A GUIDE TO COMMUNITY AND URBAN FORESTRY PROGRAMMING

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WASHINGTON STATE DEPT. OF COMMERCE
EVERGREEN COMMUNITIES PARTNERSHIP TASK FORCE

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AND
THE EVERGREEN COMMUNITIES PARTNERSHIP TASK FORCE

CONTENTS

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1. INTRODUCTION

Healthy community and urban forests are a valuable and potentially powerful tool to support economically viable, sustainable urban areas in the State of Washington. The 2008 Evergreen Communities Act (ECA; ESSHB 2844[1] and RCW 35.105[2]) seeks to assist municipalities and jurisdictions across the state to better manage existing urban forests and plan for improvements to urban forests to increase the value of the ecological, social, and economic services that urban trees provide. The ECA created the Evergreen Communities Partnership Task Force (the Task Force) to develop model urban forest management plans and model ordinances to provide this assistance, as well as an awards program to recognize all communities that plan and manage their community forests. Funding for work directed by the ECA, however, has been suspended for the State Fiscal Biennium 2009-2011.

Recognizing the possibility of a loss of funding early in 2009, the Task Force members expedited a compressed work program so that tangible resources could be produced by June 30, 2009, to guide local communities in urban forestry programming efforts during the unfunded interim. This document provides a resource for local governments interested in creating or enhancing community and urban forestry programming, and discusses a possible approach to a future awards program to recognize communities who excel in planning and managing their community and urban forestry resource for maximum benefit.

During the unfunded interim, guidance and technical assistance for communities working to build or enhance community and urban forestry programming is also available through the Washington State Department of Natural Resources (DNR) Urban and Community Forestry Program. Contacts there include

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In addition to providing interim guidance for communities who wish to move forward with incorporating urban forestry principles and practices into both current and long-range planning, this document provides a strong platform from which to launch continuing work under the authority of the ECA when funding resumes.

A. CONTENTS OF THE REPORT

The report

- Describes social, ecological and economic benefits of healthy community and urban forests.
- Discusses policies that relate to those benefits and functions, and includes examples, when appropriate, from existing urban forestry programs in municipalities throughout the State.
- Reports briefly on the related work of developing inventories and canopy assessment protocols and methodologies, accomplished by the Technical Advisory Committee (the TAC) convened by the DNR. A link is provided to the full TAC report.

[1] http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2844&year=2007
[2] http://apps.leg.wa.gov/RCW/default.aspx?cite=35.105

- Provides broad guidelines for the direction and intent of urban forestry management plans. Development of model urban forestry management plans is currently on hold, pending funding.

- Presents suggestions for addressing the tree ordinance components listed in Section 12 of the ECA, along with other points important to consider in crafting an ordinance. The purpose for each component is discussed, with portions of code from local jurisdictions throughout the State offered as illustrative examples where appropriate. Development of a model tree ordinance is currently on hold at this time, pending funding.

- Proposes a structure of an awards program that incorporates incremental awards and incentives that support excellence in urban forestry programming at a variety of levels. Development of a recognition program is currently on hold.

- Lists urban forestry resources available for reference and guidance.

- Provides background of the ECA, together with challenges and recommendations for the future.

B. HOW TO USE THIS REPORT

The report is designed for people who wish to incorporate community and urban forestry into the comprehensive planning efforts of their communities, and may be used as a springboard for community discussion that focuses on the role of community and urban forestry in creating and supporting the vital, healthy, sustainable communities that we all want to live in and bequeath to our children.

Although this report does not contain fully developed models of management plans and ordinances, the guidance and assistance offered here covers important policy, planning, and ordinance elements that should be considered during development of a new community and urban forestry program or enhancement of an existing one.

Full citations for printed sources referred to in the text are gathered in a References section at the end of this document. Online web addresses (URLs) are footnoted at the bottom of each page for those interested in investigating sources in more depth. This document is available online as a fully-linked webpage at

2. ECOSYSTEM SERVICES AND BENEFITS PROVIDED BY COMMUNITY AND URBAN FORESTS

The concept of “ecosystem services” has recently emerged to describe the tangible and intangible contributions that natural systems provide for human life support, and human health and well-being. Some ecosystem products have obvious market value, such as timber or mineral ore; others have been identified by scientific study, but do not yet figure widely into market-based planning.

Many of the benefits and services provided by community forests, for example, are not yet easily assigned a dollar value but are, nonetheless, absolutely essential for vital, livable communities. Community and urban forests are defined by the DNR as “that land in and around

human settlements ranging from small communities to metropolitan areas, occupied or potentially occupied by trees and associated vegetation. Community and urban forest land may be planted or unplanted, used or unused, and includes public and private lands, lands along transportation and utility corridors, and forested watershed lands within populated areas" (RCW 76.15[1]). Below is a selection of ecosystem services provided by trees and associated vegetation in urban areas, based on the most current scientific research.

- **Stormwater, Water Quality, Flooding and Erosion**

As noted in the preamble to the ECA, trees and forests play a major role in reducing the stormwater runoff, flooding, and erosion that contribute to degraded water quality in urbanized areas. While urban forests are typically not as effective as large, intact forest stands, they can help to lessen the volume and velocity of surface water that moves through urban areas, reducing the need for highly-engineered man-made structures as well as mitigating the negative impacts of stormwater discharge into lakes, rivers and other public water bodies.

Before precipitation reaches the ground, the leaves, branches and trunks of trees intercept moisture or facilitate evaporation (Schwab 2009). When native vegetation and soils are removed or compacted, infiltration is limited, groundwater recharge is reduced, and surface runoff and erosion occur, all of which may contribute to flooding, loss of stable and diverse aquatic habitat, loss of nutrient cycling, an increase in suspended particulates in the water column, and increases in water temperature (Schwab ed. 2009). Preserving and retaining trees and forested areas in appropriate places within a community may reduce the need for built stormwater controls and increased water quality treatment in urban areas. Research indicates that a healthy forest canopy may reduce stormwater runoff. Local jurisdictions may benefit from community and urban forestry programs that provide guidelines for builders and developers during the development process to offset the loss of the ecological services of forested areas when such sites are converted through development. For additional guidance on planning stormwater mitigation measures using urban forestry principles and practices, see the Department of Ecology's stormwater management manuals for eastern[2] and western[3] Washington.

- **Air Quality**

Trees and forests improve air quality in urban areas in many ways (Wolf 2004). Trees remove carbon dioxide and release oxygen through photosynthesis. Forest canopy can remove tons of material from the air across a city as particulates, or fine dust and pollutants, settle in the leaves of trees.

Some emissions from vehicles and industry undergo chemical changes, or may generate "bad ozone," under certain atmospheric conditions. The effects on human health of both particulates and chemical compounds are extensive and can include breathing disorders such as asthma and bronchitis, sensitivity to allergens, eye irritation, and even dizziness and nausea (AIRnow 2007). Direct sunlight and hot weather drive formation of the airborne chemical irritants. Trees are an effective way to reduce surface temperatures as they block solar radiation from heating paved surfaces. Reducing urban heat island effect reduces the formation of harmful compounds in the air.

[1] http://apps.leg.wa.gov/RCW/default.aspx?cite=76.15
[2] http://www.ecy.wa.gov/programs/wq/stormwater/easternmanual/index.html
[3] http://www.ecy.wa.gov/programs/wq/stormwater/manual.html

- **Economic Development and Aesthetics**

Many people recognize that trees contribute to more beautiful urban settings. Trees also have a positive effect on economic development and community vitality. Well-planned tree plantings have positive impacts on retail sales and consumer behavior. Studies done at the University of Washington indicate that shoppers claim to spend up to 12 percent more for goods and services in shopping districts having a quality tree canopy. Shoppers say they will spend more time in well-canopied business districts and perceive the merchandise to be of better quality in these areas (Wolf 2009). Many studies show that trees, landscape, and natural parks increase the value of nearby homes. Residential properties that are attractively landscaped may increase up to 7% in value, and those located near forested open spaces and parks may have up to 20% greater value (Wolf 2007). Trees have a positive effect on commercial property as well; one study found that building rental rates were 7% higher for office complexes having a quality landscape (LaVerne & Winson-Geideman 2003).

- **Human Health and Well-Being**

Many people enjoy working with plants or in their gardens, yet many studies tell us that simply having *views* of trees and nature in urban areas can have a positive effect as well (Wolf 2008a). Patients in hospitals heal faster when they have views of trees and greenery. Office workers are more productive when they can take brief breaks in natural settings. People feel less stressed when they view trees and green space. Pediatric researchers have also noted less frequency, and milder attacks, of childhood asthma in urban areas with greater tree canopy coverage. Trees also contribute to solving the obesity epidemic by enhancing recreation and walkability through attractive tree-lined routes for pedestrians and bicycle riders (Wolf 2008b).

Street trees are one approach to safer streets (Wolf 2006). The line of trees between the curb and sidewalk forms a barrier, both visual and physical, between traffic and pedestrians that creates a feeling of greater safety. Drivers respond to tree-lined streets by driving more slowly, adding another potential level of safety. Trees, and tree-planting events, have been linked to a greater sense of community connection that may help neighborhoods become safer and less susceptible to crime (Kuo 2003). Conversely, a sense of social malaise may be triggered in a treeless urban landscape. The Trust for Public Land[1] has measured a variety of values that urban parks bring to a community, including user happiness and health, and “neighborhood social capital.”

- **Land Use, Climate Change, Energy and Carbon**

Regional land use patterns have a significant influence on global climate change and the overall livability of communities, neighborhoods and rural areas. Coordinated urban development that promotes higher density in established urban centers while incorporating community and urban green space and forests helps to create attractive, livable communities with efficient regional transportation and land use patterns that reduce development pressures on rural and wildland resources. Additional benefits of compact development include reduced single-occupancy vehicle trips and the associated greenhouse gas emissions; multi-modal transportation networks; and retention and conservation of farmland, forests, and open space in rural areas.

Community and urban forests also mitigate climate change through energy use reduction. Properly sited trees may provide significant energy savings by reducing heating and cooling energy requirements through both direct protection of buildings from sun and wind, and the use of vegetation to reduce the amount of thermal gain across large urban areas, commonly referred to as the “urban heat island effect”. Forested neighborhoods (i.e., those with 40 percent tree canopy coverage) may save homeowners more than 4 percent in heating costs in the

[1] http://www.tpl.org/

winter and 10 percent in cooling costs in the summer. Energy savings may be as high as 30 percent when trees are properly sited to protect the home from the effects of sun and wind (Akbari et al. 1997).

Community and urban forests may also help mitigate climate change by sequestering or storing carbon, although the benefits and tradeoffs of *urban* tree sequestration are still under investigation. At the present time carbon markets are not well-established nationally and current markets are extremely administratively intensive. Communities may wish, however, to position themselves for participation in future carbon markets by considering steps such as baseline inventories and management programming as recommended by the TAC and DNR, and the 2008 Climate Action Team's Forest Sector Working Group[1], convened by Washington's Governor and Legislature. Carbon gains in urban areas are more likely to be found through reduced energy use as described above, which in turn reduces carbon emissions associated with energy production. In addition, tree-lined transportation corridors provide pleasant, safe walkable routes that people may choose to experience by walking or bicycling, thereby reducing vehicle greenhouse gas emissions.

- **Wildlife, Fish and Habitat**

Urban trees provide nesting and roosting sites for birds and other wildlife, as well as a wide range of insects and fruits that serve as important food sources. Urban trees also play a role in protecting aquatic habitats used by salmon and forage fish through their shade which cools water, better water quality through stormwater and erosion control, and nutrient cycling. In an urban setting, green corridors may support diverse wildlife species as well as provide important connectivity within an often fragmented landscape.

Forested riparian corridors may enhance salmon survival by shading water to maintain cool water temperatures and ensuring a diversity of microorganisms and other food sources (Brennan 2007). Trees adjacent to marine shorelines harbor terrestrial insects that provide food for salmon and other fish species, and moderate beach temperatures, reducing the potential for desiccation of fish eggs (Brennan 2007). In the Pacific Northwest, urban stream corridors often connect the marine or riverine environment to smaller stream networks upstream, and thus can support—or disconnect—water quality and fisheries enhancement efforts.

Although urban forests cannot fully mitigate the hydrologic consequences of urban development, they can help to keep streams healthy by reducing the extremes of stormwater discharge, which in turn helps to reduce erosion and allows for more consistent, long-term groundwater discharge. Such moderation provides more water in streams during summer low-flow periods for salmon and other aquatic species. Roots of live trees also protect against erosion and sedimentation of streams and shorelines (EnviroVision 2007).

Forest structure is a critical component of wildlife habitat. Structural elements that contribute to healthy wildlife populations include a diversity of tree species, ages and sizes, with an understory of native shrubs and ground cover. Snags (standing dead trees) and nurse logs (downed dead trees) also provide important structural elements for wildlife habitat, and should be considered during planning. Finally, urban trees help keep people connected to the natural world through wildlife viewing as well as their own intrinsic nature.

[1] http://www.ecy.wa.gov/climatechange/2008FAdocs/11241008_forestreportversion2.pdf

3. PRINCIPLES FOR POLICY DEVELOPMENT

The following elements are important considerations in developing a program that supports healthy urban forests and the ecological, social and economic benefits they confer in an efficient, effective manner that is consistent over time.

Community and urban forestry policy typically includes references to natural as well as human systems, and may include discussion of both tree-related and broader community-based goals and objectives. Policy principles communicate the shared vision that a community has for, and about, its trees. Such principles, expressed as brief statements, may be found in a community's comprehensive plan, in its urban forestry management plan, and/or as the opening statements of a tree ordinance. Public discussions about such statements help to build public awareness of the importance of the community and urban forestry resource. Referencing best practices supported by current science makes the policy statements credible throughout community debate about policy priorities.

A. POLICY PRINCIPLES

The following policy principles offer several ideas to begin the process of expressing the values that a community holds for its trees. The list below, while not all-inclusive, serves as a framework for discussion about the benefits and challenges of trees within communities. Principles such as these should be incorporated into ongoing planning and management efforts, while also bearing in mind the community's other activities, programs and goals such as the location and intensities of land uses, parks and open spaces, and the location of major utility and infrastructure corridors.

- **General Statements of Vision and Purpose**
  - A healthy urban forest contributes to the economic vitality of the community, provides environmental stability and resiliency, and ensures a better quality of life.
  - Trees provide important ecological, economic and social functions and benefits in urban landscapes that should be recognized, protected, and enhanced where possible.
  - Protecting the environment and conserving natural resources is a priority and is essential to maintaining healthy, vital and safe neighborhoods.
  - Urban natural resources and urban natural systems, including trees and forests, are important for public health, economic development, education and community values.

- **Protect, Preserve, Restore and Enhance the Community and Urban Forest**
  - Protect, restore and improve existing vegetation that has environmental, wildlife and aesthetic value. Such vegetation may include groves of trees, significant individual trees or tree stands, forested hillsides, and vegetation associated with wetlands, stream/wildlife corridors and riparian areas.
  - Healthy retained and restored forests and natural systems provide benefits and services that are essential for human health and well-being.
  - Forested natural areas form the green infrastructure of a community, contributing to better air and water quality, as well as benefiting other ecosystem services.
  - Invasive species that are destructive to forest health must be controlled and eradicated where possible.

- **Manage the Community and Urban Forestry Resource for Maximum Benefit**
  - Initiate and promote appropriate urban tree management practices in high density, mixed-use areas in order to improve quality of life for all district users and create more

livable conditions, to include visual amenities, environmental services and economic development.
- Trees and understory vegetation retain stormwater, reduce erosion, buffer water bodies from polluting runoff, and clean the air of airborne pollutants. As the extent and health of an urban forest increases, so does its capacity to provide these green infrastructure benefits in greater amounts.
- An urban forest that is managed sustainably is healthier—allowing more trees to mature and more species to thrive. Healthy forests ultimately increase the ecological, social, and economic benefits of the forest and improve forest management.
- Encourage the use of science-based Best Management Practices (BMPs) to protect and enhance community trees and forests. A well-managed community and urban forest builds capacity for increased benefits and services over time, one of the few municipal assets that appreciates in value and capacity over time.
- Each community department with responsibility for the urban forest should share standardized maintenance practices. Standardized practices increase overall consistency in how trees are maintained, resulting in better tree health and longevity.

- **Promote Stewardship and Enable Community Education and Action**
  - Develop community-wide programming to enhance the community's awareness of the value of trees and the urban forest.
  - Knowledgeable citizens improve and enhance the quality of the urban forest through greater engagement in the care and maintenance of trees and related resources.
  - Educate families and children about the natural world to benefit the health and wellness of people and wildlife.
  - Develop programming that leverages the commitment and interest of citizens to support environmental stewardship that works collaboratively to increase wildlife habitat and other natural systems, and to generate greater public awareness of community and urban forestry issues.
  - Benefits of community stewardship are numerous: increased community leadership and civic engagement; creation and protection of more viable habitats for wildlife; improved greenways and stream corridors; and a greater understanding by citizens of their individual and combined impacts on natural systems.

- **Optimize Opportunities for Partnerships in Urban Forest Preservation and Enhancement**
  - A community—residents and businesses alike—that is provided a clear picture of the priorities, scope, timing, and resources for achieving a thriving urban forest is more likely to invest their energy and resources to help achieve that vision.
  - Community trees must be actively cared for and managed to maintain a healthy, safe existence and coexist well with homes, streets, infrastructure/utilities, businesses, parks, and natural areas. An urban forest management plan that provides the public with a vision for a healthy and sustainable urban forest, as well as a roadmap for getting there, will inspire more people to become informed and involved as stewards to guide and support future sustainable tree practices and policies.
  - Outreach programming should inspire community partnerships with other local organizations, schools, and agencies, and will result in greater awareness and understanding of the importance of protecting and caring for community and urban forests.

- **Promote the Use of Incentives to Leverage Community and Urban Forestry Goals**
  - Broader community support for tree conservation and planning can be built through positive appeals for best practices that include voluntary and incentive-based programs, such as stormwater utility credits, certified wildlife habitat, density/building height bonuses, streamlined permit review, adjusted setback or parking requirements, and property or impact fee reductions.

- **Provide Urban Forest Resources Equitably Across the Community**
  - The local jurisdiction (city, town, county or tribe) and its partners (e.g., local communities, organizations, etc.) should allocate community and urban forest resources in a manner that recognizes geographic, racial and social equity.
  - Community and urban forest benefits should be equitable for all residents of a community. All residents within a jurisdiction deserve the benefits of a healthy urban forest.

- **Transportation and Utilities**
  - Planning and management of urban forests and trees must take into account urban utility infrastructure. Location and type of trees in proximity to aboveground and underground utilities must be considered in order to avoid damage to both the utility's infrastructure as well as to the forest and trees.
  - Transportation corridors may provide excellent opportunities for tree and shrub planting when safety and design guidelines are taken into consideration. Partnerships with public works departments, transportation and utility organizations are encouraged.

B. CONSIDERATIONS FOR POLICY IMPLEMENTATION

- **Costs**

Local governments must consider the costs associated with community and urban forestry programs in addition to the benefits of a local urban forestry program. Careful planning of program costs will help provide a defensible basis for budget requests and grant proposals, as well as determine eligibility for federal, state, and local funding assistance. Program costs that may be considered include inventory and assessment of the community's trees; long-range implementation plans; development of a management plan including maintenance activities; formation of a tree board or urban forestry commission; the adoption and enforcement of ordinances and code; public outreach and education; and tree evaluation and appraisal.

- **Relationship to Other Programs, Plans and Policies**

Vital, livable communities have a number of responsibilities and requirements to fulfill toward their citizens, both residential and commercial. Community and urban forestry principles and practices should be integrated into the land use, transportation, parks and open spaces, and capital facilities plans and programs to maximize the ecosystem benefits described elsewhere in this document. These elements should be crafted collaboratively with reference to each other to avoid unintended consequences and the highest achievement of community benefits. It is important that there be deliberate discussions about the tradeoffs that will occur over time to accommodate future growth and change as policies are established concerning the location and maintenance of trees within a community.

A thoroughly integrated program may also assist with compliance and implementation of other state and local programs. As local governments are increasingly being held responsible for implementing pollution control and ecosystem restoration projects, community and urban forests, along with other green infrastructure features, should be viewed as strategic tools for compliance. For example, community and urban forestry programs may help communities

manage flooding and stormwater runoff to mitigate discharges into Puget Sound, as required in the Land Use Element of the Growth Management Act (RCW 36.70A.070(1) Land Use Element[1]).

In addition, Environmental Protection Agency (EPA) regulations for both Phase I and Phase II stormwater permits allow communities to include urban forestry in their best management practices. Programs that protect and restore trees in riparian areas may work hand-in-hand with local Shoreline Master Plans, which must ensure no net loss of shoreline ecological functions (WAC 173-26-221[2]).

Protecting and enhancing community and urban forests may also help meet air pollution mandates as well as mitigate the effects of greenhouse gases. Because smog formation is directly related to air temperatures in the lower atmosphere, the ability of trees to moderate temperatures in urban areas may also help to reduce smog.

- **Evaluation, Monitoring and Adaptive Management**

Communities that incorporate community and urban forestry principles into planning processes must consider how to evaluate their programs to ensure maximum efficiency and effectiveness. Clear, measurable goals and objectives must be set, with reasonable timelines for implementation. Management plans must have the flexibility to adapt to new information as a result of monitoring outcomes, or changes in best management practices based on best currently available research.

4. COMMUNITY AND URBAN FORESTRY INVENTORY AND CANOPY ASSESSMENT

The DNR Urban and Community Forestry Program (UCF), with the assistance of the Technical Advisory Committee (the TAC), is charged with the development of inventory and assessment protocols along with a project implementation plan under the ECA. The TAC and UCF have worked closely with CTED to assure that inventory criteria are designed to meet the goals and objectives of urban forestry management plans and tree ordinances. Similarly to CTED and the Task Force, funding is not available for the Fiscal Biennium 2009-2011, causing a suspension of activity in this arena as well. The Task Force and the TAC recognize, however, that evaluation of the resource through inventories and assessments are an important first step toward sustainable community and urban forestry management and programming.

An *inventory* catalogues existing trees and their associated attributes while an *assessment* evaluates the state of the existing forest resource. Both are valuable and essential tools in identifying current maintenance and management needs and setting future goals. Analysis of the resulting information may be used to determine both baseline conditions and to set long-term goals regarding specific achievable conditions for a community's forest resource, which are important both to develop an accurate, effective management plan for the resource and to set measurable goals to evaluate program efficiency and efficacy.

[1] http://apps.leg.wa.gov/RCW/default.aspx?cite=36.70A.070
[2] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-26-221

Community and urban tree inventories typically focus on city-managed street, park and/or natural-area trees. It is important to remember, however, that a community forest is much larger than the public tree component; the majority of trees comprising a community forest canopy are actually located on private property. Forest canopy assessment through the use of remote sensing technology such as aerial photography or satellite imagery captures the total effect of *all* trees within a community and, thus, is a major component of the ECA recommended inventory and assessment protocol.

The core data set recommended by the TAC for use in ground-based inventories is designed to provide communities sufficient information to assess the forest resource, address local management needs, and develop a site-specific management plan. This basic data set will also provide the information necessary to use the i-TREE[1] analysis tools developed by the USFS, should a community desire to do so. Communities may choose to collect additional information beyond the required data elements to address their particular management goals.

For more information about the work and recommendations of the TAC, as well as the pilot project details, please refer to the TAC report[2] available on the DNR website.

5. ELEMENTS OF COMMUNITY AND URBAN FORESTRY MANAGEMENT PLANS

While the Task Force did not have time to fully develop model community and urban forestry management plans, the following elements are important points to consider when developing a strong, thoughtful management plan, an important step in fostering sustainable community and urban forestry programming and achieving healthy forest systems.

A management plan conveys a vision for the resource in practical terms, based on the distinctive character and context of a community, and helps to establish consistency and coherence in long-range planning even should changes occur in local administration. A management plan is an expression of purpose that identifies how community and urban forests and other ecosystems may aid the community in achieving its broader planning goal.

An urban forestry program may also be guided in its larger purpose by a *strategic plan*. Strategic plans establish long-term over-arching goals and objectives for a community's urban forestry efforts in order to provide a logical process for programmatic development, and may function as a framework for interagency cooperation toward the incorporation of urban forestry principles into general community planning and infrastructure maintenance. Management plans, by contrast, tend to be more specific to the field operations of a tree program. This section focuses on recommendations for urban forestry management plans.

A. SCOPE OF A MANAGEMENT PLAN

A key decision early in the process of drafting a management plan is the scope of applicability of the document. Most plans begin by addressing those trees under the jurisdiction of the community or municipality, such as trees in parks, open space lands, street rights-of-way, and other publicly-owned properties. The next tier may include trees on properties owned or managed by other public entities such as school districts, water districts, and public utility

[1] http://www.itreetools.org/
[2] http://www.dnr.wa.gov/researchscience/topics/urbanforestry/pages/rp_urban_eca_tac.aspx

services. A final management arena, perhaps the most difficult to scope and implement, involves trees on privately-owned property, including trees in commercial areas such as parking lots and commercial building complexes; residential areas, including both single and multifamily housing; dedicated open space lands owned and managed by homeowners' associations; and vacant lands that may be subject to future development. Trees in some of these designations may have been protected or planted as a condition of development plan approval.

B. CONTENTS OF THE PLAN

Management plans will be as varied as the communities they serve, but most contain the basic elements discussed below. A good management plan is a clear representation of the unique characteristics of the community's forest resources and the values that local citizens hold concerning trees. In addition, the level of detail will vary among communities according to staff and other resources available.

- **Executive Summary**

An abbreviated version of major findings and recommendations should be provided, with more extensive, supporting detail following.

- **Introduction/Rationale**

The introduction should answer the key question, "Why was this plan developed?" That answer may address forest loss, forest health, community aesthetics, and environmental conditions, among others. A summary of benefits based on scientific research and studies may provide strong justification for subsequent policy and action recommendations.

- **Community Context**

A quick overview of the status of the urban forest resource should be provided, connected to the historical and cultural background of the community. Economics and trees of past times may be discussed. Heritage, historic or landmark trees in the community and their social significance may be described. The status and primary activities of any existing urban forestry program should be detailed.

- **Assessment Outcomes**

Results of a forest assessment such as a street tree inventory or canopy cover analysis should be summarized. Maps are often the best way to highlight key information provided by an assessment. Challenges, such as canopy loss, should be described and discussed. Previous past programmatic successes should be highlighted.

- **Needs**

Needs of the forest resource, the existing program, and management efforts should be described and related to the broader needs and desires of the community, such as meeting the environmental elements of the community's comprehensive plan.

- **Concept and Vision**

The management plan builds on what has already been achieved and guides future action. It discusses specific local concerns and issues in terms of the forest resource. Some communities emphasize *green infrastructure*, the idea that connected forest systems across the community provide cleaner air and water, mitigate stormwater effects and reduce energy use. A related concept is that of *ecosystem services*, the idea that trees provide tangible and intangible goods and services that sustain basic needs, and improve human health and well-being. Communities may plan to promote a systems approach toward planning the forest resource, rather than planning for single trees or small groves, depending on the needs and desires of their citizens.

- **Review of Current Practices**

The management plan needs to provide the context that links background information and previous actions to existing activities and practices. It should report the current work plan (e.g. conservation, planting, stewardship), along with those responsible for the work (e.g. government departments, community organizations, a tree board). Current planning documents and code/ordinances that apply to trees should be included or summarized.

- **Plan Goals and Objectives**

The management plan establishes a framework of long-term, comprehensive intentions, and becomes the "road map" for future actions. Clear goals and objectives provide a consistency and continuity of purpose and outcome over an extended time period.

- **Implementation Actions and Timeline**

Specific actions to meet the goals and objectives must be included, with detailed specifications as to who will do the work and timelines for accomplishment, with phases of work coinciding with the community's budget cycle. Programs should be monitored so that outcomes can be measured over time, providing feedback on effectiveness and efficiency of the work plan. Goals and actions may need periodic adjustment to reflect updated information and conditions. Adaptive management through a monitoring and feedback informational loop will produce best results over time.

- **Appendices**

Appendices provide technical documentation to support the plan's assessment and implementation efforts. This reference material may be too complex or lengthy to present in the main body of the document.

6. ELEMENTS OF A COMMUNITY AND URBAN FORESTRY ORDINANCE

While the Task Force did not have time to fully develop model community and urban forestry ordinances, commonly referred to as "tree ordinances", the following elements are important considerations in developing a program that supports healthy urban forests and the ecological, social and economic benefits they confer. Elements may be scaled to the size and needs of the community, depending on resources available and support dedicated to community and urban forestry programming.

A well-crafted community and urban forestry ordinance should include discussion and support of these items:

- Establishment of priorities for tree removal and replacement, possibly placing more rigorous standards for higher valued trees and higher functioning forests
- Conflict resolution
- Cross-referencing to other local, state and federal policies
- Inclusion of urban forestry policy in the community's Comprehensive Plan
- Tree recognition program (i.e. significant trees, historical trees, Tree City USA)
- Incentives for tree retention and tree maintenance (tax credits, etc.)
- References to existing professional, accredited maintenance and management standards and best management practices rather than including technical detail in the ordinance itself

Elements listed below include several important points that the Task Force recommends for consideration in addition to those listed in Section 12 of the Act. The underlying purpose of each element is described, considerations are discussed, and references to existing programs, code language or other helpful resources are given where appropriate examples are available. A community may develop topics or elements in addition to those listed, based on their own needs or desires; if such additional items are included in a management plan or policy statement, be sure that they are addressed in the related ordinance. Further ordinance-writing references and guides may be found in the Resources section at the end of this document.

- **General Purpose Statement**

Purpose: A clear purpose statement is an important organizing element in an effective tree ordinance. It states the reason for having a tree ordinance as part of an community and urban forestry program, and sets the overarching goals of the program.

Considerations: A tree ordinance provides the legal authority to manage and maintain community and urban forests. Clearly identify which trees are regulated by the tree ordinance: public, private, those on the right of ways, in parks, in city jurisdiction, etc.

References:

- International Society of Arboriculture (ISA) Tree Ordinance Guidelines[1]
- Model Tree Ordinances For Louisiana Communities[2] - scroll down to Section 2
- Lacey Title 14.32.020[3] Purposes and permit criteria

- **Tree Canopy Cover**

Purpose: For the past decade, the benefits of urban forestry (stormwater/runoff abatement, pollution, shade) have been quantified through analysis of tree canopy cover for a community, with optimal percentages proposed for various land uses, as well as target coverages for a community working toward realizing maximum benefit from its urban forest. A goal that states an optimal percentage of tree canopy cover that a community wants to pursue will further support its ordinance and urban forestry program.

Considerations: Canopy coverage goals should be included in purpose and intent sections of an ordinance as an overall goal.

References:

- DNR's TAC inventory and assessment report[4]
- American Forests Ecosystem Analysis[5]
- NCDC Imagining, Inc. projects[6]

- **Tree Conservation and Retention**

Purpose: Tree conservation encompasses all aspects of tree management – installation, maintenance, retention, preservation, removal and replacement. Tree ordinance components and requirements must point to the ultimate goal of appropriate tree conservation to ensure optimal benefit and provide a firm basis for continuing tree care and public education.

[1] http://www.isa-arbor.com/publications/tree-ord/ordprt1a.aspx#Goals
[2] http://www.greenlaws.lsu.edu/modeltree.htm
[3] http://www.ci.lacey.wa.us/lmc/lmc_main_page.html
[4] http://www.dnr.wa.gov/researchscience/topics/urbanforestry/pages/rp_urban_eca_tac.aspx
[5] http://www.americanforests.org/resources/rea/
[6] http://www.ncdcimaging.com/page.asp?id=175&name=Projects

Considerations: Retention and conservation goals should be included in purpose and intent sections of an ordinance as an overall goal.

References:

- Olympia Title 16.56[1] Landmark Tree Protection
- Olympia Title 16.60[2] Tree density protection and replacement
- Bellevue Title 20.20.900[3] Tree retention and replacement

- **Tree Density**

Purpose: Promoting a target tree density in a community helps to further conservation efforts toward optimal tree canopy cover.

Considerations: Minimum tree densities are typically required for sites under development or redevelopment, when appropriate, to ensure a minimum canopy coverage is achieved through a combination of retention, allowable removal and required replacement. Other opportunities to address tree density occur when tree removal is requested that is not related to development. Examples of density measurements include actual measurements of tree crowns through aerial photography analysis, stem counts that enumerate actual trees, and diameter measurements that correlate to predetermined "tree units". The most popular is the diameter measurement due to ease of administration and a reasonable correlation of density to a common measure.

References:

- Vancouver Title Section 20.770.080[4] Tree Density Requirement
- Kirkland Title 95.35[5] Tree Retention, Protection and Density
- Olympia Title 16.60.080[6] Tree density requirement

- **Tree Spacing**

Purpose: Tree spacing ensures adequate space for individual trees to grow, develop and thrive in order to provide the highest possible benefit and services.

Considerations: Growing space both above and below ground must be considered. It is best to link to outside documents (such as American National Standards Institute [ANSI] standards, BMPs, etc.), rather than spell out detailed specifications in the ordinance itself, as this allows for more flexibility and more timely updates as best practices improve through research, and precludes the need to amend the ordinance for such changes.

References:

- street tree specifications from other jurisdictions
- public works street specifications and standards
- experienced urban forestry consultants

[1] http://olympiamunicipalcode.org/
[2] http://olympiamunicipalcode.org/
[3] http://www.cityofbellevue.org/bellcode/Bluc2020.html#20.20.900
[4] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_20&chapter=770&VMC=080.html
[5] http://kirklandcode.ecitygov.net/KirklandZC_html/kzc95.html#95.35]
[6] http://olympiamunicipalcode.org

- **Vegetated Stormwater Runoff Management**

Purpose: Trees and associated vegetation coverage are directly linked to stormwater mitigation and should be aligned during planning to ensure proper placement of increased community and urban tree cover in order to reduce and filter stormwater runoff.

Considerations: Consult with local, state, regional and/or federal stormwater management manuals for guidance. Prioritize locations for tree and vegetation retention and replacement; for example, stormwater facilities and buffers for sensitive areas can be high priority locations for retention and replacement efforts. Trees intercept and store precipitation in leaves and bark, as well as storing water in trunk, twig and leaf tissues. For example, a mature Douglas-fir may hold up to 300 gallons of water throughout its structure.

References:

- Department of Ecology (DOE) Stormwater Manual for Western Washington[1]
- DOE Stormwater Manual for Eastern Washington[2]
- US Environmental Protection Agency report, "Using Smart Growth Techniques as Stormwater Best Management Practices[3]," identifies urban tree canopy as an innovative and sustainable means to dramatically reduce stormwater runoff and the costs associated with stormwater management.

- **Clearing, Grading, Protection of Soils**

Purpose: Vegetation protects soils, provides permanent erosion control and reduces surface stormwater runoff. Erosion control should be specified for projects requiring manipulation of the soil in order to preserve this precious resource to the best extent possible. Clearing for new development must take into consideration not only possible required tree retention, but ensuring that tree tracts preserve the best trees in the healthiest way possible within the site constraints. Manipulation of the soil such as grading has potential detrimental impacts on tree roots, and should be conducted in accordance with best management practices for protection of critical root zones.

Considerations: Consult with stormwater manuals for information about clearing and grading impacts. Protection of water quality is a major consideration in developing erosion control specifications. Protection of the critical root zone around urban trees during construction, planting, and maintenance will help to preserve their health and structural integrity to ensure maximum ecological benefit and ongoing safety.

References:

- Washington State Department of Transportation (WSDOT) *Standard Specification for Road Bridge and Municipal Work*[4], 1-07.16(2)
- WSDOT *Highway Runoff Manual*[5]
- City of Olympia Urban Forestry Manual[6]

[1] http://www.ecy.wa.gov/biblio/0510029.html
[2] http://www.ecy.wa.gov/biblio/0410076.html
[3] http://www.epa.gov/dced/pdf/sg_stormwater_BMP.pdf
[4] http://www.wsdot.wa.gov/publications/manuals/M41-10.htm
[5] http://www.wsdot.wa.gov/publications/manuals/fulltext/M31-16/HighwayRunoff.pdf
[6] http://www.olympiawa.gov/city-government/departments/community-planning-and-development/forms-and-brochures-cpd.aspx#Urban

- **Appropriate Tree Selection and Siting**

Purpose: Planting the "Right Tree in the Right Place" eliminates many potential future conflicts, particularly with overhead utilities. With the advent of solar and wind-generated power, it becomes even more important to plan tree planting locations and choose an appropriate tree variety. Maintenance costs may be considerably reduced through choosing varieties that are not only of correct size and shape, but are adapted to local climate and conditions. Tree care costs related to pest and disease control and irrigation may be significantly reduced through selecting trees appropriate to the local conditions.

Considerations: An ordinance should link to a list of recommended trees rather than contain it, so that the list may be reviewed and updated as new information becomes available. Some jurisdictions find it useful to also have a "prohibited" or "restricted use" list of tree varieties to reduce the use of problematic or invasive trees. Adequate growing space both above and below ground will ensure well-shaped trees that are healthier and structurally safer for maximum cost/benefit. Line-of-sight standards and utility constraints must be considered when siting trees; guidelines for utility-appropriate trees are typically available through utility providers or wholesale nurseries. ANSI A300 standards for nursery stock may be linked to the ordinance to ensure quality young trees are provided for projects; minimum size standards for different planting types (i.e., street tree planting, reforestation/restoration planting) may be indicated as well.

References:

- "The Right Tree for the Right Place" – Tree City USA Bulletin #4[1], The Arbor Day Foundation
- ISA BMP - Tree Planting[2]
- Refer to local public works standards for line-of-sight clearances, side sewers, water lines, and any on-site drainage requirements.
- Consult with utilities regarding potential utility conflicts.
- Check tree selection and spacing guidelines in tree manuals and nursery publications.

- **Native Species and Non-native Species Diversity**

Purpose: Diversity of tree ages and species ensures a healthier, more resilient ecosystem capable of responding more easily to insect and disease threats, and changes in climate and other environmental conditions.

Considerations: Planting native vegetation species should be encouraged where appropriate; however, in many urban settings, native soils and hydrology have been severely impacted. Native tree species may be less capable of coping with urban stresses than introduced varieties. To the extent possible, match what is known of the native habitat of a tree species with existing conditions. Consult with surrounding communities and the Washington State University Cooperative Extension Service (WSU Extension) to avoid introducing invasive tree species. Jurisdictions should plan for diversity in planting to avoid losing major tree canopy through epidemic disease such as Dutch elm disease or infestation such as emerald ash borer. An up-to-date inventory can help to plan continuing tree planting efforts in order to maintain tree age diversity as well.

[1] http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=129
[2] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Tree-Planting-P256C59.aspx

References:

- Local knowledge of successful tree species and varieties is extremely helpful.
- Local nurseries, the WSU Extension and Master Gardeners are useful resources.
- Experienced urban forestry consultants

- **Centralized Tree Management**

Purpose: This element ensures that there is a responsible party to administer and enforce the code, as well as carry out the planning and maintenance activities described elsewhere in the ordinance and/or management plan.

Considerations: A department, tree commission or board, or designated staff position must be given the authority to manage the urban forestry program. There may additionally be a requirement that all departments that perform work related to trees (including planning, street and sidewalk maintenance, signs and signals, public utilities, transportation, parks, field inspectors, etc.) shall coordinate efforts and perform work to the same standards. Several jurisdictions further add that "no person may prevent, delay or interfere with this person, department, or any city employee in the administration or enforcement of this ordinance."

References:

- Vancouver Chapter 12.02[1] URBAN FORESTRY COMMISSION
- Walla Walla Chapter 12.49.030[2] Municipal arborist – Duties and powers
- Everett Section 8.40.070[3] Tree committee

- **Tree Maintenance**

Purpose: Correct, timely maintenance of trees protects the public's investment in the urban forest resource and enhances the health, safety, and welfare of the community. The community and urban forest constitutes a vital environmental, historic, visual, and economic resource that provides benefits to all who live, work, play and shop in a community.

Considerations: Clearly identify who is responsible for tree maintenance. In some jurisdictions the property owner is responsible for public trees adjacent to his/her property; in others the local jurisdiction is responsible for all public tree maintenance. Permitting may be required of residents for work they wish to perform to trees regulated by the local community. Professional standards such as those outlined in the ANSI A300 standards for tree care and maintenance should be linked to the ordinance, and enforced. All departments that perform work related to trees should be fully trained in proper maintenance activities and coordinate efforts. Standards and specifications should reference not only street trees, but all trees on publicly-owned properties (parks, stormwater facilities, etc.). Some jurisdictions require all tree workers working within their boundaries to be certified by a professional arboricultural organization.

References:

- ISA BMP – Tree Pruning[4]
- ISA BMP – Integrated Pest Management[5]

[1] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_12&chapter=02&VMC=index.html
[2] http://www.codepublishing.com/WA/WallaWalla/wallawalla12/wallawalla1249.html#12.49.035
[3] http://www.mrsc.org/mc/everett/everet08/everet0840.html#8.40.070
[4] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Tree-Pruning-P177C59.aspx
[5] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Integrated-Pest-Management-P308C59.aspx

- ISA BMP – Tree and Shrub Fertilization[1]
- Vancouver Chapter 12.04[2] STREET TREES
- ANSI A300 standards – Integrated Vegetation Management, Pruning and Fertilization[3]
- Everett Chapter 8.40.040[4] Management program
- Port Orchard Municipal Code §16.20.700[5] - View Protection Overlay District

- **Street Tree Installation and Maintenance**

Purpose: The points made above in "Appropriate Tree Selection and Siting" and "Tree Maintenance" apply here as well, with the additional responsibility of managing trees in corridors of high traffic volume and greater potential risk to public safety.

Considerations: Developers of new residential and commercial development are responsible in many jurisdictions for planting street trees, but bear no further responsibility for maintenance or care. A few jurisdictions require performance bonds ranging from 3 to 5 years to ensure adequate establishment of required tree plantings. In some jurisdictions, property owners have the responsibility to install and maintain street trees and reduce tree related hazards. However, due to increased risk management issues, many jurisdictions prefer to install, maintain, and care for street trees themselves, particularly on major arterials. Proper selection, installation, siting, and maintenance has been shown to significantly reduce risk associated with street trees in high traffic corridors, as well as potentially increasing the services and benefits that such trees provide. Minimum standards for quality and size must be provided, and enforced.

References:

- ISA BMP – Tree Planting[6]
- ISA BMP – Tree Pruning[7]
- ISA BMP – Integrated Pest Management[8]
- ISA BMP – Tree and Shrub Fertilization[9]
- Vancouver Title12.04[10] STREET TREES
- Olympia Title 12[11] - STREETS, SIDEWALKS AND PUBLIC PLACES
- Edmonds Chapter 18.85[12] STREET TREES

[1] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Tree-and-Shrub-Fertilization-P174C59.aspx
[2] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_12&chapter=04&VMC=index.html
[3] http://secure.isa-arbor.com/webstore/Combo-packages-C36.aspx
[4] http://www.mrsc.org/mc/everett/everet08/everet0840.html#8.40.040
[5] http://www.cityofportorchard.us/docs/city_clerk/Land_use_devl_reg.pdf
[6] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Tree-Planting-P256C59.aspx
[7] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Tree-Pruning-P177C59.aspx
[8] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Integrated-Pest-Management-P308C59.aspx
[9] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Tree-and-Shrub-Fertilization-P174C59.aspx
[10] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_12&chapter=04&VMC=index.html
[11] http://www.olympiamunicipalcode.org/A55799/Oly-muni-PUBLIC.nsf/1.%20Title/Chapter?OpenView&Start=1&Count=30&Expand=12.12]
[12] http://www.mrsc.org/mc/edmonds/edmonds18/edmonds1885.html

- **Tree and Vegetation Buffers**

Purpose: Healthy and sustainable vegetated buffers help to ensure optimal functionality of wetlands, riparian zones and similar locations. Well-planned tree retention tracts and buffers reduce utility conflict through assessment and analysis of potential locations within a development site.

Considerations: Planning and design for tree and vegetation buffers must consider the inherent risk to transportation and utility corridors, as well as potential risk to homes, schools, hospitals and other structures. Jurisdictions should work closely with local utility providers to identify utility corridors and coordinate planning and development of retained tree tracts and buffers. Long, narrow tracts or buffers consisting of retained native trees should be avoided, as these are particularly prone to windthrow once the supporting stand has been removed. Retention of single trees has not been successful over the long term using dense development standards; such individual trees tend to sustain considerable root damage during construction and are easily blown over due to both root damage and to loss of the supporting stand.

References:

- Buffer requirements for sensitive areas may be found in community development and critical area codes
- Riparian buffer regulations
- Consult with local utility foresters to learn more about local utility concerns and issues.

- **Tree Assessments for Site Permitting**

Purpose: Assessment and evaluation of trees and tree stands during site planning and permitting ensures retention of healthy trees in the most appropriate manner, as well as adequate protection of viable trees during the development and construction processes.

Considerations: A complete forestry report by a qualified professional that contains an inventory of trees on the site and discusses the health, structural integrity and risk assessment should be part of the permitting process for new development and/or redevelopment. Trees adjacent to the development site that may be impacted by development and/or construction processes should be included in the documentation. Particular site-related issues that may impact the long-term viability of the retained tree tract (steep slopes, laminated root rot, etc.) should be noted and discussed in detail. Long, narrow tracts or buffers consisting of retained native trees should be avoided, as these are particularly prone to windthrow once the supporting stand has been removed. Retention of single trees within a development have not been shown to be successful over the long term; such individual trees tend to sustain considerable root damage during construction and are easily blown over due to both root damage and to loss of the supporting stand.

References:

- Kirkland Chapter 95.35[1] Tree Retention, Protection and Density
- Olympia Chapter 16.60.050[2] Tree plan required
- Vancouver Section 20.770.050[3] Tree Plan Required

[1] http://kirklandcode.ecitygov.net/KirklandZC_html/kzc95.html#95.35
[2] http://olympiamunicipalcode.org/
[3] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_20&chapter=770&VMC=050.html

- **Tree Protection During Construction**

Purpose: Protecting existing trees from damage or removal on a site is important in retaining the ecosystem services those trees contribute to the community. Protecting trees during construction ensures that trees identified as having long-term benefit to the community retain their health and structural integrity, which is necessary for continued public health and safety.

Considerations: Trees and their root systems require protection from disturbance and compaction during construction in order to remain healthy and safe. The ISA has developed a "rule of thumb" guideline for the Critical Root Zone (CRZ) area of retained trees that should be protected from construction impacts: one foot from the base of the trunk (radius) for each one inch of trunk diameter at 4.5 feet above grade. Several jurisdictions have detailed specifications for protection measures, including fencing of the CRZ during construction, especially on new construction. Missing or inadequate safeguards may render a tree tract hazardous through damage to trunks and roots, thereby raising risk factors to an unacceptable level.

References:

- ISA BMP – Managing Trees During Construction[1]
- WSDOT *Standard Specification for Road Bridge and Municipal Work*[2], 1-07.16(2) Vegetation Protection and Restoration
- Redmond Chapter 20D.80.20-100[3] Protection Measures
- Olympia Chapter 16.60.090[4] Tree protection during construction
- City of Olympia Urban Forestry Manual[5]

- **Forest Condition for Different Land Use Types**

Purpose: This element is intended to provide options and a range of forestry opportunities for the possible range of land uses in communities.

Considerations: Community and urban forests consisting of different species, sizes, densities, percent canopy coverage, and heights may be indicated for different land use zones, such as residential, commercial, parks, etc. A jurisdiction may also incorporate additional opportunities, such as the retention of existing trees on site, supplemental planting, or the creation of stands of trees. Vancouver and Kirkland have different retention requirements for single-family, multi-family and commercial. Maintenance and management of view corridor planning overlays, if identified, must be taken into consideration as well.

References:

- Bellevue Chapter 20.20.900[6] Tree retention and replacement. Sections D, E, F, and G contain different requirements for differently zoned development.
- Clyde Hill Chapter 17.38[7] View Protection and Tree Removal

[1] http://secure.isa-arbor.com/webstore/Best-Management-Practices-BMP-Managing-Trees-During-Construction-P394C59.aspx
[2] http://www.wsdot.wa.gov/publications/manuals/M41-10.htm
[3] http://www.mrsc.org/mc/redmondcdg/cdg20D8020.html#20D.80.20-100
[4] http://olympiamunicipalcode.org/
[5] http://www.olympiawa.gov/city-government/departments/community-planning-and-development/forms-and-brochures-cpd.aspx#Urban
[6] http://www.cityofbellevue.org/bellcode/Bluc2020.html#20.20.900
[7] http://www.mrsc.org/mc/clydehill/clyde17.pdf#Page=31

- **Public Education and Support**

Purpose: Urban forestry can be a powerful tool to aid in building strong, vital, sustainable communities. Establishing an environmental and stewardship ethic helps bring the importance of the tree canopy—a community asset that functions for the common good—to the forefront of public awareness. Such awareness is important to create and foster ongoing support for future program development and needs.

Considerations: Development of a citizen tree board or commission in addition to municipal staff can be useful in implementing educational programs and soliciting community engagement in urban forestry programming. Celebrate Arbor Day. Partner with local organizations such as schools, garden clubs or libraries to provide educational events. While the level of public education and outreach will be largely dependent on jurisdiction's resources, explore partnerships with local organizations to increase outreach potential. A public well-educated about best tree maintenance practices will be more engaged in day-to-day care of the community-based forestry resource.

References:

- "Handbook for Tree Board Members" – available through the Arbor Day Foundation[1]
- "Trees Are Good[2]" - ISA public education website
- Alliance for Community Trees[3]

- **Tree Account**

Purpose: A dedicated tree account will allow penalties, fines, fees or payments in lieu of required planting and/or donations to be directly received by the urban forestry program in order to be used by the program for replanting, maintenance, additional planting, education and other activities.

Considerations: Financial challenges are an ongoing concern for most community and urban forestry programs. A mechanism to capture funds associated with regulating a community's trees provides a method to leverage those funds *from* tree-related fines, fees, etc. to increase the efficacy of the overall program. Some jurisdictions also provide for replacement fees or fines based on appraised replacement value of trees that have been damaged on publicly-owned property through vehicle collision or vandalism.

References:

- Vancouver Title 20.770.040[4] City Tree Account
- Lacey Title 14.32.066(B)[5] City Tree Account
- Olympia 16.60.045[6] City tree account

- **Permits and Appeals**

Purpose: Permits provide a standardized platform to review and approve or deny tree-related actions to ensure quality and consistency of the work. An appeal process should be linked to any permitting process, to provide for equitable conflict resolution.

[1] http://www.arborday.org
[2] http://www.treesaregood.org
[3] http://actrees.org/site/index.php
[4] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_20&chapter=770&VMC=040.html
[5] http://www.ci.lacey.wa.us/lmc/lmc_main_page.html
[6] http://olympiamunicipalcode.org/

Considerations: Permits may be required for removal, planting, pruning or any other tree-related work within the right-of-way at a minimum or be more far-reaching, as desired by the community. Some jurisdictions require that any and all tree work performed within jurisdictional borders must be performed by a tree worker certified by a professional arboricultural organization. Some jurisdictions require permits for tree work performed on private property as well, at no charge, in order to have the opportunity to review the intended work. Particularly in the case of tree removals, staff may use this opportunity to educate the consumer on other options that may be available, as well as discuss minimum tree density requirements with the consumer, if such exist.

References:

- Vancouver Section 12.04.040[1] Street tree work permit
- Walla Walla Section 12.49.200[2] Appeals
- Lacey Section 14.32.040[3] Permits

- **Enforcement and Penalties**

Purpose: Ordinances must have enforcement capabilities in order to be effective. Penalties help ensure compliance and may require restitution, such as civil fines or site restoration, for non-compliance.

Considerations: Incentives and education may render enforcement obsolete; however, it is always wise to have enforcement capability associated with a tree ordinance to protect this valuable community resource most effectively. Because enforcement happens within an urban area, fines and fees should be calculated on appraised landscape value rather than wildland timber value. Fines, fees or other restitution or penalties should be received by the Tree Account to be used to support the urban forestry program, as detailed earlier in this document in the discussion of Tree Accounts.

References:

- Vancouver Title 12.04.100[4] Enforcement
- "Guide for Plant Appraisals, 9th Edition" - Council of Tree and Landscape Appraisers, available through the ISA[5]
- Olympia Chapter 16.58.070[6] Penalties

- **Alternative Compliance**

Purpose: Other approaches that incorporate 'green' elements into a site design may be offered for review; alternatively, a site that cannot comply with the provisions of the ordinance but does or can provide benefits as stated in the purpose/intent section of the ordinance will have the legal opportunity to offer valid options.

Considerations: Requests to use alternative measures and procedures should be reviewed by the staff responsible for urban forestry programming to ensure that issues and concerns are adequately covered. Examples include retaining specimen or landmark trees or low impact

[1] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_12&chapter=04&VMC=040.html
[2] http://www.codepublishing.com/WA/WallaWalla/wallawalla12/wallawalla1249.html#12.49.200
[3] http://www.ci.lacey.wa.us/lmc/title_14/chapter_14-32.htm
[4] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_12&chapter=04&VMC=100.html
[5] http://secure.isa-arbor.com/webstore
[6] http://olympiamunicipalcode.org/

development techniques, including such programs as Green Building Design or Leadership in Energy and Environmental Design (LEED), which demonstrate a significant reduction to stormwater runoff from the site.

References:

- Kirkland Zoning Code Chapter 95.25[1] Alternative Compliance
- Redmond Chapter 20D.80.10-030[2] Unique or Special Circumstances

- **Alternatives for Safety**

Purpose: Potential high-risk situations must be addressed in an orderly manner to preserve public safety. This element should provide criteria by which a community or its citizens may remove trees on both public and private property which are deemed to be a severe risk to public safety and critical infrastructure.

Considerations: Trees identified as "hazardous" or "at risk" should be identified as such by a certified arborist using a validated method whenever possible. Owners of trees deemed to be an imminent hazard on private property should be notified prior to removal or abatement whenever possible. Procedures for tree removals or other hazard abatement processes should be clear and flexible to protect public and property safety in the event of emergency situations.

References:

- "A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas" - Metheny and Clark, 1994.
- "Tree Risk Assessment in Urban Areas and the Urban/Rural Interface[3]"
- Vancouver Chapter 12.08[4] HAZARDOUS VEGETATION

- **Alternatives and Exemptions for Utility Companies**

Purpose: Washington State requires utilities to provide for "the safe and uninterrupted delivery of service." Cooperation among jurisdictions, citizens and local utility providers is essential to meet this requirement and still retain healthy, viable trees, and vegetation.

Considerations: Utility providers may be granted 'self-permitting' privileges with an annual review of work to be accomplished within a jurisdiction. Jurisdictions and utility providers may collaborate on arboricultural training for utility workers and public outreach and education to consumers. Utility providers must be exempt, within reason, from lengthy review and permitting processes during storm events and emergency response. Exemptions or a high degree of cooperation are required for utilities in order to meet certain federal standards in conjunction with state and local mandates with regard to tree pruning and removal practices along critical infrastructure. An annual integrated vegetation management plan may be useful in addressing such issues in a positive, time-sensitive fashion. Street tree work should be coordinated with utility providers and local public works departments, including both above- and belowground disturbance such as trenching, pipe installation, curb cuts, sidewalk installation, sign installation, etc., and traffic control when needed.

[1] http://kirklandcode.ecitygov.net/KirklandZC_html/kzc95.html#95.25
[2] http://www.mrsc.org/mc/redmondcdg/cdg20D8010.html#20D.80.10-030
[3] http://www.pnwisa.org/TRACEBulletin.pdf
[4] http://www.cityofvancouver.us/MunicipalCode.asp?menuid=10462&submenuID=10478&title=title_12&chapter=08&VMC=index.html

References:

- ANSI A300 Part 1: Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices, Pruning[1]
- ISA BMP - Utility Pruning of Trees[2]
- "Trees and Overhead Electric Wires: Proper Pruning and Selection" – available through ISA[3]

- **Variance to Address Conflicts**

Purpose: Clear criteria and an equitable process should be designed for parties to work toward resolving conflicts involving trees and other structures such as solar panels, wind towers, view corridors, and utilities. Such criteria should enable a conversation about the benefits and contributions of trees that lead to a practical and workable alternative solution to removal without replacement.

Considerations: Ordinances dealing with this issue emphasize a conflict resolution process rather than litigation. Proper valuation of the benefits and services of trees must be taken into consideration. The lifespan of the impacted tree versus the lifespan of the proposed structure should also be considered.

Reference:

- Clyde Hill Chapter 17.38[4] View Protection and Tree Removal
- Redmond Section 20D.80.10-030[5] Unique or Special Circumstances

- **Definitions**

Purpose: A section of definitions will provide clarification for terminology in ordinance elements, so that all users understand concepts and principles contained in the code without uncertainty regarding technical jargon.

Considerations: Definitions should be simple and accurate, and reflect the intent of the ordinance.

7. EVERGREEN COMMUNITIES RECOGNITION

Section 6 of the Evergreen Communities Act sets out the framework for an evergreen communities recognition program, codified in RCW 35.105.030[6], which builds upon the existing Tree City USA program, created and administered nationally by The Arbor Day Foundation. While the Task Force did not have time to fully develop a recognition program, the following considerations are essential to a future program that supports healthy urban forests and the ecological, social and economic benefits they confer. Further development of program criteria and establishment of the recognition program will resume when funding is restored.

[1] http://secure.isa-arbor.com/webstore/ANSI-A300-Pruning-Standard-2008-Edition-P20C21.aspx
[2] http://secure.isa-arbor.com/webstore/Best-Management-Practices-Series-BMP-Utility-Pruning-of-Trees-P230C59.aspx
[3] http://secure.isa-arbor.com/webstore/Trees-and-Overhead-Electric-Wires-Proper-Pruning-and-Selection-P26.aspx
[4] http://www.mrsc.org/mc/clydehill/clyde17.pdf#Page=31
[5] http://www.mrsc.org/mc/redmondcdg/cdg20D8010.html#20D.80.10-030
[6] http://apps.leg.wa.gov/RCW/default.aspx?cite=35.105.030

- The award program should enable every Washington State community (city, town, county or tribe) to attain recognition.
- Outstanding achievement should be rewarded with higher recognition.
- The recognition program should provide for flexibility concerning community context, rather than a list of absolutes uniformly applied across all communities.

A. BASIC EVERGREEN COMMUNITIES RECOGNITION

The first four steps toward attaining Evergreen Community status as described in the ECA are essentially the same as the four requirements to become a Tree City USA, and will be applicable to all jurisdictions including those not currently eligible for the Tree City USA program:

- The development and implementation of a tree board, tree department, or responsible department;
- The development of a tree care ordinance;
- The implementation of a community forestry program with an annual budget of at least two dollars ($2) for every resident; and
- Official recognition of Arbor Day through a celebration and proclamation by the mayor or other community dignitary.

The Task Force strongly urges any community interested in participating in the Evergreen Communities Program and its incentives to begin by implementing the Tree City USA standards, with or without recognition through the Arbor Day Foundation.

Basic evergreen communities recognition as laid out in the ECA requires a *fifth* step in addition to the four above:

- The completion of an updated community and urban forest inventory for the city, town, tribe or county or the formal adoption of an inventory developed for the city, town, tribe or county by the DNR (RCW 76.15.070[1]).

B. PROGRAM-BUILDING STEPS

A second graduated step of designation as an Evergreen Community includes adoption of evergreen community management plans and ordinances that exceed the minimum standards adopted under RCW 35.105.050[2]. While development of criteria and programming toward this step and any other additional graduated steps wait upon renewed funding of the ECA, the Task Force offers the following approach toward building an evergreen communities recognition program when funding becomes available.

A 3-tiered (or "step" as described in the legislation) system of awards is recommended, similar in concept to LEED certification rankings of Silver, Gold, and Platinum. A community is recognized as it completes each step's designated product, while maintaining the requirements for all prior steps that are achieved, thus building integrated urban forestry programming that builds strength upon strength incrementally.

The Task Force believes that this proposal lays out a framework for an evergreen communities recognition program that potentially:

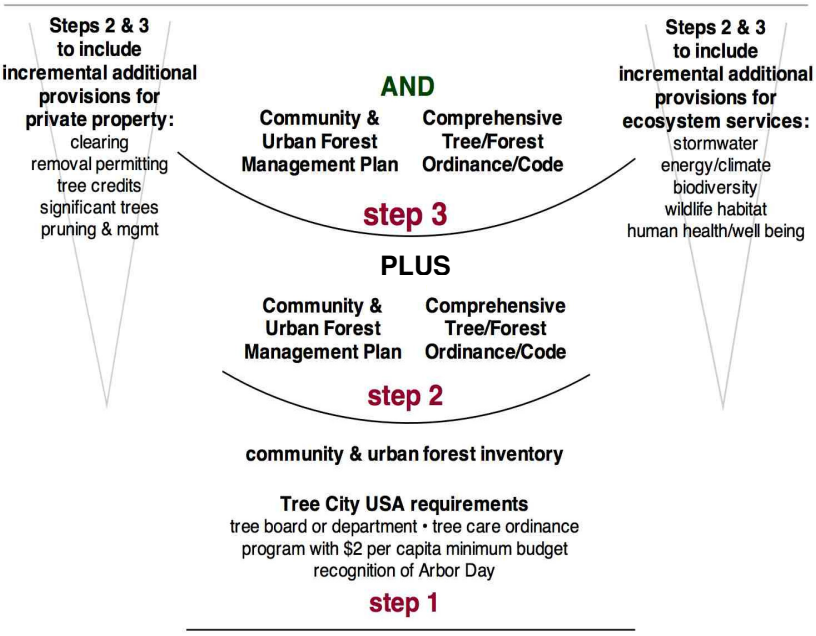
- enables every Washington community to attain recognition, but also rewards ever higher achievement;

[1] http://apps.leg.wa.gov/RCW/default.aspx?cite=76.15.070
[2] http://apps.leg.wa.gov/RCW/default.aspx?cite=35.105.050

- provides for flexibility concerning community context by offering a palette of choices or options, rather than a uniformly applied list of requirements across all sizes and types of communities; and
- builds excellence in urban forestry programming that is integrated into long-range community planning through preferential access to a wide range of State grant and loan opportunities.

- **Step 1**

The first step of recognition is explicitly defined in the ECA and largely adopts the requirements of the Tree City USA designation as described above, then adds a tree inventory requirement. Because Tree City USA is currently available only to cities and towns, these recognition requirements will be adapted to apply to counties and other non-municipal jurisdictions as well.



- **Step 2**

The ECA then specifies that the second graduated step must include adoption of an urban forestry management plan. This step should include an update to the tree ordinance that is part of Step 1 in order to address the management plan's vision and goals.

- **Step 3**

Finally, the ECA states that the "department may require additional graduated steps and establish the minimum requirements for each." The Task Force proposes a third step, in which a community must adopt an urban forest management plan with higher level visions and goals, and update the tree ordinance to address those. This highest level of recognition would acknowledge continuing excellence in urban forestry programming that is comprehensive and visionary in tree policy, programs, and actions.

Under this vision of the recognition program, Step 3, and to some extent Step 2, would reward increasingly expanded urban forestry programming that addresses:

- planning, protection, conservation and management of trees and forest groves on private property as well as public properties; and
- planning and management of trees and forest groves to develop higher percentages of community canopy coverage and performance of ecosystem services.

C. RESOURCES AND OPPORTUNITIES

The Task Force recognizes that each of these steps represents a substantial commitment of staff and administration by a community. Renewed full funding of the ECA will ensure that resources and assistance will be available to communities. Section 3 of the ECA (RCW

76.15.070[1]) indicates that the DNR will conduct a statewide community and urban forestry inventory and that these data will be made available to communities as the inventory proceeds. Sections 8 and 19 (RCW 35.105.040[2]; RCW 76.15.030[3]) provide for grants and technical assistance to communities for inventories, management plans, and code development when the Program is fully funded. Section 9 (RCW 35.105.050[4]) provides for the development of model management plans and ordinances by CTED and the Task Force to serve as guides for the development of locally appropriate urban forestry management plans and tree ordinances.

D. INCENTIVES

Sections 26 through 30 of the ECA list a wide variety of infrastructure and environmental grants and loans available through several State agencies that will provide preferential consideration to applications from communities that have achieved recognition as evergreen communities.

- Section 26 (RCW 43.155.070[5]) – Grants and project funding through the Public Works Board
- Section 27 (RCW 70.146.070[6]) – Water pollution control grants or loans
- Section 28 (RCW 89.08.520[7]) – Water quality improvement and habitat protection grants
- Section 29 (RCW 79.105.150[8]) – Aquatic lands enhancement project funding through the recreation and conservation funding board
- Section 30 (RCW 79A.15.040[9]) – Habitat conservation grants or project funding through the recreation and conservation funding board

These incentives will become operational one year *after* adoption of the model management plans and ordinances developed by CTED staff and the Task Force; as with the rest of the ECA, this portion is on hold due to budget constraints.

[1] http://apps.leg.wa.gov/RCW/default.aspx?cite=76.15.070
[2] http://apps.leg.wa.gov/RCW/default.aspx?cite=35.105.040
[3] http://apps.leg.wa.gov/RCW/default.aspx?cite=76.15.030
[4] http://apps.leg.wa.gov/RCW/default.aspx?cite=35.105.050
[5] http://apps.leg.wa.gov/rcw/default.aspx?cite=43.155.070
[6] http://apps.leg.wa.gov/RCW/default.aspx?cite=70.146.070
[7] http://apps.leg.wa.gov/rcw/default.aspx?cite=89.08.520
[8] http://apps.leg.wa.gov/rcw/default.aspx?cite=79.105.150
[9] http://apps.leg.wa.gov/RCW/default.aspx?cite=79A.15.040

8. REFERENCES

AIRnow. 2007. *Quality of Air Means Quality of Life*. Washington, D.C. Available online at http://airnow.gov/index.cfm?action=jump.jump_ozone.

Akbari H., S.E. Bretz, D.M. Kurn and J.W. Hanford**.** 1997. Peak Power And Cooling Energy Savings Of Shade Trees**.** *Energy and Buildings* 25:139-148.

Brennan, J.S. 2007. *Marine Riparian Vegetative Communities of Puget Sound*. Puget Sound Nearshore Partnership Report No. 2007-02. U.S. Army Corps of Engineers, Seattle District, Seattle, WA.

EnviroVision, Herrera Environmental, and Aquatic Habitat Guidelines Working Group. 2007. *Protecting Nearshore Habitat and Functions in Puget Sound, An Interim Guide*. October 2007. Page II - 42.

Kuo, F. E. 2003. The Role of Arboriculture in a Healthy Social Ecology. *Journal of Arboriculture* 29(3):148-155.

Laverne, R. J., and K. Winson-Geideman. 2003. The Influence of Trees and Landscaping on Rental Rates at Office Buildings. *Journal of Arboriculture* 29(5):281-290.

Schwab, James. 2009. Branching Out. *Planning Magazine*, March 2009, 11-15. American Planning Association.

Schwab, James, ed. March 2009. *Planning the Urban Forest: Ecology, Economy, and Community Development*. American Planning Association Planning Advisory Service, Report Number 555. 154 pp.

Wolf, K. L. 2004. *Trees, Parking and Green Law: Strategies for Sustainability*. Stone Mountain, GA. Georgia Forestry Commission, Urban and Community Forestry. Available online at http://www.naturewithin.info/transportation.html.

Wolf, K. L. 2006. Roadside Urban Trees: Balancing Safety and Community Values. *Arborist News*, December 2006, 15(6) pp. 56-58.

Wolf, K.L. 2007. City Trees and Property Values. *Arborist News*, August 2007, pp. 34-36.

Wolf, K.L. 2008a. With Plants in Mind: Social Benefits of Civic Nature. *MasterGardener*, Winter 2008, 2(1) 7-11.

Wolf, K.L. 2008b. City Trees, Nature and Physical Activity: A Research Review. *Arborist News*, 17, 1:22-24.

Wolf, K.L. 2009. More in Store: Research on City Trees and Retail. *Arborist News* 18, 2: 22-27.

9. URBAN FORESTRY RESOURCES

GENERAL URBAN FORESTRY REFERENCE

A City Among the Trees: an urban forestry resource guide. City of Seattle Urban Forest Coalition. October 1998. In collaboration with Arai/Jackson Architects & Planners. 204 pp.

A Handbook for Tree Board Members. Gene W. Grey. 1993. The National Arbor Day Foundation. 50 pp.

A Model of Urban Forest Sustainability. J. R. Clark, N. P. Matheny, G. Cross, and V. Wake. January 1997. Journal of Arboriculture 23(1): 17 – 30. Available online at www.naturewithin.info/Policy/ClarkSstnabltyModel.pdf.

A Technical Guide to Urban and Community Forestry in Washington, Oregon and California. World Forestry Center, Portland, OR, and Robin Morgan, urban forestry consultant. March 1993. In partnership with USDA Forest Service Pacific Northwest and Pacific Southwest Regions, Washington State Department of Natural Resources, Oregon Department of Forestry, and California Department of Forestry and Fire Protection. 49 pp.

Community Forestry and Urban Growth: A Toolbox for Incorporating Urban Forestry Elements into Community Plans. Washington State Department of Natural Resources. December 1994. In partnership with USDA Forest Service and Washington Community Forestry Council. 19 pp.

Department of Natural Resources Urban and Community Forestry Program website online at http://www.dnr.wa.gov/ResearchScience/Topics/UrbanForestry/Pages/rp_urban_commandurbanforestry.aspx.

Municipal Research and Services Center of Washington Urban Forestry webpages online at http://www.mrsc.org/subjects/environment/urbanforest/urbtrees.aspx.

Northern Mountain and Prairie Community Tree Guide: Benefits, Costs and Strategic Planting. McPherson, E.G., J.R. Simpson, P.J. Peper, Q. Xiao, S.E. Maco, and P.J. Hoefer. 2003. Center for Urban Forest Research, USDA Forest Service, Pacific Southwest Research Station. 92 pp. Appropriate for northeastern Washington. Available online at http://www.fs.fed.us/psw/programs/cufr/tree_guides.php.

Planning the Urban Forest: Ecology, Economy, and Community Development. James C. Schwab, general editor. March 2009. American Planning Association Planning Advisory Service, Report Number 555. 154 pp.

Temperate Interior West Community Tree Guide: Benefits, Costs, and Strategic Planting. Vargas, K. E.; E. G. McPherson, J. R. Simpson, P. J. Peper, S. L. Gardner, Q. Xiao. 2007 General Technical Report PSW-GTR-206. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 108 p. Appropriate for southeastern Washington. Available online at http://www.fs.fed.us/psw/programs/cufr/tree_guides.php.

Urban & Community Forestry: A Practical Guide to Sustainability. James R. Fazio. 2003. The National Arbor Day Foundation. 75 pp. Available online at http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=81.

Western Washington and Oregon Community Tree Guide: Benefits, Costs and Strategic Planning. McPherson, E.G., S.E. Maco, J.R. Simpson, P.J. Peper, Q. Xiao, A.M. VanDerZanden and N. Bell. 2002. General Technical Report International Society of Arboriculture, Pacific Northwest Chapter. 76pp. Available online at http://www.fs.fed.us/psw/programs/cufr/tree_guides.php.

INVENTORY AND CANOPY ASSESSMENT GUIDANCE

How to Conduct a Street Tree Inventory – Tree City USA Bulletin #23; available through the Arbor Day Foundation online at http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=108.

Placing a Value on Trees – Tree City USA Bulletin #28; available through the Arbor Day Foundation online at http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=113.

Public Property Tree Inventory and Assessment Report, March 2007. City of Renton. 67 pp. Available online at http://www.rentonwa.gov/living/default.aspx?id=16702.

STRATEGIC AND MANAGEMENT PLAN GUIDANCE

Guidelines for Developing Urban & Community Forestry Plans, Strategic Plans & Management Plans for Street and Park Tree Management. Vermont Urban and Community Forestry Program. 23 pp. Available online at http://www.vtfpr.org/urban/documents/PlanGuid.pdf.

How to Plan for Management – Tree City USA Bulletin #29; available through the Arbor Day Foundation online at http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=114.

How to Fund Community Forestry – Tree City USA Bulletin #34; available through the Arbor Day Foundation online at http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=118.

Urban Forestry Best Management Practices for Public Works Managers: A Technical Guide to Developing Urban Forestry Strategic Plans & Urban Forest Management Plans. Wisconsin Department of Natural Resources Bureau of Forestry. 28 pp. Available online at http://www.apwa.net/Documents/About/CoopAgreements/UrbanForestry/UrbanForestry-4.pdf.

COMMUNITY AND URBAN FORESTRY ORDINANCE GUIDANCE

Guidelines for Developing and Evaluating Tree Ordinances. Elizabeth A. Bernhardt and Tedmund J. Swiecki. 1991, updated 2001. California Department of Forestry and Fire Protection Urban Forestry Program. 76 pp. 2001 edition online at http://www.isa-arbor.com/publications/ordinance.aspx.

How to Write a Municipal Tree Ordinance – Tree City USA Bulletin #9; available through the Arbor Day Foundation online at http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=96.

Louisiana State University Green Laws website online at http://www.greenlaws.lsu.edu/.

Tree Protection Ordinances – Tree City USA Bulletin #31; available through the Arbor Day Foundation online at http://www.arborday.org/Shopping/Merchandise/MerchDetail.cfm?id=116.

SPECIAL TOPICS RESOURCES

The Arbor Day Foundation
Online at http://www.arborday.org/.

Center for Urban Forest Research, Pacific Southwest Research Station
Online at http://www.fs.fed.us/psw/programs/cufr/.

City of Portland and Multnomah County Action Climate Plan 2009 – Public Comment Draft.
See Chapter 4 – Urban Forestry. 59 pp.
Online at

Human Dimensions of Urban Forestry and Urban Greening, Dr. Kathleen Wolf.
Online at http://www.naturewithin.info/.

Municipal Research and Services Center Urban Forestry webpages
Online at http://www.mrsc.org/subjects/environment/urbanforest/urbtrees.aspx.

Trees Are Good! International Society of Arboriculture consumer education website
Online at http://www.treesaregood.org/.

USDA Forest Service Urban and Community Forestry
Online at http://www.fs.fed.us/ucf/.

Washington State Department of Ecology Stormwater Manual for Western Washington
Online at http://www.ecy.wa.gov/biblio/0510029.html.

Washington State Department of Ecology Stormwater Manual for Eastern Washington
Online at http://www.ecy.wa.gov/biblio/0410076.html.

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10. EVERGREEN COMMUNITIES PARTNERSHIP TASK FORCE

Chair: Joseph Scorcio
Vice Chair: Beth Rogers

Note: Task Force members are listed in the following format:

- Interest group, agency or organization as described in Section 17 of the ECA
  - Primary representative of the organization
    - Alternate representative of the organization, where designated

- Department of Community, Trade and Economic Development
  - Leonard Bauer, Washington State CTED Growth Management Services
    - Micki McNaughton, Washington State CTED Urban Forestry Specialist

- Department of Natural Resources
  - Sarah Foster, Washington State DNR Urban and Community Forestry Program
    - Linden Mead, Washington State DNR Urban and Community Forestry Program

- Department of Ecology
  - Stephen Bernath, Washington State Dept. of Ecology

- A statewide council representing urban and community forestry programs authorized under RCW 76.15.020
  - Kathleen Wolf, Washington Community Forestry Council
    - Jana Dilley, University of Washington

- A conservation organization with expertise in Puget Sound stormwater management
  - Bruce Wishart, People for Puget Sound
    - Cyrilla Cook, People for Puget Sound

- At least two cities, one from a city east and one from a city west of the crest of the Cascade mountains
  - David Erickson, City of Wenatchee Parks and Recreation

- At least two cities, one from a city east and one from a city west of the crest of the Cascade mountains
  - Janet Way, City of Shoreline City Council
    - Chris Eggen, City of Shoreline City Council

- At least two counties, one from a county east and one from a county west of the crest of the Cascade mountains
  - David Grimes, Chelan County Development
    - Keith Goehner, Chelan County Commissioner

- At least two counties, one from a county east and one from a county west of the crest of the Cascade mountains
  - Joseph Scorcio, Pierce County Public Works & Utilities
    - Anne-Marie Marshall-Dody, Pierce County Public Works & Utilities

- Two land development professionals or representative associations representing development professionals affected by tree retention ordinances and storm water management policies
  Phil Harlan, Keller Williams Realty Olympia, Washington Association of Realtors
  Jeanette Samek-McKague, Washington Association of Realtors

- Two land development professionals or representative associations representing development professionals affected by tree retention ordinances and storm water management policies
  Brian Ross, YarrowBay Group
  Katherine Orni, YarrowBay Group

- A national conservation organization with a network of chapter volunteers working to conserve habitat for birds and wildlife
  Charles Kahle, Audubon Washington
  Matt Mega, Seattle Audubon

- A land trust conservation organization facilitating urban forest management partnerships
  Ara Erickson, Cascade Land Conservancy Green Cities Program Director
  John Floberg, Cascade Land Conservancy

- A national conservation organization with expertise in backyard, schgoolyard, and community wildlife habitat development
  Courtney Sullivan, National Wildlife Federation

- A public works professional
  Brian Carlson, City of Vancouver Public Works Director
  Charles Ray, City of Vancouver Urban Forestry

- A private utility
  Beth Rogers, Puget Sound Energy
  Janet Brown, Puget Sound Energy

- A national forest land trust exclusively dedicated to sustaining America's vast and vital private forests and safeguarding their many public benefits
  Paula Swedeen, Pacific Forest Trust

- Professionals with expertise in local land use planning, housing, or infrastructure
  Sandy Salisbury, Washington State Dept. of Transportation
  Mark Maurer, Washington State Dept. of Transportation

- Professionals with expertise in local land use planning, housing, or infrastructure
  Elizabeth Walker, Sound Tree Solutions

- The timber industry
  Adrian Miller, Washington Forest Protection Association

11. BACKGROUND OF THE ACT

The portion of the 2008 Evergreen Communities Act (ESSHB 2844; RCW 35.105) that is administered by the Washington State Department of Community, Trade and Economic Development (CTED) is intended to assist local jurisdictions to make best use of the benefits and services that trees in urbanized areas provide by offering technical guidance for communities through the development of model tree ordinances and model urban forestry management plans. Such management programming may include urban and community forestry assessments and inventories, tree ordinances, management plans, maintenance programs, partnerships, and community involvement. In addition, CTED staff and the Evergreen Communities Partnership Task Force (the Task Force) are responsible for creating an awards program to recognize those communities who work toward developing excellent management programming that enhances the capacity of their urban and community forests to provide ecological, social, and economic services.

The Act directs CTED to complete the following tasks, subject to available funding:

1. Form the Evergreen Communities Partnership Task Force (RCW 35.105.110);
2. Develop model tree ordinances suitable for use as a guide for jurisdictions of all configurations throughout the State (RCW 35.105.080);
3. Develop model urban forestry management plans suitable for use as a guide for jurisdictions of all configurations throughout the State (RCW 35.105.070);
4. Develop and implement an Evergreen Communities grant and competitive awards program to provide financial assistance to towns, tribes, cities and counties to develop, adopt and implement Evergreen Communities management plans or tree ordinances (RCW 35.105.040); and
5. Create an Evergreen Communities recognition program built upon the Tree City USA award program to recognize communities for their work in developing excellent urban forest management programs (RCW 35.105.030).

CHALLENGES

Funding for work directed by the ECA has been suspended for the Fiscal Biennium 2009-2011. The timeline for work proceeding under the ECA, therefore, was reduced from more than two years (a deadline of December 2010) to one year, ending on June 30, 2009. During the funding hiatus, the Act will continue to provide a statutory platform for cooperation and collaboration among agencies, organizations and communities that work to build or improve urban forestry programming. The Task Force Report will function as a valuable outreach tool for CTED, the Washington State Department of Natural Resources (DNR) and the Washington Community Forestry Council (WCFC; RCW 76.15) to support urban and community forestry programs around the state until CTED, the DNR and the Task Force are funded and reconvened to finish their ECA work.

NEXT STEPS AND RECOMMENDATIONS

During the one year of funding for the Evergreen Communities program, CTED has worked with its partner agency, the DNR, and with the Task Force toward completion of tasks #2, #3, and #4 above. Although fully-developed model ordinances and management plans were not possible due to the shortened timeline, the Task Force has worked diligently to provide this document as basic guidance to local jurisdictions desiring to better manage and plan for improvements to their urban and community forests during the unfunded interim. The resources and recommendations offered in this Task Force Report provide an excellent foundation for local jurisdictions to establish or expand urban forestry programming. Through these resources,

communities can increase the value of the ecological, social, and economic services that urban forests provide.

This document was completed through the tremendous efforts of the members of the Task Force. Recognizing the possibility of a loss of funding in early 2009, the Task Force members expedited a compressed work program so that tangible resources could be produced by June 30, 2009, to guide local communities in their urban forestry programming efforts during the unfunded interim. Due to the time constraints, the Task Force, CTED staff and the DNR were unable to present the resources and recommendations in the Task Force Report to the public for review and feedback, but will do so once funding is restored and the development process can be resumed.

The commitment and dedication of the Task Force has resulted in these additional resources becoming available to communities that choose to enhance the quality and capacity of their urban forests, thereby improving their ability to manage stormwater, reduce carbon emissions into the atmosphere, lower the cost of heating and cooling of buildings, and experience the many other benefits and services of community and urban forests, as discussed elsewhere in this document.

When funding is again available for CTED, the DNR, and the Task Force to return to their tasks as assigned in the ECA, this document will provide the foundation to fully complete the development of the tools described in the Act without delay or “backtracking” on work that has already been completed. The Legislature will need to adjust the deadlines in RCW 35.105.050(5) to provide adequate time for completion of the assigned work.