



CITY OF
BAINBRIDGE ISLAND

**PLANNING COMMISSION REGULAR MEETING
THURSDAY, SEPTEMBER 10, 2020**

THE PLANNING COMMISSION WILL HOLD THIS MEETING USING A VIRTUAL, ZOOM WEBINAR PLATFORM, PER GOVERNOR INSLEE'S "STAY HOME, STAY HEALTHY" ORDERS. MEMBERS OF THE PUBLIC WHO DO NOT WISH TO VIEW THE MEETING VIA THE BKAT BROADCAST OR THE CITY'S WEBSITE STREAMING WILL BE ABLE TO CALL IN TO THE ZOOM MEETING.

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AGENDA

1. **CALL TO ORDER/ROLL CALL - 6:00 PM**
2. **PUBLIC COMMENT - 6:05 PM**
Public Comment on off agenda items.
3. **UNFINISHED BUSINESS - 6:15 PM**
 - 3.a **(6:15 PM) - Proposal for Updates to Tree and Vegetation Regulations in BIMC 16.18, 16.32, and 18.15.010 - Planning** 45 Minutes
[Draft BMP Manual](#)
[Tree and Veg Update Table, Ord 2020_DRAFT](#)
 - 3.b **(7:00 PM) - Ordinance 2020-16 Amending Bonus Floor Area Ratio (FAR) Options, BIMC 18.12.030.E.** 45 Minutes
[20200910_PC_Staff_Memo](#)
[Ordinance No. 2020-16 Revising Bonus FAR program.docx](#)
[MUTC Zoning Districts Map.pdf](#)
[Excerpt BIMC_Table_18.12.020-3.pdf](#)
[WMP Goals & Policies Related to FAR.pdf](#)

4. SUBCOMMITTEE UPDATE - 7:45 PM
5. PLANNING DIRECTOR'S REPORT - 7:55 PM
6. ADJOURNMENT - 8:00 PM

GUIDING PRINCIPLES

Guiding Principle #1 - Preserve the special character of the Island, which includes downtown Winslow's small town atmosphere and function, historic buildings, extensive forested areas, meadows, farms, marine views and access, and scenic and winding roads supporting all forms of transportation.

Guiding Principle #2 - Manage the water resources of the Island to protect, restore and maintain their ecological and hydrological functions and to ensure clean and sufficient groundwater for future generations.

Guiding Principle #3 - Foster diversity with a holistic approach to meeting the needs of the Island and the human needs of its residents consistent with the stewardship of our finite environmental resources.

Guiding Principle #4 - Consider the costs and benefits to Island residents and property owners in making land use decisions.

Guiding Principle #5 - The use of land on the Island should be based on the principle that the Island's environmental resources are finite and must be maintained at a sustainable level.

Guiding Principle #6 - Nurture Bainbridge Island as a sustainable community by meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Guiding Principle #7 - Reduce greenhouse gas emissions and increase the Island's climate resilience.

Guiding Principle #8 - Support the Island's Guiding Principles and Policies through the City's organizational and operating budget decisions.



Planning Commission meetings are wheelchair accessible. Assisted listening devices are available in Council Chambers. If you require additional ADA accommodations, please contact the Planning & Community Development Department at (206) 780-3750 or pcd@bainbridgewa.gov by noon on the day preceding the meeting.

Public comment may be limited to allow time for the Commissioners to deliberate. To provide additional public comment, email your comment to pcd@bainbridgewa.gov or mail it to Planning and Community Development, 280 Madison Avenue North, Bainbridge Island, WA 98110.



CITY OF
BAINBRIDGE ISLAND

Planning Commission Regular Meeting Agenda Bill

MEETING DATE: September 10, 2020

ESTIMATED TIME: 45 Minutes

AGENDA ITEM: (6:15 PM) - Proposal for Updates to Tree and Vegetation Regulations in BIMC 16.18, 16.32, and 18.15.010 - Planning

AGENDA CATEGORY: Review and Recommendation

PROPOSED BY: Nick Snyder

PREVIOUS PLANNING COMMISSION REVIEW DATE(S): August 13th 2020

PREVIOUS COUCIL REVIEW DATE(S):

RECOMMENDED MOTION:
Direction on a proposed ordinance

SUMMARY:
Proposed updates and changes to the Tree and Vegetation regulations will be presented for discussion.

BACKGROUND: City Council directed the Planning Department to pursue updates to these chapters in May 2019 after discussion and review of a report generated by a team of consulting arborists.

ATTACHMENTS:

Community Forest Best Management Practices Manual



2020

City of Bainbridge Island
Bainbridge Island, WA

First Draft: Kevin McFarland
Second Draft: Tree Solutions Inc., Ann Hirschi & Eliza Davidson
Revised – 2010 by Community Forestry Commission
Revised – 2020 by Nick Snyder, City Arborist PCD

BAINBRIDGE ISLAND COMMUNITY FOREST
BEST MANAGEMENT PRACTICES

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INTRODUCTION

Bainbridge Island is endowed with abundant trees that give the landscape a special, forested character. This “Urban and Community Forest” is the sum total of trees in both our urbanized and suburban-rural “interface” areas, and its many benefits are well described in the 2006 **Community Forest Management Plan**. Our community forest is a source of pride and identity for Island residents. The State of Washington and the National Arbor Day Foundation has recognized Bainbridge Island as a **Tree City-USA**.

Our present challenge is to maintain enough healthy tree canopy to safeguard forest benefits for generations yet to come. Facing intense development pressure, our community is well served by making good use of every setting where trees can - or already do - grow. Some loss of trees may be inevitable as Bainbridge Island matures, but we still have abundant opportunities to fortify our common forest, where we live, shop, drive, play and exercise, worship, learn, commune with nature, and send our storm water. Available settings run the gamut from wild to urban. With commitment and foresight, we can accommodate trees almost anywhere.

Sustaining trees in Bainbridge Island’s already-developed areas presents a great challenge, and entails careful planning and vigilant maintenance. Also, after more than a century of settlement, the vestiges of native island forest are increasingly rare and vulnerable. To meet these formidable challenges, the City and local citizen leaders serving on the Community Forestry Commission together have developed a **Community Forest Management Plan**. This plan has built the foundation for this **Community Forest Best Management Practices Manual**.

The BMP Manual **provides a toolbox** of standards needed in order to reach CFMP goals for tree preservation, management and replenishment for future generations. The goal of this document is to assemble the best available science and most widely accepted practical and professional techniques now in use in urban forestry. This BMP Manual should be reviewed and updated periodically, because, like trees, knowledge is dynamic.

CFMP and BMP Manual: What Is the difference?

Community Forest Management Plan (CFMP) 2006	Community Forest Best Management Practices (BMP) Manual 2007
<p>Defined: A roadmap for maintaining the ecological function and benefit of Bainbridge Island's forest, while integrating trees as green infrastructure in the developing urban landscape.</p>	<p>Defined: A tool box of standards for achieving the Island goals described in the CFMP for tree preservation, tree management and planting new trees for future generations.</p>
<p>What? Current State of the Community Forest:</p> <ul style="list-style-type: none"> • A mixed deciduous and coniferous forest with most trees on private land. • Island tree canopy cover was 72% in 2004, only 42% in Winslow and falling fast. 	<p>What? Tree Basics:</p> <ul style="list-style-type: none"> • Structure & Growth - Roots, Trunk and Canopy • Spare that Tree! - How to protect what we have (root zone, soil health, construction impacts). • it's not just the trees; it's the forest as well.
<p>When? Future Forest: Maintain a 70% canopy cover for the Island and 35% for Winslow.</p>	<p>When? Future Forest: Ongoing actions to ensure future canopy cover (Tree siting, planting & maintenance techniques, tree risk management).</p>
<p>How? Implement Plan Policies and Actions:</p> <ul style="list-style-type: none"> • Protect and restore existing tree resources • Promote urban tree management • Enhance community awareness • Control invasive species destructive to forest health • Use the BMPs to make it all happen! 	<p>How? Provide and Maintain Trees for Specific Situations and Land Uses:</p> <ul style="list-style-type: none"> • Urban Core • Streets & Roads / Parking lots • Residential settings • Institutional settings • Natural Areas, Green Belts and Environmentally-sensitive Areas.

This document is intended for builders, developers, landscape contractors, city planners, inspectors, engineers and operations crews, architects, landscape architects, garden designers, wetland and restoration specialists, heavy equipment, tree care & landscape maintenance operators, homeowners and do-it-yourself gardeners, community volunteers and civic leaders.

“Best management practices (BMPs)” means:

Conservation practices or systems of practices and management measures that:

- a. *Control soil loss and protect water quality from degradation caused by nutrients, animal waste, toxins, and sediment; and*
- b. *Minimize adverse impacts to surface water and groundwater flow, and to the chemical, physical, and biological characteristics of critical areas.” (from City of Bainbridge Island Code)*

SECTION 1: TREE BASICS

Overview

Trees form an essential part of our infrastructure, just as do roads, schools and our water supply. Bainbridge Island's trees are a valuable asset, and unlike other types of infrastructure, appreciate in value over time. Trees perform essential biological functions that benefit the environment and all of us in substantial ways.

Trees perform hard labor by accomplishing the following:

- intercepting rainwater (100 mature trees catch ~250,000 gallons per year) and dispersing it more slowly into the ground
- filter smoke and other fine particulate matter from the air – Evergreens are the most efficient at this
- cleansing the air by consuming carbon dioxide and producing oxygen (100 trees remove~ 5 tons of CO₂)
- buffering noise, dust, fumes, wind and glare
- sheltering wildlife and protecting native biodiversity
- creating calm settings to rejuvenate and relax
- creating a pleasant and safer sidewalk environment
- shading street pavement, increasing its useful life
- screening the view of parking lots and utility areas from public streets
- encouraging safe driving with street trees and planting islands
- building civic pride by enhancing the beauty of public thoroughfares
- increasing aesthetic and monetary value of property
- sheltering buildings from summer heat and winter chill, reducing electricity consumption
- buffering extremes of precipitation and heat accompanying climate change

Unlike other assets, trees are *living* things with biological requirements for survival and growth. “Operating Instructions” for trees aren’t universally understood by everyone, whether homeowner, student, contractor, merchant, public servant, retiree or design professional. This chapter provides information to fill common knowledge gaps, about both individual trees and trees growing together as the urban forest.

Trees suffer abuse, especially where they come into contact with the human environment . Although damage is generally not intentional, it does represent a lack of understanding and respect. Because trees can absorb and adapt to some degree of mistreatment or neglect, we may not notice signs of decline. Eventually, cumulative stresses reach a tipping point, beyond which a vulnerable tree can’t garner enough soil nutrients or sun energy to photosynthesize at a rate that will keep it alive.

If we understand **how trees grow** and how they function in the environment, we can prevent damage and manage them proactively. We must plan for growth **with trees in mind**, using the principles of “low impact development” in relation to our community forest, so we can improve the odds that future Islanders will enjoy the benefits of a healthy green canopy.

What Tree Biology teaches us:

- Trees cannot run away – protect their roots or tops!
- Trees need oxygen, water & light – please don't cut off supplies!
- People and trees share space – think of BOTH before changing it.
- There is strength in numbers– consider the forest and soil, not just the trees.

1.1 Individual Tree structure and growth

Understanding tree biology is the starting point for appreciating and using best management practices for planting, protecting, and maintaining trees.

Definition of a tree:

A woody plant that grows to 15 or more feet in height, usually with a single trunk, growing to more than 3 inches in diameter at maturity, and possessing an upright arrangement of branches and leaves.

Trees are commonly referred to by their size at maturity:

- Small Trees: less than 25 feet tall
- Medium Trees: 25 to 50 feet tall
- Large Trees: more than 50 feet tall

Trees, like people, are complex organisms composed of many types of cells arranged into tissues and organs. New cells are produced in specialized structures called **meristems**. Those located at the ends of roots and shoots produce elongation, resulting in new growth, those near the periphery of stems increase a tree's girth.

Unlike people, trees are only generating systems: they cannot regenerate cells in the place of damaged or destroyed cells. This means that when a tree trunk is wounded, it can only "wall off" the damaged area and grow new wood around it. The damage itself cannot be mended.

Starting from the ground up, the three main parts of a tree are: roots, trunk and crown.

1.11 The Roots

The three most important things to know about tree roots are:

- There are two basic types of roots: **Woody and non-woody**
- 95% of tree roots are located in the top 18 inches of soil
- Tree roots spread far wider than the canopy edge...as much as 3 times

Tree roots grow out from the trunk a distance of 2 to 3 times the radius of the tree's crown. A tree that is 80 feet tall can have roots extending out in a 240 ft. diameter circle. Roots are located near the soil surface like a disk, to access needed nutrients, moisture and oxygen. Roots rarely penetrate deep into the earth.

Woody roots are the underground structures that **anchor** the tree. They are large, ropelike, and usually number from 4 to 11. They taper rapidly as they move away from the trunk. Woody roots develop in response to the tree's particular environment, working together to keep it stable in wind and extreme weather.

Non-woody roots are many, small and fibrous. They absorb water and nutrients essential for tree survival and growth. On their fine root hairs grow beneficial fungi that form *mycorrhizae*, structures that mutually benefit both the fungus and the tree. Mycorrhizae increase root surface area, thus maximizing the water and nutrient uptake passing into the water-transporting cells within the wood of the tree.

Root Depth and Spread can be difficult to measure exactly. In the PNW it is widely understood that up to 95% of a tree's root system is within the first 18 inches of soil depth. This means that even activity only within the first few inches of soil can have a serious impact to tree roots. While relatively limited in depth tree roots are not usually so confined in terms of spread. Roots routinely extend up to two times the distance of the dripline and some species have been documented with roots extending over 8x the distance of the dripline!

What does this mean in the Practice?

- Excavating through a tree's root zone could sever one or more of the structural roots anchoring the tree. The tree could be destabilized and pose an increased risk of failure during an extreme weather event in the future.
- When soil in the root zone is compacted for any reason (by, heavy equipment use, construction, vehicle parking, even heavy foot traffic) the air spaces (pores) that make soil porous and allow non-woody roots to function, are crushed. Without these pores, feeder roots die and the tree begins to starve.
- Compacted soil leaves less space for water to seep down into the root zone. The results can be ponding and poor drainage, surface run-off and dry soil below.
- Leveling of a site by the addition of fill can result in roots not being able to obtain enough oxygen.

1.12 The Trunk

The trunk is the main woody stem of the tree that supports the crown. While most trees have one stem or trunk, other trees, such as vine maples, are characteristically multi-stemmed. Carbohydrates and other substances necessary for tree growth are stored in the trunk, roots and other woody portions of the tree.

Beneath the bark—the outer protective layer that covers the trunk, limbs, branches, and roots—there is a very thin layer of specialized cells known as the **cambium layer**. This is where growth in trunk and root diameter takes place each year. It also functions as the nutrient transport system for the tree. Water is transported up through the trunk in vascular tissues (**xylem**) to other parts of the tree. Sugars produced in the leaves flow down through the trunk in other vascular tissues (**phloem**) servicing all parts of the tree including roots.

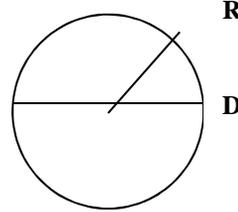
Every growing season, cambium cells divide repeatedly to form a new layer of phloem to the outside and an annual ring of new wood to the inside. The wood laid down in the early part of the growing season (early wood) contains more space for water conduction than the denser late wood that supplies more mechanical strength.

The annual rings produced by the cambium are not of uniform width or wood quality throughout the entire tree. Instead, the cambium responds to the prevailing load at any particular point by regulating the quantity and quality of new wood that it produces. By looking at a cut stump you can identify growth rings that are larger during rainy years, or asymmetrical where they have produced reaction wood to respond to a prevailing wind.

Measuring Trunk Diameter

Tree size is often measured as DBH or “diameter at breast height,” which is at 4.5 feet above ground. You can calculate trunk diameter by measuring trunk circumference at 4.5 feet above the ground with a standard tape measure and dividing by pi or 3.14, a constant. A standard forester’s tape converts a circumference measurement into diameter measurement.

$$\text{Diameter} = \text{Circumference} \div 3.14$$



What does this mean in the practice?

- When a backhoe clearing a building site removes a notch of the bark from a tree that is scheduled to be retained, its cambium layer has been damaged. Loss of this vascular life support system will make it more difficult for the tree to recover and thrive.
- Often, the diameter of the trunk is a better indicator of a tree’s age than the height. –Some trees, by species characteristics are stouter per height than others. A crowded conifer forest will have tall trees reaching for light with narrow stems and a low live crown ratio.
- Trunks enlarge yearly but only become taller by adding new tissue at the top. Branches don’t move upward as trees grow. Since a limb 4 feet above the ground stays at 4 feet, clearance beneath the canopy does not increase with time. Thus, a sweeping-branched Western red cedar does not make a great street tree in a tight location without surgical pruning.

1.13 The Canopy/ Crown

The crown is the woody and leafy component of the tree. It is composed of large, scaffold limbs that support smaller branches, twigs, leaves, and buds. The main function of the leaves is to capture energy from sunlight and convert it to energy stored in the form of sugars and starch.

This process is known as photosynthesis.

The sugars are transported in solution to the parts of the tree where they are needed for growth or for storage--downward and inward through the stem and roots, and a short distance upward into the growing shoots.

New growth appears as meristematic cells divide at the tips of shoots and roots.

Tree crown size is measured in square feet, based on the diameter of the branches at their greatest reach. In urban areas, a very small canopy is 150 square feet . A large canopy ranges to 1600 square feet (40 x 40 feet) or more where favorably sited.

What does this mean in the Real World?

- When planning new construction near a tree to be preserved, consider how upper building stories may impact tree branches. Branches can be temporarily roped back to avoid being torn off by equipment or placement of scaffolding. Buildings could have upper levels set back to accommodate wide canopy.
- Pruning a tree too radically greatly reduces leaf area and the tree is unable to photosynthesize at its previous rate. This throws roots and shoots out of balance and may cause shock and decline.
- Crown width indicates the “drip line”, even though roots usually extend at least another crown width beyond that. The area below the drip line is known as the Critical Root Zone (CRZ) that needs protection to ensure tree survival.
- If a tree planted below utility lines is a species that grows to great stature, it will require maintenance pruning indefinitely. This poses unnecessary hardship on the trees manager AND the tree. Remember to plant the “right tree in the right place.”

1.2 What is the Community Forest?

Understanding how a single tree functions is vital to giving it the right care. It is equally vital to think of trees together in groves, stands, woodlots and remnant forests. Because tree groves provide exponentially greater public benefit in terms of storm water interception and porous soils, we should consider the forest, not just the trees.

*The Community Forest Management Plan (CFMP) identifies the **Community Forest** as **any individual trees, small stands of trees or forested areas, and associated understory plants, that are found growing in natural and built environments, and which contribute important ecological, social and/or economic benefits to the community.***

The CFMP discusses the ecosystem services that trees provide such as improved air quality, storm water interception, reduction of soil erosion and energy costs, and wildlife habitat...not to mention the general enhancement of our quality of life. In cities larger than Bainbridge this collective green infrastructure is also known as the **Urban Forest**.

Why does it need Managing?

There are often conflicts where people and trees coexist. As the Journal of Arboriculture stated in January 1997: “*We cannot separate sustainable urban forests from the people who live in and around them...Urban forests require active consistent, continuing management.*”

The study and practice of community and urban forestry continues to evolve as municipalities recognize the huge value that trees provide. Increasingly, this value is being quantified and progressive communities like Bainbridge Island see their forests as necessities, not just amenities.

SECTION 2: TREE PROTECTION

Overview

We have chosen to place tree protection practices near the front of this manual. An important aspect of tree protection is to **first save the best of the trees you have**. This option will *always* preserve greater ecological value, higher real estate value and probably cost less than waiting for newly planted landscape trees to mature. While not feasible in all cases, it is sensible to survey existing trees first and design for protection, rather than assume a new structure can be built right next to a prized tree without consequence.

When contemplating new construction, paving or a building addition, a property owner should first obtain a site survey. The survey will locate accurately the edges of your property and the public right-of-way, as well as existing trees. Local codes encourage saving a site's significant trees. Thoughtful site planning with trees in mind is the best first step, and buildings designed to allow retention of worthy trees have instant payback in amenity value.

If site soils are compacted into hardpan by heavy equipment, vehicles or stored materials, they will no longer be porous enough to absorb storm water or provide room for roots. What is done to soil cannot easily be undone, so it is wise to understand and protect soil before beginning construction. Protecting the soil also helps ensure a future for valuable site vegetation, especially trees.

This chapter includes information on maintaining healthy soils. The humble material beneath your feet is actually:

- The basis for stable building foundations
- The sponge that soaks up Northwest rains
- A factory of organic decay and renewal
- Home for vegetation that will provide returns well into the future.

2.1 Identification of Significant and Valuable Trees

A "**significant tree**" as defined in BIMC 18.36 has 4 possible definitions:

1. In the Mixed Use Town Center (MUTC) and High School Road zoning districts, any tree eight inches in diameter or greater, measured four and one-half feet above existing grade
2. *Deciduous trees outside the MUTC and High School Road Zones: 12 inches in diameter or greater, measured four feet above existing grade.*
3. *Evergreen trees outside the MUTC and High School Road Zones: 10 inches in diameter or greater, measured four feet above existing grade.*
4. *all trees located within a "critical area and/or buffer" as defined in BIMC Chapter 16.20.*

Begin with an inventory of what you have. Assemble a list of trees, noting species, size and condition. A general rule of thumb is that groups of trees with associated understory plants are easier to protect and return greater value than single trees preserved in the center of a building site.

Although it is impractical to put time and money into saving a tree that is terminally flawed or diseased, it is equally important to understand the value that tree canopy provides to the overall ecological health of Bainbridge Island. A Tree Professional should provide unbiased information on tree health and will not provide justification for tree removals, if none exist. They can also help dispel fears of tree failure, which can lead to unnecessary removals of healthy and structurally sound trees.

Landscape buffers are almost always required for new subdivisions or commercial projects. On Bainbridge Island, these narrow strips of remnant forest more often than not include Douglas fir or other native conifers that are tall and slender with little canopy. Trees such as these, that begin their lives surrounded by forest, produce foliage at the top, where sunlight is abundant, while their lower branches often die back from light starvation. When site clearing creates a new woodland edge, these slim trees are exposed to a condition to which they are not adapted – standing alone. Blowdowns or breakage frequently result, and property owners understandably begin to fear tall trees.

This problem can be mitigated by planting smaller trees and shrubs that normally grow at the forest edge, removing conifers close enough to pose a risk to people or buildings and replanting young trees that can adapt to buffer conditions. The best solution is to preserve larger blocks of vegetation where the perimeter to area ratio is as low as possible.

2.2 Protection and Conservation During Construction

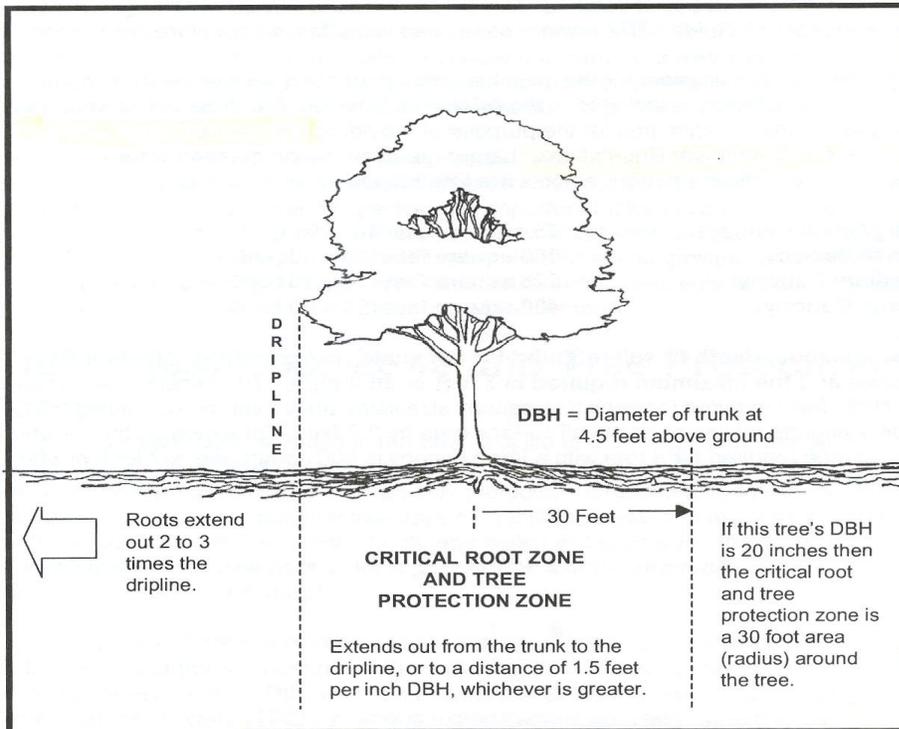
Please reference City code requirements, available from the City of Bainbridge Island Planning and Community Development Department, (206) 842-2552.

Property owners should meet with the City arborist or planner, architect, developer, and contractors to discuss tree protection issues and required permits before parties become invested in a particular site plan. This will save trees, money and headaches down the road.

2.21 Critical Root Zone (CRZ) and Tree Protection Zone (TPZ)

Most of a tree's roots lie within its dripline (or under-canopy area). Ninety-five percent of the roots of most trees grow in the top 12-18" of soil. Roots that supply nutrients and water concentrate just below the soil surface. Since fine feeder roots can only penetrate a thin layer of soil, they must spread far out from the tree to adequately supply it, well beyond the edge of the canopy above.

For existing trees, there is a minimum amount of space, above ground (for trunk and crown) and below ground (for soil health and the root system) needed to sustain a tree and preserve its health. The ground area is called the **Critical Root Zone (CRZ)**. The CRZ is usually far smaller than a tree's entire root spread. Thus, protecting the CRZ saves a portion, but not all the roots. The greater the protected area, the better a tree's odds for survival. You can calculate the CRZ as illustrated and described below.



The CRZ falls within an imaginary circle on the ground with a radius of between 1 and 1.5 feet for every inch of tree diameter at 4.5 feet above the ground, (but never less than a seven-foot radius). For example, a tree with a trunk diameter (dbh) of 20 inches has a CRZ of 20-30 feet (20 inches x 1-1.5) around the tree.

2.22 Activities Requiring TPZ Determination

The **Tree Protection Zone (TPZ)** is the area to be fenced around the CRZ, in this case having a 20- 30 foot radius, and a diameter of 40-60 feet. When this configuration is not practical, a Tree Professional, based on the location of a specific tree's structural roots and other site conditions, can establish a TPZ in the field.

A TPZ is a restricted activity zone where no soil disturbance is permitted. Site work planned near the critical root zone (CRZ) of a single tree or groups of trees to be preserved, requires a TPZ. TPZ fencing should be in place before undertaking any activities that might involve trenching or other disturbance to the tree's roots, such as:

- Access roads
- Staging, storage, and temporary parking areas
- Paving or other impervious surfaces
- Temporary utility lines
- Installation of pipe drainage, irrigation or other services
- Stormwater management devices
- Grading that requires cut and fill

2.23 Activities Prohibited within TPZ

- Storage or parking of vehicles, building materials, refuse, excavated spoils or dumping of poisonous materials on or around trees and roots such as paint, petroleum products, concrete or stucco mix, dirty water
- The use of tree trunks as a winch support, anchorage, as a temporary power pole, sign posts or other similar function.
- Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches and other miscellaneous excavation
- Soil disturbance or grade change
- Drainage changes.

A site visit by a Tree Professional is needed if advance planning fails and a trench must pass through the TPZ. Depending on specific site conditions, tree species, health, and position of any potential targets, trenching may be approved. If not, it could require risk mitigation, restoration, and payment of a bond by the contractor. Alternative remedies can include tunneling or re-routing utilities, and relocating or re-engineering walls to avoid roots of important trees. Walls and pipes can be moved, but a damaged tree cannot be repaired or readily replaced.

2.24 Activities Permitted/Required within TPZ

- Mulching. During construction, spread wood chips within the TPZ 4" to 6" deep, leaving the trunk itself clear. Mulching helps prevent inadvertent compaction and moisture loss from occurring. 2-inch unpainted, untreated wood chips or equivalent is recommended for mulch material.
- Root Buffer. When areas under the tree canopy cannot be fenced, create a temporary buffer to cover the root zone (such as wood chips and plywood) that remain in place until final grading.
- Irrigation, soil aeration with an air spade, fertilizing or other beneficial practices.

2.25 Protective Measures

Protective Measures for Retained Trees, Street Trees or Designated Trees

Tree Protection Fencing

- keep branches and foliage clear from contact by equipment, materials and activities;
- preserve roots and soil conditions from compaction;
- make it clear to all contractors on site that the tree protection zone (TPZ) cannot be violated.

Recommended fencing includes orange plastic or chain link fencing that is 4– 6 feet tall. For best results, use **chain link fence** on galvanized poles. After placement under supervision of a Tree Professional, this fencing will enclose the entire TPZ for the duration of the construction project.

To protect street trees, a **plywood box** that physically protects the trunk from gouging by nearby equipment is the best option.

Prune trees with branches that hang over into the building envelope zone before construction damages them. They may be temporarily roped back to allow for clearance during construction. A Tree Professional can perform this type of work in a way that will protect the tree.

Post a Sign

A brightly colored sign shall be posted on each fence and /or plywood box enclosure to clearly state: *WARNING - Tree Protection Zone*

Erosion Control

If a tree is adjacent to or near a steep slope or other critical area, approved erosion control or silt barriers may be necessary to prevent siltation and/or erosion within the TPZ. **Do not install silt fence within the Critical Root Zone, CRZ.** Far too often contractors trench through a tree's root zone to meet requirements for silt fence installation, causing more harm than good. Protective mulch (above) and permeable erosion control blankets can substantially reduce runoff within the CRZ.

Root Pruning

See Section 4.4 (Root Pruning) if damage to tree roots occurs during excavation on a building site. It is far better for the tree to avoid root damage in the first place.

2.3 Post-Construction Management

Once construction is complete and the site clean, the arborist should reassess the site and identify maintenance measures that may be required for retained trees. Factors to consider include:

- Stress or damage to protected trees and associated vegetation/understory
- Risk assessment
- Odds for the trees to remain healthy in the altered landscape

A maintenance plan should help relieve tree stress from construction damage, including:

- disruptions to drainage
- restricting impervious surfaces or compacted soil
- impacts of fill
- impacts of root or canopy loss, or trunk damage
- potential increased storm water runoff and erosion due to tree/vegetation loss
- interference with, or impact on, surviving or neighboring trees

2.31 Maintenance and Monitoring Strategies

Successful tree protection does not end with construction, but continues with maintenance that takes place over a number of years. It requires a sustained stewardship commitment, fulfillment of after-care responsibilities, and may require that a landscape maintenance surety device be in place before granting a Certificate of Occupancy.

Regular site monitoring and weeding are of great importance following construction. Additional management includes mulching with compost or arborist's chips and summer irrigation for the first 3 years until retained trees have recovered from construction stress and new plants are well established. During the growing season, check at least monthly that weedy plants are controlled before smothering or setting seed, and that sufficient moisture is reaching plant roots to prevent wilting, browning or dieback.

IMPORTANT NOTE:

Avoid excessive or regular watering on or near the tree trunk and do not plant incompatible, water-loving plants within the tree's dripline. Combined with poorly-drained soil, these factors often activate normally dormant fungi to become opportunistic and infect the tree, causing the decline and eventual death of the tree. This decline can be slow and may not be evident for many years.

Performance Standards to track success of vegetation establishment (or restoration) should be clear. It is imperative to monitor tree and/or plant condition at the beginning and end of each growing season, relative to these standards. If problems arise, modify maintenance methods or frequency as needed. **Target success rates** should fall within the following guidelines:

- 95% survival of retained trees protected by approved plan
- 60-80% survival of new trees and plant material after 3 years
- Tree and shrub cover establishment resulting in 30-50% growth after 3 years
- After initial clearing of invasive species all invasive grow-back should be aggressively addressed to prevent infestation for, at minimum, 3 years
- Any newly installed plants that die should be replaced within 3 years of planting

2.4 Soil Health

Preserving soil health is essential to preserving tree root health. Construction is one of the main activities responsible for *damaged* soil. While it appears that some trees will grow anywhere, most trees are particular about the soil conditions under which they will thrive. All roots need porosity in the soil to grow towards nutrients and water.

2.41 Soil Attributes

Native soils are highly complex systems that provide essential ecosystem services including bio-filtration of pollutants, nutrients for plant growth, and the storage and slow release of stormwater. The ability of soil to effectively store and slowly release water is dependent on soil texture, structure, depth, organic matter content, and biota (Washington Organic Recycling Council (WORC), 2003).

Soil fertility can be evaluated using standard tests that measure the amounts of phosphorous, potassium, calcium, magnesium, zinc, and manganese in a sample. Soil tests can determine the soil pH (acidity/alkalinity), concentration of key trace elements, and the amount of organic matter present by weight. The Kitsap County WSU Cooperative Extension Service provides soil sampling advice and soil sample analysis services. Special tests can determine the presence of soil pathogens affecting plant health.

2.42 Organic/Hydrologic Soil Balance

Organic matter is the critical component of a functioning soil system. Typically, native Puget Sound forest soils have an organic matter content of 4 to 6 percent and the sub-soils less than 1 percent.

Construction activity removes the upper layers of soil, and site equipment compacts exposed sub-soils low in organic matter. This alters the site's hydrologic characteristics by converting the predominantly subsurface flow regime of the pre-disturbance site to primarily overland flow (*Low Impact Development Technical Guidance Manual for Puget Sound*, 2005).

To restore the hydrologic and other environmental functions of disturbed soils on developed sites, added topsoil should have the following characteristics:

- A minimum organic matter content of 10 percent by dry weight for all planting beds and other landscaped areas (except turf requiring access during wet months)
- Organic matter content in turf areas that requires maintenance or supports foot traffic during the wet months should be 5 percent by dry weight
- PH between 5.5 and 7.0 or a pH appropriate for installed plants – Some acid loving plant such as conifer require a pH of 4.0 to 5.7.
- A minimum depth of 8 inches (except in TPZ)
- Planting beds mulched with 2 to 4 inches of organic material
- Subsoils below topsoil applications should be scarified to a depth of a least 4 inches and some topsoil material incorporated to prevent stratification

2.51 Soil maintenance: Enhancing Soil Composition

When beginning a construction project where retained trees will be protected:

Set Aside and Protect Native Soil and Vegetation Areas

The most effective and cost efficient method for providing the hydrologic benefits of healthy soil is to designate and protect native soil and vegetation areas that already exist on the site.

Stockpile Topsoil from Cleared and Graded Areas and Replace Prior to Planting

Strip and stockpile topsoil in approved locations. Cover with weed barrier or other breathable material that sheds moisture, yet allows for air transmission. Before replacing, test stockpiled material and if needed, amend with organic matter or topsoil to achieve required organic content to an 8-inch depth where redistributed. Replace stockpiled topsoil prior to planting.

If replaced topsoil plus compost or other organic material will amount to less than 12 inches, scarify or till subgrade to achieve 12 inches of loosened soil after topsoil and amendment are placed. The entire surface should be disturbed by scarification, and then dressed with the amendment. **Do not scarify (roughen) soil within drip-line or determined TPZ of existing trees to be retained.** To reduce damage to roots within 3 feet of tree drip-line or TPZ, incorporate amendment no deeper than 3 to 4 inches.

Import Topsoil that Satisfies Required Organic Matter Content Standards

If topsoil from the site is inadequate, bring in good quality organic compost and apply and incorporate as described above. Imported topsoil that is not blended into the subsoil layer can cause serious drainage and plant establishment problems.

2.52 Soil Stresses and Mitigation Measures

During development, compaction of the soil is the largest single factor responsible for the decline of older trees. Ninety percent of the damage to the upper eighteen inches of soil occurs with the first pass of heavy equipment – and **cannot be reversed**. Every effort must be made to avoid compaction of soil porosity within the TPZ. Correct placement of the TPZ fencing and strict adherence to the “no-fly” zone will prevent soil compaction. If, however, the completed development results in soil compaction near the trees that are to be protected, there are ways to help reduce impact injury.

If a compaction event does occur to the upper 12-inch soil horizon, one or more of the following mitigation measures, performed under the supervision of a Tree Professional, can help:

- Aeration system
- Vertical mulching
- Soil fracturing
- Core venting
- Radial trenching
- Deep mulching
- Another method recommended by an ISA Certified Arborist

Mitigation for drought stress and excess soil moisture is covered in Chapter 4.2 Watering and Irrigation.

SECTION 3- TREE SELECTION AND PLANTING

Overview

Trees should be chosen carefully, since their value increases over the decades, and is fully achieved only if growing site and species are well matched. Bainbridge Islanders can grow a wide variety of native and ornamental species, in a range of habitats. Site characteristics, aesthetics, and habitat value should all be evaluated before deciding which tree fits best.

The tree itself should be of good quality, regardless of size. Flaws in nursery stock often cannot be corrected, and may prove fatal over time. Quality matters. The City has developed an approved Landscape Materials Matrix (Appendix J), and can be used to select trees and shrubs.

Northwest native species contribute special environmental and heritage value, and are highly recommended.

3.1 Tree Selection Criteria

Potential trees need to work for the environments they will call home. A tree can't move; it can only try to adapt. Species characteristics are genetically derived, based on habitat of origin. Since neither site nor species attributes are easily changed, both must be considered in advance to ensure a successful outcome.

Before buying a tree, investigate key planting site characteristics:

- Light level (deep shade, open shade, partial shade, full sun, extreme exposure)
- Soil type (sand, silt, clay, gravelly, glacial till, humus, loam, bedrock)
- Availability of water (droughty or saturated soils, well-drained or moisture retentive soils, seasonal fluctuations, perched water table)
- Size of intended planting area (above or below ground restrictions)

If a particular site presents multiple challenges based on this evaluation, another planting location might be a better choice. If your heart is set on a certain tree, seek out a more compatible spot if necessary. For multiple-tree planting areas, the same principles apply, and the match must work for all selected species.

With site constraints in mind, the next step is to choose a suitable species among the huge range of available options. It is at this point that landscape character and desired aesthetic or functional attributes come into play. A good plant list provides detailed information to help filter options:

- Tree size (height & spread, ultimate stature, longevity & growth rate)
- Environmental tolerances (light, water, pollution, soil type & pH, etc.)
- Seasonal attributes (flower, fruit, bark, fall color, silhouette, etc.)
- Functional attributes (screening, light shade, fragrance, wildlife value, etc.)
- Drawbacks and conflicts (fruit and leaf drop, shallow roots, failure profile)

As a final selection step, you can seek out examples of good candidate species in a nursery, park or mature public or private garden such as the Island's own Bloedel Reserve. Looking at trees in actual landscapes is invaluable for envisioning a future tree's character and stature. Photos in books or on-line are also helpful. This deliberate process helps develop familiarity with both a tree and its landscape home, and provides the basis for wise decisions.

3.2 Tree Quality Standards

All trees planted on Bainbridge Island, as either street or landscape trees, should meet the standards defined in American Standard for Nursery Stock (ANSI Z60-1-1996). This standard specifies height, caliper, and rootball diameter for nursery stock. In addition, it provides standards for container tree stock and shrubs.

In addition to specifying that stock meet the ANSI standard, trees selected should:

- Have strong central leaders for all but small or multi-stemmed, spreading trees
- Have symmetrical canopy and evenly-spaced scaffold branches
- Show evidence of cultural pruning by the nursery, including corrective pruning and crown raising but without extensive heading-back (which creates branch congestion)
- Be free of damage from nursery lifting, insects, diseases, and other pests
- Have intact rootball, not broken from rough handling.
- Have weed-free, non-desiccated rootball or container soil

3.3 Miscellaneous Material

3.31 Stakes

Not all new trees need staking. In fact staking can lengthen the time it takes a tree's roots to take hold in the soil. Trees planted in natural areas as part of restoration efforts, or those in protected areas do not need staking. Movement of the young tree's stem is important for developing trunk taper, which provides future strength. The use of planting stock with more substantial stem is preferable to staking.

In more urbanized settings like Winslow, where highly exposed to wind, or where there are close encounters with people and vehicles, new trees should be staked, but for **one year** only.

Install stakes and ties immediately after planting. Use stakes of sound, untreated wood, approximately 2 in. x 2 in. or 2 in. diameter, 6-8 feet long (depending on tree size), and pointed at one end. Use plastic chain-link ties to secure the tree to the stakes. Remove thin bamboo stakes and trunk-binding tape that come with some container-grown trees. Tape can girdle a tree as it adds growth rings, strangling or weakening it structurally to the point of failure.

Remember to remove all stakes after 1 year, except where necessary for trunk protection.

Do not drive a stake through a tree's root ball

Do not tie a tree directly to a stake (this immobilizes the trunk and inhibits proper growth)

Do not leave stakes – and especially ties – in place long-term

3.32 Mulch

Mulch all trees, shrubs and other plantings with an organic mulch that has been previously approved by a qualified tree professional. A mixture of composted wood chips and compost is ideal, but wood chips alone are usually sufficient. Avoid using peat moss or fine bark alone, since these actually shed water when dry, deflecting moisture from thirsty plants.

- Place mulch 4 to 6 inches deep around trees and shrubs out to the edge of the drip line. Take care that no mulch touches the trunk itself, even on small plants.
- Do not pile or mound mulch against tree trunks; This smothers roots and invites basal rot or insect attack.

3.33 Tree grates

Where sidewalk width is less than 8 feet and new trees are to be installed in tree wells, metal tree grates can successfully protect roots from soil compaction. Grates should be approved by Bainbridge Island Public Works Department, and should be at least 4' x 4', with breakouts to accommodate future trunk growth. Tree grates offer a good opportunity for integrating work of local artists in the Winslow core. Tree grate areas should be cleaned and re-mulched periodically, and inspected to be sure trunks have room to expand. Enlarge grate openings as needed.

3.4 Timing of Planting

Overall, Fall is the best time to plant in the Puget Sound region. Mild winters and rain favor root establishment before spring growth spurts. Exceptions are magnolias and a few other species, and conifers in landscape (not natural) areas; these survive better when planted in the spring. Here are guidelines for planting time:

- Balled and Burlapped (B&B) trees and shrubs: October 20th to May 1st
- Bare root trees and shrubs: January 1 to April 1st
- Container-grown trees and shrubs: All year, but best October 20th to May 1st.

Schedule plant purchase and delivery as close to planting time as possible after the site is prepared. Plants that cannot go in the ground immediately upon delivery should be held in a shady location, protected with wet wood chips and kept well watered. Plant within 4 days of delivery if possible.

3.5 Site Preparation

Call for utility locate service prior to digging a tree hole (Dial 811, open 24/7).

A percolation test is required to ensure that there is adequate drainage for planting new trees. A minimum of one test per site shall be reviewed with the contractor and a landscape architect or ISA certified arborist. Mitigation measures shall be applied to locations with poor drainage.

Planting site must be free of weeds, construction debris and spilled materials.

For trees in a confined planter pit or sidewalk area:

- Dig the planting hole to a depth that establishes the top of the rootball 2-inches below the bottom of the tree grate.
- The width of the planting hole shall be at least 4-feet. Scarify (roughen) the sides of the pit.

For trees in all other areas:

The depth of the planting hole shall be no deeper than the height of the new tree's root ball. Trees shall be set at the same relationship to finish grade as they were to the ground from which they were dug. *Beware of excess soil piled up in the root ball or container – find the plant's root flare and remove any soil above this level before (and after) planting.* Excavate the hole a minimum of three times wider than the diameter of the root ball or container, and deep enough to allow the root ball or container to rest solidly on firm ground. If initially dug too deep, refill the hole with mineral soil and tamp to bring root ball or container up to the correct level before proceeding with planting.

3.6 Tree Planting

- Move the tree using only the root ball or container; avoid using the tree trunk as a 'handle' to move the tree.
- Remove ropes, strings, and wrapping from the root ball after the tree has been set. Cut apart the wire basket and remove before backfilling.
- Make sure the roots are not currently buried in their pot or burlap by carefully excavating the surface of the root ball until the first root is found, then stop.
- Prune roots of bare root trees at the time of planting to remove damaged or undesirable roots (those likely to become a detriment to future growth of the roots system). Consult with an ISA Certified Arborist prior to pruning. Bare root trees should have the roots spread to approximate the natural position of the roots and centered in the planting pit. Work planting soil backfill firmly into and around the roots, with care taken to fill in completely with no air pockets. Watering the back fill soil will aid in keeping roots moist and removing air pockets.
- Trees must be plumb and braced in position until prepared backfill has been placed around the root ball.
- Utilize the native soil from the planting hole for backfilling, unless specified otherwise. Studies have shown this is better for long term tree health than potting soil or other amendments.
- Water twice during planting--once when the planting hole is half backfilled, and again thoroughly when full to eliminate air pockets. Soil in the hole should be moistened if necessary before setting the plant. Dry soil can kill fine roots on contact.
- Mulch all trees, shrubs and other plantings as described elsewhere in this manual.

3.7 Recommended Species

Included in the BMP Manual Appendix is a matrix of plant materials recommended for use on Bainbridge Island. All commercial, industrial, and residential projects, whatever the scope, should use this list as the basis for plant selection.

Always select species based on site-specific conditions that affect plant growth: sun exposure, soil type, moisture availability, shoreline conditions, adjacent site improvements, and any particular constraints on space or function. If above- or below-ground utilities are present, plant selection must conform with utility company requirements to avoid conflicts. Otherwise, a promising tree may later suffer damaging root disturbance or disfiguring topping, compromising its longevity and landscape value.

Suggested landscape materials matrix— APPENDIX J

SECTION 4- TREE MANAGEMENT AND MAINTENANCE

Overview

The recommended practices (BMPs) in this section describe basic tree care activities, and when or where to use them. Regardless of their location, all trees require some care, particularly in the early stages of life. The level of care generally increases with the level of human interaction a tree experiences. Established trees in large landscapes, buffers, riparian zones, and drainage areas require little more than periodic inspection and passive protection. Trees growing along road frontages, in parking lots, in plazas and downtown settings, in schoolyards and developed parklands and in some utility corridors require a much higher level of care since our interaction with them is frequent. People have direct impacts on trees, and trees on people. Tree maintenance and management are all about keeping people safe and trees healthy.

4.1 Mulching

Mulching is the application of organic material on top of the ground over a tree's root system, to enhance root and tree growth. The objective of mulching is to recreate the conditions found in undisturbed, natural woodlands. All trees should be mulched regularly unless nature provides it.

The main reasons for mulching are:

- to improve soil moisture retention
- to improve soil structure by reducing compaction and allowing aggregates to form
- to enhance beneficial microbes and soil macro-fauna biodiversity (bugs & worms)
- to protect roots from extreme heat and cold
- to return nutrients to the soil for plant uptake
- to reduce runoff and erosion

4.11 Basic Mulching Guidelines

- Use organic materials such as aged wood chips, leaves, and compost; avoid grass clippings, fir bark, and inorganic materials like plastic and rocks.
- For newly planted trees, mulch the area out to the dripline of the tree.
- For established trees, mulch out to the drip line or as far out as practical. Completely remove underlying turf before mulching. This also can be accomplished by sheet-mulching. Sheet mulching is the practice of laying down "sheets" of cardboard, burlap, newspaper or any other material that will bio-degrade over time underneath a layer of organic mulch.
- Spread mulch in an even layer, 4-6 inches in depth; do not mound the mulch around the tree trunk.
- Keep mulch at least 3 inches away from the tree trunk to avoid creating favorable conditions for disease and insect infestation.
- Mulch twice per year if possible, in late spring and/or in fall as leaves drop.
- Do not use string weed trimmers around the base of trees to remove weeds within mulch beds. Trimmers damage bark and cambium at ground level, which diminishes tree health. Hand pull weeds. Avoid the use of contact herbicides.

4.2 Watering and Irrigation

In this era of diminishing resources, the ultimate goal for irrigation is to eliminate supplemental watering. The reality is that even the most drought tolerant species, well-mulched, require a period of watering to establish root systems and fend for themselves – typically 3 to 5 years. For a variety of reasons, we also sometimes use trees that aren't genetically adapted to our summer drought weather pattern. Without supplemental irrigation, such trees will either die or become stressed, stunted and susceptible to diseases and pests.

4.21 Basic Watering Guidelines

When watering is necessary, follow these basic guidelines:

- Water between 10 p.m. and 10 a.m. if possible. Early morning is best because winds are calmest, and the weaker morning sun will dry wet foliage without damage.
- Water less often with more water, rather than more often with smaller amounts of water. This practice encourages deep rooting. Except trees in containers, no established tree should need watering more than twice weekly.
- Apply water evenly throughout the outermost 75% of the CRZ (drip line).
- Do not directly spray water on tree trunks.
- Apply water slowly to avoid losing it as runoff outside the CRZ.
- Mature trees need approximately 1 inch of water every 3 - 4 weeks. In extreme drought or heat waves, look for signs of distress and water deeply, more often if needed.
- Over-watering can cause as many problems as insufficient watering and symptoms may look the same: wilting, yellowing, dropping leaves, dieback, but usually there is associated soggy soil.
- If you are unsure if your tree needs water, put your finger in the soil and see if it is dry deeper than 3 inches down. If so, water; if not, don't.
- Maintain organic mulch to retain moisture.

4.22 Newly Installed Trees

Newly installed trees, including drought tolerant and native species, are dependent upon supplemental irrigation until established, (3-5 years), but for a minimum of two years. Periods of extreme heat, wind or drought may require more or less water than recommended here. Amounts will vary, depending upon soil composition, heat, wind, rainfall, soil drainage characteristics, and type and extent of ground cover.

During the establishment period, water trees thoroughly to their full root depth as frequently as needed. Develop a schedule for dry months, prior to planting, as follows:

Tree Caliper (inches)	Gallons per Week
1	5
2	10
3	13
4	18
5	23

Alternatively, in the absence of adequate rainfall, apply 1 inch of water per week during the growing season, throughout the root zone of newly planted trees, damaged trees, or trees under stress. Brief Summer rains add little usable moisture to the ground.

4.23 Mature Trees

Established and mature native vegetation should not require watering unless changes have occurred within the tree’s CRZ. Root impacts such as construction damage, grade changes, compaction, root cutting, or other disturbances to the root zone may necessitate watering to improve or maintain the health of the tree. Mature trees could become stressed due to periods of drought and subsequently require watering to sustain them.

Water should be applied over a period of time to thoroughly moisten the soil to a depth of 18 inches or more.

The amount needed depends on several factors, including plant species, current soil moisture, soil texture (sand, loam, clay), and drainage. The amount of air in the soil is as important as moisture. These must be kept in balance to ensure continued plant health.

If soil texture is sandy, trees will need to be watered more frequently than in clay soil. Clay soils have a high water-holding capacity and may only need water during very dry periods. If your soil is compacted, it will be more difficult for water to penetrate the soil and aeration may be necessary.

To determine the amount of water to apply to a tree’s root zone:

- Calculate the radius of the CRZ
- Calculate the number of seconds it takes to fill a 5-gallon bucket of water with the hose or water delivery system you are using
- Match that time to the closest number of seconds listed in the following table
- For tree’s CRZ radius (Step 1) check under this Delivery Rate column to find total application time required to water the tree
- These numbers assume that you are watering the outermost 75% of the CRZ
- This can represent a huge amount of water, take the time to figure accurately.

Approximate Watering Time to Apply One Inch of Water Across Critical Root Zone

Radius of CRZ (ft)	Volume of Water (gals) to equal 1”	Total Application Time (minutes and hours) at a Delivery Rate of 5 Gallons Per x Seconds					
		X =	5 Sec	15 Sec	30 Sec	45 Sec	60 Sec
10	147		3 min	7 min	15 min	22 min	30 min
15	330		6 min	17 min	33 min	50 min	1 hr
20	587		10 min	29 min	1hr	1 hr 30 min	2 hrs
25	917		15 min	46 min	1 hr 30 min	2 hrs 30 min	3 hrs
30	1,322		22 min	1 hr	2 hrs	3 hrs 30 min	4 hrs 30 min
35	1,799		30 min	1 hr 30 min	3 hrs	4 hrs 30 min	6 hrs
40	2,349		39 min	2 hrs	4 hrs	6 hrs	8 hrs
45	2,973		50 min	2 hr 30 min	5 hrs	7 hrs 30 min	10 hrs
50	3,670		1 hr	3 hrs	6 hrs	9 hrs	12 hrs

4.24 How and When to Water

A soaker hose is the best tool for properly watering trees. Position the hose at the dripline and let it run for 1 - 1 1/2 hours at a slow drip so the water has a chance to penetrate the soil. A standard garden hose can be used in place of a soaker hose. Turn the hose on to a slow trickle and set it under the canopy for 2 - 4 hours. Water a minimum of four sites around the tree and out to at least the dripline. Watering should take place during the dry months of the year, historically July-October. Annual weather variations may alter this range.

4.25 Mitigation for Drought Stress

If for some reason watering doesn't occur when needed, make up the deficit as soon as possible by irrigating sufficiently to wet the soil within the CRZ (or on a construction site, the TPZ) to a depth of 18-inches or more. More aggressive options include sub-surface irrigation at regular specified intervals by injecting on approximate 3-foot centers, 10-gallons of water per inch trunk diameter within the TPZ. Apply water slowly to avoid runoff outside of the CRZ. Duration should be until October rains, unless specified otherwise by local authorities or a project arborist. Don't forget to mulch trees to reduce the volume of water required.

4.26 Mitigation for Excess Soil Moisture

Construction on- or off your property can result in excess surface moisture collecting around valued trees. Such changes can stress or put a tree into decline. More water is not always better, especially for long-established trees used to a particular environment. Take measures to prevent or alleviate excess water saturation and sedimentation within a retained tree(s) TPZ due to site construction activity. If a tree's adjacent grade exceeds 8% (23 degrees), silt barriers can be installed outside the TPZ to prevent excessive soil saturation, siltation and/or erosion within the TPZ. Divert water from low-lying areas of trees where it could pool for long periods and stifle roots. Some trees can survive periods of soil saturation, but others cannot. Acceptable levels of saturation vary with tree species, soil type, time of year and the pre-construction growing environment.

4.3 Fertilization

Do not apply fertilizer to newly planted trees, and avoid mixing additives into backfill soil. For established trees in managed landscapes, place 2 -3" of aged manure or compost to tree CRZ and on beds once a year at most, in spring or fall. Unless soil tests indicate deficiencies, a tree should need no further supplemental fertilizer applications. In nature, trees recycle the nutrients they need through leaf and decaying wood returning nutrients to the soil.

When applying fertilizer based upon recommendations resulting from a soil test, use the following guidelines:

- Apply fertilizer when the roots are actively growing--late winter, early spring, and early summer
- Use slow release organic fertilizers with a salt index of less than 50
- Apply fertilizer to the CRZ of trees, from the trunk to the dripline
- For surface applications do not incorporate or till fertilizers into the topsoil
- Apply sub-surface applications of fertilizer where turf or groundcover exists, or where runoff is likely
- Make sub-surface applications of fertilizer 4-12 inches deep, in holes that are 2-4 inches in diameter and spaced 12 to 36 inches apart
- Follow recommended application rates: more is not better, and may pollute the groundwater

4.4 Pruning

For trees in managed landscapes, the most compelling reason to prune is to develop a strong, safe tree structure, or to correct significant defects or damage. Generally, no more than one fourth (25 percent) of the tree's functioning leaf and stem area should be removed within one calendar year. An arborist certified by the International Society of Arboriculture, or supervised by an ISA certified arborist should complete pruning. It should conform to the current American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Pruning), ANSI A300 (2001).

- Excessive Pruning (over 25%) is prohibited except for clearance pruning of overhead electrical utility lines, for traffic safety, or to abate a public nuisance
- Topping is prohibited, unless approved by an ISA Certified Arborist. There may be special cases when it is better to remove large portions of a tree rather than remove it totally.

4.41 Pruning Young Trees

Early structural pruning is a proven, cost-effective measure to improve life expectancy. Added benefits are safer trees with fewer branch failures. Prune newly planted and young trees as follows:

- Newly planted trees should only receive minor pruning to remove dead wood and branches damaged during transport and planting
- Prune in successive years to provide sidewalk and street clearance, improve the branch structure and maintain central leaders
- No more than 25% of foliage should be removed during a growing season

4.42 Pruning Mature Trees

There are seven types of pruning that may be required for use on mature trees. Prior to entering the tree, the tree worker is required to be familiar with these types of pruning as stated in the Performance Standards of the current ANSI A300 (2001).

Types of pruning include:

- Crown Cleaning: selective pruning to remove one or more of the following parts: dead, diseased, and/or broken branches
- Crown Thinning: removal of watersprouts and dead, dying, diseased, crossing, and hazardous branches from a tree
- Crown Raising: lower branches are removed, thus raising the overall height of the crown from the ground
- Crown Restoration: restoring the natural growth habit of a tree that has been topped or damaged in any other way
- Crown Reduction: reducing the height or spread of a tree by performing appropriate pruning cuts
- Utility Pruning: pruning around or near utility facilities with the object of maintaining safe and reliable utility service
- Re-trenchment: pruning that reduces the canopy size of old declining trees to enhance and prolong realized tree benefits.

Climbing and pruning practices should not injure the tree except for necessary pruning cuts; ascent into the canopy should be by rope. Climbing spikes (gaffs) should never be used unless the tree is identified for removal.

4.43 Root Pruning

Protecting tree roots during construction is a primary goal. If tree roots **are** exposed during excavation:

- They must be cut cleanly with sharp hand tools. Preserve the root bark ridge (similar in structure and function to branch bark ridge).
- Use hand pruners, loppers and/or an appropriate handsaw. **Do not** apply wound dressings, as this retains moisture and can encourage decay.
- Directional Root Pruning is the recommended technique, combined with hand excavation around tree roots. With Directional Root Pruning, objectionable and severely injured roots are properly cut to a lateral root that is growing downward or in a favorable direction.
- The project arborist or City Arborist should review the removal or cutting of roots greater than 2 inches in diameter. The recommended review ensures that the stability and health of the tree is assessed.
- If soil and or sub-grade material must be removed from the CRZ, complete by hand excavation, air spade, or water and suction device.
- If backhoe excavation is implemented, over-burden removal should be conducted with the bucket facing the tree(s) and soil removal should be pulled back toward the backhoe or small excavator.
- Don't leave the CRZ exposed overnight. If exposure is to occur, then wet burlap or mulch should be applied temporarily.

4.5 Plant Health Care

Generally, insect populations do not threaten tree health to the point of mortality. More often, when their populations become too great they create a nuisance. If a tree is stressed due to other circumstances, pests can defoliate and severely damage a tree. If action is warranted, **Integrated Pest Management (IPM)** suggests that the pest source be identified and targeted with a specific and timely treatment. To preserve an ailing tree, property owners should implement the following guidelines and treat the problem in a timely fashion to prevent further deterioration of the tree.

4.51 Insect Control

One of the most common and detrimental mistakes made by owners and landscape maintainers is the unwarranted use of pesticides and herbicides. Use the IPM method to diagnose and decide upon an appropriate response. If chemical controls are called for, consult a pest control operator licensed by the Washington State Department of Agriculture (Chapter 17.21 RCW). A licensed applicator should be employed. Nontoxic materials should be used whenever possible to control damaging insects.

4.52 Disease and Decay – above ground

Disease that erodes the health or weakens the structure of a protected or designated tree may compromise the safety of people or property. A Tree Professional should be contacted for diagnosis and remedy options. (See Section 5 for tree risk management.)

4.53 Disease – below ground

Soil borne diseases, such as root rot (*Phytophthora*, *Verticillium*, *Armillaria*, etc.) are present in this area’s soils. Often, a poor landscape design encourages harmful, and often lethal, diseases in surrounding, old trees.

Avoid the following conditions that tend to favor a diseased root environment:

- compacting the soil within a tree’s dripline
- adding fill dirt
- roto-tilling within the drip line
- trenching and removing soil from the tree root area
- excessive or regular watering on or near the tree trunk area
- planting incompatible water-loving plants within the tree’s drip line

Combined with poorly-drained soil, these factors can activate normally dormant fungi that in turn may infect the tree, precipitating the decline and potential death of the tree. This decline can be slow and may not be evident for many years.

4.54 Diagnosing Health Issues; Biotic, Abiotic & Environmental

When planning landscaping around a protected or designated tree, an evaluation of the tree and soil should be performed to determine if a disease is present. If the tree is diseased and landscaping will contribute to decline, permanent damage, or render the tree hazardous, it is the obligation of the property owner to take reasonable measures to reduce or eliminate the conditions that may cause the decline of the protected or designated tree.

To identify cultural conditions that may lead to diseases such as *Verticillium* or *Phytophthora* or other soil borne fungi, consult with a plant health care specialist or Tree Professional.

Plants selected for use under established native trees should not need water more than once a month. Use a drip system to irrigate within the critical root zone of the established tree so that runoff does not flood the area. Procure plant material from a reputable source, to improve odds that new plants will be disease free. Sometimes landscape plants introduce serious pathogens that are hard to control, notably *Phytophthora*.

4.56 Diagnostic Techniques & Applications

The health and the safety of a tree are two distinct and separate functional characteristics. A vigorous and healthy tree may not necessarily be of sound wood or structure. To remove a protected or City-owned tree, it must first be evaluated and the tree determined to be “hazardous.” This must be verified in writing by a Tree Professional with a completed current International Society of Arboriculture ‘Tree Hazard Evaluation Form’ (see CHAPTER 5 Tree Risk Management).

SECTION 5: TREE RISK MANAGEMENT

Overview

Trees provide a multitude of benefits to the people living and working in their proximity. They have ecological and sociological importance as well as documented aesthetic and economic impacts. These benefits are understood to increase with size and age of the tree. In contrast to this fact, trees also become more likely to shed limbs or experience structural failures as they age, and the consequences of these failures can increase with age and size as well. Because trees are living, dynamic organisms it is impossible to maintain trees that are free of risk and reap their benefits. Given this, we must be ready to accept some degree of risk to experience the benefits that trees provide to our built and natural environments. A successful tree risk management regime aims to maximize tree benefits in our community while minimizing tree risk. The interplay between these values may shift over time as our forest ages and deals with increased pressure from climate changes, pests, wildfire, and increased development.

Thus, the tree risk manager should attempt to balance the risks that a tree poses with the benefits it provides to individuals and communities. To assist in this task tree owners should engage a Tree Risk Assessment Qualified (TRAQ) professional to perform a Tree Risk Assessment (TRA).

A Tree Risk Assessment(TRA) is a systematic process used to identify, analyze, and evaluate tree risk. Risk is assessed by categorizing or quantifying both the likelihood and the severity of a the failure. A complete Tree Risk Assessment report should identify the risk level and make recommendations for reducing the risk.

A hazard is widely defined as ‘A likely source of harm’. In relation to trees, a hazard is the tree part or parts that might fail and are likely sources of harm. An entire tree can be considered hazardous when it has been assessed and found to be likely to fail and cause an unacceptable degree of injury, damage, or disruption, or rather that it rates as high or extreme risk

The City of Bainbridge Island Municipal Code defines a Hazard Tree as:

The degree to which a tree is hazardous hinges on three factors:

- The Likelihood of Failure
- The Likelihood of Impacting the Target
- The Consequences of that Failure

In short, hazard designation requires both a tree defect and a proximate target. A giant tree collapsing in a remote forest poses negligible risk, while a single limb dropping on a busy street could cause tragedy. The level of potential risk depends on the size of the part likely to fail (whole tree or a part,) and the frequency that a target is present & occupied.

Three important things to keep in mind:

There are many options for reducing tree risk to acceptable levels without removing the whole tree.

Tree Risk Assessment should never be used as an excuse to remove trees that are healthy and ‘safe’.

All trees pose some degree of risk.

5.1 Responsibility

On private property, the property owner bears responsibility to mitigate or abate a tree with a known hazardous condition. Trees on City property that may be a public safety hazard should be reported to the City of Bainbridge Island, Department of Public Works for an assessment of risk by the City Arborist. Trees of concern on state property should be reported to the respective agency (WA DOT, Parks, etc.).

5.2 Recognizing Tree Risk

Determining whether a tree's defect constitutes a condition that makes it an imminent hazard requires a high degree of knowledge and expertise. In the case of a protected or designated tree, only a qualified tree professional who is familiar with tree physiology, can interpret external signs of weakness, can perform internal checks if necessary, and make recommendations for risk reduction should perform hazard assessment. Hiring a Tree Risk Assessment Qualified (TRAQ) arborist is the best way to be sure your assessor is properly trained. (see Appendix: Arborists – What you Need to Know)

5.3. Managing Public Tree Risk

The City of Bainbridge manages thousands of trees in the public right of way and on City-owned property. The two basic tools for proactive public tree management are a recurrent risk assessment regime and guidelines for risk tolerance. Creating and putting these tools to use requires a long-range commitment to public safety and community forest health.

5.4 Establishing a Recurrent Risk Assessment Regime

A baseline tree evaluation system should be developed in planning sessions before evaluations are conducted. The following represents a suggested approach toward developing a hazard tree detection and correction program for public property.

5.41 Stratify City Owned Property into Risk Zones on a Map

Low risk areas such as woods, open fields or areas with trees and low foot traffic and no built structures, as well as roads leading into such areas.

Moderate risk areas, such as open space with trail systems, open picnic areas without fixed picnic tables, etc.

High risk areas, such as streets, arterials, developed parks, municipal facilities, and other structures, parking lots, bus stops, and any other places where people might congregate.

5.42 Recurrent Site Assessments

Timing and frequency of assessments may vary, but developed sites should be evaluated for new evidence of hazardous trees at minimum every 3 to 5 years. In addition to this minimum screening, sites should be examined after major storm occurrences once the severe weather has passed.

Carry out site assessments systematically. They normally consist of a level 1 assessment of the risk zones, where each tree and all areas of the developed site are observed for new evidence of hazard or defect. Examine all trees within striking range of a target, either fixed (play structure) or transitory (swim beach).

Generally, only trees greater than 6 inches in diameter at breast height (DBH, 4.5' above grade) should be examined. Smaller trees cause little damage and are considerably less prone to failure under most conditions. Under certain circumstances, trees less than 6 inches in diameter may require periodic inspection if their proximity to a particularly sensitive target (a target that likely would be damaged by impact) suggests unacceptable hazard, but this is an exception.

5.43 Guidelines for Tree Removal & Retention

When annual or storm-related site examination identifies trees of concern, these must be assessed individually for risk by a Tree Professional, using standard TRAQ protocols. This evaluation provides the basis for “risk abatement” actions, which may entail removing defective part(s), moving a target, or partial or full tree removal. Proceed with risk assessment and prescribed remedies as promptly as possible to minimize liability and public endangerment. In the case of a high-value tree, a second professional evaluation may be warranted if removal has been recommended and time allows.

5.5 Risk Reduction

5.51 Pruning

When the primary objective is to reduce the danger to a specific target caused by visibly defined hazards in a tree, the property owner, manager and/or ISA-certified tree care contractor must choose an appropriate pruning type. Pruning for risk reduction should consist of one or more of the maintenance types described in the American National Standards Institute’s Pruning standards: crown cleaning, crown raising, crown reduction, crown restoration. (See Section 4.4 Pruning for details)

5.52 Wildlife Snags

Creation of wildlife snags or “habitat trees” is another risk abatement option. If a tree is dead or dying, a habitat snag can be an excellent alternative to full removal. Choose an appropriate height for the site conditions and monitor the snag as it decays. Created snags add important habitat for microbes all the way up the food chain. While not suitable for developed, high use locations, Bainbridge Island offers many good locations for snag retention. (see Appendix: Wildlife Snag Specifications)

5.53 Cabling, Guying, and Bracing

Occasionally a hazard can be adequately mitigated by artificially supporting the tree or tree part by connecting it back other healthy trees, tree parts or the ground. This is a strategy primarily used to protect large sections of high value trees that have natural structural deformities (co-dominant stems, over extended limbs etc.) that are of concern. This type of mitigation is generally inappropriate for trees with advanced rot or displaying physical wounds that are expected to deteriorate.

5.54 Tree Removal and Replacement

Limitations may exist on the removal or care of trees within certain regulated areas. For example, a regulated tree may not be removed without City review and approval. Therefore, a first step would be to verify that the removal is allowed under City law, by applying for a clearing permit and researching replacement requirements. Trees removed in violation of City law must be replaced by the property owner or, in the case of street trees, the developer. (Removal and replacement standards for public trees are included in the Appendix.)

To remove a protected or designated tree that has been confirmed as hazardous, as defined by the City of Bainbridge Island Municipal Code, a letter addressing the condition of the tree is required from an Arborist. Submission of a replanting plan may also be required, following review by City staff. This approval document must be available on site before the tree is removed, unless emergency conditions exist.

5.7 Public Tree Replacement Criteria

When a public tree is removed, it should be replaced on a minimum 1:1 basis in the next available planting season, since canopy equivalent to that loss will take years to grow. This ensures the continuation of the ecosystem service that the trees provide. Bainbridge Island's Community Forest Management Plan addresses expected population growth by establishing canopy cover goals by zone. In the Winslow Core and the MUTC where density is concentrated, the loss of even a single tree matters. Private citizens are also encouraged to replant or contribute time or funds toward tree replenishment on public sites instead. Contact the City Department of Planning and Community Development for suitable options.

5.7.1 Public Tree Replacement Considerations

Budget Considerations

- Develop a realistic budget covering the "life cycle cost" of added trees, including
 - Purchase of planting stock,
 - Site preparation (removal of existing trees, installation, landscape amenities such as grates)
 - Establishment care (watering, weeding, pruning, monitoring, etc.)
 - Ongoing maintenance (watering, fertilizer, mulch, pruning, etc.)
 - Administrative costs

Site Review & Planning

- Review available growing space
- Planting strip width, cut outs, behind sidewalk or curb, etc.
- Underground utilities
- Competition from existing plant roots
- Suitability of soil (compaction, toxins, drainage issues, etc.)

Review Above Ground Site Constraints

- Utility lines
- Utility poles, traffic lights, street lights, security lights
- Signs (public or private)
- Awnings
- Building structure (surrounding hardscape)
- Vehicular and pedestrian clearance
- Existing vegetation (trees and shrubs)

Standards Compliance

- ADA Standards,
- Other City requirements and standards.

Site Design/Streetscape

- Long-term viability or size at maturity
- Stormwater mitigation potential and other ecological function
- Suitability for “complete streets” that combine various functions including bicycles, pedestrians, utilities, etc.

Selection of Tree Species

- Aesthetic design
- Existing trees’ condition and character

5.8 Designated Hazard Tree Forms

The ISA adopted the most current Tree Risk Assessment Qualification (TRAQ) process in 2017, and this approach is now considered the present Standard of Care. This method provides assessors a structured process, based on good science and arboriculture, to assign recommended thresholds for action for the purpose of informing risk managers.

TRAQ utilizes the Basic Tree Risk Assessment Form. When this form is completed by a TRAQ Tree Professional, it provides a standard rating methodology for tree risk. The risk rating is determined by categorizing the likelihood of failure potential, the likelihood of impacting the target, and the consequences of that failure in a set of matrices.

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impact			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

The **Likelihood of Failure** is assigned one of four categories based on the judgment of the Assessor.

Improbable – The defect is not likely to lead to failure and no further action is required. In many cases these defects might not even be recorded.

Possible – One or more defects that are well established but would typically not lead to failure for several years. Corrective action might be useful to prevent future problems but only if time and money are available. Not the highest priority for action, these are the “retain and monitor” situations that can be used to inform budget and work schedules for subsequent years.

Probable – One or more defects areas well-established, but not yet deemed to be a high priority issue. Additional testing may be required or, the assessor may feel the problems are not serious enough to warrant immediate action, but do warrant placing the tree on a list of trees to be inspected more regularly. These are Retain and Monitor trees.

Imminent – The defect is serious and imminent failure is likely and corrective action is required immediately. These cases require treatment within the next few days or weeks. Often failure has already begun.

The **Likelihood of Impacting the Target** is categorized as Very Low, Low, Medium, or High.

Very Low – The target is at the edge of the possible strike zone or only comprises an extremely small portion of that zone, or is only within the strike zone for a short duration.

Low – The target has less than a 50% chance of being struck by the expected failure

Medium – The target has about a 50/50 chance of being struck

High – The Target has more than a 50% chance of being struck in the event of failure

The **Consequences of Failure** is categorized based on the following target descriptions.

Negligible – If the part were to fail and strike the target the expected damage or disruption could be easily repaired in an hour or two, this also includes minor injuries that require no first aid (bruise or scratch), and minor disruptions that impact neighborhood streets, and open space.

Minor – – If the part were to fail and strike the target the expected damage could be repaired in a day or two, this also includes minor injuries that typically do not require attention from a medical professional, and neighborhood level disruption of individual services.

Significant – – If the part were to fail and strike the target the expected damage would be substantial personal injury or moderate to high value property damage. This includes injuries that require medical care, or disruptions to primary powerlines or arterial streets.

Severe – – If the part were to fail and strike the target the expected damage would be serious personal injury or death or high-value property damage. Disruptions to regional or critical infrastructure would be considered severe.

5.81 Options for Mitigation of Risk Trees include

Remove the Risk by cutting off one or more branches, removing dead wood, or possibly removing the entire tree. Extreme risk rating situations should be closed off until the risk is abated.

Modify the Risk of Failure In some cases it may be possible to reduce the probability of failure by adding mechanical support in the form of cables braces or props. Strategic pruning can also decrease the loads experienced by identified defects and reduce the likelihood of failure

Modify the Risk of Impact by moving the target. Risk ratings can sometimes be lowered by moving the target so that there is a much lower probability of the defective part striking anything.

Retain and monitor. This approach is used where some defects have been noted but they are not yet serious, and the present risk level is Moderate or Low.

CHAPTER 6- BMP's FOR SPECIFIC LAND USES & LANDSCAPE TYPES

Overview

In this section, we address several specific environments and discuss how to tap the opportunities each presents for preserving and adding trees. It is worth recounting that our *green infrastructure* accomplishes the following:

- cleanses the air by consuming carbon dioxide and producing oxygen
- buffers noise, dust, fumes, wind and glare
- intercepts rainwater and dispersing it more slowly into the ground
- shelters wildlife and protects native biodiversity
- creates calm settings to rejuvenate and relax
- creates a pleasant and comfortable sidewalk environment
- shades street pavement, increasing its useful life
- screens the view of parking lots and utility areas from public streets
- encourages safe driving with street trees and planting islands
- builds civic pride by enhancing the beauty of public thoroughfares
- increases aesthetic and monetary value of property
- shelters buildings from summer heat and winter chill
- buffers extremes of precipitation and heat accompanying climate change

Tree care is the property owner's responsibility, including the city for trees within the right-of-way or on city-owned property. Most island residents are responsible for the care and protection of some portion of our community forest. Some willingly shoulder extra responsibility as community volunteers.

Common threads you will find running through these recommendations are to:

- Save the best of what you have, evaluating existing trees, using careful site design, and following the principles of "Low Impact Development."
- Understand specific characteristics and limitations of sites when choosing trees.
- Take good care of trees, knowing and embracing the role(s) you play.

6.1 Parking Lots

Parking lots have long been recognized as thermal "hot spots", as well as collectors of significant storm-water runoff and associated pollutants. Trees growing in parking lots within commercial, industrial, and residential land use areas help to offset some of the many negative aspects of these sites. A parking lot is one of the few places where species with wide canopies can be allowed to grow and spread to full maturity.

Parking lots are not, however, a healthy environment for trees. Just picture how many times you have opened a car door onto the trunk of a struggling specimen tree or watched a busy shopper jam the grocery cart into a tree trunk. Successful conservation, planting and maintenance of trees in parking lots depends on providing adequate soil volume, water, nutrients and protection.

Tree species planted or retained in parking lots should be:

- selected to provide abundant shade
- tolerant of heat and pollution, and often, compaction and drought
- effective at intercepting, evaporating, storing and conveying rainwater, enhancing infiltration and reducing erosion
- free of structural, pest or disease problems, aggressive roots and fruits or nuts
- protected to provide optimal opportunity for healthy growth

Certain design features are encouraged, where feasible:

- Continuous planting islands, to accommodate multiple tree and increase the soil volume available to roots
- Planting islands that serve double-duty by incorporating surface water runoff treatments such as bio-swales and rain gardens in their design
- The use of structural soil mixes, which increase rootable soil volume and reduce the potential for root invasion into parking lot paving. (Appendix F)
- Incorporating understory plantings to shade and protect roots; prickly low shrubs discourage cut-through foot traffic better than groundcovers

6.11 Drainage / Water Quality Options

With early planning and design, it is possible for tree planting requirements to meet regulations for on-site treatment of stormwater. Trees planted within stormwater runoff areas should be limited to species adapted to heavy to moderate irrigation, such as riparian species (see Appendix).

6.12 Best Management Practices for Parking Lots

1. Integrate bio-retention into parking lot islands or planter strips distributed throughout the parking area in the forms of swales or linear shallow depressions
2. Utilize the opportunity to choose a species that will be big and spreading when mature. Plant one large canopy tree (>40') for every seven (7) parking spaces in parking lots
3. Select trees that can withstand the hot, dry microclimates and poor soil conditions of parking lots
4. Use Silva Cells (an underground frame) or a structural soil mix beneath pavement to increase the volume of soil available to tree roots
5. Group trees in islands so they can share rooting space.
6. Provide a required minimum open soil surface area for very small, small, medium, and large trees of 25, 100, 225, and 400 square feet respectively
7. Use pervious pavements to increase the moisture penetration and gas exchange for tree roots
8. The maximum distance between trees in linear tree islands should be 30 feet unless they are a species that will require more space.
9. Tree planting islands should have a minimum width of 12 feet
10. Maintain sight lines so motorists can see pedestrians and other vehicles, through proper tree selection and regular appropriate pruning

11. A clearing permit may be required from the City of Bainbridge Island to remove parking lot shade or ornamental trees if those trees had been required for retention through a land use permit. At this time, there is no cost associated with obtaining these permits
12. All pruning work shall be completed pursuant to the current International Society of Arboriculture (ISA) and American National Standards Institute (ANSI) standards
13. Removed trees must be replaced with healthy specimens of similar species and size
14. Maintain an 8-foot minimum height to branching for vehicular and pedestrian clearance
15. Provide curbs or wheel-stops around tree planting areas and plant trees at least 30-inches (2.5 feet) inside the curb or wheel-stop to avoid vehicle injury to the trees
16. Provide designated paths through planting areas that follow “desire lines” to prevent soil compaction by foot traffic.
17. Irrigate tree islands to ensure new tree survival and improve long-term tree health
18. Incorporate understory plantings to shade and protect roots, and prickly low shrubs to discourage cut-through foot traffic better than groundcovers

6.2 Plazas, Courtyards and Winslow Core Areas including Street Trees

Plazas, Courtyards and Core Areas are places where people gather to work, shop, eat, meet, and relax. They are found predominantly within commercial, institutional, and dense residential areas.

Growing space for trees in these areas is limited. The majority of trees are planted, as opposed to conserved, and usually grown as single trees. Trees are often arranged in a linear or rectangular grouping and planted in small tree wells (4 x 4 feet) or infrequently, larger landscape islands.

These settings are characterized by an abundance of impervious pavement, poor quality soil, inadequate soil volumes, close proximity to buildings and streets, air pollution, and high levels of human activity. They are also appropriate for the integration of ideas put forward in the Bainbridge Island Arts Plan.

6.21 Best Management Practices for Plazas, Courtyards and Winslow Core

1. Match the mature size of trees selected to the amount of available growing space
2. Select trees to enhance architectural design, without blocking important building or structural detailing
3. Plant trees where limbs will not impede access for delivery or emergency vehicles, pedestrian circulation, or sight lines
4. Don't assume that site conditions are the same throughout a plaza; plazas can have dramatic changes in temperatures from one side to another due to microclimatic conditions created by surrounding buildings

5. Use alternative (permeable or open) paving systems that accommodate pedestrians and vehicles while increasing opportunities for moisture and air to reach tree roots
6. Use structural soils beneath the pavement and innovative design to increase the volume of soil available to tree roots
7. Locate trees where underground utilities and compacted soils won't constrict the available area for tree roots
8. Look above for overhead utilities that will limit mature tree size
9. Protect trees from vandalism or other damage by pruning and protecting with sturdy fencing
10. Budget for increased tree maintenance costs in downtown "high contact" areas, to ensure new tree survival and long-term health; include irrigation and pruning to maintain pedestrian and vehicular clearance

6.22 Street Trees and Road Frontage Areas-- *(Please refer to the "City of Bainbridge Island Civic and Street Tree Plan" for specific information)*

Road Frontage Areas consist of public rights-of-way (including streets, alleyways, circles and medians) and immediately adjacent land in residential, commercial, institutional, industrial, and agricultural zones. Frontage areas include both street trees and adjoining yard trees that are part of a property's landscape design and function. These trees may be planted ornamentals, or pre-existing vegetation like native woods. Street trees are found growing both singly (most often) and in groups.

Removal and replacement of trees that damage city sidewalks or other city infrastructure shall be reviewed by the City Arborist prior to tree removal. The City encourages the use of creative alternatives that favor tree protection, such as "bumpouts" and rubber sidewalks that allow for tree root expansion.

6.23 Best Management Practices for Road Frontage Areas

1. Plant trees where there is adequate overhead and underground room to accommodate their mature size
2. Vary the spacing and species of trees along road right-of-ways to add interest and diversity to roadway plantings. In appropriate locations, evergreen trees should be considered in order to provide year-round foliage, as long as they comply with infrastructure and sight line restrictions
3. Maintain sight lines so drivers can see pedestrians and vehicles when pulling out of driveways or through intersections. Plant trees and hedges a minimum of 15 feet from driveways and 15 feet down each lot line on corner locations from road intersections for minor collectors. For major collectors and arterials, the distance will be greater to accommodate faster speeds
4. Provide 15 feet of vertical clearance for large vehicles along tree-lined streets and drives
5. Provide at least 8 feet of vertical clearance for pedestrians and bicycles, to avoid hazards created by low branches too close to sidewalks and drives

6. Avoid over-thinning natural stands of trees in or by road frontages, to reduce susceptibility to wind damage and failure
7. Bump out planting strips or jog sidewalks to accommodate tree trunk and root growth where necessary
8. In order to avoid damaging tree roots, tunnel or bore instead of trenching during utility line installation
9. Allow special consideration for designated Heritage trees that may be in right of way areas
10. Avoid planting trees directly over property lines or corners
11. Tree lawns (Planting strips) – the planting area between the sidewalk and curb – should be a minimum of 5 feet wide
12. Install root barriers along sidewalks and curbs to prevent tree roots from heaving and breaking pavers, sidewalks curbs, and road pavement. Other alternatives include load-bearing soil (developed by Cornell University—see appendix), rubber sidewalks or other innovative material that does not crack from root growth
13. Where the sidewalk is directly adjacent or very close to the street, plant trees behind the sidewalk. If necessary utilize private property tree planting easements to provide growing space and vehicular and pedestrian clearance

6.3 Utility Corridors and Easements

Utility corridors are linear landscape areas that contain power, gas, water, or sewer service. These corridors can be as narrow as 20 feet or as wide as 150 feet. They often run parallel to roadways, and contain above and/or below ground lines. Within these corridors, vegetation must be managed to allow safe maintenance and repair of the utilities. These long, narrow bands create continuous vegetation ‘edges’ that actually can improve ecological function. Wildlife is attracted to forest edges for food, nesting and protective cover, as well as to adjacent open areas to forage. The down side of exposed edges is their vulnerability to invasive plants, which can move in from any side.

6.31 Best Management Practices for Utility Corridors

1. Avoid trees with aggressive or damaging root systems near underground water and sewer lines. (See Appendix for recommended trees list.)
2. Plant only small-maturing trees beneath overhead electrical lines to minimize “topping” needed for future line clearance.
3. Maintain adequate clearance from all overhead and underground utility lines to facilitate access for repairs and minimize impacts to tree canopies and roots.
4. Plant medium sized trees at least 20 feet off the centerline of overhead electrical distribution lines.
5. Plant large sized trees at least 40 feet off the centerline from overhead electrical distribution lines.
6. When trees are pruned within overhead utility line maintenance zones, adhere to Best Management Practices for Utility Pruning of Trees [companion publication to the current ANSI A300 Part 1. Shrub, and Other Woody Plant Maintenance-

Standard Practices, (Pruning). Only specially-trained arborists should perform tree work near live electrical lines.

7. Employ crown reduction pruning rather than tree “topping” to reduce tree size beneath utility lines.
8. Tunnel instead of trenching beneath tree roots within the CRZ for installation or repair of cable, phone, electric, gas, water, or sewer lines.
9. Never use spikes to climb trees during overhead utility line maintenance, installation or repair. Exemptions include tree removal or emergency situations, such as storm work and worker rescue situations.
10. Annually monitor edges for invasive plant infestations and remove or limit encroachments before they penetrate to interior of corridor

6.4 Residential Lots

Although the potential for large canopied trees is limited in urban core areas, trees remain an important part of residential landscapes. Their value as “green infrastructure” is so great from a storm water management standpoint, that many communities credit homeowners on utility bills for choosing tree canopy rather than increased impervious surface.

In suburban and rural lots, especially where new houses are built on wooded tracts of land, property owners should embrace the opportunity to practice enlightened site design early in the planning process. Consideration of tree protection and healthy soils can result in the preservation of promising young and mature native trees, that buffer roads, provide screening and habitat value, and reduce the visual intrusiveness of large new buildings. Rainwater mitigated on site can reduce the costs of below-grade storm water drainage systems.

6.41 Best Management Practices for Residential Lots

Assess the existing vegetation and plan new construction or additions to save as many high quality existing trees as possible.

1. Evaluate your yard for above- and below-ground conflicts: utilities, soil type, buildings, view, shade, sun, other trees, and safety
2. Plant trees only where there is adequate room both overhead and underground for the mature size of the tree you are planting
3. Avoid planting trees directly over, or too close to, property lines or corners.
4. Identify tree priorities—whether for beauty, wildlife habitat, shade, windscreen or a visual buffer
5. Consider the maintenance needs of the tree you choose by matching the preferences of the tree (i.e., drought tolerant, likes “wet feet”) with the site conditions.. Can the tree prosper in our Pacific Northwest climate without extensive care throughout its life?
6. Plant native species, which, if chosen wisely and sited appropriately for their microclimate, can reduce the need for ongoing care (i.e. irrigation) after establishment

7. Where room allows, install an informal hedgerow to replace a fence or laurel hedge. Hedgerows are mixed plantings that create habitat for birds, reduce hedge-pruning chores, and add seasonal interest – all while providing screening. A hedgerow should be at least 6 feet wide, but is much more valuable to wildlife if it is wider. Mixed hardwoods and conifers add significantly to the diversity of wildlife that will use the hedgerow. Plant shrubs and trees about 3 feet on center. Try to avoid breaks or openings in the hedgerow — these spaces are hazardous for many hedgerow dwellers, allowing easier access for larger predators. Native hedgerow species may include:

Red alder	Oregon grape	Elderberry
Douglas fir	Salal	Nootka rose
Western red cedar	Snowberry	Serviceberry
Vine maple	Ceanothus	Blueberry
Bigleaf maple	Red osier dogwood	Huckleberry
Willow	Red flowering currant	Salmonberry
Oregon white oak		

6.5 Institutional Campuses

Typical examples of institutional campuses found across the island are schools, churches, and health facilities. Larger tracts of land associated with institutions provide valuable opportunities for tree planting and preservation. By virtue of their size, they can preserve remnant forests that provide a link to Bainbridge Island’s wooded past. They also allow for planting of large new specimen trees and groves of trees and understory.

The Bainbridge City Hall, Bainbridge Performing Arts Center and Island History Museum located between Madison and Erickson Avenues make up the main downtown Civic Complex. A Tree Management Plan was completed for this campus in 2006, and is available at City Hall. Private developments may also lend themselves to landscape-level planning for vegetation retention and planting.

6.51 Best Management Practices for Institutional Campuses

1. Inventory and assess the site’s existing critical areas, flora and fauna to identify areas to protect and enhance as part of development or landscape improvements
2. Conduct a risk assessment of major trees every 5 years and after major storm events
3. Utilize native species in layered arrangements that echo the Island’s forest communities
4. Create surface storm water handling systems such as rain gardens and swales
5. Configure pedestrian circulation to invite visual contact between people and plants, while protecting them from physical damage and disturbance
6. Concentrate buildings and associated pavement, to maximize green area on site
7. Select a wide variety of trees to maximize biodiversity; include unusual species to pique public interest and test out tree performance
8. Choose tree species offering ease of upkeep, durability and a range of seasonal effects

6.6 Open Spaces, Parks and Natural Areas

Open spaces and Natural areas include forests, large gardens, parks, agricultural areas, pasture land, lake and stream margins, beaches and natural preserves. These fulfill many positive and fundamental functions on Bainbridge Island. They provide large areas of un-compacted soil that absorb stormwater, greater tree canopy for intercepting and distributing rain, and provide habitat and movement corridors for wildlife. Furthermore, they offer opportunities for sports, recreation, education and other individual and social activities. Well-managed open spaces are a positive contributor to quality of life in developed areas of the Island.

6.61 Best Management Practices for Parks, Open Spaces and Natural Areas

1. Assess and inventory individual sites related to critical areas, flora and fauna
2. Determine specific site uses and contributions, and reinforce the positive contributions
3. Maintain or reclaim optimal ecological health of the site
4. Establish a maintenance management system for Open Spaces, Parks and Natural Areas

6.62 Maintenance Recommendations

- Remove or prune trees if they pose undue risk to people or property
- Remove invasive species of plants
- Replant areas with non-invasive, mostly native species
- Create wildlife snags and retain fallen woody debris to improve wildlife habitat
- Develop wayfinding and artist-designed interpretive signs
- Build volunteer stewardship partnerships with local civic, religious, school, youth, neighborhood and social organizations, or budget for private contracted maintenance
- Cooperate with municipal, county, and state government agencies for permitting and technical advice

6.63 Suggested Maintenance Management System

The following basic steps are recommended to maintain environmental diversity, health, and recreational use within Island open spaces and natural areas.

1. Familiarize stakeholders with BMP's and any applications before the Planning Department or other agencies. Gather comment on management concerns and opportunities.
2. Conduct onsite evaluation to define vegetative zones.
3. Determine management priorities.
4. Plan for restoration and ongoing maintenance according to vegetative zone:
 - Determine and rank restoration and maintenance needs
 - Determine and comply with permitting and regulations relating to work within open space and natural areas
 - Remove exotic and invasive plant species in accord with recommended vegetation management techniques (see Section 6.9 and Appendices/References)
 - Replant areas of disturbance and set up maintenance programs for newly established areas
 - Monitor and record replanting survival rates and invasive plant resurgence; replace lost plants and remove invasive weeds promptly

Monitor and record trees with significant defects located within striking distance of persons or property, annually and after severe storms
Monitor and record erosion or other significant changes to landscape features
Monitor and record health of vegetation annually; budgeting resources to take timely corrective action when monitoring indicates a threshold of need

5. Monitor security issues

Increase volunteer presence for trail and vegetation maintenance projects,
Add trail patrols
Encourage recreational user awareness, appropriate use and communication
Tap “eyes and ears” of property owners adjacent to public open space/ parks

6.7 Buffers and GreenBelts

Buffers are the linear areas that border roadways, adjacent properties, or dissimilar land uses. Critical Area Buffers are vegetated areas that protect fragile landscape elements in accordance with the State-mandated Critical Area Ordinance. These areas include steep slopes, , shorelines, slide zones, wetlands, and streams. Trees provide very effective buffers, either alone or with other vegetation. They may be planted in either groups or rows, and spaced uniformly or in irregular patterns. On Bainbridge Island, many buffers contain natural woodlands or remnant forest areas. Plantings that combine overstory trees, understory canopy, shrub, and herbaceous layers make effective buffers. Wherever possible, buffers should be designed and/or enhanced to provide multiple vegetative layers.

In some cases, buffers may be limited in width and therefore in the amount of growing space available for trees. In most cases, however, trees in buffer areas remain relatively undisturbed after they are established and usually have an ample amount of growing space.

6.71 Best Management Practices for Landscape Perimeter and Park and Conservation Land Buffers

1. Select low branching or multi-trunk species to provide visual and physical screening to the ground
2. Plant a variety of tree species and mature tree sizes
3. Include all vegetative layers in buffer planting. Consider creating mixed-species hedgerows as compact, wildlife-rich buffers
3. Incorporate trees with dense, evergreen foliage to provide screening year-round (especially native coniferous trees)
4. Select trees for their suitability to the existing topography, soils, infrastructure (utilities, roads), light, moisture conditions, and vegetation
5. Conserve existing undisturbed woodlands with understory trees and shrubs for high quality buffers where width allows – preferably 50 feet or more. Create woodland buffers where there is room to create a “feathered” canopy edge with lower foreground trees to help tame and deflect wind.
6. Be aware of the remnant forest ‘New Edge’ effect on wind firmness of retained trees. Newly exposed interior trees are at risk for windthrow or failure. A too narrow buffer of slender, interior-stand trees within striking distance of frequently-occupied targets (homes, parking lots, playgrounds, etc.) may pose a risk. If necessary, consider enhancing the existing buffer or planting a new buffer that will mature into a multi-layered canopy with site-adapted, stable trees

7. Leave the soil, organic litter layer, and native groundcovers undisturbed
8. Plant trees in a staggered, naturalistic pattern, rather than in linear rows
9. Conserve at least the minimum undisturbed width of buffer required by the City Municipal Code

6.8 Riparian Zones and Drainage Areas

These areas are associated with streams, rivers, shorelines, and surface drainage-ways. They are characterized by wetlands, alluvial soils, high water tables, and periodic flooding. In many riparian zones, the topography includes a substantial slope from upland to lowland areas.

6.81 Best Management Practices for Riparian Zones and Drainage Areas

1. Review the City's Critical Areas Ordinance (BIMC 16.20), Shoreline Management Master Program (BIMC 16.12) and related State and Federal Codes
2. Retain, to the extent possible, existing woodlands with undisturbed understory trees, shrubs, herbaceous plants, leaf litter, and soil
3. Plant and conserve trees in mixed groups and stands
4. Select species that are adaptable to local soil conditions, whose root systems help prevent erosion (fibrous, non shallow-rooting habit)
5. Manage areas containing young trees to ensure development of valuable mature tree stands over time
6. Do not plant exotic species, as many are aggressive or have the ability to be transmitted easily along riparian corridors or shorelines
7. Plant trees and associated vegetation that can tolerate variable lowland or high water table conditions
8. Refer to Washington Department of Ecology manuals available on line that address vegetation management for steep slopes and stream corridors (see References)

6.9 Invasive Plant INFESTATIONS

Our community must be ever vigilant to the risks posed by noxious weeds and invasive exotic plants. These plants threaten the general ecological health and diversity of our native ecosystems on public and private lands throughout Bainbridge Island, including forests, parks, agricultural land, waterways, and developed landscapes. Guidance for protecting such areas may be found in Washington state noxious weed law, which acts to protect wildlife, property values, and public health and safety from the adverse impacts of invasive plant species. Kitsap County Weed Control Program provides monitoring and advice on controlling listed plants.

The key tools for noxious weed and invasive species management are: prevention, eradication and containment. For control, all three must be put to use. By definition, such plants respect no boundaries, so coordinated public and private efforts are essential to successfully dealing with this constant threat to our environment.

An **invasive plant** is one that has the ability to thrive and spread aggressively outside its natural range.

A **noxious weed** is an invasive, often herbaceous plant traditionally designated as a threat to farmland, pasture or wetlands. Some of our most serious invasive forest species are not official noxious weeds: English laurel, English holly, English ivy, and knotweed.

6.91 Best Management Practices for Invasive Plant Infestations

1. Properly identify the existence, extent and species of invasive plants within your site
2. Contact the Kitsap County Weed Control Program for direction on invasive control methods or when dealing with a Class A noxious species, mandatory eradication (contact information: http://kitsap.wsu.edu/noxious_weed/index.htm)
3. Determine the type or combination of control methods that apply to your situation and site and from this information develop a specific Maintenance Plan. Control options include biocontrol (using selected insects and pathogens), weeding, grazing, smothering (with sheet mulch), herbicides, and mechanical removal. Always select the most environmentally-friendly alternative you can, within the constraints of the situation
4. Use techniques developed through experience by others. See Appendix H (References) for excellent resources to help Bainbridge Island win the war against invasives, one infestation at a time
5. “An ounce of prevention” is key to invasive and noxious weed management. Protect desirable vegetation by monitoring, and weed out invaders as soon as they appear. Don’t waste energy attacking the worst first – instead save valuable, intact plant communities
6. Embrace the adage “prevention begins at home.” Engage local nurseries, landscapers, garden clubs, schools, service organizations, park managers, permitting agencies and realtors to raise public awareness about invasive plants
7. Encourage the use of non-invasive ornamental species in public and private landscapes. Eliminate them from civic landscapes and in their place demonstrate vigorous, attractive alternatives to popular invasive ornamentals like holly, laurel, ivy, butterfly bush and broom

Note on Ivy Removal:

In addition to hurting trunks and killing canopies, English ivy weighs down our Northwest trees and can cause them to fail in whole or in part, during storms. It is important to control ivy growth into trees by removing as much as possible. A qualified professional can climb the tree and remove ivy from high in the canopy.

An effective way to control ivy is to cut vine stems at the base of the trunk and 4 feet up. Strip away cut sections while leaving vines higher in the tree to die on their own without pulling them down, which can be dangerous, fruitless or damaging to a tree’s protective bark. For large vines, a crowbar or pruning saw may be needed to cut the vines, and a screwdriver to pry them off. The goal is to delay return growth and keep the tree healthy even if it inhabits a sea of ivy. For long-term control, remove ivy roots and replant with sword fern or other native ground covers. To discourage erosion, cleared slopes should be replanted in the fall before winter rains set in.

APPENDICES

The Appendices that follow are intended to provide more specific information for managing Bainbridge Island's important Community Forest resource.

APPENDIX A – Arborists – What you Need to Know

ISA Certified Arborist

A certified Arborist has at least 3 years experience in tree care industry and has passed an exam demonstrating knowledge in all areas of arboriculture. Continued Education credits are required for recertification every 3 years. www.isa-arbor.com.

ASCA Registered Consulting Arborist

This is the highest certification a consulting arborist can earn; RCAs are considered experts of the field. They must have extensive technical experience in landscape planning and development, tree preservation, hazard tree assessment, legal matters, tree appraisal and damage assessment. They must meet and maintain requirements for membership in ASCA, including Continuing Education requirements. They must have completed ASCA's rigorous Consulting Academy and passed a qualifying exam. They must also demonstrate extensive report writing competence through reports submitted for peer review. There are currently only 6 arborists in the State of Washington with this designation.

http://asca-consultants.org/join_rca.html

TRAQ

This is an additional Qualification administered by the ISA

Tree Professional

An individual with relevant education and training in arboriculture or urban forestry. The individual must be an arborist certified by the International Society of Arboriculture or a registered consulting arborist from the American Society of Consulting Arborists or have equivalent training from an organization such as Tree Care Industry Association and for Forest Management Plans may be a certified forester by the Society of American Foresters. A Tree Professional must possess the ability to perform tree risk assessments and prescribe appropriate measures necessary for the preservation of trees during land development. For Forest Management Plans, the qualified professional must have the ability to assess wooded sites and prescribe measures for forest health and safety.

What is Urban Forestry?

Urban forestry is the care and management of urban forests, i.e., tree populations in urban settings for the purpose of improving the urban environment. Urban forestry advocates the role of trees as a critical part of the urban infrastructure. Urban forestry is practiced by municipal and commercial arborists, municipal and utility foresters, environmental policymakers, city planners, consultants, educators, researchers and community activists. (Wikipedia)

There is no officially certified title of "Urban Forester" at this time, that we know of.

Selecting an Arborist

Hiring a tree care provider deserves careful consideration and caution. A mistake can be expensive and long-lasting, while the right choice can assure health, beauty and longer life for your trees and landscape.

- First decide if you need a diagnosis of a suspected problem, or a tree service company to perform work that has been prescribed
- Beware of *door-knockers* who may show up just after storms when there is an opportunity to earn quick money. These may not be professionals and may not have the skills or proper equipment to do the work safely
- Hire an arborist or tree worker who has been certified through a program of the International Society of Arboriculture (ISA) and has a business license
- Ask the arborist for a client or reference list so that you can assess their workmanship
- Check the phone directory, usually under trees or tree care service. Listings in the directory should indicate some degree of permanence. Look for professional membership affiliations. Membership does not guarantee quality, but a lack of it may cast doubt on the company's commitment to professionalism
- Get copies of proof of liability, personal insurance, property damage insurance and worker's compensation. Don't stop there – call the insurance company to verify that the policy is current
- Obtain more than one written estimate that clearly states their scope of work, but don't expect an arborist to lower a bid to match another's
- A good arborist will not use climbing spikes unless the tree is going to be removed
- Beware of an arborist who is too eager to remove a living tree, but keep in mind that living is not always equal to healthy or structurally sound

The Contract for Services

A contract should protect you and the tree professional. Most companies will provide their own contract and should include the following basics:

- Dates that work will begin and end.
- Specific Scope of Work
- Cleanup procedures should be listed and whether firewood will need to be cut (and into what lengths)
- Clarify if a tree removal includes grinding the stump and surface roots and if so, how deep? Will they remove grindings and backfill the hole?
- The total dollar amount you will be charged and how: (a) as a single price for the job, or (b) on an hourly basis plus materials "...but not to exceed...".

APPENDIX B-- Tree Protection Specifications (General Guidelines)

1. This specification must be followed for all trees that are in close proximity to any clearing and grading limits.
2. After the site has been surveyed, and clearing and grading stakes are in place, the Tree Professional will visit the site to determine the actual placement of tree protection measures based on the potential impact to tree root systems. Final adjustment of clearing limits will be made on site.
3. Tree Protection Zone (TPZ) fencing or other barriers shall be installed along all clearing limits to protect the Critical Root Zones (CRZ) of trees that are to be preserved. Optimal CRZ areas should be calculated at 1.5 foot radius for every 1 inch of tree DBH. Work required for removal of unwanted vegetation within the CRZ areas will be **hand work only**. TPZ fencing shall be 4' tall orange plastic fencing anchored with steel stakes or 6' chain link fence. The Tree Professional may also require plywood boxing around trees in certain high traffic areas, and will meet on site with the contractor to determine the specific types of fencing, placement, and specific clearing instructions for areas near preserved trees. Adjustment of the initial TPZ lay out may be required as construction progresses.
4. Within the TPZ areas no parking, materials storage, dumping, or burning is allowed.
5. When removing trees outside of the TPZ determined to be unacceptable for retention, use methods such as directional felling to avoid damage to trees and other valuable vegetation that is being retained. Small trees and other native vegetation in these areas should be carefully preserved.
6. Where the arborist has determined that roots of a preserved tree may be encountered during excavation or grading, a Tree Professional shall be on site to supervise any root pruning and to assess the potential impact of such pruning. Any root greater than 1.5" diameter that is encountered shall be carefully cut with a sharp tool. Roots cut shall be immediately covered with soil or mulch and kept moist.
7. Where access for machinery or any vehicle is required within the CRZ or TPZ of any preserved tree, the soil should be protected from compaction. Acceptable methods include 18" of wood chips or hog fuel, plywood, or steel sheets.
8. TPZ fencing shall not be moved without authorization from the Tree Professional or the site supervisor. All fencing is to be left in place until the completion of the project. Tree protection signage shall be attached to fencing only.
9. Landscaping specified within the TPZ areas shall be designed to limit disturbance of surface soils and preserved vegetation. No root pruning is permitted. New plants added in these areas should be of the smallest size possible to minimize disturbance.
10. Where backfill is required within a CRZ or TPZ area, the Tree Professional shall determine the amount and type of fill material to be used.
11. The Tree Professional will provide a recommendation using ANSI A300 American Standards for Pruning to remove dead wood, provide clearance, and cabling or bracing. Use of an International Society of Arboriculture Certified Arborist to perform the recommended work is strongly recommended.
12. Supplemental irrigation for all protected trees is required during the summer months or prolonged periods of dry weather. **THIS IS MOST IMPORTANT FOR SUCCESSFUL TREE RETENTION.**
13. Monitoring of all trees, especially those exposed to new environmental conditions such as exposure to wind, sun, or deep shade, shall occur annually to check for adverse changes to the tree health or stability.

APPENDIX C—Public Tree Removal Criteria

Trees may be removed in accordance with the BIMC. See sections 16.18.040 and 18.15.010 for Vegetation management regulations.

Public Tree Removal Considerations include:

- Vandalism
- Casualty/Accident
- Sight Line Obstruction (traffic lights, signs, view safety)
- Outgrew the site (various reasons)
- Capital Improvement (street widening, new entrances, sidewalk installation, etc.)
- Natural Disaster (storms, wind, landslide, fire, etc.)
- Disease
- Risk consideration (over mature, structural problems)
- Utility Conflicts (buckling paving and sidewalks, growing into overhead power lines)
- Maintenance
- Development (loss of 30% or more critical root area)

APPENDIX D-- Alternatives to Tree Removal

Create a Wildlife Snag

The object of creating a snag is to preserve as large a portion of a defective tree as the location permits, so it can serve as habitat for birds and insects and to blend in with the landscape. The cuts made by chainsaw should be disguised to look like a natural break

The height of a snag is dependent on the site. It is important to remember the tree will slowly decay and fall apart. In busy locations, it is best to choose a height that will not put anything at risk. Based on management concerns and budget, long-lived snag species may be monitored and reduced in height again as they break down.

Long lasting snags = 15 years or more

Douglas fir (*Pseudotsuga menziesii*),
Western red cedar (*Thuja plicata*)
Bigleaf maples (*Acer macrophyllum*)
Other maple species (*Acer spp.*)
Oak species (*Quercus spp.*)

Short lived snags = Less than 15 years

Western hemlock (*Tsuga heterophylla*)
Red Alder (*Alnus rubra*)
Bitter cherry (*Prunus emarginata*)
Black cottonwood (*Populus trichocarpa*)

Snag Creation techniques:

Birds love a perch, and so, it is important not to strip a snag tree of the lower branches. Branches can be cut back, but stubs should be left to serve as perches and to mimic nature. Ragged cuts at the end of branches will look best when the tree is finished.

The cut at the top is important to the look of the final project.

Try to mimic the way trees that break naturally look.

Many small slits in the edge of the trunk works well.

Use a small sledgehammer to break and bend the smaller pieces created with saw cuts.

Installing bird holes and bat slits:

Bird holes form as stumps decay and woodpeckers begin to work on the decayed wood. Bats often use narrow cracks or loose pieces of bark to roost in. This process can be speeded up by cutting in a birdhouse or bat slit in the created snag. *CAUTION; these techniques require advanced chainsaw skills. Use a small, sharp saw and extreme care.*

Bore a triangular "pie" shaped piece from the trunk. Use a crowbar to pop the piece loose.

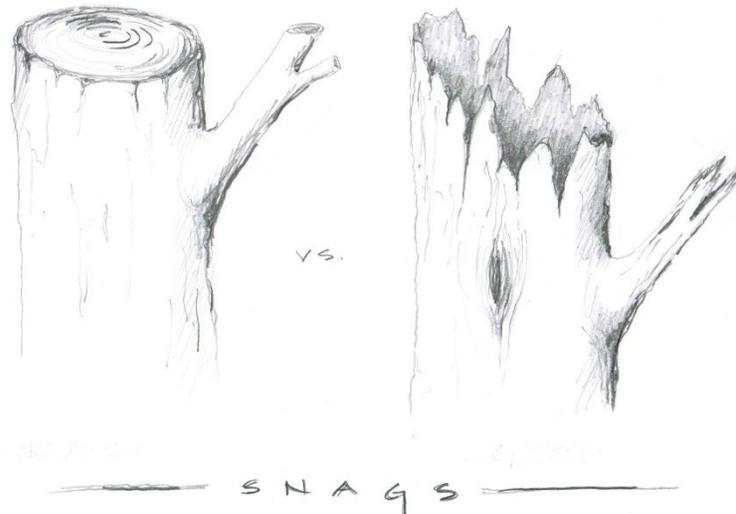
Send the piece to the ground and cut the back off, leaving a 1-2" thick slab of wood with the bark.

Drill an appropriately sized hole. Two northwest species that use trees are chickadee (1") and Flicker (2.5")

Deepen and enlarge the hole using the tip of the saw bar

Send the piece back up into the snag and screw or nail it back in place.

For bats, make a shallow cut upwards into the trunk of the tree; use the saw to widen the cut to about 1/2".



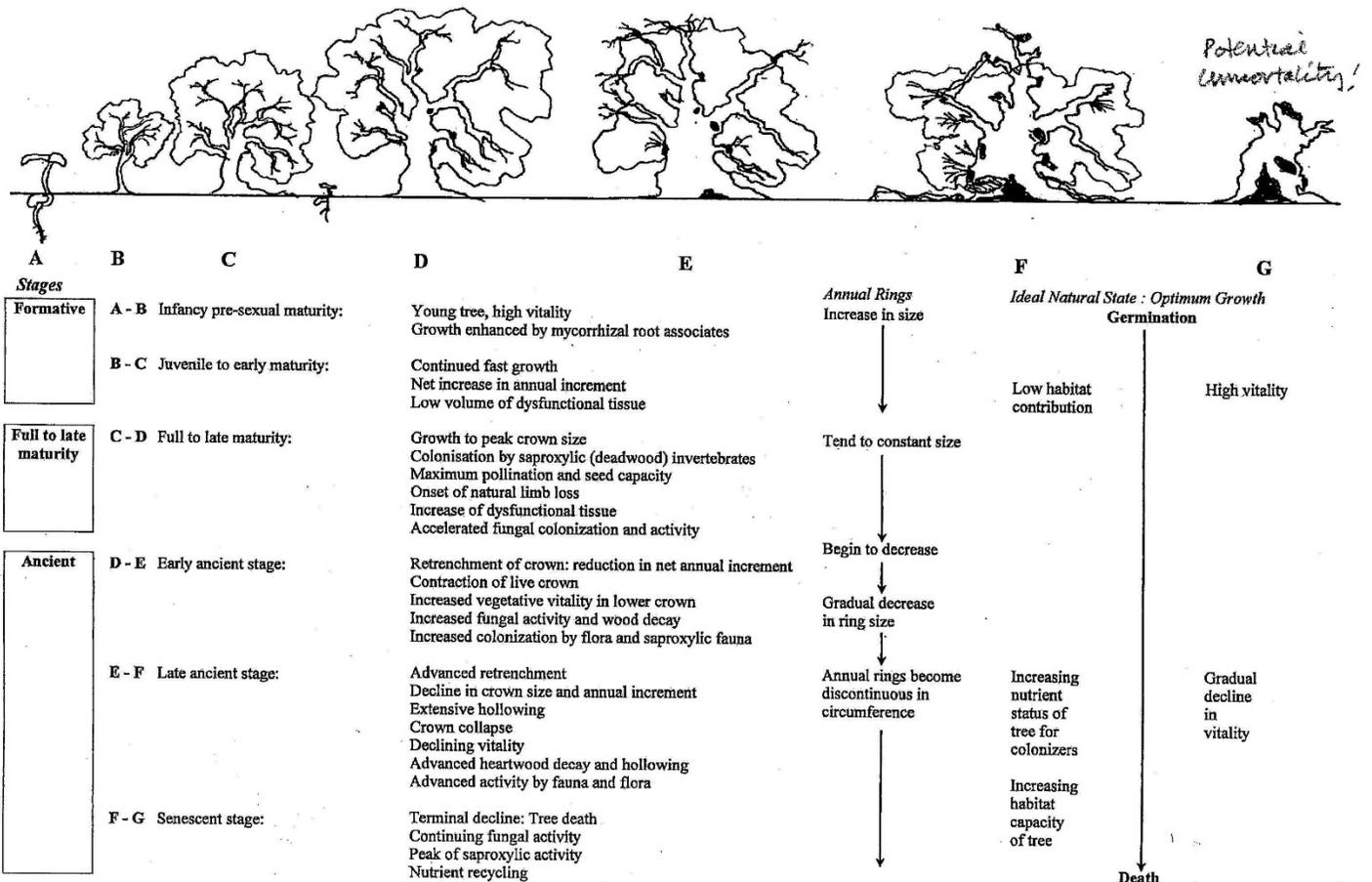
Veteranizing an Old Tree

“Veteranizing” – or re-trenchment pruning, is the current European practice of allowing mature and senescent trees to be managed to reduce risk, but stay as elder members of the Community Forest so they can continue to provide ecological value for a wide range of organisms.

Fay, Neville, (2002) Environmental Arboriculture, Tree Ecology and Veteran Tree Management. *The Arboricultural Journal*, 26 (3) 213-238.

The Ageing Process: From Infancy to Death

By Neville Fay of Treework Environmental Consultancy, designer Christine Kirkley



APPENDIX E-- Best Management Practices for Pruning of Trees

The most current and up to date version of ANSI A300 standards for Tree, Shrub, and Other Woody Plant Management-Standard Practices should be reviewed for best pruning procedures.

TCIA, *the Tree Care Industry Association*, is a good resource for these standards. To order a copy visit the below URL:

http://www.tcia.org/TCIA/Build_Your_Business/A300_Standards/A300_Standards.aspx

APPENDIX F – Providing Space for Urban Trees

Overview of Alternatives

Evaluate streetscape alternatives to the classic street profiles (following in Appendix G) that incorporate some common sense technologies and research. The following list is a brief overview of ways to provide space for tree roots while reducing infrastructure damage.

Planting Space

Match tree species with available space. When possible, allow between 10 and 15 feet for large growing species, and take advantage of the added benefits of the increased canopy cover they provide.

Curving Sidewalks

Create additional space for trees by replacing existing sidewalks with ones that curve away from the tree. Build a new section or narrow the existing one to a minimum of 39 inches (for wheelchair access.)

Pop-Outs

Remove a section of curb and extend the planting space into the street, taking care to maintain water drainage. Combine with curved sidewalks to maximize tree space.

Tree Islands

Plant trees in groups, so they can share root space. This technique can be useful in non-linear settings, and they can double as traffic-calming devices.

Narrower Streets

Make more space for trees and people by widening sidewalks and planting spaces, and reducing the width of streets in appropriate locations. This has been shown to lower the number of accidents by slowing traffic. This will become more practical as cars get smaller and their numbers decrease in the coming decades.

Structural Soil

A structural soil mix, sometimes called an engineered or load-bearing soil, offers an alternative medium for planting in pits and under sidewalks. A formula developed by Cornell University researchers, consists of approximately 80 percent small triangular stones mixed with about 20 percent loam, along with a small amount of water retention material that also helps to keep the pore spaces open. The mixture helps prevent soil compaction, preserve large air spaces, and help ensure oxygen supply to the roots. When used under a sidewalk, there is promising evidence that this mix will support the pavement and keep it from lifting. Structural soil mix used under sidewalks can also expand the rooting space to extend under the pavement. It can be used to connect existing tree pits and increase available rooting space on the most congested urban thoroughfare.

Super Planting Pits

Where new construction is proposed, design large, unsealed surfaces (>130 sq.ft.) in combination with deep soil loosening, providing at least 525 cubic ft. of soil for each tree. A typical profile might be 24" topsoil, 24-32" exchanged mineral base soil, and 32-48" loosened original soil.

Root Barriers

Material installed vertically, directly adjacent to the paving should extend above the soil and mulch line. This will keep roots from growing over the top of the barrier. Ribbed material is more effective in directing roots downward and horizontally, instead of under sidewalks.

Rubber Sidewalks/ vaulted sidewalks

A modular sidewalk system made of recycled tires is relatively simple to install over existing tree roots. The material allows some flexibility of movement, and the modularity allows removal of specific portions for periodic inspection of tree roots. It also keeps tires out of landfills.

Appendix F is compiled from:

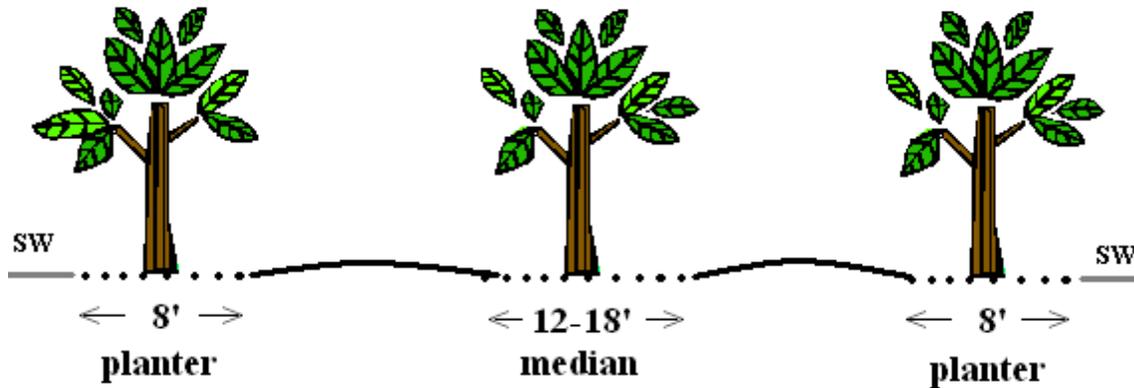
Buhler, Kristofferson & Larsen. *Growth of Street Trees in Copenhagen*, Scientific Journal of the ISA, Vol. 33, No.5. Sept. 2007.

Costello & Jones. *Designer Sidewalks*, ISA Arborist News Vo.I 14, No 5. Oct. 2005
Rubber Sidewalks, Inc. www.Rubbersidewalks.com

Urban, James, Up By Roots. ISA, 2008.

APPENDIX G-- Classic Street Profiles for Trees

The ideal street profile to create a tree-lined street with canopy forming trees would include 8' planter strips plus 12-18' wide medians. Future designs of major and minor arterials should consider this type of design where right-of-ways permit. This design provides adequate space above and below ground for trees, minimizing damage to curbs, sidewalks and streets. These guidelines enhance the driving, bike riding, jogging and walking experiences on these types of streets.



This is the ideal street design for development of maximum canopy, while providing separation between streets and sidewalks.



When space does not allow the development of a full median, 8' planter strips will offer enough room for large, canopy forming trees to be planted.

Planter strips should not be less than 6' wide. These narrow widths will only accommodate plantings of small to medium sized trees that will not produce the canopy effect.

Street designs that incorporate a 4' planter should not be planted with trees due to the limited above and below ground space. If trees are required as part of the street development or frontage improvement, then the trees should be planted at a minimum 4' behind the outside edge of the sidewalk if adequate space and rights-of-way are available.



Street trees are planted behind the sidewalk within public rights-of-way.

APPENDIX H--Additional References and Resources

The following websites provide related information and additional links.

Bainbridge Island Land Trust – www.bi-landtrust.org

City of Bainbridge Island – www.bainbridgewa.gov

City of Bainbridge Island Community Forest Management Plan

Matheny and Clark, Trees and Development: A Technical Guide to Preservation of Trees During Land Development

Kitsap County Extension (Washington State University) – www.extension.wsu.edu/kitsap/

The National Arbor Day Foundation – www.arborday.org

Pacific Northwest Chapter – International Society of Arboriculture – www.pnwisa.org

Tree Care Industry Association- TCIA - www.tcia.org

Trees Are Good <http://www.treesaregood.com/>

APPENDIX J- Suggested Landscape Matrix

This matrix provides a list of suggested plant materials recommended for use on Bainbridge Island. Additional plants may be added to this list as deemed appropriate by the department. Plants shall be selected based upon site-specific conditions which may affect plant growth such as sun exposure, soil types, shoreline conditions, adjacent site improvements, etc. Plant material selection shall be coordinated with utility company requirements to avoid conflicts.

	Parking lot trees	Landscape buffer areas	Critical areas – Uplands	Critical areas – Wetlands/streams	Native species	Drought resistant	Shoreline	Trees near util. lines
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Large deciduous trees

<i>Acer macrophyllum</i>	Bigleaf Maple	.	.	✕	✕	✕	.	.	.
<i>Acer rubrum species</i>	Red Maple variety	✕	✕	✕	.
<i>Acer saccharum</i>	Sugar Maple	✕	✕	.	.	.	.	.	.
<i>Alnus oregona</i>	Red Alder	.	.	✕	✕	✕	✕	.	.
<i>Fagus sylvatica</i>	European Beech	.	✕	.	.	.	✕	✕	.
<i>Fraxinus latifolia</i>	Oregon Ash	.	.	✕	✕	✕	.	.	.
<i>Gingko biloba 'Sentry'</i>	Columnar Maidenhair	.	✕	.	.	.	✕	.	.
<i>Liquidambar styraciflua</i>	American Sweet Gum	✕	✕	.	.	.	✕	✕	.
<i>Liriodendron tulipifera</i>	Tulip Tree	.	✕	.	.	.	.	.	.
<i>Platanus x acerifolia</i>	London Plane	.	✕	.	.	.	.	.	.
<i>Populus trichocarpa</i>	Black Cottonwood	.	.	.	✕	✕	.	.	.
<i>Quercus species</i>	Oak variety	.	✕	.	.	.	✕	.	.
<i>Quercus robur 'Fastigiata'</i>	Upright English Oak	.	✕	.	.	.	✕	✕	.
<i>Quercus rubra species</i>	Eastern Red Oak	.	✕	.	.	.	✕	.	.
<i>Salix species</i>	Willow variety	.	.	.	✕	✕	.	✕	.
<i>Tilia cordata</i>	Littleleaf Linden	✕	✕	.	.	.	.	✕	.

Medium deciduous trees

<i>Acer campestre</i>	Hedge Maple	✕	.	.	.	.	✕	.	✕
<i>Betula species</i>	Birch variety	✕	✕	.	.	.	.	.	.
<i>Carpinus betulus</i>	European Hornbeam	✕	✕	.	.	.	✕	✕	.
<i>Cercidiphyllum japonicum</i>	Katsura Tree	.	✕	.	.	.	.	.	.

		Parking lot trees	Landscape buffer areas	Critical areas – Uplands	Critical areas – Wetlands/streams	Native species	Drought resistant	Shoreline	Trees near util. lines
<i>Cornus species</i>	Dogwood variety	.	.	✕	.	✕	✕	.	.
<i>Fraxinus pennsylvanica</i> 'Marshall'	Marshall's Seedless Ash	✕	✕	.	.	.	✕	.	.
<i>Populus tremuloides</i>	Quaking Aspen	.	.	.	✕	✕	.	.	.
<i>Prunus species</i>	Flowering Cherry variety	✕	✕	.	.	.	✕	✕	.
<i>Pyrus calleryana species</i>	Flowering Pear variety	✕	✕	.	.	.	✕	.	.
<i>Zelkova serrata</i> 'Village Green'	Sawleaf Zelkova	✕	✕	.	.	.	.	.	.

Small deciduous trees

	
<i>Acer circinatum</i>	Vine Maple	.	✕	✕	✕	✕	.	.	✕
<i>Acer davidii</i>	David Maple	.	✕	.	.	.	.	.	.
<i>Acer ginnala</i>	Amur Maple	✕	✕	.	.	.	.	✕	✕
<i>Acer palmatum</i>	Japanese Maple	.	✕	.	.	.	.	.	✕
<i>Amelanchier species</i>	Serviceberry variety	.	✕	✕	✕	✕	.	.	✕
<i>Carpinus species</i>	Hornbeam variety	✕	✕	.	.	.	✕	✕	.
<i>Cornus florida</i>	Eastern Dogwood	.	✕	.	.	.	.	.	✕
<i>Cornus kousa</i>	Kousa Dogwood	✕	✕	.	.	.	.	.	✕
<i>Crataegus species</i>	Hawthorn variety	.	✕	✕	.	✕	✕	✕	✕
<i>Magnolia species</i>	Magnolia variety	✕	✕	.	.	.	.	✕	✕
<i>Malus species</i>	Flowering Crabapple	.	✕	.	.	.	.	.	✕
<i>Prunus species</i>	Flowering Cherry Plum	.	✕	.	.	.	✕	✕	✕
<i>Rhus typhina</i>	Staghorn Sumac	.	✕	✕	.	✕	✕	.	✕
<i>Styrax japonica</i>	Japanese Snowball	.	✕	.	.	.	.	.	✕

Evergreen trees

	
<i>Abies grandis</i>	Grand Fir	.	✕	✕	.	✕	.	.	.
<i>Cedrus deodara</i>	Deodar Cedar	.	✕	.	.	.	✕	✕	.
<i>Chamaecyparis lawsoniana</i>	Port Orford Cedar	.	✕	✕	.	✕	✕	✕	.
<i>Chamaecyparis nootkatensis</i>	Alaska Cedar	.	✕	✕	.	✕	✕	✕	.
<i>Calocedrus decurrens</i>	Incense Cedar	.	✕	.	.	.	.	.	.
<i>Picea sitchensis</i>	Sitka Spruce	.	✕	.	✕	✕	.	✕	.
<i>Pinus contorta</i>	Shore Pine	✕	✕	✕	.	✕	✕	✕	.
<i>Pinus contorta latifolia</i>	Lodgepole Pine	.	✕	.	.	.	✕	✕	.

		Parking lot trees	Landscape buffer areas	Critical areas – Uplands	Critical areas – Wetlands/streams	Native species	Drought resistant	Shoreline	Trees near util. lines
<i>Pinus densiflora</i>	Japanese Red Pine	.	✗	.	.	.	✗	.	.
<i>Pinus monticola</i>	Western White Pine	.	✗	✗	.	✗	✗	.	.
<i>Pinus nigra</i>	Austrian Black Pine	.	✗	.	.	.	✗	✗	.
<i>Pinus ponderosa</i>	Ponderosa Pine	.	✗	.	.	.	✗	.	.
<i>Pinus sylvestris</i>	Scotch Pine	✗	✗	.	.	.	✗	✗	.
<i>Pinus thunbergii</i>	Japanese Black Pine	.	✗	.	.	.	✗	✗	.
<i>Pseudotsuga menziesii</i>	Douglas Fir	.	✗	✗	.	✗	✗	✗	.
<i>Sequoiadendron sempervirens</i>	Coastal Sequoia	.	✗	.	.	.	.	✗	.
<i>Taxus brevifolia</i>	Western Yew	.	✗	.	✗	✗	.	✗	.
<i>Thuja plicata</i>	Western Red Cedar	.	✗	.	✗	✗	.	.	.
<i>Tsuga heterophylla</i>	Western Hemlock	.	✗	.	✗	✗	.	.	.

Deciduous shrubs

<i>Amelanchier alnifolia</i>	Western Serviceberry	.	✗	✗	✗	✗	.	✗	.
<i>Callicarpa japonica</i>	Japanese Beautyberry	.	✗	.	.	.	.	.	.
<i>Cornus stolonifera</i>	Red-Osier Dogwood	.	✗	✗	✗	✗	.	✗	.
<i>Corylus cornuta californica</i>	Western Hazelnut	.	✗	✗	.	✗	✗	.	✗
<i>Enkianthus campanulatus</i>	Red-Veined Enkianthus	.	✗	.	.	.	.	.	.
<i>Elaeagnus species</i>	Elaeagnus variety	.	✗	.	.	.	✗	✗	.
<i>Euonymus alata 'Compacta'</i>	Winged Eonymus	.	✗	.	.	.	✗	✗	.
<i>Hamamelis mollis</i>	Chinese Witch Hazel	.	✗	.	.	.	.	.	.
<i>Holodiscus discolor</i>	Ocean Spray	.	.	✗	✗	✗	✗	✗	.
<i>Hydrangea lacecap varieties</i>	Lacecap Hydrangea	.	✗	.	.	.	.	.	.
<i>Potentilla fruticosa</i>	Potentilla	.	✗	.	.	.	✗	✗	.
<i>Physocarpus capitatus</i>	Pacific Ninebark	.	.	.	✗	✗	.	.	.
<i>Rhamnus purshiana</i>	Cascara Sagrada	.	.	✗	✗	✗	.	.	.
<i>Ribes sanguineum</i>	Red-Flowering Currant	.	✗	✗	✗	✗	.	.	.
<i>Rosa nutkana</i>	Nootka Rose	.	.	✗	✗	✗	.	✗	.
<i>Rosa rugosa</i>	Rugosa Rose	.	✗	.	.	.	✗	✗	.
<i>Rubus parviflorus</i>	Thimbleberry	.	✗	✗	✗	✗	.	.	.
<i>Rubus spectabilis</i>	Salmonberry	.	✗	✗	✗	✗	.	✗	.
<i>Salix species</i>	Willow variety	.	.	.	✗	✗	.	✗	.
<i>Sambucus racemosa</i>	Red Elderberry	.	.	✗	✗	✗	.	✗	.

		Parking lot trees	Landscape buffer areas	Critical areas – Uplands	Critical areas – Wetlands/streams	Native species	Drought resistant	Shoreline	Trees near util. lines
<i>Spiraea species</i>	Spiraea variety	.	✕	.	✕	✕	✕	✕	.
<i>Symphoricarpos albus</i>	Snowberry	.	✕	✕	.	✕	✕	.	.
<i>Syringa vulgaris cultivars</i>	Lilacs	.	✕	.	.	.	.	✕	.
<i>Vaccinium parvifolium</i>	Red Huckleberry	.	.	.	✕	✕	.	.	.
<i>Viburnum x burkwoodii</i>	Burkwood Viburnum	.	✕	.	.	.	.	✕	.

Evergreen shrubs

	
<i>Arbutus unedo</i>	Strawberry Tree	.	✕	.	.	.	✕	✕	✕
<i>Cotoneaster species</i>	Cotoneaster variety	.	✕	.	.	.	✕	✕	.
<i>Gaultheria shallon</i>	Salal	.	✕	✕	✕	✕	✕	✕	.
<i>Ilex crenata</i>	Japanese Holly	.	✕	.	.	.	.	.	.
<i>Kalmia latifolia</i>	Mountain Laurel	.	✕	.	.	.	.	.	.
<i>Ligustrum japonicum</i>	Japanese Privet	.	✕	.	.	.	.	.	.
<i>Myrica californica</i>	Pacific Wax Myrtle	.	✕	✕	✕	✕	✕	✕	.
<i>Umbellularia californica</i>	California Bay Laurel	✕	✕	.	.	.	✕	✕	✕
<i>Osmarea x burkwoodii</i>	Burkwood Osmarea	.	✕	.	.	.	✕	.	.
<i>Osmanthus delavayi</i>	Delavay Osmanthus	.	✕	.	.	.	✕	✕	.
<i>Photinia frazeri</i>	Japanese Photinia	.	✕	.	.	.	✕	✕	.
<i>Pieris floribunda</i>	Mountain Pieris	.	✕	.	.	.	.	✕	.
<i>Pieris japonica</i>	Japanese Pieris	.	✕	.	.	.	.	✕	.
<i>Prunus lusitanica</i>	Portuguese Laurel	.	✕	.	.	.	✕	.	.
<i>Pinus mugo</i>	Mugho Pine	.	✕	.	.	.	✕	✕	.
<i>Rhododendron spp./ hybrids</i>	Rhododendrons / Azaleas	.	✕	✕	.	✕	.	✕	.
<i>Vaccinium ovatum</i>	Evergreen Huckleberry	.	✕	✕	✕	✕	.	✕	.
<i>Viburnum sinus species</i>	Laurustinus variety	.	✕	.	.	.	✕	✕	.

Groundcovers

	
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	.	✕	✕	.	✕	✕	✕	.
<i>Berberis nervosa</i>	Cascade Mahonia	.	✕	✕	.	✕	✕	.	.
<i>Calluna vulgaris</i>	Scotch Heather	.	✕	.	.	.	.	✕	.
<i>Ceanothus gloriosus</i>	Point Reyes Ceanothus	.	✕	.	.	.	✕	✕	.
<i>Cotoneaster microphyllus 'Cochleatus'</i>	Rockspray Cotoneaster	.	✕	.	.	.	✕	✕	.
<i>Erica carnea</i>	Winter Heath	.	✕	.	.	.	.	✕	.

		Parking lot trees	Landscape buffer areas	Critical areas – Uplands	Critical areas – Wetlands/streams	Native species	Drought resistant	Shoreline	Trees near util. lines
<i>Erica x darleyensis</i>	Mediterranean Heather	.	✗	.	.	.	.	.	.
<i>Euonymus fortunei</i>	Winter Creeper Euonymus	.	✗	.	.	.	.	✗	.
<i>Hypericum calycinum</i>	St Johnswart	.	✗	.	.	.	.	✗	.
<i>Ilex crenata varieties & cultivars</i>	Japanese Holly	.	✗	.	.	.	.	.	.
<i>Mahonia species</i>	Mahonia variety	.	✗	.	.	.	.	✗	.
<i>Pachysandra terminalis</i>	Japanese Spurge	.	✗	.	.	.	✗	.	.
<i>Sarcococca hookerana</i>	Sarcococca	.	✗	.	.	.	.	.	.

Revised by CFC - 2010

Additional Natives for the Landscape Matrix Community Forest

Large deciduous trees

Cornus nutallii Pacific Dogwood buf, n
Quercus garryana Garry Oak buf, n, drt

Small deciduous trees

Prunus emerginata Bitter Cherry buf, n, drt, shr, utl

Deciduous shrubs

Menziesia ferrugina False azalea buf, w, n
Omeleria cerasiformis Indian Plum buf, w, n
Oplopanax horridum Devils Club buf, w, n
Sorbus sitchensis Sitka Mountain Ash buf, up, n, drt
Spiraea douglasii Hardhack Spiraea buf, w, n
Viburnum edule Highbush Cranberry buf, up, n, shr

Evergreen shrubs

Polystichum munitum Sword Fern buf, up, n, drt
Rhododendron macrophyllum Pacific Rhododendron buf, up, n, shr

Groundcover

Blechnum spicant Deer fern buf, w, n
Gaultheria ovatifolia Tea Berry buf, w, n, shr

buf-buffer, **up**-uplands, **w**-wetlands, **n**-native, **drt**-drought, **shr**-shoreline, **utl**-utility

Memorandum

Date: September 3, 2020
To: Planning Commission
From: Nicholas Snyder, City Arborist
Subject: Proposed Updates to [BIMC 16.18](#) (Tree Removal, Forest Stewardship, and Vegetation Maintenance), [BIMC 16.32](#) (Protection of Landmark Trees), and [BIMC 18.15.010](#) (Landscape, Screening, and Tree Retention, Protection and Replacement)

Proposed Changes to [BIMC 16.18](#) – Tree Removal, Forest Stewardship, and Vegetation Maintenance

Change Number	Original Text	Proposed Text	Purpose
A-1	16.18.010.B. -- To a large extent, work carried out in landscaped yards and forested areas does not require a permit (see BIMC 16.18.040). However, property owners who are considering major changes to the landscape and trees on their property should seek advice and professional services from a licensed arborist who is certified by the American Society of Consulting Arborists or the International Society of Arboriculture, or a landscape professional who is certified by the city.	16.18.010.B. -- To a large extent, work carried out in landscaped yards and forested areas does not require a permit (see BIMC 16.18.040). However, property owners who are considering major changes to the landscape and trees on their property should seek advice and professional services from a licensed arborist who is certified by the American Society of Consulting Arborists or the International Society of Arboriculture.	The city does not certify landscape professionals.
A-2	16.18.030. -- Provisions of this chapter apply citywide to all properties where trees and naturally occurring vegetation are found, except where the following chapters of the municipal code apply:	16.18.030. -- Provisions of this chapter apply citywide to all properties where trees and vegetation are found, except where the following chapters of the municipal code apply:	Planted trees and vegetation are subject to some of the provisions in this chapter.

A-3	16.18.040.E – Routine maintenance activities in rights-of-way and required roadside buffers, including removal of hazard trees and invasive/exotic species, trimming of overgrown hedges, thinning and planting to replace removed vegetation to control vegetation on road and utility rights-of-way (see Chapter 12.04 BIMC).	16.18.040.E – Routine maintenance activities in rights-of-way and required roadside buffers, including removal of hazard trees and invasive/exotic species, trimming of overgrown hedges, thinning and planting to replace removed vegetation to control vegetation on road and utility rights-of-way. Where all portions of the project comply with applicable Right-of-Way regulations found in Chapter 15.12 BIMC.	Brings clarity to Right-of-Way vegetation regulations
A-4	16.18.050.A. -- A permit is required for any tree removal or vegetation maintenance in an area required to be retained or planted, pursuant to BIMC 18.15.010 , through a land use permit such as a subdivision, a site plan review, or a conditional use permit. Tree retention requirements for the R-2.9, R-3.5 and R-4.3 single family residential zones (subsection E of this section) also apply (see below).	16.18.050.A. -- A permit is required for any tree removal or vegetation clearing in an area required to be retained or planted, pursuant to BIMC 18.15.010 , through a land use permit such as a subdivision, a site plan review, or a conditional use permit. Tree Unit retention requirements in subsection G-I of this section also apply (see below).	This line creates confusion with what is allowed without a permit. This also adds the other tree unit requirements to the text of this chapter.
A-5	16.18.050.B.1. -- The tree is dead, or determined to be hazardous, as certified by an International Society of Arboriculture (ISA) Tree Risk Assessment Qualified (TRAQ) arborist; or	16.18.050.B.1. -- The tree is dead, or determined to be high or extreme risk , by an International Society of Arboriculture (ISA) Tree Risk Assessment Qualified (TRAQ) arborist using a Basic Tree Risk Assessment Form as provided by the ISA using a five year timeframe; or	Brings standardization to our tree hazard assessment process, and helps prevent improper designation of hazard trees
A-6	16.18.050 Subsection Addition	16.18.050.E.-- For properties located within the Mixed Use Town Center or Highschool Road Zones I and II a tree removal/vegetation maintenance permit is required for vegetation clearing of over 2500 square feet	Aligns Tree removal permitting language with stormwater regulations.

A-7	16.18.050 Subsection Addition	16.18.050.F.-- For properties located outside the Mixed Use Town Center or Highschool Road Zones I and II a tree removal/vegetation maintenance permit is required for vegetation and underbrush clearing of over 7000 square feet	Aligns Tree removal permitting language with stormwater regulations.
A-8	16.18.050 Subsection Addition	16.18.050.G – Removal or shortening of a wildlife snag that was kept or created as part of a mitigation plan resulting from a land use permit.	Protects Wildlife snags that were kept as part of a mitigation plan.
A-9	16.18.050.E.-- In the R-4.3, R-3.5 and R-2.9 zoning districts, existing single-family residential development, developing single-family residences and vacant parcels shall retain at least 30 tree units per acre, or at least as many tree units as the property had on October 31, 2018, pursuant to BIMC 18.15.010.G. Replanting may be required as described in BIMC 18.15.010.G. (Ord. 2018-19 § 1 (Exh. A), 2018)	16.18.050.H.-- In the R-4.3, R-3.5 and R-2.9 zoning districts, existing single-family residential development, developing single-family residences and vacant parcels shall retain at least 30 tree units per acre, or at least as many tree units as the property had on the date of permit application. Replanting may be required as described in BIMC 18.15.010.G. (Ord. 2018-19 § 1 (Exh. A), 2018)	Establishes realistic timeframe for measuring Tree Units.
A-10	16.18.050 Subsection Addition	16.18.050.I.-- In the MUTC central core and ferry terminal overlay districts, any parcel shall have at least 30 tree units per acre or at least as many tree units the property had on the date of permit application.	Brings applicable tree unit language into chapter 16.18
A-11	16.18.050 Subsection Addition	16.18.050.J. -- In the Mixed Use Town Center Ericksen Avenue, Madison Avenue, and gateway overlay districts, and each site in the R-5, R-8, R-14, HSR I and II, and NC districts, and for permitted nonresidential development in the R-4.3, R-3.5, R-2.9, R-2, R-1, and R-0.4 zone districts, the parcel shall have at least 40 tree units per acre or at least as many tree units the property had on the date of permit application.	Brings applicable tree unit language into chapter 16.18

A-12	16.18.060.B – An applicant shall protect any trees or landscaped area that must be retained during approved tree removal or vegetation maintenance work, pursuant to the protection provisions of BIMC 18.15.010.C.4	16.18.060.B. – An applicant shall protect any trees or landscaped area that must be retained during approved tree removal or vegetation maintenance work, pursuant to the protection provisions of BIMC 18.15.010.C.4 and the Community Forest Best Management Practices Manual.	Brings references to the CFMP and BMP Manual into code.
A-13	16.18.060.D.-- Any tree or vegetation removal or maintenance undertaken without a permit pursuant to this section shall be done to ensure long-term health of the trees or vegetation. A property owner shall follow the ANSI A300 (Part 1 – 2017), Tree, Shrub and Other Woody Plant Management – Standard Practices (Pruning), or 60 percent live-crown ratio, whichever standard is more appropriate for the species.	16.18.060.D.-- Any tree or vegetation removal or maintenance undertaken without a permit pursuant to this section shall be done to ensure long-term health of the trees or vegetation. A property owner shall follow the ANSI A300 (Part 1 – 2017), Tree, Shrub and Other Woody Plant Management – Standard Practices (Pruning).	This is not recognized as a useful standard by the professional Arboricultural community.

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A-14	16.18 Section Added	<p>16.18.090-- Forest Stewardship Plan</p> <p>A. Tree Removal and Vegetation Management activities that require a permit and are planned over multiple years may be permitted for up to a 10 year period after the submittal and City review of a Forest Stewardship Plan. At a minimum the plan shall include:</p> <ol style="list-style-type: none"> 1) A project narrative that addresses: <ol style="list-style-type: none"> a) Goals of the project b) Compliance with all applicable tree and vegetation retention regulations including those that resulted from a land use permit such as a subdivision, site plan review, or conditional use permit. c) Canopy cover impacts, d) Wildlife habitat impacts, e) Wildfire impacts 2) A site plan identifying existing vegetation 3) A site plan showing proposed vegetation activities 4) A vegetation activity timeline 5) A mitigation plan developed according to section 16.18.100 BIMC 6) The administrator may include additional conditions for a site-specific analysis by a qualified professional at the cost of the applicant. 	<p>Allows for multiple year permits to be issued for habitat restoration or wildfire mitigation projects in areas with no critical areas. (Sites with an ARPA would use an ARPA stewardship plan and require a critical areas permit)</p>
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A-15	<p>16.18.090.A— ... 1. Historic structural and functional values shall be restored, including water quality and habitat functions;</p> <p>2. Historic soil types and configuration shall be replicated;</p> <p>3. The disturbed area shall be replanted with vegetation that replicates the vegetation historically found on the site in species types, sizes, and densities. The historic functions and values should be replicated at the location of the alteration;</p> <p>4. Any applicable tree retention or replanting requirements shall be met through restoration, if required.</p>	<p>16.18.100.A – ... 1. Vegetation types, size, distribution and habitat functions shall be restored, including stormwater infiltration;</p> <p>2. Historic soil organic matter and infiltration shall be replicated;</p> <p>3. The historic environmental functions and values should be replicated at the location of the alteration;</p> <p>4. Any applicable tree retention or replanting requirement shall be met through restoration of disturbed areas when possible.</p>	Adds clearer and measurable standards
A-16	16.18.130 Addition	<p>16.18.140-- “Hazard Tree” means a tree that has been found to be high or extreme risk, by an International Society of Arboriculture (ISA) Tree Risk Assessment Qualified (TRAQ) arborist using a Basic Tree Risk Assessment Form as provided by the ISA using a five year timeframe.</p>	Adds a needed definition
A-17	16.18.130 Addition	<p>16.18.140-- “Dead Tree” means a tree that has no live tissue or is determined to have less than 10% live tissue by a Tree Risk Assessment Qualified ISA Arborist.</p>	Adds a needed definition
A-18	16.18.130 Addition	<p>16.18.140-- “Wildlife Snag” means a tree that has been partially removed and whose trunk has been left standing at six feet tall or taller to provide quality habitat for wildlife species.</p>	Adds a needed definition

A-19	16.18. 130 -- “Invasive/exotic species” means opportunistic plant species (either native or non-native) that colonize disturbed ecosystems and may come to dominate the plant community in ways that are seen by us as reducing the values provided by the previous plant community.	16.18.140-- “Invasive/exotic species” means opportunistic plant species that colonize disturbed ecosystems and may come to dominate the plant community in ways that are seen by us as reducing the values provided by the previous plant community.	Revises the definition to be more clear
A-20	16.18. 130 Addition	16.18.140-- “TRAQ” means Tree Risk Assessment Qualified, as administrated by the International Society of Arboriculture.	Adds a needed definition

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Proposed Changes to [BIMC 16.32](#) – Protection of Landmark Trees

Change Number	Original Text	Proposed Text	Purpose
B-21	16.32.010 Addition	16.32.010-- “Removal” This means cutting of a tree with the intent to kill it, this includes wildlife snag creation wherein all live material is removed from the tree.	Clarifies what qualifies as a removal
B-22	16.32.010 Addition	16.32.010-- “Dead Tree” means a tree that has no live tissue or is determined to have less than 10% live tissue by a Tree Risk Assessment Qualified ISA Arborist.	Expands the definition to include arboricultural realities.
B-23	16.32.020— Landmark trees are trees that meet the following criteria for their species:	16.32.020-- Landmark trees are trees that meet the following size criteria for their species or are known to be 100 years old or older:	Expands the qualifying criteria for Landmark trees.
B-24	16.32.020— Birch (<i>Betula papyrifera</i>) 30”	16.32.020-- Birch (<i>Betula spp.</i>) 30”	Expands definition
B-25	16.32.020— Beech (<i>Fagus grandifolia</i>) 36”	16.32.020-- Beech (<i>Fagus spp.</i>) 36”	Expands definition
B-26	16.32.020— Black Locust (<i>Robinia pseudoacacia</i>) 30”	Remove	This is an aggressive and Invasive tree
B-27	16.32.020— Japanese Laceleaf Maple 12”	16.32.020-- Japanese Maple 12”	Expands the definition

B-28	16.32.020 Addition	16.32.020-- Pacific Dogwood (<i>Cornus nutalii</i>) 20", Atlas Cedar (<i>Cedrus atlantica</i>) 36", Deodar Cedar (<i>Cedrus deodara</i>) 36", Giant Sequoia (<i>Sequoiadendron giganteum</i>) 40", Black Walnut (<i>Juglans nigra</i>) 24", Red Maple (<i>Acer rubrum</i>) 36", Weeping Willow (<i>Salix babylonica</i>) 30", Shore Pine (<i>Pinus contorta</i>) 24", Port Orford Cedar (<i>Chamaecyparis lawsoniana</i>) 30", Cherry (<i>Prunus</i> spp.) 24"	Adds additional trees to the Table in 16.32.020.
B-29	16.32.030.D.3. -- The tree is diseased, or otherwise determined to be a hazardous tree as determined by a qualified professional pursuant to BIMC 18.15.010.C.1.c.	16.32.030.D.3. -- The tree is determined to be a high or extreme risk tree within a five year timeframe by an ISA certified TRAQ Arborist using a Basic Tree Risk Assessment form as provided by the ISA.	Brings standardization to our tree hazard assessment process, and helps prevent improper designation and removal of hazard trees

Proposed Changes to BIMC 18.15.010 – Landscape, Screening, and Tree Retention, Protection and Replacement.

Change Number	Original Text	Proposed Text	Purpose
C-30	<p>18.15.010.C.1.c.-- Exceptions. Significant trees and tree stands may be removed if it is determined by a consulting arborist who is certified by the American Society of Consulting Arborists, or a TRACE certified professional as established by the PNW Chapter of the International Society of Arboriculture, and whose services are paid for by the applicant, that the vegetation is:</p> <p>i. A safety hazard due to potential root, trunk, or primary limb failure, or due to exposure of mature trees that have grown in a closed, forested situation; or</p> <p>ii. Damaged, diseased, or standing dead trees.</p>	<p>18.15.010.C.1.c.— Exceptions. Significant trees and tree stands may be removed if it is determined by a consulting arborist who is certified by the American Society of Consulting Arborists with TRAQ, or a TRAQ ISA Arborist, and whose services are paid for by the applicant, that the vegetation is:</p> <p>i. A high or extreme risk tree as determined using a Basic Tree Risk Assessment Form as provided by the ISA.</p> <p>ii. Diseased, or standing dead trees.</p>	<p>TRACE no longer exists as a qualification. TRAQ is the current standard</p>
C-31	<p>18.15.010.C.2.a.-- Intent. The intent of these regulations is to discourage the unauthorized removal of significant tree(s) and tree stands; and to establish a replacement or fine if such activity occurs. All replanting plans must be prepared or approved by a landscape architect licensed by the state of Washington, a Washington certified nursery professional or a Washington certified landscaper, a consulting arborist who is certified by the American Society of Consulting Arborists, or a TRACE certified professional as established by the PNW Chapter of the International Society of Arboriculture.</p>	<p>18.15.010.C.2.a.— Intent. The intent of these regulations is to discourage the unauthorized removal of significant tree(s) and tree stands; and to establish a replacement or fine if such activity occurs. All replanting plans must be prepared or approved by a landscape architect licensed by the state of Washington, a Washington certified nursery professional, a Washington certified landscaper, a consulting arborist who is certified by the American Society of Consulting Arborists, or an ISA certified Arborist.</p>	<p>Tree Risk Assessment Qualifications is not needed to create planting plans</p>

C-32	<p>18.15.010.C.3.-- Enforcement and Penalties. Failure to retain, replace or transplant trees will be enforced as follows; provided, that any fine shall be no less than three times the value of the trees, as determined by the current standards of the International Society of Arboriculture. If unauthorized tree(s) or vegetation removal occurs within the public right-of-way, all permits in force on the subject property shall be suspended and no new permits issued until the tree(s) or vegetation has been replaced or all penalties have been satisfied(...)</p>	<p>18.15.010.C.3.-- Enforcement and Penalties. Failure to retain, replace or transplant trees will be enforced as follows; provided, that any fine shall be no less than three times the value of the trees, as determined by the current standards found in 18.15.010.G.3.a.iii of the BIMC. If unauthorized tree(s) or vegetation removal occurs within the public right-of-way, all permits in force on the subject property shall be suspended and no new permits issued until the tree(s) or vegetation has been replaced or all penalties have been satisfied(...)</p>	Align with new valuation paradigm
C-33	<p>18.15.101.C.3.e.iv. -- In addition to the penalties addressed under subsection C.3.e.ii of this section, failure to retain, replace or transplant trees will be enforced as provided in this code; provided, that any financial penalty assessed will be the greater of the amount indicated in Table 18.15.010-2 or three times the value of the trees, as determined by the current standards of the International Society of Arboriculture, whichever is greater...</p>	<p>18.15.101.C.3.e.iv. -- In addition to the penalties addressed under subsection C.3.e.ii of this section, failure to retain, replace or transplant trees will be enforced as provided in this code; provided, that any financial penalty assessed will be the greater of the amount indicated in Table 18.15.010-2 or three times the value of the trees, as determined by the current standards found in 18.15.010.G.3.a.iii of the BIMC, whichever is greater...</p>	Align with new valuation paradigm
C-34	<p>Table 18.15.010-2-- The financial penalty will be the amount indicated in this table or three times the value of the trees, as determined by the current standards of the International Society of Arboriculture, whichever is greater, pursuant to subsection C.3.e.iv of this section.</p>	<p>Table 18.15.010-2-- The financial penalty will be the amount indicated in this table or three times the value of the trees, as determined by the current standards found in 18.15.010.G.3.a.iii of the BIMC, whichever is greater, pursuant to subsection C.3.e.iv of this section.</p>	Align with new valuation paradigm

C-35	18.15.010.C.4.b.viii.-- Wherever this subsection C.4 allows or requires the involvement of a consulting arborist, that individual shall be selected from the city's list of current arborists certified by the American Society of Consulting Arborists and his or her services shall be paid for by the applicant.	18.15.010.C.4.b.viii.-- Wherever this subsection C.4 allows or requires the involvement of a consulting arborist, that individual shall be certified by the International Society of Arboriculture (ISA) and his or her services shall be paid for by the applicant.	The city does not maintain a list of this type. Further there are no ACSA registered arborists in Kitsap County.										
C-36	18.15.010.C.4.b.— Addition	18.15.010.C.4.b.x. — To ensure the best outcomes for significant trees that are retained any situation not directly addressed above shall follow standards laid out in Section 2 of the Community Forest Best Management Practices Manual.	Expands tree protection standards to cover a broader spectrum of situations and conditions.										
C-37	18.15.010.G.2.-- ...If a substantial portion of a significant tree trunk, dripline and/or critical root zone extends onto an adjacent property, both properties may use the tree units to meet the requirements of subsection G.4 of this section, upon mutual agreement. These provisions shall not apply to projects involving only interior renovation of existing buildings.	18.15.010.G.2.— ...If any portion of a significant tree trunk, extends across an adjacent property line, each property may use half the tree units of that tree to meet the requirements of subsection G.4 of this section. These provisions shall not apply to projects involving only interior renovation of existing buildings.	Aligns code language with legal tree ownership rulings.										
C-38	18.15.010.G.3.a.iii. -- The applicant shall also submit valuation of all trees to be retained, using the valuation standards of the International Society of Arboriculture (see administrative manual for submittal requirements for landscaping plans). This provision does not apply to new and existing single-family residential development in the R-2.9, R-3.5, and R-4.3 zone districts.	18.15.010.G.3.a.iii-- The applicant shall submit a valuation schedule of all trees required to be retained Using the city table provided below. This provision does not apply to new and existing single-family residential development in the R-2.9, R-3.5, and R-4.3 zone districts. <table border="1" data-bbox="565 1381 867 1606"> <thead> <tr> <th>DBH Range (inches)</th> <th>Restoration Value</th> </tr> </thead> <tbody> <tr> <td>3 - 11.9</td> <td>\$500</td> </tr> <tr> <td>12 -23.9</td> <td>\$1,500</td> </tr> <tr> <td>24-35.9</td> <td>\$5,000</td> </tr> <tr> <td>36+</td> <td>\$10,000</td> </tr> </tbody> </table> iv. Applicant may choose to hire a qualified professional to complete a tree appraisal in lieu of using the City table. That appraisal must follow Council of Tree and Landscape Appraisers (CTLA) Tree Appraisal Guidelines set out in the most current manual released by the CTLA.	DBH Range (inches)	Restoration Value	3 - 11.9	\$500	12 -23.9	\$1,500	24-35.9	\$5,000	36+	\$10,000	Rewritten to be a more useful and applicable tool.
DBH Range (inches)	Restoration Value												
3 - 11.9	\$500												
12 -23.9	\$1,500												
24-35.9	\$5,000												
36+	\$10,000												



CITY OF
BAINBRIDGE ISLAND

Planning Commission Regular Meeting Agenda Bill

MEETING DATE: September 10, 2020

ESTIMATED TIME: 45 Minutes

AGENDA ITEM: (7:00 PM) - Ordinance 2020-16 Amending Bonus Floor Area Ratio (FAR) Options, BIMC 18.12.030.E.

AGENDA CATEGORY: Discussion

PROPOSED BY: Jennifer Sutton

PREVIOUS PLANNING COMMISSION

REVIEW DATE(S): February 27, March 12, May 14 and 28, June 11, June 25, July 9 and August 27, 2020.

PREVIOUS COUCIL REVIEW DATE(S): February 4, 11, 25, March 3, 10, & April 14 & 28, August 25, 2020

RECOMMENDED MOTION:

Continue discussion of Ordinance 2020-16 and formalize a recommendation to the City Council on the Bonus FAR program before the September 15, 2020 City Council meeting.

SUMMARY:

See Attached July 9 Planning Commission Proposed Changes document. At the June 11 meeting, the full Planning Commission came to consensus on changing the Bonus FAR program based on a Commission subcommittee recommendations. These changes were captured in DRAFT Ordinance 2020-16, and were discussed on June 25. During the June 25 discussion, the focus was on the Commission's ideas for reducing parking demand in downtown Winslow and existing ferry parking. Currently there is a bonus FAR provision in the Ferry Terminal District for relocating existing surface ferry parking to a garage (BiMC 18.12.030.E.7). Staff included DRAFT Ordinance No. 2020-16 and information in the July 9 Commission packet about existing parking requirements for residential and commercial development in the MUTC and HS Road zones to support the Commission's discussion of incentivizing development that improves the parking situation in downtown Winslow. On July 9, the Commission also discussed how to pursue eliminating the sale of Islander Mobile Home Park residential FAR. See staff memo for additional analysis of the Commission's attached July 9 proposed changes to the bonus FAR program.

On August 27, 2020, the Planning Commission discussed a memo from staff that provided analysis on the proposal to the Bonus FAR program to the Comprehensive Plan. The purpose of tonight's discussion is to formalize a recommendation to the Council on the Bonus FAR program before the September 15, 2020 City Council meeting.

BACKGROUND: The City Council has engaged in multiple discussions regarding bonus FAR density options. The following is a chronological legislative history summary of discussions and decisions made by the Council and the Planning

Commission thus far related to Ordinance No. 2020-10, as well as related to consideration of FAR density options more generally. The summary is based on the agenda packet materials and the minutes of the meetings as below described.

At the February 4, 2020 City Council study session, Councilmembers expressed an interest in discussing whether to eliminate the option to purchase bonus FAR. The fees for FAR have been established by resolution (Resolution Nos. 2001-02 & 2006-50) and are included within the City's Fee Schedule. The fees are \$18 per square foot for residential development, \$25 per square foot for mixed use development, and \$34 per square foot for commercial development. The funds are split between public amenities (40%) and farm/agriculture (60%).

Options considered by the Council at the February 4 meeting included pursuing a suspension of the bonus FAR regulations via adoption at a future meeting of an interim control ordinance that would be effective immediately (if adopted on an emergency basis) or five days after passage and publication (if enacted on a non-emergency basis). The Council also discussed the option of seeking to otherwise consider revisions to or elimination of the FAR bonus option by referring the matter to the Planning Commission for review and recommendation, and the Council would then consider that recommendation before taking action.

At the February 11, 2020 City Council business meeting, the Council passed a motion directing the City Manager to pursue an interim zoning control related to BIMC 18.12.030.E. to suspend that section (relating to bonus FAR). A motion to direct the Planning Commission to review Chapter 18.12 BIMC relating to FAR and Chapter 18.21 BIMC relating to affordable housing was tabled. Following further discussion, the Council decided to revisit the first motion and approved a motion to reconsider that motion relating to the development of an interim control ordinance at the Council's February 25, 2020 meeting.

At the February 25, 2020 City Council meeting, the Council reconsidered the motion directing the City Manager to develop an interim control ordinance related to suspending BIMC 18.12.030.E. regarding use of bonus FAR density. That motion failed. Other motions also failed related to directing the City Manager to pursue an interim zoning control that would suspend BIMC 18.12.030.E. in different ways. However, the Council passed unanimously (6-0, with Councilmember Pollock absent) the following motion:

I move to direct the City Manager to work with the Planning Commission and any other appropriate City committees or commissions to bring back to Council as quickly as possible an ordinance that will reform the City's bonus FAR programs so as to only allow bonus FAR in relation to Affordable Housing, Historic Preservation, and Transfer of Development Rights.

At the February 27, 2020 Planning Commission meeting, City staff briefly discussed with the Planning Commission the City Council's action directing the City Manager to work with the Planning Commission to bring back to the Council as quickly as possible an ordinance to reform the City's bonus FAR programs so as to only allow bonus FAR in relation to affordable housing, historic preservation, and transfer of development rights.

At the March 3, 2020 City Council meeting, Councilmember Medina was absent and Councilmember Pollock, who was absent for the February 25 meeting, was present. Councilmember Pollock moved and Councilmember Deets seconded a motion to add a discussion regarding an interim zoning control related to BIMC 18.12.030.E. to that night's agenda under Unfinished Business. The Council approved the agenda as amended. The Council then unanimously passed a motion to

suspend the rules for the purpose of taking up this motion again after having voted on it at the last meeting on February 25. The Council then unanimously passed the following motion:

I move to direct the City Manager to prepare an interim zoning control ordinance for consideration at the Council's March 10 meeting related to BIMC 18.12.030.E. to suspend the applicability and use of that Section E., except that subsections E.1. (related to Optional Affordable Housing) and E.6. (related to Historic Structure Preservation) would not be suspended and waiving any procedural requirements that would otherwise apply to the motion that was passed.

At the March 10, 2020 City Council meeting, the Council considered the interim control ordinance that was prepared as directed by the Council at its March 3, 2020 meeting related to suspending the applicability and use of BIMC 18.12.030.E., except that subsections E.1. (related to Optional Affordable Housing) and E.6. (related to Historic Structure Preservation) would not be suspended. The ordinance was prepared as an emergency ordinance, meaning that it would be effective immediately upon passage. The ordinance also included suspension of the applicability and use of BIMC 18.27.080 and footnote three of Table 18.12.020-3 because those provisions relate directly to the provisions that were being suspended in BIMC 18.12.030.E.

As part of that March 10, 2020 Council meeting, the Council passed various motions to revise the ordinance as drafted. The first such motion was to add an additional exclusion to the interim zoning control as follows:

I move to amend Ordinance No. 2020-10, Section 2.B., to add an exclusion to the interim zoning control for development projects that filed a complete land use permit application with the City and have purchased from the City or otherwise acquired development rights, including related to bonus floor area ratio, through an executed covenant, development agreement, or contract, prior to the effective date of this ordinance.

The Council then adopted motions to remove two recital "Whereas" clauses in the draft ordinance. The Council then voted unanimously to approve Ordinance No. 2020-10 with the following motion:

I move to approve Ordinance No. 2020-10, relating to an interim zoning control to hereby suspend BIMC 18.12.030.E. and related provisions as described in the ordinance regarding floor area ratio bonus density options, except for Sections E.1. and E.6. of BIMC 18.12.030.E. as amended.

At the March 12, 2020 Planning Commission meeting, the Planning Commission ("Commission") had an item on their agenda entitled "FAR Discussion." Included as part of the materials for that agenda item was the February 27, 2020 memorandum written by Planning Director Heather Wright that is referenced above in relation to the Commission's February 27 meeting. Under the "Council Action" section of the memorandum, it states:

On February 25, 2020, the City Council approved a motion that the City Manager work with the Planning Commission and appropriate City Committees or Commissions to bring back to Council as quickly as possible an Ordinance that will reform the City's bonus FAR programs so as to only allow bonus FAR in relation to Affordable Housing, Historic Preservation and Transfer of Development Rights.

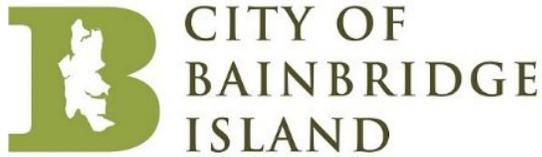
Based on the draft minutes for this Commission meeting on March 12, 2020 (attached as Attachment B below), Planning Director Heather Wright introduced the interim zoning control ordinance. Following, there was public comment, including from Councilmember Pollock. After the public comment, the Commission unanimously passed a motion that recommended changes to the interim control to the City Council.

At the April 14, 2020 City Council meeting, the Council scheduled a public hearing regarding Ordinance No. 2020-10 for April 28, 2020. The Council took action to set the public hearing pursuant to RCW 35A.63.220 and RCW 36.70A.390, which require the Council to hold a public hearing within 60 days of adoption of Ordinance No. 2020-10 (i.e., by May 10, 2020) in order to take public testimony and to consider adopting further findings of fact.

On April 28, 2020, the City Council held a public hearing on Ordinance 2020-10 and no changes to the Ordinance were made.

The Planning Commission formed a subcommittee of 3 members (Chester, Paar, Quitslund) to begin working on a revised FAR ordinance. The Planning Commission discussed Subcommittees information and recommendations on changes to bonus FAR regulations on at their May meetings and on June 11. City Staff integrated the June 11 recommendations into DRAFT Ordinance 2020-16. Those changes were discussed by the Commission on June 11 and July 9. See attached staff memo for additional information.

ATTACHMENTS:



Department of Planning and Community Development

Memorandum

Date: September 10, 2020
To: Planning Commission
From: Jennifer Sutton, AICP
Senior Planner
Subject: Planning Commission Review of Bonus FAR Program

I. BACKGROUND

On March 10, 2020, the City Council approved an [interim zoning control ordinance](#) related to Floor Area Ratio ("FAR") bonus options ([Ordinance No. 2020-10](#)). The interim control became effective immediately and paused the use of bonus FAR, which increases the amount of residential, commercial, or mixed-use development that can be built for some types of projects in some instances. At their [August 25, 2020 meeting](#), the City Council will hold a public hearing on Ordinance No. 2020-20 to consider extending the Interim Zoning Control until March 10, 2021.

The FAR and Bonus FAR development provisions only apply within the Mixed Use Town Center (MUTC) and High School Road zoning districts, otherwise known as downtown Winslow or Winslow. See attached map and excerpt of [BIMC Table 18.12.020-3](#). See definitions of Floor Area and Floor Area Ratio below ([BIMC 18.12.050](#)).

F. Floor Area. Floor area is measured as the total area of all floors within the exterior vertical walls of a building. If any room has a sloping ceiling, no portion of the room measuring less than five vertical feet from the finished floor to the finished ceiling shall be included in the computation of total area.

G. Floor Area Ratio (FAR). "Floor area ratio" is a figure that expresses the total floor area as a multiple of the lot area. This figure is determined by dividing the floor area of all buildings on a lot by the lot area prior to removal of lot area for dedication. Portions of parking located underneath a building footprint are not counted in floor area ratio calculations.

The City's Bonus FAR program was created in the late 1990's as part of implementing the [Winslow Master Plan \(WMP\)](#); as described in the [WMP](#), bonus FAR incentivizes developers to provide or integrate a variety of community benefits as a way to earn bonus FAR. Each district has different FAR standards for residential, commercial, and mixed-use FAR, and in several districts, the program has a "built-in" incentive for mixed-use development by having a higher mixed-use FAR standard than straight commercial or residential development.

In addition, the Bonus FAR could be purchased from the City to support public farmland and improved amenities downtown. As a result of the interim zoning control, Bonus FAR choices were limited and can now only be obtained or used currently under the following circumstances:

- Providing affordable housing as defined in Chapter 18.36 BIMC in accordance with BIMC 18.12.030.E.1.a;
- Transferring unused FAR from the Islander Mobile Home Park to another parcel or parcels in the Mixed Use Town Center District for residential development in accordance with BIMC 18.12.030.E.1.b; or
- Preserving an historic structure located on a state, local, or federal register in accordance with BIMC 18.12.030.E.6. such that, when an historic structure is preserved, the square footage of that structure will not count toward the FAR calculation.

[Ordinance No. 2020-10](#) includes an exclusion recognizing development rights that were purchased from the City or otherwise acquired prior to the effective date of the ordinance, as well as a provision recognizing vested rights. The interim control is set to expire on September 10, 2020.

As directed by the City Council on February 25, 2020, the Planning Commission has been tasked to bring back to Council as quickly as possible an ordinance that will reform the City's bonus FAR program so as to only allow bonus FAR in relation to Affordable Housing, Historic Preservation, and Transfer of Development Rights. The Planning Commission began their discussion on [March 12, 2020](#), and it continued on [May 14 and 28, June 11, June 25, and July 9, 2020](#). The Planning Commission had formed a subcommittee that came back with recommendations on revising the Bonus FAR program on June 11. The Commission affirmed the committee's recommendations for revising the Bonus FAR program, and those recommendations were integrated into DRAFT Ordinance No. 2020-16 for discussion at the July 9 meeting. The Planning Commission's refined their recommendation at that July 9 meeting- see attached summary in ~~strikeout~~/underline format. Staff analysis of some components of the Commission's recommendation is below.

II. Comprehensive Plan

As mentioned above, the bonus FAR program was originally added in the late 1990's as part of implementing the [Winslow Master Plan \(WMP\)](#), which was originally approved in 1998 and substantially updated in 2006. The WMP went into the details about how Winslow could grow and change to support the broader smart growth principles of the City's [Comprehensive Plan](#). Those smart growth principles were reaffirmed in the recent Comprehensive Plan Update, including the [Land Use Vision 2036](#) and the City's growth plan, the Island-wide Conservation and Development Strategy.

ISLAND-WIDE CONSERVATION AND DEVELOPMENT STRATEGY GOAL LU-4

As part of a long-term Island-wide Conservation and Development Strategy, focus residential and commercial development in designated centers, increase a network of conservation lands, maximize public access while protecting the shoreline, minimize impacts from the SR 305 corridor and conserve the Island's ecosystems and the green and open character of its landscape.

The Island-wide Conservation and Development Strategy, Land Use Element Goals LU-5 through LU-8 and supporting policies promote housing and commerce in designated centers including downtown Winslow and describe the positive benefits of that growth pattern.

Policy LU 5.1 Winslow is the urban core of the Island while the Neighborhood Centers are smaller-scale mixed-use centers. In order to achieve the goals of the GMA this Plan:

- Encourages development in areas where public facilities and services exist or can be provided in an efficient and effective manner.

- Provides a vibrant, pedestrian-oriented core.
- Reduces sprawl.
- Provides choice of housing location and lifestyle.
- Maintains and protects environmentally sensitive and resource lands.
- Encourages the retention of open space.
- Maintains and enhances fish and wildlife habitat.

GOAL LU-6 Ensure a development pattern that is true to the Vision for Bainbridge Island by reducing the conversion of undeveloped land into sprawling development. Encourage improvement of aging or underutilized developments over development of previously undeveloped property.

Policy LU 6.1 Land use designations reflect the priority of Bainbridge Island to remain primarily residential and agricultural with nonresidential development concentrated in the designated centers.

Policy LU 6.2 Promote dense residential and commercial development and encourage human activity within Winslow, the heart of Bainbridge Island. In order to create a vibrant city center direct growth where infrastructure exists, reduce reliance on the automobile, provide opportunities for affordable housing and absorb growth that would otherwise be scattered in outlying areas. Plan for adequate parking in Winslow to accommodate residents and visitors who drive downtown for shopping, participation in local government, attendance at cultural events and centers, and to use other resources in Winslow.

GOAL LU-7 The Winslow mixed use and commercial districts are designed to strengthen the vitality of downtown Winslow as a place for people to live, shop and work. The Winslow Mixed Use Town Center (MUTC) is intended to have a strong residential component to encourage a lively community during the day and at night. The high residential density of Winslow requires the Central Core Overlay District to provide services and products that meet the needs of residents as well as visitors.
Policy

LU 7.1 The Island's major center for new commercial development is the Mixed Use Town Center (MUTC) and the other commercial districts in Winslow. Development within the MUTC and High School Road Districts shall be consistent with the Winslow Master Plan. The level of development is determined using Floor Area Ratio (FAR) rather than dwelling units per acre. The use of FAR may result in an increase in the base level of development (density) over the existing zoning, but will provide greater flexibility in type and size of housing units that will further the goals of this Plan.

The above Land Use Element policies are merely a smattering that support the City's [Comprehensive Plan](#) anti-sprawl land use strategy. Additional support can be found in the Comprehensive Plan Elements hyperlinked below.

[Introduction](#)

[Land Use Element](#)

[Economic Element](#)

[Housing Element](#)

[Transportation Element](#)

[Winslow Master Plan](#)

As mentioned above, the [Winslow Master Plan \(WMP\)](#) describes a Winslow that is a major component of the City's overall land use strategy as the Island's primary center for commerce and housing. The "bonus FAR tool" is described in the [WMP](#) as a way to achieve community benefits above and beyond

what is required by the BIMC. See attached document of [WMP](#) goals, policies and information specifically related directly to the bonus FAR program. The very first page of the [WMP](#) distills these community goals (below):

WHY A MASTER PLAN FOR WINSLOW?

The Comprehensive Plan establishes the vision and overall framework for the future of Winslow. It is designated as the major area of urban concentration — the commercial, cultural and commuter hub of the Island.

Higher intensity of residential and commercial activity is recommended for Winslow to 1) encourage development where public facilities and services exist or can be efficiently expanded, 2) provide choice of housing for all economic segments of the population, 3) reduce sprawl elsewhere on the Island, 4) encourage efficient multimodal transportation, and 5) encourage economic development within Winslow.

WMP Chapter 1 Introduction & Summary

BONUS FAR Changes Reduces New Commercial Development

As seen above, the [Comprehensive Plan](#) and [WMP](#) identify and promote Winslow as the commercial center for Bainbridge Island. The July 9 Planning Commission recommendations to modify the bonus FAR provisions (see attached) and eliminate the ability to purchase FAR from the City would limit the ability of commercial development to achieve bonus FAR to 1) projects that can integrate preserving a historic building and 2) mixed-use developments that provides affordable housing pursuant to [BIMC 18.12.030.E.1.a](#). To summarize, the changes currently contemplated by the Planning Commission de facto limit most commercial development to the base FAR levels of [BIMC Table 18.12.020-3](#).

If the Planning Commission and City Council continue pursuing this limitation on new commercial development, staff recommends eliminating the bonus FAR provisions for commercial development, and set a maximum commercial FAR standard that is equal to the current bonus FAR level for each zoning district- see this change in excerpt of BIMC Table 18.12.020-3 below. Keeping the theoretical amount of allowed commercial development at the same level would ensure that the City wouldn't backtrack on the [Comprehensive Plan](#) and [WMP](#) goals and policies that promote Winslow as the Island's center of commerce.

ZONING DISTRICT DIMENSIONAL STANDARD	Winslow Mixed Use Town Center					HSR I and II
	Central Core Overlay	Madison Avenue Overlay	Ericksen Avenue Overlay	Gateway Overlay	Ferry Terminal Overlay [See BIMC 18.12.030.C]	
Basic Maximum						
Commercial and Other Nonresidential Uses	0.6	0.4	0.3	0.15	0.1	0.3
Maximum with Bonus	Bonus densities require compliance with BIMC 18.12.030.E					
Commercial and Other Nonresidential Uses	1.0	0.6	0.6	0.3	0.2	0.6

Another option for the Planning Commission to consider is creating a bonus FAR option for commercial. Previously, options included a fee, construction of amenities and parks to name a few.

In addition to supporting the goals and policies that put Winslow at the center is Bainbridge Island commerce and public life, the Growth Management Act requires that that comprehensive plans and zoning plan for future jobs, not just future residences. It is well known that the City's 2016 Comprehensive Plan needed to plan for or accommodate a future population of 28,660 persons. Lesser known is that comprehensive plans need to accommodate enough land with commercial development potential to accommodate future jobs. Kitsap County and its cities coordinated on the [2014 Buildable Lands Report](#) (see Chapter 5 and Appendix C for more information on commercial capacity analysis) in advance of the comprehensive plan update. Page 18 of [Introduction](#) to the Comprehensive Plan summarizes this work and is excerpted below:

The Plan has been updated based on residential and employment targets that align with [Vision 2040](#), as demonstrated through the population and employment capacity analysis in the [Kitsap County 2014 Buildable Lands Report](#). The City's existing residential and commercial zoning accommodates those target- see tables below.

Table IN-1: City of Bainbridge Island Population Capacity and Demand	
2036 Residential Population Forecast/Target	28,660
Population Capacity Under Existing Zoning	6,814
2010-2036 Allocated Population Growth	5,635
Net 20-Year Population Capacity (+ or -)	+1,179
Population Capacity/Demand Ratio	1.21

Table IN-2: City of Bainbridge Island Employment Capacity and Demand	
Employment Capacity Under Existing Commercial Zoning	2,941 jobs
2036 Employment Growth Forecast/Target	2,808 jobs
Net 20-Year Population Capacity (+ or -)	+133 jobs
Employment Capacity/Demand Ratio	1.04

Table IN-2 shows that the City has just enough land with commercial development capacity to accommodate 2,808 future jobs. The [2014 Buildable Lands Report](#) commercial capacity analysis for the MUTC and HS road zones utilized the bonus commercial FAR standard to calculate employment growth capacity. The Growth Management Act requirement to plan for future commercial development is another reason to not reduce the availability of commercial FAR, and instead, to consider making the current bonus commercial FAR as maximum FAR standard if the Planning Commission opts to move forward with their current recommendation to scale back the bonus FAR program.

Affordable Housing

Increasing the amount of affordable housing and improving housing affordability generally are goals that permeate several elements of the [Comprehensive Plan](#), notably the [Land Use](#), [Housing](#) and [Economic Elements](#). To achieve the affordable housing goals and policies in the [Comprehensive Plan](#), City Council created a short-term Affordable Housing Task Force (AHTF) in 2017 to assist the City in prioritizing a variety of affordable housing actions.

The City changed its mandatory affordable housing requirement to voluntary in 2005 ([BIMC 18.21](#)), and developers have opted not to use it, including in downtown Winslow ([BIMC 18.12.030.E.1.a](#)). Although the City has succeeded in building a high proportion of new residences in Winslow in the last 20 years, few of the units have been designated as "Affordable Housing". Despite the aspirational goals of the [Comprehensive Plan](#) and [WMP](#), the City's development code is not producing affordable units.

The City has hired firm ECONorthwest to provide economic analysis and feasibility study regarding a new Inclusionary Zoning program and adoption of a Multifamily Tax Exemption (MFTE). Council discussed these issues on [June 19](#), [October 2](#) and [December 4](#), 2018. On [February 19, 2019](#), ECONorthwest presented a final report to City Council. The final analysis indicated that the City's FAR (too low), building height (too low) and parking standards (too high) are outdated, and need to be changed in order to create an inclusionary zoning program that relies on the private market to produce affordable housing. Council has continue consideration of adoption of an MFTE and/or an inclusionary zoning program and continued to make progress on these complex issues at their [September 17, 2019](#) and [February 4, 2020](#) meetings, however the Council has not finalized a policy direction to design a inclusionary zoning program that could be successful.

Although limiting bonus FAR to those projects that include affordable housing as required by [BIMC 18.12.030.E.1.a](#) seems like a way to ensure that affordable housing is constructed in lieu of market rate and commercial development, it is unlikely that any private development project would utilize this section, because it hasn't been utilized for 15 years. The City's base and bonus FAR levels have not been updated since the WMP was originally implemented- more than 20 years ago.

The [February 2019 Final Report on Inclusionary Zoning](#) by ECONorthwest indicates that the current available FAR is too low, and the affordability requirement too high (requiring the entirety of any bonus FAR to be designated affordable housing) to produce any private development projects. The modeling done by ECONorthwest was utilizing a 10% affordable housing requirement. Given that building and implementing designated affordable housing is expensive, the lower the income targeted, the higher the number of market-rate units needed to support those affordable units. Add in the incredible low vacancy for rental units at this time, and for these reasons, City Planning staff cautions against modifying and limiting the bonus FAR provisions of BIMC 18.12.030.E without making the other changes to FAR, building height and parking that are described in [February 2019 Final Report on Inclusionary Zoning](#) by ECONorthwest. As described above, the [Comprehensive Plan](#) and [WMP](#) describe a Winslow where both commerce and diverse housing types are appropriate.

III. Islander MOBILE HOME PARK RESIDENTIAL FAR

In 2004, the residents of the Islander Mobile Home Park (IMHP) succeeded in their multi-year effort to purchase their mobile home park property to prevent it from being sold and likely, redeveloped. This purchase was the result of a wide-scale community effort to raise money to preserve the IMHP to preserve this pocket of affordability in downtown Winslow. The City was an integral partner in the preservation of the IMHP. The IMHP is in the MUTC/Central Core District in the center of downtown Winslow, which allows the most intense development. Preserving the IMHP as a mobile home park with a relatively low level of development left the IMHP with more than 137,000 square feet of unused "Residential" FAR.

The City is party to a 2004 Covenant with the then newly formed IMHP Residents Association that outlines the ability of the IMHP to "sell" or "transfer" the unused residential FAR with City oversight. Most of the IMHP residential FAR has been sold and used in development throughout Winslow, however some of the IMHP residential FAR remains unsold or unused.

On July 9, the Planning Commission recommended eliminating BIMC 18.12.030.E.1.b, the IMHP bonus FAR provision, and that the City should purchase the balance of IMHP FAR. In making this recommendation, the Commission acknowledged that to do so would require legal review and budget analysis to inform a City Council decision on this task. Eliminating this provision would also require amending that 2004 Covenant in coordination with the other parties. Part of the Commission's rationale for eliminating the IMHP FAR is because the City doesn't otherwise have mandatory affordable housing provisions, such as mandatory inclusionary zoning, that the residential bonus FAR could be used to build only market-rate housing in downtown Winslow. This provision is in the Affordable Housing portion of Section E because of the affordable units MAINTAINED by preserving the IMHP.

Staff has briefed the City Attorney's office about the Planning Commission's proposal. Staff will schedule a time for staff and the Planning Commission to check-in with the City Council regarding the entire Planning Commission proposal for updating the Bonus FAR program, including the proposal to pursue eliminate the Mobile Home Park bonus FAR provisions (BIMC 18.12.030.E.1.b), prior to the Planning Commission holding a public hearing and completing their recommendation on Ordinance No. 2020-16.

IV. NEXT STEPS & PUBLIC OUTREACH

At their [August 25, 2020 meeting](#), the City Council held a public hearing on Ordinance No. 2020-20 and approved extending the Interim Zoning Control until March 10, 2021.

Staff has scheduled a Planning Commission check-in with the City Council regarding the Planning Commission proposal for updating the Bonus FAR program for September 15, 2020, prior to the Planning Commission holding a public hearing and completing their recommendation on Ordinance No. 2020-16.

City staff will collaborate with the City's Communications Coordinator to improve outreach about the proposed changes to the Bonus FAR program, to ensure that the Winslow community, including the business community, is informed about this effort prior to the Planning Commission holding a public hearing on Ordinance No. 2020-16.

ORDINANCE NO. 2020-16

AN ORDINANCE of the City of Bainbridge Island, Washington, relating to bonus floor area ratio and amending Section 18.12.030.E of the Bainbridge Island Municipal Code.

WHEREAS, within the express terms of the Growth Management Act, the Washington State Legislature has specifically conferred upon the governing bodies of Washington cities the right to establish and adopt interim zoning controls related to land uses; and

WHEREAS, the City Council of the City of Bainbridge Island (“City”) updated the City’s Comprehensive Plan in February of 2017; and

WHEREAS, balancing affordable housing, historic preservation, growth management, and sustainable development continues to be a local, regional, and national challenge due to many social and economic factors; and

WHEREAS, the City has encouraged affordable housing construction by adopting “bonus density” programs that allow for increases in density above the underlying zoning if the additional density creates affordable homes; and

WHEREAS, the intent of the Comprehensive Plan is to place residential density, inclusive of affordable housing, in the Winslow core area near infrastructure such as transportation hubs (e.g., ferry service, bus service, highway access), sewer, water, reliable electrical power, and retail stores; and

WHEREAS, the intent of such policies is to manage growth consistent with the Growth Management Act, reduce infrastructure costs, and follow general principles of sustainable community development; and

WHEREAS, the City Council is interested in evaluating the applicability, use, and effectiveness of the bonus density options provided for and as described in BIMC 18.12.030.E. including related to the purchase of development rights, the provision of public amenities and/or infrastructure, the provision of community open space, floor area ratio transfers related to the Mixed Use Town Center and High School Road districts, and ferry-related parking; and

WHEREAS, on February 25, 2020, the City Council directed the City Manager to work with the Planning Commission to draft an ordinance that suspended use and applicability of bonus FAR options; and

WHEREAS, on March 10, the City Council approved an interim zoning control ordinance related to Floor Area Ratio (“FAR”) density bonus options (Ordinance 2020-10); and

WHEREAS, the Planning Commission discussed these policies on February 27 and March 12, and formed a subcommittee of Commissioners Chester, Paar and Quitslund to work on this topic; and

WHEREAS, the subcommittee brought back their recommendations to the full Planning Commission for discussion on May 14 and 28, met again, and brought back revised recommendations for the June 11, 2020 Commission meeting and the full Planning Commission came to consensus on a set of amendments to bonus FAR regulations; and

WHEREAS, the Planning Commission and City Council held a joint meeting on June 22, 2020 to discuss the bonus FAR regulations and how they are interrelated with other land use issues such as improving affordable housing and transfer of development rights programs; and

WHEREAS, the Planning Commission discussed Ordinance 2020-16 on June 25 and July 9, 2020 and made additional recommendations on how BIMC 18.12.030.E; and

WHEREAS, the Planning Commission recommends that Subsection E.2 related to obtaining Bonus FAR through the City's Transfer of Development Rights (TDR) program be deleted at this time, and reconsidered at a later date as part of updating the TDR program; and

WHEREAS, the Planning Commission recommends moving that Subsection E.6 Historic Structure provisions to 18.24 Historic Preservation and to 18.12.050; and

WHEREAS, the Planning Commission recommends that the City pursue eliminating the Bonus FAR provisions related to the Islnder Mobile Home Park selling it's unused residential FAR; and

WHEREAS, the Planning Commission recommends all other provisions related to obtaining Bonus FAR be eliminating, leaving section E.1.a; and

WHEREAS, the Planning Commission has formed an Affordable Housing subcommittee to make recommendations to the full Commission on implementing affordable housing recommendations; and

WHEREAS, On June 22 the City Council and Planning Commission formed an ad hoc subcommittee to prioritize land use code changes generally; and

WHEREAS, the Planning Commission continued discussion of revising the Bonus FAR program on revisions to the ordinance prior to holding a public hearing on XXXX, 2020; and

WHEREAS, after closing the public hearing on XXXX, 2020, the Commission recommended of approval of Ordinance 2020-16 to the City Council; and

WHEREAS, notice was given on XXXX, 2020, to the Office of Community Development at the Washington State Department of Commerce in conformance with RCW 36.70A.106; and

WHEREAS, the City Council considered Ordinance 2020-16 at its meeting on XXXX, 2020; and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF BAINBRIDGE ISLAND, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Section 18.12.030.E of the Bainbridge Island Municipal Code is hereby amended to read as follows:

BIMC 18.12.030

E. Bonus Density in Winslow Mixed Use and High School Road Districts. Eligible properties may achieve a maximum level of development above the base FAR, as provided for in Table 18.12.020-3, by using one, or a combination of, the following FAR bonus provisions. The FAR bonus provisions may be combined to achieve the maximum level of development established for each district. In no case shall the total commercial, residential or mixed use FAR exceed the maximum FAR as provided for in Table 18.12.020-3.

1. Optional Affordable Housing.

a. FAR Bonus. Up to 100 percent of the maximum residential FAR bonus may come from providing affordable housing as defined in Chapter 18.36 BIMC; provided, that the difference between the base residential FAR and the maximum residential FAR shall be dedicated to affordable housing. A portion of the total floor area that is of common use and benefit to the entire residential development (for example, interior halls, stairwells, laundry rooms, exercise rooms) may be included in the calculation of the affordable housing component. This portion shall be the same percentage as the affordable housing provided. For example, if 20 percent of the living unit floor area is for affordable housing, then 20 percent of the common floor area may be included in the total affordable housing calculation. Development of the optional affordable housing shall be in accordance with Chapter 18.21 BIMC and Table 18.12.030.

Table 18.12.030: Optional Affordable Housing Bonus Summary Table

Size of Development	Residential development less than 10,000 sq. ft.	Residential development of 10,000 sq. ft. but less than 60,000 sq. ft.	Residential development more than 60,000 sq. ft.
Affordable Housing FAR Bonus	Must provide 100 percent of bonus square footage for extremely low, very low, or moderate income groups.	Must comply with following ratios: (a) 100 percent of bonus for all moderate; OR (b) 0.2 of bonus for extremely low, very low, or low income groups; 0.5 of bonus for moderate income group; and 0.3 of bonus for middle income group.	Must comply with following ratios: 0.1 of bonus for extremely low, very low or low income groups; 0.6 of bonus for moderate income group; and 0.3 of bonus for middle income group.

~~b. Preservation of the Islander Mobile Home Park. Preservation of the Islander Mobile Home Park as an existing park site for manufactured homes shall be encouraged through the following provisions:~~

~~i. Unused FAR from the parcel on which the mobile home park is located may be transferred to another parcel or parcels within the Mixed Use Town Center. For example, the base FAR for the mobile home park would be calculated, less the FAR of the mobile homes. In exchange for permanently preserving the mobile home park, the owner of the property may transfer the unused FAR to another parcel or parcels in the Mixed Use Town Center, where it may be used as bonus FAR above the base FAR for that district.~~

ii. Permanent preservation of the mobile home park may be used as an affordable housing bonus on another parcel or parcels within the Mixed Use Town Center. For example, in exchange for preserving the mobile home park, the owner of the property would be deemed to have met the affordable housing bonus provisions of subsection A.1 of this section, and could achieve the maximum FAR bonus for residential development on another parcel or parcels in the Mixed Use Town Center. The owner of the mobile home park may either apply the FAR bonus to another parcel(s) he or she owns, or transfer or sell the bonus to another property owner in the Mixed Use Town Center.

2. Purchase of Development Rights. Up to 100 percent of the maximum residential, commercial or mixed use FAR bonus may come from the purchase of development rights as provided for in Chapter 18.27 BIMC. The cost of development rights shall be established by resolution of the city council.

3. Public Amenities and/or Infrastructure. At the applicant's option, a portion of the bonus may be earned through the provision of public amenities, infrastructure, and/or preservation of a heritage tree(s) on site, pursuant to an adopted city council resolution clarifying the amount of credit awarded for different provision of different public amenities and/or infrastructure, as follows:

a. Up to 40 percent of the maximum residential, commercial or mixed use FAR bonus may come from monetary contributions toward public amenities and/or infrastructure beyond that required for SEPA mitigation. The amount of the contribution shall be established by resolution of the city council. Funds contributed to the public amenities and/or infrastructure shall be used exclusively in the Mixed Use Town Center or High School Road districts, for projects identified in the six year capital facilities program, or approved by the city.

b. In lieu of the contribution of funds as provided for in subsection E.3.a of this section, and subject to approval by the director or designee, the public amenities FAR bonus may be achieved by the preservation of a heritage tree(s) on site, construction of public amenities and/or infrastructure beyond that required to mitigate the impacts of development. Public amenities and/or infrastructure projects shall be located in the Mixed Use Town Center or High School Road districts, and shall be chosen from projects identified in the six year capital facilities program, or approved by the city.

~~4. Community Open Space. In the ferry terminal district, up to 60 percent of the maximum residential, commercial or mixed use FAR bonus may be achieved by providing community open space of one acre, or 20 percent of the parcel area, whichever is greater. The community open space shall be located in or in the immediate vicinity of locations identified in Figure 4.1 of the Winslow master plan. The open space must be located on the same parcel that is being developed, and must be on land that would be otherwise buildable. Adequate public access to the community open space must be provided. The city shall consider approving the bonus, taking into consideration the configuration, public use and accessibility of the proposed open space. In cases where a development project utilizes the community open space bonus provision in conjunction with the purchase of development rights bonus provision, all funds collected from the purchase of development rights shall go toward the preservation of agricultural lands fund.~~

~~5. Winslow Town Center Mixed Use/High School Road FAR Transfers. Up to 20 percent of the maximum residential, commercial or mixed use FAR bonus may come from transfers of FAR from parcels within the Mixed Use Town Center and the High School Road districts. The transfer shall create permanent open space through open space preservation covenants on sending parcels that contain critical areas as defined in Chapter 16.20 BIMC. For example, development potential in the ravine of the gateway district may be shifted to the upland area; provided, that the requirements of Chapter 16.20 BIMC are satisfied.~~

~~6. Historic Structure Preservation. When an historic structure is preserved on site, the FAR of that historic structure shall not be included in the calculation of total FAR for the site. The historic structure must be included on a state, local or federal register.~~

~~7. Ferry Related Parking. In the ferry terminal district, an additional 0.2 FAR may be achieved by relocating existing legal surface ferry commuter parking on site (as shown on Figure 6.2 of the Winslow master plan) to under building or below grade parking. The percentage of the additional FAR that is achieved shall be dependent upon the percentage of parking that is relocated. For example, if 50 percent of existing surface ferry commuter parking on site is relocated under building or below grade, then 50 percent of the total additional FAR (or 0.1 FAR) may be achieved.~~

Section 2. Section 18.12.050 of the Bainbridge Island Municipal Code is hereby amended to read as follows:

G. Floor Area Ratio (FAR). “Floor area ratio” is a figure that expresses the total floor area as a multiple of the lot area. This figure is determined by dividing the floor area of all buildings on a lot by the lot area prior to removal of lot area for dedication. Portions of parking located underneath a building footprint are not counted in floor area ratio calculations. When an historic structure is preserved on site, the FAR of that historic structure shall not be included in the calculation of total FAR for the site. The historic structure must be included on a state, local or federal register.

Section 3. Section 18.24.010 of the Bainbridge Island Municipal Code is hereby amended to read as follows:

C. Zoning Code Relief. Designated local register properties may be authorized for a use not otherwise permitted in a certain zone. The planning director may approve said use through an administrative conditional use (BIMC [2.16.050](#)). The planning director may also waive or modify development standards such as: setbacks, open space, lot coverage, landscape buffers and parking requirements. When an historic structure is preserved on site, the FAR of that historic structure shall not be included in the calculation of total FAR for the site. The historic structure must be included on a state, local or federal register.

Section 4. Section 18.27.040 of the Bainbridge Island Municipal Code is hereby amended to read as follows:

18.27.040 Receiving areas for development rights.

~~A. Winslow Mixed Use Town Center and High School Road Districts. Developments in the Mixed Use Town Center (MUTC) and the High School Road districts are eligible for increases in floor area ratio as provided for in BIMC [18.12.030.E.1](#).~~

~~B. NC Districts. The neighborhood centers (NC) are eligible for increased density through the purchase or transfer of development rights in accordance with BIMC [18.12.030.D.1](#) and D.3, as amended.~~

~~C. R-8 Districts. The urban single family overlay district (R-8SF) is eligible for increased density through the purchase or transfer of development rights for specified lots in the R-2.9, R-3.5, and R-4.3 zone districts.~~

Section 5. Section 18.27.080 of the Bainbridge Island Municipal Code is hereby repealed as follows:

~~18.27.080 Use of development rights in Mixed Use and High School Road districts.~~

~~A. In order to use development rights to increase floor area ratio within the Mixed Use Town Center or High School Road districts as provided in BIMC 18.12.030.E, an applicant must out an application in a form approved by the city. The application shall include the amount of the requested increase in floor area ratio, and the fee, if any, of the increased floor area ratio. The fee for development rights to increase floor area ratio shall be established by resolution of the city council.~~

~~B. The approved application to utilize development rights to increase floor area ratio within the receiving area must be part of a site plan and design review application under BIMC Title 2. The site plan must indicate the increase in floor area ratio (FAR).~~

~~C. The use of development rights shall be reviewed for conformance with the design review provisions of BIMC 18.18.030.~~

Section 6. This ordinance shall take effect and be in force five (5) days from its passage and publication as required by law.

PASSED BY THE CITY COUNCIL this _____ day of _____, 2020.

APPROVED BY THE MAYOR this _____ day of _____, 2020.

Leslie Schneider, Mayor

ATTEST/AUTHENTICATE:

Christine Brown, City Clerk

FILED WITH THE CITY CLERK: XXX, 2020
PASSED BY THE CITY COUNCIL:
PUBLISHED:
EFFECTIVE DATE:
ORDINANCE NUMBER: 2020-16

ZONING DISTRICT	Winslow Mixed Use Town Center					HSR I and II
	Central Core Overlay	Madison Avenue Overlay	Ericksen Avenue Overlay	Gateway Overlay	Ferry Terminal Overlay [See BIMC 18.12.030.C]	
DIMENSIONAL STANDARD						
Basic Maximum						
Commercial and Other Nonresidential Uses	0.6	0.4	0.3	0.15	0.1	0.3
Residential	0.4	0.4	0.3	0.5	0.4	0.3
Mixed Use [2]	1.0	0.5	0.5	0.5	0.5	0.3
Maximum with Bonus	Bonus densities require compliance with BIMC 18.12.030.E					
Commercial and Other Nonresidential Uses	1.0	0.6	0.6	0.3	0.2	0.6
Residential	1.0	0.6	0.6	1.0	1.1	0.6
Mixed Use [2]	1.5	1.0	1.0	1.0	1.3 (1.5 pursuant to note [3])	1.0

[1] If the existing FAR for a developed property as of May 21, 1998, is higher than the base FAR for that district, then the existing FAR will be considered the base FAR for that developed property. Total FAR may not be exceeded.

[2] In mixed use development, the established FAR in the residential and commercial components shall not be exceeded. For the residential FAR bonus provisions for qualifying housing design demonstration project, refer to the bonus density provisions in BIMC [2.16.020.S.8](#).

[3] In mixed use development in the ferry terminal district, an additional 0.2 FAR is permitted in accordance with BIMC [18.12.030.E.7](#). The additional FAR may be applied to either the residential or commercial component of the mixed use development.

WMP CHAPTER 2 LAND USE

Overall Land Use Goal WMP 2-1

Strengthen Winslow—the Island’s commercial, cultural and commuter hub—as a sustainable, affordable, diverse, livable and economically vital community, by:

- Encouraging downtown living;
- Providing an enhanced pedestrian experience, with linked access to retail shopping, the ferry, major public facilities, open space and residential areas, and promoting and retaining visual access to Eagle Harbor;
- Promoting the efficient use of land;
- Encouraging the retention and expansion of retail that serves the needs of community members and visitors;
- Providing opportunities for business expansion and private reinvestment;
- Promoting development that is sustainable and supports community values; and
- Developing strategies that result in the creation of less expensive housing and retail space, thereby increasing diversity while minimizing dependence on the automobile.

Goal WMP 2-3: Maintain and Enhance Community Character in the Mixed-Use Town Center and High School Road Districts

Policy WMP 2-3.1: Promote architecture that encourages green building, natural light, ventilation and rooftop gardens.

Policy WMP 2-3.2: Through the use of design guidelines, development standards and incentives, promote the development of courtyards that create a pattern of linked public and private gardens and gathering places, providing opportunities for pedestrian movement.

Policy WMP 2-3.3: Through the use of design guidelines, development standards and incentives encourage stepped-back buildings that result in a softer street edge, the retention and enhancement of visual connections to Eagle Harbor and the creation and preservation of sun-filled public gathering spaces.

Policy WMP 2-3.4: Preserve, protect, adapt and restore sites, buildings and trees of historic significance.

Policy WMP 2-3.5: Retain and expand the historic pattern of narrow pedestrian passages.

Policy WMP 2-3.6: Enhance the livability of the downtown with trees and small gardens on the streets, along paths and in courtyards.

Policy WMP 2-3.7: Collaborate with the Arts and Humanities Council and downtown organizations to solicit sponsors for public art in the downtown.

Policy WMP 2-3.8: Enhance the experience of Winslow as a waterfront town that is connected to Eagle Harbor by activity, trails, views, lanes and design features:

- Utilize FAR levels, development standards and incentives to encourage development and redevelopment along Bjune Drive.
- Actively work to acquire land, easements and permits needed to extend the Waterfront Trail and develop a ravine trail.
- Develop new facilities for visitors, residents and the community, including public road ends, beaches, concessions, docks, marinas and mooring.
- Plan for a future water taxi connection between the Winslow and Egleddale waterfronts.
- Improve water quality through restoration projects, management practices and environmentally responsible building techniques.
- Retain views of the harbor from public lands and streets.

Goal WMP 2-4: Sustain and Enhance the Economic Vitality of the Mixed-Use Town Center and High School Road Districts

Policy WMP 2-4.1: Establish policies, programs and development standards that facilitate business expansion and private reinvestment.

Policy WMP 2-4.2: To stimulate investment in the downtown, create an organizational and funding structure that encourages partnerships and participation by the property owners, developers, businesses and island residents.

Policy WMP 2-4.3: Develop an organizational structure in city government as needed to implement the long-term vision for Winslow.

Policy WMP 2-4.4: Integrate sustainable solutions that address economic, social and ecological concerns into land use planning and building processes.

Goal WMP 2-5: Determine density and intensity of development in the Mixed-Use Town Center and High School Road Districts through the Floor Area Ratio (FAR) method.

Discussion: Floor area ratio refers to a figure that expresses the total allowable floor area in relation to the total lot area. This figure is determined by dividing the floor area of all buildings on a lot by the lot area. For example, if a lot is 25,000 square feet and the FAR is 1.0, then the total square footage allowed would be: $25,000 \times 1 = 25,000$ sq. ft. A development of 1 FAR could have up to 25,000 sq. ft. of development that could be commercial or residential.

Although density is frequently defined by dwelling units per acre in suburban communities that are comprised of single-use districts, it is less useful in areas where a mixture of uses is desired. Using FARs provides flexibility to design a project to address a particular site. The use of FAR allows the market to determine the number and size of units and the mix in the type of development. (Conventional density limits can discourage affordability since smaller, less expensive units count the same as larger, more expensive ones.)

It is possible to relate FAR to a range of achievable units per acre, as follows:

0.4 FAR would produce 8-20 units per acre

0.8 FAR would produce 16-40 units per acre

1.5 FAR would produce 24-60 units per acre

The unit range results from the variety of unit sizes that can occur.

Parking requirements also influence the number of units that a site could accommodate. The form of parking also affects the extent to which a development actually reaches the densities suggested by each range. Surface parking coupled with larger average unit sizes would tend to produce the lower end of the range, while structured parking coupled with smaller average unit sizes would allow the higher end to be possible.

FAR allows uses to be weighted according to the characteristics of a particular district. For example, one district might allow an FAR of 0.4 for commercial and 0.4 for residential, while another might allow 0.4 for commercial and 0.8 for residential. Each development would be a unique blend of uses and unit sizes.

Policy WMP 2-5.1: Establish base floor area ratio levels for commercial, residential and mixed-use development (FAR) for each of the five overlay districts in the MUTC and the High School Road Districts, in coordination with a study of the necessary infrastructure, particularly transportation.

Policy WMP 2-5.2: Establish maximum FAR levels of development beyond the base for each of the districts through the use of bonus FAR provisions. The bonus FAR provisions are a means of advancing specific Comprehensive Plan policies and community values. Bonus FAR may be achieved by:

- Preserving open space, agricultural land and critical areas, through participation in a Transfer of Development Rights (TDR) program or contribution to a land preservation effort;
- Providing public open space that is visibly accessible to the public, with adequate access from a public corridor.
- Contributing toward or providing public amenities (above and beyond what is required to mitigate the impacts of the project itself) that serve the community and enhance the livability and vitality of Winslow. Public amenities may include, but are not limited to, pedestrian connections; on-site places for public gathering; streetscape improvements; public art; and other public benefits as determined by the City;

- Preserving exceptional and/or legacy trees or trees within designated greenways.
- Preserving historic structures;
- Providing affordable housing;
- Utilizing green building and low impact development techniques;
- Creation of permanent open space on parcels that contain critical areas, by transferring development potential from the critical areas to another parcel within the Mixed-Use Town Center or High School Road Districts; and
- Relocating existing surface commuter parking to underbuilding (Ferry Terminal District only).

Priorities among the bonus FAR provisions may be established in the zoning code through the level of bonus that can be achieved through each of the provisions, and by phasing implementation of the provisions.

Policy WMP 2-5.3: The bonus FAR provisions may be changed based on future conditions without amending the Master Plan, as long those changes continue to meet the goals of the Comprehensive Plan and Winslow Master Plan, and provided that changes are made in coordination with a study of the necessary infrastructure, particularly transportation.

Policies for Specific Districts

Specific land use policies in the MUTC and High School Road Districts are as follows:

Central Core Overlay District

Policy WMP 2-6.1: Establish FARs and development standards that support mixed-use development at a level that encourages downtown living with a variety of housing sizes and types, provides commercial and retail services that meet the needs of the community, and enhances the vitality of the downtown.

Policy WMP 2-6.2: Encourage the retention and development of ground floor retail on Winslow Way, Madison Avenue, Bjune Drive and other appropriate areas, and establish the implementing FAR levels and development regulations.

Policy WMP 2-6.3: Increase the vitality of the civic plaza — currently comprised of the Farmers’ Market, BPA and City Hall — by developing better circulation and enhanced pedestrian amenities, providing opportunities for future civic and cultural buildings; and encouraging a greater variety of activities.

Policy WMP 2-6.4: Design Winslow Way as the community’s “living room”— the stage for community gatherings and a gallery to showcase art and gardens. The central section of Winslow Way should function as a civic plaza, with artistic gathering spaces and unique design features.

Ericksen Overlay District

Policy WMP 2-7.1: Establish FARs and development standards that provide for a mix of residential and small-scale commercial development, while preserving the unique and historical features of the Ericksen Avenue neighborhood.

Madison Overlay District

Policy WMP 2-8.1: Establish FARs and development standards that provide for a mix of residential and small-scale commercial development, with retail located on the ground floor.

Gateway Overlay

Policy WMP 2-9.1: Establish FARs and development standards that provide for commercial, multifamily, and tourist-oriented uses while ensuring protection of the natural character of the Ravine.

Policy WMP 2-9.2: Development within the district should include provisions for pedestrian access to adjoining parcels and neighborhoods, and as part of the pedestrian link to the ferry terminal and waterfront.

Policy WMP 2-9.3: Implement policies to restore and protect the habitat, forest and water resources of the Ravine and provide for non-motorized public access.

Ferry Terminal Overlay District

Discussion: The Ferry Terminal Overlay District — currently dominated by parking — could undergo significant change as it transforms from surface parking lots for commuters to a new pedestrian and transit oriented, mixed-use neighborhood. Although the Core District is designated for the most intense development in the Mixed Use Town Center, new development in the Ferry Terminal District should complement the character and vitality of the Core District. Higher density housing is appropriate for this area because of its proximity to the ferry and downtown and because it is a prime view location. Parking for both commuters and new development may be integrated within (or under) housing or in adjacent garages.

Policy WMP 2-10.1: Establish FARs and development standards that provide for a pedestrian/transit oriented, mixed-use neighborhood with higher density residential development, commercial development, and some retail, while protecting the adjacent residential neighborhoods.

Policy WMP 2-10.2: Enhance the district's status as the "gateway" to Winslow by maximizing opportunities for visual and physical access to the shoreline while protecting, reclaiming and sustaining high quality, native shoreline vegetation. Civic and public uses should be provided along the waterfront.

Policy WMP 2-10.3: The area south of Winslow Way is intended to redevelop as a transit and pedestrian friendly mixed-use neighborhood, with small blocks served by a network of streets, alleys, public open space and pedestrian walkways.

Policy WMP 2-10.4: Allow additional parking spaces in structured parking in the Ferry Terminal District for use by non-commuter ferry passengers in off-peak hours (e.g., after 9:00 a.m.), when constructed in conjunction with placement of an equivalent amount of existing surface ferry parking in structure.

Policy WMP 2-10.5: Any redevelopment of the ferry terminal and/or related transit services should maximize public open space and minimize the development footprint, and should provide shoreline views, a public plaza and a pedestrian accessible waterfront.

Discussion: The transit center should address multimodal users and should integrate access to the public plaza and shoreline. “Stacking” of vehicle holding, transit and terminal activities is preferred.

Policy WMP 2-10.6: Commuter parking located in the Ferry Terminal Overlay District shall be limited in number and/or area to achieve the following objectives:

- Protect the character of the district from being further dominated by parking;
- Encourage the redevelopment of the district;
- Limit traffic impacts; and
- Encourage transit, non-motorized, and other travel methods as alternatives to low-occupancy vehicles.

Policy WMP 2-10.7: North of Winslow Way, the City shall protect adjacent residential neighborhoods from adverse impacts associated with development by establishing transition standards, such as landscaped buffers, lower height limits, small-scale buildings and other appropriate measures.

High School Road I and High School Road II

Policy WMP 2-11.1: Establish FARs and development standards that provide for a variety of commercial uses that complement downtown Winslow and benefit from automobile access near the highway, while creating a pedestrian-friendly retail area. In High School Road II, retail uses shall be limited to 14,400 sq. ft. (See Land Use Element Policy W 5.3.)

WMP CHAPTER 3 HOUSING

Goal WMP 3-1: Promote and facilitate the provision of diverse and affordable housing choices in a manner that encourages socio-economic diversity.

Policy WMP 3-1.1: Through FAR levels, development standards and incentives, encourage a variety of housing sizes and types that meet the needs of a broad range of households, including smaller units suitable for small families, single individuals and senior citizens.

Policy WMP 3-1.2: The bonus FAR program established for the Mixed Use Town Center and High School Road districts may include a provision that allows bonus FAR to be achieved in exchange for providing for-rental and for-purchase income-qualified housing.

WMP CHAPTER 4 OPEN SPACE AND TRAILS

Goal WMP 4-1: Incorporate open space and green spaces throughout Winslow by:

- enhancing existing parks and developing new parks;
- providing street trees, small gardens and other landscaping that provides visual relief and enhances the character;
- providing a series of green spaces, plazas and corridors that connect the community, define character and protect resources; and
- celebrating and connecting the town to the Harbor and the Ravine.

WMP 4-1.1: Development standards, design guidelines, and incentives should be provided to encourage retention or development of open space, public gathering spaces and parks.

WMP CHAPTER 6 TRANSPORTATION

Goal WMP 6-13: Commuter parking within the Ferry Terminal Overlay District shall be limited and planned to ensure consistency with a new mixed-use neighborhood in the District and limit traffic impacts within the District, Winslow, SR-305, and Island-wide.

Policy WMP 6-13.1: Commuter parking located in the Ferry Terminal Overlay District shall be limited to achieve the following objectives:

- Protect the character of the district from being further dominated by parking;
- Encourage the redevelopment of the district;
- Limit traffic impacts within the Ferry Terminal Overlay District, Winslow, and Island-wide; and

- Encourage transit, non-motorized, and other travel methods as alternatives to low-occupancy vehicles.

Policy WMP 6-13.2: The City should develop an overall parking management strategy that balances the parking needs of downtown residents and visitors, long-term and short-term ferry commuters, and commercial uses. The parking management strategy should include:

- Promoting the availability and use of park & ride lots and transit to reduce the number of vehicle trips and associated parking demand in the downtown.
- Improving parking enforcement.
- Offering incentives for providing parking for non-commuter ferry passengers in off-peak hours (e.g., after 9:00 a.m.).
- Encouraging the owners of existing parking lots to redevelop their properties in a coordinated manner to ensure enhanced pedestrian safety and efficient traffic flow.
- Developing strategies and innovative financing techniques to promote the construction of commuter parking structures by a private entity or public/partnership, in conjunction with mixed-use projects.
- Creating a mechanism to hold funds generated in the Ferry Terminal Overlay District from any future paid parking revenues, including but not limited to a fee-in-lieu program and/or meter revenue.