



CITY OF KIRKLAND
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MEMORANDUM

To: Kurt Triplett, City Manager

From: Deb Powers, Urban Forester
Paul Stewart AICP, Deputy Director
Eric Shields AICP, Director

Date: August 25, 2016

Subject: 2015-2016 URBAN FORESTRY ANNUAL REPORT

RECOMMENDATION:

On behalf of the Departments of Planning, Public Works and Parks and the City's Tree Team, it is recommended that the City Council receive the 2015-2016 Urban Forestry Annual Report (Attachment 1) on progress towards Urban Forest Strategic Management Plan goals and provide direction on the action items and initiatives for the upcoming year.

BACKGROUND DISCUSSION:

Urban forests improve air and water quality, enhance property values and contribute to human health, safety and community character. Unfortunately, many urban elements negatively impact trees, shortening their normal life expectancy. These impacts include constrained spaces, poor quality and limited volume of soils, reflected heat, and lack of adequate water.

On a larger scale, tree removal resulting from development, limited public tree monitoring or maintenance, climate change and invasive species contribute to the decline of a community's natural environment.

For these reasons, urban forests require sound and deliberate management to ensure that trees function well in their intended landscape, provide optimal benefits to the community, and remain reasonably safe for property and people. In addition, a proactive approach allows the city to be cost effective by anticipating needs and minimizing risks from tree failure and severe storm events.

Adopted by the City Council in 2013, the intent of Kirkland's [Urban Forestry Strategic Management Plan](#) (Strategic Plan) is to establish performance measures and citywide efforts towards a cohesive, efficient and sustainable urban forest management program. Following its adoption, multiple City departments developed an [Urban Forest Work Plan](#) (Work Plan) to prioritize specific objectives that were feasible to attain over the next six years, from 2014 to 2019. The objectives predominantly focus on public tree management. Trees on private property or reviewed as part of development applications are regulated through Chapter 95 of the Zoning Code.

2015-2016 Work Plan Summary

Although some Work Plan objectives have been deferred to next year, many other milestones were met in 2015-2016. These milestones are included in the annual report and highlighted below:

- The City was again designated a Tree City USA and achieved a Growth Award for its efforts
- Tree Team participation for more efficient and coordinated urban forest management; particularly with public trees.
- The Green Kirkland Partnership planted 960 trees in 2015 and it is estimated that over 700 trees will be planted by the end of 2016.
- In 2015, Public Works crews responded to 353 service requests for tree removal and maintenance compared to 23 such requests in 2010.
- Previously-unidentified projects that arose from service request trends, extreme weather conditions, funding availability, or by mandate.
- Through a WA Department of Natural Resources grant, an inventory of trees in 14 city parks was conducted.
- Public Works crews planted 48 trees in medians and rights-of-way.

Now half-way through the six-year period, progress has been made on several objectives but has fallen behind on others. To meet the long-term goals outlined in the Urban Forestry Strategic Management Plan, support for urban forestry programs and activities is necessary to raise the City's urban forestry performance indicators.

Proposed Urban Forestry Objectives for 2016-2017

Specific objectives are outlined in the 2015-2016 Urban Forestry Annual Report (Attachment 1). Staff from multiple departments is committed to achieving the following initiatives in the upcoming 2016-2017 period:

- Continue collaborative efforts between departments
- Update codes, Pre-Approved Plans and standard operating procedures as time allows, or unless incorporated into departmental annual work plans
- Prepare for a new Maintenance Management Software launch, enabling multiple departments to efficiently respond to service requests and to prioritize public tree care
- Inventory right-of-way trees
- Apply for City's 9th Growth Award with the completion of eligible projects
- Undertake efforts to provide education and outreach to property owners, applicants, developers and the community
- Enhance the City's safety program for tree workers in Parks and Public Works

Council Direction

Staff is requesting Council to confirm the direction on the proposed initiatives, objectives, priorities and timing established in the citywide urban forest Six Year Work Plan proposed for the upcoming 2016-2017 year.

Attachments

1 - 2015-2016 Urban Forestry Annual Report

CITY OF KIRKLAND

Urban Forestry 2015-2016

ANNUAL REPORT



Planning & Building
Parks & Community Services
Public Works



Kirkland City Council

Amy Walen, Mayor

Jay Arnold, Deputy Mayor

Penny Sweet

Shelley Kloba

Toby Nixon

Dave Asher

Doreen Marchione

Kirkland's urban forest includes trees in woodlands, parks, yards, in public spaces and along streets. Trees affect the air and water where we live and the desirability of our neighborhoods.

Unfortunately, many factors negatively impact urban trees. To provide optimal benefits to the community, urban forests require sound and deliberate management over a long range horizon.

For these reasons, the Kirkland City Council adopted an Urban Forestry Strategic Management Plan July 2013.

I. Introduction

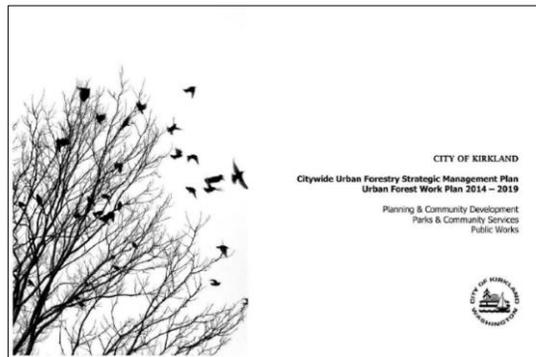
Kirkland’s [Urban Forestry Strategic Management Plan](#) (Strategic Plan) guides City efforts towards a healthy, sustainable urban forest using standardized criteria and performance indicators (Appendix Table 1).

Using Kirkland’s performance in sustainable urban forest management as a baseline, the Departments of Planning and Building, Parks and Community Services and Public Works developed prioritized, targeted objectives to address any gaps in performance.

The objectives were organized into a more incremental six-year [Urban Forest Work Plan 2014-2019](#) (Work Plan) framework, from which the City uses to plan its urban forestry-related operations on an annual basis through 2019.

Consistent with the City’s Comprehensive Plan policies, City Council goals and operational values for the environment, these objectives link daily operations to long-term goals, enabling staff to realize greater levels of:

- Accountability, cooperation and resource-sharing
- Operational efficiency
- Collaborative problem-solving
- Customer service
- Stewardship of public investment



II. 2015-2016 Work Plan Accomplishments

While there were many successes and accomplishments in 2015-2016 (Appendix Table 2), less progress occurred than the [previous year](#) in meeting established city-wide Work Plan objectives.

The following summary shows Work Plan objectives and other urban forestry-related projects that were accomplished through Tree Team partnerships and coordination, departmental efforts and by striving to earn Growth Awards as established by the [National Arbor Day Foundation](#).

- ✓ The City maintained its status as a Tree City USA for the 14th consecutive year and was one of only 13 cities in Washington to earn a Growth Award.
- ✓ Public Work Grounds Maintenance crews planted 48 trees in medians and rights-of-way.
- ✓ Planning and Public Works developed internal procedures to streamline and clarify the public tree removal and pruning permit process.
- ✓ The Green Kirkland Partnership (GKP) planted 960 trees in 2015. By July 1st 2016, 167 trees were planted, with an estimated 540 tree plantings to occur by the end of 2016.
- ✓ A consultant inventoried trees in 14 Kirkland parks through a grant from the Washington Department of Natural Resources (DNR); data essential to prioritize maintenance needs.
- ✓ In 2015, Public Works tree maintenance crews responded to 353 service requests for tree-related activities (pruning, removal, etc.), a substantial increase from 23 tree requests in 2010.
- ✓ Public Works CIP, the City's Urban Forester and DNR partnered with the Cedar Creek Correctional Center to repurpose street trees removed from Park Lane.
- ✓ The Urban Forester worked with Public Works/Surface Water to identify potential code changes regarding trees and vegetation related to Low Impact Development, as required by the Washington Department of Ecology.
- ✓ Public Works, Parks, Planning and GIS collaborated on developing a scope of work to inventory trees along Kirkland arterials and collector streets.
- ✓ In response to an early 2016 storm, Public Works initiated a project to address dead, dying and excessively leaning trees along portions of Holmes Point Drive.
- ✓ Planning and Parks (GKP) celebrated Arbor Day on October 17, 2015 at Watershed Park along with dozens of volunteers as part of the restoration of the park.
- ✓ Public Works Grounds Maintenance assisted a volunteer planting at Fire Station 22 to celebrate National Arbor Day in April 2016.
- ✓ Public Works has continued to sponsor annual aerial rescue classes (arborist's safety) for the region since 2014

Due to workload priorities and resource allocation, the City was unable to

- Conduct the previously-funded right-of-way tree inventory
- Receive funding to establish a Heritage Tree program
- Obtain grant funding for tree planting
- Conduct tree code awareness and educational workshops for property owners, developers and tree companies.

Tracking day-to-day operations and linking progress to long-range goals has been challenging with shifting workload demands, compounded with departments' varied performance measures and tracking systems. Examples of this are provided later in this report.

Details on the City's progress in urban forestry management are described below:

- **Growth Awards & Tree City USA**

Kirkland continued to show its commitment to sustainable urban forest management by maintaining its status as a [Tree City USA](#) for the 14th consecutive year, proclaiming and celebrating Arbor Day on October 17, 2015.



Growth Awards demonstrate a higher standard of urban forest management, awarding points for accomplishments in four categories. Cities must earn at least 10 points per year for meeting specific criteria in -

- Category A: Education and Public Relations
- Category B: Partnerships
- Category C: Planning and Management
- Category D: Tree Planting and Maintenance

In 2015, Kirkland earned 30 points for eligible projects (Appendix Table 3) and was one of only 13 cities in Washington to earn a Growth Award!

- **Developing an Urban Forest Program: Kirkland Tree Team**

The City's 'Tree Team' is responsible for implementing the Strategic Plan through developing annual work plans, tracking operations, and appending the Plans to ensure long-range goals remain effective and relevant over time. This service team meets once every month.

<p>KIRKLAND TREE TEAM</p> <p>PARKS AND COMMUNITY SERVICES Tim Werner, <i>Park Maint. Supervisor</i> Sharon Rodman, <i>GKP Supervisor</i> Mark Padgett, <i>Lead person</i> Ryan Fowler, <i>Field Arborist</i></p> <p>PUBLIC WORKS Jenny Gaus, <i>SW Engineering Supervisor</i> Bobbi Wallace, <i>Street Services Manager</i> Shannon Sedlacek, <i>Public Grounds Lead</i> Jerry Merkel, <i>Field Arborist</i></p> <p>PLANNING AND BUILDING Paul Stewart, <i>Deputy Director</i> Deb Powers, <i>Urban Forester</i> Aoife Blake, <i>Assistant Planner</i> Craig Salzman, <i>Code Enforcement Officer</i></p>

Very often, these meetings enable management level and field crew staff to gain valuable insight into each other’s responsibilities, resulting in greater support and cooperation to meet common goals. An example of this is Public Works and the Parks Departments pairing Field Arborists to address public tree care.

The partnerships between Tree Team members and across departments yielded these results in 2015-2016:

Noticing a trend in public tree damage and service requests by Kirkland residents, the Tree Team turned its attention to refining internal *public tree permit procedures* (primarily in the right-of-way). Planning and Public Works worked together to clarify roles and streamline the

process for improved customer service (2015-2016 UF Annual Report Attachment A). Together with the Cross Kirkland Corridor Service Team, an outreach effort is planned to provide an overview of the permitting process for citizens, while future code amendments are tentatively planned to clarify permit language regarding public trees.

Public Works Grounds Maintenance crews expanded upon last year’s *Street Tree Replacement Project* to replant street trees city-wide, using funds from the City Forestry Account. Funding allowed crews to rent a stump grinder to remove old root systems from available tree spaces and replace 48 trees in early spring, 2016. A formalized right-of-way tree replacement program may be considered as a result of this cross-departmental cooperation.



- **Growing the Green Kirkland Partnership Program**

The passage of the 2012 Parks Levy provided much-needed *funding to continue the Green Kirkland Partnership (GKP) program*, which was initiated in 2005 to restore forested parkland. With annexation adding a significant amount of acreage in parks/open space areas, and as a result of its own ambitious goals, GKP program growth projections exceed its current levy funding allocation. Recognizing that, GKP leaders have aggressively sought diverse funding sources in 2015-2016 to support program needs.

A King Conservation District grant provided funding to update and incorporate new neighborhoods into the City's *20-Year Forest and Natural Areas Restoration Plan*, which was approved by Council Resolution on November 17th, 2015.

Another King Conservation District grant provided *professional volunteer management support* for large monthly restoration activities, including Earth Day, Arbor Day, and Green Kirkland Day events where each event generates over 100 volunteer participants.

The K-DOG board provided funding for GKP to hire *professional crews* to work for two days in November 2015 at Heronfield Wetlands riparian mitigation site, which is a park restoration site that was required for the construction of Jasper's Dog Park.



To hire *specialized professional crews* essential for working in sensitive areas unsuitable for volunteers, GKP utilized Capital Improvement Project (CIP) funding under an interagency agreement with the Washington Department of Ecology. Washington Conservation Corps crews were contracted for 9 weeks in 2016 for natural area restoration in Crestwoods Park, Heronfield Wetlands, Juanita Heights Park, O.O. Denny Park, and Watershed Park. Six of the nine weeks occurred before June 2016.

The Kirkland Parks Foundation collaborated successfully with GKP to *raise funds* to purchase trees and other forest native plants for Green Kirkland Day held at Crestwoods Park, November 14th, 2015.

To restore the riparian corridor at O.O. Denny Park and further meet Strategic Plan goals for GKP program growth, the Kirkland Parks Foundation *raised funds* through a Royal Bank of Canada Blue Water Grant so that the GKP could hire professional crews to work together with volunteers on restoration efforts. Grants to fund restoration work at Juanita Bay Park in 2015 and 2016 were obtained by GKP from the Melody S. Robidoux Foundation Fund.

III. Additional Urban Forestry Projects in 2015-2016

While not previously identified in a work plan, several significant urban forestry projects were launched or completed in 2015-2016:

Mandated by the Washington Department of Ecology, Kirkland conducted a *2016 Low Impact Design (LID) code review* as part of its National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater permit. This intensive project involves both Public Works and Planning Departments analyzing municipal codes and standards as they relate

to LID. Because land use, trees, landscaping, native vegetation, and soils are core LID issues, the City's Urban Forester plays a key role on the project team.



In response to an early 2016 storm resulting in dangerous and blocked Juanita rights-of-way, Public Works initiated a *Holmes Point Drive Pruning/Removal Project* to address dead, dying, and excessively leaning trees located at the north and south entrances of Holmes Point Drive.

The project was scheduled for summer 2016 to utilize staffing from Surface Water funding and to overlap with a CIP Quick Wins project phase. Public Works worked with the Planning Department on permitting; then coordinated with a consulting arborist, the Finn Hill Neighborhood Alliance and Puget Sound Energy (PSE). The first phase of tree work was completed by Public Works and contract tree crews, while additional work is scheduled to be completed in October 2016 by PSE.

Using the City's new Energov permit database, the Planning and Building Department conducted a query to track tree permits processed between July 2015 and July 2016. The total number of TRE (permit) cases in this 12-month range is 641. This includes various tree-related requests such as the 2 tree removal per year notifications, hazard/nuisance tree removals, public tree pruning requests, and public tree removal requests.

Note that the total is not indicative of actual tree removal in Kirkland because:

- TRE cases differ in the total number of trees approved for removal
- TRE cases include permits that were denied, resulting in no tree removals
- Tree removal notifications are optional; residents may opt to lawfully remove their 2-trees per year without notifying the City

And finally, Kirkland Public Works CIP, the City's Urban Forester and DNR partnered with the Cedar Creek Correctional Center to *repurpose Park Lanes' previously-removed street trees*. Through this pilot program, inmates salvaged the trees in 2015 to haul, mill, kiln-dry and finish a one-of-a-kind Norway maple slab for Kirkland's use. In 2016, Facilities staff fabricated a steel base for the slab, creating a beautiful coffee table for the newly-remodeled City Hall entry.



IV. Incomplete/Deferred Projects

In summer 2015, data was collected from Kirkland's 14 formally-landscaped park trees through a grant from the Washington Department of Natural Resources (DNR) and the U.S. Forest Service. *The Park Tree Inventory* resulted in valuable GIS-formatted data and a [summary report](#) describing Kirkland park trees' appraised value and high priority tree maintenance recommendations. Not yet incorporated into Kirkland's GIS database, the data is being evaluated by Parks officials to develop a Work Plan strategy.



In 2015, the City Council approved funding to update and expand a 2004 street tree inventory. Public tree inventories document the value, condition and risk assessment of the urban forest asset.

In Kirkland, obtaining current data is important to include annexed right-of-way trees, reduce risk potential and to proactively manage the City's tree asset for optimal stormwater mitigation and public benefit.

The *Right-of-Way (ROW) Tree Inventory Project* has been put on hold temporarily, pending completion of the City's new Enterprise Asset Management/Maintenance Management System (MMS) project, Lucity. The Lucity MMS will include an inventory of all City-maintained roadway, utility, and roadside features.

A complete asset inventory, together with standard work practices and approved levels of service, will provide the basis for the City's Public Works, Parks, and Facilities operations, maintenance, annual work programs and budgets, including public tree management.

Kirkland's existing public tree inventory data will be examined for compatibility and re-scoped once the Lucity MMS is up and running.

V. Public Tree Maintenance

Public tree maintenance is critical to ensure long-term success and health of an urban forest. Tree maintenance (including structural pruning), providing for vehicular and pedestrian clearances, and mitigating potentially hazardous conditions is an essential part of urban forest management.

In 2015, Public Works Maintenance and Park departments acquired and began to share an aerial lift truck for public tree maintenance, a positive result of Tree Team discussions. Merging equipment and staff resources to address public tree service requests, although productive, presented some challenges in tracking:

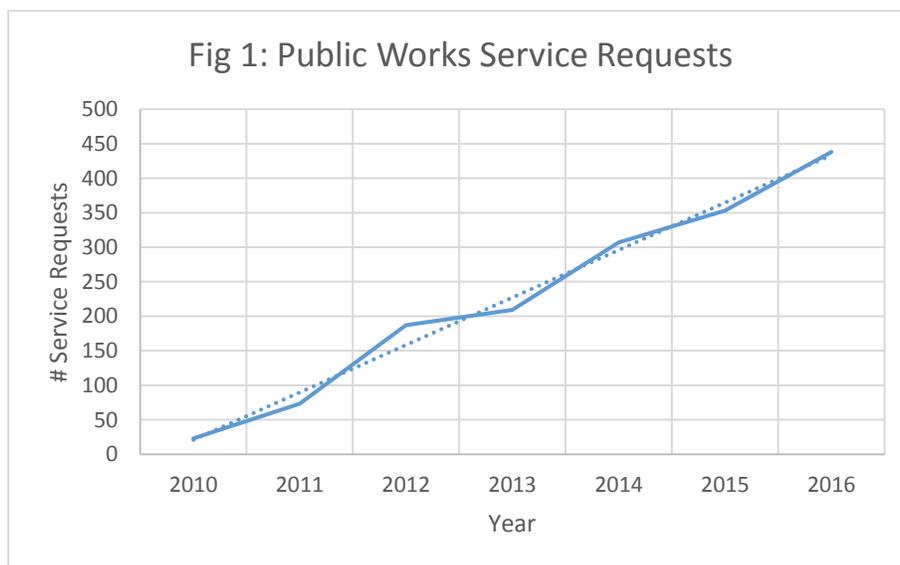


- Service request data for tree-related activities
- Hours spent on tree-related activities
- Quantity of public trees planted
- Distinguishing between tree planting, pruning, removal, other maintenance activities (weeding, mulching, watering, etc.) and emergency response
- Determining levels of service request priorities vs. scheduled maintenance

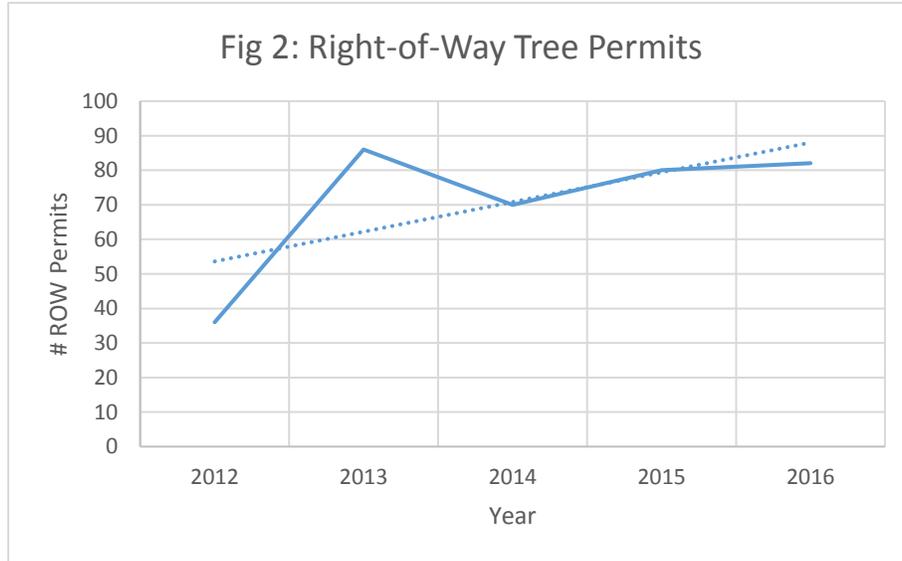
• Tracking Maintenance Trends

Obviously, consistent data is needed to align the City’s desired level of service with risk management and appropriate support or resources. Currently, Public Works uses Hansen Maintenance Management System (MMS) software to inventory, track city asset maintenance needs and generate work orders. Not all public tree service requests are entered into the Hansen system.

It is anticipated with the citywide implementation of LuCity MMS software that appropriate public tree data will be uniformly tracked by both Parks and Public Works. Until then, Public Works data best quantifies 5 year trends in public tree service requests, showing a steady increase over the last 5 years (Figure 1).

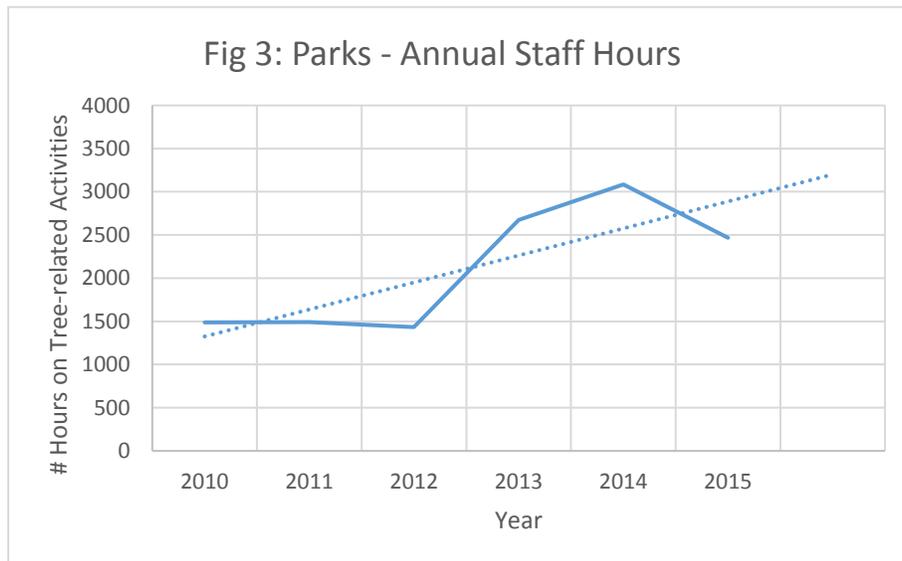


An alternative to tracking street tree service requests is examining the number of right-of-way tree permits for street tree pruning and/or removal. Note that permit data was only available from April 2012, when the City started using its Energov permit database (Figure 2).

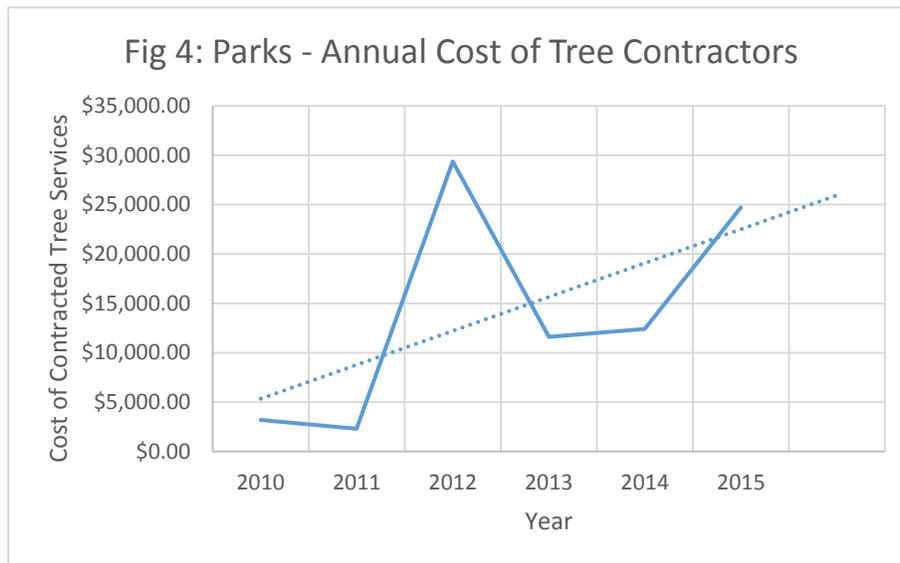


Right-of-way tree permit data for 2016 is forecasted through December 2016 based on the number of permits from January to July and by considering prior annual trends.

Kirkland Parks does not track individual tree service requests, yet tracks the total number of annual staff hours (Figure 3) and the cost of contract services for tree-related activities (Figure 4). Note the association between staff hours and the cost of contracted tree services in the past 5 years.



Although Public Works hires contractors when peak workloads exceed crew capacity, annual expenditures for tree contractors is not tracked.



- **Managing a Public Tree Asset**

Public trees are important attributes of the City's infrastructure, just as sewers, light signals and sidewalks are. **The appraised value of Kirkland park trees alone is estimated at \$17.6 million**, a significant and valuable asset for the City of Kirkland. However, as the [Parks Tree Inventory report](#) notes, many of Kirkland parks' trees are in fair condition, yet will *add more value if properly maintained*.



Not surprisingly, the increase in public tree service requests corresponds to the increase of dead, poor and fair condition public trees. Although the current street tree inventory is outdated and incomplete, 44 percent of street trees were found to be in fair condition and over 1,000 trees were dead or in poor health in 2004; conditions that may pose a risk to public safety.

Together with the occurrence of annexation and an overall increase in public tree plantings from restoration efforts, frontage improvement requirements and CIP projects, the City can expect higher volumes of public tree service requests in the coming years.

Currently, 2 Field Arborists from different departments share vehicles and equipment for 4 days per week to meet current service requests entirely on a reactionary basis. In 2015, Public Works alone completed 96 removals and 214 street tree pruning requests. This

does not include tree removals and pruning in Kirkland parks, City facilities such as the cemetery and fire stations, trails and open space forested areas.

Beyond staff's collaborative approach in managing Kirkland's public tree asset, it will be important for the City as a whole to:

- Establish efficient systems for tracking productivity and generating work orders
- Identify the number of staff needed to fulfill current and desired levels of public tree maintenance on a proactive basis
- Identify and provide equipment resources necessary for tree care operations
- Recruit, train and certify staff to maintain expertise, professional performance, and compliance with industry safety standards

VI. Looking Ahead to 2016-2017

Tree Team meetings involve an exchange of emerging issues, general trends in municipal arboriculture, generating ideas to gain Growth Awards and planning to meet Strategic Plan goals. Generally, the upcoming year's efforts can be summarized as:

Main Objectives

- Continued collaborative efforts between departments
- Update codes, Pre-Approved Plans and standard operating procedures as time allows, or unless incorporated into departmental annual work plans
- Prepare for new Lucity MMS software launch for tree management and work requests
- Inventory ROW trees
- Apply for City's 9th Growth Award with completion of proposed initiatives
- Undertake efforts to provide education and outreach to property owners, applicants, developers and the community on tree codes
- Enhance the City's municipal arborist safety program

Challenges and Opportunities

- Establish meaningful, uniform urban forestry performance measures and tracking systems across departments
- Continue to seek support and funding opportunities for municipal tree operations in order to respond to increasing service request demands.
- Balance new, high priorities with limited staffing resources to meet the objectives outlined in Strategic, Six Year and Annual Work Plans.

A detailed account of specific 2016-2017 initiatives shown by lead department, Growth Award points and Work Plan objectives by number is shown below.

PROPOSED 2016-2017 URBAN FORESTRY INITIATIVES

LEAD	INITIATIVE	OBJECTIVE #	GROWTH AWARD?	PROJECTED COMPLETE DATE
Planning/ Urban Forester	1. Develop 2017-2018 Annual Urban Forest Work Plan	2.3	-	July 2017
	2. Park Tree Inventory data installed and analyzed to fulfil MOU with WA DNR	1.1.2	C4. 7 points	May 2017
	3. Assist with revising LID codes re: trees and vegetation (see PW/SW Item 1 below)	-	-	Dec 2016
	4. Conduct ROW Tree Inventory (previously funded) - hire contractor, coordinate w/ GIS, PW	1.1.2	C4. 7 points	undetermined
	5. Conduct tree code awareness workshops for developers, arborists, public sector	4.1	A11. 5 points	undetermined
	6. Plan & participate in Arbor Day w/ Green Kirkland Partnership to meet Tree City USA criteria	3.4	-	Oct 15, 2016
	7. Deliver 2017-2018 Annual Report to City Council	2.4	-	Aug 2017
	8. Lead multi-departmental Tree Team	2.1	-	ongoing
Public Works/SW	1. LID code revision	4.3	B7. 6 points	Dec 2016
Public Works/ Maint	1. Continue to source funding for adequate public tree maintenance equipment & staffing, including chip truck, flat bed and climbing gear	-	-	undetermined
	2. Develop/implement city-wide comprehensive approach to tree replacement	1.2.3	D4. 7 points	undetermined
	3. Enhance citywide tree worker safety program/SOPs with Parks Maintenance	2.2, 4.2	A9. 5 points	undetermined
Parks/ Maint	1. Using Park Tree Inventory data, draft a management plan establishing park tree maintenance priorities.	See #2 Planning/UF	-	May 2017
Parks/ GKP	1. Initiate restoration on five new acres		-	Dec 2016
	2. Arbor Day celebration in collaboration with Planning/UF	3.2, 3.4		Oct 15, 2016
	3. Ongoing outreach to schools, businesses, and other community groups regarding the UF/GKP agenda	3.1, 3.2, 3.7	A6, A7.	ongoing
	4. Celebrate Green Kirkland Day and Earth Day	-	-	Nov 12, 2016 & Apr 2017
	5. Conduct work in O.O. Denny Park funded by Park Foundation's Royal Bank of Canada's Blue Water Grant	-	-	Mar 2017
	6. If funded through WA DNR grant, utilize professional crews at Juanita Bay and Watershed Parks	-	-	Nov 2017
	7. Submit application for King Conservation District grant to fund professional crews in 2017	-	-	Sept 2016
	8. Submit a grant to fund work at Juanita Bay Park from the Melody S. Robidoux Foundation Fund	-	-	December 2016
	9. Participate in i-Tree webinars and source funding to conduct i-Tree analysis of open space trees/vegetation	1.1.3, 1.3	C4. 7 points	July 2017

VII. Summary

Appendix Table 2 shows initiatives by department achieved in 2015-2016. Although numerous milestones achieved in this period are praiseworthy, it should be noted that 2016 marks a halfway point in Kirkland's urban forestry six year work plan; with many initiatives being deferred from one year to the next for the last 2 years. To meet the long-term goals outlined in the Urban Forestry Strategic Management Plan, support for urban forestry programming is required to raise the performance indicators shown on Appendix Table 1.

The City of Kirkland will continue to be accountable to the community and the City Council on its incremental progress towards a sustainable urban forest by reviewing, summarizing and reporting its work towards the goals outlined in the Plan on an annual basis.

Appendixes

APPENDIX TABLE 1: SUSTAINABLE URBAN FOREST PROGRAM / CRITERIA & PERFORMANCE INDICATORS

Using the Clark model, performance is assessed with a rating from low to optimal. The current status of each measure is summarized below, along with the risks of inaction and the benefits of increased performance. Note: there are three performance indicators of urban forest health in which the City has no data to accurately perform an assessment.

Criteria: Accessible Canopy Cover Data

<i>Performance</i>	Good
<i>Current Status</i>	High resolution imagery analysis conducted in 2011. Compares canopy at several levels (watershed, neighborhood, zoning type, parcel, etc.) from 2002 to 2010. Data has not been integrated into the City GIS system. No subsequent canopy studies are planned.
<i>Risk</i>	Cannot track community sustainability goals. Limits interdepartmental effectiveness & services. Limits green infrastructure, Smart Growth, climate action planning.
<i>Benefit</i>	Baseline data. Can optimize coordination of development services, improve internal efficiency, is a tool for public outreach and positions Kirkland for regional collaboration.

Criteria: Existing Canopy Cover Status

<i>Performance</i>	Optimal
<i>Current Status</i>	40.7% canopy cover following the 2011 annexation; consequently the City has met its 40% canopy goal. The City can shift towards maintaining its canopy cover and achieving acceptable levels of urban forest health and sustainability.
<i>Risk</i>	Unknown status can result in low canopy %, causing increased flooding, urban heat island effects, energy use; reduced air quality and degraded asphalt road surfaces. Canopy reductions also negatively impact wildlife travel corridors and decrease habitat.
<i>Benefit</i>	Optimized ecosystem services and equality between zoning, land use, watersheds or business district canopy cover % goals.

Criteria: Public Tree Inventory

<i>Performance</i>	Low to Moderate
<i>Current Status</i>	Outdated; does not include trees in the annexation area or trees in active parks. The City does not have enough information to manage resource for three criteria: age, species suitability and diversity (see below).
<i>Risk</i>	Cannot proactively manage public trees and monitor service levels. Without condition and value of trees on record, cannot efficiently resolve accident claims and damage reimbursements caused by extreme weather events, etc. Prioritizing urban forestry activities is based on institutional knowledge and anecdotal evidence.
<i>Benefit</i>	Managers can develop work plans for proactive tree management, distribute workloads efficiently and justify funding. City can quantify assets, risks, and liabilities.

Criteria: Uneven-Aged Tree Distribution

<i>Performance</i>	Not enough information to determine
<i>Current Status</i>	Unknown. Need complete public tree inventory.
<i>Risk</i>	Substantial maintenance and tree removal costs result from even-aged populations reaching the end of their useful life simultaneously. Tree failure from disease, extreme weather events, and pests can be catastrophic in even-aged tree populations. Neighborhoods and business districts can become devoid of canopy.
<i>Benefit</i>	Age distribution facilitates long-term budget forecasting. Annual costs for care of public trees can be more evenly distributed over many years. A varied age-class distribution is important for optimizing environmental benefits and results in a healthier, more resilient and sustainable urban forest.

Criteria: Species Suitability

<i>Performance</i>	Not enough information to determine
<i>Current Status</i>	Unknown; need complete public tree inventory.
<i>Risk</i>	Unsuitable species require substantial maintenance and must be replaced more frequently.
<i>Benefit</i>	Poor performing tree species do not continue to be planted, reducing tree maintenance and removal costs.

Criteria: Species Diversity

<i>Performance</i>	Not enough information to determine
<i>Current Status</i>	Unknown. Need complete public tree inventory.
<i>Risk</i>	Predominance of fewer species can lead to substantial impacts or catastrophic loss from pests or disease. (Dutch elm disease and Emerald Ash borer are examples of why cities diversify tree species). The risk of ignoring species diversification can be costly for municipalities.
<i>Benefit</i>	Healthier, resilient and sustainable urban forest.

Criteria: Condition of Public Trees

<i>Performance</i>	Low
<i>Current Status</i>	Condition of public trees is largely unknown. Trees in the right-of-way or in parks do not typically receive routine planned inspections. Request-based, reactive management system.
<i>Risk</i>	Lack of proactive hazard tree evaluations can compromise public safety and increase risk of property damage or injury.
<i>Benefit</i>	Successful budgeting. Increased public safety. Reduced risk.

Criteria: Management of Trees & Vegetation in Public Natural Areas

<i>Performance</i>	Good
<i>Current Status</i>	The 20-Year Forest & Natural Areas Restoration Plan (Restoration Plan) outlines the structure & function of forested parks. It does not include the majority of extensive natural areas in annexation areas. The ecological structure and function of all publicly-owned natural areas is not documented in the citywide GIS system.
<i>Risk</i>	If services are not tracked, the value of the asset is unknown and preservation and maintenance is more difficult to rationalize.
<i>Benefit</i>	Healthier, more resilient and sustainable natural areas.

Criteria: Tree Planting & Establishment

<i>Performance</i>	Low
<i>Current Status</i>	Current tree planting in the City is ad hoc, no formal tree planting goals or programs except in open space areas. Plantings through development frontage requirements, GKP, CIP and major park projects (e.g. Juanita Beach Park) are not tracked consistently.
<i>Risk</i>	The number of trees decline in urban settings without active replanting. Without data to quantify tree mortality, the number of trees that should be planted annually cannot be determined.
<i>Benefit</i>	Healthy urban forest succession guides the value of ecosystem services. Control costs by proactively managing the tree inventory.

Criteria: Native Vegetation

<i>Performance</i>	Good
<i>Current Status</i>	This criterion is well-managed through the Restoration Plan, which identifies the composition of native stands and recognizes the dangers of invasive species. Use of native vegetation is encouraged on a project-appropriate basis. Use of invasive species is discouraged but not prohibited.

<i>Risk</i>	Reductions in native species decrease wildlife habitat (example: declining native range of Pacific madrone).
<i>Benefit</i>	Resilient urban forest. Native vegetation often requires less maintenance and optimizes ecosystem health.

Criteria: Tree Planting Guidelines

<i>Performance</i>	Low to moderate
<i>Current Status</i>	No community-wide guidelines for the improvement of planting sites, selection of suitable species, adequate soil quality and quantity, and growing space to achieve greatest potential of asset.
<i>Risk</i>	Improperly planted trees and unsuitable species increase future workloads and potential hazard trees.
<i>Benefit</i>	Important to help to ensure that trees maximize current and future benefits and to control costs.

Criteria: Effective Tree Protection Codes or Ordinance

<i>Performance</i>	Optimal
<i>Current Status</i>	Adopted tree protection regulations (KZC 95) in 2005. Code amended for clarity in 2009. Adequate staffing resources dedicated for code administration and enforcement. Canopy increased from 2002 (32%) to 2010 (36%) prior to annexation.
<i>Risk</i>	Loss of canopy results in decreased ecosystem benefits.
<i>Benefit</i>	Increased desirability to live, work, recreate in Kirkland vs. adjacent communities with less aesthetic character

Criteria: City-wide Urban Forestry Management Plan

<i>Performance</i>	Optimal
<i>Current Status</i>	Urban Forest Strategic Management Plan adopted by the City Council, July 2013
<i>Risk</i>	Uncontrolled costs associated with tree maintenance and removal, inefficient and ineffective public service, increased risk associated with tree failure.
<i>Benefit</i>	Provides a framework for consistent, efficient City operations. With periodic reviews and updates, Plan maintains relevance to the community and City staff. Creates pathways to stable and predictable funding.

Criteria: Stable Municipality-wide Funding

<i>Performance</i>	Low to moderate
<i>Current Status</i>	Funding for reactive management. Diverse funding sources are used: General Fund, Surface Water Utility, grants and capital improvement program
<i>Risk</i>	Plan objectives will not be attained
<i>Benefit</i>	Controlled costs, as funds are allocated to urban forestry programs strategically

Criteria: Adequate Qualified Urban Forestry Staff

<i>Performance</i>	Low to moderate
<i>Current Status</i>	Municipal tree maintenance staffing is ad hoc. There are a number of ISA-certified arborists and a limited number of staff with TRAQ credentials. Inspectors, permitting and code enforcement staff attend to urban forestry issues but are not formally trained in arboriculture.
<i>Risk</i>	Staff unaware of current BMPs, tree industry safety standards, and tree risk assessment protocols.
<i>Benefit</i>	Staff can effectively manage urban forest risks and control costs using the best available science and practices.

Criteria: Formally-recognized Urban Forest Program

<i>Performance</i>	Moderate
<i>Current Status</i>	No centralized urban forest program, no designated urban forest divisions within multiple departments. More institutional knowledge than formal/consistent protocols. Some common goals when functioning on a project-specific basis, but no leadership within departments. Has become more effective with the formation of interdepartmental team with experienced leadership.
<i>Rationale</i>	All departments cooperate with common goals/objectives with leadership across all urban forestry projects. Municipal policy implemented by formal interdepartmental working team or program.
<i>Risk</i>	Misaligned and uncoordinated procedures and policies, misinformed public.
<i>Benefit</i>	Greater accountability, cooperation and resource-sharing; greater stewardship of public investment. Improved operating efficiency on urban forestry projects. Plan obstacles can be addressed through collaborative problem solving. Improved levels of public service.

Criteria: Stakeholder Cooperation

<i>Performance</i>	Low
<i>Current Status</i>	Damage to trees on development sites occurs frequently. No adherence to industry pruning standards in many commercial landscapes, no vegetation management plans with utility providers. Issues with development permit applications not meeting professional standards or City requirements.
<i>Risk</i>	Damage to public trees and canopy loss.
<i>Benefit</i>	Partnerships with stakeholders, alignment with City urban forestry objectives. Stakeholders operate with high professional standards. Creates advocates of proper tree care.

Criteria: Neighborhood Level Action

<i>Performance</i>	Moderate to Good
<i>Current Status</i>	Regular interaction city-wide with GKP and Kudos Kirkland; otherwise isolated or limited number of active groups. With the recent annexation, all neighborhoods are not unified in their understanding of the City's urban forest management objectives.
<i>Risk</i>	Failure to engage with neighborhoods can lead to misunderstandings and citizen distrust of City staff and policies.
<i>Benefit</i>	Stewardship can be one of the most cost-effective methods for creating a sustainable urban forest and foster volunteerism in the community, which lowers costs associated with urban forest management through voluntary cooperation.

Criteria: Municipal-Citizen Interaction

<i>Performance</i>	Moderate
<i>Current Status</i>	Aside from GKP, interactions are on a project-by-project basis or with general cooperation. Tree vs. view issues and the tree codes have been polarizing amongst constituencies. Permit processing is often a main point of interaction for urban forestry issues.
<i>Risk</i>	Public does not have a way to voice opinions, are left out of important urban forestry decisions.
<i>Benefit</i>	Improved community support for urban forestry funding and a public forum to resolve tree conflicts.

Criteria: General Awareness of Trees as a Community Resource

<i>Performance</i>	Low and optimal
<i>Current Status</i>	Trees are often seen as a problem by developers and homeowners, while others recognize trees as vital to community, creating very polarized views. Public education on the City's tree codes is not readily available.
<i>Risk</i>	Limited effectiveness of plan, conflict or affect funding.
<i>Benefit</i>	Citizens and developers are more likely to invest their energy and resources to help achieve program goals of Plan and support urban forestry projects.

Criteria: Regional Cooperation

<i>Performance</i>	Low to moderate
<i>Current Status</i>	Kirkland's forestry goals should be consistent with Washington State, King County, the Puget Sound Partnership, and neighboring municipalities Bellevue, Redmond, Bothell and Woodinville.
<i>Risk</i>	Conflicts with regional planning efforts.
<i>Benefit</i>	Ensures Kirkland's urban forest management is an integrated component of larger regional planning efforts. Regional partnerships can create pathways to stable and predictable funding.

APPENDIX TABLE 2: CITY-WIDE URBAN FORESTRY INITIATIVES ACCOMPLISHED IN 2015-2016

LEAD	INITIATIVE	WORK PLAN OBJECTIVE #	ELIGIBLE FOR GROWTH AWARD?	COMPLETE DATE
Planning/ Urban Forester	1. Develop 2015-2016 Annual Urban Forest Work Plan	2.3	-	Sept, 2015
	2. Plan & participate in Arbor Day w/ Green Kirkland Partnership	3.4	-	Oct 17, 2015
	3. Submit Tree City USA & Growth Award applications	3.3	-	Nov 2015
	4. Develop project team and scope previously funded ROW Tree Inventory project with GIS, PW	1.1.2	C4. 7 points	May 2016
	5. Deliver 2015-2016 Annual Report to City Council	2.4	-	Oct 6, 2015
	6. Lead multi-departmental Tree Team service team	2.1	-	2015-2016
Public Works/ Grounds Maint	1. Coordinate with Green Kirkland Partnership to submit DNR grant application for specialized CKC maintenance	1.2.3	D1. 4 points	May 2016
Parks/ GKP	1. Initiate restoration on 5 new acres	3.2	C11.	Dec 31, 2015
	2. Establish \$30,000 funding through grants or partnering--for crews to work in sensitive areas	2.2, 3.2	C2.	Feb 18, 2016
	3. Arbor Day open space restoration project	3.2, 3.4	-	Oct 17, 2015
	4. Initiate volunteer restoration efforts in O.O. Denny Park, Finn Hill Neighborhood	3.2	-	Throughout 2016
	5. Earth Day Event and Celebration	-	-	April 23, 2016
	6. Ongoing outreach to schools, businesses, and other community groups regarding the UF/GKP agenda	3.1, 3.2, 3.7	A6, A7.	Ongoing
	7. Submit funding applications for professional crews at O.O. Denny & Crestwoods park forested areas	2.2	-	May, 2016
	8. Obtain \$26,000 grant from King Conservation District for volunteer management efforts at restoration events	2.2	-	November 4, 2015

APPENDIX TABLE 3: TREE CITY USA/GROWTH AWARDS

<i>Year</i>	<i>Category/Activity</i>	<i>Activity Points</i>	<i>Total Points</i>
2005	No online verification - adoption of tree ordinance? 1st tree inventory?	?	10 minimum
2009	C8. - Improved Tree Ordinance (Amended KZC 95)	6	
	C10. - Wildlife Habitat (National Community Wildlife Program)	3	
	A10. - Con't Education for Forestry Managers (ISA Events)	6	15
2011	B8. - Land Use Planning Coordination (Pilot Program: Single Family Review Team)	5	
	C4. - Tree Inventory and Analysis (City-wide Tree Canopy Assessment)	7	12
2012	A5. - Online Community Tree Survey (SurveyMonkey via DRG re: Trees)	4	
	A11. - Tree Care Workshops (Focus Group Workshops with 3 Stakeholder Groups)	4	
	C6. - Management Plan (Kirkland Urban Forest Strategic Management Plan)	7	15
2013	B5. - External Funding (\$23,534.75 from King Cons Distr to update 20-Yr Restoration Plan)	6	
	C2. - Municipal Funding (Voter-approved Park & Street Levy for open space acq., park renovation)	8	
	C6. - Management Plan (Six Year Work Plan 2014-2019)	7	21
2014	A1. - Publications (GKP Steward Field Guides)	2	
	A8. - Con't Ed for Tree Workers (3 ISA Conference, 6 webinar and 1 TRAQ)	6	
	A10.- Con't Ed for Managers (Deb attended Canadian UF Conference)	6	
	B7. - Engineering/Forestry Coordination - revised SW Master Plan (mandates ROW tree inventory)	6	20
2015	A1. - Publications (GKP Outreach Brochure)	2	
	A10. - Con't Ed for Forestry Managers (Deb - TRAQ cert)	6	
	C6. - Management Plan: Revised 20-Year Forest and Natural Areas Restoration Plan	7	
	A11. - Tree Care Workshops for New Park Stewards	4	
	D1. - Special Tree Planting Project - Carbon Capture Project	4	
	D4. - Street Tree Planting: Pilot "Director's Tree Replacements" Project	7	30

Public Tree Permit Procedures (includes CKC)

Issue	ROW TREE EMERGENCY Safety concern exists	ROW TREE PRUNING No imminent hazard	PUBLIC/ROW TREE REMOVALS	
			No development on adjacent property	Development or tree removal on adjacent property
Intake Method	Varies	Planning Counter x3600 PlanningInfo@kirklandwa.gov	Planning Counter x3600 PlanningInfo@kirklandwa.gov MyBuildingPermit.com	
What's required?	No permit No fee	Permit required No fee	Permit Permit fee (covers cost of review)* Arborist report* *waived if photos clearly show trees meet hazard/nuisance criteria	
Handled by	PW Maintenance	Planning & PW	Planning & PW	Planning
Procedure	<ol style="list-style-type: none"> 1. Call PW Service Request ASAP x3900 2. Call Grounds Lead (425) 587-3908 3. Email Grounds Lead at ssedlacek@kirklandwa.gov 4. cc: PW Service Request at PWServiceRequest@kirklandwa.gov 5. PW Maint Grounds Crews responds, secures site, and abates public hazard 	<ol style="list-style-type: none"> 1. PCD creates Energov case 2. Email request to Grounds Lead, cc: PW Service Request with: <ul style="list-style-type: none"> • Permit application • GIS screenshot 3. PW staff inspect site, provide permit determination 4. Grounds Lead email PCD with permit determination* & basis for decision within 21 days 5. PCD contacts permit applicant with determination. If technical or complicated, PW will contact applicant. 6. PCD closes out permit in Energov 7. If approved, pruning by ISA-certified arborist or PW Maint Crew 	<ol style="list-style-type: none"> 1. PCD creates Energov case, checks for critical areas. No critical areas: proceed below. Critical areas: proceed to right. 2. Email request to Grounds Lead, cc: PW Service Request with: <ul style="list-style-type: none"> • Permit application • GIS screenshot • Arborist report 3. If CKC, PCD also cc's: CKC Coordinator kpage@kirklandwa.gov 4. PW staff inspect site, provide permit determination to PCD with basis for decision within 21 days. If CKC, Kari & PW Grounds coordinate determination 5. PCD contacts permit applicant with determination. If technical or complicated, PW will contact applicant 6. PCD closes out permit in Energov 7. If approved, removals done by PW Maint Crew or contracted out. 	<ol style="list-style-type: none"> 1. Permit Techs or PCD creates Energov case, check for critical areas 2. If CKC, PCD also cc's: CKC Coordinator kpage@kirklandwa.gov 3. PCD routes development permit to Planner/Contract Arborist 4. Contract Arborist inspects site 5. Contract Arborist provides Planner with permit determination & basis for decision within development permit timeline 6. PCD contacts permit applicant with determination 7. PCD closes out permit in Energov
Replacement?	Determined by Grounds	N/A	1:1 tree replacement required	1:1 tree replacement required
Tracking	PW - Hansen Service Request (TREES)	PCD - Energov PW - Hansen Service Request (TREES)	PCD - Energov PW - Hansen Service Request (TREES)	PCD - Energov PW - Hansen Service Request (TREES)