



CITY OF PORTLAND, OREGON - PORTLAND TREES

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Citywide Tree Project
Data Report
January 1-December 31, 2015

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I. Introduction

On April 13, 2011 the City Council adopted the Citywide Tree Regulatory Improvement Project (also known as the Citywide Tree Project). The overarching goals of the Citywide Tree Project were to 1) craft comprehensive tree regulations that support multiple city goals and are clear, consistent, easy to understand and work with, equitable, and cost-effective; 2) protect and enhance the urban forest; and 3) improve customer service.

To that end, the Citywide Tree Project consisted of three primary components: 1) a new Title 11, Trees; 2) amendments to the Portland Zoning Code; and 3) a set of customer service improvements. Title 11 is a new Title that combines tree requirements associated with development projects and tree requirements when no development is also proposed under one code, the Tree Code. The Tree Code was effective January 1, 2015. The Zoning Code contained tree regulations prior to the adoption of Title 11 including tree planting specifications for tree planting in parking lots, new single family development projects as well as preservation standards for land divisions and environmentally sensitive areas of the city. The amendments to the zoning code served as an update to already existing tree standards. Customer service improvements were made such as creating a single point of contact for tree-related questions, and improving inspections. The outcomes of the Citywide Tree Project are administered by two bureaus, the Bureau of Development Services (BDS) and Portland Parks and Recreation Urban Forestry (Parks Urban Forestry).

Development of the Citywide Tree Project included significant community and city resources over a three year period of time. Volunteers spent hundreds of hours and staff from BDS and Parks Urban Forestry, BES, and other infrastructure bureaus contributed responses to countless drafts during project development. Given the levels of both city and community involvement and city resources, BDS and Parks Urban Forestry are reporting on the outcomes of the first complete year of implementation, January 1-December 31, 2015.

This report will focus on the performance of the new regulations in the Tree Code (Title 11). The data presented also includes requirements of the Zoning Code (Title 33) for development-related tree requirements and outcomes. The report also contains information on tree requirements and outcomes in non-development situations, and on customer service efforts and outcomes. The report is focused around four topic areas:

- Development Permits on Private Property
- Non-Development Permits
- Development Permits in the Public Right of Way, City Owned and Managed Property and Inspections
- Customer Service

II. Executive Summary

The primary findings, successes and challenges highlighted by the data gathered for the first year of implementation of the Citywide Tree Project can be summarized as follows:

Findings

Development Permits on Private Property

- The rate of when tree planting and/or preservation is required by code is higher for Residential permits than Commercial permits (19.6% and 3.9%, respectively).
- Considering all permit types, the rate of required tree planting and/or preservation is 15.7%. This includes all permit sub-types: new construction, additions, demolitions and alterations. Alterations account for the highest volume of permits issued, but have the lowest rate of required tree planting and/or preservation because they are most often internal to an existing building and don't trigger tree requirements. The rates are more significant when looking at new construction, demolitions, and additions. This is especially true for residential projects, which have a rate of required tree planting and/or preservation in new construction, additions, and demolitions of 63.0%, 27.6% and 34.2%, respectively.
- Approximately 1/5 of development sites (1,015 sites) did not require any tree preservation due to site size because they were under the 5,000 square foot size to trigger tree preservation standards. Approximately 1/3 of commercial development sites (484 sites) did not require tree preservation because they were located in a zone exempt from tree preservation standards.
- The rate of tree planting and preservation for new single family residential construction is similar to what it was prior to the implementation of Title 11. In 2014, 86.1% of permits had planting, and 21.8% of permits had preservation. In 2015, 85.0% of permits had planting, and 19.7% of permits had preservation.
- Just 2% of new single family residential permits opted to pay a fee in lieu of planting requirements where planting was required, while about 18% of single family residential permits opted to pay a fee in lieu of preservation where preservation was required. 43% of residential demolition permits chose the fee in lieu of preservation where preservation was required.
- Approximately 13% of trees planted are in the large canopy size category; the remainder are in the small or medium canopy size categories.
- Approximately 1.5 times more trees were preserved (1,677) than were removed (1,128). The average size of both trees preserved and trees removed are approximately 17-inches.
- Approximately 60% of trees were preserved (1,677 trees and over 28,000 diameter inches).

Non-Development Permits

- Type A (non-discretionary) permits made up over 95% of all permitted private and street tree removals in 2015.
- In the fourth quarter of 2015, replacement of removed trees fell below 1:1 under issued Type B (discretionary) permits for private and street tree removal. The Administrative Rule, finalized in October, 2015, lowered maximum mitigation for many of these permits.
- Type A permits made up 97% of permitted private tree removals in 2015. Private trees that were dead, dying, or dangerous; nuisance species; or within 10 feet of a building or attached structure made up 72% of all private tree removal permits in 2015.

- On private lands, large form and evergreen trees are most often replaced with smaller, deciduous species. Title 11 established a minimum 1:1 mitigation for trees removed but allows applicants the choice of species for replanting. As a result, private tree removal and replanting permits issued in 2015 resulted in a net loss of 1,051 large form trees (1,605 removed vs. 554 planted) and a net gain of 556 small form trees (465 removed vs. 1,021 planted). The same permits resulted in a net loss of 748 evergreen species (1,192 removed vs. 444 planted).
- Applicants rarely chose to pay a fee in lieu of planting to meet mitigation requirements in 2015. Of 2,842 street and private removal permits issued, 12 applicants chose to pay a fee in lieu of planting required replacement trees. In all other cases, applicants met required mitigation through planting or were granted a waiver from requirements.
- Parks Urban Forestry permitted the planting of 3,696 street trees in 2015, including those planted as mitigation for removals. 52% of these trees were small form varieties and 94% were deciduous.
- Parks Urban Forestry pursued 699 tree code compliance complaints outside of development in 2015. Of these, 22 resulted in violations; all other compliance issues were unfounded or resolved without proceeding to a violation process.
- Enforcement of the new tree code was “soft” during the first 6 months of 2015 in order to allow for a public outreach period when the regulations were new. As such, the numbers of violations and associated fines collected (\$11,325) were lower than may otherwise be expected.

Development Reviews and City Property Development

- Urban Forestry reviews of development projects increased 35% in 2015. Tree preservation and tree violation inspections, new under Title 11, increased over the year, with two-thirds of inspections occurring in third and fourth quarters of 2015.
- A new process to standardize and streamline permitting for capital improvement projects (CIPs) was implemented under Title 11, requiring early consultation with Parks Urban Forestry in order to identify opportunities to preserve and protect trees when possible. Permit requirements of 17 completed CIPs in 2015 resulted in a net gain of 98 trees; most CIPs for which permits were issued in 2015 are still in progress.

Customer Service

- Overall increase of 34% in tree permit applications and 26% in public inquiries to Urban Forestry staff in 2015 over the previous year.
- While Title 11 roughly tripled the number of private properties where trees are regulated in Portland, applications for private tree removals increased more than four times from 2014 (470 applications) to 2015 (2,193 applications). It is unknown if more trees are being removed or, due to outreach efforts, more people are obtaining appropriate permits.
- Urban Forestry intake staff met response goals for 99% of public inquiries in 2015.
- Urban Forestry tree inspectors met goals for initial inspections at similar rates to the previous year, meeting goals for a minimum 60% of permits despite workload increases and significant staff vacancies.

Successes

- Administration and application of the Citywide Tree Project has been successful, with permit processes developed and inter-bureau coordination greatly improved.
- More trees regulated and possibly retained than under previous city policies.
- Increased capacity for data collection and monitoring to guide further code improvements.
- Improved customer service and clearer paths for customers to submit tree questions via new website, caller menu, and central staff location.
- Improved permitting process for capital improvement projects, providing clear expectations for project managers and identifying opportunities for tree preservation at the project's earliest stages.
- Programmatic Permits implemented for 14 public agencies and utilities have created a clear, streamlined process for regulating routine tree work in large areas of the city and ensure a net positive benefit to the urban forest.

Challenges

- Parks Urban Forestry staff workloads continue to result in response rates at less than acceptable levels in some cases.
- Data suggests that the number and stature of trees currently planted in development and non-development situations will not fully replace tree canopy lost, resulting in long-term canopy implications.
- There may be unintended incentives to remove trees during demolition phases of the development process to avoid tree preservation requirements in latter stages of development or future land use reviews.
- Limited planting space in Portland's rights of way continues to restrict long-term tree health and canopy growth.
- Adequate data to assess long-term trends in the urban forest are not currently available, including:
 - Species and size of trees planted, preserved, and removed in development on regulated sites.
 - The number, size, and species of trees lost to development on exempt sites.
 - The rate of compliance with tree planting requirements in development and non-development situations.
 - The effect of the Administrative Rule, *Replanting Requirements for Tree Removal on Private Property, City-Owned and Managed Sites, and Public Rights-of-Way*, on tree mitigation requirements.
- Inability of new tree preservation standards to incentivize preservation of high-quality trees—under current rules, applicants may receive the same credit for preserving trees in poor health or nuisance species as for healthy, native trees. (Note: This item is currently being addressed through Regulatory Improvement Code Amendment Process 8 [RICAP 8] staffed by the Bureau of Planning and Sustainability.)
- Compliance is largely complaint-driven. It is unknown how often tree planting requirements are met and how much illegal tree removal is occurring.
- Applicants for some development permits are relied upon to provide accurate tree plans. Because an arborist is not required to submit a tree plan in most cases, inaccuracies were often noted in 2015.

- Building inspectors are currently expected to confirm a variety of tree-related information on development sites, including the accuracy of tree plans where no preservation is proposed, that trees preserved on site were not harmed by construction activities and remain viable after projects are complete, and the size and species of any tree planting required by Titles 11 or 33. Ideally staff trained in arboriculture would be responsible for these tasks. This issue must be considered along with work efficiency and resources to determine the appropriate number of different inspectors to send to a development site.

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III. Development Permits on Private Property

Background

The Bureau of Development Services is responsible for administering tree preservation and density (planting) requirements found in Chapter 11.50, Trees in Development Situations for trees on private property.

Purpose of Trees in Development Situations Chapter

11.50.010 Purpose

The regulations of this chapter support and complement other City development requirements, with a focus on achieving baseline tree preservation and total tree capacity on a site, considering the anticipated use and level of development. This Chapter regulates the removal, protection, and planting of trees through the development process to encourage development, where practicable, to incorporate existing trees, particularly high quality or larger trees and groves, into the site design, to retain sufficient space to plant new trees, and to ensure suitable tree replacement when trees are removed. It is the intent of these provisions to lessen the impact of tree removal and to ensure mitigation when tree preservation standards are not met.

New Tree Density and Preservation Applicability, Exemptions and Standards

Tree preservation and density (planting) standards in Title 11 replaced the T1 standards in Title 33 (Planning & Zoning) for one & two family residential development, and added standards for all other types of development (i.e. commercial, industrial, mixed use, multi-dwelling). Starting January 1, 2015 applications for new single family residential construction are subject to both tree preservation and tree density (planting) standards under certain circumstances. There are exemptions to both tree planting and tree preservation requirements. Title 11 Tree Density (Planting) and Preservation applicability, exemptions, and standards are summarized below:

Tree Density (Planting) Applicability. On private property applications for new development, exterior alterations to existing development and additions in excess of 200 square feet to single dwelling development must meet On-Site Tree Density (Planting) Standards.

Tree Density (Planting) Exemptions.

- Additions or exterior alterations to existing development with a project valuation less than non-conforming upgrade threshold noted in Title 33 (Planning & Zoning). This amount is currently set at \$155,900 and is adjusted annually.
- A specific condition of land use review approval exempts the site from density standards.
- Sites within the Portland International Airport Plan District or Cascade Station/Portland International Center Plan District that are subject to Airport Landscape Standards.
- Sites located within a zone intended for high intensity building coverage and uses, specifically IH (Heavy Industrial), IG1 (General Industrial 1), EX (Central Employment), CX (Central Commercial), CS (Storefront Commercial) or CM (Commercial Mixed) zone.
- Work conducted under Demolition, Site Development, or Zoning Permits.

Tree Density (Planting) Standards.

Tree density standards are a function of a land area called Required Tree Area, which is based on development type, and canopy size category of trees to be planted. In summary, residential uses have larger required tree areas while more intense uses and anticipated level of development such as industrial have smaller required tree areas. Within the required tree areas, planting of large canopy trees achieves greater credit than planting small canopy trees.

- 1. Required Tree Area.** The required tree area is based on the size of the site and the type and size of proposed and existing development as shown in Title 11 Table 50-1. Applicants may choose Option A or Option B for calculating required tree area except only Option A may be used to apply standards to a "Development Impact Area".

Table 50-1 Determining Required Tree Area		
Development Type	Option A	Option B
One and Two Family Residential	40 percent of site or development impact area	Site area minus building coverage of existing and proposed development
Multi Dwelling Residential	20 percent of site or development impact area	
Commercial/Office/Retail/Mixed Use	15 percent of site or development impact area	
Industrial	10 percent of site or development impact area	
Institutional	25 percent of site or development impact area	
Other	25 percent of site or development impact area	

- 2. Required Tree Density.** The required tree area shall be planted with some combination of large, medium or small canopy trees at the following rates:

Table 50-2 Number of Required Trees and Minimum Planting Area		
Canopy size category	Number of trees required per size of tree area	Min. required planting area per tree (min. dimension)
Large	1 per 1,000 s.f.	150 s.f. (10' x 10')
Medium	1 per 500 s.f.	75 s.f. (5' x 5')
Small	1 per 300 s.f.	50 s.f. (3' x 3')

Tree canopy types are categorized as small, medium, or large based on the estimated canopy size at maturity. The "Portland Tree and Landscaping Manual" suggested plant lists include the size categories recognized for many trees. For other trees, canopy size is calculated by specific formulas using factors of mature height, crown spread, and growth rate.

3. Tree Density Credits. Payment into the Tree Planting and Preservation Fund may be made in lieu of planting. Payment equivalent to the cost of planting and establishing one 1.5-inch tree is credited at a rate of one medium canopy size tree. The current fee for one 1.5-inch tree is \$450.00, based on a value established in 2009 of \$300.00 per inch.

In addition, existing trees may be preserved to meet tree density standards. Trees between 1.5 and less than 6 inches in diameter count as one small canopy size tree. Trees 6 or more inches in diameter count as one medium canopy size tree for each full increment of 6 diameter inches.

*Note: For ease of understanding, the remainder of this report **uses the terminology of “tree planting” as opposed to “tree density”**. Though trees may be preserved to meet tree density standards, most often they are planted. In addition, the data captured is represented in trees planted and trees preserved, and referring to tree planting as opposed to tree density is more consistent with how the data is collected and reported.*

Tree Preservation Applicability.

On private property, sites with ground disturbing activity that are 5,000 square feet or larger and have less than 85% building coverage must meet tree preservation standards.

Tree Preservation Exemptions.

Projects are not subject to tree preservation under any of the following circumstances:

- The site is less than 5,000 square feet.
- The project has existing or proposed building coverage $\geq 85\%$.
- Sites located within a zone intended for high intensity building coverage and uses, specifically IH (Heavy Industrial), IG1 (General Industrial 1), EX (Central Employment), CX (Central Commercial), CS (Storefront Commercial) or CM (Commercial Mixed) zone.
- Tree preservation requirements approved through a land division or other land use review that is still in effect.
- Trees that are dead, dying, dangerous, or a nuisance species defined by the Portland Plant List.

Tree Preservation Standards¹.

At least 1/3 of trees 12 inches and larger must be preserved. Payment into the Tree Planting and Preservation Fund may be made in lieu of preservation. For each tree removed below the 1/3 requirement, payment to the Tree Planting and Preservation Fund is required equivalent to the cost of planting and maintaining two 2-inch trees for two years. The current fee for two 2-inch trees is \$1,200.00, based on a value of \$300.00 per inch.

Tree Planting and Preservation Fund

As noted above, payment may be made in-lieu of tree planting or preservation. Those payments are made to the Tree Planting and Preservation Fund. Those funds are used by the City to plant new trees to replace some of the services lost through permitted tree removal, or to acquire property with significant trees.

¹ Tree Preservation Standards have recently been amended via ORD ###. The data reported is based on the code in effect in 2015.

Data Collection

The following section details background information about the type of data collected and some important information about the synthesis of that data.

Permit Types

Tree data is collected by BDS for development review permits as part of the following permit types:

1. **Residential Building Permit (RS):** Residential building permits are for work associated with single family dwellings, duplexes and two-unit townhouses.
 - a. **New Construction-** New construction is erection of a new structure which could include a house, garage, accessory dwelling unit or other accessory structure. New construction involves ground disturbance.
 - b. **Additions-** An addition is work that increases the envelope of a building and generally adds square footage through new floor area or enclosing existing floor area. Additions could include adding a room to a house, enclosing a porch, or adding a dormer. They may or may not include ground disturbance.
 - c. **Alterations-** An alteration is work that does not increase the envelope of a building. Most alterations are interior to a building, though they may include some exterior changes like replacing or moving windows or doors. Alterations could include a kitchen remodel or finishing a basement. Alterations typically do not include ground disturbance.
 - d. **Demolitions-** Demolitions are removal of the entire superstructure of a building down to the subflooring. Most demolitions will contain ground disturbance, unless the foundation or slab remains.
2. **Commercial Building Permit (CO):** Commercial building permits are for work associated with all buildings other than single family dwellings, duplexes and two-unit townhouses, including but not limited to commercial, mixed-use, industrial, and multi-family buildings.
 - a. **New Construction-** New construction is the erection of a new structure which could include a building, trash enclosure, or other accessory structure. New construction involves ground disturbance.
 - b. **Additions-** An addition is work that increases the envelope of a building and generally adds square footage through new floor area or enclosing existing floor area. They may or may not include ground disturbance.
 - c. **Alterations-** An alteration is work that does not increase the envelope of a building. Most alterations are interior to a building, though they may include some exterior changes like replacing or moving windows or doors. Alterations could include improvements for a new commercial tenant, reconfiguring dwelling units in a multi-family building, or reconfiguring office space. Alterations typically do not include ground disturbance.
 - d. **Demolitions-** Demolitions involve removal of the entire superstructure of a building down to the subflooring. Most demolitions will contain ground disturbance, unless the foundation or slab remains.

3. **Development Review Permit (DR):** Development Review permits are for work where no building or structure is altered, moved or constructed but that may otherwise require review for conformance with portions of the building code (Title 24), and reviewed by multiple agencies for conformance with several Titles. Examples includes stormwater retrofits on non-residential property, parking lot construction or alteration, or vending cart sites. Most work covered under a Development Review permit will contain ground disturbance.
4. **Site Development Permit (SD):** Site Development permits are for work where no building or structure is altered, moved or constructed and that does not require a building permit. They primarily include work such as clearing, grading, tree cutting, landslide repair, private streets and groundwork related to new subdivisions. Most work covered under a Site Development permit will contain ground disturbance.
5. **Zoning Permit (ZP):** Zoning permits are for work that only requires review for conformance with Title 33 (Planning and Zoning) regulations and, in some cases also Title 11—but not building code regulations. The Bureau of Transportation or Bureau of Environmental Services may also review zoning permits, depending on the scope of work. Examples include residential driveways, small sheds or other accessory structures that do not require a building permit, tree or landscaping work in fulfillment of Title 33 land use review conditions of approval, and work in environmental overlay zones. Some, but not all work covered under a Zoning Permit will contain ground disturbance.
6. **Facilities Permits (FA):** Facilities permits are permits issued through the Facilities Permit Program (FPP). This program is designed to serve customers with on-going interior tenant improvements where facility maintenance, upgrade and renovations are frequent. Work includes tenant improvements for office spaces in large office buildings, interior remodels for college and hospital campuses, tenant improvements for industrial buildings, electrical or mechanical work in existing spaces, and others. Additions are generally not allowed through the FPP, so permits rarely include ground disturbance. In addition, most buildings in the FPP are located in the commercial and industrial zones that are exempt from Title 11 requirements. There were 5,999 FA permits issued in 2015. The type of work permitted through FPP was not intended to, and rarely does trigger Title 11 requirements. For this reason, coupled with the relatively large number of FA permits issued, **data on FA permits has been deliberately excluded from this report.** Inclusion of the data would greatly skew the data toward results that would diminish the overall applicability and effect of Title 11 requirements.

	Data Collected	Description
1	Total number of trees preserved	Total number of on-site trees to be preserved on a site
2	Total diameter of all inches preserved	Total combined diameter inches of on-site trees preserved on a site
3	Number of large trees planted	Total number of large canopy species trees to be planted on a site
4	Number of small and medium trees planted	Total of both small and medium canopy species trees to be planted on a site
5	Total trees planted	Total of large, medium and small canopy species trees to be planted on a site
6	Total number of trees removed	Total number of on-site trees to be removed from a site
7	Total diameter of all trees removed	Total combined diameter inches of on-site trees removed from a site
8	Tree fund – number of trees removed	Number of trees removed on a site that require a mitigation fee
9	Tree fund – number of trees not planted	Number of trees not planted on a site that require a mitigation fee

The data in this report is based on information entered into the City's permitting system (TRACS) by BDS staff as part of permit review. Some of the information collected triggers tree preservation inspections or fees to be paid by the customer. Other information is collected for reporting purposes only. The following table describes the information that is entered by BDS staff for each development permit described earlier in this report.

Notes Regarding the Data

There are a few items of interest about the data that may be useful to consider when reading this report relating to the scope of the data captured, and an explanation of differences in quarterly data.

Inclusion of Other City Titles in the Data

BDS records the following tree data for each permit type listed above when tree preservation and/or planting requirements apply. **It should be noted that this data includes tree information for both Title 11 requirements and Title 33 (Planning and Zoning) requirements. It would also include trees planted to meet Stormwater management requirements.** For example, Title33 requires trees and other landscaping in parking lots. Therefore, a permit for a new commercial building and associated parking lot would include trees planted and preserved to meet BOTH Title 11 tree preservation and tree density requirements AND Title 33's parking lot landscaping requirements. Another example is where a land use review required by Title 33 such as an Environmental Review or Land Division Review requires tree planting or preservation. The intent is to capture

the results of Title 11 in concert with other complimentary regulations. Title 33 requirements are generally less prevalent in one and two family residential development (RS) because the Title 33 standards for tree planting were replaced with Title 11 tree preservation and tree density (planting) requirements.

Quarterly Data

The data gathered for this report only captures permits that have been issued. For data presented quarterly, the data for Quarter 1 is often a significantly smaller amount than for Quarters 2 and 3. This is due to a timing issue related to when permits are applied for versus when they are issued. A permit issued in March will be allocated to Quarter 1, while a permit issued in September will be allocated to Quarter 3. However, all permits in the data set were applied for in 2015. Thus, to be included in Quarter 1 data, the permit must be both applied for and issued within Quarter 1. In contrast, a permit issued in Quarter 3, may have been applied for in Quarter 1, 2, or 3. Given that many permits take longer than 2 or 3 months to issue, the base data set for Quarter 1 is smaller. In addition, some permits that were applied for in 2015 may not yet have been issued at the time the data in this report was extracted (January 2016). This is especially true for permits applied for in Quarter 4. Therefore, Quarter 4 numbers may be lower than other quarters. This is not necessarily reflective of trends, only that there is a smaller data set for Quarter 1 and Quarter 4.

Tree Planting and Preservation in Different Permit Types

Unless exempt, the Title 11 tree preservation standards and tree planting standards apply to development permits for new construction, additions, alterations, and demolitions. **Table 1** below represents the number of permits where a) tree planting standards applied; b) where tree preservation standards applied; c) and the aggregate where either or both tree planting and preservation standards applied. It is possible that both tree planting standards and tree preservation standards apply to any given permit. **The data includes both where trees were planted or preserved to meet the standard, or where fees were paid in-lieu of meeting the preservation or planting standard; it does not distinguish between preserving the tree(s) or paying a the fee in-lieu.** The table is meant to capture how many development permits triggered tree planting standards and/or tree preservation standards.

The table summarizes issued Residential permits, Commercial permits, Site Development permits, Development Review permits, and Zoning permits. Residential and Commercial permits are further broken down into categories of new construction, additions, alterations, and demolitions to add further insight into the type of work that most often triggers tree preservation or tree planting standards.

In summary, tree standards applied to 19.6% of all Residential permits, 3.9% of all Commercial permits, and 15.7% of all permits. Broken down, tree planting standards applied to 9% of Residential permits, 2.7% of Commercial permits, and 7.6% of all permits. Tree preservation standards applied to 12.5% of Residential permits, 2% of Commercial Permits, and 9.6% of all permits.

Within the new construction and demolition subtypes, the rate of applicability is much higher, at 63.0% and 34.2% for Residential permits, respectively. Also, 27.6% of Residential addition permits triggered either or both tree planting or preservation.

In contrast, alteration sub-types have a much lower occurrence, at 2.6% for Residential permits. This is to be expected since alterations generally do not include ground disturbance (and therefore do not trigger tree

preservation standards) and are relatively less expensive (and therefore are exempt because they are less than the exempt value threshold, currently \$155,900). Alterations also make up the highest volume of permits issued, which negatively affects the overall percentage of permits that triggered tree planting and/or preservation (19.6% for all Residential permits). Also, addition sub-types have a low rate of planting occurrence (2.3%), primarily due to the fact that many additions are exempt from tree density requirements due to the value of the alteration or addition project (less than \$155,900) and are exempt from tree planting requirements- as approximately 95% of all issued permits are below this value.

Further discussion regarding tree planting and tree preservation applicability and exemptions and how they may affect the rate of applicability follows in the next section.

Table 1
Issued Permits Where Tree Planting or Preservation Were Required Relative to
Total Issued Permits, by Permit Type and Sub-type, 2015

Permit Type		Total	Planting Applied		Preservation Applied		Planting and/or Preservation Applied	
Permit Type	Permit Sub-Type	Permits Issued	# of Permits	% of Permits	# of Permits	% of Permits	# of permits	% of permits
Residential (RS)	All subtypes	5,060	456	9.0%	630	12.5%	994	19.6%
	New Construction	856	428	50.0%	185	21.6%	539	63.0%
	Additions	700	16	2.3%	187	26.7%	193	27.6%
	Alterations	2,509	7	0.3%	62	2.5%	65	2.6%
	Demolitions	571	0	0.0%	194	34.0%	195	34.2%
Commercial (CO)	All subtypes	1,730	46	2.7%	35	2.0%	67	3.9%
	New Construction	177	26	14.7%	15	8.5%	33	18.6%
	Additions	140	10	7.1%	7	5.0%	13	9.3%
	Alterations	1,311	10	0.8%	6	0.5%	14	1.1%
	Demolitions	98	0	0.0%	7	7.1%	7	7.1%
Development (DR)		20	2	10.0%	1	5.0%	3	15.0%
Site Development (SD)		33	6	18.2%	8	24.2%	13	39.4%
Zoning (ZP)		178	25	14.0%	0	0.0%	25	14.0%
Total		7,021	530	7.6%	674	9.6%	1,102	15.7%

Tree Planting and Preservation Applicability and Exemptions

The tree code excludes some projects from tree preservation and tree planting standards, which aids in further explanation of the data in Table 1.

Tree Planting Applicability and Exemptions

As summarized earlier in the report, projects do not need to meet tree planting standards if any of the following circumstances:

- Additions or exterior alterations to existing development with a project valuation less than non-conforming upgrade threshold noted in Title 33 (Planning & Zoning). This amount is currently set at \$155,900 and is adjusted annually.
- A specific condition of land use review approval exempts the site from density standards.
- Sites within the Portland International Airport Plan District or Cascade Station/Portland International Center Plan District that are subject to Airport Landscape Standards.
- Sites located within a zone intended for high intensity building coverage and uses, specifically IH (Heavy Industrial), IG1 (General Industrial 1), EX (Central Employment), CX (Central Commercial), CS (Storefront Commercial) or CM (Commercial Mixed) zone.
- Work conducted under Demolition, Site Development, or Zoning Permits.

Tree Preservation Applicability and Exemptions

As summarized earlier in the report, projects are not subject to tree preservation under any of the following circumstances:

- The site is less than 5,000 square feet.
- The project has existing or proposed building coverage $\geq 85\%$.
- Sites located within a zone intended for high intensity building coverage and uses, specifically IH (Heavy Industrial), IG1 (General Industrial 1), EX (Central Employment), CX (Central Commercial), CS (Storefront Commercial) or CM (Commercial Mixed) zone.
- Tree preservation requirements approved through a land division or other land use review that is still in effect.
- Trees that are dead, dying, dangerous, or a nuisance species defined by the Portland Plant List.

The following tables show the number of permit applications that were exempt from tree preservation or tree planting for measurable exemptions. These tables provide additional insight into why some permits shown in Table 1 were not subject to tree preservation and/or tree planting requirements. It is possible for a site to be exempt from tree planting or preservation standards for more than one reason. Thus, while the tables do not offer definitive reasons why a particular permit was not subject to tree preservation, they do provide information about the scale of applicability of particular exemptions.

For example, per **Table 2**, approximately 21% of Residential permits and 6% of Commercial permits could have been exempt from tree preservation standards due to site size. On a case-by-case basis, they may also be exempt because they are located in an exempt commercial zone, or they may not trigger tree preservation at all because they do not include ground disturbing activity, or do not contain any trees on site. However, it is useful to know that approximately 1/5 of residential development activity would not have triggered tree preservation due to site size.

Table 2
Issued Permits Where Site is Less than 5,000 Square Feet:
Exempt from Tree Preservation Standards, 2015

	# of Permits*	# of Sites < 5,000sq.ft.	% of Sites <5,000 sq. ft.
Residential Permits	4,500	940	20.9%
Commercial Permits	1,338	75	5.6%
Total	5,838	1,015	17.4%

*excludes permits with no information regarding site size

Similarly, as shown in **Table 3**, 34% of Commercial permits and 1% of Residential permits could be exempt from tree preservation standards and tree planting standards due to their location in an exempt zone. This number is significantly higher for commercial development since the exempt zones contain primarily commercial uses. Thus, it can be generalized that approximately 1/3 of commercial development activity could be exempt from tree preservation requirements due to their location in a specific zone, while this exemption has little effect on residential development.

Table 3
Issued Permits Where a Site is in IH, IG1, EX, CX, CS, or CM Zone:
Exempt from Tree Preservation and Tree Planting Standards, 2015

	# of Permits*	# of Sites in Exempt Zones	% of Sites in Exempt
Residential	4,576	45	1.0%
Commercial	1,296	439	33.9%
Total	5,872	484	8.2%

*excludes permits with no information regarding zone

Tree Planting and Preservation for New Single Family Residential Construction (NSFR)

Pre-Title 11 tree preservation and planting for NSFR permits

Prior to Title 11, tree preservation and planting requirements were reviewed as part of new single family residential construction projects under *Chapter 33.248, Landscaping and Screening* (also known as the *T1 Standards*). To meet these standards, applicants could preserve trees, plant new trees, or pay a fee in lieu of planting or preservations. The options could be utilized singly or in combination. There were no exemptions to the standard.

The T1 standards were as follows:

- 1) Tree preservation.** Preserve at least 2 inches of existing tree diameter per 1,000 square feet of site area.
- 2) Tree planting.** Plant at least 2 inches of tree diameter per 1,000 square feet of site area.
- 3) Tree fund.** Pay a fee in lieu equal to the cost to purchase and plant at least 2 inches of tree diameter per 1,000 square feet of site area. The most recent fee amount was \$300 per diameter inch.

With the implementation of Title 11, applications for new single family residential construction must now meet both tree preservation and tree planting standards. This is different than the T1 standards, where

applicants could *choose* to preserve *or* plant trees to meet standards. However, under Title 11, several exemptions apply based on the zoning designation, site size and valuation of the project. Again, no exemptions existed under the T1 standard.

Table 4 below represents 2014 NSFR tree data for each of four quarters and for the year in its entirety. This data shows that the majority of applications met the T1 standards by planting trees. In summary, in 2014 a total of 418 new single family residential permits were issued. Of the 418 permits 360 (86%) planted trees, and 91 (22%) preserved trees. (Note: some permits may have contained a combination of planting and preservation to meet the T1 standard).

Table 4
Issued Permits for New Single Family Construction Where Trees Were Planted or Preserved
By Quarter, 2014

2014	# of Permits	# Permits With Planting	% Permits With Planting	# Permits With Preservation	% Permits With Preservation
Q1	24	20	83.3%	5	20.8%
Q2	109	94	86.2%	23	21.1%
Q3	143	119	83.2%	37	25.9%
Q4	139	126	90.6%	13	9.4%
2014	418	360	86.1%	91	21.8%

Post-Title 11 tree preservation and planting for NSFR permits

Interestingly, the data for 2015 is similar. **Table 5** below represents 2015 NSFR tree data for each of four quarters and for the year in its entirety. In summary, a total of 401 new single family residential permits have been issued. Of the 401 permits, tree planting occurred in 341 (85%) cases, and tree preservation occurred in 79 (20%) cases. (Note: some permits may have had both tree planting and tree preservation).

Table 5
Issued Permits for New Single Family Construction Where Trees Were Planted or Preserved
By Quarter, 2015

2015	# of Permits	# Permits With Planting	% Permits With Planting	# Permits With Preservation	% Permits With Preservation
Q1	136	111	81.6%	30	22.1%
Q2	152	129	84.9%	30	19.7%
Q3	90	79	87.8%	14	15.6%
Q4	23	22	95.7%	5	21.7%
2015	401	341	85.0%	79	19.7%

It is important to note that, prior to 2015, there were no requirements for tree planting or preservation for additions, alteration, or demolitions, for either Residential or Commercial permits. In addition, there were no planting or preservation requirements for new construction of anything other than houses—new construction of garages, accessory dwelling units, or other accessory structures did not require planting or preservation.

Table 6 below is taken from Table 1, and shows the occurrence of tree planting or preservation for residential permits only. (Note: some permits may have had both tree planting and tree preservation). **The data includes both where trees were planted or preserved to meet the standard, or where fees were paid in-lieu of meeting the preservation or planting standard; it does not distinguish between preserving the tree(s) or paying a the fee in-lieu.** Again, the occurrence of planting and preservation is lower for alterations, given that they are often exempt from planting requirements due to the value threshold (currently \$155,900) and rarely include ground disturbance to trigger preservation. Similarly, additions are also often under the value threshold for planting, and don't always include ground disturbance. However, as noted above, planting and preservation requirements now apply to a larger percentage of all new construction; not only new single family residences, but also accessory structures including ADUs, garages, and sheds. Planting in association with residential new construction (including accessory structures) is now occurring at a rate of 50% of permits and preservation is occurring at a rate of 22%. In addition, preservation is now occurring with approximately 1/4 of all residential additions and 1/3 of all residential demolitions.

Table 6
Issued Residential Permits Where Tree Planting or Preservation Were Required, 2015

Permit Type	Total	Planting Required		Preservation Required	
Residential Permit Sub-Type	# of Permits	# of Permits	% of Permits	# of Permits	% of Permits
New Construction	856	428	50.0%	185	21.6%
Additions	700	16	2.3%	187	26.7%
Alterations	2,509	7	0.3%	62	2.5%
Demolitions	571	5	0.9%	194	34.0%
All subtypes	5060	456	9.0%	630	12.5%

Comparison of Pre- and Post- Title 11 tree preservation and planting for NSFR permits

The data shows that roughly the same percentage of permits result in trees planted and trees preserved, with 2015 having a slightly lower percentage. However, there are several considerations that are important to remember when evaluating the results of Title 11 implementation:

- **Number of Trees Planted or Preserved:** The data shows only IF trees were planted and/or preserved, not how many. Title 11 attempts to achieve tree density appropriate to the expected area not covered by buildings and considering the intensity of the use, while the previous T1 standards were based purely on site size. Thus, this data does not capture the effectiveness of Title 11 in terms of either aggregate numbers of trees added or retained, or to the appropriateness of those numbers given site conditions.
- **Canopy Size of Trees Planted:** The data does not show what types of trees were planted. Title 11 attempts to incentivize the planting of larger canopy trees by assigning them a larger portion of the Required Tree Area from which planting requirements are derived. The previous T1 standards had no

such incentive; planting of a larger canopy tree counted toward meeting the standard at the same level as planting a small canopy tree. This data does not give any information regarding the mature canopy size of trees to compare pre- and post- Title 11 implementation results.

- **Tree Planting and Preservation for Permits other than New Construction.** Again, the comparative data is for new single family construction only. Pre-Title 11, there were no planting or preservation requirements for alterations, additions, or demolitions, or for new construction of accessory structures.

Payment In-lieu of Tree Planting and Preservation

The following information illustrates how often the option of paying a fee in-lieu of preserving or planting trees is utilized, and how much has been contributed to the Tree Preservation and Planting Fund to-date. The tables below present that information for New Single Family Residential construction and Residential demolitions, two permit categories with higher rates of required tree planting and preservation (See Table 1).

Tables **7a, 7b, and 8** show two things 1) how often trees were actually planted or preserved to meet the tree planting or preservation standards, compared to the total number of permits issued and 2) how often payments were made in-lieu of planting and preservation, compared to when **planting or preservation was required (either by planting or preserving OR paying a fee in-lieu)**.

Tables 7a and 7b show this information for New Single Family construction only. This development scenario usually offer the least amount of constraints for tree planting and preservation, as there are typically little or no constraints in the form of existing development or other limits on building design to maximize opportunities for tree preservation or planting.

In 2015, 85% of issued permits for New Single Family Construction included trees to be planted. 2% of permits (7 permits) that required tree planting (accomplished either by planting trees or paying a fee in-lieu) chose to pay a fee in lieu of planting for some or all of the trees.

For tree preservation, 19.7% of issued permits included trees to be preserved in 2015. 17.7% of permits (17 permits) that required tree preservation (accomplished either by preserving trees or by paying a fee in-lieu) opted to pay a fee in lieu of tree preservation. It is possible to pay a fee in-lieu for some or all of a site's tree planting or preservation requirements. This table does NOT show the number of trees paid for in-lieu, just the number of permits that had at least one tree paid in-lieu—that payment in-lieu occurred. For reference, 22% of Residential new construction permits required tree preservation in 2015 (See Table 1).

Table 7a
Issued Permits for New Single Family Construction,
Where Trees Were Planted,
and Where Fees Were Paid in-Lieu of Planting
by Quarter, 2015

2015	Total #of Issued Permits	# of Permits With Tree Planting	% of Total Permits with Tree Planting	# of Permits With Planting Fee In-Lieu	% of Permits With Tree Planting Required That Paid Fee In-Lieu
Q1	136	111	81.6%	0	0.0%
Q2	152	129	84.9%	4	3.0%
Q3	90	79	87.8%	2	2.5%
Q4	23	22	95.7%	1	4.3%
2015	401	341	85.0%	7	2.0%

Table 7b
Issued Permits for New Single Family Construction,
Where Trees Were Preserved,
and Where Fees Were Paid in-Lieu of Preservation
by Quarter, 2015

2015	Total #of Issued Permits	# of Permits With Tree Preservation	% of Total Permits with Trees Preserved	# of Permits With Preservation Fee In-Lieu	% of Permits With Tree Preservation Required That Paid Fee In-Lieu
Q1	136	30	22.1%	6	16.7%
Q2	152	30	19.7%	9	23.1%
Q3	90	14	15.6%	2	12.5%
Q4	23	5	21.7%	0	0.0%
2015	401	79	19.7%	17	17.7%

Table 8 shows how often payments are made in Residential demolitions. Residential demolitions typically include ground disturbance, therefore, unless exempt, the sites are usually subject to tree preservation requirements. Note: all demolitions are specifically exempt from tree density requirements, so payment in lieu of tree planting is not applicable. Residential Demolitions include demolitions of houses and duplexes, but also of accessory structures such as accessory dwelling units, garages, and sheds that are of sufficient size to require a demolition permit.

In 2015, 19.7 % of issued permits included trees to be preserved. 43% of Residential demolition permits (86 permits) that required tree preservation (accomplished either by preserving trees or by paying a fee in-lieu) paid a fee in-lieu of preservation for some or all of the trees. This table does NOT show the number of trees

paid for in-lieu, just the number of permits that had at least one fee in-lieu payment. For reference, 34% of Residential demolition permits required tree preservation in 2015 (See Table 1).

Table 8
Issued Permits for Residential Demolition Where Trees Were Preserved,
and Where Fees Were Paid In-Lieu of Preservation
by Quarter, 2015

2015	Total #of Issued Permits	# of Permits With Trees Preserved	% of Total Permits with Trees Preserved	# of Permits With Preservation Fee In-Lieu	% of Permits With Tree Preservation Required That Paid Fee In-Lieu
Q1	139	25	18.0%	14	35.9%
Q2	184	39	21.2%	42	51.9%
Q3	147	33	22.4%	17	34.0%
Q4	101	16	15.8%	13	44.8%
2015	571	113	19.8%	86	43.2%

To summarize, trees were planted in association with 85% of issued New Single Family permits. For both Residential demolitions and New Single Family permits, just under 20% had trees preserved. Where tree planting was required for New Single Family development, only 2% of permits chose to pay a fee in-lieu of planting. However, where tree preservation was required for New Single Family development, 17.7% of permits paid a fee in-lieu of preservation. Finally, for Residential demolitions, 43% of permits chose to pay a fee in-lieu of preservation, where tree preservation was required.

Notably, the rate of payment in lieu of preservation is significantly higher for residential demolition permits (43%) than for new single family construction permits (18%). This could indicate that, on sites where demolition is occurring prior to new construction, applicants are opting to pay in lieu of preservation during the demolition phase of work, to make room for new construction.

Finally, **Table 9** shows the absolute number of trees not planted and not preserved but instead paid for in-lieu of planting or preservation. It also shows the corresponding contribution to the Tree Planting and Preservation Fund. As stated in the Background section, payment in-lieu into the Fund for each tree not planted is equal to a payment of one 1.5-inch tree at \$300.00 per inch, for a total of \$450.00 per tree not planted. Payment in-lieu into the Fund for each tree not preserved is equal to a payment of two 2-inch trees at \$300.00 per caliper inch, for a total of \$1200.00 per tree not preserved. A total of \$262,950 has been contributed to the Tree Planting and Preservation Fund from these permits at the cost of not planting or preserving 306 trees.

Table 9
Funds Collected as Fees-in-Lieu of Trees Planted or Trees Preserved
by Quarter, 2015

Quarter	# of Trees Not Planted	Fees for Trees Not Planted	# of Trees Not Preserved	Fees for Trees Removed
Q1	98	\$ 44,100	36	\$ 43,200
Q2	16	\$ 7,200	78	\$ 93,600
Q3	24	\$ 10,800	33	\$ 39,600
Q4	1	\$ 450	20	\$ 24,000
2015	139	\$ 62,550	167	\$ 200,400

Number of Trees Planted and Preserved

The final set of information presented deals with the absolute total numbers of trees planted, preserved, and removed on private property in development situations since implementation of Title 11. The data is gathered from issued permits of all permit types discussed and shown in Table 1.

Tree planting standards applied to 530 permits in 2015. In total, 2,844 trees were planted as part of these permits. The vast majority of trees, approximately 87%, were in the small and medium canopy classification. Conversely, only 13% of trees planted were in the large canopy classification.

Table 10
Number and Canopy Size of Trees Planted in All Permit Types
by Quarter, 2015

Quarter	#of Large Trees Planted	# of Small & Medium Trees Planted	# of Total Trees Planted	Large Trees as Percentage of Total
Q1	122	855	977	12.5%
Q2	202	1,224	1,426	14.2%
Q3	76	612	688	11.0%
Q4	19	153	172	11.0%
2015	419	2,844	3,263	12.8%

Tree preservation standards applied to 674 permits in 2015. As **Table 11** shows, 1,677 trees were preserved through those permits, while 1,128 trees were approved for removal through those permits. The average size of trees preserved was 17.6-inches and the average size of trees removed was 16.9-inches. In summary, 1.5 more trees are being preserved than removed. Some reasons for this could include the use of preservation to meet tree density (planting requirements) of Title 11, preservation requirements through land divisions or other land use review conditions of approval, or voluntary preservation. Regardless, approximately 60% of trees were preserved and approximately 40% of trees were removed. This exceeds the requirement to preserve 1/3 of trees on sites subject to tree preservation standards.

It is also useful to note that Title 11 tree preservation rules require that trees 12-inches or greater be subject to tree preservation standards. However, other tree preservation options, such as to meet Title 11 tree density

(planting) standards, allow for preservation of trees smaller than 12-inches to count toward meeting preservation requirements. This could skew the average size of trees preserved toward a lower number. Thus, the average size of trees preserved strictly through Title 11 tree preservation requirements may be larger than 17.6-inches.

Table 11
Number and Size of Trees Preserved and Removed in All Permit Types
By Quarter, 2015

Quarter	# of Trees Preserved	Total Inches Preserved*	Avg Inches Per Tree Preserved	# of Trees Removed	Total DBH Removed*	Avg DBH Per Tree Removed
Q1	424	7,570	18.2	324	4,840	15.5
Q2	792	12,975	16.9	476	7,779	18.0
Q3	311	5,361	17.9	212	3,828	19.0
Q4	150	2,753	18.9	116	1,638	14.1
2015	1,677	28,659	17.6	1,128	18,085	16.9

*There was no information for inches preserved for 50 trees and for inches removed information for 67 trees. Those trees were excluded from the Total Inches Preserved, Average Inches Preserved, Total Inches Removed, and Average Inches Removed, but included in the # Trees Preserved or the # of Trees Removed.

IV. Non-Development Tree Permits

Background

Under Title 11, and prior to that under Titles 20.40 and 20.42, the City Forester is responsible for administering tree requirements in non-development situations on public and private property and in City rights of way.

Prior to Title 11, regulations for trees outside of development situations included all City-owned trees, trees in the right of way, and private trees 12" or greater in diameter on divisible lots and in environmental zones. Exemptions for private trees on non-dividable single-family lots and for private trees in certain overlay zones created situations where similar trees on the same or adjoining lots might be regulated differently or by different bureaus within the City. A main objective for the Citywide Tree Project was to replace this often confusing and inconsistent system with a clear, cohesive, and consistent regulatory framework for trees in non-development situations that is understandable to residents, equitable, and that provides protection for trees that contribute significantly to Portland's tree canopy.

Changes to regulations for trees in non-development situations under Title 11 include the following:

- extension of tree removal permit requirements to all single family non-dividable lots;
- establishment of a minimum tree-for-tree replacement for trees that are dead, dying, or dangerous;
- creation of a tiered permitting system that centers greater staff resources on reviewing permits for removal of large, healthy trees or multiple trees; and

- creation of programmatic permits, which cover routine and on-going maintenance programs and resource enhancement programs managed by public utilities and agencies.

Together, these changes seek to protect the quantity and quality of Portland's tree canopy and have substantially increase the workload of Parks Urban Forestry staff. Information included in this section will cover tree permitting data, workload indicators, and where applicable, comparisons of pre- and post-Title 11 data for use in evaluating to what extent Title 11 is meeting stated objectives.

Tree Permit Requirements (No Associated Development)

11.40.010 Purpose

The purpose of this Chapter is to manage, conserve, and enhance the urban forest when development activity is neither proposed nor occurring. The provisions of this chapter encourage preservation of high quality trees, large trees, and groves; regulate pruning and planting on City-owned and managed sites and streets to protect public safety and public infrastructure; and ensure replacement for trees that are removed. The permitting procedures that are required to implement these provisions are intended to not only enforce maintenance, removal and preservation requirements but also to educate property owners about the intrinsic urban benefits of trees as well as the principles of tree care.

Objectives (Citywide Tree Project Recommended Draft Report to City Council, Volume 1, 2010):

- 1) Minimize canopy loss from tree removals through protection of large, healthy trees on all private lots and minimum tree-for-tree replacement of dead, dying, dangerous, or nuisance trees.
- 2) Streamline permitting through tiered A/B permitting system.
- 3) Create a consistent and transparent process for applicants across public and private properties.

Title 11 created a tiered permitting system for tree activity in non-development situations (see Appendix A for summary of permit requirements). The system breaks permits into the following two categories:

- Type A permits are issued for pruning and planting where applicable, and for removals of smaller trees, trees in poor health, trees identified as nuisance species in the Portland Plant List, or trees that pose a threat to residents or infrastructure.
- Type B permits are issued for the removal of larger trees in good health, or in cases of more than four removals within a calendar year.

Type A tree removal permits are meant to streamline the process for tree removals in certain situations without inspection or option for public appeal. Minimum tree-for-tree replacement is required in these cases. Type B tree removal permits are reserved for the removal of large, healthy, non-nuisance private trees, and for any healthy City or street tree that meets size and quantity thresholds. Escalated mitigation requirements, clarified in the Administrative Rule, "*Replanting Requirements for Tree Removal on Private Property, City-Owned and Managed Sites, and Public Rights-of-Way*," apply in these situations, based on a set of factors that seeks to balance economic, ecological, and community concerns, and also the reasonable use and enjoyment of private properties.

Data Collected

Data included in this section will cover tree permitting applications, issuance, and denials on public and private properties, as well as appeals and non-development related code violations. Permit types and reviews include the following:

- Planting
- Pruning
- Removal and Replanting
- Root Pruning
- Health Inspection
- Emergency Response
- Code Compliance

In some cases, it is possible to compare pre- and post-Title 11 permitting activity in non-development situations, and these comparisons are included in this section. Data related to private trees in these comparisons should be interpreted with the knowledge that trees located on approximately one-third of private lots were regulated prior to Title 11, with the remaining two-thirds of lots coming under regulation with the new tree code in 2015.

Non-Development Related Permit Applications and Reviews

Metrics in Table 12 measure overall workload and identify which types of requests are generating inspections. As regulation of trees under Title 11 varies by location, data are reported by location: private lots, rights of way, and city-owned or managed properties.

Table 12. Applications Received, 2014 and 2015

Permit Type	2014 Reviews	2015 Reviews	Trend
Planting	220	237	Up
<i>Private</i>	<i>n/a</i>	<i>n/a</i>	
<i>Right of Way</i>	181	214	
<i>City</i>	39	23	
Pruning	1,336	1,653	Up
<i>Private</i>	23	26	
<i>Right of Way</i>	1,216	1,557	
<i>City</i>	97	70	
Removal and Replanting	1,614	3,304	Up
<i>Private</i>	470	2,193	
<i>Right of Way</i>	1,023	1,025	
<i>City</i>	121	86	
Root Pruning	714	782	Up
<i>Private</i>	0	0	
<i>Right of Way</i>	712	781	
<i>City</i>	2	1	
Health	511	360	Down
<i>Private</i>	21	6	
<i>Right of Way</i>	467	286	
<i>City</i>	23	68	
Emergency Response	1,105	1,068	Down
<i>Private</i>	54	18	
<i>Right of Way</i>	962	965	
<i>City</i>	89	85	
Code Compliance	583	686	Up
<i>Private</i>	56	108	
<i>Right of Way</i>	525	574	
<i>City</i>	2	4	
Other	86	169	Up
<i>Private</i>	37	15	
<i>Right of Way</i>	38	142	
<i>City</i>	11	12	
TOTAL	6,169	8,259	Up

Overall, permit applications have increased 34% from 2014 to 2015. This is due to an increase in private tree removal applications, which increased from 470 in 2014 to 2,193 in 2015, caused by the regulation of more private properties under Title 11.

Denials of Removal and Replanting Permits

In order to ensure that significant adverse impacts of tree removals are avoided, the City encourages retention of healthy trees where practicable alternatives to removal exist. In the absence of extraordinary circumstances, the City will not permit the removal of a healthy, functioning street tree. In the case of private tree removals, broader factors are considered, including economic, ecological, and community concerns, and the reasonable use and enjoyment of property.

In non-development situations, non-exempt trees that meet the size or quantity thresholds for B permits may be denied a permit for removal. Denials of removal and replanting permits occurring in 2014 and 2015 are shown in Tables 13a and 13b, below.

Table 13a. Permit Denials, 2014

Permit Type	Applications	Denials	Proportion of applications denied
Removal and Replanting	1,614	117	7.2%
<i>Private</i>	470	46	9.8%
<i>Right of Way</i>	1,023	69	6.7%
<i>City</i>	121	2	1.7%

Table 13b. Permit Denials, 2015

Permit Type	Applications	Denials	Proportion of applications denied
Removal and Replanting	3,304	156	4.7%
<i>Private</i>	2,193	93	4.2%
<i>Right of Way</i>	1,025	62	6.0%
<i>City</i>	86	1	1.2%

The total number of denials of removal and replanting permits increased in 2015, consistent with an increase in overall applications, but the rate of denials proportionate to applications received has dropped from 7.2% to 4.7%. The rate of denial of private tree removal applications decreased by more than half, from 9.8% in 2014 to 4.2% in 2015.

Permits Issued

Permitting in non-development situations under Title 11 falls into two categories. While each permit type (e.g. pruning, planting, removal/replant) has one application, Type A permits are issued for pruning and planting where applicable, and for removals of smaller trees, trees in poor health, or trees that pose a threat to residents or infrastructure. Type B permits are issued for the removal of larger trees in good health, or in cases of more than four removals within a calendar year. Prior to Title 11, permits were not issued according to these categories.

Data in this section are organized by location: private, street, and city trees.

Private Trees

Permitting activity for private trees in non-development situations under Title 11 is limited to the pruning of heritage and native trees in environmental zones and removals of regulated trees. Prior to Title 11, permits to remove private trees 12 inches or larger were only required on developable or dividable lots, which amounted to approximately one-third of all private lots in the city. Under Title 11, permit requirements were extended to all private lots. The tables below summarize permits issued for tree activity on private properties in 2014 and 2015 (Table 14) and display quarterly data for 2015 (Table 15).

Table 14. Private Tree Permit Activity, 2015

Permit Type	2014	2015, A Permits	2015, B Permits	Trend
Pruning				Down
Permits issued	25	19	n/a	
Trees permitted	36	17	n/a	
Removal/Replant				
Applications	470	2,193		Up
Permits issued	300	1,923	51	Up
Trees permitted for removal	470	2,796	110	Up
Trees permitted for planting*	473	2,448	123	Up
Replacement ratio (Ratio of trees planted : trees removed)	1 : 1	.9 : 1		Down
Denial rate (permits denied)	9.8% (46)	4.2% (93)		Down

**fee in lieu of planting paid for in 12 permits (19 trees) in 2015.*

Table 15. Private Tree Removal/Replant Permit Quarterly Detail, 2015

	Applications	A permits issued	Trees permitted for Removal	Trees Permitted for Planting	B Permits issued	Trees permitted for Removal	Trees Permitted for Planting
Q1	441	358	508	455	5	8	15
Q2	603	540	763	680	18	34	45
Q3	595	486	700	606	14	18	22
Q4	554	539	825	707	14	50	41
Total	2,193	1,923	2,796	2,448	51	110	123

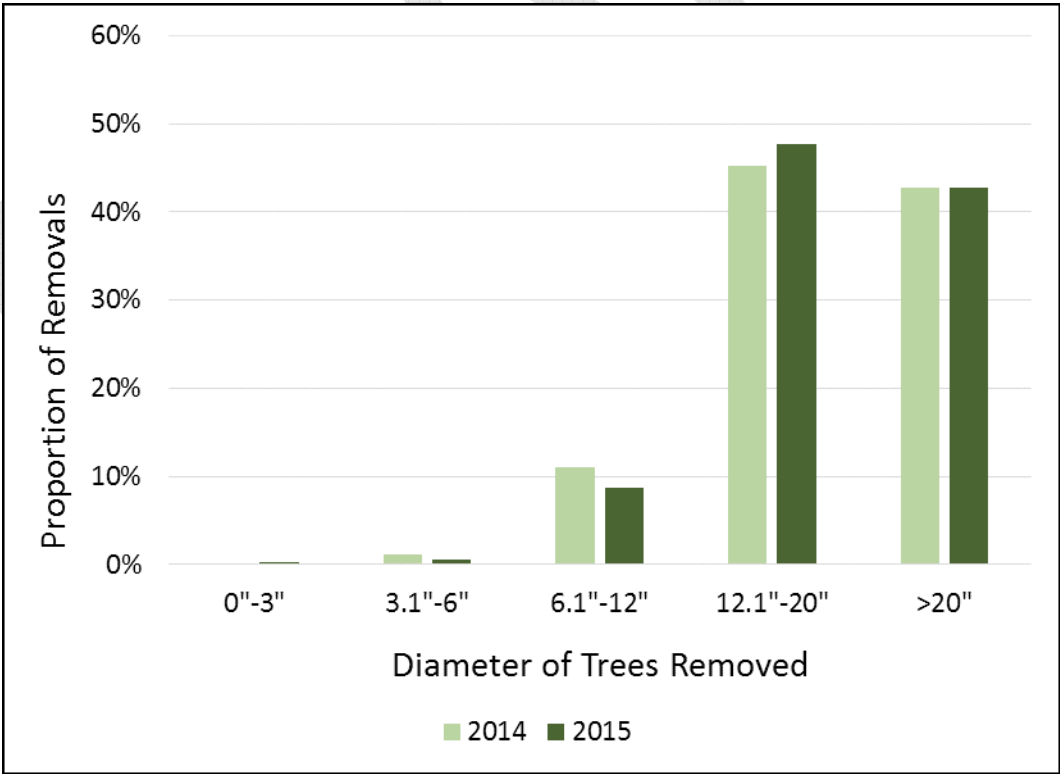
Both prior to and under Title 11, very few pruning permits for private trees have been issued as these permits are only required in rare circumstances. In 2015, there was a large increase in removal permits both applied for and issued and a subsequent rise in private trees permitted for removal, from 470 in 2014 to 2,906 trees

removed under A and B permits in 2015. This six fold increase exceeds the generally expected rise in private tree removals permitted under Title 11, which brought trees on all private properties under regulation.

Under Title 11 in 2015, more trees were permitted for removal than for replanting on private property. This is indicated by the replacement ratio of trees planted (or paid for) to trees removed, which dropped from 1:1 in 2014 to .9:1 in 2015. The replacement ratio is a key indicator for tracking whether or not Title 11 regulations are meeting the goal of minimum tree for tree replacement, a goal set by the Citywide Tree Project (Citywide Tree Project Recommended Draft Report to City Council, Volume 1, 2010). Most permits (97% of all permits) issued for tree removal on private property in 2015 were Type A permits, which require a direct tree-for-tree replacement. While Type B permits issued in 2015 resulted in a greater than 1:1 planting to removal ratio for the first 3 quarters of 2015, mitigation requirements were reduced under the Administrative Rule, finalized in October, 2015. Under the Administrative Rule, Type B permits often required less than a tree-for-tree replacement in cases where properties met on-site and ROW tree density requirements after tree removal; this is reflected in the fourth quarter data, which show 50 trees permitted for removal and 41 trees required for replanting.

The size of trees permitted for removal on private lots followed similar patterns in 2014 and 2015, with most trees removed over 12" diameter. The chart below shows the proportion of trees removed each year by diameter group.

Figure 1. Diameter of Private Tree Removals in 2014 and 2015



Over 40% of private trees permitted for removal in 2015 were greater than 20" in diameter. Trees of this size on private property may be permitted for removal under a Type A permit if they are in poor health, a nuisance species, or within 10 feet of an attached building or structure (see following section for more explanation of exemptions from type B criteria for large trees). In all other cases, trees of this size would require a type B permit for removal. Only 3% of all permits issued for private tree removals in 2015 were type B, which indicates that in most cases, trees 20" or greater permitted for removal on private lots in 2015 were dead, dying, or dangerous; a nuisance species; or within 10 feet of a building or attached structure.

Exemptions for Private Trees

Under Title 11, all trees within 10 feet of an attached structure, all nuisance species, and all trees that are dead, dying, or dangerous are automatically granted a type A permit for removal on private lots, regardless of size. In the case of the 10 foot and nuisance exemptions, trees are automatically permitted for removal, regardless of condition. Trees that meet these criteria are exempt from the review factors and heightened mitigation levels of type B permits. Table 5, below, shows the permits issued and trees removed due to private tree exemption criteria in 2015.

Table 16. Private tree removals by code exemption, 2015

Exemption	Permits Issued	Trees Removed
Dead, Dying, or Dangerous (DDD)	644	991
Nuisance, non-DDD	211	302
Within 10 feet of a building or attached structure, non-DDD/non-nuisance	573	749
Total issued Removal/Replant permits	1,974	2,906

Over one-third (991) of all 2,906 private trees permitted for removal in 2015 were for trees that were dead, dying, or dangerous. Additionally, 302 nuisance trees in otherwise healthy condition were permitted for removal. The exemption for trees within 10 feet of a building or attached structure was applied to 749 otherwise healthy, non-nuisance trees, representing 26% of all private trees approved for removal. Overall, 72% of all private tree removal permits issued in 2015 fell under one of these three categories.

Composition of Private Trees Planted and Removed: Mature Tree Form and Functional Type

Objectives for Title 11 include minimizing tree canopy loss through planting and replacement, which is consistent with goals set out in the Urban Forest Management Plan to maintain and enhance the urban forest (UFMP, 2004). Additionally, the UFMP sets objectives for the planting of large, evergreen, and native trees when appropriate. When planted in the right location, these trees will provide more benefits to Portland's residents over a longer period than smaller, shorter-lived species.

While the planting of large, evergreen species is not always feasible, it is important to monitor the types of trees planted and removed as a result of Title 11 regulations and Parks Urban Forestry policies because this information determines the overall tree canopy services provided to residents. The tables and figures below

display data for all private trees planted or removed in 2015 as a result of non-development permits and inspections, including planting, removal/replanting, emergency response, and code compliance. Planting data are only for trees required to be planted as mitigation for trees removed; permits are not otherwise required for tree planting on private lands under Title 11. Trees removed include those permitted under A or B permits and those required to be removed as a result of code compliance inspections or emergency response. Numbers in the tables below include only those trees where species information was reported.

Table 17. Mature Size of Private Trees Planted/Removed, 2015

	Large Form	Medium Form	Small Form
Trees Planted	554	867	1021
Trees Removed	1605	951	465

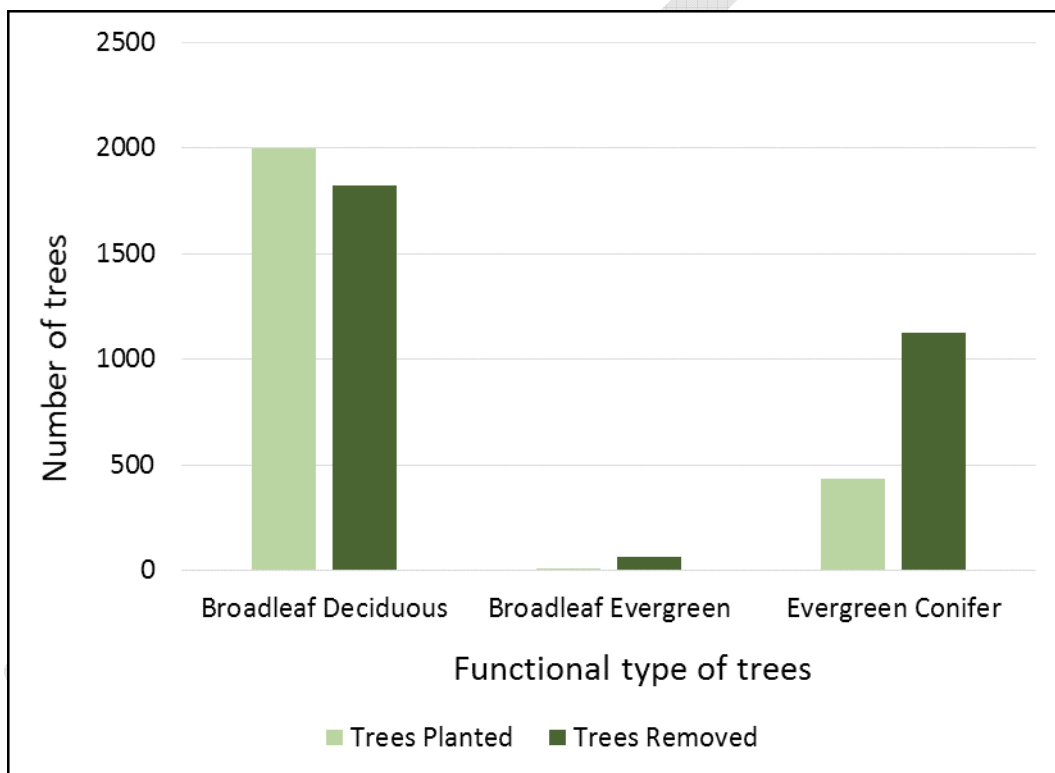
Figure 2. Mature size of private trees planted and removed in 2015



Table 18. Functional Type of Private Trees Planted/Removed, 2015

	Broadleaf Deciduous	Broadleaf Evergreen	Evergreen Conifer	Other
Trees Planted	1996	9	435	2
Trees Removed	1823	65	1127	6

Figure 3. Functional type of private trees planted and removed in 2015



On private lands, large form trees are being removed at nearly three times the rate that they are being replaced (Table 17 and Figure 2). Similarly, evergreen trees are removed at more than twice the rate that they are replaced (Table 18 and Figure 3). Generally, the tables and graphs above point to a trend toward smaller, deciduous trees planted to replace trees removed. While Title 11 prohibits the planting of any nuisance species, applicants can choose to plant any non-nuisance tree species as mitigation for a permitted tree removal. Data in the tables above suggest that given this choice, applicants most often choose smaller, ornamental species as replacements on private lands.

Street Trees

Both prior to and under Title 11, a permit is required to plant, prune, or remove any street tree greater than 1/4" diameter in non-development situations. Under the A/B permitting system instituted in 2015, removals of healthy trees 3" diameter or greater require a B permit. All dead, dying, and dangerous trees, as well as trees under 3" diameter, require A permits for removal.

While information on tree activities completed under Programmatic Permits is primarily covered in a separate section in this report, street trees planted by the Environmental Services Tree Program, managed by the Bureau of Environmental Services (BES), are included in the table below as they account for the majority of permitted street tree plantings in 2014 and 2015. Parks Urban Forestry works cooperatively with BES and Friends of Trees (FOT) to provide permits for street tree plantings under this program. BES and FOT canvassers approach homeowners with potential street tree planting spaces, and Parks Urban Forestry issues final permits for homeowners who sign up with the program.

The tables below show permits issued for street trees in 2014 and 2015 (Table 19) and display quarterly data for street tree permits in 2015 (Table 20).

Table 19. Street Tree Permit Activity, 2014 and 2015

Permit Type	2014	2015, A Permits	2015, B Permits	Trend
Planting				Down
Permits issued	79	176	n/a	
Trees permitted for planting	121	291	n/a	
Tree Program permits issued	2,170	1,279	n/a	
Tree Program trees permitted for planting	3,877	2,268	n/a	
Pruning				Up
Permits issued	1,277	931	n/a	
Trees permitted	3,035	2,676	n/a	
Online permits issued	637	1,084	n/a	
Trees permitted	1,452	2,369	n/a	
Removal/Replant				Up
Permits issued	701	831	37	
Trees permitted for removal	1,270	1,281	81	
Trees permitted for planting	1,136	1,137	65	
Replacement ratio (Ratio of trees planted : trees removed)	.9 : 1	.9 : 1		
Root Pruning				Up
Permits issued	678	722	n/a	
Trees permitted	1,248	1,333	n/a	

Table 20. Street Tree Removal/Replant Permit Quarterly Detail, 2015

	Applications	A permits issued	Trees permitted for Removal	Trees Permitted for Planting	B Permits issued	Trees permitted for Removal	Trees Permitted for Planting
Q1	208	218	386	387	1	1	1
Q2	246	168	237	193	8	10	8
Q3	303	212	308	255	7	16	14
Q4	267	233	350	302	21	54	42
Total	1024	831	1281	1137	37	81	65

In 2015, more removal/replanting, pruning, and root pruning permits were issued than the previous year. Outside of the Environmental Services Tree Program, planting permits increased over 100% in 2015, from 79 to 176 (Table 19). The replacement ratio of trees planted to trees removed under a removal and replanting permit did not change year to year, remaining at 0.9 to 1. While minimum tree-for-tree replanting is generally required with any permitted street tree removal, adequate space does not always exist after a tree is removed, in which case a waiver of replanting requirements may be granted. As such, not all permits issued will meet the minimum tree-for-tree replacement.

Figure 4. Diameter of street tree removals in 2014 and 2015



The size of street trees permitted for removal increased in 2015 compared to the previous year, with a higher proportion of trees removed greater than 12" in diameter (Figure 4).

Composition of Street Trees Planted and Removed: Mature Tree Form and Functional Type

Objectives for Title 11 include minimizing tree canopy loss through planting and replacement, which is consistent with goals set out in the Urban Forest Management Plan to maintain and enhance the urban forest (UFMP, 2004). Additionally, the UFMP sets objectives for the planting of large, evergreen, and native trees when appropriate. When planted in the right location, these trees will provide more benefits to Portland's residents over a longer period than smaller, shorter-lived species.

While the planting of large, evergreen species is not always feasible in the public right of way due to limitations in planting strip width and soil volume, it is important to monitor the types of street trees planted and removed as a result of Title 11 regulations and Parks Urban Forestry policies. The tables and figures below display data for street trees planted or removed in 2015 as a result of non-development permits and inspections, including planting, removal/replanting, emergency response, and code compliance. Planting data include both trees required to be planted as mitigation for trees removed and those planted under street tree planting permits. Tree removals in tables below include those removed under A and B permits and those required to be removed as a result of code compliance inspections or emergency response. Numbers in tables below include only those trees where species information was reported.

Table 21. Mature Size of Street Trees Planted/Removed, 2015

	Large Form	Medium Form	Small Form
Trees Planted	532	856	1503
Trees Removed	495	739	567

Figure 5. Mature size of street trees planted and removed in 2015

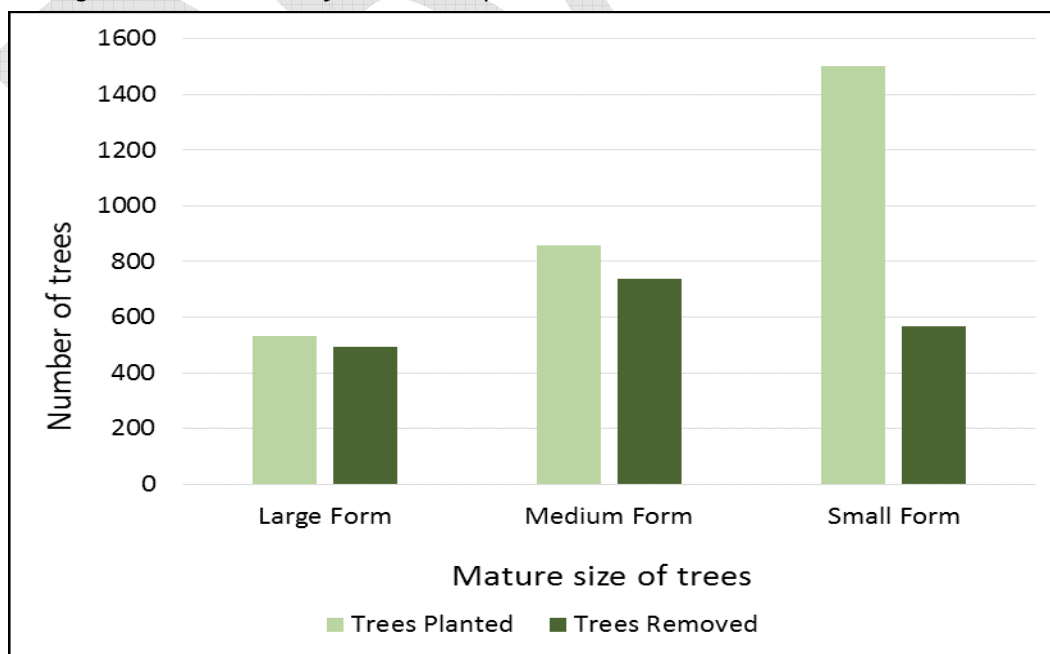
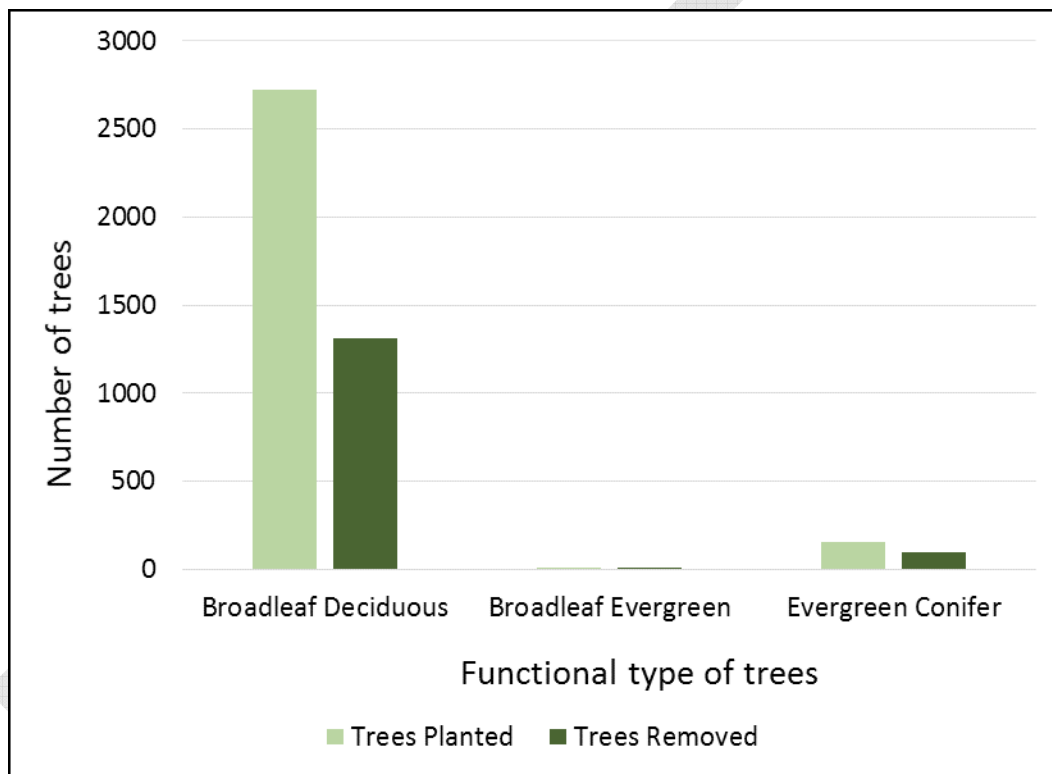


Table 22. Functional Type of Street Trees Planted/Removed, 2015

	Broadleaf Deciduous	Broadleaf Evergreen	Evergreen Conifer	Other
Trees Planted	2725	12	152	2
Trees Removed	1643	13	145	0

Figure 6. Functional type of street trees planted and removed in 2015



The majority of tree plantings represented in the tables above occurred through the Environmental Services Tree Program, which operated under a programmatic permit that prioritized the planting of large form and evergreen trees. As a result, more large form trees were planted than removed in 2015 (Table 21 and Figure 5). While evergreens still represent a small proportion of total street tree plantings, plantings exceeded removals at a rate of more than 2:1 (Table 22 and Figure 6). Despite these positive outcomes, 52% of street trees planted were small form varieties, and 94% were deciduous species, due limitations of planting sites.

While planting large trees will always be a challenge in Portland's often small planting strips, use of the city's Approved Street Tree Planting Lists promotes planting the largest tree appropriate for the site, maximizing the benefits provided by this public resource located on City property.

City Trees

Prior to Title 11, permits were required for the planting, pruning, or removal of any tree on City-owned property. Title 11 limited permitting requirements for removals of trees to only those 3" in diameter or greater, and exempted minor pruning of branches or roots (less than 1/4" in diameter). Tree planting on City-owned property outside of development continues to be regulated under Title 11.

Most permitted tree activity on City-owned land in non-development situations takes place within Parks properties. To date, data concerning this work is limited; the table below represents only those cases where individual permits were required, most often occurring in developed parks as opposed to natural areas. Prior to Title 11, most natural area parks activities fell under blanket permits, which were guided by master plans or desired future conditions established by Portland Parks & Recreation. These have been replaced under a Title 11 with Programmatic Permits, which are discussed in the following section.

Table 23. City Tree Permit Activity, 2014 and 2015

Permit Type	2014	2015, A Permits	2015, B Permits	Trend
Planting				Up
Permits issued	33	22	n/a	
Trees permitted	99	41	n/a	
Pruning				Up
Permits issued	71	87	n/a	
Trees permitted	252	328	n/a	
Removal/Replant				Up
Permits issued	90	100	1	
Trees permitted for removal	162	205	1	
Root Pruning				Down
Permits issued	2	0	n/a	
Trees permitted	29	0	n/a	

Programmatic Permits

Programmatic permits were created under Title 11 to streamline the permitting process for public agencies and utilities that conduct routine tree maintenance and/or resource enhancement programs over a large scale. Programmatic permits are blanket permits that eliminate the need for qualifying applicants to apply for individual tree removal, pruning, or planting permits. Programmatic Permits do not apply to tree activities associated with development and are not subject to the standards, review factors, or general procedures of other non-development permits discussed earlier in this report. Instead, applications are evaluated to prevent cumulative adverse impacts on the urban forest and ensure that on balance the activities will meet the goals and objectives of the Urban Forest Management Plan.

The first permits issued under this new program took effect in 2015. To date, 14 programmatic permits have been issued, and four more are expected to be issued by June 2016. The majority of programmatic permits will apply for a duration of two years, and permits cover routine tree maintenance activities primarily on city property and in the right of way and, in limited cases, on private property. Applications are received twice per year, and more permits may be issued depending on new applications received in 2016. Programmatic permits were issued to the following agencies and utilities in 2015:

- Bureau of Environmental Services Watershed Revegetation Program
- CenturyLink
- Portland Parks & Recreation Community Gardens Program
- Hoyt Arboretum
- Leach Botanical Garden
- Multnomah County Drainage District
- PacifiCorp
- Portland General Electric
- Portland Public Schools
- Portland Water Bureau
- Portland Parks & Recreation City Nature
- Portland Parks & Recreation Zone Operations
- TriMet light rail
- West Multnomah Soil and Water Conservation District

Data reporting for these permits will vary according to the nature of each program. At a minimum, the number of trees planted and removed will be self-reported by applicants on an annual basis and will be subject to monitoring and verification by Parks Urban Forestry staff. Parks Urban Forestry will receive annual reports for the first round of issued permits beginning in August 2016.

Mitigation and Appeals

Fees in Lieu of Planting

Under Title 11, mitigation planting requirements for tree removals in non-development situations are based on the size, species, condition, and location of the tree. In cases where insufficient or unsuitable area exists to accommodate some or all of the required replacement trees, applicants may pay into the Tree Planting and Preservation Fund at a rate of \$300/inch of required planting or request to have the fee waived. Waivers from replanting requirements are granted to applicants whose properties meet on-site and street tree density planting standards described in 11.50.050 and 11.50.060 after the tree has been removed.

For single-family residential properties, replacement trees must be a minimum of 1.5" caliper, leading to a typical payment of \$450/tree. In multi-family, commercial, and other zones, minimum planting sizes for street trees are higher, requiring payments of \$600-\$750/tree. The table below includes payments received in lieu of required planting in non-development situations.

Table 24. Fees Collected in Lieu of Planting, 2015

Permits opting to pay fee in lieu of planting	12
<i>ROW</i>	<i>4</i>
<i>Private</i>	<i>8</i>
Total collected	\$8,375
<i>ROW</i>	<i>\$3,300</i>
<i>Private</i>	<i>\$5,075</i>

As Table 24 indicates, very few applicants in non-development situations chose to pay a fee in lieu of planting. Partly accounting for this is the reduction of maximum mitigation requirements for non-development tree removals under the Administrative Rule, first implemented in April 2015 and revised in October 2015. Over the course of 2015, \$8,375 was paid in lieu of planting 19 trees, making up less than one percent of removal and replanting permits issued (2,842) and mitigation trees required (3,773) in the right of way and on private lands.

Appeals

Applicants may appeal any permit decision under Title 11, whereas the public may appeal permits issued only in cases where public notice is required. The table below includes all appeal applications received in 2014 and 2015. After applications to appeal are received, cases undergo administrative review and re-inspection, at which point many are resolved by the permit being issued or by the applicant's withdrawal of their application. If cases cannot be resolved, appeals are heard by the Urban Forestry Appeals Board.

Table 25. Appeals Applications Received, 2014 and 2015

	2014 Appeals	2015 Appeals
Street Trees	8	0
Private Trees	1	7

Despite increased permitting activity under Title 11, appeals have not increased over the reporting period (Table 25).

Code Compliance

Improvement in the enforcement of tree violations is one measure of success of the Citywide Tree Project, as put forward by the Bureau of Planning and Sustainability. Information on the number of reported and confirmed non-development related violations in 2014 and 2015 is included in the table below.

Table 26. Code Compliance Cases, 2014 and 2015

Violation Type	2014		2015	
	# Reported	# Found	# Reported	# Found
Failure to Plant	15	9	24	18
Hazard Tree	31	20	119	61
Improper Pruning	65	46	76	47
Low Limbs	319	241	285	217
Removal	97	48	146	87
Other	55	29	49	14
Grand Total	582	393	699	444

While reported code compliance violations increased in 2015, this is not an indication of more violations to the tree code citywide. Staff limitations result in a largely complaint-driven code compliance program, therefore the increase in cases is possibly a reflection of increased public scrutiny of tree activity in the city—a positive outcome of Title 11 implementation.

In some cases, violations can be corrected with no penalty while in others, fines will be assessed. In the first six months of Title 11 implementation, violations fines were not assessed in many cases and instead violators were informed of changes to the Tree Code, and that penalties would be applied for new violations beginning July 1, 2015. Consequently, relatively few fines were collected during the reporting period. Prior to 2015, fees collected as a direct result of violations were not tracked independently.

Table 27. Fines Collected, 2015

Dollars	\$11,325
Cases	22

V. Development Permits in the Public Right of Way, City Owned and Managed Property, and Inspections

In addition to non-development related reviews, Parks Urban Forestry Tree Inspectors review development permit projects primarily administered by BDS when tree preservation is required, where trees in the right of way will be affected by the project, or to review street tree planting requirements.

Tree Preservation and Tree Violation Inspections are new requirements under Title 11, therefore none were conducted in 2014. While reviews of public works projects were conducted in 2014, improvements in permit

processing associated with Title 11 allowed for accurate tracking of these cases in 2015. The table below includes data on all other reviews of residential and commercial development projects by Parks Urban Forestry Tree Inspectors in 2014 and 2015.

Development Review Workload

Table 28. Quarterly Detail: Development Reviews Workload, 2014 and 2015

Review Type	Q1		Q2		Q3		Q4		Total		Trend
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	
Tree Preservation Inspection	n/a	37	n/a	97	n/a	143	n/a	126	n/a	403	
Tree Violation Inspection	n/a	0	n/a	6	n/a	9	n/a	6	n/a	21	
Public Works	n/a	91	n/a	41	n/a	33	n/a	31	n/a	196	
Early Assistance Response	10	39	22	20	23	64	27	115	82	238	Up
Land Use Response	95	93	115	76	137	91	128	67	475	327	Down
Street Tree Review	628	671	824	947	815	889	677	1025	2,944	3,532	Up
Grand Total	733	931	961	1187	976	1229	832	1370	3,501	4,717	Up

There has been a 35% increase in development reviews of commercial and residential projects in 2015, with the number of development reviews increasing throughout each quarter of the reporting period. Not included in the above table are consultations such as peer review of tree preservation plans and arborist reports, regularly provided by Parks Urban Forestry tree inspectors. These consultations are a result of improved coordination between Parks Urban Forestry and BDS staff under Title 11. Systems for tracking this workload were developed late in 2015, and will inform future staffing needs.

Capital Improvement Projects (CIPs)

Development on City-owned property is regulated differently than development on private lands. Under Title 11, project managers are required to consult with the City Forester at the preliminary project design phase before any development activity occurs on site in order to identify opportunities to preserve and protect existing trees when possible.

Nuisance species, and trees that are dead, dying or dangerous are exempt from tree preservation requirements in CIPs, and do not require a permit for removal. Preservation and permitting requirements otherwise apply to all non-exempt trees 6" or greater in diameter, or in the case of half or full-street improvements, to non-exempt trees 12" or greater in diameter. Trees that fall below these size thresholds do not require a permit for removal. Tree data below includes only regulated trees.

The table below includes data on CIPs initiated in 2015.

Table 29. Capital Improvement Projects, 2015

Number of Applications Received	123
Number of Projects Completed	17
# Trees Removed	59
# Trees Planted	157
# Trees Preserved	221

Due to the often large scale of many projects initiated in 2015, relatively few were completed within the year. For CIPs initiated and completed in 2015, regulated trees were more often preserved than removed. Additionally, plantings associated with CIPs resulted in a net gain of 98 trees.

VI. Customer Service

The goals of the Citywide Tree Project include the regulatory changes discussed earlier in this report as well as customer service improvements meant to create a simple, efficient, and responsive system for answering tree-related inquiries. Prior to 2015, public confusion over tree permit requirements and bureau responsibility, and concerns about inadequate enforcement of violations led to a number of changes to staffing and procedures in conjunction with the implementation of Title 11 in 2015.

Solutions Implemented in 2015:

- Single point of contact for tree-related questions and concerns—two and later three additional staff (“Tree Technicians”), whose duties include the following:
 - Dispatch tree emergency response
 - Return phone messages
 - Answer customer email
 - Process permit applications
 - Issue some permits over the counter
 - Take in-person inquiries and applications at the Development Services Center (DSC)
- Additional two and a half Tree Inspectors to handle increased workloads associated with development inspections and private tree removals.
- Co-location of two Tree Inspectors, Tree Technicians at the 1900 Building to streamline development-related work and provide a central service location for the public.
- Improved website (www.portlandoregon.gov/trees) provides access to:
 - Explanations of permit processes and timelines, and when a permit is required
 - Permit applications
 - Approved street tree planting lists
 - Tree care information, including contacts for local commercial arborists

Prior to 2015, Parks Urban Forestry staffing levels allowed limited ability to respond to customer questions in a timely fashion, resulting in particularly poor response to non-emergency inquiries after major storm events. Where data exists, this section will provide comparisons to pre-Title 11 response times as a measure of implementation success in improving customer service objectives.

Workload and Response Rates

The table below lists overall intake and workload for Parks Urban Forestry permitting staff. Housed in the 1900 Building. Parks Urban Forestry Tree Technicians answer all questions from the public by phone, email, and in person at the DSC as well as processing all permit requests and dispatching tree emergencies during regular business hours. Development and non-development reviews and inspections are conducted by Parks Urban Forestry Tree Inspectors. Data regarding emails and walk-ins was not collected in 2014, and were estimated by staff to be 5 emails/day and 1 walk-in/day for that time period.

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Table 30. Overall Workload in 2014 and 2015

Quarter		1	2	3	4	Grand Total
Intake - Permits and Reviews						
Applications received	2015 # of non-development applications	1,875	2,070	2,298	2,016	8,259
	2015 # of development reviews	931	1,187	1,229	1,370	4,717
	2014 # of non-development applications	1,071	1,467	1,776	1,855	6,169
	2014 # of development reviews	733	961	976	832	3,502
Totals, by year	2015 total applications and reviews	2,806	3,257	3,527	3,386	12,976
	2014 total applications and reviews	1,804	2,428	2,752	2,687	9,671
	<i>Percent Increase, 2014 to 2015</i>	<i>56%</i>	<i>34%</i>	<i>28%</i>	<i>26%</i>	<i>34%</i>
Intake - Public Inquiries						
Emails	2015 # of emails received	2,787	3,070	2,646	2,700	11,203
	2014 est. # of emails received	305	320	320	310	1,255
Walk-ins	2015 # of walk-ins	343	486	464	362	1,655
	2014 est. # of walk-ins	61	64	64	62	251
Calls	2015 total phone intake	1,943	2,042	2,137	1,790	7,912
	2014 phone intake	3,499	3,875	4,050	3,516	14,940
Totals, by year	2015 total intake	5,073	5,598	5,247	4,852	20,770
	2014 total intake	3,865	4,259	4,434	3,888	16,446
	<i>Percent Increase, 2014 to 2015</i>	<i>31%</i>	<i>31%</i>	<i>18%</i>	<i>25%</i>	<i>26%</i>
Total Workload						
Totals, by year	2015 total intake	7,879	8,855	8,774	8,238	33,746
	2014 total intake	5,669	6,687	7,186	6,575	26,117
	<i>Percent Increase, 2014 to 2015</i>	<i>39%</i>	<i>32%</i>	<i>22%</i>	<i>25%</i>	<i>29%</i>

Year to year, staff workload increased by 29% (Table 30). This includes a 34% increase in permit reviews and inspections, and a 26% increase in public inquiries. In addition to the increase in overall inquiries, the manner by which the public interacted with Forestry staff changed as well in 2015, with a larger proportion of questions reaching staff via email and in person than over the phone. This can be attributed to the centralized location of intake staff in 2015, as well as an updated website, which directs the public to email tree-related questions.

Response Rates

The tables below list overall response rates for intake and some non-development inspections in 2014 and 2015. When phone calls, emails, or permit applications are received by Parks Urban Forestry staff, response is measured by the time it takes to return messages and emails, or conduct an initial inspection or permit review. Note that some response data does not exist prior to 2015.

Table 31. Response Goals Met, by % of Total, 2014 and 2015

Activity	Response Goal	2015				2014 Response Goals Met (# Total Applications)	2015 Response Goals Met (# Total Applications)	Trend
		Q1	Q2	Q3	Q4			
Intake - Public Inquiries								
Phone calls	2 business days	98%	99%	100%	100%	no data	99%	n/a
Emails	2 business days	99%	99%	99%	99%	no data	99%	n/a
Initial Inspections								
Planting	10 business days	73%	64%	41%	50%	79% (220)	60% (237)	Down
Pruning	10 business days	75%	75%	83%	80%	71% (1,336)	78% (1,653)	Up
Removal/Replant	10 business days	76%	71%	65%	69%	70% (1,614)	68% (3,304)	Down
Roots	2 business days	80%	92%	86%	85%	80% (714)	86% (782)	Up

New Parks Urban Forestry staff have been able to respond to 99% of phone calls and emails within the goal of 2 business days. While reliable data does not exist for response to phone calls and emails prior to 2015, the current response rate can be seen as a substantial improvement. It should be noted that the two full-time Tree Technicians funded as part of Title 11 implementation were not able to maintain this high level of service alone. For the first 3 quarters of 2015, Parks Urban Forestry employed a seasonal Community Service Aide II to support the Tree Technicians in responding to customer inquiries and permit intake, adding resources equivalent to .5 FTE to these tasks. In the fall of 2015, a third Tree Tech was hired to maintain this high level of service on a permanent and on-going basis.

Despite the increase in applications received in 2015, as well as numerous staff vacancies, Tree Inspectors were able to improve the rate of response to pruning and root pruning permit requests, meeting response goals in 78% and 86% of cases of each type, respectively. Response to removal/replant permit requests dropped slightly

in 2015, despite double the amount of applications received over the year. Response to planting permit requests dropped in 2015, meeting the goal in 60% of cases. This drop can be attributed to a shortage of Tree Inspectors to handle the increased permitting workload under Title 11. Response rates will continue to be monitored in order to judge whether more Inspection staff will be necessary in 2016.

VII. Conclusions

Based on the information collected during permit review and described in this report the following conclusions, successes, and challenges can be drawn:

Conclusions

Tree Planting and Preservation in Development Situations

New development types are now subject to tree planting and preservation. It is important to remember that prior to Title 11, there were no tree planting or preservation requirements for anything but new single family residences, or sites that had undergone a land division (or other requirements of Title 33). Planting and preservation requirements are new to alterations, additions, and multi-dwelling residential, mixed use, commercial, and industrial development.

Occurrence of planting and preservation in New Single Residential construction (the development type that can offer comparisons pre-and post- Title 11) is similar pre- and post- Title 11. However, data are not available on the number or sizes of trees preserved or species of trees planted prior to Title 11, so outcomes of those measures cannot be determined at this time.

Fees in lieu of preservation are occurring most frequently for demolition permits. Demolition is often the first step in new construction projects. As such, it may be that applicants are opting to pay fees in lieu to create room for new development. Allowed removal as part of a demolition permit may also circumvent tree preservation that would apply as part of a subsequent land use review, such as a land division.

Workload and Customer Service

Improvements in customer service in 2015, despite large increases in permit applications, reviews, and public inquiries, as well as significant staff vacancies, have resulted in lowered response times to some permits. Additional Parks Urban Forestry staff funded as a result of the Citywide Tree Project (two Tree Technicians and two and a half additional Tree Inspector positions) were augmented with significant use of temporary staff in order to provide this level of service in 2015. Trends outlined in this report indicate no expected decrease in permit volume or staff workload in 2016, therefore more sustainable funding of permanent staff will be necessary to improve customer service levels to acceptable standards going forward. A third Tree Technician position was established in fall 2015; use of Parks Urban Forestry permit fees to fund additional staff positions is expected.

Citywide Tree Canopy

Title 11 has had positive effects on the urban forest by requiring tree planting and preservation in new types of residential and commercial development, and by expanding regulations in non-development situations to include all private properties in the City, rather than only developable or dividable lots. This has led to the preservation of trees in development that would not have been required prior to 2015, and replacement of hundreds of trees whose removal was not regulated before Title 11.

However, development and non-development related tree permitting data presented in this report suggest long-term negative impacts on citywide tree canopy, especially on private lands. While no data exist regarding the species of trees removed in development, just 10% of trees planted are large form varieties despite incentives for planting these desirable species. In non-development situations, permitting the removal and replacement of private trees results in fewer, smaller trees—the ratio of replacement is 0.9 trees planted for each removed, and large form trees are being removed at three times the rate they are being replanted.

While significant fees have been contributed to the Tree Planting and Preservation Fund in lieu of tree planting and preservation in 2015, the current fees (\$1200 per tree removed beyond the allowed removal of two-thirds of trees on site and \$450 per tree not planted) are based on an outdated calculation of the cost to the City of tree planting and establishment. It is estimated that the current cost to plant and maintain a 2" caliper tree is approximately \$600/inch, not the \$300/inch currently charged. Funds collected in lieu of planting and preserving 325 trees in 2015 (including 19 trees not planted in non-development permits) will pay for the cost of planting and maintaining approximately 226 trees. The current fee in lieu system is therefore not achieving tree-for-tree replacement and will result in approximately 266 fewer trees than the code intended (two trees for each not preserved, one tree for each not planted).

To ensure that code outcomes better match the intent of the Citywide Tree Project and goals of the Urban Forest Management Plan, Parks Urban Forestry will conduct a review of the per inch in lieu fee, as well as explore possible Title 11 amendments to tree preservation standards, regulatory exemptions in development and non-development contexts, and incentives for preserving and planting large form trees. The data in this report will inform these reviews.

Code Compliance

Ensuring compliance with tree regulations and requirements in development and non-development situations is critical to the long-term health and growth of Portland's urban forest. The rise in code compliance cases in 2015 may be related to a higher public profile for trees in the city, which is a positive outcome of Title 11. Parks Urban Forestry Tree Inspectors inspected 699 code compliance cases in non-development situations in 2015, requiring correction in 444 cases—most of which were resolved without proceeding to a violation process. The system for compliance with non-development tree requirements is primarily complaint-driven, relying on the public to contact Parks Urban Forestry with possible violations. This system's reliance on a public with the knowledge and free time to submit violations may have equity implications, where tree regulations may be more closely followed in certain neighborhoods. Violations include illegal pruning and removal of trees and also whether applicants have planted trees required as mitigation. In order to gauge the effectiveness and equity of this system, Parks Urban Forestry plans to collect planting compliance data across all of Portland's neighborhoods in 2016.

In development, Parks Urban Forestry Inspectors reviewed 21 cases of violations to tree preservation plans in 2015. No punitive action is taken in cases where these violations are confirmed; if trees are damaged so as to be unviable for preservation, then applicants must submit a site plan revision rather than pay a fine. While the public may submit reports in these cases, often trees will not be visible from public space. In these cases and more generally, BDS Building Inspectors are relied upon to confirm a variety of tree-related information on development sites, including the accuracy of tree plans where no preservation is proposed, that trees preserved on site were not harmed by construction activities and remain viable after projects are complete, and the size and species of any trees required to be planted by Titles 11 or 33. While Parks Urban Forestry Tree Inspector staff do not currently have the capacity to perform such inspections, trained arborists performing review and confirmation of tree plans before construction and inspection of trees planted or preserved after completed construction would likely have a positive impact on compliance with tree regulations during development.

Successes and Challenges

Below is a list of positive outcomes and continuing challenges of Title 11 implementation activities.

Successes:

- Administration and application of the Citywide Tree Project has been successful, with permit processes developed and inter-bureau coordination greatly improved.
- More trees regulated and possibly retained than under previous city policies.
- Increased capacity for data collection and monitoring to guide further code improvements.
- Improved customer service and clearer paths for customers to submit tree questions via new website, caller menu, and central staff location.
- Improved permitting process for capital improvement projects, providing clear expectations for project managers and identifying opportunities for tree preservation at the project's earliest stages.
- Programmatic Permits implemented for 14 public agencies and utilities have created a clear, streamlined process for regulating routine tree work in large areas of the city and ensure a net positive benefit to the urban forest.

Challenges:

- Parks Urban Forestry staff workloads continue to result in response rates at less than acceptable levels in some cases.
- Data suggests that the number and stature of trees currently planted in development and non-development situations will not fully replace tree canopy lost, resulting in long-term canopy implications.
- There may be unintended incentives to remove trees during demolition phases of the development process to avoid tree preservation requirements in latter stages of development or future land use reviews.
- Limited planting space in Portland's rights of way continues to restrict long-term tree health and canopy growth.

- Adequate data to assess long-term trends in the urban forest are not currently available, including:
 - Species and size of trees planted, preserved, and removed in development on regulated sites.
 - The number, size, and species of trees lost to development on exempt sites.
 - The rate of compliance with tree planting requirements in development and non-development situations.
 - The effect of the Administrative Rule, *Replanting Requirements for Tree Removal on Private Property, City-Owned and Managed Sites, and Public Rights-of-Way*, on tree mitigation requirements.
- Inability of new tree preservation standards to incentivize preservation of high-quality trees—under current rules, applicants may receive the same credit for preserving trees in poor health or nuisance species as for healthy, native trees. (Note: This item is currently being addressed through Regulatory Improvement Code Amendment Process 8 [RICAP 8] staffed by the Bureau of Planning and Sustainability.)
- Compliance is largely complaint-driven. It is unknown how often tree planting requirements are met and how much illegal tree removal is occurring.
- Applicants for some development permits are relied upon to provide accurate tree plans. Because an arborist is not required to submit a tree plan in most cases, inaccuracies were often noted in 2015.
- Building inspectors are currently expected to confirm a variety of tree-related information on development sites, including the accuracy of tree plans where no preservation is proposed, that trees preserved on site were not harmed by construction activities and remain viable after projects are complete, and the size and species of any tree planting required by Titles 11 or 33. Ideally staff trained in arboriculture would be responsible for these tasks. This issue must be considered along with work efficiency and resources to determine the appropriate number of different inspectors to send to a development site.

Appendix A: Non-development Permit Requirements

Table 40-2
Summary of Permit Requirements for City and Street Trees

Activity	Permit Type	Tree Replacement [1] (See Section 11.40.060)	Public Notice / Public May Appeal
No Permit is required for: <ul style="list-style-type: none"> - pruning branches or roots <1/4"; - removing City Trees <3" in diameter; - removing street trees that are sucker shoots, self-sown trees < 1/4"; or - other activities that are exempt from the requirements of this Chapter (see 11.40.030). 			
Planting trees Pruning branches or roots larger than 1/4" Other activities as described in 11.40.040 A.3	A	n/a	No
Removal of any regulated tree that is: <ul style="list-style-type: none"> - dead, dying, or dangerous 	A	tree for tree	No
Removing up to 4 healthy trees per site, or abutting right of way per year as follows:			
- less than 3" in diameter	A[2]	tree for tree	No
- 3 to <12" in diameter	B	tree for tree	No
- 12 to <20" in diameter	B	tree for tree	No
- 20" and larger in diameter	B	inch for inch	Yes
Removing more than 4 healthy trees per site, or abutting right of way per year as follows:			
- less than 3" in diameter	A[2]	tree for tree	No
- 3 to <12" in diameter	B	tree for tree	No
- > 12" in diameter	B	inch for inch	Yes
- 20" and larger in diameter	B	inch for inch	Yes

[1] "Tree for Tree" means one tree is required to be planted for each tree removed, "inch for inch" means the City Forester may require up to an equivalent number of inches be planted for the total diameter inches of the tree being removed.

[2] Applies to all Street Trees, in addition to any other City Trees planted as part of a landscaping or mitigation requirement, including trees planted to replace trees removed under a previous tree permit.



Appendix A: Non-development Permit Requirements

Table 40-3
Summary of Permit Requirements for Private Trees

Activity	Permit Type	Tree Replacement[1] (See Section 11.40.060)	Public Notice / Public May Appeal
No permit is required for:			
<ul style="list-style-type: none"> - planting trees - pruning trees outside of the environmental protection (p), environmental conservation (c), or Pleasant Valley Natural Resource (v) overlay zones; - removal of trees smaller than the sizes regulated by this chapter (see 11.40.020 B.); or - other activities that are exempt from the requirements of this chapter (see 11.40.030) 			
Pruning native trees in c, p, or v overlay zones	A	n/a	No
Removal of any tree that is: <ul style="list-style-type: none"> - dead, dying, or dangerous - a nuisance species identified in the Portland Plant List - located within 10 feet of building or attached structure 	A	tree for tree	No
Removing up to 4 healthy non-nuisance species trees per site per year as follows:			
- Smaller than 20" diameter	A	tree for tree	No
- 20" diameter and larger	B	inch for inch	Yes[2]
Removing more than 4 healthy non-nuisance species trees per site per year as follows:			
12" diameter and larger	B	inch for inch	Yes

[1] "Tree for Tree" means one tree is required to be planted for each tree removed, "inch for inch" means the City Forester may require up to an equivalent number of inches be planted for the total diameter inches of the tree being removed.

[2] No public notice or opportunity for public appeal is required for removal of one healthy tree ≥ 20 " diameter per lot per year in any residential zone.