the trees.  
 Maintain damage is done.  
 Leave them standing, pruning assisting their health.  
 Maintain what they have and not let the new buildings do away with the trees. Plant new ones after they have built homes or buildings.  
 Plant more and not chop down forest to put up condos.  
 I wish people would take care of trees better.  
 They could have more trees where there are no trees.  
 More street trees.  
 Don't think anything should be done.  
 Trim them.  
 Highway 99 at the bridge. Just be conscientious.  
 Plant more trees, when you remove trees, plant trees where the space is available. It should be a law to plant trees.  
 Provide good maintenance.  
 Downtown area needs more trees.  
 Old trees be cut down, plant new ones.  
 Preserve during development.  
 Better overall maintenance.  
 Better maintained.  
 Pick up more leaves.  
 I don't have a problem with it, so nothing.  
 Need more trees in old town.  
 Cut them all down, too many large trees, they are blocking the view of everything. They need to at least be trimmed.  
 Developer should put trees of appropriate size for the lot.  
 A little bit better maintained by people that take care of the trees.  
 More of them along the main streets.  
 They could be preserved. Planting the right trees. And more of them.  
 Trimming and landscaping around trees.  
 Like the downtown, they made it look all cutesie.

## APPENDIX A

Plant more, let more streets be planted next to trees. Less shopping malls, have an area of trees planted, 99 west. They put ugly storage unit, they cut down beautiful trees for that.

Improve the city council decisions.

Pruning.

A little bit of pruning.

There could be improvements on highway 99 and on commercial properties. I see a lot of death that needs to be maintained a little bit better. More trees on busier streets.

Plant more of them, take care of them, and cut their branches and everything.

First of all plant more trees if there is the space.

Largely, plant new ones and stop cutting down the old ones.

Probably more aggressive street tree planting program. Out reach to property owners that have trees and preserve them.

Most of the trees are on private property. As to the ones that are on public domain, they should be maintained professionally with an eye towards long term growth.

I like where homes don't go right to the creek and there is green spaces along creeks.

Maybe more trimming on trees.

Plant more.

Expert looking at the issue.

Old ones let go. Cleaned up.

By preserving existing trees.

Better maintenance.

Leave them alone.

Remove many of them. Public works departments are not funded to protect neighborhoods as a result of leaf fall. There is not enough street sweeping services.

Downtown could plant trees.

Lining the streets and putting them in parks, but I think they're doing that right now. Where I live there are many trees in the community.

More trees, as far as the existing trees, I'm not sure what to say about their quality and appearance.

Proper maintenance of the trees and removal of the dead or improper growth.

Plant more, rip up cement and plant trees.

In certain neighborhoods there could just be more of them. And more yard debris pick-up, so that people are not afraid to have trees. Anything that would make having a tree easier would be good.

I would like to see their messes cleaned up quicker.

If they had left the old trees to live, it would have been better. They put up some new dinky trees. And they just don't look as good. It's too late.

Maybe better maintained and kept trees.

Maintain existing trees.

Plant more. City to replace trees that are deceased or need to be replaced.

Cut down dying trees, take care of trees next to main roads.

Stop cutting them down. When a large tree is cut down, requires two of three tree in their place.

Adding variety.

More of them in public areas. In downtown Tigard.

## APPENDIX A

I think they need to plant more trees along streets and in newly developed areas.

Add some along 99.

Better trimming and maintenance.

Maybe more appropriate trees in the area they're going to be planted. I guess I'm thinking about some trees are planted too close to the street, and that causes problems with leaves in the sewer and sidewalks heaving from the roots.

Maintenance

Maintenance and replanting with trees that die.

Just encourage more people to plant proper trees and take care of the ones they have. And not cut them down unnecessarily.

Pruning.

In the greenway, we have lots of English ivy that is destroying our trees. Dead trees.

Not cutting down massive amounts when they build new areas. Plant more trees along the parks.

I don't know what could be done to make them better. I noticed when new development is going in were there is a forestry areas and they take out the trees and I don't like that. I don't like the ripping up of the stuff along Vano Creek.

Stop chopping down trees.

More maintenance and planting more trees.

Plant more decorative trees. Some of the ones that flower in the spring. More evergreens. The big scrub maples, big yellow leaves. Replace stuff with more colors for spring and fall. More red maples.

Planting more trees in the downtown Tigard area and taking care of trees that are at the end of their life. Taking down and replacing trees that are dying.

They're in pretty good shape.

Maintain the one we have, and plant more.

Keep them trimmed away from the important stuff.

Replace trees as they are taken out.

Medians planted with trees. Uniform tree type on various streets so that it isn't so ragged looking.

Better up keep.

Get rid of the old ones that are dying. Just clean up.

Plant more. Help maintain the huge fir trees.

I think that the city needs to be a little more proactive in trimming them so things can be seen. So that people who are unfamiliar with the area can see the street signs. It's a huge sign. If people are elderly then they can't trim them themselves. Need to be more proactive.

I really don't know if I like a tree in front of my house, I wouldn't plant it but I think trees are important.

Stop cutting down all the trees on all developments.

Keep them trimmed up a little bit nicer and leaves in the fall are a big problem, they make a mess.

Nothing I think they are fine.

Take down the trees that drop leaves.

I'm not sure we need more trees.

## APPENDIX A

I don't really know, stop cutting down all the trees, build where they do not have to remove trees.

Just prune and thin out the trees. Increase the health of trees.

More open green spaces and more trees in commercial areas.

Plant more trees.

Better maintaining by replanting. More planting.

Plant more.

I'm thinking of the one on the corner of my lot, it has pruning problems due to the power lines. It really distorts the shape of the tree.

Stop building houses.

Cutting them back and some pruning them.

More planting.

Do not cut down anymore than they absolutely have to.

I think maybe stronger education on how to take care of trees.

More development of downtown, Tigard with lots of trees and landscaping.

Better management by the city and government.

When developing, keep more trees that are already existing. Or replanting trees that have been taken down to build a new house.

Regular maintenance.

I think there should be more, plant more.

I feel that every time they cut one down they put new ones in. They've stopped doing that. They don't replace anything, it looks like a concrete forest.

I think more of the visual stuff and getting the community more involved, too many businesses.

I think they are okay.

I don't have an opinion on it.

Planting to include green space and park settings, Bull Mountain is an example of how not to do it.

More trees. Better upkeep.

Not cut them down.

I would think that they could be better shaped, and trimmed when needed. I fit the location where they fit size wise.

Leave the consumer alone. They have their own trees, so let them do what they want.

Some of them need to be shaped better. The ones on the road.

I don't know, just make sure they're maintained and plant new trees as ones die or become available.

They are properly cared for and planted more of them.

Better maintenance.

Better care and clean up.

Variety and maintenance.

I would presume plant more.

We're going to suggest the city does a better job of maintaining them. To improve our park, we're on Woodard park, it would improve the park if they would thin the trees that are diseased and prune them, or remove them.

Quit cutting them down for new developments.

Planting more trees.

APPENDIX A

- Just constant vigilance.
- More and just more.
- Plant trees where there are no trees. Where I live there are lots of trees.
- Leave them alone.
- Better maintenance.
- Plant more.

**TAX1** Currently, property owners are responsible for maintaining street trees in front of their property. Would you strongly support, support, oppose, or strongly oppose a program that transfers the responsibility for maintaining street trees to the City?

1 STRONGLY SUPPORT	65	16.25%
2 SUPPORT	128	32%
3 OPPOSE	136	34%
4 STRONGLY OPPOSE	38	9.5%
7 REF/ 8 DK/ 9 NA	<u>33</u>	<u>8.25%</u>
	400	100%

**TAX2** Would you strongly support, support, oppose, or strongly oppose additional funding from increased city fees, charges, or property taxes to fund a City street tree program?

1 STRONGLY SUPPORT	25	6.25%
2 SUPPORT	151	37.75%
3 OPPOSE	132	33%
4 STRONGLY OPPOSE	63	15.75%
7 REF/ 8 DK/ 9 NA	<u>29</u>	<u>7.25%</u>
	400	100%

**TAX3** Would you strongly support, support, oppose, or strongly oppose additional funding from increased city fees, charges, or property taxes to fund a more comprehensive tree planting and maintenance program in Tigard parks and open spaces?

PROBE: This would include trees throughout Tigard, not just on streets.

1 STRONGLY SUPPORT	32	8%
2 SUPPORT	190	47.5%
3 OPPOSE	104	26%
4 STRONGLY OPPOSE	53	13.25%
7 REF/ 8 DK/ 9 NA	<u>21</u>	<u>5.25%</u>
	400	100%

**TAX4** Would you prefer volunteering to plant and maintain trees or paying a fee to the City to do this?

PROBE: Even if you are not a property owner, which would you prefer?

## APPENDIX A

1 PLANT	208	52%
2 PAY	106	26.5%
3 IF VOL – NEITHER	61	15.25%
7 REF/ 8 DK/ 9 NA	<u>25</u>	<u>6.25%</u>
	400	100%

**CHOICE1** Which of the following would be your first choice of where the city should plant more trees?

(PROBE FROM LIST)

1 ALONG STREETS	99	24.75%
2 IN PEOPLE'S YARDS	10	2.5%
3 IN COMMERCIAL/INDUSTRIAL AREAS	51	12.75%
4 IN PARKS	79	19.75%
5 NEAR STREAMS/NATURAL FORESTED AREAS	129	32.25%
7 REF/ 8 DK/ 9 NA	<u>32</u>	<u>8%</u>
	400	100%

**CHOICE2** Which of the following statements most closely represents your opinion about trees.

1 PRESERVE AS MANY TREES AS POSSIBLE	128	32%
2 WHEN TREES ARE REMOVED, REPLACE THEM	129	32.25%
3 PRESERVE LARGE OR UNIQUE TREES	60	15%
4 ALLOW INDIVIDUALS REMOVE TREES IF WISH	71	17.75%
5 IF VOL – NONE OF THESE STATEMENTS	1	0.25%
7 REF/ 8 DK/ 9 NA	<u>11</u>	<u>2.75%</u>
	400	100%

**HAZARD** Currently, if there is a dispute between neighboring property owners regarding a potentially hazardous tree, the City does not get involved, and instead directs the neighbors to work out a solution through civil means. Would you strongly support, support, oppose, or strongly oppose the creation of a program where the City would become involved in disputes between neighbors regarding hazardous trees?

1 STRONGLY SUPPORT	54	13.5%
2 SUPPORT	185	46.25%
3 OPPOSE	101	25.25%
4 STRONGLY OPPOSE	49	12.25%
7 REF/ 8 DK/ 9 NA	<u>11</u>	<u>2.75%</u>
	400	100%

APPENDIX A

**REG1** Would you strongly support, support, oppose, or strongly oppose tree removal regulations during property development, even when they limit the size and extent of potential buildings or profits?

1 STRONGLY SUPPORT	59	14.75%
2 SUPPORT	168	42%
3 OPPOSE	99	24.75%
4 STRONGLY OPPOSE	32	8%
7 REF/ 8 DK/ 9 NA	<u>42</u>	<u>10.5%</u>
	400	100%

**REG2** If you had the opportunity to develop your property, would you be in favor of city tree regulations that required preservation of existing large trees and landscaping or tree planting afterwards?

1 YES	264	66%
2 NO	97	24.25%
3 IF VOL – IT DEPENDS	14	3.5%
7 REF/ 8 DK/ 9 NA	<u>25</u>	<u>6.25%</u>
	400	100%

**REG3** Should the City allow the decision to preserve trees to be left to the developer?

1 YES	80	20%
2 NO	293	73.25%
3 IF VOL – IT DEPENDS	17	4.25%
7 REF/ 8 DK/ 9 NA	<u>10</u>	<u>2.5%</u>
	400	100%

**REG4** If the City were to enact new tree protection measures, would you like to see them focused on natural areas, ornamental landscape trees, both types equally, or on something else.

1 NATURAL AREAS	149	37.25%
2 ORNAMENTAL TREES	11	2.75%
3 BOTH	192	48%
4 SOMETHING ELSE	25	6.25%
7 REF/ 8 DK/ 9 NA	<u>23</u>	<u>5.75%</u>
	400	100%

**REG5** Would you strongly support, support, oppose, or strongly oppose city regulations that would provide some level of protection for large, healthy trees on developed private property?

PROBE: This would apply to all current private property.

1 STRONGLY SUPPORT	78	19.5%
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**APPENDIX A**

2 SUPPORT	224	56%
3 OPPOSE	60	15%
4 STRONGLY OPPOSE	20	5%
7 REF/ 8 DK/ 9 NA	<u>18</u>	<u>4.5%</u>
	400	100%

**REG6** If the city were to enact new tree protection measures, where would you prefer to see them focused: on larger groves of native trees or individual trees of significant size.

1 LARGE GROVES	221	55.25%
2 INDIVIDUAL TREES	113	28.25%
3 IF VOL – BOTH	31	7.75%
4 IF VOL – NEITHER	18	4.5%
7 REF/ 8 DK/ 9 NA	<u>17</u>	<u>4.25%</u>
	400	100%

**AGE** In what year were you born?

Coded Categories:

AGE 18-24	3	0.75%
AGE 25-34	23	5.75%
AGE 35-44	59	14.75%
AGE 45-54	106	26.5%
AGE 55-64	91	22.75%
AGE 65 AND OLDER	118	29.5%
7 REF/ 8 DK/ 9 NA	<u>0</u>	<u>0%</u>
	400	100%

**GENDER** Are you male or female?

1 MALE	160	40%
2 FEMALE	240	60%
7 REF/ 8 DK/ 9 NA	<u>0</u>	<u>0%</u>
	400	100%

**RENT** Do you own your home, or do you rent?

1 OWN	344	86%
2 RENT	49	12.25%
7 REF/ 8 DK/ 9 NA	<u>7</u>	<u>1.75%</u>
	400	100%

APPENDIX A

**STREET** What neighborhood do you live in?

**PROBE:** What is your closest elementary school?

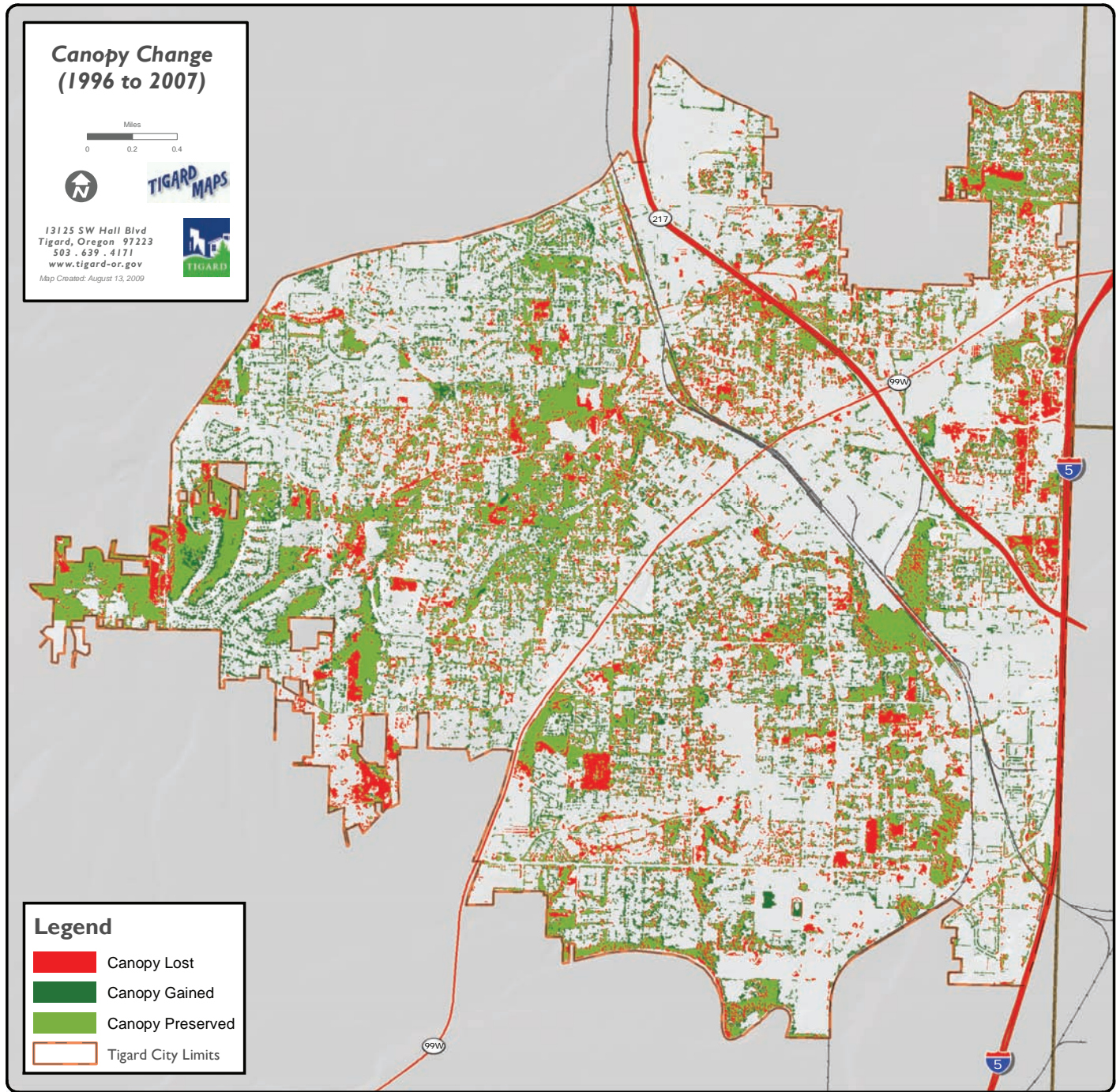
**PROBE:** What is your closest cross street?

OPEN ENDED – RECORD EXACT RESPONSE

**END** That's the end of the survey! On behalf of the City of Tigard, we would like to thank you for your time and participation. Have a great day. Good bye.

**NOQAL** I'm sorry, we can only interview residents of who are 18 years of age or older). I'm sorry to have bothered you. Have a nice (day/evening).

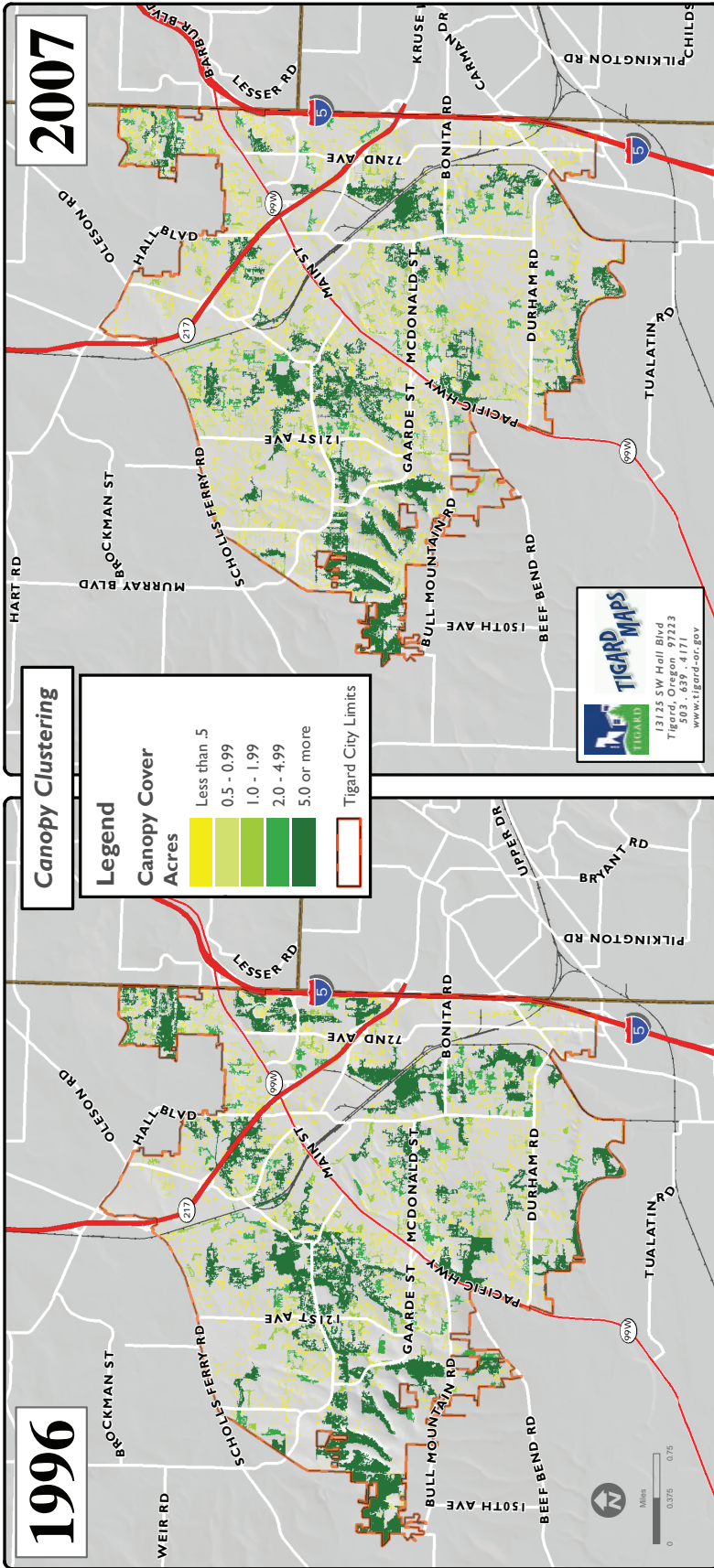
APPENDIX B



	1996		2007	
	Acres	Percent *	Acres	Percent *
Tigard's Total Canopy Cover	1952.75	25.84%	1852.69	24.52%

\* of June 2008 city limits

APPENDIX B

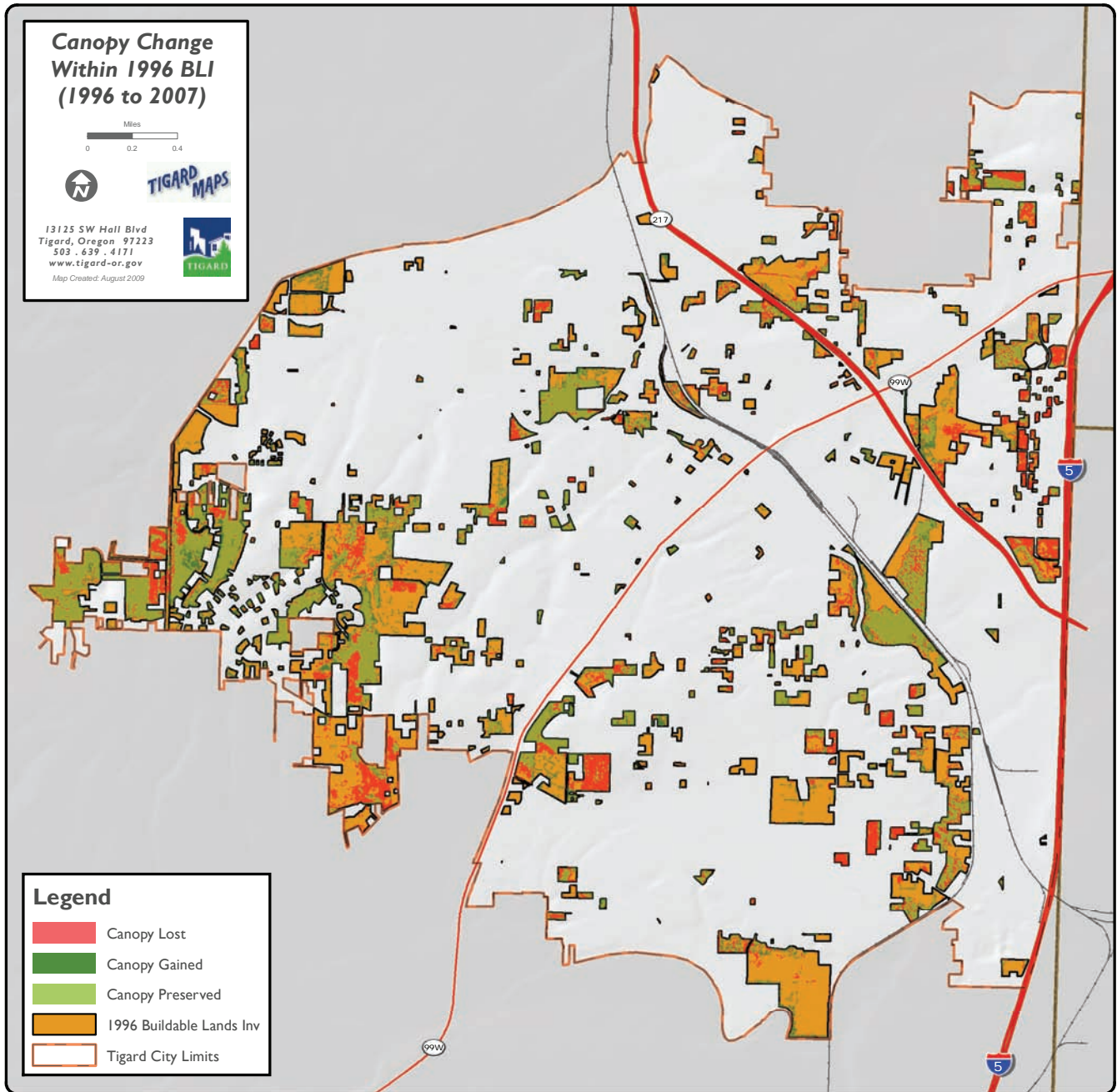


### Canopy Clustering Summary

Canopy Cluster Size Class	1996		2007	
	Total Acres of Canopy Cover	Acres as a Percent of Total Canopy Cover	Total Acres of Canopy Cover	Acres as a Percent of Total Canopy Cover
Less than 0.5 acres	366.55	18.77%	584.3	31.54%
0.5 to .99 acres	135.76	6.95%	167.25	9.03%
1.0 to 1.99 acres	159.25	8.16%	177.88	9.60%
2.0 to 4.99 acres	190.86	9.77%	157	8.47%
5.0 or more acres	1100.33	56.35%	766.26	41.36%
<b>Total</b>	<b>1952.75</b>	<b>100%</b>	<b>1852.69</b>	<b>100%</b>
		<b>No. of Clusters</b>	<b>No. of Clusters</b>	<b>No. of Clusters as a Percent of Total</b>
		4356	7231	93.86%
		197	242	3.14%
		113	131	1.70%
		61	52	0.67%
		63	48	0.62%
		<b>4790</b>	<b>7704</b>	<b>100%</b>

Map Created: August 13, 2009

APPENDIX B

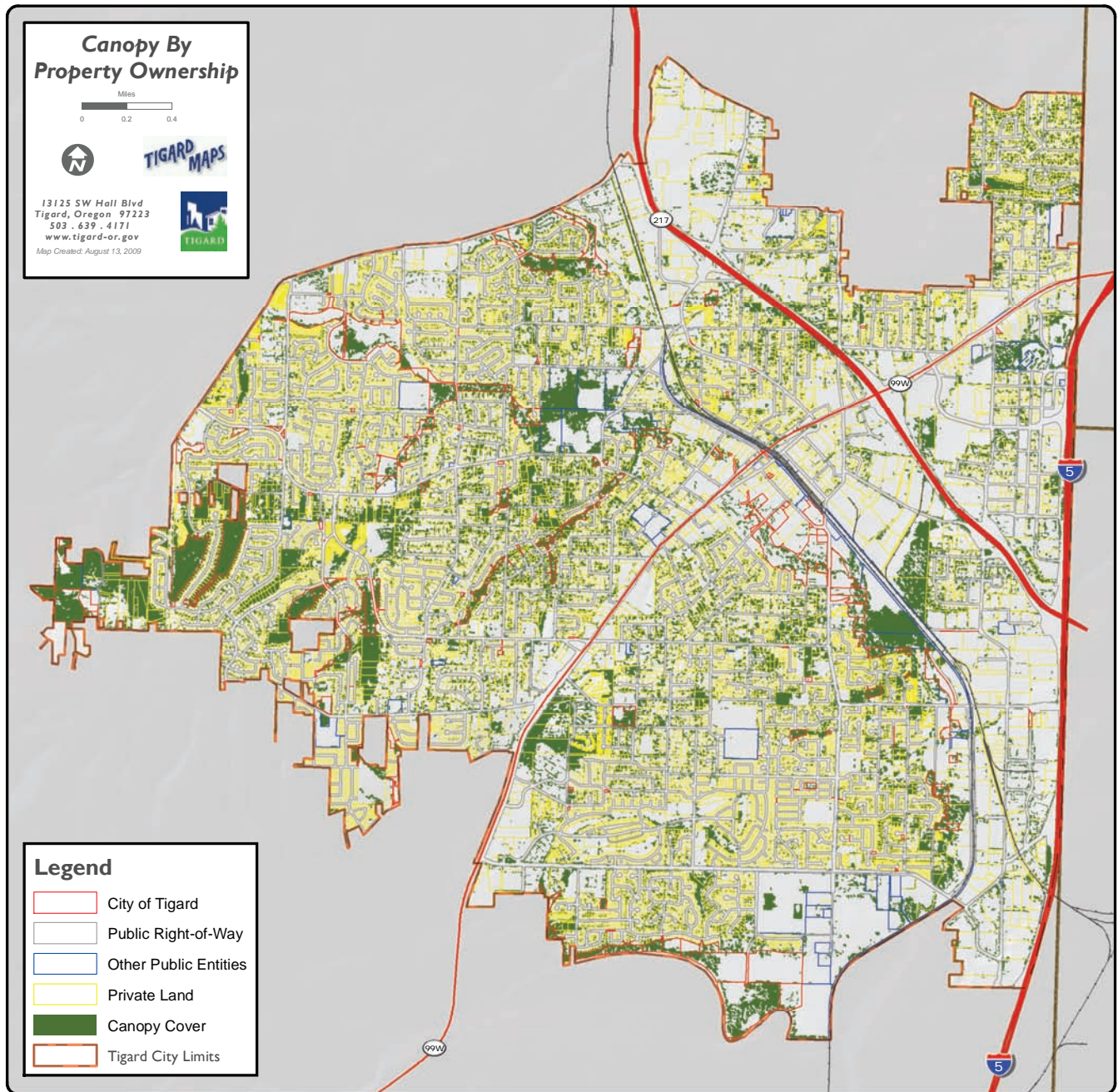


Citywide Canopy Change Within 1996 BLI Area Summary

	1996		2007		Percent Change
	Acre	Percent	Acre	Percent	
Tigard's Canopy Cover within 1996 BLI (1423.32 acres)	646.52	45.42%	495.24	34.79%	-10.63%

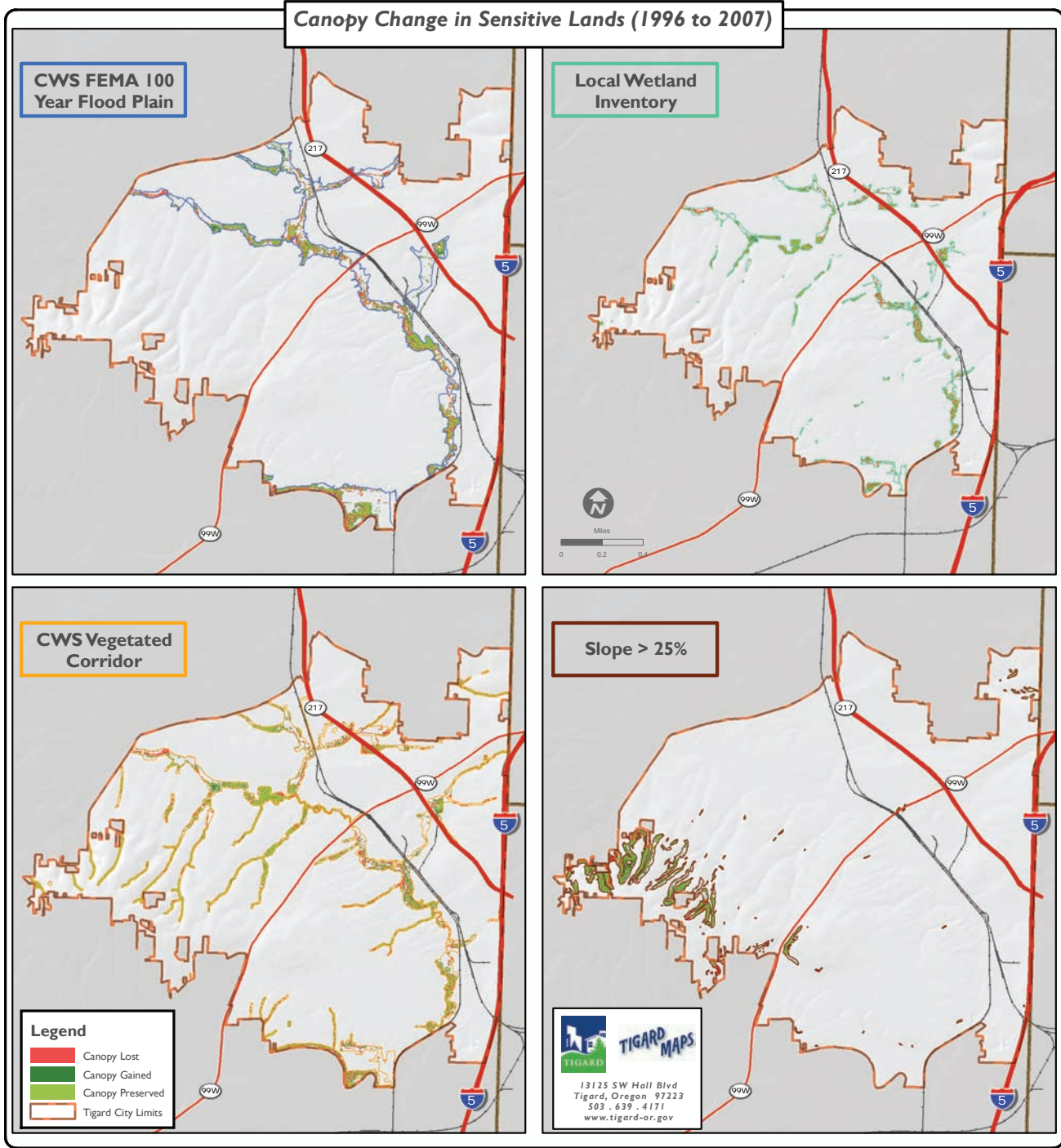
Citywide Canopy Cover Within BLI Summary

	1996			2007		
	BLI Acres	Acres of Canopy Cover	Percent	BLI Acres	Acres of Canopy Cover	Percent
Tigard's Canopy Cover within BLI	1423.32	646.52	45.42%	528.75	226.26	42.79%



Canopy/ Property Ownership Summary				
Taxlot Ownership	May 13, 2008 Taxlots		2007 Canopy Cover	
	Number of Taxlots	Total Acres	Acres of Canopy Cover in 2007	Percent Canopy Cover in 2007
City of Tigard	235	388.41	179.18	46.13%
Public Right-of-Way	n/ a	1,288.30	117.45	9.12%
Other Public Entity	79	431.65	105.1	24.35%
Private	15,880	5,447.64	1,450.96	26.63%
<b>Total</b>	<b>16,194</b>	<b>7,556.00</b>	<b>1,852.69</b>	<b>24.52%</b>

APPENDIX B

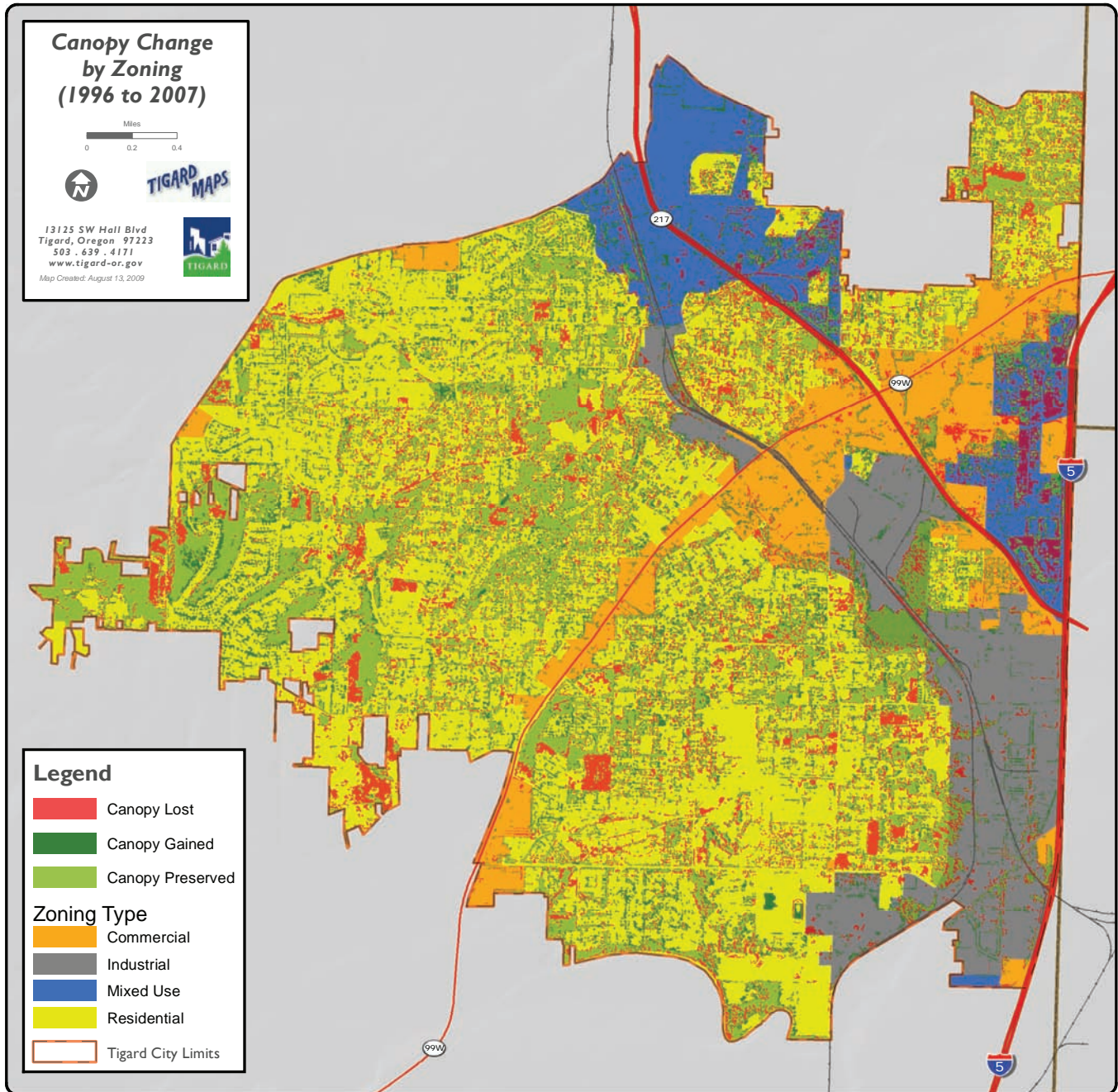


Map Created: August 2009

Citywide Canopy Change Within Sensitive Lands Summary

	Sensitive Land Acres	1996			2007			Percent Change
		Canopy Acres	Percent Canopy	Percent of 1996 Canopy Cover	Canopy Acres	Percent Canopy	Percent of 1996 Canopy Cover	
Local Wetland Inventory	290.91	145.98	50.18%	7.48%	116.01	39.88%	6.26%	-10.30%
CWS Vegetated Corridor	704.78	348.16	49.40%	17.83%	302.85	42.97%	16.35%	-6.43%
FEMA 100-yr Floodplain	592.6	213.17	35.97%	10.92%	188.05	31.73%	10.15%	-4.24%
Slopes > 25%	195.51	130.28	66.64%	6.67%	129.64	66.31%	7.00%	-0.33%
<b>Total</b>	<b>1783.8</b>	<b>837.59</b>	<b>46.96%</b>	<b>42.89%</b>	<b>736.55</b>	<b>41.29%</b>	<b>39.76%</b>	<b>-5.66%</b>

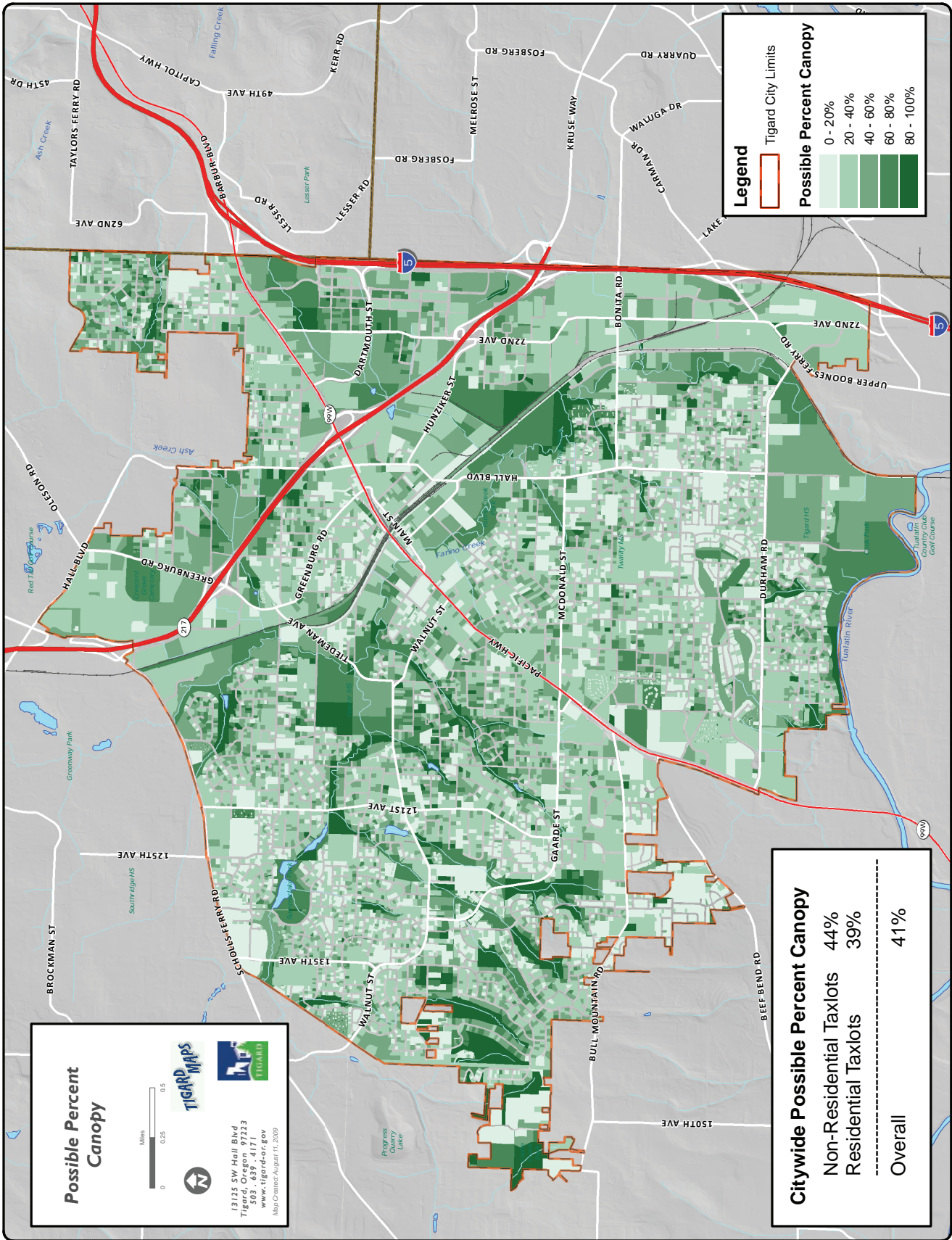
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### Citywide Canopy Change By Zoning Summary

2008 Zoning	Total Acres	1996		2007		Percent Change
		Acres	Percent	Acres	Percent	
Commercial	800	88.13	11.02%	80.52	10.07%	-0.95%
Industrial	863	139.81	16.20%	137.58	15.94%	-0.26%
Mixed Use	701	150.3	21.44%	99.79	14.24%	-7.21%
Residential	5192	1574.42	30.32%	1534.72	29.56%	-0.76%
<b>Total</b>	<b>7556</b>	<b>1952.66</b>	<b>25.84%</b>	<b>1852.61</b>	<b>24.52%</b>	<b>-1.32%</b>

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Parking Lot Sample Acreage:	508.77 acres
Parking Lot Sample Acres covered by canopy:	30.72 acres
Percent Parking Lot Sample Canopy Coverage:	6%

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Home Builder's Association of Metropolitan Portland Stakeholder Interview Notes

1. What is your level of interaction with Tigard's urban forestry program?
  - The 1000+ members of the Home Builder's Association of Metropolitan Portland (HBAMP) rely on the homebuilding industry for their livelihood. It is in the interest of the membership to develop land and create building sites for new homes. Land development requires tree removal on sites that have trees and are zoned for development.
  - Applications for land development are currently required to include tree preservation/removal plans prior to development in order to meet Tigard Development Code requirements.
  - Under the current code section 18.790, applicants may pay a fee in lieu of mitigation or are required to mitigate tree removal by planting replacement trees within the City.
  - HBAMP members have attended Tree Board, Planning Commission, and City Council meetings to provide input on tree related matters such as the Urban Forest section of the Comprehensive Plan.
  - The HBAMP has a representative on the Urban Forestry Master Plan Citizen Advisory Committee.
  
2. What features of Tigard's urban forestry program work well?
  - Tree planting when the right tree is planted in the right place.
  - The City's overall goal of preserving trees.
  - Requiring developers to utilize the expertise of independent, certified arborists when evaluating the conditions of trees and their viability of survival with site development.
  
3. What features of Tigard's urban forestry program do not work well, and why?
  - The HBAMP's position is that the City's mitigation requirements are unreasonable and punitive.
  - The mitigation structure in section 18.790.030.B.2(a-d) is unreasonable because it is not practicable to retain even 25% of the trees on sites zoned for medium to high density residential development (5 units per acre or more). There has likely never been a development in Tigard with 75% or greater retention on property zoned R4.5 or higher. Heavy equipment, grading, roads, and utilities are very disruptive to trees. Significant amounts of grading must take place outside the right of way when driveways are cut in, sidewalks are poured, and building footprints are cleared for structures. This results in tree retention being limited to the perimeter of developed sites.
  - The City's current program incentivizes the preservation of trees that will cause potential future hazards. For example, trees over 12" in diameter have root systems and canopies that extend at least 10' from the trunk. Larger trees have larger areas around them that need to remain undisturbed. This is not practicable in high density situations.

Even if a younger but potentially large tree species such as Doug.-fir is able to be retained, it often makes sense to remove it to avoid potential hazards in the future.

- The fee structure associated with fee in lieu of planting for mitigation far exceeds the actual cost to plant trees. For example, a recent mitigation project to plant trees in Cook Park for the Fletcher Woods development cost the developer \$20,000 to complete. However, the City required the developer to submit a bond for \$106,000 or \$110 per caliper inch as assurance and to cover the City's cost of planting should the developer fail to mitigate.
- The incentives in section 18.790.040 should be updated. For example, the density bonus incentive allows for a 1% density bonus for 2% canopy cover retained. This bonus does not yield any practical benefit unless the site is very large. For a site that is 10 lots, it would take 20% retention for a 10% density bonus to add just one unit. Moreover, by adding another unit and decreasing the amount of land available for infrastructure and buildings, the result is lots that are significantly smaller than zoning allows. This creates a direct conflict with lot size requirements in section 18.510.
- Finally, it is the consensus of the HBAMP that tree regulation and tree plan requirements require additional resources adding cost and time to any development project. In addition, Tigard's current program is divisive and creates legal conflicts in the form of appeals to the Land Use Board of Appeals for tree related issues.

#### 4. What could be done in the future to improve the programs that do not work well?

- The City should not regulate trees on private property. Private property owners should be allowed to cut trees as they have done since the establishment of Tigard. This "hands off" approach has successfully been done for decades with virtually no loss (and perhaps even some gain) in tree canopy. Trees are not community property and belong to the owners of the land.
- Eliminate the punitive standards that cost developers large sums of money for unavoidable tree removal. There is currently over \$1,000,000 in the tree mitigation fund. It is expected to grow to over \$2,000,000 within the next year. This fund can only be used to plant trees. Last year's City budget for tree planting was \$50,000. There is little available land within the City where future trees can be planted.
- If the City does continue to regulate trees in the future, developers should only be required to mitigate only for unnecessary tree removal.
- The City should not incentivize the preservation of potentially hazardous trees.
- The mitigation fee in lieu should be revised to reflect the actual cost of planting trees.
- Revise incentives to create higher motivation for developers to utilize the incentives.
- The City forestry program should be balanced with the right to subdivide and develop private property. The cost of an urban forestry program should not outweigh the benefits.

#### 5. How can we work together in the future to improve Tigard's urban forest?

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- HBAMP and its members continue to participate in the public process so that their views are understood by the City's decision makers.
- It is the view of those HBAMP members who have participated in the process that the HBAMP's views are dismissed while the views of the Tree Board and one extremely active Tigard citizen are taken very seriously. It is always simple to achieve "consensus" when everyone in the room shares the same view. The key to real and balanced stakeholder participation is to find the people who have concerns about the forestry program and openly discuss the views of the stakeholders' concerns and have dialogue. The HBAMP has received virtually no feedback from City staff, the Tree Board or the Citizen Advisory Committee about the information and testimony HBAMP's representatives have provided at meetings, public hearings and worksessions. This needs to be addressed.
- By requiring costly tree mitigation and/or fees for tree removal, it is the view of the HBA members who have been involved in this process that the Tree Board and City Staff are putting the interest of trees ahead of the interest of property owners. This is unacceptable.
- City staff has not made a concentrated effort to contact those property owners who have the most potential impact under the current and future tree code. These owners should be contacted and advised of the financial impact the current tree code could have on their property values. These are the single most impacted stakeholder group, yet they have never been invited to any meetings. This needs to be addressed.

## 6. What should be included/excluded from Tigard's urban forestry programs?

- There should be no urban forestry program because the benefits of such a program do not outweigh the costs.
- Do not regulate trees on private property, and allow owners to manage their land as they see fit.
- However, if the City does continue to regulate trees in the future the following should be included/excluded from the program:
  - Eliminate punitive mitigation standards and only require developers to mitigate for unnecessary tree removal.
  - Revise fee in lieu of mitigation to reflect the actual cost of tree replacement.
  - Do not incentivize the preservation of large and potentially hazardous trees.
  - Revise incentives for tree preservation so that developers are able to utilize the incentives.
  - Make a concerted effort to include the HBAMP and affected property owners in the process.

Clean Water Services Stakeholder Interview Notes

## 1. What is your level of interaction with Tigard's urban forestry program?

- Watershed Management Department manages revegetation projects in Tigard’s stream corridors.
- Partnered with urban forester (currently unfilled) on many acres of tree planting in Tigard’s stream corridors including Englewood Park, Fanno Creek Park, and Cook Park. These projects were funded by Surface Water Management (SWM) fees which come from sewer system ratepayers.
- Development Services issues Service Provider Letters (SPL) for development projects with potential impacts on stream corridors.
- CWS inspectors monitor Vegetated Corridor work of private developers to ensure compliance with CWS standards.
- Some stream restoration projects require City of Tigard tree removal permits and tree protection plans.

2. What features of Tigard’s urban forestry program work well?

- Tigard Public Works is effective at using volunteers for planting projects.
- In theory, the tree mitigation fund works well (if the money is actually used for tree planting).
- Tigard has worked well with Clean Water Services on tree planting projects and meeting “Tree for All” planting goals.

3. What features of Tigard’s urban forestry program do not work well, and why?

- Tree survey requirements can be counterproductive for restoration projects in stream corridors. The money for tree surveys and protection plans in areas dominated by non-native or invasive trees would be better spent on tree planting.
- Invasive and non-native trees in Sensitive Areas and Vegetated Corridors should not be protected and/or require a tree removal permit. Protecting invasives and non-natives is a barrier to restoration.
- Vegetated Corridor and other natural area plantings require long term maintenance beyond the two-year maintenance period typically required of developers.

4. What could be done in the future to improve the programs that do not work well?

- The City should be more diligent about taking a proactive approach to inspecting Vegetated Corridors during the maintenance period if their Urban Forestry Program includes CWS Vegetated Corridor requirements.
- Restoration projects in degraded Sensitive Areas and Vegetated Corridors should be exempt from tree survey and protection requirements.
- Tigard needs to adopt an inclusive invasive species list and exempt the removal of invasive trees from Sensitive Areas and Vegetated Corridors from permit requirements.
- There needs to be more focus on long term maintenance of private and public riparian plantings. This could be addressed through a combination of Code requirements, SWM

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funds, and tree mitigation funds. The City should secure a stable source of funding for vegetation maintenance.

5. How can we work together in the future to improve Tigard’s urban forest?

- Continue stewardship of “Tree for All” sites even after the program ends.
- Coordinate public outreach about invasive plants and the responsibilities of streamside property owners.
- Ensure City of Tigard and Clean Water Services regulatory requirements are coordinated in future. Allow Clean Water Services to review/comment on Code changes that affect stream corridors prior to adoption.
- Continue partnering to co-implement Stormwater Management Permits.
- Coordinate on implementing an integrated pest management plan.

6. What should be included/excluded from Tigard’s urban forestry programs?

- Exempt stream restoration projects in degraded Sensitive Areas and Vegetated Corridors from tree survey and protection requirements.
- Exempt invasive and non-native tree removal in stream corridors from permit requirements.
- Adopt an inclusive invasive species list and exempt invasive tree removal from permit requirements.
- Focus on long term maintenance of riparian plantings through Code revisions, SWM funds, and tree mitigation funds.
- Secure a stable funding source for long term riparian vegetation management.
- Monitor expenditure of SWM funds to ensure that adequate funding is provided for riparian vegetation management.
- Fill the urban forester position so that riparian revegetation projects continue/expand in the future.
- Coordinate City planting standards in stream corridors with Clean Water Services standards.
- Implement an Integrated Pest Management (IPM) Plan in cooperation with Clean Water Services.

Oregon Department of Transportation Stakeholder Interview Notes

1. What is your level of interaction with Tigard’s urban forestry program?

- During development, the Oregon Department of Transportation (ODOT) reviews street tree planting plans in ODOT right of ways for compliance with ODOT specifications.
- ODOT reviews and grants permits for City tree planting projects in ODOT right of ways (99W, Hall Boulevard, Highway 217).

2. What features of Tigard's urban forestry program work well?
  - No comment.
3. What features of Tigard's urban forestry program do not work well, and why?
  - Street tree planting under powerlines causes conflicts because traffic lanes are closed for ongoing maintenance issues.
  - Some trees cause damage to infrastructure (sidewalks, curbs, streets).
  - Trees planted on top of underground utilities cause future conflicts due to root interference.
  - Some City tree planting and placement requirements are not coordinated with ODOT requirements (root barriers, site distance, clear distance, limb clearance)
4. What could be done in the future to improve the programs that do not work well?
  - Require overhead utilities to be shown on site plans to avoid inappropriate tree planting that will create future conflicts. Route plans to Portland General Electric for review.
  - Select street trees that will not conflict with hard features. Require root barriers and other design feature that will help to minimize conflicts.
  - Require development projects to locate utilities on planting plans prior to ODOT and City review. This help to ensure that trees are not planted on top of existing utilities.
  - Clarify jurisdictional requirements and coordinate during future Code updates.
5. How can we work together in the future to improve Tigard's urban forest?
  - Clarify jurisdictional requirements and coordinate during future Code updates.
6. What should be included/excluded from Tigard's urban forestry programs?
  - Prohibit the planting of trees that will conflict with powerlines. Route plans to Portland General Electric for review.
  - Require root barriers and other design feature that will help to minimize conflicts with hard features.
  - Require development projects to locate utilities on planting plans prior to ODOT and City review.
  - Clarify jurisdictional requirements in ODOT right of ways:
    - ODOT site distance requirements supersede Tigard requirements.
    - ODOT clear distance requirements supersede Tigard requirements.
    - ODOT branch clearance requirements supersede Tigard requirements.
    - ODOT has final signoff authority on any trees planted or removed in ODOT right of way (ODOT permit required).

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The Parks and Recreation Advisory Board Stakeholder Interview Notes

The Parks and Recreation Advisory Board declined to comment at their February 23, 2009 meeting.

Portland General Electric (PGE) Stakeholder Interview Notes

1. What is your level of interaction with Tigard's urban forestry program?
  - PGE continually trims trees away from overhead conductors in Tigard to provide for the safe, reliable and continual source of electricity to meet the needs of commercial and residential customers.
  - PGE considers the City of Tigard an integral participant in this process in terms of establishing approved street tree lists, encouraging appropriate and responsible plantings, approving of ideal specimens for their heritage tree program and having the long term vision to develop and maintain an urban forestry program.
2. What features of Tigard's urban forestry program work well?
  - As a whole, Tigard's urban forestry program works extremely well. There is very qualified and attentive stewardship of trees in the City of Tigard.
3. What features of Tigard's urban forestry program do not work well, and why?
  - Some inappropriate street tree plantings in the City of Tigard.
  - Several potentially hazardous tree/utility conflicts in the City of Tigard.
4. What could be done in the future to improve the programs that do not work well?
  - Remove and replace inappropriate street trees.
  - Aid in the hazardous tree removal by providing the labor and equipment necessary.
5. How can we work together in the future to improve Tigard's urban forest?
  - PGE can contribute appropriate trees to new planting sites.
  - Aid in hazardous tree removal where the threat of an overhead conductor is a factor.
  - Attend monthly City coordination meetings.
  - Share in the exchange of information and of past experiences of what works well and what doesn't work quite well in other municipalities.
  - Assist in any educational capacity such as right tree/right place programs.
6. What should be included/excluded from Tigard's urban forestry programs?

- Future programs need to recognize the conflict between a static overhead distribution system of electricity and the dynamic nature of vegetation management around PGE facilities.
- Invite PGE to monthly City coordination meetings.
- Route tree plans to PGE for review.

#### Pacific Northwest Chapter of the International Society of Arboriculture Stakeholder Interview Notes

1. What is your level of interaction with Tigard's urban forestry program?
  - High level of involvement with tree ordinance through development projects.
  - Assist private property owners with tree management outside the development process.
2. What features of Tigard's urban forestry program work well?
  - Tree code helps to incentivize preservation because increasing tree removal requires increasing mitigation and associated costs.
  - Bi-weekly arborist report condition of approval helps to ensure better project oversight and tree plan implementation.
3. What features of Tigard's urban forestry program do not work well, and why?
  - Tree code penalizes property owners with heavily treed lots more than those with un-treed lots. Mitigation is tied solely to tree removal. This may have the effect of precluding development in heavily treed areas such as the Tigard Triangle that are zoned for dense development.
  - Mitigation standards encourage overplanting of trees or planting of small stature trees to meet mitigation requirements. Requiring tree replacement on a caliper inch basis may not be appropriate for every tree and contributes to overplanting.
  - No sustainable funding for urban forestry programs. There needs to be a stable funding source for Tigard's urban forestry program that can be utilized for tree maintenance, not just tree planting.
  - Bi-weekly arborist reports can be hard for the City to track, especially during the transition from site development to building phase.
  - Project arborists are hired to protect their clients. This can result in arborist reports with false or misleading information.
4. What could be done in the future to improve the programs that do not work well?
  - Determine tree stocking levels based on plantable areas as is done in the City of Vancouver, WA. This could be accomplished by matching available soil volumes for lots of various sizes with trees.

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- Allow required trees such as parking lot and street trees to count for mitigation. This will help alleviate overplanting of mitigation trees.
- Provide incentives for planting of natives and large stature mitigation trees. One incentive could be to offer more mitigation credit for planting natives and large stature trees. This will help alleviate overplanting and encourage the planting of trees that offer the most environmental benefits.
- Develop spacing standards based on the mature size of trees to improve long term growth and health.
- Urban forestry funding can be more sustainable if it tied to stable sources such as stormwater fees, permit fees, transportation fees, etc. This will also allow for the urban forestry funds to be used for long term tree maintenance.
- Bi-weekly arborist reports should be required in future code updates. The City should require a copy of the contract for bi-weekly reports and require the project arborist to send a notice to the City if the contract is terminated. If a different arborist is to provide bi-weekly reports, then the original project arborist should have to sign off prior to the new arborist amending the tree preservation plan.
- The City should require more personal accountability for project arborists to discourage false or misleading information. Measures could include revoking business licenses and/or fines so that project arborists have more personal accountability when providing false or misleading information.
- An alternative method to limit false or misleading reports would be for the City to hire a third party the arborist to do the tree preservation report and bi-weekly inspections.

## 5. How can we work together in the future to improve Tigard's urban forest?

- ISA can provide input and review on future tree code revisions.
- ISA can be a resource for code provisions that have been successful in other jurisdictions and may be appropriate for Tigard.

## 6. What should be included/excluded from Tigard's urban forestry programs?

- Require mitigation based on stocking levels, not on a caliper inch basis.
- Develop clear and specific mitigation requirements that favor native and large stature trees, and require spacing per industry standards. Allow required landscape trees and street trees to count towards mitigation requirements.
- Do not unfairly penalize property owners with heavily treed lots that will have trees that are overcrowded and not in good condition.
- Incentivize protection and replanting of natives and large stature trees.
- Identify sustainable funding sources for urban forestry programs. Fund long term maintenance of trees, not just tree planting.
- Require project arborists to be brought onto the project team as early as possible.
- Allow the project arborist to drive the tree preservation plan in future code updates, not the project engineer.

- Require metal fencing in future code updates.
- Develop a zone of clearance for building footprints, and don't penalize developers for removing trees in clearance zones. This zone could be 5'-10' or 3 to 5 times the diameter of the tree. However, site and species characteristics should be considered when crafting code revisions.
- Increase planting strip size and require root barriers to protect streets and sidewalks.
- Require utilities to be under the street, not in the planter strip where trees should be.
- Hire a greenspace coordinator to manage the City's greenspaces.

#### Tigard Area Chamber of Commerce Stakeholder Interview Notes

On March 9, 2009, I spoke with Christopher Zoucha, Chief Executive Officer of the Tigard Area Chamber of Commerce regarding the Urban Forestry Master Plan. Christopher informed me that urban forestry has not been an issue for the Chamber members, and therefore declined providing input as a stakeholder group for the Urban Forestry Master Plan.

#### Tree Board Stakeholder Interview Notes

1. What is your level of interaction with Tigard's urban forestry program?
  - The Tree Board is an oversight body for Tigard's urban forestry program.
2. What features of Tigard's urban forestry program work well?
  - The City actively works to include the greater community in developing its urban forestry program.
  - The City collects substantial fees to be used for the planting of trees.
3. What features of Tigard's urban forestry program do not work well, and why?
  - The City's departments are not well coordinated on urban forestry issues due to lack of communication.
  - Tree management provisions are scattered throughout the Code and not unified.
  - The Tree Code is too focused on development.
4. What could be done in the future to improve the programs that do not work well?
  - More communication between City departments.
  - Unify tree related provisions in Code.
  - Focus future Code on areas outside development, and fix the mitigation issue.
5. How can we work together in the future to improve Tigard's urban forest.

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- The Tree Board can help create a plan for the future management of Tigard's urban forest.
- The Tree Board can help execute the action measures in the plan. Mitigation funds can be used to implement the plan.
- The Tree Board can continue to reach out to stakeholders when implementing the plan.

## 6. What should be included/excluded from Tigard's urban forestry programs?

- Increase communication between City departments.
- Unify tree related Code provisions.
- Focus future Code revisions on areas outside development.
- Make sure Code revisions can be translated into something the public can understand.
- Expand community education on urban forestry issues. Use Eastmoreland outreach materials as a model.
- Continually measure progress on canopy preservation/expansion and community attitudes.
- Plan for future annexations of tree resources in areas outside of the City limits.

Oregon Chapter of the American Society of Landscape Architects Stakeholder Interview Notes

## 1. What is your level of interaction with Tigard's urban forestry program?

- High level of familiarity with Tigard's tree and landscape ordinances.
- Regularly implements codes during development projects to meet landscape and mitigation requirements.

## 2. What features of Tigard's urban forestry program work well?

- Tigard actually has a tree and landscape ordinance whereas some cities do not.
- Tigard staff is easily accessible to discuss issues with and work out solutions.
- The Urban Forestry Master Plan will result in a more comprehensive approach to future tree and landscape ordinance updates.

## 3. What features of Tigard's urban forestry program do not work well, and why?

- Replanting on a caliper inch basis does not work because it incentivizes overplanting.
- Site planning is focused too heavily on building needs and not on existing site conditions. This causes an excessive amount of clear cutting.
- Landscape architects do not have enough flexibility in landscape design because landscape code requirements are overly specific.
- Street tree list is outdated, and many of the species are no longer appropriate or relevant.

- Street trees and streetscapes are non-uniform. Different development projects choose different types of trees so city blocks become a hodgepodge of street trees.
- Many parts of the tree code are overly vague, which creates loopholes and a wide variety of interpretations. For example, there are no spacing, species, or nursery stock quality standards with respect to mitigation trees.
- Need more tree and landscape related expertise on the Tree Board.

4. What could be done in the future to improve the programs that do not work well?

- Focus tree code revisions on preservation and less on mitigation. If preservation requirements are increased, then mitigation could occur on a tree for tree basis rather than inch for inch.
- Need to be stricter on grading with respect to trees. This can occur by focusing more on existing conditions and how trees can be incorporated into the building design. Also, landscape architects should be required to collaborate more with project arborists in order to identify which trees are appropriate for preservation, and how to adjust grading to preserve trees. Perhaps there should be a dual sign off on preservation plans between the landscape architect and project arborist.
- Allow for more flexibility in landscape requirements in future updates. Require landscape architects to be part of the design team, and sign off on planting before, during, and after installations.
- Update street tree list.
- To improve uniformity of streetscapes, the developers should have to survey the street trees in a 4-5 block radius and choose trees that complement existing plantings.
- The tree/mitigation code sections need more specificity. The City of Salem has a detailed development design handbook with detailed drawings and specifications that are referred to in their development code. This allows for more clarity as to what is expected of the development.
- When advertising Tree Board vacancies, specify that you are looking for members with tree and landscape expertise. Advertise vacancies with local professional organizations.

5. How can we work together in the future to improve Tigard's urban forest?

- Sends drafts of tree and landscape code revisions to ASLA for review and comment.
- Contact ASLA to see if members could get credit hours for developing codes and design handbooks.
- Hire ASLA members to help develop code and design guidelines.
- Share example codes that require maximum preservation of existing trees.

6. What should be included/excluded from Tigard's urban forestry programs?

- More focus on preservation through improved grading plans, less focus on mitigation. The City needs to take a leadership role in this.

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- More focus on sustainable landscapes. Not necessarily native trees, but trees that are appropriate for site conditions.
- Need detailed design/preservation manual with illustrations.
- Need to have a warranty period for required landscaping to ensure establishment.
- Need to require powerlines to be shown on landscape plans to avoid future overhead utility conflicts.
- Landscape architects should be a required member of the design team.

Tigard Tualatin School District Stakeholder Interview Notes

1. What is your level of interaction with Tigard's urban forestry program?
  - Somewhat limited.
  - Participation in the Tigard Neighborhood Trails Study.
  - Manage trees on School District property.
2. What features of Tigard's urban forestry program work well?
  - Adequate budget for tree planting and early establishment.
  - City of Tigard is very cooperative with the School District.
3. What features of Tigard's urban forestry program do not work well, and why?
  - Lack of communication prior to planting trees on School District property. It is important to coordinate with Facilities Division so that long term maintenance issues can be addressed prior to planting.
4. What could be done in the future to improve the programs that do not work well?
  - Bring Facilities Division into the planning process from the beginning of a tree planting project.
5. How can we work together in the future to improve Tigard's urban forest?
  - School District properties may offer opportunities to utilize City tree planting funds.
  - Wetlands on School District properties may offer wetland mitigation opportunities for the City.
  - Facilities Division would be able to provide guidance as to the types of trees and planting layouts that will facilitate long term maintenance by the District.
  - School District can contact City Arborist to find out if permits are required for tree removal and/or planting.
6. What should be included/excluded from Tigard's urban forestry programs?

- Bring Facilities Division into the planning process from the beginning of tree planting projects on School District properties.
- Focus on low maintenance plantings with evergreens and other trees with low leaf litter.

#### Tualatin Riverkeepers Stakeholder Interview Notes

1. What is your level of interaction with Tigard's urban forestry program?
  - High level of involvement.
  - Work closely with the City and Metro on restoration projects in Tigard.
  - Provide comments on municipal separate storm sewer systems (MS4) permits.
  - Provide comments on City of Tigard Parks plans and occasionally on private development applications.
  - Participated in the development of the Healthy Streams Plan by Clean Water Services.
  - Member of Oregon Community Trees, a non-profit organization that promotes urban and community forestry in Oregon.
2. What features of Tigard's urban forestry program work well?
  - Mitigation fee structure provides an adequate budget for tree planting.
3. What features of Tigard's urban forestry program do not work well, and why?
  - Trees could be better utilized for stormwater management in developed areas such as along street and in parking lots.
  - Urban forestry funds could be collected and utilized more strategically. An example would be to use stormwater management fees to fund restoration programs.
  - The City of Tigard could make more of a public commitment to sustainability efforts such as by signing the Mayor's Climate Protection Agreement.
4. What could be done in the future to improve the programs that do not work well?
  - Improve parking lot design standards to incorporate stormwater treatment features and more tree canopy.
  - Retrofit existing parking lots to improve stormwater treatment and tree canopy using grant money and other funding sources.
  - Encourage/require the use of more evergreen species in parking lots and streets so that the stormwater benefits of trees can be utilized during the winter rainy season.
  - Collect urban forestry funds more strategically through stormwater fees, development fees, etc. so that the funding sources are more sustainable and can be used for more than just tree planting.

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### 5. How can we work together in the future to improve Tigard's urban forest?

- Tualatin Riverkeepers can assist with volunteer recruitment for urban forestry projects.
- Tualatin Riverkeepers can help educate kids about the importance of environmental stewardship through camp and recreation programming.
- Tualatin Riverkeepers can help identify potential restoration sites.
- Tualatin Riverkeepers can provide training to Planning Commission, City Council, City staff, and others on low impact development techniques.

### 6. What should be included/excluded from Tigard's urban forestry programs?

- Improve parking lot design standards to incorporate stormwater treatment and more tree canopy.
- Increase stormwater incentives/requirements for development such as the "no runoff" provisions as in Lacey Washington.
- Collect urban forestry funds more strategically through stormwater fees, development fees, etc. so that the funding sources are more sustainable and can be used for more than just tree planting.
- More public commitment to sustainability efforts such as signing the Mayor's Climate Protection Agreement.
- More efforts in invasive species removal. Incentivize and/or require private landowners to remove invasives.

### City of Tigard Internal Coordination Meeting Results

On January 21, 2009, a coordination meeting was attended by key City staff members that have a role in coordinating and implementing Tigard's urban forestry programs, policies, and ordinances. Meeting attendees included representatives from a range of City departments (Community Development, Public Works, and Financial and Information Services) and divisions (Capital Construction & Transportation, Current Planning, Development Review, Information Technology, Public Works Administration, Parks, Streets, Wastewater/Storm, and Water). The purpose of the meeting was to discuss urban forestry coordination issues, and identify those areas where coordination could be improved. As a result of the meeting, the following list was generated that identified areas where urban forestry coordination efforts could be improved.

1. Street trees on record drawings don't reflect where they are actually planted (Planning, Engineering, Public Works, IT/GIS);
2. Development engineering inspects vegetated corridors after development, but no long term/sustained maintenance requirements (Engineering, Planning/Arborist and Code Enforcement, IT/GIS);
3. Difficult to track deed restricted trees after development (Planning, IT/GIS);
4. Difficult to track required landscape trees (parking lot trees, buffer trees, etc.) after development (Planning/Arborist and Code Enforcement, IT/GIS);
5. Difficult to track mitigation trees after development (Planning/Arborist, IT/GIS);
6. No inventory of street trees (Planning, Engineering, Public Works, IT/GIS);
7. When City acquires greenspaces, no detailed understanding of maintenance costs (especially regarding hazard trees) (Planning/Arborist, Public Works);
8. No policy for protecting deed restricted trees and significant habitat trees during building additions (Planning, Building);
9. No policy of requiring exempt City projects to follow standards required by private development (Planning, Capital Construction and Transportation, Public Works);
10. No review of exempt City projects for trees by planning staff (Planning, Capital Construction and Transportation, Public Works);
11. No formal hazard evaluation process for parks/greenspaces (Planning/Arborist, Public Works/Parks, Risk);
12. No formal emergency response system for tree hazards on streets (Planning/Arborist, Public Works/Streets);
13. No formal emergency response system for tree hazards in parks/greenspaces (Planning/Arborist, Public Works/Parks);
14. Tree removal in sensitive lands requires tree removal permits, not sure if there is awareness of this Code provision (Planning, Capital Construction and Transportation, Public Works);
15. No formal process for spending/tracking tree mitigation fund expenditures and planting (Planning/Arborist, Public Works, IT/GIS, Finance); and
16. No formal process for determining adjustments to street standards to preserve trees (18.810.030.A.7) (Planning/Arborist, Engineering).
17. No formal street tree maintenance process for limb/root clearance and removal (Planning/Arborist, Public Works/Streets).

After the list was generated, a series of meetings was held with representatives from the groups affected by the coordination issues. The purpose of the smaller group meetings was to discuss the coordination issues

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and formulate possible solutions that could improve coordination efforts. The following list identifies possible solutions for the coordination issues that were formulated after the group meetings.

1. Street trees on record drawings don't reflect where they are actually planted (Planning, Engineering, Public Works, IT/GIS);
  - Make note on record drawings that actual street tree locations may vary, see street trees in GIS for actual locations.
  - Require developers to GPS or pay a fee to the City to GPS actual locations of street trees prior to final approval. The spatial data can then be loaded into the City's GIS system for tracking.
  - Information on street trees to include location (x/y coordinates), size (dbh), species, date planted, condition, tree ID code, and any additional information necessary to conduct resource analyses in the future.
  - Consider creating program where developers pay a fee to the City to plant and GPS street trees.
  
2. Development engineering inspects vegetated corridors after development, but no long term/sustained maintenance requirements (Engineering, Planning/Arborist and Code Enforcement, IT/GIS);
  - Development engineering inspects vegetated corridors after planting, and after a defined maintenance period (usually two years) to ensure compliance with Clean Water Services (CWS) requirements.
  - If the vegetated corridor becomes City property, then the Wastewater/Storm Division of Public Works assigns crews to ensure long term maintenance.
  - If the vegetated corridor is privately owned, the City of Tigard does not currently have a program to inspect/enforce long term vegetation maintenance. The City will clarify with CWS what agency is responsible for ensuring long term maintenance of vegetated corridors.
  
3. Difficult to track deed restricted trees after development (Planning, IT/GIS);
  - Require developers to GPS or pay a fee to the City to GPS locations of deed restricted trees prior to final approval. The spatial data can then be loaded into the City's GIS system for tracking.
  - Information on deed restricted trees to include location (x/y coordinates), size (dbh), species, date inventoried, condition, tree ID code, and any additional information necessary to conduct resource analyses in the future.
  
4. Difficult to track required landscape trees (parking lot trees, buffer trees, etc.) after development (Planning/Arborist and Code Enforcement, IT/GIS);
  - Require developers to GPS or pay a fee to the City to GPS actual locations of required landscape trees prior to final approval. The spatial data can then be loaded into the City's GIS system for tracking.

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- Information on required landscape trees to include location (x/y coordinates), size (dbh), species, date planted, condition, tree ID code, and any additional information necessary to conduct resource analyses in the future.
5. Difficult to track mitigation trees after development (Planning/Arborist, IT/GIS);
- Require developers to GPS or pay a fee to the City to GPS actual locations of mitigation trees prior to final approval. The spatial data can then be loaded into the City's GIS system for tracking.
  - Information on mitigation trees to include location (x/y coordinates), size (dbh), species, date planted, condition, cash assurance/bond release date, tree ID code, and any additional information necessary to conduct resource analyses in the future.
6. No inventory of street trees (Planning, Engineering, Public Works, IT/GIS);
- Require developers to GPS or pay a fee to the City to GPS actual locations of street trees prior to final approval. The spatial data can then be loaded into the City's GIS system for tracking.
  - Hire AmeriCorps member and/or recruit volunteers to assist in inventory of existing street trees outside development process.
  - GPS actual locations of street trees planting during annual street tree planting program.
  - Information on street trees to include location (x/y coordinates), size (dbh), species, date planted, condition, tree ID code, and any additional information necessary to conduct resource analyses in the future.
  - Consider creating program where developers pay a fee to the City to plant and GPS street trees.
7. When City acquires greenspaces, no detailed understanding of maintenance costs (especially regarding hazard trees) (Planning/Arborist, Public Works);
- Create budget sheet to track personnel, material, and service costs associated with greenspace acquisition.
  - Budget sheet should detail first year costs as well as costs for years two through five.
  - A benefits section should be included on the form to identify mitigation, connectivity, and other potential benefits.
  - The budget sheet needs to be routed to the appropriate departments and divisions for input before it is finalized.
  - There is an evaluation form for land acquisition that was used for CIP projects that may be used as a template (contact Carissa).
  - If hazard trees are an issue during land acquisition associated with development projects, require developer's arborist to conduct a hazard assessment for review and inspection by City Arborist.

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8. No policy for protecting deed restricted trees and significant habitat trees during building additions (Planning, Building);
  - This item should be further addressed during the Tree Code updates.
  - However, for deed restricted trees, the City can require a protection plan for building additions that complies with the original tree protection plan for the development project.
  - For trees in sensitive lands, the City can restrict access/building within the driplines of trees through the use of tree protection fencing. Section 18.790.060 prohibits damage to a protected tree or its root system.
  
9. No policy of requiring exempt City projects to follow standards required by private development (Planning, Capital Construction and Transportation, Public Works);
  - City Arborist to attend “kickoff meetings” for City projects to identify applicable City rules and regulations.
  - Project plans will be routed to City Arborist for review and comment prior to completion.
  - Depending on the size of the project, the City Arborist may provide assistance on tree protection and planting specifications, or recommend that the City hire a project arborist.
  - Work with the Tree Board and Community Development Director on developing a set of standards for City projects to follow.
  
10. No review of exempt City projects for trees by planning staff (Planning, Capital Construction and Transportation, Public Works);
  - City Arborist to attend “kickoff meetings” for City projects to identify applicable City rules and regulations.
  - Project plans will be routed to City Arborist for review and comment prior to completion.
  - Depending on the size of the project, the City Arborist may provide assistance on tree protection and planting specifications, or recommend the City hire a project arborist.
  
11. No formal hazard evaluation process for parks/greenspaces (Planning/Arborist, Public Works/Parks, Risk);
  - Budgeting has eliminated non-emergency management and evaluation of hazards in parks/greenspaces due to the transfer of the greenspace coordinator (urban forester) position from Public Works to the associate planner/arborist (city arborist) position to Community Development.
  - Proactive evaluation and management of City owned parks/greenspaces would be best accomplished through the hiring of a greenspace coordinator to fill the position vacated in Public Works.

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- A greenspace coordinator could develop a program based off of protocols developed by the USDA Forest Service and/or International Society of Arboriculture.
- Alternatively, the City could contract with a private arborist to develop a hazard evaluation and management program.

12. No formal emergency response system for tree hazards on streets (Planning/Arborist, Public Works/Streets);

- When a member of the public calls the City about a potential hazard tree on a City street, they should be forwarded to the Public Works front desk (503-639-4171).
- Operators at Public Works will route the call to the Streets Division manager, who will in turn assign a staff member to investigate the complaint.
- If the tree clearly is not a hazard, the Streets Division will contact the citizen and close the case.
- If the tree is already down or is clearly an immediate hazard, the Streets Division will coordinate traffic control, contact other impacted agencies (such as PGE if power lines are involved), and remove the tree from the street and sidewalk right-of-way using the City's contract arborist (or any other available private arborist if the contract arborist is not available). The debris from the removal will be placed on the owner's property, and debris disposal will occur at the owner's expense.
- If the tree hazard is a borderline case, the City Arborist will make a determination whether the tree should be retained, monitored, removed, or further investigated by the contract arborist.
- If the City Arborist decides the tree is a hazard and there is enough time, he will write a letter to the responsible property owner giving them a specific period of time to abate the hazard. If the deadline is not met, the responsible owner will be cited through Code Enforcement.
- If the hazard is after hours, citizens will need to call the Public Works after-hours number (503-639-1554). Public Works will then investigate the hazard after hours and either contact the contract arborist (or any other available private arborist if the contract arborist is not available) if there is an immediate hazard, or forward the inquiry to the Streets Division for follow up the following business day if the hazard is not immediate. The Streets Division will then follow the same process outlined above.

13. No formal emergency response system for tree hazards in parks/greenspaces (Planning/Arborist, Public Works/Parks);

- When a member of the public calls the City about a potential hazard tree on City property, they should be forwarded the Public Works front desk (503-639-4171).
- Operators at Public Works will route the call to the appropriate division manager, who will in turn assign a staff member to investigate the complaint.

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- If the tree clearly is not a hazard, the responsible division will contact the citizen and close the case.
  - If the tree is determined to be an immediate hazard, the responsible division will contact the City’s contract arborist (or any other available private arborist if the contract arborist is not available) to abate the hazard immediately.
  - If the tree hazard is a borderline case, the City Arborist will make a determination whether the tree should be retained, monitored, removed, or further investigated by the contract arborist.
  - The City Arborist is estimated to respond to one “borderline” call per week on average. If the time commitment is significantly more, the process may need to be reevaluated.
  - If the hazard is after hours, citizens will need to call the Public Works after-hours number (503-639-1554). Public Works will then investigate the hazard after hours and either contact the contract arborist (or any other available private arborist if the contract arborist is not available) if there is an immediate hazard, or forward the inquiry to the appropriate division if the hazard is not immediate for follow up the following business day. The responsible division will then follow the same process outlined above.
14. Tree removal in sensitive lands requires tree removal permits, not sure if there is awareness of this Code provision (Planning, Capital Construction and Transportation, Public Works);
- City Arborist to attend “kickoff meetings” for City projects to identify applicable City rules and regulations.
  - Tree removal permits and fees in Tigard Development Code Section 18.790.050 are applicable for any tree removal over six inches in diameter within sensitive lands (including City projects).
  - Publicize program through periodic Community Development/Public Works/Capital Construction and Transportation coordination meetings.
  - Ensure the sensitive lands GIS layer is available through Tigard Maps for all divisions/departments.
  - Clarify with Community Development Director if invasive/exotic trees are exempt from tree removal permit requirements.
15. No formal process for spending/tracking tree mitigation fund expenditures and planting (Planning/Arborist, Public Works, IT/GIS, Finance); and
- GPS actual locations of mitigation trees/areas. The spatial data can then be loaded into the City’s GIS system for tracking.
  - Information on mitigation trees to include location (x/y coordinates), size (dbh), species, date planted, condition, cash assurance/bond release date, tree ID code, and any additional information necessary to conduct resource analyses in the future.
  - Link mitigation trees (via a GIS point layer) and mitigation areas (via a GIS polygon layer) with IFIS (accounting system) so that expenditures can be directly related to specific projects.

16. No formal process for determining adjustments to street standards to preserve trees (18.810.030.A.7) (Planning/Arborist, Engineering).

- The City's policy is to maintain the required curb to curb width standards in the Tigard Development Code in all cases, regardless of existing trees.
- However, during the development review process, when a healthy and sustainable tree in the right of way is identified by the project arborist and/or City Arborist, Development Engineering will allow adjustments to planter strip and/or sidewalk standards on a case by case basis.
- The City does not currently have the authority to require private developers to preserve trees if they choose not to.

17. No formal street tree maintenance process for limb/root clearance and removal (Planning/Arborist, Public Works/Streets).

- If the street tree is the responsibility of the City, the corresponding division will maintain the clearance requirements outlined in the Tigard Municipal Code.
- If a citizen complaint is received, the Streets Division will investigate.
- If there is an immediate hazard (e.g. blocked stop sign, hanging limb, etc.), the Streets Division will prune the tree immediately.
- If there is not an immediate hazard, the Streets Division will contact the responsible party directly and explain the Code requirements, or gather the information and forward to Code Enforcement if the owner is nonresponsive.
- If the potential branch clearance hazard is after hours, citizens will need to call the Public Works after-hours number (503-639-1554). Public Works will then investigate the hazard after hours and either contact the contract arborist (or any other available private arborist if the contract arborist is not available) if there is an immediate hazard, or forward the inquiry to the Streets Division if the hazard is not immediate for follow up the following business day. The Streets Division will then follow the same process outlined above.
- When tree roots are impacting City streets or utilities, the responsible division will investigate and, if needed, contact the City Arborist for root pruning advice.
- If the City Arborist decides the tree can be safely root pruned to make the necessary repairs, the responsible division will absorb the cost of root pruning.
- If the tree cannot be safely root pruned and the tree needs to be removed, the City will absorb the cost of removal, but the property owner will be responsible for stump removal and replanting. Prior to removing a street tree, the City Arborist shall be contacted.

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LAND USE PLANNING

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## Section 2: Tigard's Urban Forest

A defining community feature of Tigard is its trees and the urban forest they create. Unlike natural forests or managed timberland, Tigard's urban forest is a mosaic of native forest remnants and planted landscape elements interspersed with buildings, roads and other elements of the urban environment. The protection, management, and enhancement of this resource is important not only for Tigard's aesthetic identity and sense of place, but for the social, ecological, and economic services it provides to the community.

Trees and other types of vegetation are integral to the quality of Tigard's aesthetic, economic, and natural environments. Plants provide variation in color, texture, line and form that softens the hard geometry of the built environment. They also enhance the public and private realm through the provision of shade from the sun and wind, providing habitat for birds and wildlife, enhancing community attractiveness and investment, improving water quality and soil stability, and promoting human health and well-being.

Tigard's trees and native plant communities have experienced significant disruption and displacement, first by agriculture and logging in the 19th century, and by increasingly dense urban development in the 20th Century. Competition from introduced invasive species such as English ivy, reed canary grass, and Himalayan blackberries has made it difficult for remaining native plant communities to thrive. However, remnant stands of native tree and associated plant communities still remain within the City Limits. Trees are important members and contributors to natural resource systems including upland habitat areas and plant communities, and functioning riparian corridors including the Tualatin River, Fanno Creek and its tributaries, and their adjacent flood plains and wetlands.

In addition to remnants of the native forest, Tigard possesses a large number of



mature and outstanding specimens of native and non-native trees planted when the area was rural country-side in the late 19th and early 20th centuries. Aerial photos demonstrate that increasingly more trees were planted on both public and private property during a period of large lot residential subdivision development from the late 1940's through the 1970's, many of which survive to this day.

Community attitude surveys reveal that Tigard Citizens place high value on the protection of trees and are concerned about the impact of development upon existing tree resources. Community surveys conducted in 2004 and 2006 show that residents value their neighborhood as a suburban retreat, a place that allows for views of trees and other natural areas. The 2006 Community Attitudes Survey found “the protection of trees and natural resource areas” as rating the highest of all “livability” characteristics posed to the respondents, scoring 8.4 out of 10 points. Preservation of trees and other natural resources scored higher on resident's livability index than neighborhood traffic (8.2), maintaining existing lot sizes (7.8), pedestrian and bike paths (7.7), and compatibility between existing and new development (7.6). A follow-up question contained in the 2007 survey revealed that 84% of Tigard Residents supported regulations to protect existing trees, with only 6% strongly disagreeing and 9% somewhat disagreeing. In addition, 90% of Tigard residents thought the City should take the lead in preserving open space. These values are also shared by residents of adjoining jurisdictions who maintain, or have begun significant updates to, their tree protection ordinances.

The City of Tigard has been a Tree City, USA since 2001 because of aggressive programs to plant trees on public property. In partnership with Clean Water Services, the City of Tigard is in the early stages of a series of stream restoration and enhancement projects intended to improve water quality, reduce erosion, and provide shade, structure and food sources to fish and other wildlife. Projects currently underway within the City's floodplains and riparian areas will result in the planting of approximately 100,000 native trees over a 10 year period (Fiscal Years 2001-2011). Through volunteer projects, cooperative efforts with non-profits, contract services, and the labor of Public Works crews, thousands of young trees are annually planted on public property.

Not including restoration projects, the City's Public Works Department annually plants approximately 250 new or replacement trees on public lands, distributes approximately 50 street trees each year to private property owners through the Street Tree Program, and plants an addition 25 trees in celebration of arbor day.

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Native species are given preference and are regularly planted along trails, riparian areas, and in new park and green space areas. The objective is to increase the total number of trees, particularly in areas where summer shade is desired such as picnic areas and next to sidewalks. Money is budgeted each year to maintain new trees being established and to remove hazard trees located on public property. As more public property is added and trees grow older, the number of hazard trees pruned or removed each year will continue to grow. The level of new tree planting is limited by the maintenance capacity of City work crews.

Conditions and circumstances have significantly changed since the adoption of Tigard's Comprehensive Plan in 1983. Rapid urban development has resulted in a general perception that the City has experienced a significant loss of tree canopy, and other vegetation essential for wildlife habitat, erosion control, slope stability, water quality, air-quality, and community aesthetics. Driving this perception are METRO land use regulations, failed annexation efforts and changing market conditions resulting in higher density development than was anticipated in 1983, further challenging the City to protect trees and canopy cover while accommodating new development. Additionally, the City does not currently have a comprehensive tree management and urban forest enhancement program to address these issues in a unified and consistent manner. As a result there is general feeling among residents, developers, and other stakeholders that the existing regulatory structure is not adequate and hinders both the strategic protection of trees and the orderly urbanization of the City.

The City has historically relied upon its Development Code to manage and protect trees on private property, particularly heritage trees and those located within steep slopes, wetlands, and other sensitive lands. Existing regulations require new development to protect and/or replace existing trees wherever possible, to pay into a mitigation fund when trees are removed, and to plant new street trees and landscape trees as part of all new construction. In addition, trees within vegetated corridors surrounding wetlands, riparian corridors, and other natural bodies of water are also protected by Clean Water Services as part of their stormwater management program. These regulatory structures do not recognize or protect existing trees outside of those areas, and offer little protection unless a development action is pending, or prior conditions of development approval designated the affected tree(s) for future protection. As a result, the existing regulatory structure does not encompass a significant number of trees across the city, which may be removed by the property owner without City consultation or permit. Additionally, because the City does not have a compre-



hensive tree removal consultation or permit system, protected trees (such as street trees) have been removed despite existing regulations or restrictions in force.

#### KEY FINDINGS:

- A defining community feature is Tigard's urban forest, a mosaic of native forest remnants and planted landscape elements interspersed throughout the City.
- This urban forest provides social, economic, and ecological services that create public and private value to residents, businesses, and visitors.
- Mature and well-managed trees provide the maximum public benefits.
- The City continues to allocate staff and resources to tree planting, tree maintenance, and outreach activities. Additionally, new development is required to install street trees, landscape trees, and trees for mitigation purposes.
- The existing urban forest continues to experience significant disruption and displacement through the conversion of land to more intense urban land uses and competition from invasive species.
- Existing tree regulations are dispersed throughout the code; applied by multiple divisions in a non-unified and inconsistent manner; and sometimes conflicting between different code sections.
- The City does not presently have a comprehensive and unified process to monitor tree removal and enforce existing tree protections outside of development permit review. Furthermore, landowners are not always aware of regulatory protections applicable to their property or street trees adjacent to their property.
- Community attitude surveys reveal that Tigard residents place high value on the protection of trees within the community, that they are concerned about the impact of development upon existing tree resources, and are strongly in favor of a regulatory structure that would protect additional trees.

#### GOAL:

- 2.2 To enlarge, improve and sustain a diverse urban forest to maximize the economic, ecological, and social benefits of trees.

#### POLICIES:

1. The City shall maintain and periodically update policies, regulations and standards to inventory, manage, preserve, mitigate the loss of, and

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- enhance the community's tree and vegetation resources to promote their environmental, aesthetic and economic benefits.
2. The City's various codes, regulations, standards and programs relating to landscaping, site development, mitigation, and tree management shall be consistent with, and supportive of, one another; administration and enforcement shall be regulated and coordinated by the variously impacted departments.
  3. The City shall continue to regulate the removal of trees, within environmentally sensitive lands and on lands subject to natural hazards.
  4. The City shall ensure that street design and land use standards provide ample room for the planting of trees and other vegetation, including the use of flexible and incentive based development standards.
  5. The City shall require the replacement and/or installation of new street trees, unless demonstrated infeasible, on all new roads or road enhancement projects. Trees should be planted within planter strips, or at the back of sidewalks if planter strips are not feasible or would prohibit the preservation of existing trees.
  6. The City shall establish and enforce regulations to protect the public's investment in trees and vegetation located in parks, within right-of-ways, and on other public lands and easements.
  7. The City shall conduct an ongoing tree and urban forest enhancement program to improve the aesthetic experience, environmental quality, and economic value of Tigard's streets and neighborhoods.
  8. The City shall continue to maintain and periodically update approved tree lists for specific applications and site conditions, such as street trees, parking lot trees, and trees for wetland and riparian areas.
  9. The City shall discourage the use or retention of invasive trees and other plants through the development review process.
  10. The City shall require the appropriate use of trees and other vegetation as buffering and screening between incompatible uses.
  11. The City shall develop and implement a citywide Urban Forestry



Management Master Plan.

**RECOMMENDED ACTION MEASURES:**

- i. Develop and implement a comprehensive, coordinated update and enhancement of all tree related regulations, standards, programs, and plans.
- ii. Develop and implement an inspection and enforcement program that will ensure ongoing maintenance of trees and other vegetation required by development approval, with particular attention to challenges introduced by the change of ownership of affected properties.
- iii. Develop and implement an inspection and enforcement program that will ensure non-development related tree management and removal complies with the City's tree protection ordinances such as heritage trees, street trees, and trees on sensitive lands.
- iv. Inventory and evaluate street tree, parking lot and landscape area plantings that have failed to thrive, and determine if site conditions or management practices can be modified, and/or if trees can be planted elsewhere in order to satisfy conditions of development approval or provide the benefits expected of the original planting.
- v. Develop and maintain, as part of the City's GIS and permit systems, a publicly accessible inventory of tree plantings, permitted removals, and the state of the City's urban forest.
- vi. Develop and distribute educational materials and programs regarding City policies, regulations, and good arboricultural practices for the general public, developers and city staff regarding tree planting, maintenance, and protection. Materials should be published in both paper and electronic media and in multiple languages. Particular focus should be given to new property owners who may be unfamiliar with the City's regulations and development related restrictions affecting their property.
- vii. Encourage and promote the removal of nuisance/invasive plants,

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and the installation of trees and vegetation that are low maintenance, drought tolerant, site appropriate, and require minimal chemical applications. Strategies could include the production and distribution of approved tree lists to area nurseries, landscaping companies, libraries and similar businesses and public resources.

- viii. Utilize approved tree and plant lists that emphasize long lived evergreens, broad-spreading deciduous varieties, and native species, but allow flexibility to choose a wide variety of species that are proven suitable for local climate conditions and for specific uses and locations.
- ix. Encourage efforts by community groups and neighborhoods to plant trees and undertake other projects, such as restoration of wetlands and stream corridors.
- x. Maintain a list of invasive plants, discourage the sale and propagation of these plant materials within the City, promote their removal, and prevent their reestablishment or expansion.

**GOAL:**

- 2.3 To balance the diverse and changing needs of the City through well-designed urban development that minimizes the loss of existing trees to create a living legacy for future generations.

**POLICIES:**

1. The City shall develop and implement standards and procedures designed to minimize the reduction of existing tree cover, with priority given to native trees and non-native varieties that are long lived and/or provide a broad canopy spread.
2. In prescribing the mitigation of the impacts of development, the City shall give priority to the protection of existing trees, taking into consideration the related financial impact of mitigation.
3. The City shall develop policies and procedures designed to protect trees, including root systems, selected for preservation during land



development.

4. The City shall address public safety concerns by ensuring ways to prevent and resolve verified tree related hazards in a timely manner.
5. The City shall develop and enforce site design and landscape requirements to reduce the aesthetic and environmental impacts of impervious surfaces through the use of trees and other vegetation.
6. The City shall, in order to preserve existing trees and ensure new trees will thrive, allow and encourage flexibility in site design through all aspects of development review.
7. The City shall require all development, including City projects, to prepare and implement a tree preservation and landscaping plan, with the chosen trees and other plant materials appropriate for site conditions.
8. The City shall continue to cooperate with property owners, businesses, other jurisdictions, agencies, utilities, and non-governmental entities to manage and preserve street trees, wetlands, stream corridors, riparian areas, tree groves, specimen and heritage trees, and other vegetation.
9. The City shall require, as appropriate, tree preservation strategies that prioritize the retention of trees in cohesive and viable stands and groves instead of isolated specimens.
10. Applications for tree removal and tree management plans shall be reviewed by a certified arborist employed or under contract to the City.
11. The City shall recognize the rights of individuals to manage their residential landscapes.

#### RECOMMENDED ACTION MEASURES:

- i. Develop and implement regulations, standards, and incentives to encourage developers to transfer density, seek variances and adjustments necessary to preserve trees and natural open space in a manner that optimizes tree preservation and protection.

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- ii. Develop tree-mitigation regulations and standards to guide the City in assessing fees or compelling compensatory action resulting from violation of its tree protection standards and/or conditions of development approval. Consideration shall be given to off-site mitigation on both public and private lands, and the maintenance of a publicly accessible registry of mitigation sites both historical and potential.
- iii. Conduct surveys, workshops, and/or other public outreach strategies to identify and implement an appropriate strategy and form for tree protection regulations outside of the development review process.
- iv. Encourage other jurisdictions operating within and adjacent to Tigard to prepare and implement a tree preservation and landscaping plan as part of all development and infrastructure projects.
- v. Develop standards and procedures to identify and abate tree related hazards on both public and private property..

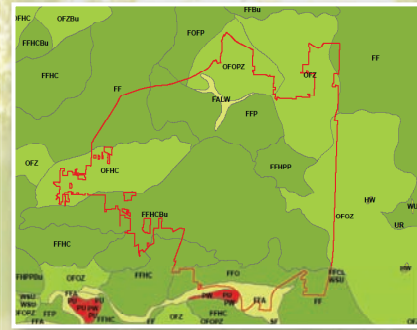
# Tigard Urban Forestry Historical Timeline

Sketch of Kalapuya man drawn by Alfred Agate, a member of the Wilkes Expedition in 1841.



3500 years before present Kalapuya (Native Americans) began managing the forests of the Willamette Valley using fire (pyroculture).<sup>4</sup>

In 1851, canopy coverage within the current city limits of Tigard was estimated to be 52.4% (3,966.9 acres).



▲ One Cloud Surveying Crew 1903 – 1905  
Survey crew of Oregon Electric Co. Railroad (from Charles F. Tigard)

In the early 1850s, Tigard was settled by several families of European descent including the Tigard family headed by Wilson M. Tigard. Native forests were cleared for agricultural uses and timber help support development in the area.<sup>3</sup>

In 1910, the Oregon Electric Railway arrived, triggering more rapid development at the rail stop near Main Street. Fruit and nut packaging and canning plants and lumber mills set up shop at that point to capitalize on the agriculture and logging activity.<sup>3</sup>



**Downtown Tigard**  
Left to right: Mrs. P.E. Lewis' Dry Goods Store, Bolens (later Schubring & Biederman's) Grocery Store, Krueger's Pool Hall and Barber Shop and Rickert's Plumbing Shops.  
Notice unpaved street and no walkways between buildings. Circa 1911.



In the 1940s, the population was about 300 people even after the arrival of the Capitol Highway (99W).<sup>1</sup>

Tigard was incorporated as a City in 1961. There were 1,749 residents and 572 occupied residences at the time of incorporation.<sup>2</sup>

In 1967, Tigard adopted its first zoning ordinance. The only mention of trees in the zoning ordinance was in Section 180-7, which required trees in industrial developments to provide a buffer for streets and residential zones.

The biggest boom period took place in the 1960s, averaging 26% population growth.<sup>2</sup>



In 1982, Tigard adopted its first Comprehensive Plan with several policies that call for the preservation of stream corridors, fish and wildlife habitat, tree and timbered areas, and wetlands.

In 1972, the Municipal Code contained provisions to protect the public from dangerous trees and branches blocking streets and sidewalks. Planned developments were required "to the maximum extent possible... to assure that natural features of the land are preserved" and to provide "a preliminary tree planting plan (with)... all existing trees over six inches in diameter and groves of trees."

In 1983, the Community Development Code was revised to comply with the Comprehensive Plan. The Tree Removal section of the new Code required a City permit prior to tree removal for all undeveloped land, developed commercial and industrial land, and public land.

In 1983, the Landscaping and Screening Chapter was also established and required street tree planting, protection, and replacement during development. It also required trees to be used as a buffer between differing land uses and for shading of parking lots.

In 1985, the Sensitive Lands Chapter of the Community Development Code prohibited development in or in close proximity to significant wetlands.



In 1987, the Tigard Municipal Code was expanded to prohibit dead or hazardous trees that pose a threat to the public and private property owners (Section 7.40.060).

In 1997, the Tree Removal Chapter was significantly revised. Tree plans were required for development, mitigation standards were established, and tree removal permits were required for trees in sensitive lands.

In 2001, the Tigard Triangle Design Standards in the Community Development Code established additional landscaping and screening requirements for the Tigard Triangle (the area bound by Highways 5, 99, and 217).



Photo: Fall in the Triangle by Kathy Vincent

In 1998, the City hired its first Urban Forester.

In 2001, the Tree Board was established to develop and administer a comprehensive tree management program for trees on public property.

Tigard has been named a Tree City USA by the National Arbor Day Foundation every year since 2001.



TREE CITY USA

In 2002, the Tigard Municipal Code was revised to increase protections for trees on City property.

In 2002, the Washington Square Regional Center Design Standards and the Durham Quarry Design Standards established additional landscaping and screening requirements in the Washington Square and Bridgeport areas respectively.

In 2002, the Sensitive Lands Chapter was significantly revised in order to implement "Clean Water Services (CWS) Design and Construction Standards", the "Metro Urban Growth Management Functional Plan," and "Statewide Planning Goal 5 (Natural Resources)."



In 2006, the Heritage Tree program was established so that trees of landmark importance could be officially recognized and protected.

In 2007 the Tree Board's mission was expanded to develop a "City Tree Stewardship and Urban Forest Enhancement Program" in part to ensure tree code revisions occurred in a comprehensive manner.

In 2007, the City adopted a "Significant Habitat Areas Map" which expanded the lands where tree removal permits were required.

In 2008, an Urban Forest section was added to the Comprehensive Plan following over a year of work by the Tree Board. The Urban Forest section of the Comprehensive Plan contains two goals to be implemented by 22 policies. Goal 2.2 Policy 11 of the Comprehensive Plan states, "The City shall develop and implement a citywide Urban Forestry Management Master Plan." This Plan is intended to meet this policy requirement.



In 2009, Tigard received a Tree City USA growth award for its expanded urban forestry efforts.

<sup>1</sup>Burrows, T. 2009. A Short History of Tigard, Oregon. Accessed via the World Wide Web < <http://tom.mipaca.com/Oregon/TigardHistory.php> > on March 25, 2009.

<sup>2</sup>City of Tigard. 2008. Natural Hazards Mitigation Plan. City of Tigard, OR, Community Development Department, Long Range Planning Division. 60p.

<sup>3</sup>City of Tigard. 2009. Tigard Downtown Future Vision. City of Tigard, OR, Community Development Department, Long Range Planning Division. 29p.

<sup>4</sup>Gray, S. 2008. The Kalapuya People: Stewards of a Rich Land and Culture. Accessed via the World Wide Web: <<http://www.washingtoncountymuseum.org/localhistory/index.php>> on November 5, 2008.

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### Federal/State/Regional Urban Forestry Policy Framework

The City of Tigard is required to comply with various Federal, State, and Regional requirements when managing its urban forest. Urban forest management practices also have positive externalities that further progress towards other jurisdictional goals and mandates. The following represent major Federal, State, and Regional agencies and programs that influence or are benefitted by urban forest management in Tigard:

#### Oregon Department of Forestry

The Oregon Department of Forestry (ODF) is responsible for administering the Forest Practices Act (FPA). The FPA was designed to promote the proper management of Oregon's forests and ensure that forests remain healthy and productive. The Oregon Legislature has given cities the authority to regulate forests in place of having ODF administer the FPA as long as the local options meet the FPA's minimum standard.<sup>1</sup>

To meet the standards, local forest practice regulations must:

- Protect soil, air, water, fish and wildlife resources;
- Be acknowledged as in compliance with land use planning goals;
- Be developed through a public process;
- Be developed for the specific purpose of regulating forest practices; and
- Be developed in coordination with the State Forestry Department and with notice to the Department of Land Conservation and Development.<sup>2</sup>

#### Oregon Department of Transportation

The Oregon Department of Transportation (ODOT) manages approximately 283 acres of right-of-way in the City of Tigard including Hall Boulevard, and Highways 217, 5, and 99W. ODOT Bulletin RD06-03(B) provides specifications for street tree placement and maintenance in ODOT right-of-ways. These specifications are intended to balance the need for safety along State roadways with trees, and supersede Tigard street tree requirements within City limits.

#### Oregon Department of Land Conservation and Development

The Oregon Department of Land Conservation and Development (DLCD) administers Oregon's Statewide Land Use Planning Program and ensures that the comprehensive plans of Oregon cities comply with Oregon Statewide Land Use Planning Goals.

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<sup>1</sup>Oregon Department of Forestry and Land Conservation and Development. 1999. **Guidelines for Developing Urban Forest Practice Ordinances**. State of Oregon, Department of Forestry and Department of Land Conservation and Development. 16p.

<sup>2</sup>Oregon Department of Forestry. 2008. **Forest Facts: Urban Growth Boundaries and the Oregon Forest Practices Act**. Accessed via the World Wide Web: <[http://www.oregon.gov/ODF/PUBS/docs/Forest\\_Facts/Forest\\_Facts\\_Urban\\_Growth\\_Boundaries.pdf](http://www.oregon.gov/ODF/PUBS/docs/Forest_Facts/Forest_Facts_Urban_Growth_Boundaries.pdf)> on March 25, 2009.

The City of Tigard Comprehensive Plan is required to be consistent with 12 of the 19 Oregon Statewide Land Use Planning Goals.

The following statewide planning goals directly relate to the urban forestry in Tigard:

**Goal 5. “To protect natural resources and conserve scenic and historic areas and open spaces.”**

This goal requires local governments to develop programs to protect resources including fish and wildlife habitats, stream corridors, and natural areas. Urban forestry programs and policies can further progress towards achievement of Goal 5. Economic, social, environmental, and energy (ESEE) analyses are required to protect Goal 5 resources.

**Goal 6. “To maintain and improve the quality of the air, water and land resources of the state.”** It is well documented that urban trees and forests contribute to air and water quality improvement.

**Goal 7. “To protect life and property from natural disasters and hazards.”** Trees roots, canopies, and leaf litter in natural hazard areas help to prevent erosion and flooding (Portland Urban Forest Management Plan).

**Goal 10. “To provide for the housing needs of citizens of the state.”** This goal requires the City to balance the needs of tree and forest preservation with the need for housing and efficient use of urban land.

Local jurisdictions within the Metro regional planning boundary must also be consistent and coordinated with relevant Metro requirements such as the Urban Growth Management Functional Plan which is described in more detail below.

DLCD has approved or “acknowledged” the City’s Comprehensive Plan (including the Urban Forest section) as being in compliance with statewide planning goals, and consistent with Metro requirements. <sup>1</sup>

#### Oregon Division of State Lands

The Oregon Division of State Lands (DSL) establishes criteria and procedures for the identification of wetlands. In 1997, Tigard’s Local Wetland Inventory was approved by DSL. Approval by DSL means that the inventory meets State standards, and therefore becomes part of the State Wetlands Inventory and must be used in lieu of the National Wetlands Inventory. <sup>2</sup>

Development in these areas is regulated by a variety of federal, state, regional, and local laws. Tigard Development Code Chapter 18.775 (Sensitive Lands) contains specific provisions to protect wetlands from development and requires

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<sup>1</sup>Oregon Department of Forestry and Land Conservation and Development. 1999. **Guidelines for Developing Urban Forest Practice Ordinances**. State of Oregon, Department of Forestry and Department of Land Conservation and Development. 16p.

<sup>2</sup>City of Tigard. 2009. **Comprehensive Plan (as of April 22, 2009)**. City of Tigard, OR, Community Development Department, Long Range Planning Division. 230p.

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concurrent approvals from the U.S. Army Corps of Engineers, Oregon Division of State Lands, and Clean Water Services. As a result, trees and native vegetation in Local Wetlands gain a highly protected status.

### Oregon Department of Environmental Quality

The Oregon Department of Environmental Quality (DEQ) is responsible for protecting Oregon's air quality by issuing permits, developing programs, and monitoring air pollution to ensure communities meet the National Ambient Air Quality Standards (NAAQS), and to protect Oregon's pristine views. Air pollutants identified in the 2005 DEQ Air Quality Report as the greatest concern in Oregon are: Ground-level ozone, commonly known as smog; Fine particulate matter; Hazardous air pollutants; and Carbon monoxide.<sup>1</sup>

Regional efforts have been established to monitor and plan for pollutants. The City of Tigard is part of the Portland Area Airshed (PAA), which is defined by the Metro service boundary. The DEQ is responsible for ensuring the PAA meets the national standards, and for developing the necessary plans to continue compliance. Currently, the PAA meets all NAAQS standards. However, DEQ is required to develop maintenance plans for carbon monoxide and ozone to ensure continued compliance.<sup>1</sup>

Trees have a natural ability to convert and sequester compounds that contribute to air pollution. Trees also offset power plant emissions by shading and sheltering buildings from sun and wind.<sup>2</sup> At the local level, the City can protect existing natural areas and mature trees, and promote and participate in tree planting efforts to improve air quality and decrease building energy usage. Within urban areas, air quality is often much worse along major roadways. Trees strategically planted along or near roadways have an increased ability to filter air pollutants and improve air quality before exhaust is released in the atmosphere.<sup>1</sup>

DEQ is also charged with establishing standards, regulating, and monitoring Oregon's waters for compliance with the Federal Clean Water Act (CWA) and National Pollutant Discharge Elimination System (NPDES). Within Tigard, run-off from impervious surfaces, pet waste, and erosion/ sedimentation are the most problematic sources of water pollution. Planting and maintaining tree canopy, water quality facility construction and maintenance (vegetated swales and retention basins), and stream corridor and wetland enhancements are all urban forestry activities that help to improve water quality and meet State and Federal requirements.<sup>1</sup>

### Oregon Public Utility Commission

The Oregon Public Utility Commission (PUC) regulates utility industries to ensure that customers receive safe and reliable services at reasonable rates. In order to ensure safety, the PUC requires Portland General Electric to maintain

<sup>1</sup> City of Tigard. 2009. **Comprehensive Plan (as of April 22, 2009)**. City of Tigard, OR, Community Development Department, Long Range Planning Division. 230p.

<sup>2</sup> McPherson, E.G., S.E. Maco, J.R. Simpson, P.J. Peper, Q. Xiao, A. VanDerZanden, and N. Bell. 2002. **Western Washington and Oregon Community Tree Guide: Benefits, Costs, and Strategic Planting**. International Society of Arboriculture, Pacific Northwest Chapter, Silverton, OR.

zones surrounding overhead utility lines clear of trees for safety and in order to help prevent outages. The result is increased maintenance costs and trees that become eyesores as a result of heavy pruning. Portland General Electric spends approximately \$500,000 annually pruning trees away from the utility lines.<sup>1</sup> These costs are passed on to utility ratepayers. The urban forestry program can help to decrease maintenance costs and improve the aesthetic quality of local trees by aiding in the selection of appropriate trees near overhead lines.<sup>2</sup>

## Metro

Metro helps the region's cities implement Statewide Planning Goals through the Urban Growth Management Functional Plan (functional plan). Metro cities are required to adopt comprehensive plans and implementing regulations that correspond with the titles and policies in the functional plan. The functional plan contains 13 titles, some of which directly or indirectly impact urban forest management in Tigard. DLCD has acknowledged Tigard's Comprehensive Plan as being in compliance with statewide planning goals, and consistent with Metro's functional plan.<sup>3</sup> The following excerpts from the functional plan have significant impact on urban forestry in Tigard:

**Title 1** of the functional plan is intended to meet Statewide Planning Goal 10, and focuses on increasing housing capacity in order to use land within Urban Growth Boundaries (an invisible line that separates rural areas from suburban) efficiently. To meet Title 1, each jurisdiction was required to determine its housing capacity and adopt minimum density requirements. Tigard adopted an 80% of minimum density requirement for development in 1998, which means that a development must build 80% of the maximum units allowed by the zoning designation.<sup>4</sup> The Home Builder's Association of Metropolitan Portland (HBAMP) and others have cited this requirement as a significant impediment to preserving trees in urban areas, particularly for those properties that are zoned for high density.

**Title 3** protects the region's health and public safety by reducing flood and landslide hazards, controlling soil erosion and reducing pollution of the region's waterways. Title 3 implements Statewide Planning Goals 5, 6 and 7 by protecting streams, rivers, wetlands and floodplains by avoiding, limiting or mitigating development impacts on these areas. The areas subject to these requirements have been mapped and adopted by the Metro Council, specifically, the FEMA 100-year floodplain and the area of inundation for the February 1996 flood. Title 3 also protects rivers and streams with buffers that are typically 50 feet wide, requires erosion and sediment control, planting of native vegetation on stream banks when new development occurs, and prohibits the storage of new uses of uncontained hazardous material in water quality areas. Title 3 results in significant protection and enhancement of that portion of the urban forest in streams and floodways. Finally, Title 3 establishes performance standards to protect regionally significant fish and wildlife habitat areas to implement Statewide Goal 5.<sup>3</sup>

<sup>1</sup>Burns, C. 2008. **Personal communication on October 6.** Western Forester, Portland General Electric Company. Portland, OR.

<sup>2</sup>Oregon Public Utility Commission. 2009. **Oregon Public Utility Commission Homepage.** Accessed via the World Wide Web: <<http://www.puc.state.or.us/>> on March 26, 2009.

<sup>3</sup>Metro. 2009. **Urban Growth Management Functional Plan.** Accessed via the World Wide Web: <<http://www.oregonmetro.gov/files/about/chap307.pdf>> on March 31, 2009.

<sup>4</sup>City of Tigard. 2009. **Comprehensive Plan (as of April 22, 2009).** City of Tigard, OR, Community Development Department, Long Range Planning Division. 230p.

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**Title 12** of the functional plan protects residential neighborhoods by prohibiting cities from increasing density in certain areas and requiring easy access to parks and greenspaces for City residents.<sup>1</sup>

**Title 13** is intended to “(1) conserve, protect, and restore a continuous ecologically viable streamside corridor system, from the streams’ headwaters to their confluence with other streams and rivers, and with their floodplains in a manner that is integrated with upland wildlife habitat and with the surrounding urban landscape; and (2) to control and prevent water pollution for the protection of the public health and safety, and to maintain and improve water quality throughout the region.”<sup>1</sup>

One of the results of Title 13 was the creation in the City of Tigard of 588 acres of habitat designated as “highest” value (i.e. Metro inventoried Class I and II riparian resources within the Clean Water Services Vegetated Corridor). An estimated 370 acres of Class I and II riparian habitat situated outside the Clean Water Services’ vegetated corridor are designated as “moderate” value. In addition, 422 acres of non-Class I and II riparian resources within the City are designated as “lowest” value, including both upland forests and lower-value riparian habitat areas. The highest and moderate value habitat are currently protected through other regulatory processes and agencies such as CWS. The lowest value habitat consists of primarily upland forests and is currently vulnerable to development. Additional ESEE analyses would be required to protect lower value habitat and additional Statewide Planning Goal 5 resources in the future.<sup>2</sup> At the time of the writing of this document, the City of Tigard has proposed budgeting funds in FY2009-10 to protect additional upland tree resources.

#### Clean Water Services

The City collaborates with Clean Water Services (CWS), the surface water management and sanitary sewer system utility for urban Washington County, to protect local water resources. Through CWS Design and Construction Standards, local governments in the Tualatin Basin (including Tigard) developed a unified program to address water quality and flood management requirements for Title 3 of Metro’s Urban Growth Management Functional Plan.<sup>2</sup>

In 2002, the City of Tigard adopted regulations restricting development within, and adjacent to, sensitive water resource areas, including streams, through standards in the CWS Design and Construction Standards. The CWS standards provide for vegetated corridor buffers, ranging from 15 to 200 feet wide, and mandate restoration of corridors in marginal or degraded condition. Native trees over 6 inches in diameter in vegetated corridors are protected, and their removal requires replacement on a tree for tree basis. In addition, land-use applicants proposing development near streams and wetlands are required to prepare a site assessment and obtain approval from CWS prior to submitting a land use application to the City.<sup>2</sup>

<sup>1</sup>Metro. 2009. **Urban Growth Management Functional Plan**. Accessed via the World Wide Web: <<http://www.oregonmetro.gov/files/about/chap307.pdf>> on March 31, 2009.

<sup>2</sup>City of Tigard. 2009. **Comprehensive Plan (as of April 22, 2009)**. City of Tigard, OR, Community Development Department, Long Range Planning Division. 230p. <sup>7</sup>Oregon Public Utility Commission. 2009. **Oregon Public Utility Commission Homepage**. Accessed via the World Wide Web: <<http://www.puc.state.or.us/>> on March 26, 2009.

The City of Tigard also collaborates in implementing CWS' Healthy Streams Plan (June 2005). The goal of this plan is to improve watershed and stream health for community benefit by recommending a number of policy and program refinements, as well as outlining a capital projects program. The capital projects focus on stream preservation and enhancement, flow restoration, community tree planting, stormwater outfall and culvert replacement. Tigard's Public Works Department is instrumental in achieving the goals of the Healthy Streams Plan through its Surface Water Quality program.<sup>1</sup> Many of goals of the Healthy Streams Plans are met through proper urban forest management activities such as invasive species control and streamside tree canopy restoration.

Large municipalities typically have NPDES permits for their wastewater treatment facilities and for stormwater runoff, called a Municipal Separate Storm Sewer System (MS4) permit. In urban Washington County, which includes the City of Tigard, the permits have been combined and are held by CWS. The combined permit was issued for the entire Tualatin River watershed to guide a basin-wide effort to improve water quality. It requires CWS to submit a Stormwater Management Plan and a Wastewater Management Plan to DEQ. These two plans outline the best management practices that CWS, its member cities, and Washington County commit to employ to reduce pollutant discharges, regulate temperature, and comply with any Total Maximum Daily Load (TMDL) levels that have been established.<sup>1</sup> Trees and urban forests are excellent stormwater managers and contribute to the achievement of water quality goals, yet are not typically addressed in Stormwater Management Plans.

#### Constitutional Takings Issue

In response to the question of whether a tree preservation ordinance constitutes a regulatory taking, the City Attorney has provided the following response:

Oregon courts recognize that regulation of real property can go too far and become tantamount to a government appropriation of property. A regulation which goes too far results in a regulatory taking or inverse condemnation, in violation of Article I, section 18 of the Oregon Constitution. See *Coast Range Conifers, LLC v. State*, 339 Or 136, 117 P3d 990 (2005); *Boise Cascade Corp. v. Board of Forestry*, 325 Or 185, 935 P2d 411 (1996); *Dodd v. Hood River County*, 317 Or 172, 855 P2d 608 (1993).

The approach of courts under the Oregon Constitution “has been to ask whether the regulation leaves the owner with any economically viable use of the property.” *Coast Range Conifers*. “Additionally, the court has recognized that regulations that deny an owner the ability to put his or her property to any economically viable use will result in a taking and entitle the owner to compensation.” *Id*; see also *Dodd* (phrasing test as whether property retains “some substantial value”).

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<sup>1</sup>City of Tigard. 2009. **Comprehensive Plan (as of April 22, 2009)**. City of Tigard, OR, Community Development Department, Long Range Planning Division. 230p.

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Whether there remains any economically viable use of property is based on the effect of the regulation as specific to the characteristics of any property at issue. Therefore, it is imperative that when utilizing the Urban Forest Master Plan as a tool to guide the drafting of regulations, that the City Attorney be consulted regarding the constitutionality of the specific regulations in light of any new jurisprudence on the topic.

## City of Tigard Urban Forestry Policy Framework

The City of Tigard has various policies and laws that frame and implement the urban forestry program.

### Comprehensive Plan

The City of Tigard Comprehensive Plan acts as the City's "land use constitution." It is the document that provides the broad policy basis for Tigard's land use planning program and ultimately guides all actions relating to the use of land in the City. The Plan also signals that the City's land use planning efforts will implement state and regional requirements, including Oregon's land use planning goals and related laws, state administrative rules, and applicable Metro plans and requirements. The Comprehensive Plan contains goals, policies and recommended action measures that identify the intent of the City to accomplish certain results. The Urban Forest Section of the Comprehensive Plan contains two (2) goals, 22 policies, and 11 action measures specific to urban forestry in Tigard. The goals and policies are obligations the City wishes to assume. The City must follow relevant goals and policy statements when developing other plans or ordinances which affect land use. Therefore, the Urban Forestry Master Plan and future revisions to the tree ordinance must be consistent with Comprehensive Plan goals and policies. Recommended action measures support the obligations to achieve a desired end, but do not signify an obligation themselves. The discretion to what degree Plan policies are implemented belongs primarily to the City Council.

### Zoning Map

The Zoning Map implements the Comprehensive Plan and guides development throughout the City. Zoning determines the type and intensity of development, as well as applicable Code provisions such as density requirements. As a result, zoning can impact the extent and feasibility of tree preservation for a given site.

### Code Provisions

The Tigard Municipal Code and Development Code contain specific provisions that regulate trees and urban forestry in Tigard. The following is a list of the major tree and urban forestry related Code provisions, as well as commentary on those provisions that present administrative challenges.

Chapter 7.40 (Nuisances) requires property owners to maintain minimum branch clearances of eight (8) feet over sidewalks and ten (10) feet over streets (section 7.40.060.A). It also prohibits owners from retaining dead or hazardous trees that threaten public or private property (section 7.40.060.B). However, there is no procedure established for abating hazards on private property such as trees that are in imminent danger of falling.

Section 7.40.050 (Noxious Vegetation) requires property owners to maintain vegetation and weeds so that they do not become unsightly or a hazard. However, it is unclear if invasive species control is required by this Code provision.

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Section 7.40.090 (Greenway Maintenance) establishes standards for greenway maintenance and prohibits the removal of non-hazardous trees over five (5) feet in height in greenways. However, the term “greenway” is not well defined.

Chapter 9.06 (Trees on City Property) regulates the planting, maintenance, and removal of trees on City property including parks and public right-of-ways. It also authorizes Council to adopt by resolution a Tree Manual that provides detailed tree related standards and the City to create an approved Street Tree List. The Chapter defines a “tree” as a standing woody plant with a trunk diameter of two (2) inches at 4.5 feet above ground level. Chapter 18.790 (Tree Removal) defines a “tree” at six (6) inches in diameter at four (4) feet above ground level.

Section 9.06.030 (Tree Planting) requires written permission from the City prior to planting street trees or trees on public property. Section 9.06.050 (Tree Protection) requires development projects on City property to protect trees according to the specifications in the Tree Manual. Section 9.06.060 (Removal of Hazardous Trees from City Property) obligates the City to inspect reports of hazardous trees on City property and prioritize their removal based on the level of hazard.

Section 9.06.070 (Removal of Trees from City Property) requires written permission for tree removal from City property and right-of-way, and requires mitigation per the requirements in the Tree Manual.

The Tree Manual, which was adopted in 2002, provides detailed specifications for Chapter 9.06. However, administering the provisions in the Tree Manual are challenging because there are some conflicts with Code provisions elsewhere in the City Code. For example, street tree planting specifications in section 030 of the Tree Manual are different than the street tree planting specifications in Chapter 18.745 (Landscaping and Screening). Also, the branch clearance requirements for sidewalks and streets in the Tree Manual are different than those in Chapters 7.40 and 18.745. Finally, referencing the Tree Manual is a challenge because the index at the beginning of the Manual does not correspond with the sections in the body.

A tree plan and mitigation is required by sections 070 and 090 of the Tree Manual, but there it is unclear what triggers the tree plan requirement and what the scope of the tree plan should be.

Chapter 9.08 of the Municipal Code contains the requirements for the City’s Heritage Tree Program. The Chapter recognizes and protects trees or stands of trees on public or private property that are designated to be of landmark importance due to age, size, species, horticultural quality or historical importance. Participation in the program is voluntary and administered by the Tree Board, City Council, and staff.

Title 18 (Community Development Code) defines a tree as a standing woody plant with a trunk that is two (2) inches in diameter at four (4) feet above the ground. This definition is inconsistent with the definitions of tree in Chapter 9.06 and 18.790 of the Code.

Chapter 18.330 (Conditional Use) authorizes the hearings officer to require conditional use developments to improve landscaping and increase tree and habitat preservation as a condition of development approval.

Chapter 18.350 (Planned Developments) states as one of its purposes “to preserve to the greatest extent possible the existing landscape features and amenities (trees, water resources, ravines, etc.) through the use of a planning procedure (site design and analysis, presentation of alternatives, conceptual review, then detailed review) that can relate the type and design of a development to a particular site”. Specific provisions in the Chapter require plans that identify areas of significant natural resources and methods for their maximized protection, preservation, and/or management. Planned Developments are approved by a Type III process by the Planning Commission. Therefore, Planning Commissioners have discretionary authority to require that sites are developed in a manner that trees and other natural features are incorporated into the project design. However, the Home Builders’ Association of Metropolitan Portland (HBAMP) and others have commented that the Planned Development provisions are in need of revision because they are not conducive to infill development.

The approval criteria in Site Development Review section 18.360.090, includes many provisions requiring the preservation of trees and natural areas. For example, approval criteria A.2.a requires buildings to be “. . . located to preserve existing trees. . . where possible based upon existing site conditions”. The approval criteria also requires trees to be preserved to the extent possible (A.2.b) and the use of innovative methods to preserve fish and wildlife habitat located on the “Significant Habitat Areas Map”. Site Development Review applications are reviewed and approved by staff through a Type II process which limits the amount of staff discretion. Therefore, the non-specific approval criteria above does not provide the tools needed to implement tree and habitat preservation.

Chapter 18.370 (Variances and Adjustments) allows for Type I adjustments to use existing trees as street trees or to vary from the street tree requirements in Chapter 18.745 (Landscaping and Screening) if there are space constraints.

Section 18.385.040 (Sensitive Land Permits) requires development within the 100-year floodplain, steep slopes, drainageways, and wetlands to obtain permits to preserve the safety and functionality of these areas. Tree Removal permits are required for the removal of trees in sensitive lands by section 18.790.050 of the Code. However, there is no tree protection plan requirement (section 18.790.030) for development within sensitive lands.

Chapters 18.510, 18.520, and 18.530 describe the development standards for residential, commercial (including mixed use), and industrial zones respectively. Among the provisions are minimum landscaping requirements, minimum and maximum density requirements, minimum building setback requirements, and minimum lot sizes and dimensions. These standards may have the greatest impact on the extent of tree and forest retention during development.

Chapters 18.620 (Tigard Triangle Design Standards), 18.630 (Washington Square Regional Center Design Standards) and 18.640 (Durham Quarry Design Standards) increase the caliper size of all required landscape and street trees

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in those planning areas. Some of the planting provisions in these special planning areas conflict which make interpretation difficult. For example, the landscaping and screening provisions in section 18.620.070, require tree spacing at a maximum of 28 feet on center. However, the provisions on page 18 of the Triangle Design Standards specify one parking lot tree for every seven parking spaces (this creates spacing of more than 28 feet on center). In addition the definition of tree types on page 18 are overly specific and therefore difficult to apply.

Chapter 18.745 (Landscaping and Screening) specifies street tree, parking lot tree, buffer tree, and other landscaping requirements. The Chapter specifies that it is applicable to all development, but it does not detail what types of permits trigger the standards. The landscaping provisions are administratively applied to those developments that require a tree plan (section 18.790.030). The General Provisions (Chapter 18.745.030) require trees and landscaping to be appropriately planted, pruned, maintained, and protected during development. However, there is a lack of specificity in these requirements that make it challenging to ensure that trees and landscaping are properly installed, protected, and maintained. Section 18.745.040 (Street Trees) specifies the location and spacing of variously sized street trees. However, these specifications differ from those in section 030 of the Tree Manual. Also, there is no minimum spacing requirement for street trees and the branch clearance requirements for sidewalks and streets in Chapter 18.745.040 are different than those in Chapter 7.40 and in the Tree Manual. Section 18.745.050 (Buffering and Screening) requires trees and landscaping to be used as a buffer between differing land uses, aesthetics, and to provide shading for parking lots. The parking lot tree requirements (18.745.050.E) have not resulted in successful shading of parking lots. This is likely due to the limited soil volumes the provisions allow (minimum parking island dimensions are three feet by three feet) and the lack of specificity on installation requirements (e.g. irrigation is not specified for parking lot trees).

The Sensitive Lands Chapter 18.775 protects sensitive lands for safety, functionality, and fish and wildlife habitat. It also implements “Clean Water Services (CWS) Design and Construction Standards”, the “Metro Urban Growth Management Functional Plan”, “Statewide Planning Goal 5 (Natural Resources)” and meets the National Flood Insurance Program requirements. The chapter requires a CWS Stormwater Connection permit when tree removal occurs in sensitive lands (section 18.775.020.A.9). Lawns and gardens are permitted in sensitive lands except in “CWS Water Quality Sensitive Areas or Vegetated Corridors” and “the Statewide Goal 5 vegetated corridor established for the Tualatin River” (18.775.020.B.1). Exemptions from the provisions of the sensitive lands chapter are emergency repair, stream restoration projects, non-native vegetation removal, and routine maintenance as long as they comply with City Standards and Specifications for Riparian Area Management (section 18.775.020.C). Section 18.775.020.D requires development to obtain permits from regulating jurisdictions such as the Army Corps of Engineers or CWS prior to development in jurisdictional wetlands. Section 18.775.070 specifies the approval criteria for sensitive lands permits. Section 18.775.100 allows for adjustments to dimensional standards such as setbacks, building heights, or lot areas to preserve habitat and vegetation cover such as trees. Section 18.775.110 allows for density transfers in order to better protect vegetated corridors. While tree removal permits are required for sensitive lands areas by section 18.790.050, and habitat protection is a stated purpose for the sensitive lands chapter, there are no implementing provisions in either Code Chapter that explicitly require the protection of trees and forests in sensitive lands.

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Chapter 18.790 (Tree Removal) is what most people think of as the “Tree Code”. This portion of the code regulates tree removal and replacement during certain types of development projects, requires tree removal permits for trees in sensitive lands, and prescribes the penalties for illegal tree removal. It also prohibits commercial forestry within the City limits. Section 18.790.020 provides definitions for some of the words used in the Chapter. Many have commented that some of the definitions need revision or clarification. For example, a “tree” is defined as a woody plant with a diameter of six inches when measured four feet above the ground. This definition is inconsistent with the definition of tree in the Municipal Code and does not account for trees that are less than six inches such as required mitigation trees. Also, the definition of “hazardous tree” is non-specific and could potentially include trees that are not intended to be defined as hazardous such as those in a forested area with little potential of striking people or other high value targets. Finally, the definition of commercial forestry is specific to the removal of 10 or more trees for sale per acre, per year. The definition is unclear whether the acreage should be measured for the entire property, or for the stand of trees where the removal is occurring.

Section 18.790.030 (Tree Plan Requirement) requires a tree protection, removal, and replacement plan for Subdivision, Partition, Site Development Review, Planned Development, and Conditional Use projects. Missing from the list are Sensitive Lands projects, building additions, demolitions, and other development projects with significant potential to result in tree damage or removal.

Tree plans require mitigation for tree removal on an “inch for inch” basis. Therefore, developers are required to replant the number of diameter inches of existing trees removed from a development site with an equivalent amount of diameter inches of replacement trees. For example, if a 24 inch tree is removed from a development site, the City may require replacement with up to 12, two inch diameter trees.

Also, as the percentage of trees removed from a site is increased, the percentage of replacement trees required for mitigation is increased. This has resulted in the overplanting of development sites to meet mitigation requirements as well as the preservation of inappropriate trees in order to avoid mitigation requirements.

If developers are unable or unwilling to plant replacement trees, there is a fee in lieu of planting option (18.790.060. E) to cover the City’s cost of replanting. This fee is currently assessed as \$125 per diameter inch removed, and viewed as excessive by many of those in the development community. Also, the methodology used to create the fee in lieu is not well defined and has resulted in many questions as to the legitimacy of the \$125 per inch figure.

The tree protection requirements of the tree plan are not defined, and are left to the discretion of the project arborist. This has resulted in wide inconsistencies between protection methods for development projects, and limits the City’s ability to require increased levels of tree protection.

Trees removed within a period of one year before a development application are required to be inventoried and mitigated as part of the tree plan. This provision has created a loophole that some developers have exploited by

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removing trees from a site, waiting one year, and then submitting a development application in order to avoid tree mitigation requirements.

Section 18.790.040 (Incentives for Tree Retention) provides developers incentives and flexibility options in order to preserve trees. However, the incentives are seldom utilized, and often criticized for their impracticality. Many in the development community have called for an overhaul of the incentives so that they are more appealing and practical for developers.

Section 18.790.040.B requires preserved trees to be protected after development through a deed restriction. This requirement is difficult for City staff to administer as development plans are archived and difficult to quickly and easily assess in responses to inquiries that occur years and decades after development.

Section 18.790.050 (Permit Applicability) requires tree removal permits for trees in sensitive lands areas. However, the approval criteria relate strictly to erosion control and not the other benefits provided by trees. Therefore, if an appropriate erosion control plan is provided by the applicant, any or all trees may be removed from sensitive lands areas. While hazardous trees are exempt from permit requirements, there is not a clear definition of what constitutes a hazardous tree and who is qualified to deem a tree hazardous.

Section 18.790.060 (Illegal Tree Removal) outlines the penalties for illegal tree removal and specifics the tree replacement requirements for violations and mitigation. The tree replacement requirements in 18.790.060.D are vague and difficult to administer. The most challenging aspect is the lack of spacing requirements, which further contributes to overplanting and lack of adequate spacing for mitigation trees. There is also little specificity on species requirements, which tend to lead to the planting of small stature and narrow crowned trees so that more trees can be planted to meet the “inch for inch” replanting requirements. Finally, the fines for illegal tree removal include the appraised value of the tree illegally removed. This can be challenging when there is not clear documentation of the previous condition of the tree. One solution may be to set a minimum penalty for cases where there is no evidence of the species or condition of the illegally removed tree.

Section 18.810 (Street and Utility Improvement Standards) specifies the minimum planting strip width for street trees (5 feet per table 18.810.1) and allows for adjustments to street standards to protect trees, habitat areas, and other existing natural feature (section 18.810.030.7). Section 18.810.070.C allows adjustments to planting strip widths to protect existing trees and natural features. Currently the City adheres to standard specifications for street widths from curb to curb regardless of existing trees and natural features. The City does actively allow adjustments to sidewalk and planter strip standards in order to preserve trees. Finally, the five foot standard planter strip width limits the selection of large stature street trees due to the high likelihood of tree root damage to curbs and sidewalks. There are currently no street tree planting specifications such as the use of root barriers aimed at reducing future tree root conflicts.

Findings from City of Tigard Policy Framework:

- The Comprehensive Plan complies with State and Regional requirements and contains two (2) goals and 22 policies specific to urban forestry that must be adhered to when developing other urban forestry plans or ordinances which affect land use.
- The Zoning Map implements the Comprehensive Plan, and frames the type and intensity of development for various areas of the City. Code provisions in Chapter 18.500 provide specification for development based on development in the various zones. These Development Code provisions may have the greatest impact on the extent of tree and forest retention during development.
- Tree and forest related Code provisions are scattered throughout the Municipal Code and the Development Code. Some of the Code provisions in the Municipal Code and Development Code conflict.
- Tree provisions in Chapter 7.40 (Nuisances) of the Municipal Code address hazardous trees and vegetation. There is lack of specificity in the provisions, thus limiting their ability to be enforced. There is also no program established to abate immediate hazards.
- Chapter 9.06 (Trees on City Property) of the Municipal regulates public trees. The Chapter contains definitions and requirements that conflict with those in the Development Code. The Chapter and associated Tree Manual also lack specificity regarding when the Code provisions are applicable and how they can be met.
- Chapter 9.08 regulates the City's Heritage Tree Program and is a functional Chapter.
- Many Chapters in the Development Code contain aspirational statements regarding tree and habitat preservation, but few implementing provisions that specifically require preservation.
- Chapters 18.620 (Tigard Triangle Design Standards), 18.630 (Washington Square Regional Center Design Standards) and 18.640 (Durham Quarry Design Standards) contain provisions that increase the type and size of landscaping in these districts. Some of the provisions within the Chapter conflict.
- Chapter 18.745 (Landscaping and Screening) specifies street tree, parking lot tree, buffer tree, and other landscaping requirements during development. The Chapter lacks a level of specificity to ensure that trees are properly installed, protected, and maintained after development. Planting and maintenance provisions differ from those in the Municipal Code, and parking lot tree requirements have not been successful at providing long term canopy.
- Chapter 18.775 (Sensitive Lands) protects steep slopes, drainageways, floodplains, and wetlands from development. Trees and forests located on sensitive lands are therefore protected as well.
- Chapter 18.790 (Tree Removal) regulates tree removal and replacement during certain types of development projects. Some development such as development in sensitive lands and building additions are not subject to the Chapter's provisions even though there is significant likelihood that trees will be impacted.
- Some of the definitions within Chapter 18.790 are inconsistent with those in the Municipal Code and lack clarity making them difficult to administer.

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- Mitigation for tree removal on an “inch for inch” basis is required by Chapter 18.790, and seen as excessive by many in the development community. It also contributes to overplanting of trees.
- The fee in lieu of mitigation tree planting is \$125 per caliper inch, which is also seen by developers as excessive. The methodology used to create the fee in lieu is not well defined and has resulted in many questions as to its legitimacy.
- There is a loophole in Chapter 18.790 that some developers have exploited by removing trees from a site, waiting one year, and then submitting a development application in order to avoid tree mitigation requirements.
- Incentives for tree preservation in Chapter 18.790 are not appealing or practical for developers.
- Tree Removal permits are required for trees in sensitive lands by Chapter 18.790, but the approval criteria do not require preservation as long as erosion is adequately controlled.
- Penalties for illegal tree removal in Chapter 18.790 can be challenging to apply when the condition and species of the tree removed are not known.
- The tree replacement guidelines in Chapter 18.790 lack specificity and are difficult to administer, especially with regards to species and spacing requirements.
- Throughout the Code, tracking of protected trees is a continual challenge in the years and decades after development is complete.

**CITY OF TIGARD, OREGON  
TIGARD CITY COUNCIL  
RESOLUTION NO. 09- 69**

A RESOLUTION ACCEPTING THE CITY OF TIGARD'S URBAN FORESTRY MASTER PLAN

WHEREAS, the Urban Forestry Master Plan supports the City Council's Goal of implementing the Comprehensive Plan; and

WHEREAS, an analysis of past and current urban forest conditions and City management practices was completed to identify program strengths, weaknesses, opportunities, and constraints; and

WHEREAS, urban forestry surveys, interviews, meetings and workshops were completed to identify stakeholder and community preferences; and

WHEREAS, the Urban Forestry Master Plan was completed by the Citizen Advisory Committee appointed by Council; and

WHEREAS, Planning Commission reviewed the Urban Forestry Master Plan and found it to be consistent with and supportive of the Comprehensive Plan; and

WHEREAS, Council has reviewed the Urban Forestry Master Plan; and

WHEREAS, the Plan before Council sets realistic timelines and provides a balanced framework for implementing updates to the City's urban forestry codes, policies and programs.

NOW, THEREFORE, BE IT RESOLVED by the Tigard City Council that:

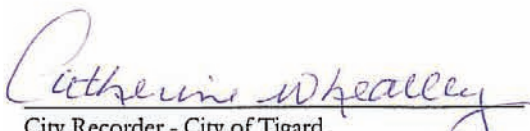
SECTION 1: The Council accepts the City of Tigard's Urban Forestry Master Plan (Exhibit A).

SECTION 2: This resolution is effective immediately upon passage.

PASSED: This 10<sup>th</sup> day of November 2009.

  
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Mayor - City of Tigard

ATTEST:

  
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City Recorder - City of Tigard