

West Capitol Campus

Historic Landscape Preservation Master Plan

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General Administration
STATE OF WASHINGTON



MITHŪN

Acknowledgements

Collaboration is requisite to creating a master plan that is respectful of cultural heritage, responsive to modern concerns and functions, and responsible to a socially, economically and environmentally sustainable future. This master plan has been principally informed and influenced by an expanded team of professionals and stakeholders who care deeply about the West Campus, and by whose efforts the Campus is stewarded and shaped. The expanded team includes representatives from the Washington State General Administration, Building and Grounds Staff, the Campus Conservators, and the Capitol Campus Design Advisory Committee.

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Historic Landscape Preservation Master Plan
Large Tree Layer Plan

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Vegetation Management Plan
Large Tree Layer Plan

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Lighting Considerations

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Fig. i Visioning Meeting with expanded team of contributors
(Nov. 2008, Source: Mithun)

Archival information

The life span of this document is intended to be long term, with phases and strategies anticipated to be incrementally implemented over the course of the next 20, 50, or even 100 years. Adaptive management necessitates periodic monitoring of implementation and attendant revision of the document as a tool to promote and guide resource stewardship. In order to be a living document in this capacity, the information contained within must be accessible and adjustable. Toward that end, the document exists as a bound hard copy, as an electronic file in .pdf format, and, selectively, as electronic base files. It was graphically compiled in InDesign, with source material built from a variety of file formats and design/analysis programs:

File

Full document for screen viewing and printing
'Raw' chapters for graphic archive and future updates
Individual images, graphics, and photographs
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Existing tree locations (approximate) and inventory numbers
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Table of Trees

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- West Campus Master Planning
- Vegetation Management Plan
- West Campus Lighting

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Acronyms

WCC	West Capitol Campus
VMP	Vegetation Management Plan
SIS	Secretary of the Interior's Standards
Fig.	Figure
Figs.	Figures
CCDAC	Capitol Campus Design Advisory Committee
GA	the Washington State Department of General Administration
HCEOB	Heritage Center and Executive Office Building
N.T.S.	not to scale
HABS	Historic American Buildings Survey
LTL	Large Tree Layer, or Large Tree Layer Plan



Fig. 1.1 Legislative Building framed by cherry trees with Sundial garden in the foreground (September 2008, Source: Mithun)

The Washington State Capitol Campus is a valuable cultural resource, not only for residents of the state but for the nation as a whole. As a campus grounds of historic importance - it symbolizes our highest ideals as a democratic society, state, and nation. The campus was listed as a National Register Historic District in 1974 and contains some of the most valued views in the State - of the Olympic Mountains, Mt. Rainier and the Capitol Dome and the Capitol Group atop the bluff, reflected by Capitol Lake and framed by the venerable heritage trees that comprise and surround the campus.

Cultural, environmental and economic stewardship

The stewardship of this legacy is multi-faceted, encompassing cultural, environmental and economic concerns. Frederick Law Olmsted and his sons were prolific landscape architects from 1857 through 1949 and their work is present in most big cities throughout the U.S. The principles used by the Olmsteds are widely agreed to be timeless and are remarkable for their relevance today in recognizing the importance of place, the use of nature as a guide, the accommodation of multiple uses, the experiential

impact of a unified composition and the facilitation of movement through spaces. Their reverence for local ecology contributed to enduring landscapes they built and advocated for.

Responsible stewardship of the West Capitol Campus as a premier example of the Olmsted principles can also demonstrate accountability for the sustainable management of our state resources by “walking the talk” to protect our cultural, energy, water and habitat resources for future generations - a powerful example from which others can learn.

While the State sets goals, standards and mandates to address climate change, the Capitol Campus can implement and demonstrate the best management practices for sustainable landscape stewardship. Water quality, soil health, nutrient cycling, habitat, biodiversity, waste and materials all represent opportunities for the Campus to not only demonstrate responsible environmental practices but link them to smart economic choices.



Fig. 1.2 View of Capitol Group framed by cherry tree with autumn leaves (October 2008, Source: Mithun)

Findings show consistent action required

The Campus is a cultural resource that is aging and declining. Trees are the assets that form the framework of the historic Campus – an iconic reminder of the campus’ Pacific Northwest heritage, sentinels that reinforce the sense of arrival, a canopy overlay that connects with the surrounding neighborhood, masses that frame views and striking specimens to admire. However, more than 40% of the existing trees on the West Capitol Campus are in decline, less than 15% of the trees are young, and only 45% of the trees that have been lost over the past seven years have been replaced. Perhaps the most stunning fact is that more than 30% of the trees are considered a current or potential risk – major landscape trees that face removal in the next few years to mitigate this risk. The trees that are the backbone of this historic place need replanting and replacing.

The second compelling reason that action is needed, is that the conditions of the resource provides a unique potential for successful protection and rehabilitation, compared to many other Olmsted landscape sites, If guided assertively, much of the original intent of the historic plan can be realized. Many cultural resources suffer challenges of changes over time that are not easily revocable, but here many of the primary character-defining historic features are intact and much of the Olmsted Brother’s design intent remains unrealized. Less than 30% of the trees on the campus align with the design intent, however, the clear need for replanting allows for future alignment with the historic intent.

Key issues and findings

- The West Campus currently lacks the three-dimensional structure, spatial hierarchy and design integrity of its intended landscape plan. Because layers of trees and vegetation are missing, the ability to form space, create thresholds, and create spatial richness is missing.
- Although many of the axes, organization and features are still legible, the original balance and symmetry of the historic plans are compromised due to missing structural plantings and nodes that were intended to serve as monuments to end the axes but are now parking areas.
- The view corridor recognized by the Olmsted Brothers as a critical connection to the region and the community is currently threatened by controversial development plans.
- The off-site views of the Dome are framed by venerable stands of conifers that send a powerful message about the sense of place. Views of the dome from I-5, the Deschutes Parkway and the pedestrian path around Capitol Lake are intact but careful stewardship of the native forest edge is required.
- Views are imbalanced within the Campus due to the unrealized potential of the west end.
- Vehicular circulation has encroached and dominates the public realm of the campus. Path systems that dead end into parking areas communicate a message of priority for the vehicle over the pedestrian.

Implementation

Within the context of the current economic downturn, we must continue to protect the investments made by previous generations in designing and building a functional and beautiful civic landscape for the Capitol. An economic downturn provides an opportunity to reconsider priorities, to plan for the future, and to position for a positive upturn. Taking advantage of this opportunity will enable the State to maximize the benefits of future investments and to provide leadership in stewarding the legacy.

Implementation of the Landscape Preservation Master Plan and the Vegetation Management Plan is intended to be gradual, but there are a couple of general ways to begin now:

- 1) Steward the existing resources: The Plan includes ways to improve the consistency and effectiveness of landscape maintenance and resource stewardship toward realizing the larger vision.
- 2) Incrementally replenish aging resources with new generations of trees and shrubs.

Vision

The vision for the West Capitol Campus is a landscape that respects the design principles of the original Olmsted plan, honoring characteristic features and concepts of the historic design while demonstrating sustainable landscape management practices and acknowledging the dynamic and increasingly urban context of the historic Capitol Grounds.

Preservation Treatment

Based upon assessments of the health and integrity of the existing cultural resources, in conjunction with considerations regarding the necessary growth and modern function of the State Capitol, the recommended goal, or treatment, for the campus, as a whole, is rehabilitation. Within this approach, carefully considered landscape interventions are allowed where such modifications are compatible with historic resources. (Secretary of the Interior's Standards)

Summary of Objectives, Recommendations, and Actions:

Objectives

- Reinforce the primary importance of people at the center of governance
- Improve the pedestrian experience throughout the West Campus
- Demonstrate a multi-faceted sustainable approach to landscape stewardship, celebrating and preserving cultural resources while protecting natural resources and responsibly investing limited economic resources.
- Establish three-dimensional spatial hierarchy throughout the West Campus
- Restore axis strength and symmetry
- Define gateways and reinforce seams
- Preserve or improve views
- Establish parameters for integrating "Opportunity Sites", including buildings, monuments, and memorials
- Identify priority action items for immediate implementation and phased action items to inform future investments
- Provide a safe and accessible campus

Recommendations and Actions

- Implement a Tree Management and Monitoring Program
- Conduct a Campus-wide drainage study and implement drainage improvements.
- Provide replenishment generations of trees through continuous strategic replanting.
- Invest in soil health to improve plant performance.
- Remove invasive plant species, particularly ivy in trees
- Begin incremental installation of original Olmsted planting plan, interpreting and substituting resource intensive species with historically compatible native species
- Provide grounds training regarding Vegetation Management Plan
- Begin the replacement of resource-intensive lawn with more ecologically sound lawn and historically compatible species through the implementation of a testing area for eco-lawn seed mixes
- Begin relocation of parking from civic spaces to nearby garages or lots
- Increase commute-trip reduction strategies
- Identify convenient bicycle parking areas
- Educate and engage the public
- Replace the non-functioning light fixtures at the obelisk in the near future to light this monument and provide a visual connection between the Tivoli Fountain and the Winged Victory Monument.

Executive Summary

What's in this document

The purpose of the West Campus Historic Landscape Preservation Plan is to clarify a vision for preserving the 50-acre West Capitol Campus, to establish a framework for stewardship, and to prioritize an implementation plan. The elements of this plan include:

50-year Master Plan

Preserves and honors the characteristics of the historic design while accommodating compatible uses, modern functions and ecological performance. Assumes incremental change over the next 50 years.

Large Tree Layer Plan

Careful comparison was made between the existing tree condition survey, the historic intent of the Olmsted plan and the proposed goals in order to develop a recommended Large Tree Layer plan. The plan depicts each tree, or in some cases, groves of trees - existing and proposed – and describes overall parameters for incrementally replenishing the Campus tree canopy as opportunities arise.

Vegetation Management Plan.

Vegetation management recommendations provide direction based on evaluation of existing landscape conditions, intended change, and identified goals and objectives. What, how, when, by whom and the priorities are identified in detail. Six management areas have been identified based on the needs particular to their location, landscape characteristics, and use.

Development Guidelines

To make this a relevant working document that interprets the Olmsted plan intent for the benefit of future decision makers, general development guidelines for campus edges and opportunity sites, as well as capital projects, are identified.

Lighting Considerations

The West Capitol Campus would benefit from an in-depth lighting master plan to develop a future lighting strategy. The most important elements to be addressed would include:

- Visual planning for the campus nightscape, including plans for future relighting of major buildings
- Development of lighting standards for safety and security
- Analysis of lighting energy use to determine which light sources and fixture types could result in energy savings and improved maintenance

To protect the integrity of the cultural resource, and until a lighting master plan is developed, lighting for new opportunity sites and adjacent development must be coordinated with the entirety of the campus lighting scheme to ensure that light sources are applied consistently, and that new fixture typologies are not introduced that would conflict with the historic character of the West Capitol Campus.

Cost analysis

The new design generates a 1-2% reduction in annual labor hours. This is a rough order of magnitude number and there are factors that affect the accuracy of this finding outlined in the report.

The Washington State Capitol Campus holds a revered position in the collective American experience, symbolizing our highest ideals as a democratic society, state, and nation. It is a place where the public gains access to the lawmaking process, where employees serve their constituents, where visitors learn about our state history, where the community gathers to celebrate and recreate, and where passersby find reassurance in the solidarity of the architecture and landscape. It is a living legacy that is both inherited from our ancestors and bequeathed to future generations. The stewardship of this legacy is multi-faceted, encompassing cultural, environmental, and economic concerns.

The West Capitol Campus, in particular, is the iconic center of our State governance, where people gather to engage in debate and shape policy, finding inspiration from the past as they aspire to a more just and equitable future. Just as the Campus is the setting for influential events, conversely, the events and ideals serve to shape the landscape. The landscape manifests the continuum of history, the evolution of our society; it evidences our values, our social mores, and our relationship with the world around us. The legibility of this historic narrative within the landscape contributes to our existential understanding.



Fig 2.1 Immigration and Naturalization Awareness Demonstration, participants assembling alongside the Winged Victory monument and marching toward the Legislative Building (Feb. 2009, Source: Mithun)

Introduction

Purpose and Scope

The purpose of the West Campus Historic Landscape Preservation Plan is to clarify a vision for preserving the roughly 50-acre West Capitol Campus, to establish a framework for ongoing stewardship, and to structure a series of priority items and specific actions for prompt and immediate implementation, while outlining a course of action for incremental implementation over the course of the next 20 years. Toward this end, the project includes a **Landscape Master Plan** to inform future planning efforts, a **Large Tree Layer Plan** to address initial vegetation rejuvenation, and a **Vegetation Management Plan** to guide ongoing landscape management. This document looks to the past, examines the present, and envisions the future, in order to craft a plan for what and how we invest and care for this landscape, so that it can continue to inspire the hearts and minds of Washingtonians.

Project Context and Resources

The impetus for the West Capitol Campus Historic Landscape Preservation Master Plan was the recognition that some of the Campus' most important cultural resources have been incrementally disappearing, and that unless prompt action is taken, we stand to lose a valuable chapter of Washington's historic narrative. Preservation of cultural resources is closely intertwined with the stewardship of environmental and economic resources. Thus, the Master Plan seeks to demonstrate a comprehensive approach to sustainable design and ongoing management, balancing the preservation of **cultural resources** with the responsible stewardship of **natural resources** and the conscientious use of limited **economic resources**. Benefits of responsible stewardship are often multiplied when viewed through this multi-focus lens of sustainability.

The sphere of influence of the West Capitol extends beyond the technical site boundaries - physically and ideologically. Environmental connections, cultural associations, and economic fluctuations all play an important role in shaping the Campus, and vice versa. The range of related considerations for the Landscape Preservation Master Plan is inherently broad, shifting scales between State, regional, local, and site.



Fig. 3.1 Comprehensive approach to sustainable design

Project Context and Resources

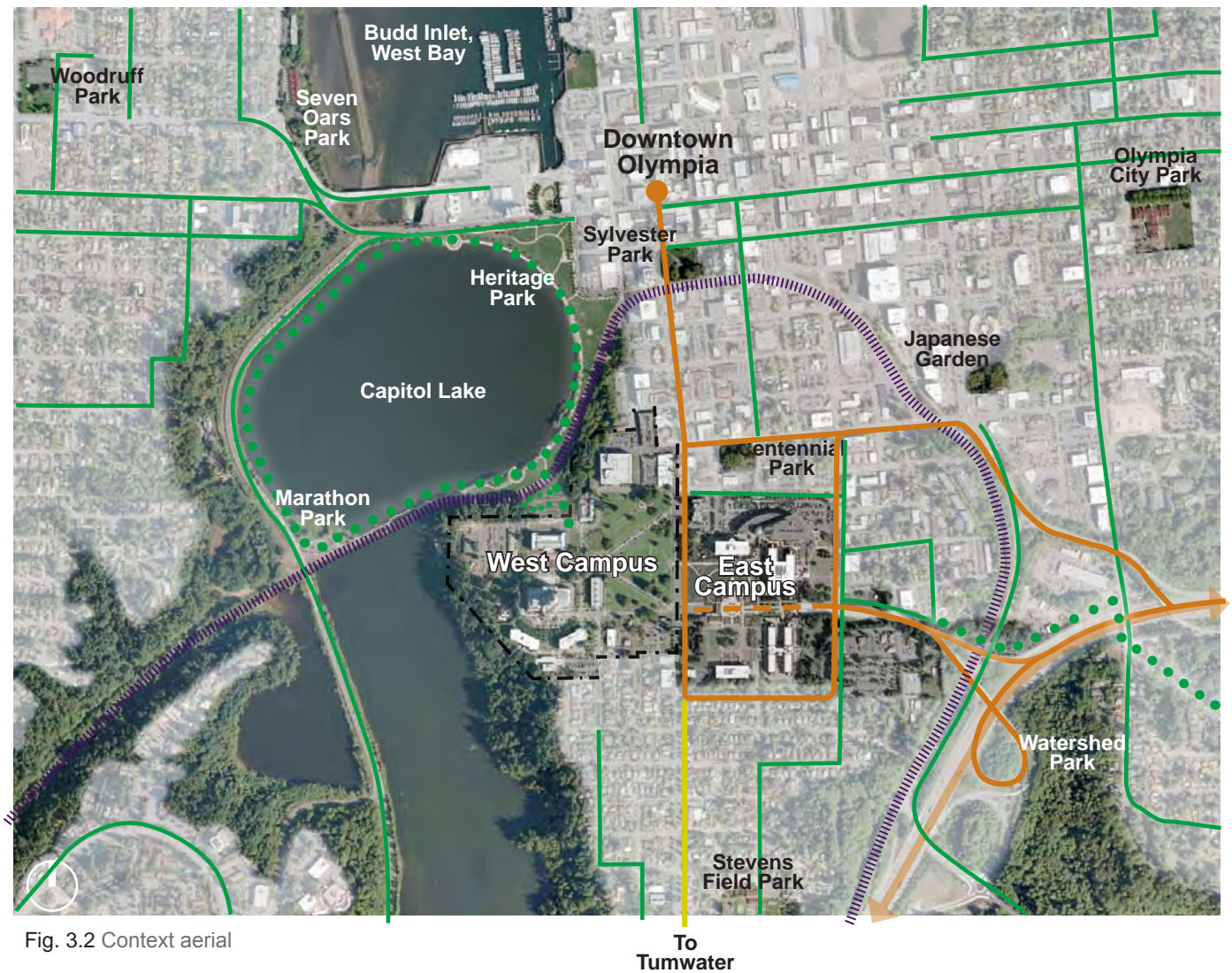


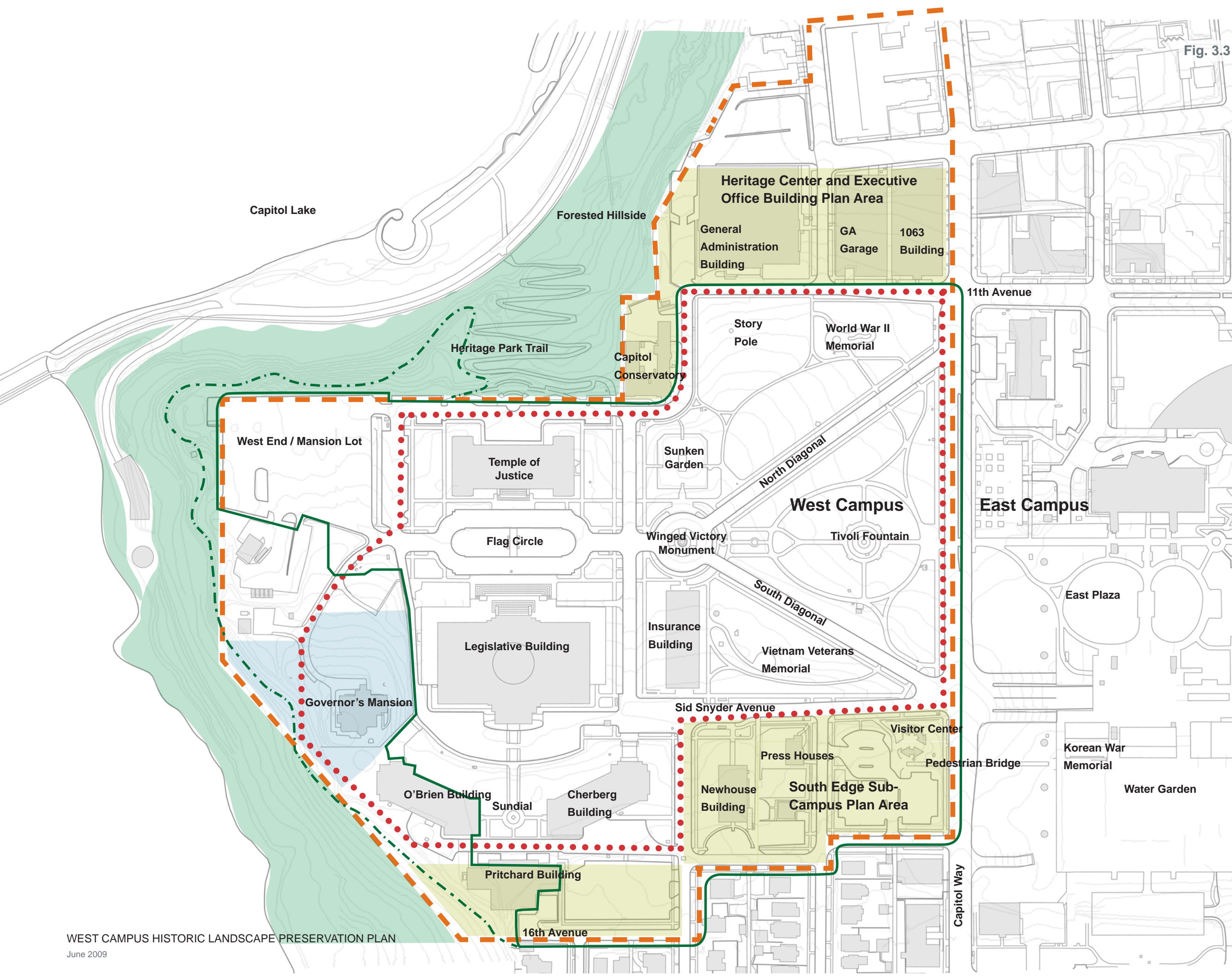
Fig. 3.2 Context aerial

The West Capitol Campus is situated atop a bluff overlooking Capitol Lake, Budd Inlet, and the City of Olympia. The Campus is immediately 'bookended' by the community on the east/south and the forest and lake on the west/north. It is a critical link within an interconnected network of open spaces and green corridors.

KEY

- pedestrian + bike trail
- bike lane, wide shoulder, or commonly used local bike route
- Olympia Express transit
- local bus route
- tunnel connection
- rail line

Fig. 3.3 West Capitol Campus Orientation Map



KEY

- West Capitol Campus per WAC 236-18
- 1974 National Register Historic District. Delineates scope of Historic Landscape Preservation Master Plan except as indicated:
- Opportunity Sites subject to review within the Historic Preservation Master Plan for compatibility with historic characteristics of the West Campus.
- Governor's Mansion Area: excluded from the scope of the Historic Preservation Master Plan
- Area subject to review within the Historic Preservation Master Plan for compatibility with historic characteristics of the West Campus
- Vegetation Management Plan (VMP) boundary
- Approximate boundary for top-of-bluff trees and Governor's Mansion trees included within the VMP
Note: Actual boundary determined in the field



Cultural Resources

The Washington State Capitol Campus is an important historic and cultural resource for the community, the state, and the nation:

- As a State Capitol, the West Campus is a place of primary civic importance. It has witnessed a series of significant events and exchanges over the course of the past 150 years, and it continues to accommodate a wide range of events and activities today.
- The West Campus was listed as a National Register Historic District in 1974.
- The West Campus contains the prominent Legislative Building and Capitol Group
- The West Campus contains or is a contributing factor to some of the most valued views in the State including:
 - Views of the Sound, the Olympic Mountains, and Mt. Rainier.
 - Views of the Capitol Dome and the Capitol Group atop the bluff, reflected by Capitol Lake, and framed by the native forest backdrop and venerable heritage trees that comprise and surround the Campus.



Fig 3.4 View of the Capitol, looking south from Budd Inlet (July 2006, Source: Marygrace Jennings)

Cultural Resources cont: Historic Period of Significance

The West Capitol Campus (hereafter used interchangeably with West Campus) contains the 12-acre portion of the Washington State Capitol Campus that was initially donated to the territorial government by Edmund Sylvester, co-founder of Olympia, in 1855. Since that time, over the course of the last 150+ years, the West Campus has occupied the center of a rich history of development and expansion as the State and the State Capitol have grown.^{3.1}

A 2008 report entitled Olmsted Landscape: Washington State Capitol Grounds, describes the textured and occasionally tumultuous history of significant planning and development efforts within the West Campus. The report utilized recently collected historic plans, photographs, and correspondence from the Frederick Law Olmsted National Historic Site and the Library of Congress to describe the historic design intent for the West Campus, to place contemporary preservation planning efforts within the context of the newly collected information, and to establish the period of significance:^{3.2}

The period of significance for the West Capitol Campus landscape, per the requirements of National Register Bulletin number 18 “How to Evaluate and Nominate Historic Designed Landscapes” extends from 1911 through 1931. This encompasses the following two sub periods:

- Olmsted Brothers influences from 1911-1912 and design and construction work from 1927 to 1931; and,
- Wilder and White’s influences and building layout, design, and construction from 1911 through 1927.

This period and sub periods encompass the seminal master planning efforts and creative tension between the architects and landscape architects that shaped the landscape as well as the 1927 to 1931 period when the Olmsted Brothers developed their detailed plans for the capitol grounds and construction under their supervision. (Artifacts)

The identification of the period of significance for the West Campus establishes the context for current and future preservation efforts, focusing on the Olmsted Brothers design intent in “balancing Wilder and White’s Capitol Group and the landscape in which they reside.” (Artifacts 4) Subsequent to the predominant development influences that shaped the West Campus during the period of significance, the campus underwent - and continues to evidence - a range of additions, modifications, and attritions reflective of State needs and priorities, available resource allocations, and management practices. Though the Campus has changed over time, the ‘bones’ designed by the Olmsted Brothers and Wilder and White are remarkably intact. This condition, combined with the

3.1 The 2006 Master Plan for the Capitol of the State of Washington defines the West Capitol Campus as: “Those state-owned grounds that constitute the State Capitol grounds west of Capitol Way which includes all of the grounds addressed in the 1928 Olmsted Brothers landscape plan plus the State Capitol Historic District, as designated in the National Register of Historic Places.” (xiv)

wealth of documentation and correspondence recently retrieved from the Olmsted National Historic Site and the Library of Congress by Artifacts Consulting, provides an exciting opportunity for cultural landscape preservation. Even though roughly eighty years have passed since the period of significance, we can continue to reinforce the essential framework for the Campus that is already in place and fairly accurately realize the richness of the Olmsted Brother's Vision.



Fig. 3.5 Historic view of Capitol from the northeast corner of the West Campus (1930s, Source: Washington State Archives)

3.2 The period of significance is a term used when working within the Secretary of the Interior's Standards to designate an emphasis on a particular time period(s) or design influence(s) within a landscape's history of evolution. The period of significance, once identified through research and evaluation, helps to describe what is valued about a place.

Project Context and Resources

Natural Resources

As a society, we are facing a global climate crisis that necessitates immediate action to reduce our carbon footprint and set a sustainable course for the future. While the State sets goals, standards, and mandates to address climate change, the Capitol Campus can implement and demonstrate the best management practices for sustainable landscape stewardship.

The Campus is connected to a larger network of open spaces and green corridors, and to a hydrologic system (the Deschutes River Basin) which includes Capitol Lake, Budd Inlet, and Puget Sound. Water quality and quantity, soil health, nutrient cycling, habitat, biodiversity, waste, and materials are all important aspects of responsible stewardship of natural resources. Though sustainability is an underlying theme throughout the document, the Sustainability Chapter describes some of the standards, goals, and mandates that can inform and guide the protection of natural resources within and surrounding the Campus.

Economic Resources

Over the course of the project, the State of Washington has entered an economic downturn. Within the context of dwindling economic resources for the State as well as the nation, we must continue to protect the investments made by previous generations in designing and building a functional and beautiful civic landscape for the Capitol. This requires conscientious and consistent investment in landscape maintenance, without which, the initial investment will have been squandered and the vision lost. Ongoing preventive care must be coupled with strategic landscape improvements that can demonstrate a high value and conserve resources.

Project Background

The West Capitol Campus Historic Landscape Preservation Master Plan was preceded by the collection and documentation of historic information about the Campus, particularly its period of significance (see bibliography); these accomplishments comprise the critical initial phases within a preservation planning process. This document builds upon the previous phases, enlisting the amassed research and assessing the current conditions in generating a Master Plan and Vegetation Management Plan that can inform future projects and guide ongoing maintenance. It must be emphasized that this Master Plan and attendant Vegetation Management Plan is considered a companion to the larger body of research, studies, and documentation that describe the West Campus.



Fig. 3.6 Aerial View looking north showing the Capitol and many of the essential components of the surrounding context: A) The South Capitol Neighborhood (National Register Historic District), B) the East Campus, C) the Native Forest edge, D) Capitol Lake, E) Olympia, F) Budd Inlet, G) the Olympic Mountains (2006, Photo Source: Washington State Department of Transportation)

“...there is no reason why the Washington State Capitol grounds should not be as fine if not the finest in the United States.”

- Mr. James Frederick Dawson, Olmsted Brothers landscape architect, 1934

Vision

The established period of significance places primary emphasis for landscape preservation and interpretation upon the design authorship of the landscape architects, the Olmsted Brothers, in designing the Capitol Grounds, with the collaborative influences of the architects, Wilder and White, in designing the Capitol Group.

Thus, the **Vision for the West Capitol Campus** Historic Landscape Preservation Master Plan is a West Capitol Campus landscape that respects the design principles of the original Olmsted plan, honoring characteristic features and concepts of the historic design while demonstrating sustainable landscape management practices and acknowledging the dynamic and increasingly urban context of the historic Capitol Grounds (based upon the CCDAC Rejuvenation Statement). The term, ‘dynamic and increasingly urban context’, encompasses issues of cultural, economic, and environmental sustainability, as well as campus safety and security, and includes consideration of multiple scales – site, local, regional, state, and national.

To clarify this Vision it is necessary to examine the philosophical approach embodied by the Olmsteds’ work and advocacy. The following section describes the Olmsted Design Principles and their employment throughout the West Campus.

Olmsted Design Principles

The Washington State Capitol's affiliation with the Olmsted Brothers body of work is particularly significant. Frederick Law Olmsted, Sr., known as the father of landscape architecture, designed Central Park with Calvert Vaux in 1858. His landscape architecture work and that of his step-son, **John Charles Olmsted**, and son, **Frederick, Jr.**, who formed the Olmsted Brothers Landscape Architecture firm, continued over a period of more than 100 years and included a wide range of institutional, park, boulevard, and residential design throughout the U.S and Canada.

The Olmsteds^{4.1} consistently practiced within a set of design principles that established the profession of landscape architecture and that continue to inspire and motivate design professionals today. The ideals and principles manifested within the hundreds landscapes they designed provide a framework for creating healthful, restorative, beautiful, democratic, resilient, and enduring places.

The Olmsteds worked on State Capitols throughout the country including Kentucky, Alabama, Connecticut, and New York, as well as the U.S. National Capitol in Washington D.C. In fact, the design for the Washington State Capitol, in many ways, shares a similar design language with the National Capitol. Through the organizational strategy, the careful sequencing of spaces, the intended layering of trees and shrubs, the defined gateways, or thresholds, and the strategic enlistment of views in connecting to their respective surroundings, one can discern the master work of the esteemed landscape architecture firm.

In terms of a design for an individual campus, the Washington State Capitol is a significant master work of the Olmsted Brothers firm. Though the Olmsted Brothers' design for the West Capitol Campus was only partially implemented, and despite modern adjustments and encroachments, their contribution remains significant and legible. Their design principles are clearly embodied by the hierarchy of spaces, pathways, axes, views, vegetation, and connections that structure the campus today. It is, therefore, fitting and appropriate to return to these fundamental principles in generating a landscape preservation master plan that will realize the potential of this landscape in honoring past generations, fulfilling the needs and aspirations of today's generation, and continuing to serve and inspire future generations.

Charles Beveridge, widely considered to be the foremost scholar of Frederick Law Olmsted's legacy, has researched and described the design principles that underlie the Olmsted's work and practice. His categorization of their principles, demarcated with boldface type, provide the foundation for discussing the Olmsted Design Principles as they apply to the West Capitol Campus:

4.1 The Olmsted Brothers' representatives during the design and construction of the West Campus included John Charles Olmsted, James Frederick Dawson, Hammond Sadler, Frederick Law Olmsted, Jr., and George Gibbs Percy. The terms Olmsteds, Olmsted, and Olmsted Brothers used within this document refer to the Olmsted Brothers' design firm and their representatives.

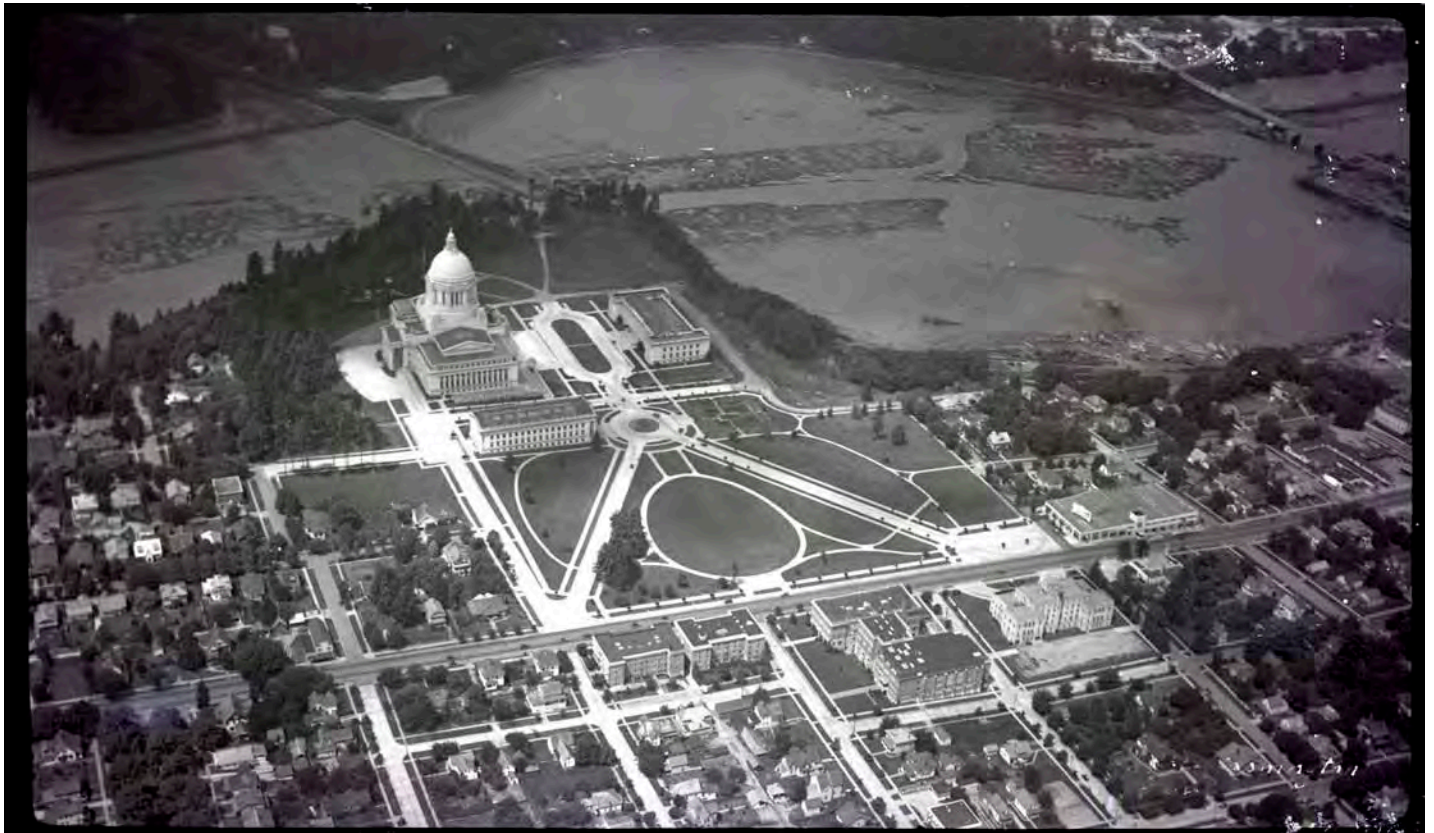


Fig. 4.1 ca. 1930s aerial view of West Campus (Source: Washington State Archives)

West Campus design and planning must demonstrate:

A Genius of Place

The Olmsteds endeavored to take advantage of quintessential features and characteristics of a given site and context. Concepts, opportunities, and constraints grew out of a reverence for the setting and an appreciation of its unique or defining qualities.

Among the unique features of the site and context that motivated/inspired the Olmsteds at the West Capitol Campus were the natural surroundings – the views and proximity of Budd Inlet, Puget Sound, the Olympic Mountains, and Mt. Rainier. They were inspired by the local topography and the variety of spatial experiences afforded by the bluff, the shoreline, the surrounding mountains and the lowland forest vegetation- tall conifers, maples, and layered understory. They understood the distinct advantage of the bluff site for the Capitol Campus as a place of prospect and refuge: restorative views of the water, hills, and mountains from atop the bluff, framed and protected/sheltered by the lowland forest, and conversely, the powerful views of the Capitol from the surrounding context. The Olmsted Brothers plans and design intent for the Capitol Campus take advantage of this quintessentially northwest spatial condition, where one experiences the variability of openness and enclosure (where the lowland forest meets the water) afforded by the sheltering, richly layered, forest and the glimpses/ views of the water and mountains beyond.

Unified Composition

Throughout the Olmsted's design practice, they consistently advocated for the subordination of individual design elements to the configuration or composition of the place, as a whole.

At the Capitol Campus, the Olmsteds considered the buildings and the grounds as a unified composition. They enlisted the range of design tools within the landscape architect's palette –vegetation, pathways, materials, topography, lighting, and the careful siting of structures and features- in creating spaces, reinforcing axes, framing views, demarcating thresholds, defining and knitting edges, encouraging connections, facilitating movement, accommodating various uses and activities, relating to the city and the region, and generally fostering a holistic experience of 'place'. The buildings and the landscape were intended to be complimentary and mutually supportive of the larger concept of democratic space.



Fig. 4.2 Pedestrian approach to Capitol Group along Sid Snyder Avenue (Sept. 2008, Source: Mithun)

Orchestration of Movement

The Olmsted Brothers' design for the West Campus depicts a thoughtful arrangement of pathways, spaces, features, and vegetation to clearly and gently direct and facilitate movement. Tree lined approaches, balanced thresholds, subtly curved pathways and framed views portray an intended experience of approach, progression, and arrival befitting the stature of the State Capitol. The scale and hierarchy of roads and pathways, and the careful configuration of intersections, nodes, and crossings, clearly and safely separate vehicular and pedestrian circulation.

The sequencing of spaces one was intended to experience in moving through the landscape varied in scale and proportion. For example, the spacious greensward was designed for a civic scale relative to the grandeur of the monumental buildings, while the sunken garden was designed for a more intimate, human scale. This variation and sequencing in scale was intended not only to create interest and to subtly direct movement, but also to provide a place for humans to feel comfortable within this important landscape, a way of relating people to the buildings and monuments, and by extension, symbolically, to the highest ideals of a democratic society.

Orchestration of Use

The Olmsteds designed resilient and multi-faceted landscapes that could accommodate multiple uses and that could remain flexible to changing uses over time. Open spaces could be used passively or actively as deemed appropriate (or as shifting needs dictated), and competition was avoided by artfully organizing potentially incompatible uses into logical areas.

The Olmsted design for the West Campus portrays a variety of spaces intended to support various activities, articulated by thresholds - or gateways - and boundaries as necessary to define precincts. Today, the campus accommodates a wide range of passive and active uses –quiet places for contemplation, intimate places for small gatherings, open spaces for active and passive recreation, and highly visible places for civic expression. Though the initial structure is discernable, rehabilitation is needed in order to fully and graciously realize the potential range and quality of experiences that this landscape is capable of supporting.



Fig. 4.3 Autumn Leaves: A colorful carpet of autumn leaves celebrates the change of season and invites interaction. Photo taken near the North Diagonal and “13 Colony” cherries. Foreground foliage is from one of the Olmsted-era Norway Maples (Oct. 2008, Source: Mithun)



Fig. 4.4 Westward view from west edge of bluff through a filtered foreground of native forest (Nov. 2008, Source: Mithun)

Sustainable Design and Environmental Conservation

The Olmsteds understood that enduring landscapes must be environmentally, economically, and socially sustainable.

Environment: They used nature as a guide not only from a conceptual standpoint, but also from a very practical standpoint of minimizing the resources and inputs necessary to perpetuate the design intent. Their landscapes were designed with reverence to local ecology, environmental patterns and features. They researched and specified regionally appropriate and native plants as a strategy to enhance local ecology, and to reduce required maintenance. Natural drainage patterns, soil suitability, climate and microclimate, and topography were essential considerations in the formulation of an appropriate design concept and subsequent development, detailing, and specification of materials.

Economics: In order for a designed landscape to flourish, it must be manageable within the level of investment appropriate to its use and importance. Capital allocations and ongoing expenditures of labor and materials must provide and demonstrate a public value.

Culture: The Olmsteds wrote extensively on the societal and health benefits of public spaces. The West Campus includes both passive and active public spaces that effect a range of positive societal influences, from the exchange of democratic ideas to the enjoyment of recreation.

Sustainable design and management: This includes the responsible stewardship of cultural resources and social capital. As the legislative epicenter of Washington State, the West Campus must continue to provide public access to the lawmaking process and facilitate the exchange of diverse ideas and opinions. As an integral part of an interconnected system of parks and open spaces, the campus must support aspects of healthful recreation for the public. As a Historic District, the campus must preserve and promote public awareness of our cultural heritage. (photo of people enjoying trees)

A Comprehensive Approach

The Olmsteds considered the Capitol Campus and its surroundings holistically in order to weave a more contiguous fabric of interconnected open spaces and corridors and to extend the positive healthful influences of the campus within the community. The campus and its surroundings were intended to have complementary influences upon each other, working holistically to reinforce a genius of place. Today, this comprehensive approach is manifested, in part, by the linkages between the campus and a significant network of open spaces and recreation corridors that include Watershed Park, Capitol Lake, Budd Inlet, Percival Landing/Olympia's public waterfront, Tumwater Historical park, and the emerging West Bay park and greenspace. Rehabilitation efforts should identify opportunities to strengthen the connections between the campus and the surrounding community without compromising the unique character of the historic campus.

Assessment of Resources

This chapter contains the majority of the analysis that has principally informed the preservation treatment goal, the Master Plan, and the list of actions and recommendations. Due to the large volume of information, a sub- table of contents has been provided to guide the reader through this chapter, as well as a summary chart of the condition of the resources and recommended preservation approaches on pages 35 and 37.

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Project Methodology

The methodology for the project was structured by two phases - 1) Gathering / Exploring, and 2) Synthesis – and involved collaboration with an extended team of contributors representing GA, Building and Grounds, Management and Operations, Cultural Resources, the Campus conservators, the Capitol Campus Design Advisory Committee (CCDAC), and the public. Through a series of meetings, interviews, and discussions, a rich picture of the Campus, past and present, emerged. Historic plans and correspondence were studied extensively and compared with a rigorous assessment of the significant resources in order to determine their health and integrity and to arrive at an appropriate preservation treatment goal.

Gathering and Exploring Phase

The purpose of this phase was to gather information and ideas about the Campus and to look for patterns and commonalities between past ideas, present realities, and future aspirations. Analysis entailed layering the continuum of influences that have shaped the West Campus over time, with particular emphasis on the period of significance. (Figs. 5.4a, 5.4b) This phase culminated in a first draft Master Plan document and outline Vegetation Management Plan, followed by a review and comment period.

Gathering and Exploring Phase Meetings

- Kickoff Meeting
- Visioning Meeting
- Design Workshop
- Draft Review and Comment Period presentations and discussions with GA staff, Building and Grounds Staff, CCDAC sub-committee, Visitor Services Staff, Artifacts Consulting, the public, and Friends of Seattle’s Olmsted Parks

Interviews

- Building and Grounds Operations: Mark Robb, David Saunders, LuAnn Taylor, Cheth Chuong
- Landscape Questionnaire (Appendix)
- Visitor Services: Pattie Williams
- Campus Sustainability: Ron Major
- Heritage Center and Executive Office Building design team: SRG Partnership and Site Workshop
- Arborists: Olaf Ribeiro, Rob Lloyd, Neal Wolbert
- Campus Conservators: Artifacts Consulting

Site Analysis and Field Work:

- View corridor analysis
- Evaluation of the integrity of cultural landscape resources, and given the project scope, emphasis was placed on the arboricultural assessment (see Vegetation Management Plan)
- Maintenance Analysis and Strategies
- Sustainability Overview and Strategies
- Lighting Assessment and Strategies

Synthesis Phase

The purpose of this phase was to respond to the draft comments, further develop the draft material, develop a Large Tree Layer Plan, and to generate a lasting document to guide both near-term and long-range preservation actions.

- Final Draft Review and Comment Period presentations and discussions with GA staff, Building and Grounds Staff, CCDAC, and Artifacts Consulting



Fig. 5.1 Site walks and interviews (Oct. 2008, Source: Mithun)



Fig. 5.2 Design Workshop (Jan. 2009, Source: Mithun)



Fig. 5.3 Design Workshop (Jan. 2009, Source: Mithun)

Fig. 5.4a Layers of Influence (abridged)

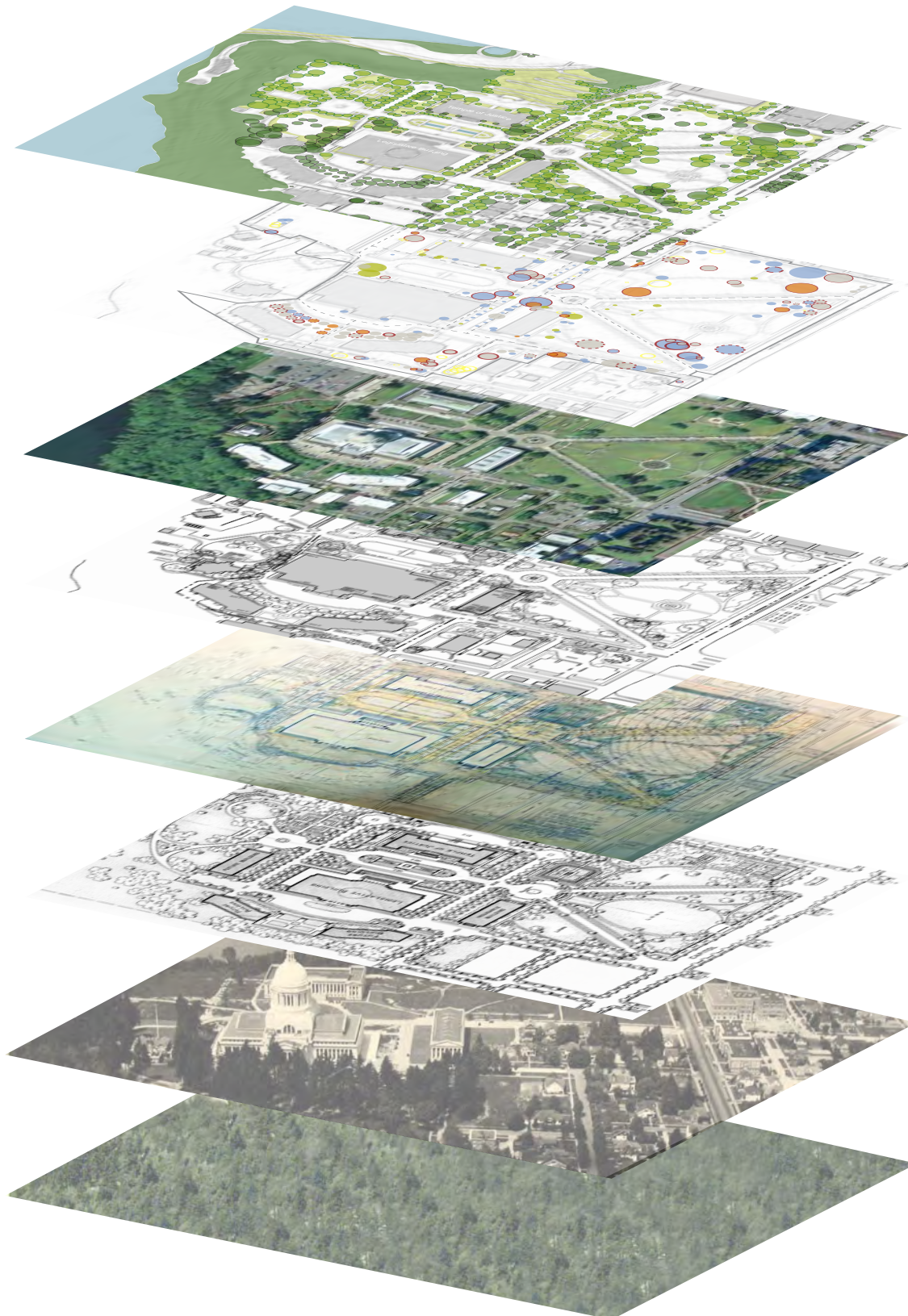
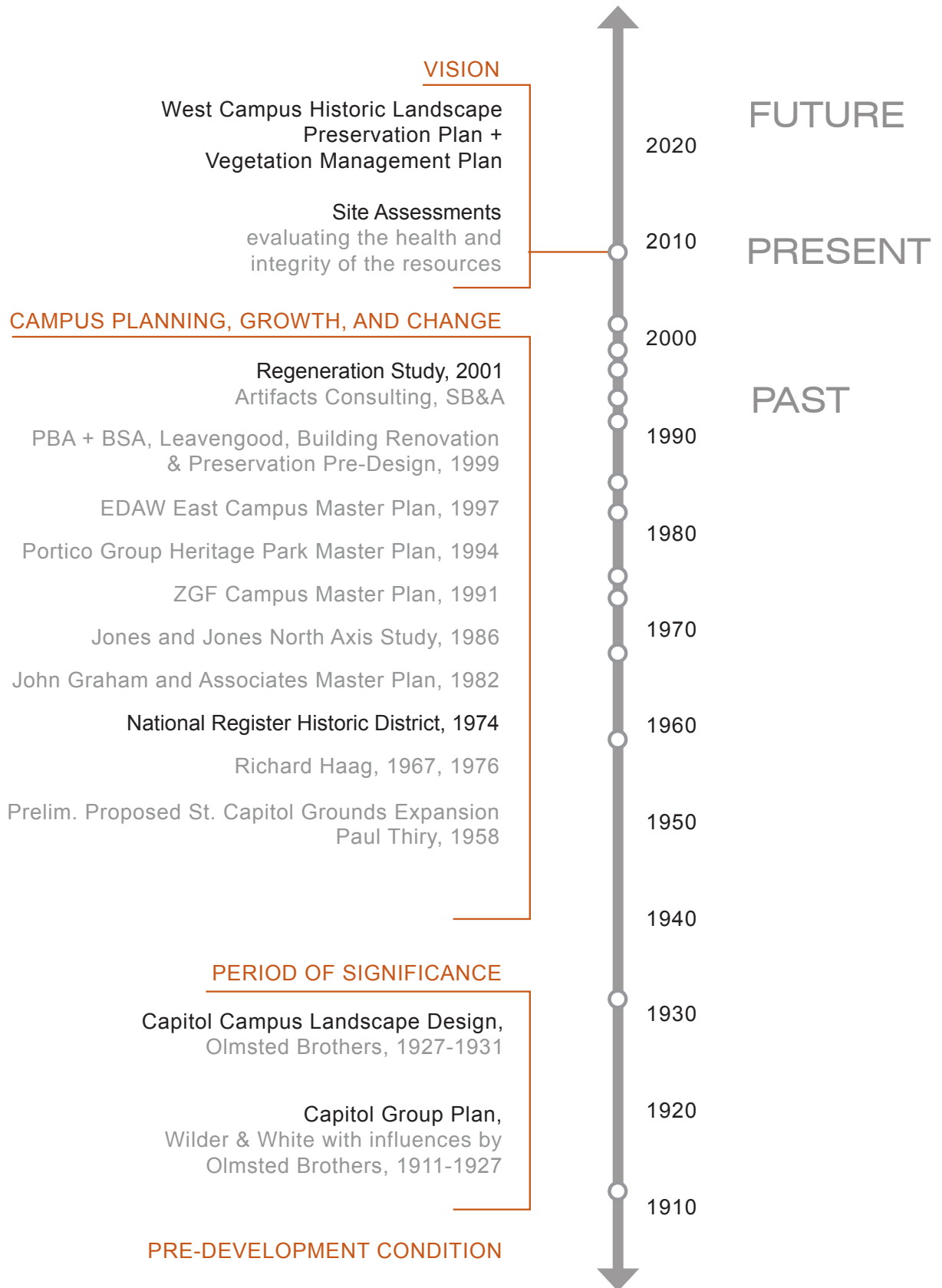


Fig. 5.4b Timeline of Influence (abridged)



Problem Statement

While the West Capitol Campus landscape is immaculately maintained, well used, and highly valued, and while many of the primary character-defining historic features are intact, much of the Olmsted Brothers' design intent remains unrealized, has been lost due to attrition or development, or is critically jeopardized by encroachments, age, or deferred preventive care. The assessment of resources leading to this statement is summarized by the chart on the following pages. (Figs. 5.5a, 5.5b)

Organizational Elements and Character-Defining Features

The Olmsted Brothers' design drawings and correspondence for the West Campus depict the measured, comprehensive approach characteristic of their work. Essential organizational elements and character-defining features^{5.1} clearly evidenced throughout the historic documentation include the considered arrangement of axes, spatial hierarchy, views, thresholds, edges, connections, topography, vegetation, circulation, nodes, and site furnishings. Today, while these elements and features are perceptible to varying degrees, they lack the intended strength, structure, vigor, and ultimately, experience, portrayed within the drawings and described within the correspondence.

Each of the Organizational Elements and Character-Defining Features was studied to understand and interpret the **historic intent**, then compared with **existing conditions** in order to arrive at a determination of **integrity**.^{5.2} A list of **findings** summarizes the existing conditions for each significant element. The charts on the following pages follow the same organizational logic, with additional columns for **significance** and **recommended approaches or treatments**.

5.1 "Cultural landscapes are composed of a collection of features which are organized in space. They include small-scale features such as individual fountains or statuary, as well as patterns of fields and forest which define the spatial character of the landscape." (Secretary of the Interior's Standards)

5.2 "The seven qualities of integrity are location, setting, feeling, association, design, workmanship, and materials." (Birnbaum, Preservation Brief 36)

Fig. 5.5a Organizational Elements and Character-Defining Features Matrix

KEY: Figs. 5.5a & 5.5b

Significance	Integrity	Color coded text
<p>Pivotal Essential and defining feature or organizational element related to the Olmsted Period of Significance, inextricably associated with Campus and State identity/history, and extant today.</p>	<p>Intact The feature or element exists today with the majority of the qualities that existed historically: location, setting, feeling, association, design, workmanship, and materials.</p>	<p>● Pivotal or Primary Significance</p> <p>● Vegetation consideration, influence, or impact</p> <p>● Topographic consideration, influence, or impact</p> <p>● Parking consideration or impact</p>
<p>Primary Important feature or organizational element related to the Olmsted Period of Significance, contributing to Campus and/or State identity/history, and extant today.</p>	<p>Intact / Missing The feature or element exists today, with many of the qualities that existed historically, but with some important qualities damaged or unrealized.</p>	
<p>Secondary Feature or element not directly related to Olmsted Period of Significance, but meaningful or important to the Campus and/or State. This designation is also assigned to Olmsted-designed features that were of lesser importance, that were only partially built, not built, or that no longer exist today.</p>	<p>Missing The feature or element exists today with few of the qualities that existed historically. This designation also applies to features or elements that do not exist today, or that exist with fundamentally different qualities.</p>	

Feature, Element, or Space	Significance	PAST: historic intent	PRESENT: existing condition	Integrity	FUTURE: recommended approach or treatment
3-dimensional spatial hierarchy	Primary	Progression of spaces and thresholds throughout the campus, from surrounding community, to naturalistic greensward, formal civic plaza, and native forest edge. Thoughtful sequencing, arrangement, and variety of scales imparted by trees, shrubs, buildings, and topography.	Lack of the majority of intended vegetation, underrealized topographic variation, and missing features. Overriding sense of vastness of great lawn and dominance of vehicles.	intact / missing	Rehabilitate through the replenishment of aging vegetation, the gradual implementation of historically intended vegetation, features, and topography, and the gradual reduction or removal of vehicular parking.
Trees, Vegetation, and Base Plantings	Primary	Formal and Naturalistic layers of trees and shrubs to help create 'rooms' throughout the campus, frame views, foster human scale, reinforce genius of place, and subtly direct movement. Base plantings were intended to provide a soft transition between the vertical buildings and the horizontal landscape, and to shift from the monumental scale of the architecture to a human scale.	Only 1/3 of the historically intended trees exist today, and half of these are in poor or fair condition. Shrub layers were only partially implemented and most of what exists today is aging and needs replenishment. With the exception of the recent installation surrounding the Temple of Justice, base plantings throughout the Campus need replenishment.	intact / missing	Rehabilitate to achieve historic vision, preserving vegetation that remains intact, while replenishing aging vegetation and incrementally implementing originally-intended layers and arrangements.
Axes, organization, and features	Primary	Balanced and semi-symmetrical campus composition	The majority of the intended organizational axes are legible within the landscape today, though due to vegetation attrition and budgetary limitations, many aspects of the campus that were intended to reinforce these axes are weak or missing.	intact / missing	Preserve and strengthen existing historic axes and features. Rehabilitate underrealized axes and features through the implementation of the western portion of the campus. Future developments must reinforce the overall composition and structure of the campus.
Views	Primary	Views to connect the Campus to the larger region. Views of the Dome and Capitol Group framed by trees and vegetation.	Intended view angles are largely present, but vegetative foreground and framing is lacking or unbalanced. Some offsite views have been impacted, or are jeopardized, by development.	intact	Preserve existing views. Rehabilitate under-realized views.
Circulation	Primary	Careful orchestration and hierarchy of pathways, roads, thresholds, and rooms throughout the Campus to subtly direct movement.	The majority of the historically intended circulation for the Campus was implemented during the 1930s and is well maintained, though impacted by the gradual encroachment by- and domination of- vehicular parking.	intact	Preserve and maintain existing historic pathways. Rehabilitate impacted pathways through the gradual relocation (and removal) of parking from within primary civic gathering spaces to nearby garages or lots as opportunity sites or nearby buildings/sites are developed.
Topography	Primary	Topographic variation within the campus served to create human-scaled spaces and to metaphorically relate to regional topography	overriding sense of flatness imparted by expansive lawn and lack of sunken garden at Central Plaza and other intended topographical variations.	missing	Rehabilitate in tandem with vegetation replenishment and the implementation of missing Campus spaces or features.
Site Furnishings	Secondary	Historic plans and correspondence describe a palette of low walls, balustrades, and light fixtures of high quality and detail.	With the exception of the rustic Sunken Garden walls, the majority of the landscape walls and balustrades were never built. The carriage style light fixtures were installed during the late 1930s under supervision of Joseph Wohleb; other light fixtures vary throughout the Campus. Signage styles and waste/recycle receptacle styles vary.	missing	Standardize signage and furnishings with styles or models consistent and compatible with historic character of Campus. Rehabilitation of spaces throughout the Campus might provide opportunities for historically compatible low walls and balustrades. See also Ch. 11: Lighting Considerations.
A. Capitol Way	Primary	Primary community connection and approach. Intended to have boulevard treatment with street trees.	Primary community connection and approach. Lack of rhythmic pattern of street trees.	intact	Plant street trees. Plant understory trees and shrubs to define and celebrate Campus edge.
B. North Diagonal Entry Threshold	Primary	Pullout and parking space off of Capitol Way. Generous gateway of trees and shrubs opened up to centered view of Capitol Dome. Low walls were intended to help define entry. Glimpses of the intended formal garden (N) were intended to provide visual interest at this entry.	Though the north diagonal is a strong organizational element, the entry threshold is not clearly defined. Pullout space has been removed and replaced by bus stop and street trees. Lack of the majority of intended trees and shrubs largely accounts for diminished potential pleasure in crossing the boundary into Campus. No walls were built.	intact / missing	Rehabilitate sense of entry using vegetation. Plant gateway trees, and underplant with shrubs while maintaining safe visibility.

Note: Features preceded by a lettered indication correspond with the "Features" maps, past and present, Figs. 5.6a and 5.6b.

Fig. 5.5b Organizational Elements and Character-Defining Features Matrix

Feature, Element, or Space	Significance	PAST: historic intent	PRESENT: existing condition	Integrity	FUTURE: recommended approach or treatment
B. Central Pedestrian Entry Threshold	Primary	Central pedestrian entry to Campus, flanked by balanced plantings - trees and understory. Intended location for in-ground monument. Low walls were intended to help define entry.	Primary connection to East Campus, with controlled pedestrian crossing. Lack of intended trees and shrubs largely accounts for diminished potential pleasure in crossing the boundary into Campus and entering the 'room' of the great lawn. No in-ground monument exists.	intact /missing	Rehabilitate sense of entry using vegetation. Plant gateway trees, and underplant with shrubs while maintaining safe visibility. Possible location for in-ground monument.
B. South Diagonal Entry Threshold	Primary	South diagonal entry, and also semi-back entry to Capitol Group along 14th (Sid Snyder Ave). Intended to have relatively naturalistic arrangement of predominantly native trees and shrubs to define gateway, then street trees along Sid Snyder Ave to lead to the Capitol Group.	Many of the original native trees still survive, but are aging and at-risk. Infrastructural and roadway alterations, including the entry tunnel to the east, have made this area particularly disorienting and confusing.	intact / missing	Rehabilitate sense of entry using vegetation. Replenish native trees, plant intended understory trees, and underplant with shrubs while maintaining safe visibility. Recommend comprehensive entrance improvement study involving pedestrian and traffic assessments and possible roadway alterations.
C. Greensward or Great Lawn	Primary	Naturalistic, but balanced, plantings defined 'rooms' and framed views of Capitol Group	Lack of trees and shrubs	intact / missing	Rehabilitate using vegetation.
D. Winged Victory Monument	Primary	Monumental feature designed by Alonzo Lewis and located by Olmsted Brothers. Commemorates those who served in WWI and demarcates axial convergence. Location for people to gather prior to entering Civic Plaza. Space surrounded by ring of small trees and understory.	Winged Victory Monument is intact, and the space functions much as intended, despite lack of formal ring of small trees and understory.	intact /missing	Rehabilitate using vegetation.
E. Cherry Lane	Primary	Double allee of flowering dogwoods as a formal threshold to Civic Plaza. Framed entry to Cherberg building. Perennial understory. Nodes at each end.	Single allee of cherry trees. Lawn.	intact / missing	Rehabilitate using vegetation and end-nodes.
F. Central Plaza / Flag Circle	Pivotal	Civic plaza for people at the center of governance. Expression of Washington State. sunken garden, water feature, pathways, local materials, flags, balanced and formal layers of trees and shrubs.	Privately dedicated vehicular parking dominates the central public realm. 'Temporary' lawn, flags, unbalanced plantings.	intact / missing	Rehabilitate to reinforce the historic and formal character of the Capitol Group and to achieve the originally intended function of the plaza as a place for people.
G. Pleasant Lane	Secondary	Double allee of flowering trees as a formal threshold to Civic Plaza. Framed entry to O'Brien building. Perennial understory.	Lawn, disconnected pathways, and isolated trees. Parking dominates.	missing	Rehabilitate vegetation, pathways. Consider gradual reduction or removal of parking.
H. Monument and 'Feature'	Secondary	Grandly-scaled monument or feature intended as a counterpoint to the Winged Victory Monument to help balance the Capitol Group. Surrounding formal arrangement of vegetation.	Catalpa tree, lawn. Confusing and unstructured circulation pattern. Disconnected paths.	missing	Rehabilitate to realize historic intent. Opportunity for important monument.
I. Sunken Garden	Primary	Human-scaled space, set into the earth, celebrating color and bloom. Formal arrangement, bordered by a double hedge, shrubs, flowering cherries, and other trees.	The Sunken Garden, though highly valued, beautiful, and much-used, has been scaled back over the years due to maintenance considerations. The surrounding/defining border is aging and diseased. Flowering trees and other surrounding trees are missing.	intact /missing	Restore historic arrangement of beds, hedges, and shrubs. Rehabilitate surroundings to reinforce thresholds and borders of the Sunken Garden.
J. Garden	Secondary	Human-scaled space, celebrating color and bloom. Formal arrangement, bordered by a double hedge, shrubs, and trees.	Ornamental rose and cutting garden was impacted by deer and transformed into a 'temporary' parking lot.	missing	Rehabilitate using formal language of historic plan and incorporating modern ecological function such as stormwater management, drought tolerant species, native species, permeable paving, etc.
K. North Overlook and North Slope	Primary	Formal terrace with primary views of the Sound, the City, and the region. The north overlook would provide a base for the Capitol Group when viewed from the surrounding context. Trees were intended to flank the north overlook. A pedestrian stair was intended to cascade down the north slope, connecting the Campus to the lake and community toward the north.	Law Enforcement Memorial provides a formal viewing terrace. Trees are missing. There is a greater emphasis on- and accommodation for- parking than historically intended.	intact / missing	Rehabilitate the areas of the overlook surrounding the Law Enforcement Memorial, relocating parking, while maintaining accessible route, and reclaiming space for the intended trees and foreground for the view of the Capitol. Continue to manage the forest edge to preserve the framed view and connection between the Campus and the community toward the north. Manage north slope for stability and soft connection.
L. Sundial Area	Primary	Human-scaled node connecting the Legislative Building, the Cherberg Building, and the O'Brien Building. Visual and social focal point and high-volume pedestrian walkway. Formal plantings.	Human-scaled node connecting the Legislative Building, the Cherberg Building, the O'Brien Building, and the Pritchard Building. Visual and social focal point and high-volume pedestrian walkway. Designed/influenced by Wilder & White, Olmsted Brothers, Joseph Wohleb, A. E. Hart, Paul Thiry, and Otto E. Holmdahl. Historic sundial archived for protection and replaced by a replica. Formal plantings.	intact	Preserve through ongoing management of vegetation and pathways.
M. West End, Governor's Mansion	Secondary	Greensward area to balance east greensward and transition to native forest edge. Future building to balance Insurance Building. Governor's Mansion with regional view.	Governor's Mansion, once considered temporary, is now a historic building in its own right. The location of the Governor's Mansion and grounds prevents the implementation of the historically sited future building to balance the Insurance Building. The temporary mansion parking lot occupies the position of the historically intended greensward.	missing	Rehabilitate the temporary mansion parking area to realize the historic intent, gradually transforming it to a naturalistic greensward, improving ecological function, and providing a transition to the native forest edge.
N. Garden and Governor Stevens' House, now World War II Memorial	Secondary	Relocation and restoration of historic Governor's house, associated with native fir trees and a formal garden foreground. Vegetation in this area provided an edge for the greensward.	World War II Memorial	intact /missing	Preserve memorial. Rehabilitate vegetation edge for greensward to the extent compatible with WWII Memorial.
O. Tivoli Fountain	Secondary	Replica of Tivoli Fountain donated by Schmidt Family in 1953. Olmsted Brothers plan did not include a monument or feature in this location, leaving the center of the 'egg' open.	Recent installation of new colored lights	intact	Preserve
P. Vietnam Veterans Memorial	Secondary	Historically intended as part of Greensward edge within the Olmsted Brothers plan.	1987 Memorial commemorating Vietnam Veterans, designed by Kris Snyder	intact	Preserve memorial. Rehabilitate vegetation edge for greensward to the extent compatible with Vietnam Veterans Memorial.
Q. Story Pole	Secondary	Designed by Chief Shelton and other members of the Snohomish Tribe, dedicated in 1940	Periodically repainted.	intact	Preserve.

Notes: * Features preceded by a lettered indication correspond with the "Features" maps, past and present, Figs. 5.6a and 5.6b.
 * See KEY on previous foldout, Fig. 5.5a.

Resource Assessments

Three- Dimensional Structure and Spatial Hierarchy

Historic Intent

The intended spatial hierarchy and sequencing was generally designed to be achieved through vegetation - the patterning and layering of trees, shrubs, ground covers, and lawns - and reinforced through a wide range of strategies including topographic variation, focal points, framing, and variations in enclosure, light and shadow. This hierarchy can be understood by examining the predominant landscape “characters” and the transitions between them: **street/community edge, greensward, formal landscape, and native edge**. These characters and their sequencing are discussed below and diagrammed in figure 5.7. Additional characters and nodes within the landscape include the Sunken Garden and other intended gardens depicted on the Features Map on pages 40-41.

Street Edge (Community Edge)

- Street trees were intended to provide a processional, or rhythmic, experiential approach from the community and a sheltering canopy
- Street trees provided a formal link – to help stitch the ‘seams’ between the campus and the community
- Layered vegetation enwrapped the campus, creating a boundary and designating the campus a special place along Capitol Way
- Native vegetation edges merged into the campus from the northwest and the south; this is particularly noticeable at the perimeter of the greensward. This was an important connection with local ecology.
- Thresholds, or gateways, were demarcated by balanced/symmetrical groupings of structural trees, with layered understory. The Olmsteds intended to be a sense of ‘compression’ in

crossing campus gateways and moving into the landscape ‘rooms’ beyond.

- Low walls were also shown on Olmsted drawings; the walls would serve to further define the campus and demarcate gateways
- Moving into the campus, the space opened up, and the layered vegetation would have defined the undulating extents of the greensward

Greensward

A November 17, 1927 letter to Mr. C. V. Savidge, Secretary of the State Capitol Committee, signed by James Frederick Dawson, summarizes the design intent for the greensward area of the Campus:

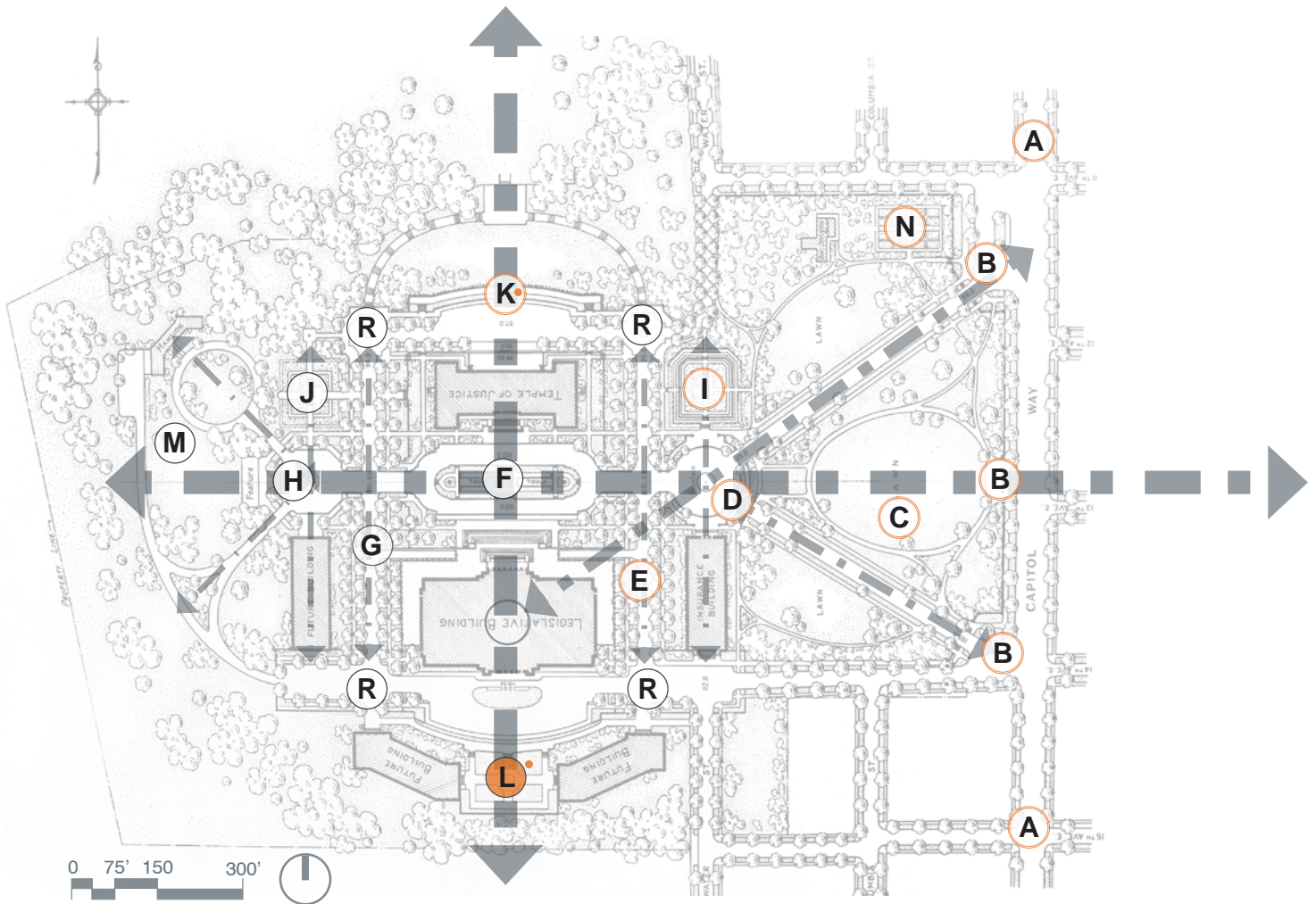
“This plan, as you will notice, embodies our original approaches and preserves the parklike effect between the approaches, as we had originally conceived, which we believe is a very important part of the developments of the capitol grounds” (Library of Congress).

Other design considerations related to the greensward area that were shown in the Olmsted Brothers plans or described in documentation include:

- Transition from rhythmic allees of street trees to a spacious open area defined by (or framed by) generous borders of layered vegetation
- Layered vegetation edge provided a sense of enclosure and screened views of traffic along Capitol Way
- Drifts of trees/vegetation (allowed to achieve their full mature glory) within the civic green provided a foreground for views, particularly of the dome. They also provided a sense of scale and interest within an otherwise vast, and potentially intimidating, expanse.
- Structural trees, particularly elms, set up a loose symmetry, a balance, which served to subtly focus views and direct movement.
- A series of smaller, implied ‘rooms’ were nested within the larger space

Assessment of Resources: Organizational Elements and Character- Defining Features

Fig. 5.6a Features depicted by the 1928 Olmsted Brothers General Plan



Key: letters correspond with the Health and Integrity Matrix on previous page foldouts

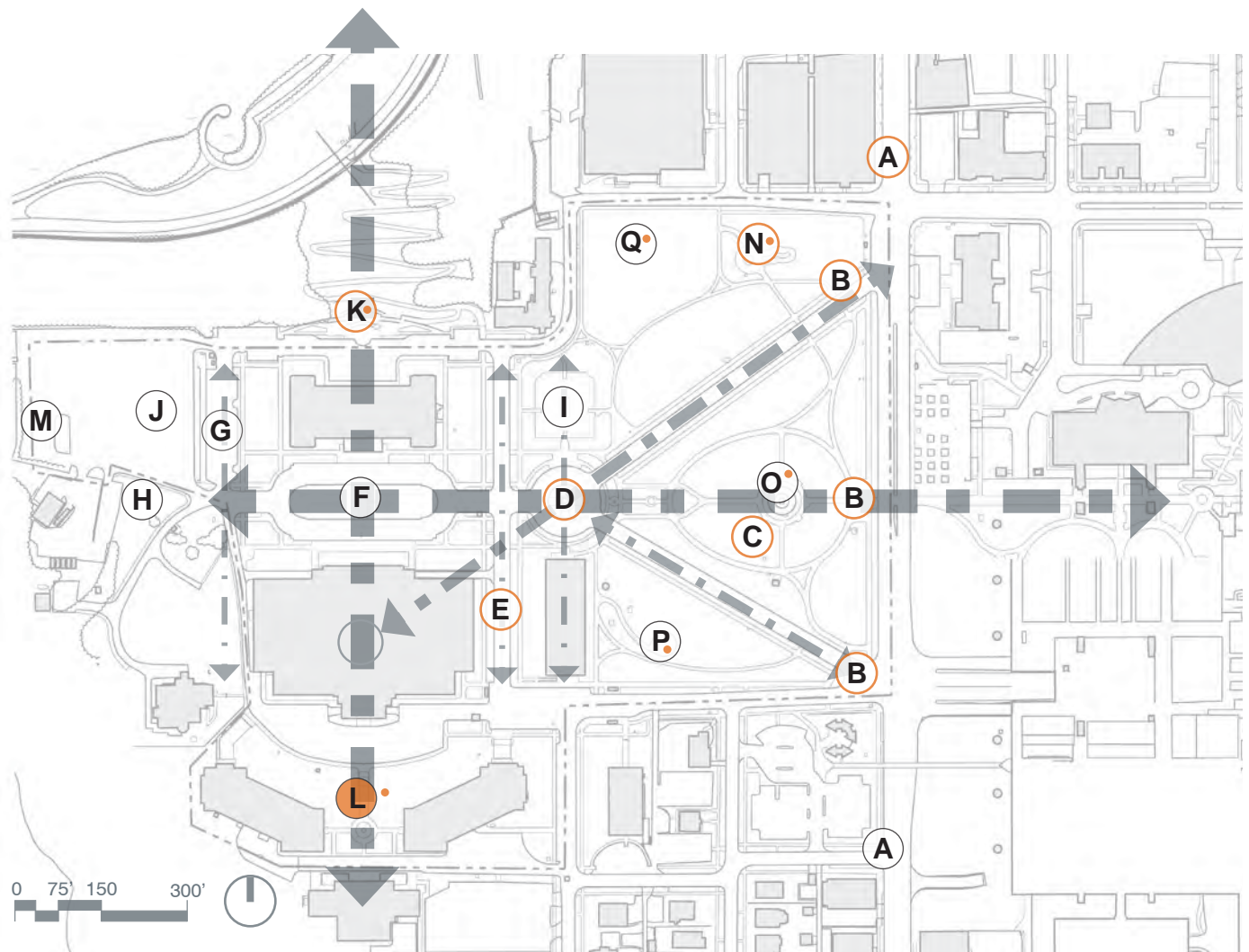
Integrity of Resource

- intact - high correlation between historic intent and existing conditions
- intact/missing - correlation between historic intent and existing conditions, but aspects missing, altered, or appropriated for a different use
- missing - low correlation between historic intent and existing conditions
- Significant Monument or Feature outside the period of significance

- | | |
|--|---|
| <ul style="list-style-type: none"> A Capitol Way B entry thresholds: North Diagonal, South Diagonal, Capitol Way node C greensward D Winged Victory Monument E Cherry Lane F Flag Circle G Pleasant Lane | <ul style="list-style-type: none"> H monument & 'feature' I Sunken Garden J Garden K north overlook L garden node M west end, Governor's Mansion N garden and Governor Steven's house R secondary axis node |
|--|---|



Fig. 5.6b Features that exist today



- | | | | |
|----------|--|----------|--------------------------------------|
| A | Capitol Way | I | Sunken Garden |
| B | entry thresholds: North Diagonal, South Diagonal, Capitol Way node | J | temporary parking |
| C | greensward | K | Law Enforcement Memorial |
| D | Winged Victory Monument | L | Sundial Plaza |
| E | Cherry Lane | M | temporary parking & maintenance area |
| F | Flag Circle | N | WWII Memorial |
| G | Pleasant Lane | O | Tivoli Fountain |
| H | gatehouse & fenced area | P | Vietnam Veteran's Memorial |
| | | Q | Story Pole |

Assessment of Resources: Organizational Elements and Character- Defining Features

Formal Landscape and Flag Circle

The drift vegetation pattern of the greensward transitioned to a more formal planting vocabulary as one approached the Winged Victory Monument, where several axes converged. Repetition of single tree species surrounding nodes and lining streets such as Cherry Lane conveyed a sense of etiquette, preparing citizens for arrival at the center stage.

Philosophically, the convergence of the axes at the Winged Victory Monument, and at its unbuilt counterpoint on the west side suggested a confluence of people, coming together from diverse directions within these unifying thresholds prior to entering the Flag Circle. The formality of this progression would have set the tone of decorum and reverence afforded by the State Capitol and related to the Olmsteds' views on the role of engaged citizenry within a democratic society.

The major east-west axis that crossed Cherry Lane created an interval within an otherwise rigorous arrangement of double street trees that formed the gateway to the Flag Circle.

At the center of this progression was a civic plaza, described by the Olmsteds in a 1934 letter to Mr. W. H. Cowles of the Spokesman Review as follows:

“The most important thing in connection with the Washington State Capitol would be the further embellishment of the central area between the Legislative Building and the Temple of Justice, where it was proposed to have a slightly sunken panel with some reflection pools in the middle of it together with walks and steps which would be enclosed by a low architectural balustrade, and at either end a fine flagpole placed with bronze ornamental bases from which the state and national flags would float. These flagpoles, of course, would be of the finest fir poles grown in the State of Washington.”

Thus, at the center of the seat of government, the Olmsteds intended a space of human scale, a place for people to feel comfortable within this important landscape. In addition to shifting from a monumental to a human scale, the central plaza was intended to feature materials and craftsmanship emblematic of the State of Washington.

Base plantings at the edges of the Campus buildings were another important aspect of the formal landscape, illustrating the inherent tension between the Olmsted Brothers' and Whilder and White's visions for the Capitol and providing a soft transition from the horizontality of the 'rooms' within the greensward and the Flag Circle to the verticality of the monumental architecture. As depicted by the Olmsted Brothers 1929 Planting Plan, the designers carefully composed the base plantings, enlisting elements of repetition, symmetry, layering, scale, texture, and rhythm. These arrangements served to mediate the grand scale of the buildings, integrate the landscape and the architecture, reinforce the balance and symmetry of the architecture, and provide visual cues to direct movement and orient visitors to points of entry and arrival. From a sustainability standpoint, the Olmsteds considered the contribution of the base plantings toward shading the buildings and reducing summer heat gain.

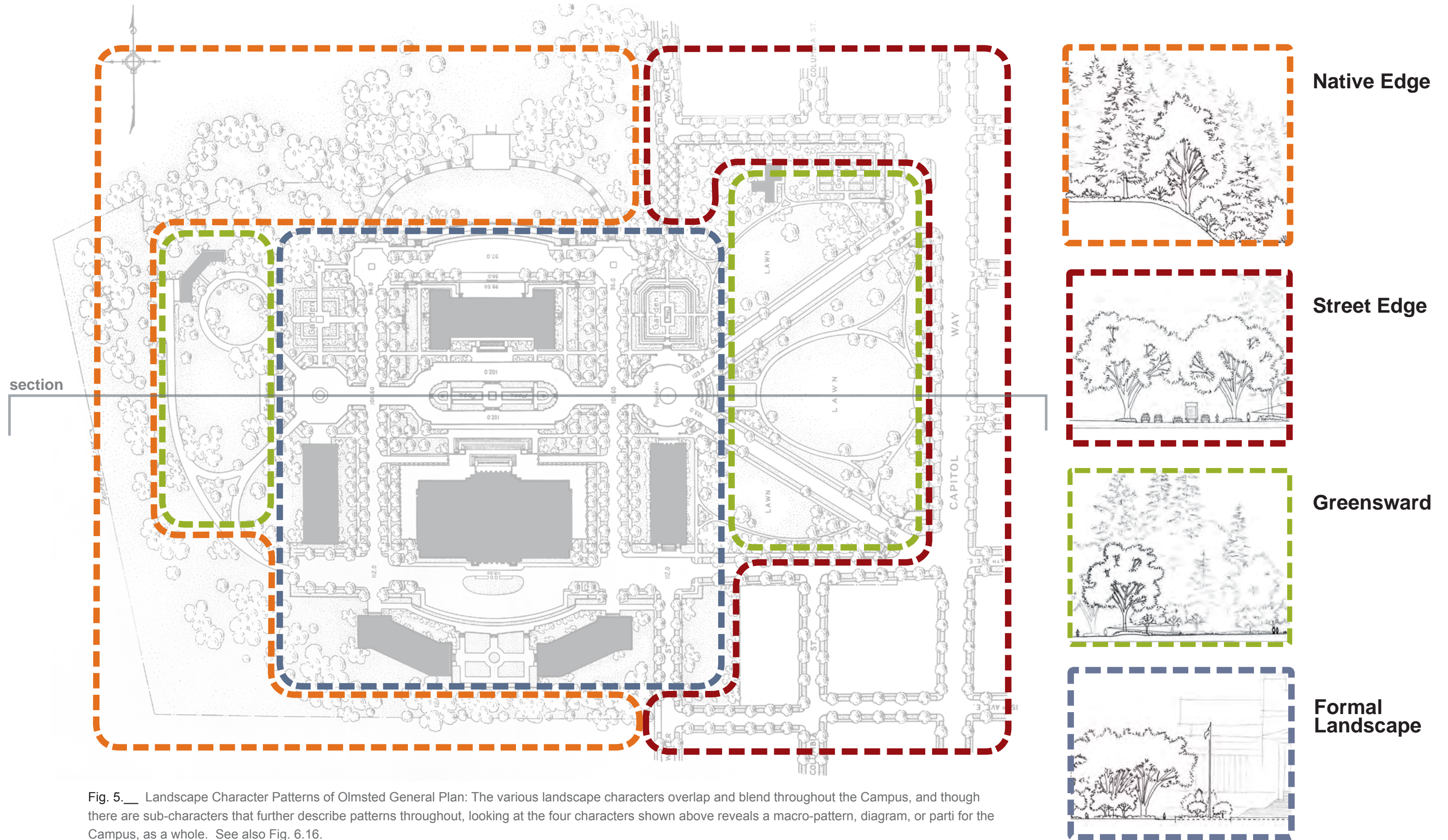


Fig. 5. Landscape Character Patterns of Olmsted General Plan: The various landscape characters overlap and blend throughout the Campus, and though there are sub-characters that further describe patterns throughout, looking at the four characters shown above reveals a macro-pattern, diagram, or parti for the Campus, as a whole. See also Fig. 6.16.

Native Edge

The native forest enwrapping the Campus was considered important in relating the campus to the regional context, affirming the genius loci, and in providing a foreground and framing for views of the Dome from a distance. The retention of the native forest and the transition, or merging, of the native vegetation into the Campus, was also an important sustainable strategy. The forest conserved water, stabilized the bluff, provided habitat, and was less costly to maintain than other alternatives.

Findings: Three-dimensional structure and spatial hierarchy

The West Campus currently lacks the three-dimensional structure, spatial hierarchy and design integrity of its intended landscape plan. The intended layering of vegetation, topographical variation, and richness of nodes and details was postponed due to financial shortcomings, temporarily replaced by lawn, planned for subsequent implementation alongside future development, or has died without replacement. Thus, while the edges of the campus are discernable, the greensward is beautifully maintained, the eastern half of the organizational axes and features are legible, and the space for the central public plaza is defined by curbs and celebrated by flags, all of the important space-defining elements – edges, thresholds, axes, and nodes – could be greatly enhanced according to the Olmsteds design intent, thereby evoking a more meaningful experience.

A comparison of the spatial composition depicted by the Olmsted Brothers' 1928-1929 plans for the State Capitol with the spatial composition shown on today's plan reveals key discrepancies (see Fig. 5.9a and 5.9b):

- The number of existing trees represent roughly 1/3 of the originally intended trees for the West Campus. This statistic is further compounded by the projected future loss of additional trees. (see Fig. 10.4.4)
- The lack of **street trees along the edges** and approaches to the Campus weakens the intended connection/extension of the Campus to surrounding community.
- Layers of trees and shrubs that were intended to create thresholds are almost non-existent today.
- The intended landscape characters, or formal and natural planting patterns, shown by the historic plans are almost indiscernible today.



Fig. 5.8 View of existing greensward: Expansive lawn exists in lieu of the majority of the intended trees and shrubs that would serve to provide a foreground for the Capitol Group and a more human scale. (Feb. 2009, Source: Mithun)

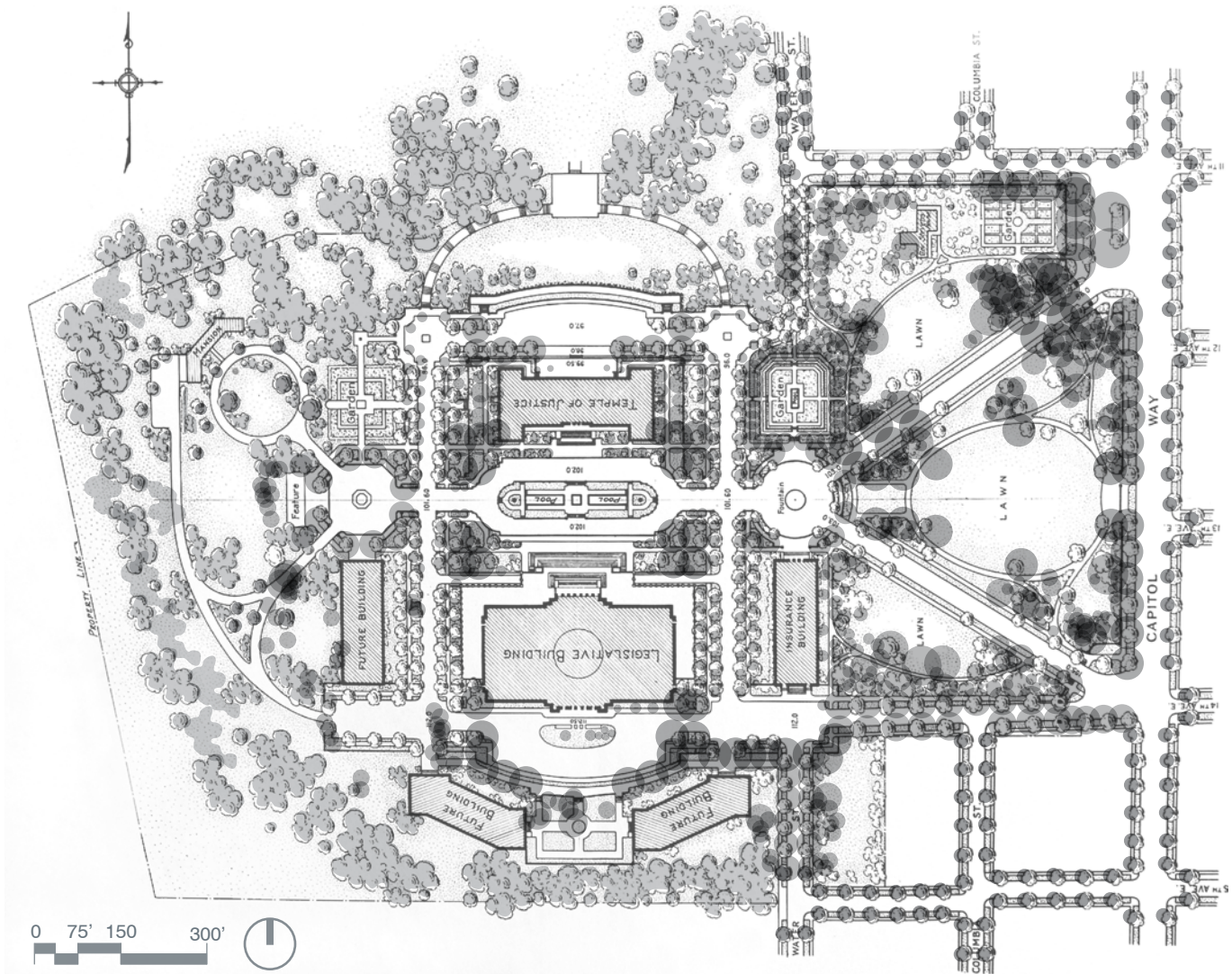


Fig. 5.9a 1928 Olmsted Brothers General Plan overlain with historically intended trees shown in 1929 Planting Plan

- The progression of spaces, of landscape ‘rooms’, described by the historic plans is under-realized today.
- The vast expanse of lawn that exists today in place of much of the intended layering and naturalistic drifts of trees and shrubs within the **greensward** not only conveys a deceptive sense of flatness, but also disconnects people from a greater experience of the natural environment, the sense of spatial richness afforded by the region’s unique combination of vegetation, topography, and water (Fig. 5.8). Additionally, lawns consume significantly greater resources, requiring more labor, water, and nutrient inputs to maintain over time than trees and shrubs.
- Many of the essential aspects of the Olmsteds’ plans exist today as lawn. The Olmsteds were wary of the installation of temporary lawn in lieu of future and phased installations. In a letter to Mr. Charles W. Saunders dated September 15, 1931, the Olmsted Brothers wrote:

“I am surprised at what you say of Mr. Clausen’s misinterpreting my statement about the grass seed. I said very distinctly that the grass seed might be placed temporarily over the proposed planting areas in order that they would not be eye sores, but I can easily see

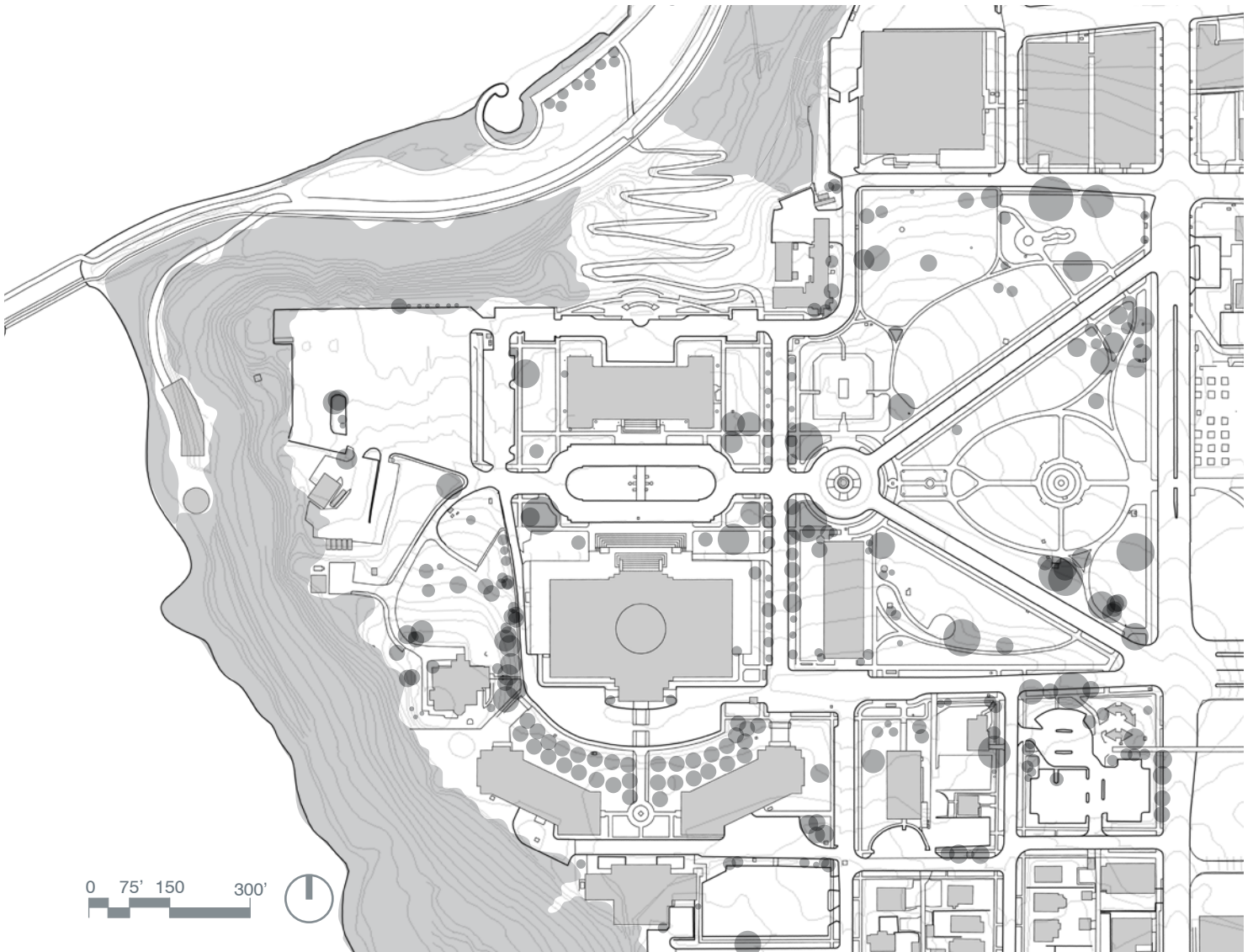


Fig. 5.9b Existing Campus Base Plan overlain with existing trees.

where they might remain that way indefinitely unless the strong hand or Mr. Savidge hoes up the ground and gets Bonnell to plant some trees and camellias.” (Library of Congress)

- The absence of the historically intended low walls weakens the sense of arrival. The Olmsted Brothers’ lighting layout for Capitol Way showed light fixtures flanking the north and south diagonal entry thresholds integral with the low walls.
- **Formal Landscape and Flag Circle:** The Flag Circle is a heavily-used space for demonstrations or gatherings, particularly during legislative session, but it is dominated by vehicular parking and lacks the historically intended gardens and pools that would impart a human scale at the center.
- The central core of the Campus lacks the surrounding nodes and features that would serve to reinforce this area as the physical and philosophical center.
- Base plantings in need of regeneration, for which specific Olmsted design documentation exists, include the areas surrounding the Legislative Building and the Insurance Building. Additional base planting areas of historic importance - and in need of regeneration - include the areas surrounding the Cherberg

Assessment of Resources: Organizational Elements and Character- Defining Features

Building, the O'Brien Building, and the Pritchard Building. (see also the Vegetation Management Plan)

The recent regeneration of the base plantings surrounding the Temple of Justice provides an example of base planting design sympathetic to historic intent.

- With the exception of the flags themselves, and perhaps the sandstone, the Flag Circle is not particularly evocative of the State of Washington.
- **Native Edge:** For greater detail, see the Vegetation Management Plan assessment of the health and integrity of the plant material along the bluff edges, but conditions vary and need restoration to realize the full potential of this buffer zone in benefitting the water cycle, improving habitat, increasing biodiversity, and framing views.

Trees, Vegetation, and Base Plantings

Historic Intent

Trees, vegetation, and base plantings have been previously discussed within the context of reinforcing, and in many cases, structuring, the essential spatial hierarchy for the West Campus. In terms of species composition, the Large Tree Layer plan contained within this document provides historic species and canopy composition analysis alongside current and future analyses. It also describes the preservation logic for making decisions about Campus vegetation, especially trees. Further, more detailed, assessments and considerations are contained within the Vegetation Management Plan (VMP).

As a growing, changing composition of living species with a dedicated staff of caretakers and managers, the vegetation warrants an expanded and detailed study that includes direction for long-term stewardship. The VMP provides a baseline assessment of existing conditions coupled with specific guidance for ongoing treatment. Essential findings, below, have been extracted from the VMP.

Findings: Trees

- Existing plantings are aging, seriously threatened, and in need of attention, coupled with ongoing care.
- West Campus tree population has declined almost 15 percent since 2001, and only 2 out of 3 of the lost trees have been replaced.
- Of the 47 trees lost since 2001, fewer than half have been replaced (45%).
- Nearly *half* of existing trees are in poor or fair condition
- Well over a third of trees exhibit current or potential risk. Most are major landscape trees that face near- or mid-term removal to mitigate this risk.
- Unusually high levels of soil fungi are attacking tree roots, the result of poor drainage, mower damage, compaction from heavy use, and lack of organic mulch.
- Only 1 in 7 trees is young. By contrast, middle-aged and post-mature (declining) trees each are about 3 in 7.
- Over 40 tree species exist on the West Campus, of which one third are represented by a single tree. Two species (both flowering cherries) have more than 40 trees each. Population diversity is far less than species number suggests.



Fig. 5.10 Norway Maple near Winged Victory Circle. A significant percentage of the existing trees on Campus are post-mature and in decline. Declining trees require more care and maintenance to manage risk, as illustrated by this system of structural reinforcement. (Oct. 2008, Source: Mithun)

- 72% of trees are found in just 5 genera: Prunus (cherry, plum, laurel), Douglas fir, maple, Western red cedar & false cypress. Lack of species diversity subjects the population to potential loss from disease or insects, and reduces seasonal richness of the landscape.
- Cherries overwhelmingly outnumber all other trees, at over 35% of total. While beautiful and popular, they are plagued by severe horticultural problems on this site.
- The current tree population only partially matches the Olmsted Brothers' palette, placement and species emphasis. A variety of dogwoods, crabapples, hawthorns, and cherries were intended to play the main flowering tree roles in the landscape.
- The Olmsted plan called for more than triple the number of trees that exist on the West Campus today.
- Native trees were both intended to be and are today well represented in the West Campus landscape. However, most are post-mature and need replenishing.

Assessment of Resources: Organizational Elements and Character- Defining Features

This study compares the existing view along the North Diagonal near the entrance to the Campus with two different future scenarios: 1) absence of ongoing tree monitoring and tree care (inaction), or, alternatively, 2) implementation of preservation recommendations toward reinforcing the historic design of the Campus. In Scenario 1, the existing view was modified according to likely near-term tree loss based upon the 2008-09 tree condition survey (Fig. 10.____ and Table of Trees). In Scenario 2, the existing view was modified according to the Landscape Preservation Master Plan and VMP recommendations. It assumes that some degree of tree attrition is natural, but that regeneration planting occurs simultaneously with consistent preventive care.

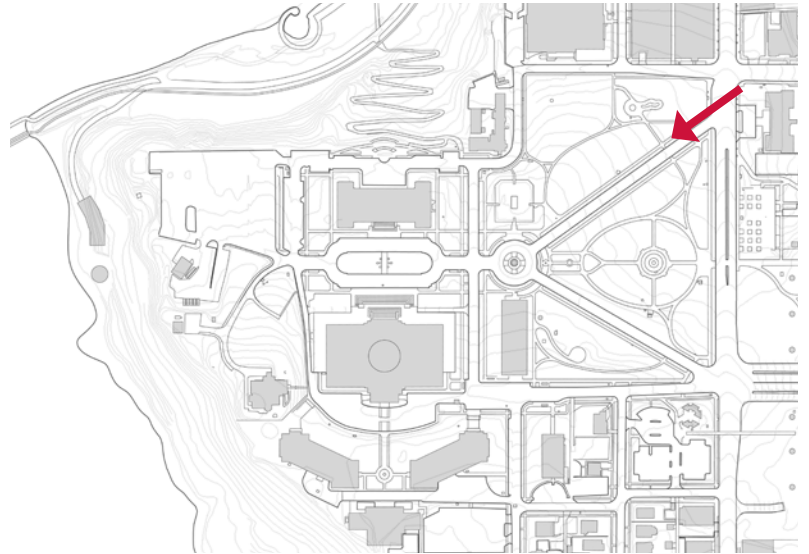


Fig. 5.11 Key map of view location along North Diagonal

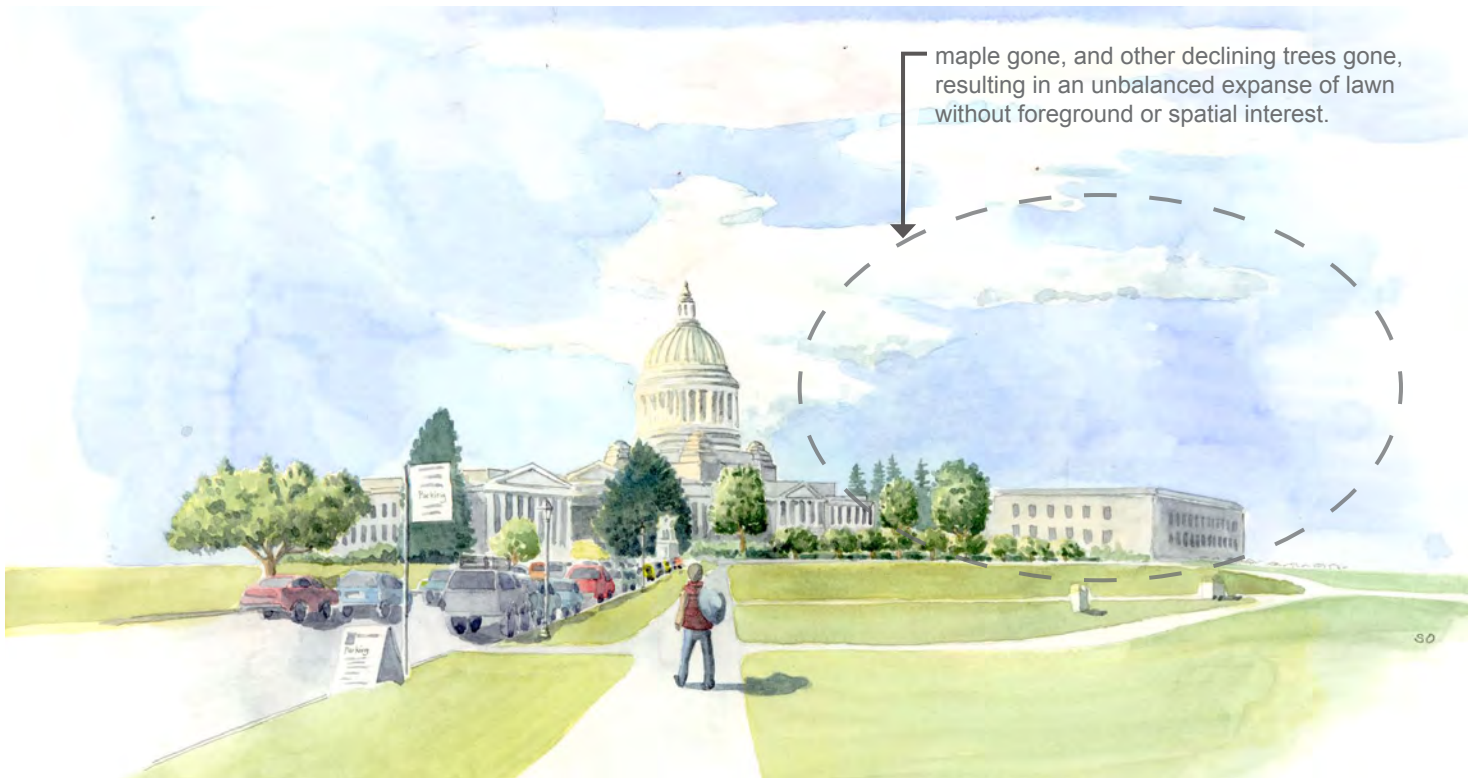


Fig. 5.12 Scenario 1: North Diagonal approach to the Capitol in the near future in the absence of ongoing tree monitoring and tree care. (Source: Susan Olmsted)

- Loss of heritage maple
- Greater visual emphasis on vehicular parking, parking signage, and garbage receptacles
- Overly-expansive lawn lacks a sense of scale in relationship to the Capitol Group
- View of Dome lacks foreground and framing



← existing Norway Maple, post-mature and in decline

Fig. 5.13 Existing view of North Diagonal approach to the Capitol (Oct. 2008, Source: Mithun)



Fig. 5.14 Scenario 2: North Diagonal approach to the Capitol in the future with the implementation of preservation recommendations. (Source: Susan Olmsted)

- Heritage Maple is preserved, and replacement tree is planted
- Street trees lining the North Diagonal provide a sense of scale and foreground while framing views of the Dome.
- Groves of historically intended trees create 'rooms' within the landscape.
- Historically intended gateway with light post.

Assessment of Resources: Organizational Elements and Character- Defining Features



Fig. 5.15 5350-16 Plan for Land and Water Approaches to the Capitol, January 18, 1912, approved by John Charles Olmsted (Source: Frederick Law Olmsted National Historic Site)

Axes, Organization, and Features

Historic Intent

Wilder and White's Capitol Group established a north-south axis for the Campus. (5350-16) The Olmsteds recognized that while there was a territorial connection and a logic to arranging the Capitol Group along a north-south axis, that most people would approach the Capitol from the east. Within a letter to Governor M. E. Hay, January 18, 1912, John Charles Olmsted wrote:

"We desire to call your attention to our suggestions for carrying the Capitol park eastward to Main Street [now Capitol Way]. Even if the extent of land to be taken should be determined to be extravagant and impracticable, the main idea of a central wide avenue should still be kept in mind to be carried out whenever an appropriation should enable it to be done. The fundamental advantage of this approach from Main Street is based upon the fact that probably a large proportion of those who have business in the Capitol and other buildings to be grouped with it will be apt to take the street cars on Main Street and ought therefore to be accommodated with a direct, obvious and attractive approach from Main Street.

The bluffs and other topographical conditions will always make a direct axial approach from the north for vehicles an impossibility. It seems likely that the ordinary approach for automobiles and other vehicles would be either by way of Water Street or by way of Main Street to the proposed east approach avenue" (Library of Congress).

The connection between the campus and the community was clearly an important concern, and while the proposed direct diagonal connection to Sylvester Park and downtown Olympia shown in the plan that accompanied their letter to the Governor (5350-16, Fig. 5.15) was disregarded by the Capitol Commission, their suggestion of "a direct, obvious, and attractive approach from Main Street" later became the essential east-west organizational axis through the campus.

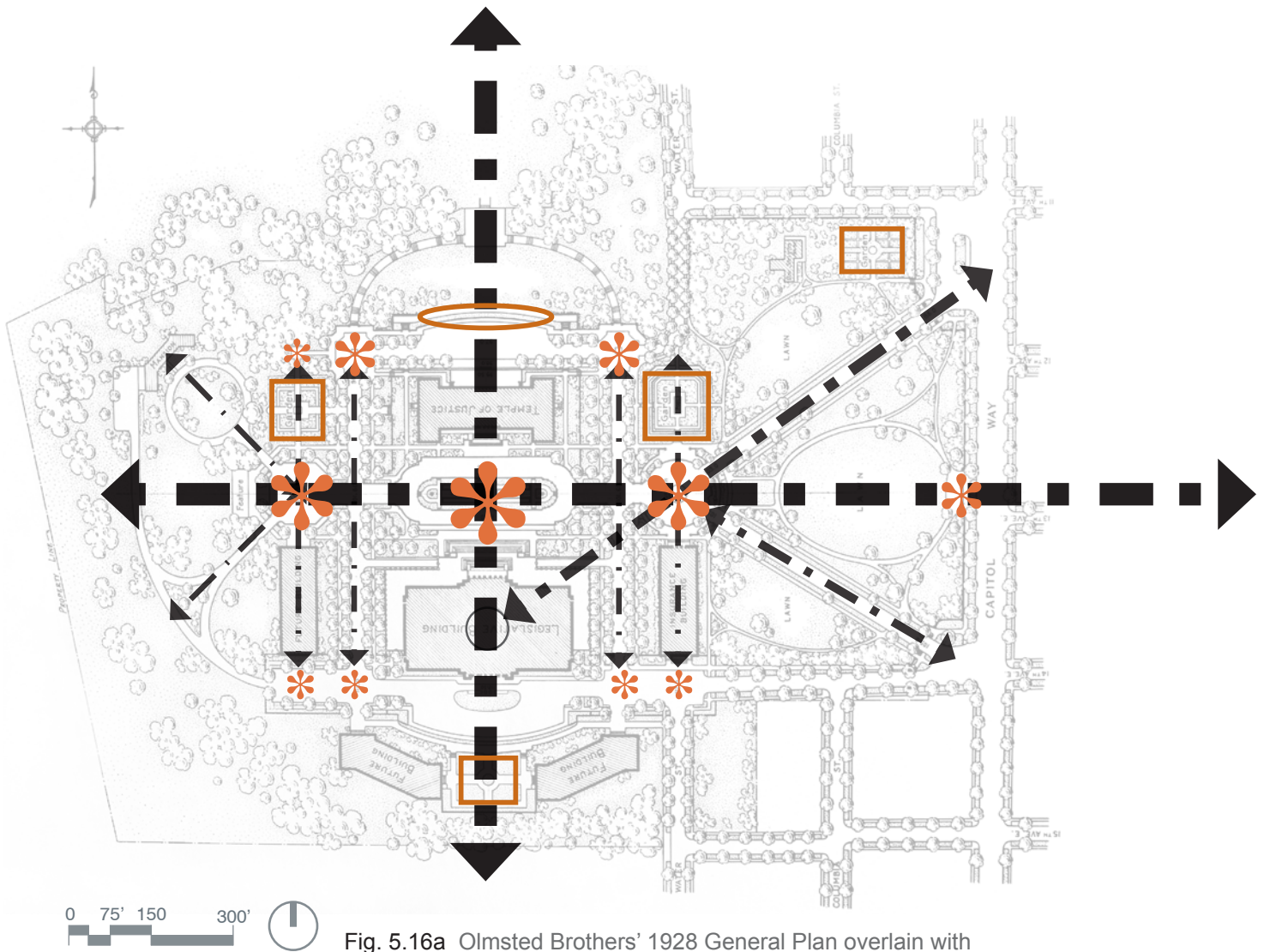


Fig. 5.16a Olmsted Brothers' 1928 General Plan overlain with historically intended axes, nodes, and features

A hierarchy of organizational axes is illustrated by the Olmsted Brothers 1928 General Plan (Fig. 5.16a). The Olmsted Brothers paid careful attention in laying out axes for the campus. In an October 2nd, 1929 letter to Mr. Alonzo Victor Lewis, in discussing the intent of axial relationships and nodes appropriate to accommodate monuments in response to Alonzo's inquiry to adjust the location of the Winged Victory Monument, the Olmsteds wrote:

"One of the most important pieces of design of the entire plan is where the axis of the approaching road from the vicinity of Eleventh Avenue and that of the approaching road from Fourteenth Avenue come together in front of the Insurance Building. This in turn is on the long axis which runs midway between the Legislative Building and the Temple of Justice. This point is also on the diagonal axis along the approach road from the vicinity of Eleventh Avenue with the dome of the Capitol which we made a special effort to attain and which seemed to us a most important point of design (Library of Congress).

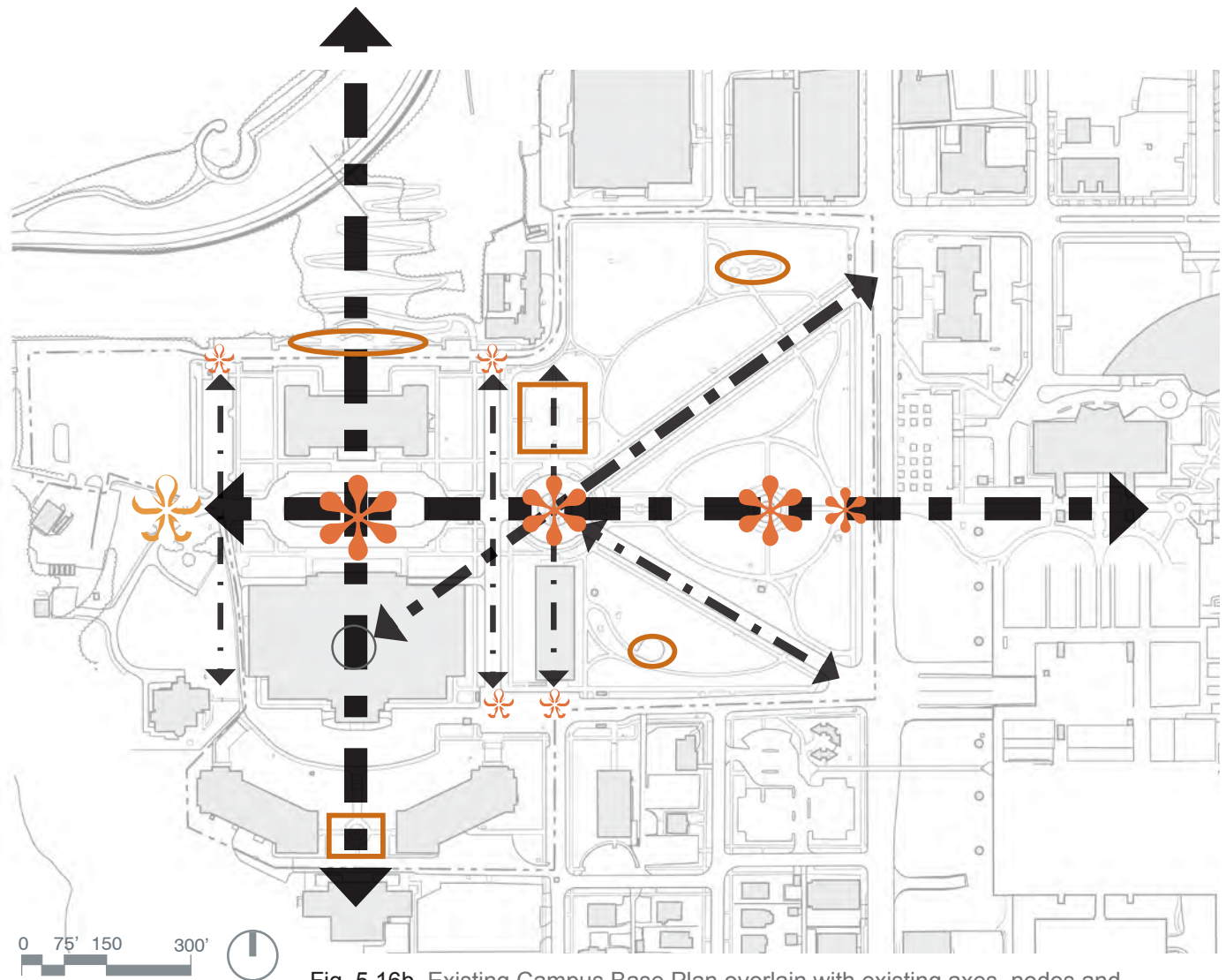


Fig. 5.16b Existing Campus Base Plan overlain with existing axes, nodes and features

KEY



organizational axis



node



underrealized node - partially legible



destination memorial



sunken garden or formal garden space

Assessment of Resources: Organizational Elements and Character- Defining Features

The Olmsteds understood the importance of the Capitol Dome and its attendant plaza, considering it the primary focal point, symbol, and civic destination and studied ways in which the other elements of the design, such as axes, thresholds, nodes, and views could contribute to the experience in approaching and appreciating this central feature, within its setting, without competing.

The symmetrical arrangement of axes about the Capitol Group at the core of the Campus was an essential organizational strategy to help provide the proper base, foreground, and balance for the Capitol buildings and the central plaza afforded by their monumental stature. The eastern half of the arrangement/approach would provide access and connection with the community, as the formal arrangement within the core gave way to drifts of trees within the civic green, and then transitioned to the rhythm of street trees extending into the community. The western arrangement/approach provided a transition and connection with the regional context and ecology, as the formal arrangement within the core gave way to informal groups of trees and, finally, the forest edge, bluff, and lake. The native vegetation along this edge would additionally have helped to screen the proposed Governor's residence and deemphasize service access. The core of the Campus, the iconic center of our State governance, philosophically resided at the convergence of the community and the environmental context.

Minor axes along Cherry Lane and Pleasant Way supported the overall balance and symmetry of the Capitol Group by providing vehicular and pedestrian circulation structured by double allees of trees with secondary termini at each end. The major east-west axis that crossed Cherry Lane, in particular, created an interval within an otherwise rigorous arrangement of double street trees that formed the gateway to the Flag Circle.

Findings: Axes, Organization, and Features

The West Campus currently lacks the originally intended balance and symmetry shown within the historic plans. The majority of the intended organizational axes are legible within the landscape today, though due to vegetation attrition and budgetary limitations, many aspects of the campus that were intended to reinforce these axes are weak or missing. Consequently, the potential power of the axes in structuring the campus is diminished. A comparison between intended and existing axes, organization, and structure (Fig. 5.16a and 5.16b) reveals key discrepancies:

- Within the portion of the campus west of the Capitol Group and central plaza, the intended symmetry with respect to the north-south axis, the balance between the eastern and western 'bookends', is nonexistent today.
- The "Feature" indicated west of the central plaza that was intended to balance the Winged Victory Monument east of the central plaza is missing.
- The Campus organizational structure has been weakened over time by the *addition* of significant interventions, such as the Vietnam Veterans Memorial and the Tivoli Fountain, that have departed from the historic design. The WWII Monument occupies the location of what was depicted in the Olmsted Brothers' plans as a formal garden, and arguably reinforces the general Campus structure, though not association, feeling, or design. These monuments and memorials are now important and significant places in their own right, and as such, should be preserved.

Assessment of Resources: Organizational Elements and Character- Defining Features

- Vehicular parking occupies the termini of many of the organizational axes
- The position of the Governor’s Mansion and grounds prohibits the fulfillment of the southern half of the axis along Pleasant Lane. The Olmsteds responded to this early reality, as shown in their 1929 Planting Plan.
- Structural planting arrangements, especially gateway trees, are missing. This issue is most noticeable at the entry threshold at the north diagonal axis, at the eastern – mid-block- entry along the east-west axis, and at the entry threshold at the south diagonal axis.
- The mid-century addition of the east campus and its recent redevelopment has helped to reinforce the major east-west axis through the campus. Treatment surrounding the mid-block crossing between the East Campus and the West Campus along Capitol Way holds greater potential for strengthening the relationship between the two.



Fig. 5.17 Pleasant Lane view looking north toward terminus occupied by parking (Sept. 2008, Source: Mithun)

Views and Connections

Historic Intent

Many of the important views and connections, such as those structured along the axial approaches, have been described in previous and related sections, so this section will describe some of the regional views and connections.

In a letter dated January 19, 1912, John Charles Olmsted discussed “a plan for approaches to Capitol by land and water,” exploring improvements and relationships to the context and vicinity that would provide the appropriate civic presence and accessibility for the Capitol. He wrote, “One idea is to have an avenue 100 feet wide extending from the public square at 7th Street and Main Street to the new Capitol centering on its dome.” Other ideas mentioned within the letter included adjusting the railroad route to remove it from the base of the Capitol (relocating it to the west side of the channel), relocating the railway station to a position along the north-south axis of the Capitol group – across what is now Capitol Lake – and creating public parks north of the station where a passenger steamer landing was planned to be located: “The result of this plan will be that all visitors coming to Olympia either by steamer or by railroad will have a fine symmetrical view of the Capitol and its group of buildings. We believe this idea will be worth all it will cost.” Additional ideas described by John Charles Olmsted included:

- A connected series of park spaces between what is now Sylvester Park and the proposed location for the railroad station.
- Linkages between the Capitol and downtown Olympia via streets, boulevards, and parks.
- The suggestion of a “small harbor view park between the two waterways.”

Thus, in addition to creating a publicly accessible and symmetrical view of the Capitol within its setting, John Charles Olmsted was looking for opportunities to extend the healthful influences of the Capitol development to the surrounding community through a connected series of parks and open spaces along the water and into the heart of downtown Olympia (Library of Congress).

The Olmsteds also placed a strong emphasis on the view overlook on the north edge of the Campus. A November 17, 1927 letter to Mr. C. V. Savidge, Secretary of the State Capitol Committee describes their intent:

“We have widened the terraces [north] of the Hall of Justice overlooking the bay, so that it will be adequate for people who undoubtedly will want to take advantage of the splendid view looking [north] over the sea water below. This involves sometime in the future building an expensive retaining wall, but we think that it is worth while in order to uphold the dignity and scale of the design around such important buildings and to provide ample space for such an overlook where people will be permitted to enjoy the view” (Library of Congress).



Fig. 5.18 View from North Overlook: looking north at Law Enforcement Memorial toward Budd Inlet and Olympia (Sept. 2008, Source: Mithun)

From the other direction, looking south across the lake toward the Campus, the Olmsteds provided a row of Linden Trees to help frame the Temple of Justice along the north edge.

Other important views/connections included:

- Connection along Capitol Way (previously discussed)
- Street trees as providing a means of connection (previously discussed)
- Hierarchical emphasis placed on view of Dome within the campus, especially along north diagonal approach (previously discussed)

Findings: Views and Connections

- The view corridor between the Campus and Capitol Lake and Budd Inlet, recognized by the Olmsted Brothers as a critical connection to the region and the community, is currently threatened by controversial development plans.
- Many of the off-site views of the Dome were intended to be framed by the tall trees. The native foreground sends a powerful message in reinforcing a sense of place. Views of the Dome from I-5 and the Deschutes Parkway are intact, but must be preserved by the careful stewardship of the native forest edge. Invasive plants, aging vegetation, and no program for rejuvenation threaten the surrounding patches of forest and the views to which they contribute.

Fig. 5.19 SRG Partnership's Rendering of the Heritage Center and Executive Office Building



- The proposed Heritage Center and Executive Office Building has the opportunity to enlist native vegetation in reinforcing the intended framed view of the Capitol Group along the north-south axis. Plans for this development include hillside stabilization and forest restoration, efforts which can help to reinforce the intended emphasis. The re-establishment of native vegetation surrounding the new development and framing the north-south axis of the Capitol Group is critical to preserving the historic character of the West Capitol Campus.
- The view of Mt Rainier from within the Campus is present, but downplayed, and this is in keeping with the described historic intent.
- The north overlook was recently realized through the development of the Law Enforcement Memorial
- The Campus is well connected to a larger network of open spaces and green corridors, very much in keeping with John Charles Olmsted's intent (Fig. 3.2). This system, and the connections between the open spaces, can be clarified through greater use of large canopy street trees and pedestrian and bicycle improvements.

Fig. 5.20 Axis Study: Importance of native vegetation in reinforcing the major north/south axis and intended hierarchy of focus



Restored native vegetation helps to frame view of Legislative Building along the north/south axis and minimize the visual competition of the future HCEOB development.

Assessment of Resources: Organizational Elements and Character- Defining Features

Findings: Views and Connections, cont.

- Also within the Campus, the under-realized west end of the campus creates an imbalance of views between the east and west, looking to-and-from the central core of the Capitol Group.
- This imbalance is acutely noticeable in the disparity between what was supposed to be flanking gardens east and west of the Temple of Justice: the elegant view of the Capitol from the existing Sunken Garden northeast of the Capitol Group and the disparaging view of the Capitol from the existing parking lot northwest of the Capitol Group. (Figs. 5.21, 5.22, 5.23)



Fig. 5.21 View of parking area at west end, close to where garden was historically intended (Nov. 2008, Source: Mithun)

view of parking area where, historically, a garden was intended (Fig 5.21)

view of existing sunken garden (Fig 5.23)

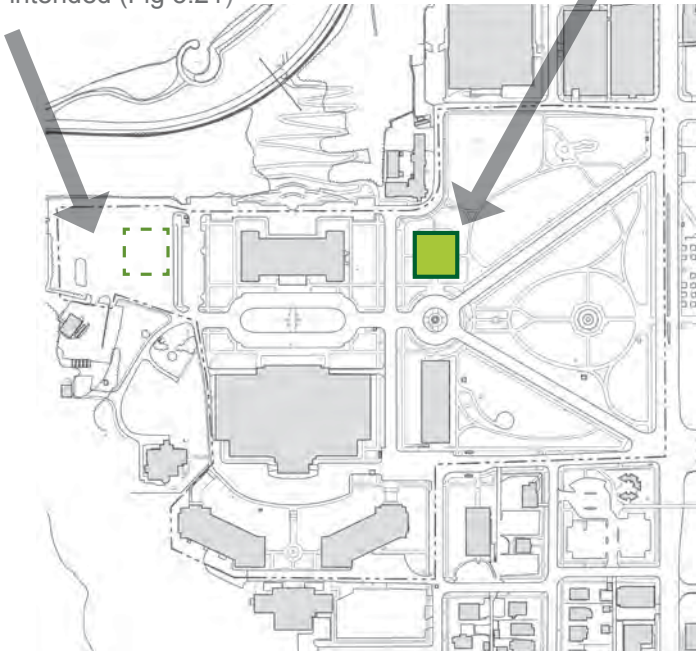


Fig. 5.22 Key map of Campus showing the existing Sunken Garden and its missing counterpart

Fig. 5.23 View of Existing Sunken Garden (Nov. 2008, Source: Mithun)



Circulation

Historic Intent

The Olmsteds developed a hierarchy of pathways, separating pedestrians and vehicles and providing clear points of crossing. The system of Campus pathways provided the choice between a more direct route along the axes and diagonals versus a more leisurely route along curved walkways designed for exploration and relaxation. Paths moved between open and enclosed vegetated borders.

The Olmsted's correspondence regarding the vehicular parking intent for the Campus reveals a strong preference against parking directly adjacent to the buildings and a desire to obscure parking, either through the use of vegetation or through the use of underground parking:

- In a report to Mr. Dawson, dated Oct. 1927, Hammond Sadler (Olmsted Brothers) wrote:
“The parking area immediately south east of the insurance building was to be eliminated and arranged amongst the trees south of the Capitol Building. Finally when those two buildings were built, the basements should be used for car storage” (Library of Congress).
- In a letter written by to Mr. Savidge, Secretary of the State Capitol Committee, dated May 19th, 1928, regarding parking, James Frederick Dawson wrote:
“On my return east I had occasion to visit the State Capitol grounds at Salt Lake City, Utah, and I was interested to note that they allowed no parking of cars in front of the Capitol building. They had signs just at the end of the steps of the Capitol which read as follows: ‘Park all automobiles in rear of Capitol Building’, and then they had other small signs, ‘No Parking’. I think that is decidedly the best way to take care of the parking of automobiles and I hope that when the grounds of the Washington State Capitol have been developed, similar restrictions will be made as to parking” (Library of Congress).



Fig. 5.24 View of Flag Circle, dominated by vehicles (Oct. 2008, Source: Mithun)

Assessment of Resources: Organizational Elements and Character- Defining Features

- To which Savidge replied on May 25th, 1928 in a letter addressed to Mr. James Frederick Dawson:
“I thank you for yours of the 19th inst. I agree with you absolutely in the matter of automobile parking around the new Capitol Group after the landscaping is done. I think that all citizens should be willing to cooperate in the matter of keeping automobiles away from prominent portions of the grounds” (Library of Congress).

Findings: Circulation

- The majority of the historically intended circulation for the Campus was implemented during the 1930s and is well maintained, though patched in places.
- Vehicular circulation has encroached upon and gradually dominated the campus
- Privately dedicated vehicular parking dominates the central public realm
- Paths that dead-end into parking areas communicate a message of vehicular importance over pedestrian importance
- Parking shacks and detract from the historic architecture and landscape
- Temporary barricades block access to important spaces and visually intrude
- The west end development and circulation was never implemented
- There is an experiential disparity between the past plans and the present experience in walking through the Campus due to lack of three-dimensional hierarchy of plantings along pathways



Topography

Design Intent

The Olmsted Brothers general plan, planting plan, and grading plans for the Campus included and considered retaining walls, sunken gardens, a north bluff overlook, and relationships of the Campus to the bluff, the forest, and the water. They used topography to connect the campus to the regional landform and ecology, but also to create human-scaled spaces within the larger landscape; this sense of intimacy afforded by the combination of topography and vegetation was especially important within the potentially overwhelming context of the Capitol buildings.

Though the Olmsteds envisioned greater topographic variety throughout the Campus during their initial grading design, the tumultuous construction phase resulted in greater topographic homogeneity.

The West Campus has historically been plagued by drainage problems resulting from a combination of clay soils, hydrologic flow, topography, and climate. The historic correspondence describes drainage problems in the past, and measures were taken to improve drainage around tree pits during the early installation phases.

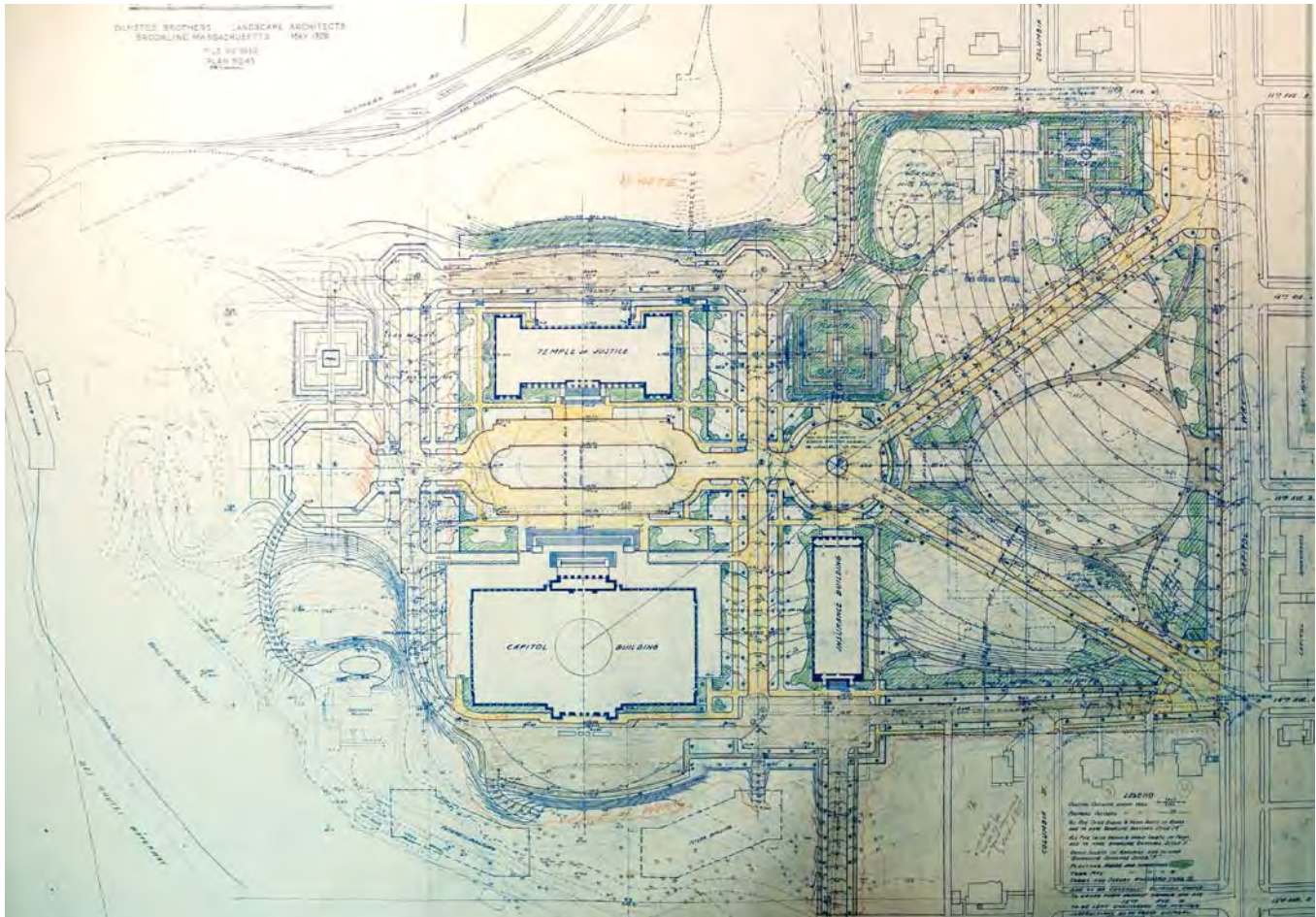


Fig. 5.25 5350_43_pt1 Grading Plan, Olmsted Brothers, 1928 (Source: Frederick Law Olmsted National Historic Site, National Park Service)

Findings: Topography

There are a number of correlations with- and deviations from- the topographic design depicted in the historic plans and correspondence. Over the course of the initial Campus construction in the 1930s, and throughout numerous phases of construction and expansion since then, the Campus topography and hydrology have been altered to support buildings, to accommodate vehicular circulation, to respond to accessibility challenges and opportunities, and to serve a variety of uses. Natural ravines at the west edge and across the greensward-conservatory were filled, and the bluff overlook was expanded and modified, particularly the north bluff and the area south of the O'Brien Building. These topographic modifications have, accordingly, affected hydrologic patterns. The potential challenges and opportunities associated with *fully restoring* the hydrologic patterns of the West Campus is beyond the scope of this planning effort, but a range of strategies and measures to *improve* the ecological function, to preserve the historic character, and to increase the value of the Campus are recommended throughout the subsequent chapters of the document. A full restoration effort would likely include both 'natural' and engineered strategies to achieve a designated and measurable performance goal, and would involve areas 'upstream' and 'downstream' within the watershed, particularly Capitol Lake.

Places of high historic integrity with the period of significance include the macro-pattern of the bluff and forest edge overlooking Budd Inlet and the micro-pattern of the sunken garden. The greensward also evidences a fairly consistent topographic pattern, with a gentle slope appropriate for a wide range of activities. Places where the historic intent is evident, but currently jeopardized or only partially realized include:

- Knoll where the Governor Stevens' House was intended to be located
- Sunken area intended to be within flag circle
- The low retaining walls shown on the historic drawings, particularly surrounding the base of the Temple of Justice, do not exist today.
- The Campus is in critical need of a comprehensive drainage and water conveyance study, coupled with drainage and irrigation improvements.

Site Furnishings

Historic Intent and Findings: Site Furnishings

Historic plans and correspondence describe a palette of walls, balustrades, and light fixtures in keeping with the decorum of the Capitol Group and with the level of detail and quality consistent with other Olmsted-designed State Capitols and the U.S. National Capitol. With the exception of the rustic Sunken Garden walls, the majority of the landscape walls and balustrades were never built. See the Lighting Considerations Chapter of this document for a discussion of the existing light fixtures, lighting conditions, and recommendations.

A variety of different styles of signage and waste receptacles exist throughout the Campus. Numerous signs and markers are associated with memorials or monuments and, in many cases, are an integral part of the design, however, future graphic communication could be standardized to a greater degree to help reinforce the historic identity of the Campus. Standardization of waste and recycle receptacles would increase the effectiveness of waste reduction and recycling efforts and would contribute to the cohesiveness and consistency of the Campus.



Fig. 5.26 Memorial signage (Sept. 2008, Source: Mithun)



Fig. 5.27 Communication signage (Oct. 2008, Source: Mithun)



Fig. 5.28 Bench compatible with historic character (Oct. 2008, Source: Mithun)

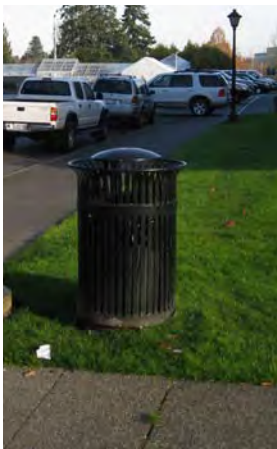


Fig. 5.29 Different styles of waste and recycling receptacles located throughout the West Campus (Sept. - Oct. 2008, Source: Mithun)

Cultural Landscape Preservation

Goal = Rehabilitation

Based upon assessments of the health and integrity of the existing cultural resources, in conjunction with considerations regarding the necessary growth and modern function of the State Capitol, the recommended goal, or treatment, for the campus, as a whole, is **rehabilitation**. Within this approach, carefully considered landscape interventions are allowed where such modifications are compatible with historic resources. (Secretary of the Interior's Standards)

It must be emphasized that cultural landscape preservation differs from building preservation in the sense that landscapes are inherently dynamic. Growth, phasing, and cycles of change must be anticipated, and with vegetation and living systems, encouraged. As the landscape grows and changes, so, too, does our understanding and experience of the landscape.

In addition, the increasing knowledge base of best management practices and environmental science constantly informs and improves the science and art of landscape preservation. Indeed, environmental science and historic preservation must be considered holistically if we are to realize the potential of the landscape in manifesting our existential understanding and evidencing our relationship with the world around us.

Thus, rehabilitation efforts for the Campus over time should involve an adaptive interpretation and management strategy, blending the best available science with the best available historic knowledge, identifying the elements that achieve multiple goals and realize the highest value.

Objectives

- Reinforce the primary importance of people at the center of governance
- Improve the pedestrian experience throughout the West Campus
- Demonstrate a multi-faceted sustainable approach to landscape stewardship, celebrating and preserving cultural resources while protecting natural resources and responsibly investing limited economic resources.
- Establish three-dimensional spatial hierarchy throughout the West Campus
- Restore axis strength and symmetry
- Define gateways and reinforce seams
- Preserve or improve views
- Establish parameters for integrating "Opportunity Sites", including buildings, monuments, and memorials
- Identify priority action items for immediate implementation and phased action items to inform future investments
- Provide a safe and accessible campus

Landscape Preservation Master Plan

The Landscape Preservation Master Plan preserves and honors the characteristics and features of historic design, while accommodating compatible uses, modern functions, and increased ecological performance. The design vocabulary has been principally derived and inspired by the Olmsted Brothers' plans, correspondence, and documentation of the West Campus, while working in concert with Wilder and White in locating and designing the Capitol Group.

Changes to the Campus would be incremental, implemented gradually over the course of the next 50 years, and beginning with the preservation and replenishment of trees.

Primary changes to the existing Campus include:

- The replenishment of aging trees and establishment of new trees
- The reduction of portions of energy-intensive lawn areas, replaced by trees, shrubs and perennial flowers
- Increased diversity of tree types with closer correlation to Olmsted species composition
- More native and drought-tolerant species
- Reduction of water and chemical use
- Incorporation of composting strategies
- Gradual reintroduction of the Olmsted-planned shrub layers.

Throughout this chapter, additional changes to the Campus are described alongside Recommendations and Actions for implementing the Plan over time. Sketches illustrate the look and feel of the proposed Plan.

Fig. 6.1 West Capitol Campus Landscape Preservation Master Plan

The Landscape Master Plan illustrates the overall structure and character for Campus. For more detailed information regarding tree species and tree care, see Ch. 7: Large Tree Layer Plan and Ch. 10: Vegetation Management Plan.



- Key
-  existing tree
 -  proposed tree
 -  shrub layer
 -  eco-lawn
 -  future development



Fig. 6.2 West Capitol Campus Landscape Preservation SHRUB Plan

The Shrub Plan is primarily based upon the arrangement of shrubs, perennials, and ground covers shown in the 1929 Olmsted Brothers Planting Plan.

Additional considerations for the shrub layer include:

- Shrub design specific to significant monuments and memorials throughout the Campus
- Shrub design specific to other historic structures outside the Period of Significance, such as the Pritchard Library.

The next step is to develop a specific planting plan for the shrub layer. The Olmsted plant palette provides a point of departure for most of the West Campus.

Additional suggested criteria for a detailed planting plan include:

- Maintain safety & visibility (See Fig. 6.17, 6.18)
- Incorporate native plants
- Reduce maintenance requirements
- Reduce water use
- Reduce chemical and fertilizer use
- Improve seasonal interest
- Consider additional shrub areas (in place of lawn) surrounding the O'Brien Building, the Cherberg Building, the Newhouse Building, and the press buildings.
- Consult "Legislative Building South Plaza and Sundial Area" HABS (Artifacts) and 1959 Otto E. Holmdahl planting plan for the Pritchard Library.

Key

-  shrub layer
-  native forest
-  eco-lawn
-  future development

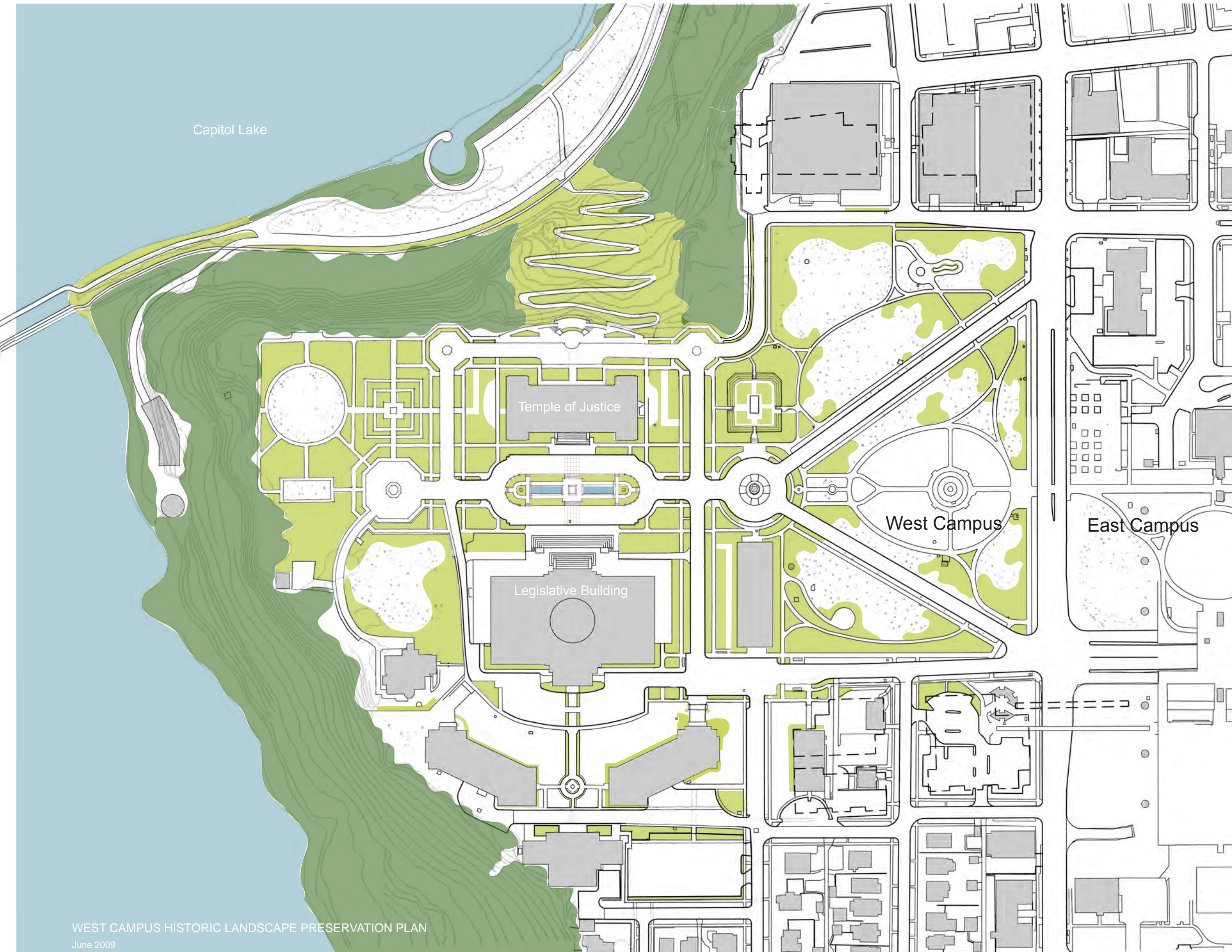


Fig. 6.3 West Campus Phasing and Focus Areas

This plan highlights many of the opportunities for **incremental implementation** and **capital projects** which are further described throughout the chapter. The incremental opportunities are primarily vegetation-based and achievable through donations, operational re-allocations, and smaller capital investments - primarily with existing in-house expertise and labor, enlisting external consultation as needed. The capital project opportunities would entail additional, detailed analysis of amassed historic documentation, further design and review, public outreach, bidding, and construction, and would involve significant external consultation.





Incremental implementation - layered vegetation
(See also Ch. 9: Cost Analysis)

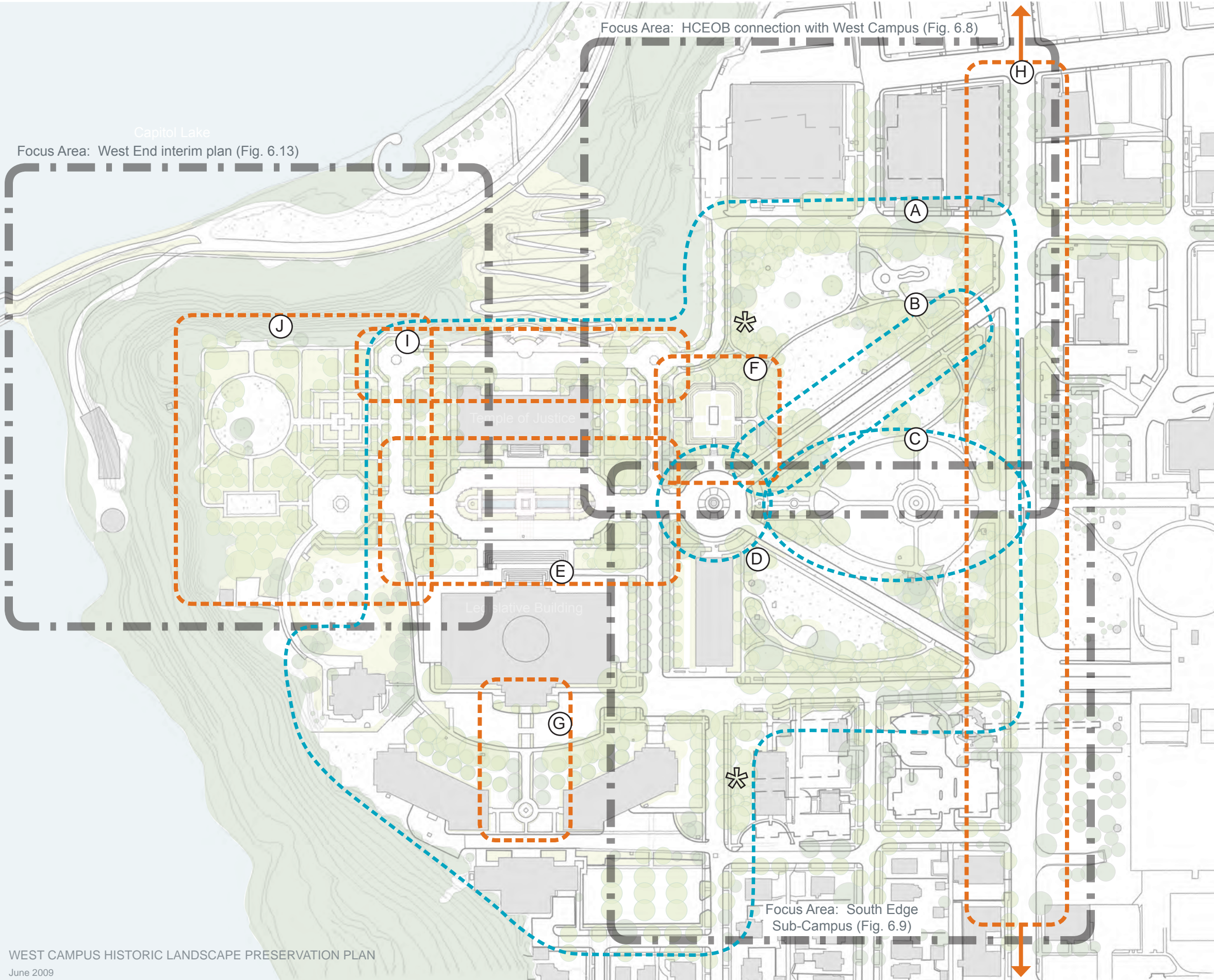
- (A) Numerous opportunities for groves, specimens, planting areas, and operational adjustments
- (B) North Diagonal 'structural' trees
- (C) Greensward oval 'structural' trees
- (D) Winged Victory 'structural' trees

Capital projects (See also Ch. 9: Cost Analysis)

- (E) Flag Circle / Central Plaza (See p.90-91)
- (F) Sunken Garden (See p. 93)
- (G) South of Legislative Building - primarily plantings (See p. 90)
- (H) Capitol Way and Campus entrances (p. 94-95)
- (I) North overlook nodes and canopy trees
- (J) West End (See p. 96-99)

Key

-  Capital project
-  Incremental implementation opportunity
-  Focus Area study
-  Potential eco-lawn testing area with interpretive signage



Actions and Recommendations (see also the Character-defining Features Matrix, Figs. 5.5a - 5.5b)

This chapter and subsequent chapters of the document provide many important recommendations and actions, but the most significant progress toward overall preservation can be achieved through rehabilitating the **layers of vegetation** throughout the Campus. Reasons for emphasizing this aspect include:

- *Culturally*, this aspect of the Landscape Master Plan holds the greatest potential for realizing the Olmsted Brothers vision.
- *Economically*, this aspect holds the greatest opportunity to realize operational cost savings and long-term cost benefits. (See Chapter 9: Cost Analysis)
- *Environmentally*, this aspect provides the greatest opportunity to demonstrate the wise use of resources, reducing water consumption and overall resource inputs to maintain, while increasing habitat value and improving soil health.
- *Experientially and visually*, layers of trees and shrubs would contribute significantly toward realizing the historically intended sequence of progression and movement through the landscape, while providing an appropriately scaled foreground to the grandeur of the Capitol Group.

Though the Vision for the West Campus is intended to be implemented over the course of many years, in tandem with adjacent developments, incrementally as opportunities arise, or systematically as preventive care, priority action items have been identified in order to strategically enlist existing resources and to help position the State to advantageously allocate additional investments during the eventual economic upswing. **Priority action items have been demarcated in boldface type.**

Trees, Vegetation, Soil, and Drainage

- **Implement a Tree Management and Monitoring Program:** Maintain trees for safety of people and property, through regular monitoring, tree care, and timely risk abatement pruning and removals.
- **Conduct grounds training regarding the Vegetation Management Plan**
- **Conduct a comprehensive Campus-wide hydrologic study including drainage, stormwater runoff, and irrigation**
- **Provide replenishment generations of trees through continuous, strategic replanting.**
- **Invest in soil health, fertility, and drainage to improve growing conditions for all plants, from trees to lawn.**
- **Selectively prune and remove vegetation to preserve and reopen key internal and external vistas defined by the Olmsted plan.**
- **Reclaim vegetation layers lost to cumulative shrub overgrowth and denuding of low understory, through targeted pruning, plant removal, and replanting.**
- **Continue to educate and engage the public regarding plans, testing, and changes to the Campus, particularly tree-related alterations.** (see public engagement recommendations)

- **Begin incremental installation of original Olmsted planting plan, interpreting and substituting resource intensive species with historically compatible native species**
 - * **Reduce long-term landscape upkeep by replacing invasive and high-maintenance species with durable plants consistent in character with the original Olmsted plant palette.**
 - * **Begin the replacement of resource-intensive lawn with more ecologically sound lawn and historically compatible species through the implementation of a testing area for eco-lawn seed mixes accompanied by interpretive signage.** Potential areas for demonstration/testing are shown on Fig. 6.3, but other locations that might be appropriate include East Campus, Heritage Park, or other State-owned public green spaces.
 - * Plant street trees
 - * Plant gateway trees along each of the primary entrance axes
 - * Plant balanced foreground trees, or 'structural' trees, within the greensward
 - * Restore native vegetation edges to the campus
 - * Plant 'structural' trees within the central core of the Campus, the formal landscape, as designated by the Large Tree Layer plan
 - * Frame and define the edges of the existing greensward with the intended layering of shrubs and trees.
- Develop a shrub layer plan to be implemented over time in conjunction with the Large Tree Layer Plan, including base/foundation plantings surrounding the buildings. Spacing and layout criteria for base plantings are included in the 2001 Regeneration Study (Susan Black & Artifacts Consulting, Inc.).

Public Engagement

- **Continue to build public support and promote implementation of the Landscape Master Plan through public engagement and participation.** Recommendations and Actions included within this document are intended to be informed and adapted according to public participation, the best available science and research, and resource availability.
- Establish a donation/endowment program for trees, groves, and vegetated areas. See initial criteria for donations and endowments included in Chapter 9: Cost Analysis.
- Continue to build a database of interested citizens and groups for web-based communications and distribution lists.
- Recommend a graphic standards study to inform the establishment and implementation of consistent signage and graphic communications throughout the Campus. Consider the possibility of enlisting brown-background signage throughout the Historic District, including street signs.

Fig. 6.4 Future View of North Diagonal Approach



Fig. 6.4a Future View of North Diagonal Approach to Capitol (Source: Susan Olmsted, 2009)



Fig. 6.4b Key Map indicating view location

This sketch shows the historic rhythm of trees which structured the North Diagonal approach, offering framed views of the Dome and creating a variable sequence of openness and enclosure. The additional canopy trees, understory trees, and shrubs would help delineate the edges of the landscape 'rooms' within the greensward.

Fig. 6.5 Future View of Greensward



Fig. 6.5b Key Map indicating view location



Fig. 6.5a Future View of Greensward [and Tivoli Fountain] (Source: Susan Olmsted, 2009)

This sketch shows the central oval in the greensward area with the historically-intended layers of vegetation. A balanced arrangement of Elm Trees lead the eye to the central core of the Capitol Group along the major east/west organizational axis (this directionality is reinforced by the 1953 replica of the Tivoli Fountain), though the circulation pattern invites the pedestrian to meander through the other landscape ‘rooms’ within the greensward. Layers of ground covers, low shrubs, understory trees, and canopy trees define the edges, without compromising the wide range of activities that occur within this important open space.

(Public Engagement, cont.)

- Install interpretive signage to highlight restoration efforts and demonstration/testing areas. (see example on Fig. 6.6)
- Clearly communicate any necessary tree removals to the public in advance of the work through on-site signage, internet communications, and distribution lists. Signage and communications should describe the condition of the tree, the reasons for its removal, replenishment and/or mitigation measures that reinforce the Landscape Master Plan and add value to the Campus, and opportunities for public comment.
- Recommend the standardization of waste and recycling receptacles and other infrastructural elements/facilities throughout the Campus to improve public communications and promote sustainable action and participation. Infrastructural elements and facilities must be compatible with the historic character of the Campus.

Utilities and Infrastructure

- Develop a utility Master Plan, as resources become available, to determine existing conditions, to establish priorities for upgrades, to institute standards, to guide siting, and to evaluate and minimize potential cultural resource and natural resource impacts, visual impacts, and experiential impacts associated with utility work and infrastructure.



Fig. 6.6 Restoration efforts at Central Park (designed by Frederick Law Olmsted and Calvert Vaux, 1857) accompanied by interpretive signage. Signage shows the contrast between 'before' and 'after'. (April 2008, Source: Eliza Davidson)

The largest parking and vehicular circulation area is located adjacent to the most ecologically sensitive portion of the Campus

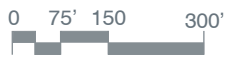
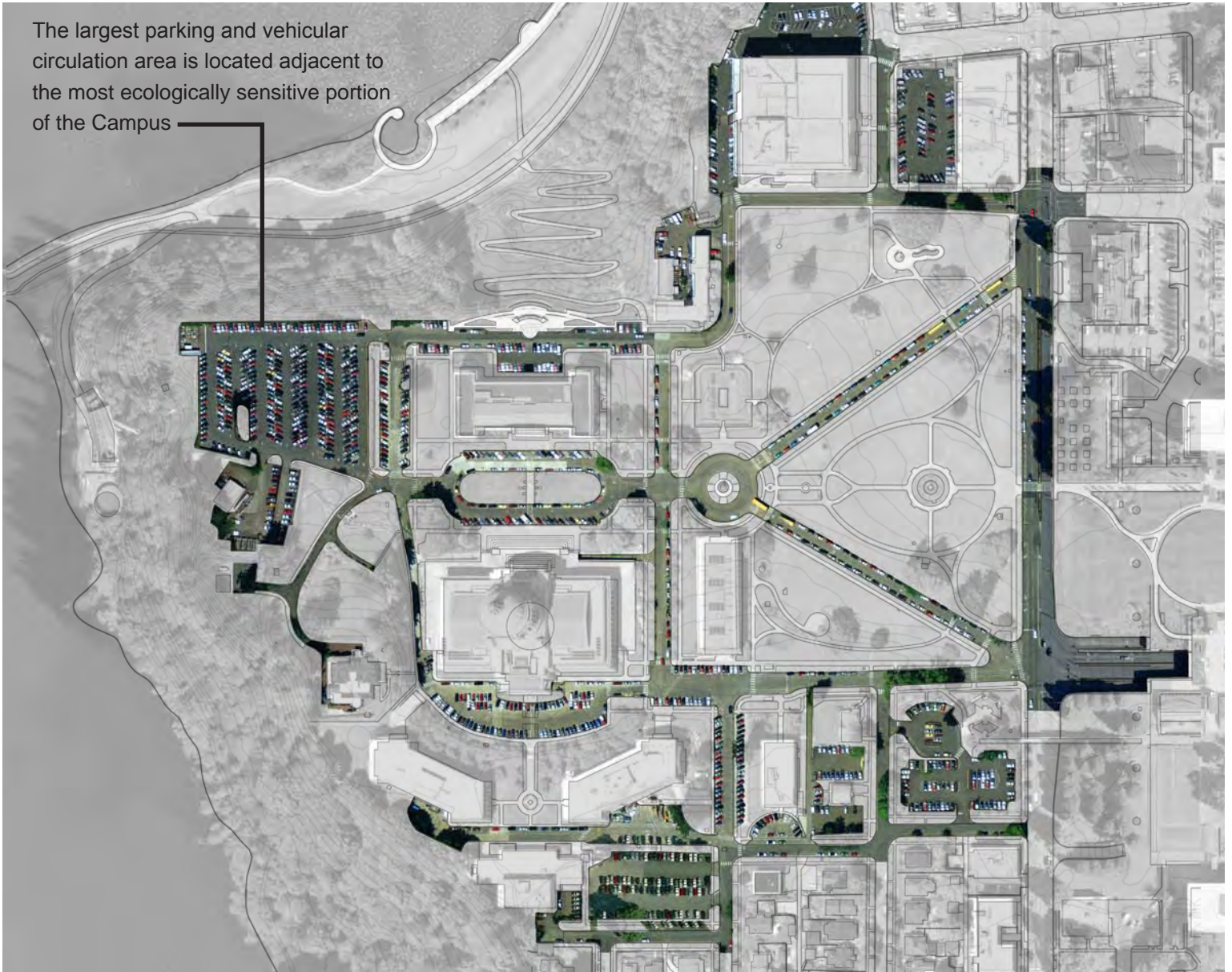


Fig. 6.7a Existing Campus aerial with parking and vehicular circulation areas highlighted to reveal the extent of impact

Circulation and Parking

- **Begin relocation of parking from primary civic gathering spaces to nearby garages or lots: As opportunity sites or nearby sites/buildings are developed, build-in additional parking capacity to accommodate the relocated parking from within the historic West Campus core.** (See also the Parking Demand Study, GA, 2008.) Do *not* reduce on-Campus parking without adequate study, planning, and accommodation for vehicles and commute-trip reduction strategies, including improved infrastructure for bikes and pedestrians. The goal is to reduce, and eventually eliminate, the majority of dedicated surface parking, so that this valuable landscape may be enlisted toward higher use. The caution is to avoid inadvertently displacing the impact of vehicular parking to adjacent areas, such as the South Capitol Neighborhood Historic District.

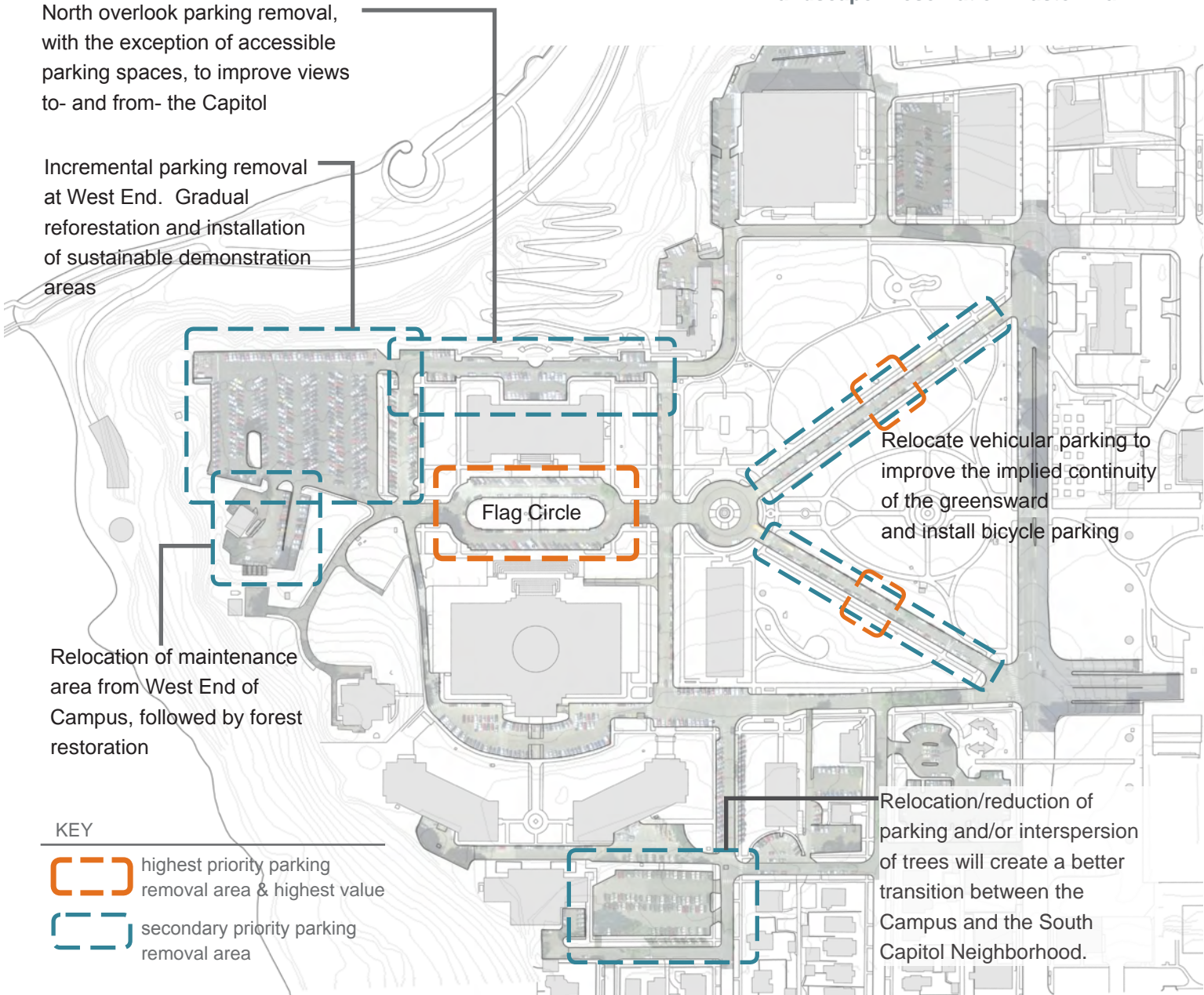


Fig. 6.7b Priority areas for phased parking removal (relocate as opportunities arise)

- Consider the complete removal of surface parking, parking shacks, and parking-related temporary barricades from the West Campus, following the example of the U.S. National Capitol, to improve security and safety while protecting historic resources and enhancing pedestrian experience.
- **Increase the promotion of commute-trip reduction strategies**
- **Identify convenient bicycle parking areas**
- Re-connect pathways that have been interrupted by surface parking
- Restore vistas, features, and focal points that have been encroached upon by surface parking

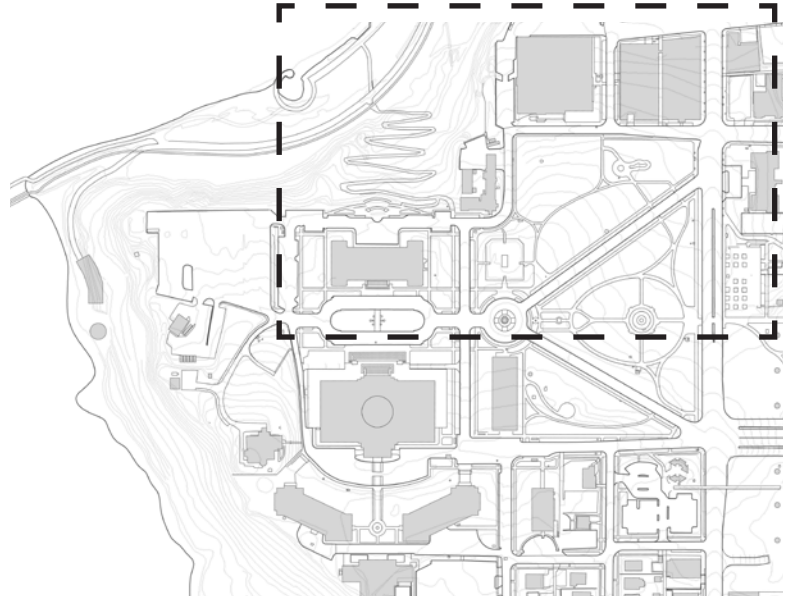


Fig. 6.8a Key map of Campus with focus area delineated

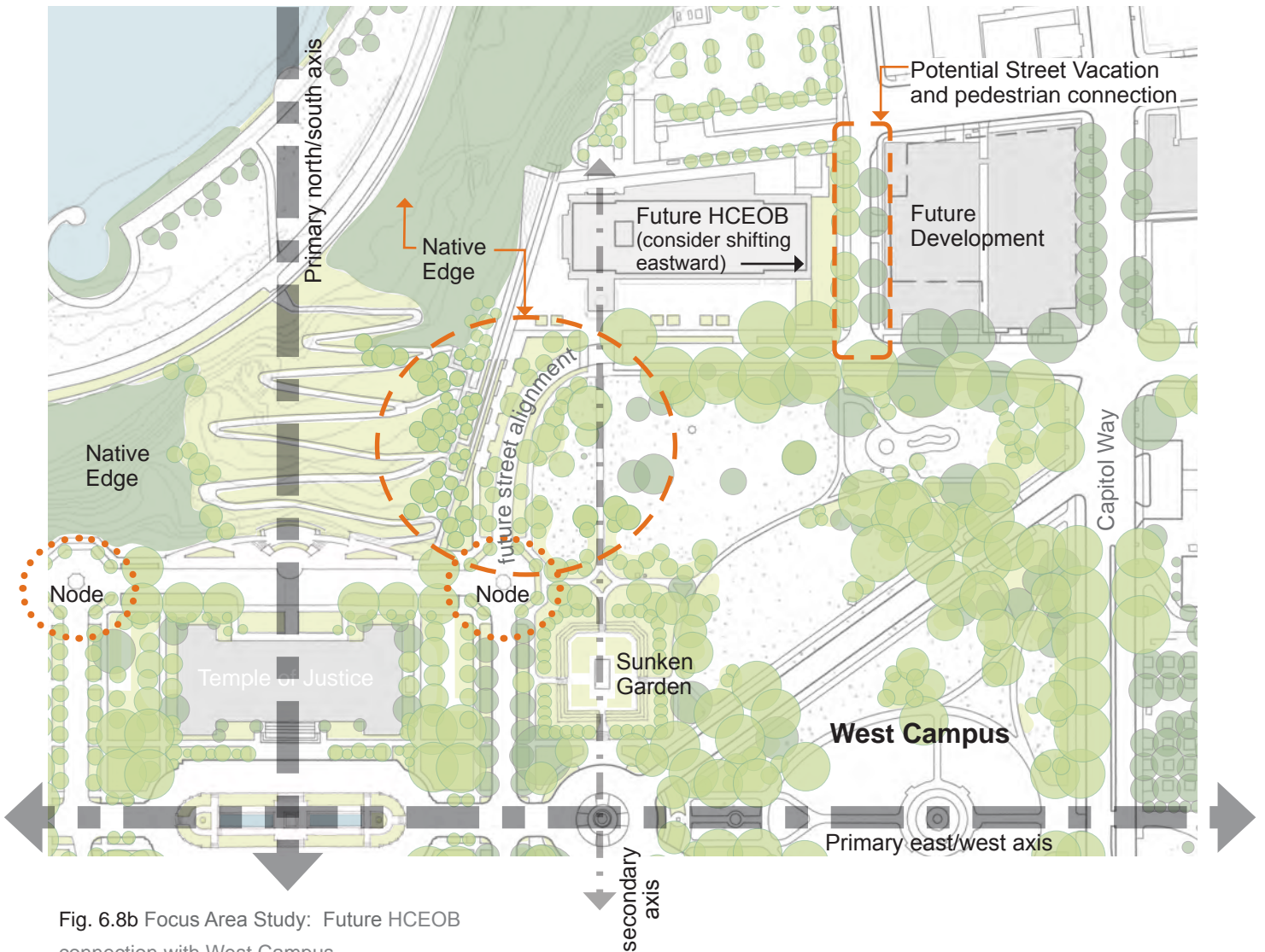


Fig. 6.8b Focus Area Study: Future HCEOB connection with West Campus

Development Recommendations

Recommendations for Campus Edges and Opportunity Sites

North Slope, Capitol Lake, and Heritage Park

- Continue restoration efforts for the slope and the native edge (see VMP)
- Protect views and connections between adjacent open and green spaces
- Design and implement north edge 'nodes'

Heritage Center and Executive Office Building (HCEOB)

- Views of the HCEOB should be subordinate to views of the Dome and the Capitol Group from the surrounding landscape. Recommend further consideration of the potential impacts of the new development upon views of the Capitol. Forest/bluff restoration may not be enough to minimize the visual impact of the new development.
- The potential vacation at Columbia Street, the adjacent future development site, and future re-evaluation of this project (postponed due to the economic downturn) provide the opportunity to reconsider moving the building eastward, reducing the need for additional retaining walls along the bluff. (See also Figs. 5.19, 5.20) Moving the development eastward could also improve the symmetrical relationship for the West Campus *about the east/west axis* with the South Edge Sub-Campus Development. (See pages 88-89 for the South Edge Sub-Campus study.)
- If the HCEOB cannot shift eastward, then the location of the primary entrance to HCEOB along the north/south axis of the Sunken Garden, shown in Fig. 6.8b, is a secondary, compatible alternative.
- The HCEOB and its associated terraces should reinforce the organizational axes and structure of the West Campus. The angle and direction of the terraces should be re-evaluated for potential conflict with the intended balance and symmetry of the major north/south organizational axis of the West Campus.
- HCEOB Landscape Design Criteria developed by Site Workshop (Appendix) can serve as an example of appropriate considerations for plant species selection along the Greensward edge and the bluff/slope edge of the West Campus.

South Edge Sub-Campus

- Development of the South Edge must reinforce the organization of the West Campus, as a whole. Future reinvestigation of the South Edge Sub-Campus plan should include a thorough review of the 2009 Landscape Preservation Master Plan and explicitly and equally emphasize the preservation of the architecture of the Capitol Group and the Campus landscape within which the Group resides.
- Any organizational axes introduced by new development must be subordinate to- or reinforcing of- the organizational axes of the West Campus. The arrangement, intersection, and transition of the proposed pedestrian connection (shown in Fig. 6.9b)) through the S. Edge to the West Campus Greensward along a vacated Columbia Street provides opportunity to knit the Campus with the South Capitol Neighborhood and warrants careful study.
- Recommend enlisting the Olmsted planting palette as a starting point for future plant species selections and substitutions, with additional species selection criteria based upon compatibility with the Sustainable Sites Initiative.
- The South Diagonal entrance to the West Campus is currently disorienting, confusing, and unwelcoming. Recommend further study and design of this important threshold.
- Plaza proposed in South Edge Sub-Campus Plan to be compatible with the historic character of the Campus and the Capitol Group.
- Recommend setbacks and massing of new development to reinforce key views of the Campus and the Capitol Group and to minimize the scale disparity between the South Edge and the South Capitol Neighborhood.
- Landscaping - particularly yards, gardens, and trees - is a character-defining feature of the South Capitol Neighborhood Historic District, thus important to respond to. Recommend a planted buffer zone along the residential boundary of the South Edge Sub-Campus development to help reduce the visual impact of the development upon residents and to provide a soft transition.
- Recommend extension of street trees throughout the South Capitol Neighborhood as depicted by the 1928 Olmsted Brothers General Plan.
- Recommend softening the Pritchard parking lot/area with trees to reduce the heat island effect, to improve pedestrian experience, to reduce the visual impact of vehicles, and to provide a more sensitive transition to the South Capitol Neighborhood.

East Campus Connection

- Continue to improve the east/west pedestrian connection across Capitol Way.
- Establish a rhythm of street canopy trees along Capitol Way, with an interval of absence at the East/West crossing, to heighten the sense of connection and improve the experience in moving between the two Campuses. (see also Capitol Way recommendations, p. 90.)

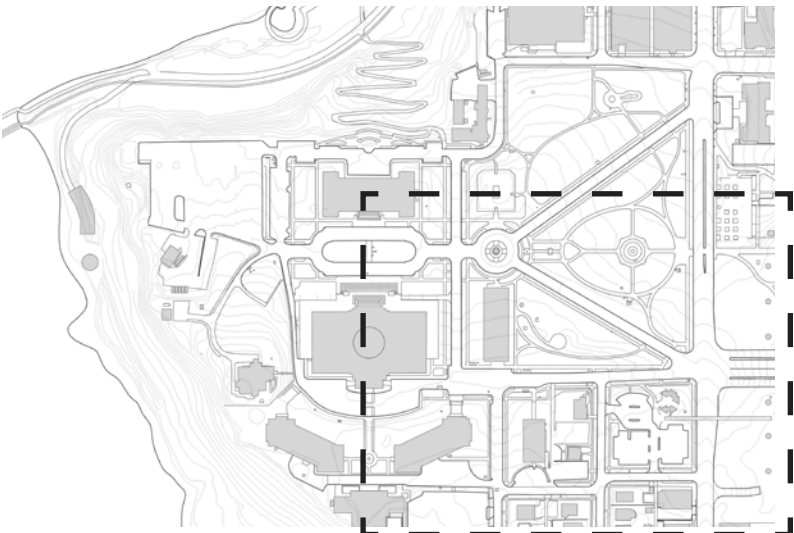


Fig. 6.9a Key map of Campus with focus area delineated

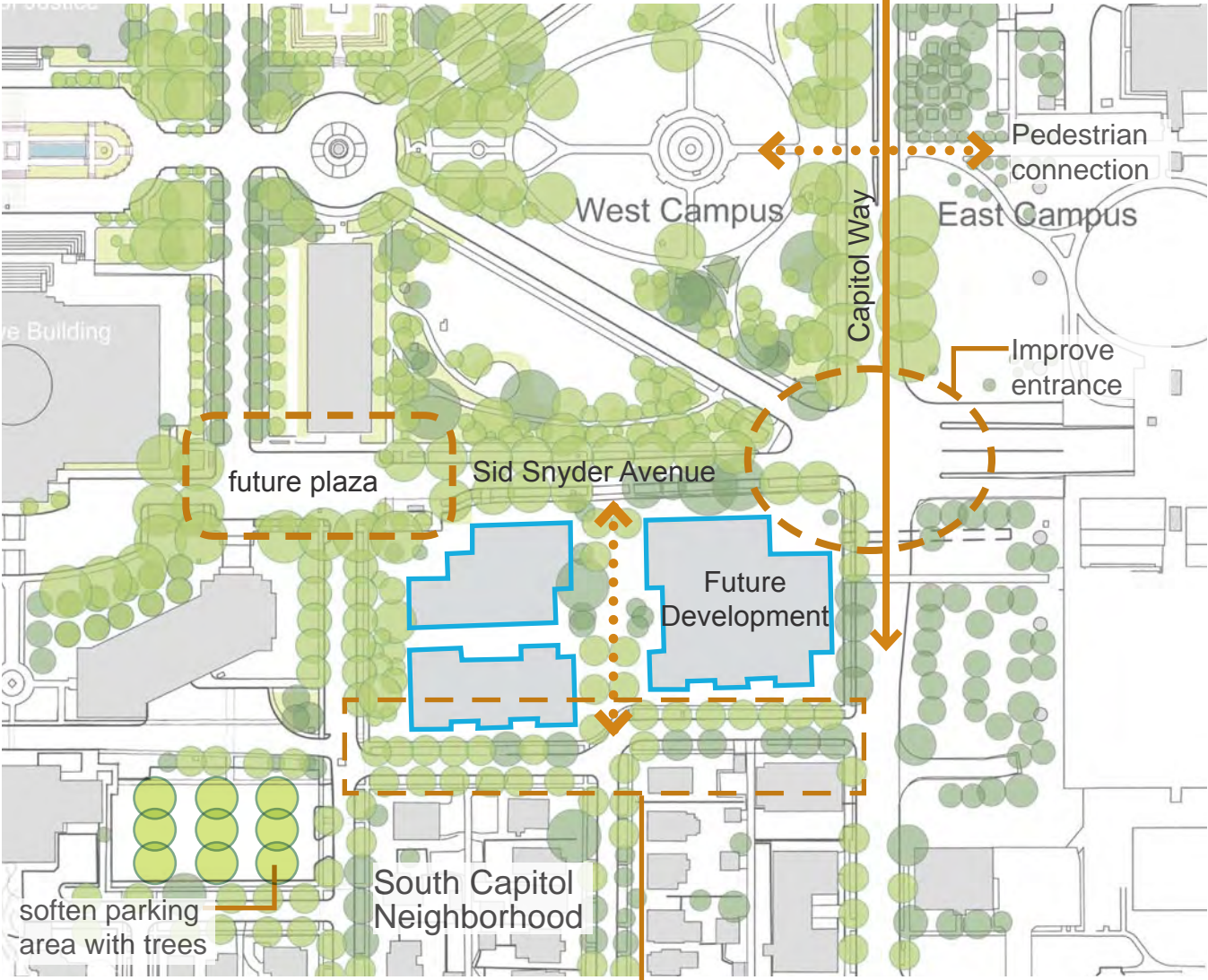


Fig. 6.9b Focus Area Study: South Edge Sub-Campus and East/West connection across Capitol Way

landscape buffer and street trees

Capitol Way and Sylvester Park

- Recommend installation of large canopy street trees extending north and south from the Capitol along Capitol Way, particularly between the Capitol and Sylvester Park, to grandly and clearly connect the two historic landscapes.
- Recommend the exception of a street tree along Capitol Way at the major east/west organizational axis to the Campus as it crosses Capitol Way between East and West Campus.
- Recommend further improvements for bicyclists and pedestrians along both sides of Capitol Way, including the removal of parallel parking along Capitol Way, to accommodate a dedicated bike lane.

Recommendations and Guidelines for Capital Projects

Flag Circle / Central Plaza

- The Flag Circle is iconic center of our State governance, providing a public forum for the exchange of ideas within a democratic society. It is currently dominated by privately-dedicated vehicular parking, communicating a message of exclusivity, rather than democracy, and reinforcing a pattern of environmental degradation, rather than restoration, interpretation, or education. There is no hospitable, comfortable, human-scaled space in the midst of this important civic plaza.
- Recommend a comprehensive rehabilitation of this area to realize the historic intent of placing people at the center of governance and to provide interpretive and educational opportunities about Washington's cultural heritage, natural resources, and societal values.
- Recommend future removal of all vehicular parking in this area, especially privately-dedicated vehicular parking. An interim measure might include a shared-use approach, temporary demonstration areas, and additional temporary closures to vehicles.
- Recommend near-term pedestrian improvements along the north/south axis connecting the Legislative Building and the Temple of Justice. Improvements might include the relocation of privately-dedicated vehicular parking and the installation of vegetation, seating, lighting, water elements, and specialty paving as a demonstration or testing area for future possibilities.
- None of the temporary measures proposed should be considered adequate, but merely incremental stepping stones along a path to full rehabilitation.

South of Legislative Building

- Replace some of the flowering annuals along the accessible connection between the Sundial area and the Legislative Building with flowering perennials to increase the season(s) of interest and to reduce maintenance and yearly expenditure.
- Also consider planting low shrubs, groundcovers, and perennials to help soften, or obscure the recently constructed retaining walls.
- See Ch. 11: Lighting Considerations for recommendations regarding the light bollards in this area. (p. 309 and 315)

Fig. 6.10 Future View of Flag Circle / Civic Plaza with Sunken Garden and Water Feature

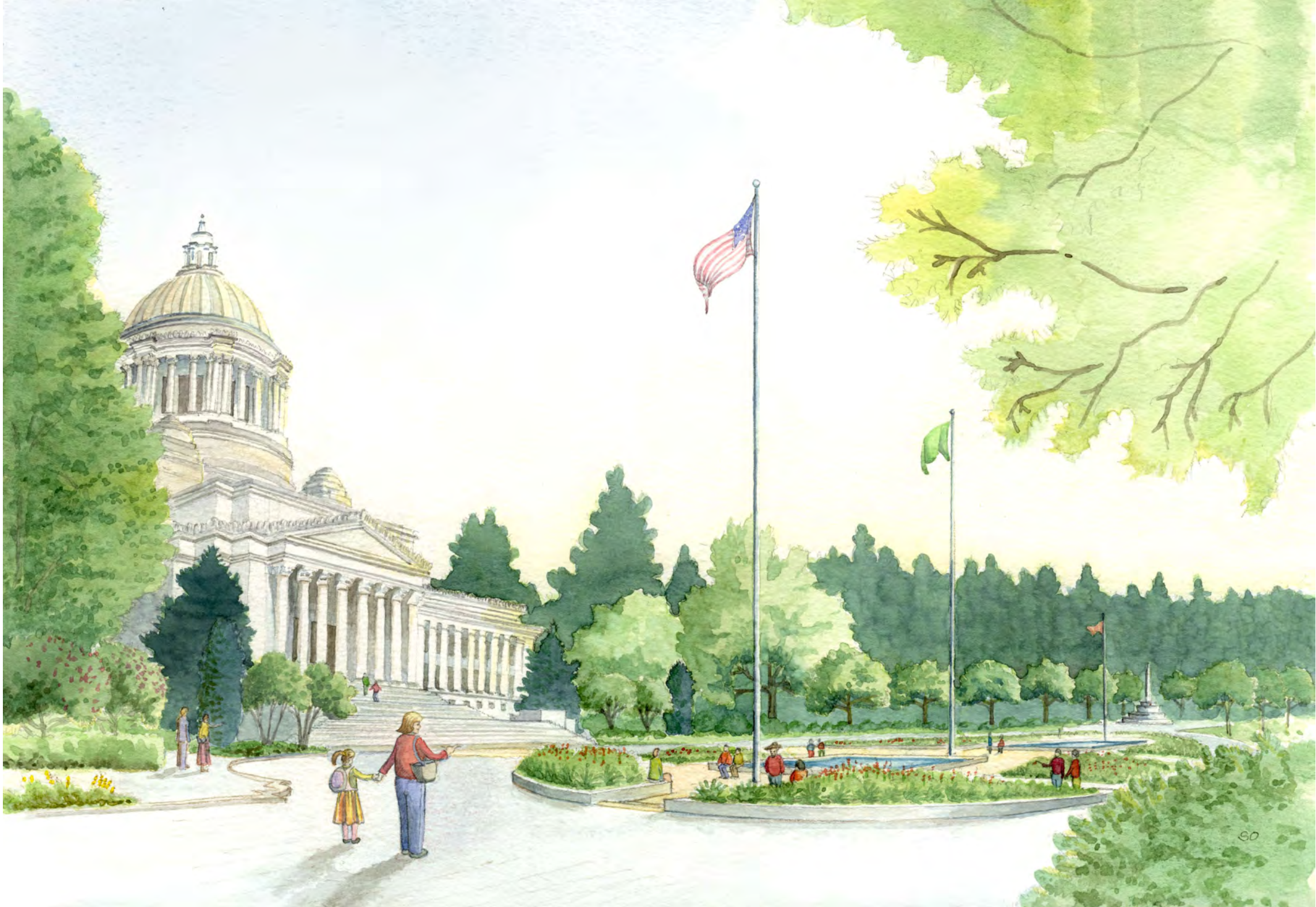


Fig. 6.10a Future View of Flag Circle / Civic Plaza with Sunken Garden and Water Feature (Source: Susan Olmsted, 2009)

This sketch shows some of the features and ideas described by the Olmsted Brothers for the civic plaza between the Legislative Building and the Temple of Justice: sunken gardens, flags, reflecting pools, and formal arrangements of trees, shrubs, and flowering perennials. The intended structure/enclosure of the garden (described by the Olmsteds as “low architectural balustrade”) would improve the connection between the architecture with the landscape. A counterpoint to the Winged Victory Monument to the east (behind) is shown at the west end of the space, with a backdrop of restored native forest. This space is currently dominated by individually-dedicated vehicular parking and a central ‘temporary’ lawn. As the landscape equivalent of the Legislative Building Dome, the culmination of the Campus arrival experience, and the central stage of democracy, this space holds tremendous potential for elevating the human spirit and celebrating the State of Washington.

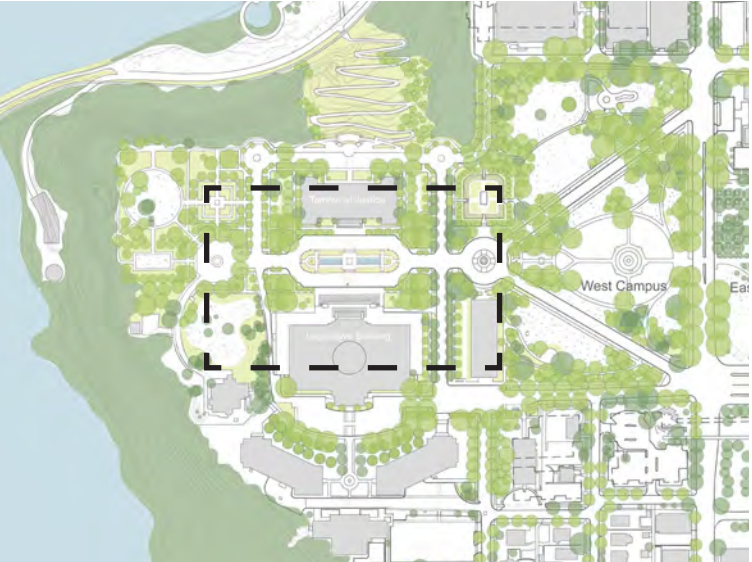


Fig. 6.10b Key Map indicating plan enlargement, below

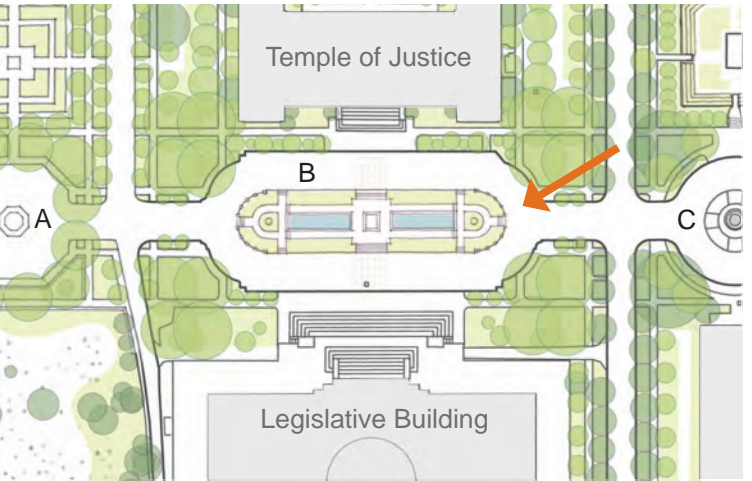


Fig. 6.10c Flag Circle plan with view indicated (not to scale)

- Key
- A. New monument opportunity
 - B. Flag Circle / Central Plaza
 - C. Winged Victory Monument

Sunken Garden

- Recommend comprehensive restoration of this primary historic feature, including planting beds, hedges, shrubs, walls, paths, and edges.
- Rehabilitate the landscape surrounding the Sunken Garden to reinforce the intended borders, gateways, views, and enclosure.
- Restoration efforts would entail additional specific research and documentation to inform detailed design and decision-making.
- Consider replacing some of the flowering annuals with flowering perennials for multi-seasonal interest and maintenance reduction.
- Restoration could invite larger public involvement, participation, and endowment, and could also provide additional leadership opportunities for grounds staff.

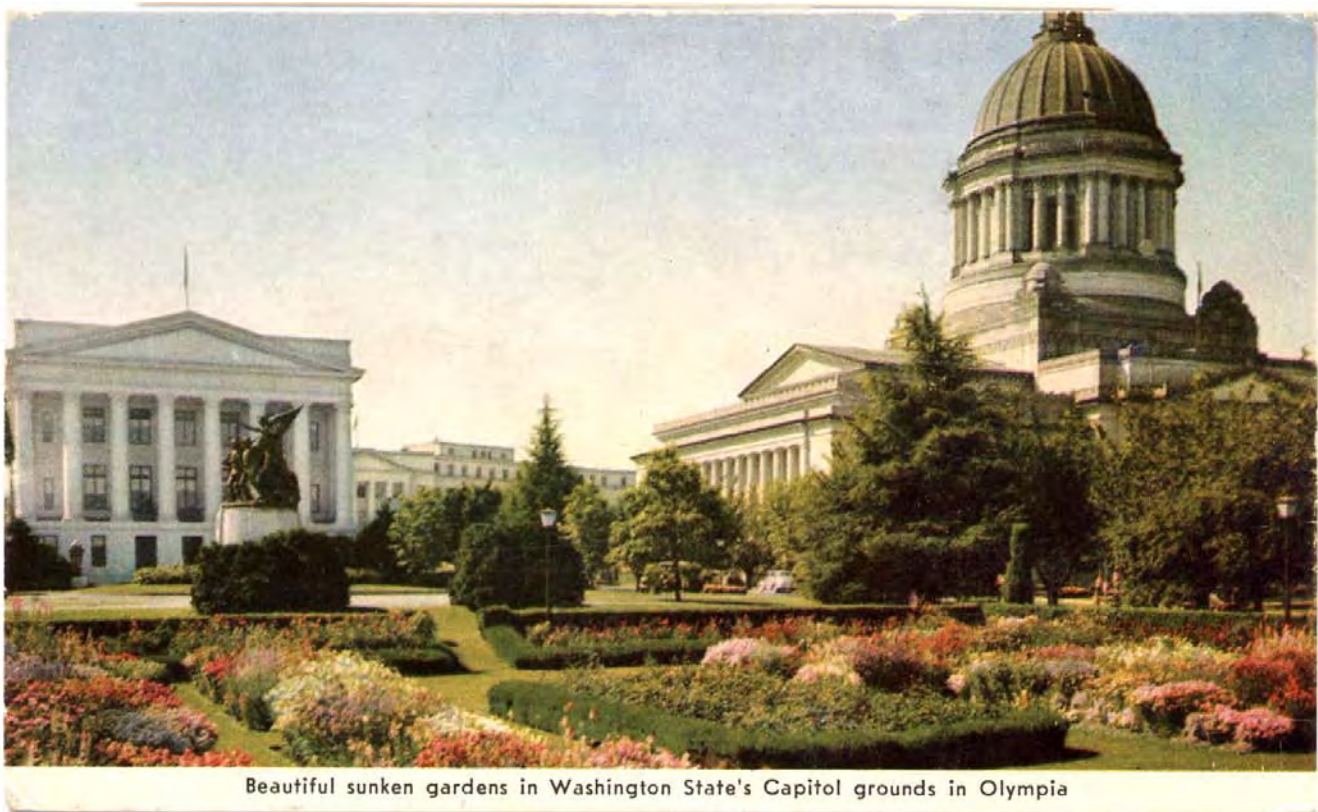


Fig. 6.11 Historic postcard of Sunken Garden. The front caption reads, “Beautiful sunken gardens in Washington State’s Capitol grounds in Olympia.” The reverse caption reads: “This card is furnished by the Washington State Advertising Commission for the convenience of men and women in the Armed Forces. Write to the Washington State Advertising Commission, 422 Transportation Building, Olympia, for any information about the beautiful State of Washington.” (postcard postmarked 1951, Source: Arbes/Knight Postcard Collection)



Fig. 6.12a Key Map indicating view locations for sketches, below



Fig. 6.12b Future North Diagonal approach to the Capitol with landscape rehabilitation: The low balustrade/gateway, the layering of trees and shrubs, and a series of outdoor 'rooms', compel visitors through the landscape. (Source: Susan Olmsted, 2009)

Campus Entrances

- Recommend further study, design, and improvements for all Campus entrances, points of arrival, and gateways.
- Entrance improvements should include infrastructure - particularly pedestrian and bicycle improvements such as sidewalks, crossings, bike lanes – vegetation, signage, and lighting.
- Recommend design and installation of historically intended gateways (low balustrades) at North Diagonal and South Diagonal entrance nodes. See Figs. 6.5b and 6.5c.
- Additional gateway trees and street trees throughout Campus would help to realize the historic intent, improve the connections between the Campus and the surrounding community, reduce the heat island effect, and offer a more pleasurable pedestrian experience.



Fig. 6.12c Future approach to the Capitol along Sid Snyder Avenue with landscape rehabilitation: The framed view of the Dome, the layered vegetation, and the low balustrade entrance gateway help to extend/connect the Capitol with the landscape and the community. (Source: Susan Olmsted, 2009)

Landscape Preservation Master Plan

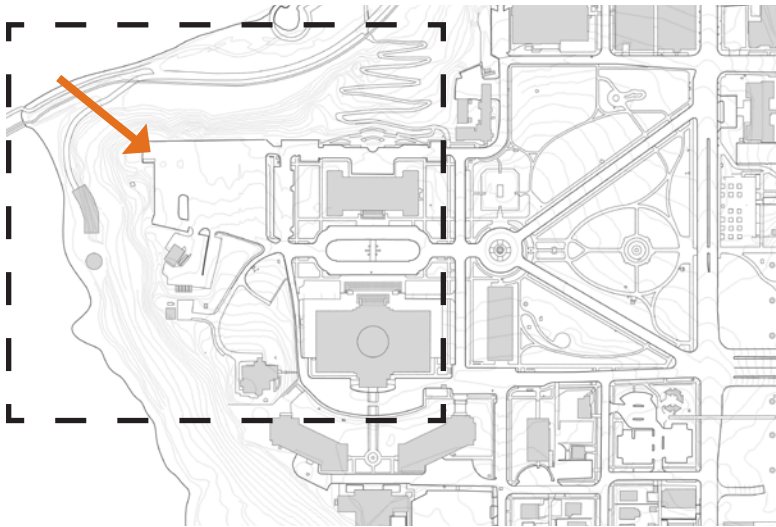


Fig. 6.13a Key map of Campus with focus area delineated. Arrow indicates view location for Figs. 6.13c and 6.15

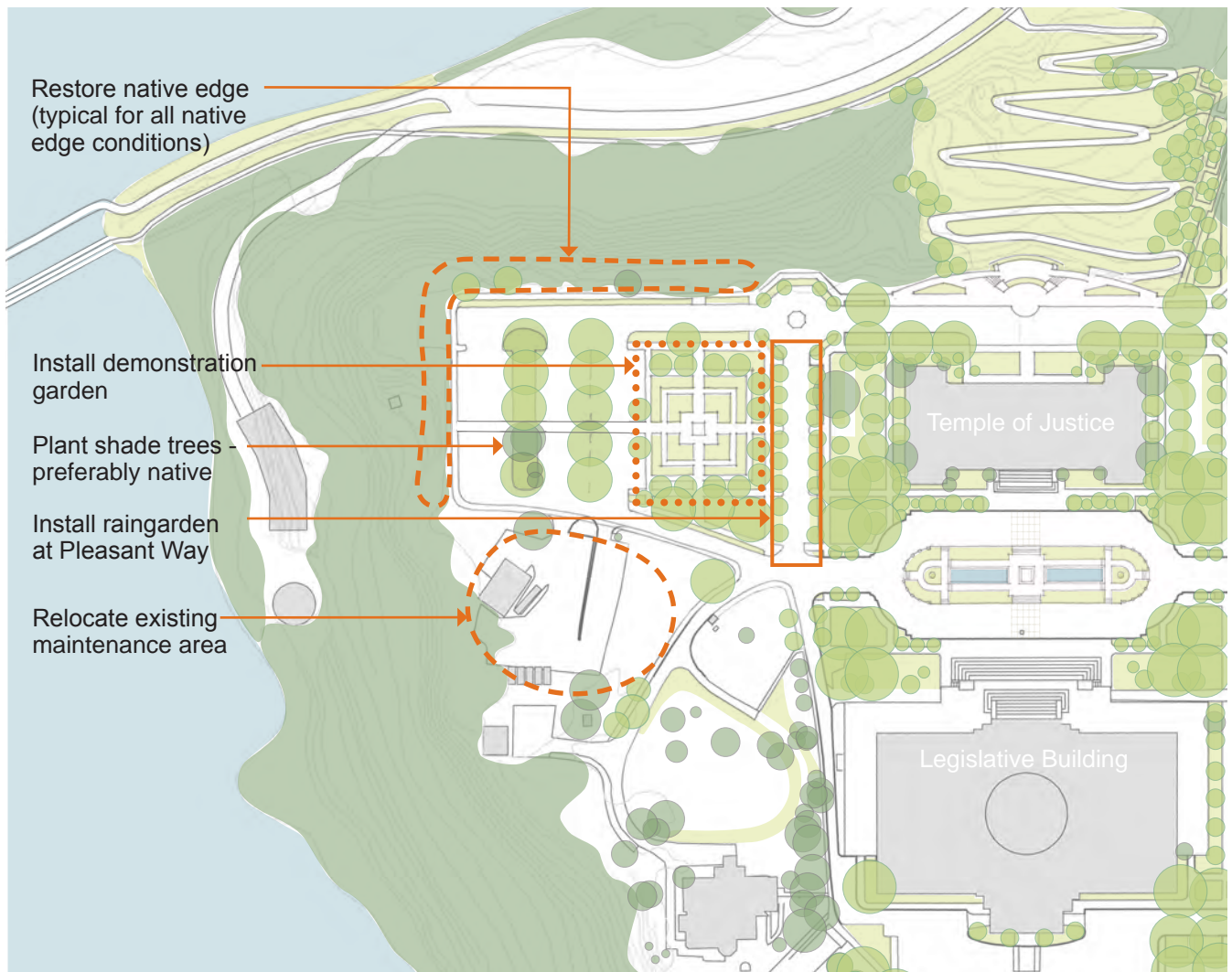


Fig. 6.13b Focus Area Study: West End interim plan



Fig. 6.13c View of existing West End parking area, the 'Mansion Lot'. (Nov 2008, Source: Mithun) See sketch of future view, Fig. 6.15

West End

- The West End of Campus is a place of rare beauty and environmental sensitivity that has been encroached upon, and arguably destroyed, by vehicular parking, equipment staging, maintenance operations, and glaring lighting. This end of the bluff is still surrounded by a native forest edge of varying integrity and still contains some of the most inspiring views of mountains and water in the State. However, it is predominantly a parking and staging area consisting of expansive asphalt that interrupts the hydrologic cycle, traps solar heat (thus increasing the greenhouse effect), and provides a demoralizing foreground to the Capitol Group.
- The Master Plan proposes a gradual implementation plan for West End, beginning with the restoration and monitoring of the native edge.
- Gradually relocate 'temporary' parking as opportunities arise (see parking relocation section) and re-establish the native forest edge. Begin by selectively planting native canopy trees to help reduce the heat island effect, and by enlisting raingardens or other stormwater strategies to help reduce runoff and improve recharge in this environmentally sensitive location. Fig. 6.13b
- Recommend near-future relocation of maintenance area to a less sensitive- and more central and convenient- location for servicing the Capitol Campus parks and open spaces, as a whole.
- The eventual transformation of this portion of the Campus could include a series of formal and informal gardens, monuments, memorials, pathways, open spaces, and viewpoints linked together by an organizational structure that reinforces the organization of the West Campus, as a whole. (See Fig. 6.15; see also Figs. 5.21, 5.22, 5.23.)
- Formal arrangements of native plants could be used as a transitional element approaching the Capitol Group from the west.
- This end of Campus could include rentable areas that could help generate the revenue needed for ongoing maintenance. See also the monuments and memorials section, p. 98.

Memorials

- A range of opportunities exist for monuments and memorials throughout the West Campus, from in-grade signage, to significant features and gardens, to viewpoints and groves.
- New monuments and memorials provide the opportunity and funding mechanism to implement significant portions of the historic plans for the West Campus, when such monuments (and their interpretation) are deemed compatible with the larger Campus.
- Monuments and memorials are generally of two different types: ① monuments that are more formal or heroic in character, more architectural or signage-based; ② monuments that are more landscape-based and need to be subordinated to the larger character of the landscape, as a whole.
- All new monuments must be evaluated for compatibility with historic resources using the Secretary of the Interior’s Standards.
- “Rules” about Campus monuments currently exist and must be consulted prior to consideration or design of new monuments. (Commemorative and Art Works on State Capitol Grounds)
- Implementation of monuments and memorials must be accompanied by resources for ongoing care.

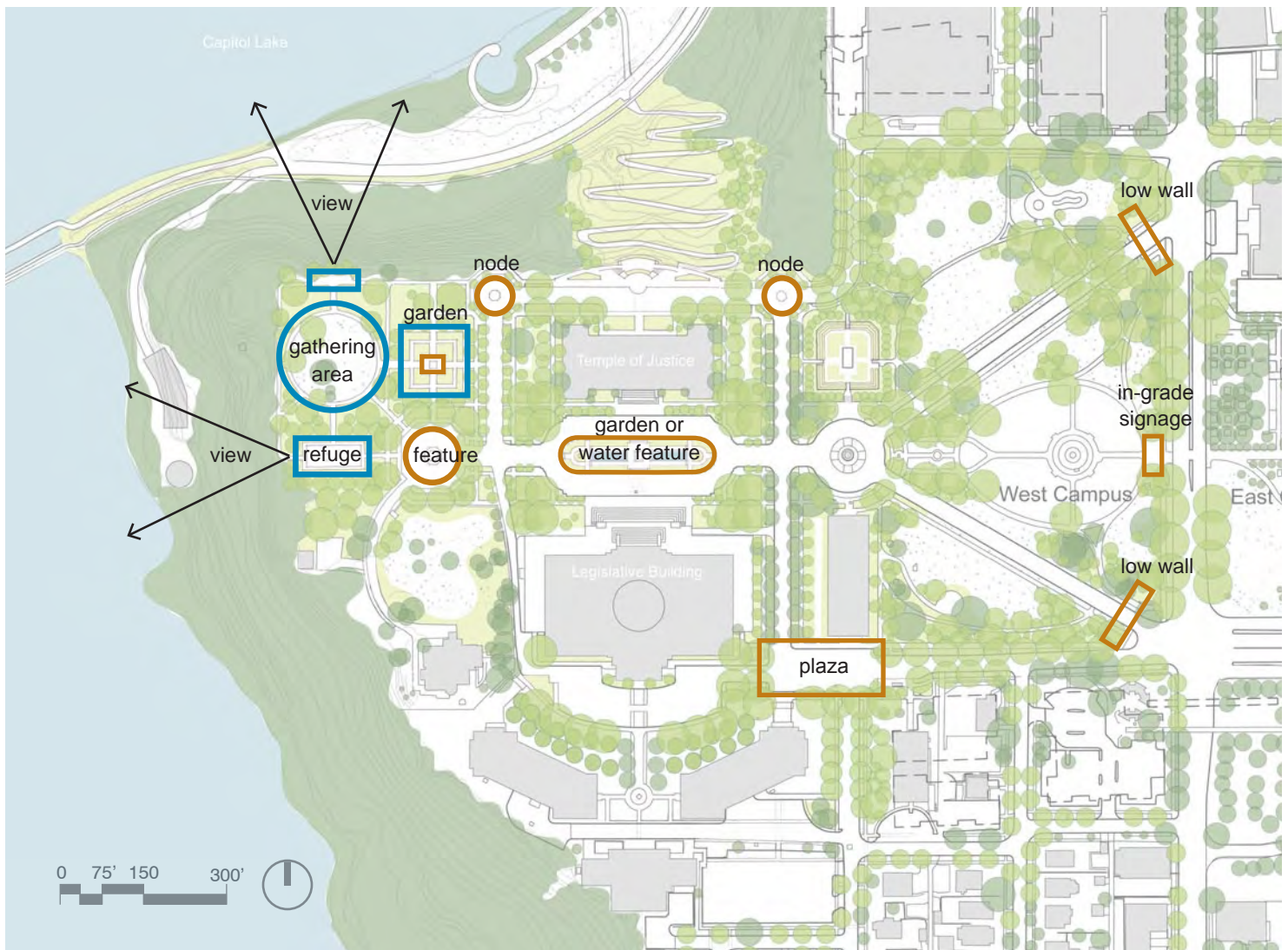


Fig. 6.14 Opportunity Sites for Monuments and Memorials, with suggested characteristics



Fig. 6.15 Future View of West End of Campus (Source: Susan Olmsted, 2009)

This sketch depicts some of the features and ideas described by the Olmsted Brothers for the West End of the Campus: a circular greensward area with informal groupings of trees, a formal garden (to balance the Sunken Garden on the east side of Campus), 'structural' trees, and the native forest edge. This portion of campus could include new monuments and memorials (See Fig. 6.14), viewpoints overlooking Capitol Lake and the Olympic Mountains, sustainable demonstration/testing gardens, and a variety of gathering spaces, pathways, and experiences. This valuable location is currently used for surface parking, staging, material storage, and maintenance facilities.

Fig. 6.16 Campus Section showing major Landscape Characters

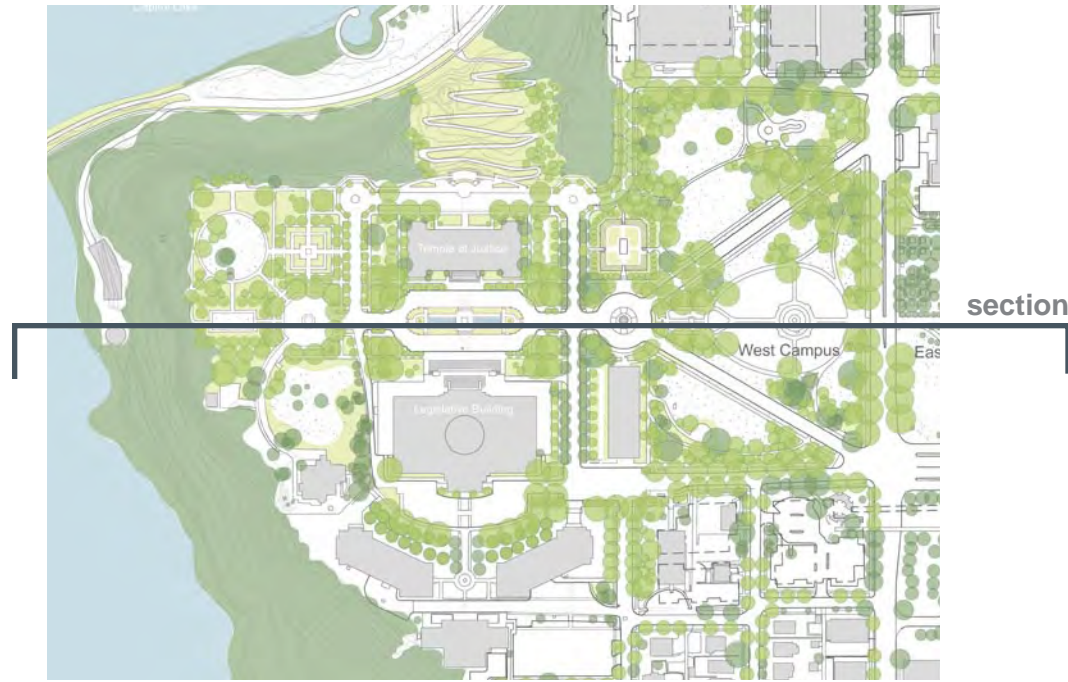


Fig. 6.16a Key Map of Landscape Master Plan indicating location of section cut

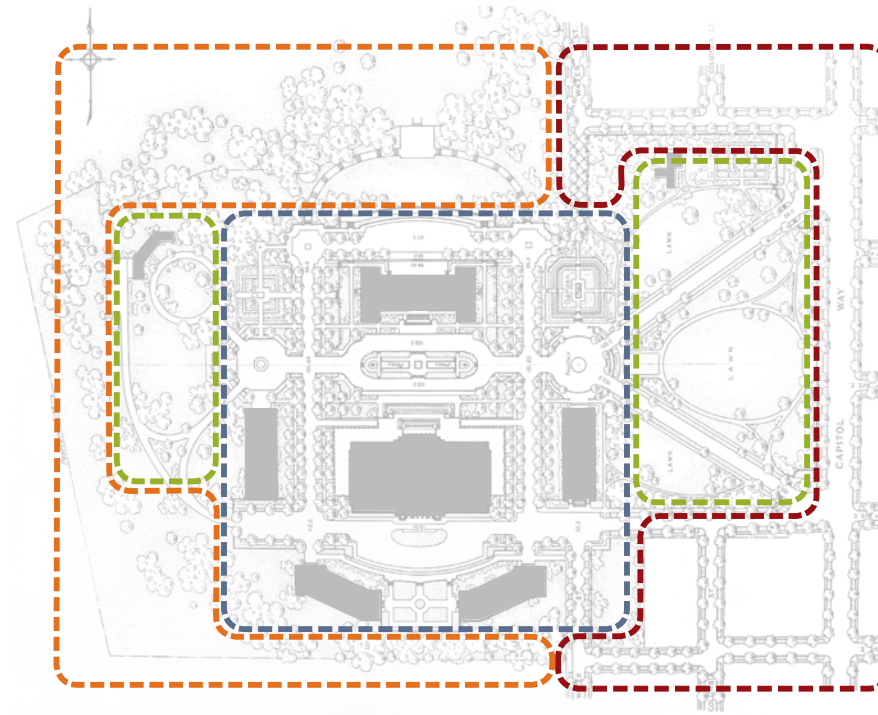


Fig. 6.16b Key diagram of Olmsted General Plan indicating Landscape Characters (excerpted from Fig. 5.7)

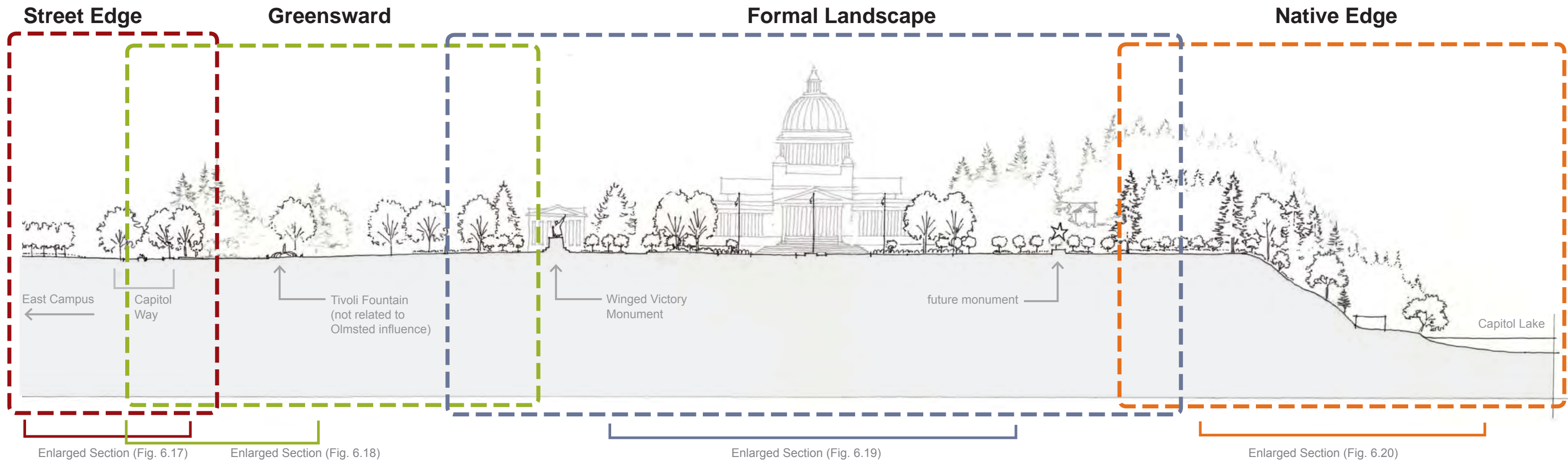


Fig. 6.16c Campus Section showing major Landscape Characters: The various landscape characters overlap and blend throughout the Campus, and though there are sub-characters that further describe patterns throughout, looking at the four characters shown above reveals a macro-pattern, diagram, or parti for the Campus, as a whole. See also Fig. 5.7.

Fig. 6.17 Street Edge: Enlarged Section through Capitol Way, looking south

Large canopy boulevard trees would provide numerous benefits:

- Improved connection between the Capitol and downtown Olympia, particularly Sylvester Park
- Visual/experiential interest
- Framed views of the Capitol Group
- Dappled shade for Capitol Way and the sidewalk = 'heat island effect' reduction
- Increased water-holding capacity
- Increased habitat value
- Improved seasonal interest
- Improved air quality
- increased carbon sequestration
- Asset appreciation - increased value of trees over time

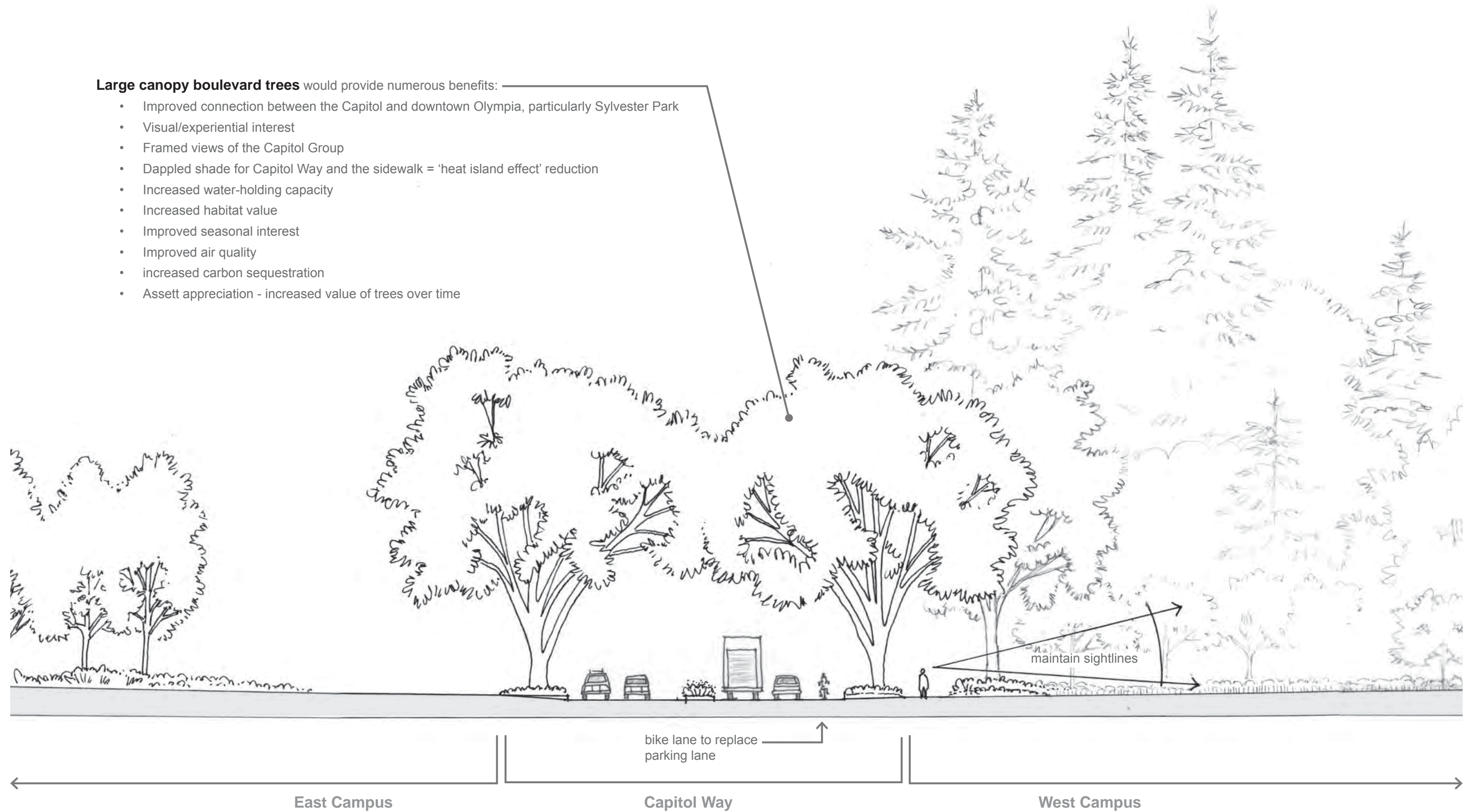
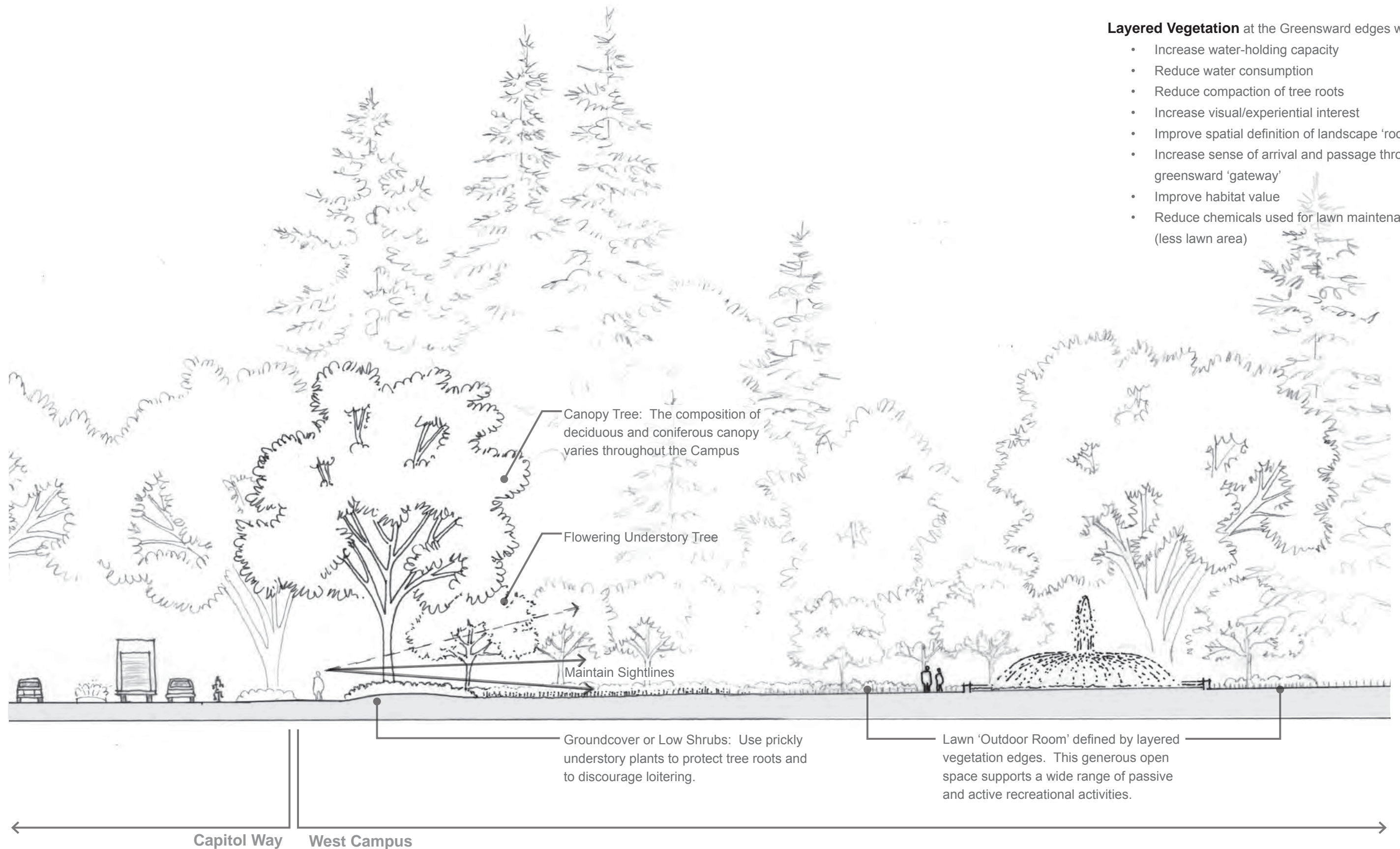


Fig. 6.18 Greensward: Enlarged Section through Great Lawn, looking south



Layered Vegetation at the Greensward edges would:

- Increase water-holding capacity
- Reduce water consumption
- Reduce compaction of tree roots
- Increase visual/experiential interest
- Improve spatial definition of landscape 'rooms'
- Increase sense of arrival and passage through greensward 'gateway'
- Improve habitat value
- Reduce chemicals used for lawn maintenance (less lawn area)

Fig. 6.19 Formal Landscape: Enlarged Section through Flag Circle, looking south

The Formal Landscape areas throughout the Campus are characterized by

- Symmetrical and balanced arrangements of large canopy trees, understory flowering trees, shrubs, and perennials
- Details and materials that relate to the architecture, such as low walls, steps, planters, curbs, balustrades, and reflecting pools
- Textured layers of vegetation, particularly at base/foundation plantings, to help transition from the monumental scale of the architecture to a more human scale.

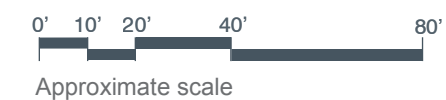
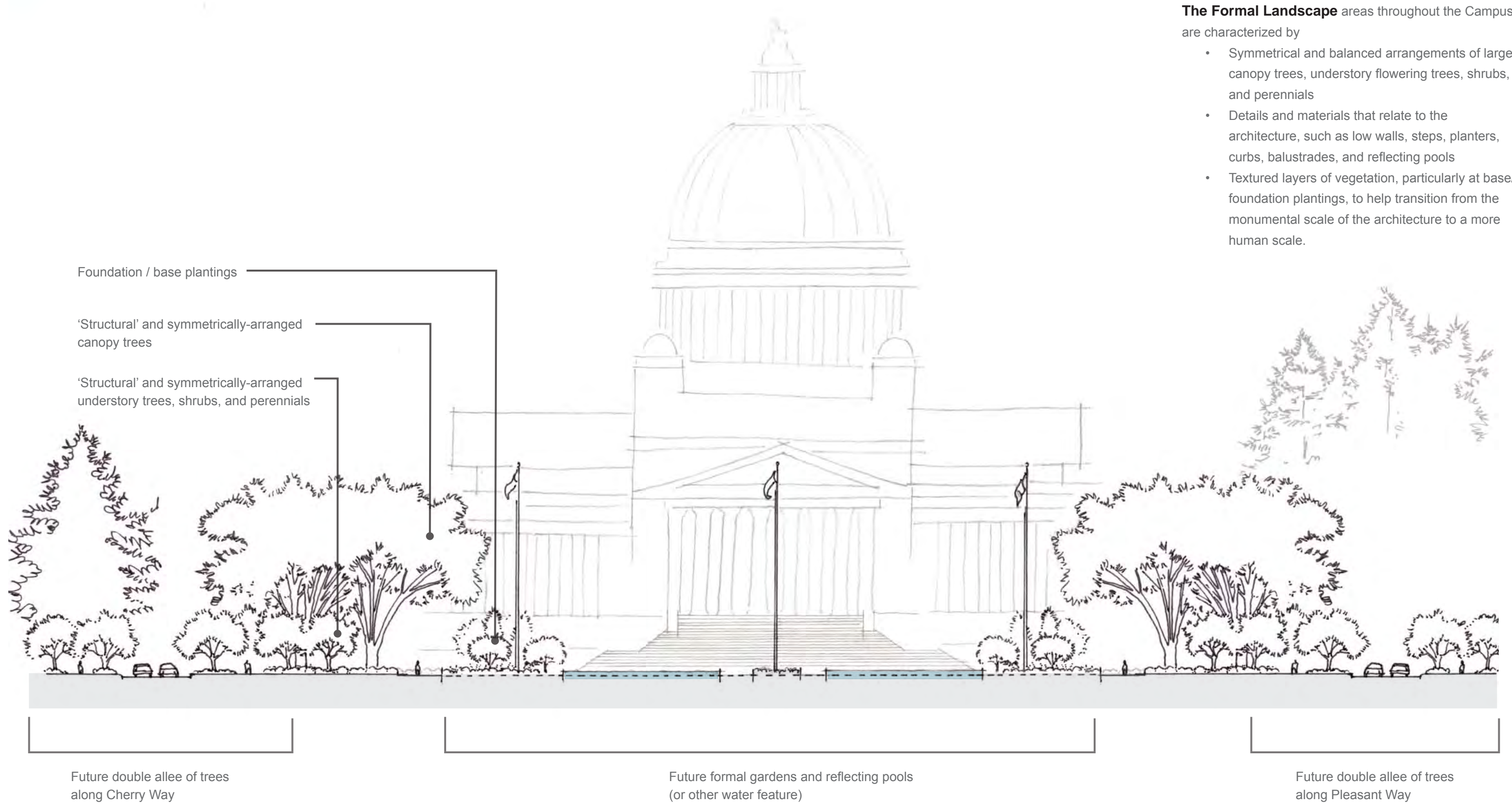
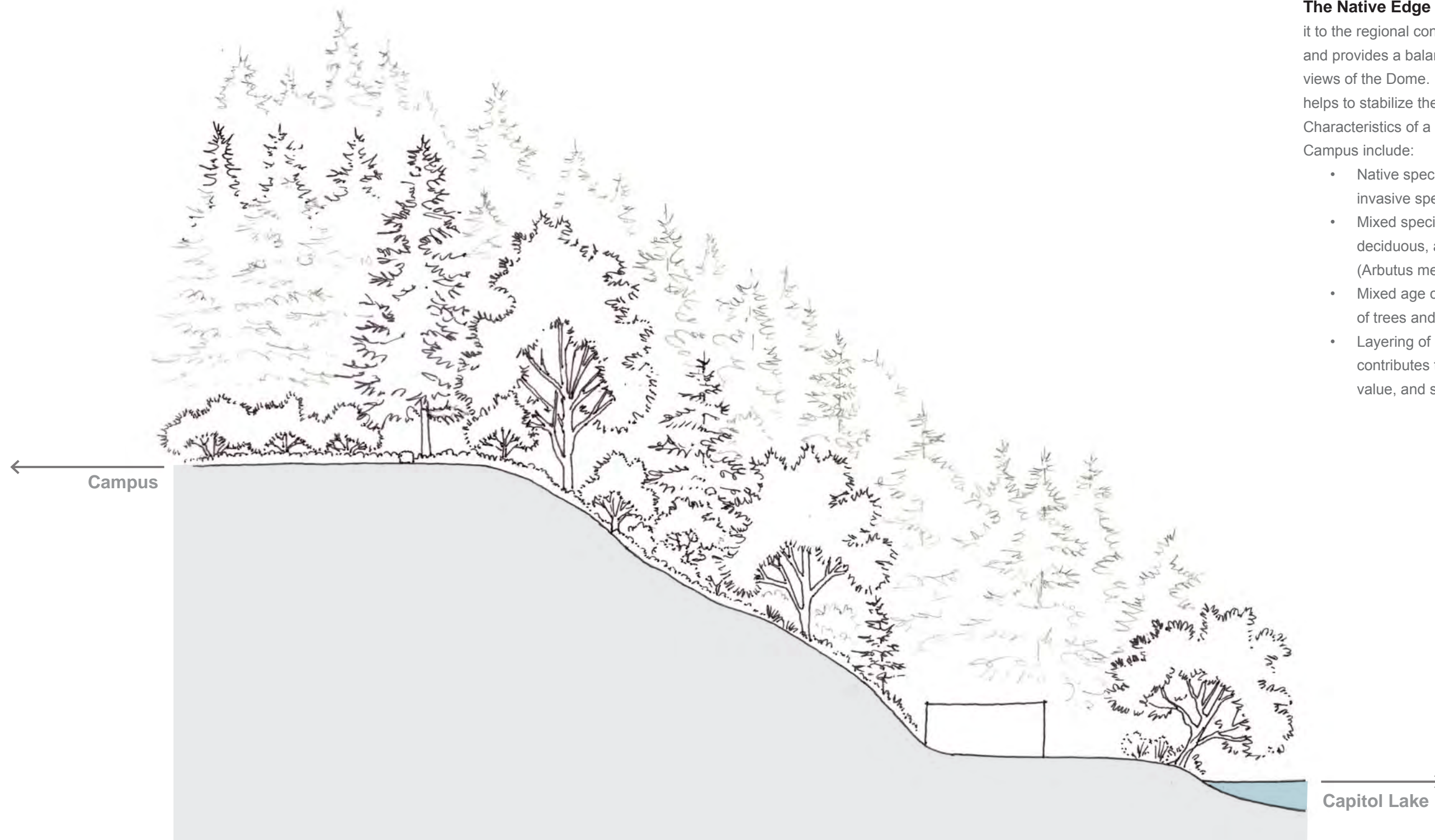


Fig. 6.20 Native Edge: Enlarged Section through Forested Bluff to Capitol Lake



The Native Edge enwrapping the Campus relates it to the regional context, affirms the genius loci, and provides a balanced foreground for distant views of the Dome. A healthy forest edge also helps to stabilize the slope and protect water quality. Characteristics of a healthy forest edge for the Campus include:

- Native species composition - eliminate invasive species, such as ivy
- Mixed species composition - coniferous, deciduous, and broadleaf evergreen (*Arbutus menziesii*)
- Mixed age composition - mature generation of trees and replenishment generations
- Layering of canopy and understory: contributes to water-holding capacity, habitat value, and slope stability



Fig. 7.1 A historic maple frames a view of the Tivoli Fountain (Oct. 2008, Source: Mithun)

Large Tree Layer Plan

Introduction: Large Tree Layer Plan

The Large Tree Layer Plan (LTL) is a tool to guide the selection and placement of trees for the West Campus in support of the Landscape Preservation Master Plan. Toward that end, the LTL includes a foldout map – a planting plan - that, together with the LTL Key, indicates tree locations and species. In addition to providing a tree planting plan, this chapter describes the analysis, considerations, and criteria that have informed the tree selection, a process, logic, or rationale that can also be used in the future. Knowing *what* to plant – and *where* – is fundamental, but knowing *why* empowers landscape managers and staff gardeners to make informed decisions about the Campus tree composition.

Where to find the planting plan / foldout map

- Bound, hard copy documents: The foldout map is a 30" x 42" sheet tucked into a folder located on the inside-back-cover of the document.
- Electronic documents: The foldout map is a 30" x 42" pdf located at the end of the electronic file.
- The LTL Planting Key is located at the end of this chapter.

Study Area Boundary

The LTL boundary follows the boundary of the Landscape Preservation Master Plan. (See Fig. 3.3, West Campus Orientation Map.) This boundary is generally consistent with the area included in the 1929 Olmsted Brothers planting plan.

Analysis, Considerations, and Criteria

The Large Tree Layer plan is the result of interpreting historic information, evaluating current conditions, and envisioning the future. As with the Landscape Master Plan, a wide range of influences encompassing issues of cultural, environmental, and economic sustainability were consulted, analyzed, compared, and layered during the design process. The process itself was cyclical, rather than linear, as the considerations are interrelated and somewhat interdependent. Key considerations described and illustrated throughout the chapter include:

- Relationship to Landscape Preservation Master Plan
- Existing Tree Condition
- Significant and Memorial Trees
- Historic Tree Characteristics and Composition
- Sustainability and Maintenance Considerations
- Tree Attrition and Replenishment
- Tree Spacing and Safety
- Phasing and Implementation

Relationship of LTL to Landscape Preservation Master Plan

The LTL supports the Landscape Master Plan through the further elaboration of the spatial hierarchy and organizational patterns contributed by particular tree species. The Landscape Preservation Master Plan and the Large Tree Layer Plan were developed and refined concurrently over the course of the project, but due to the ongoing evolution of the two drawings, the large volume of information, the repetition of the Master Plan throughout the document, and the different emphases of the two, discrepancies are natural and unavoidable. Where differences exist, the Large Tree Layer governs tree placement, arrangement, and location. The LTL also indicates tree species.

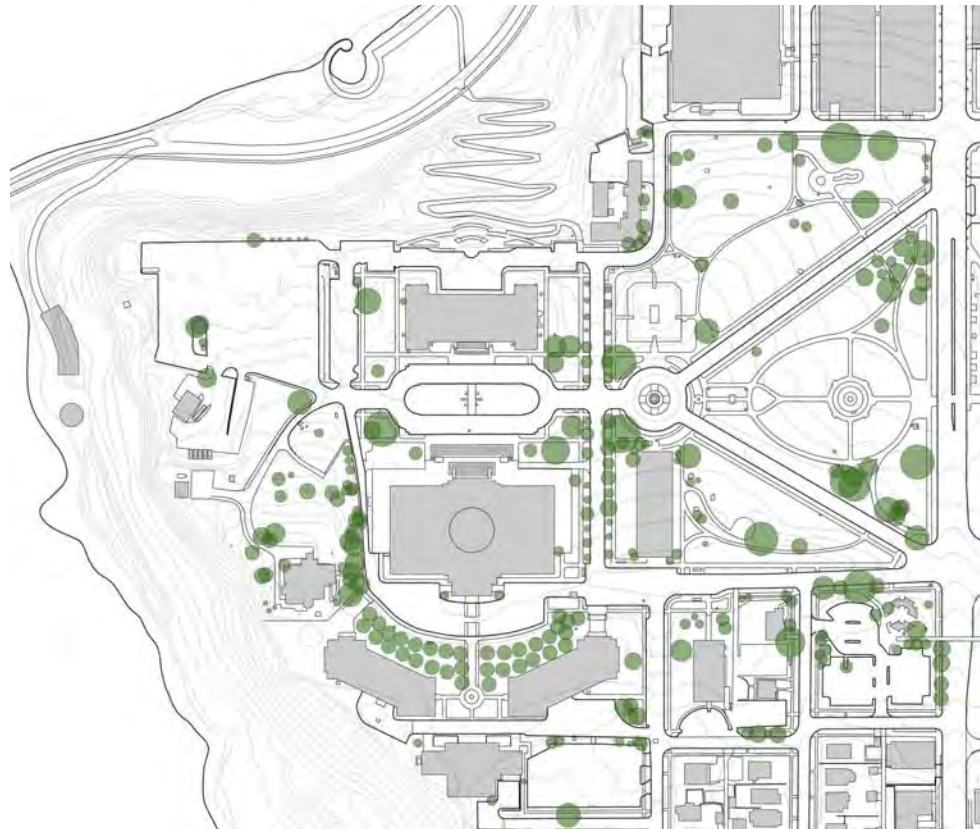


Fig. 7.2a Existing trees, 2008-09

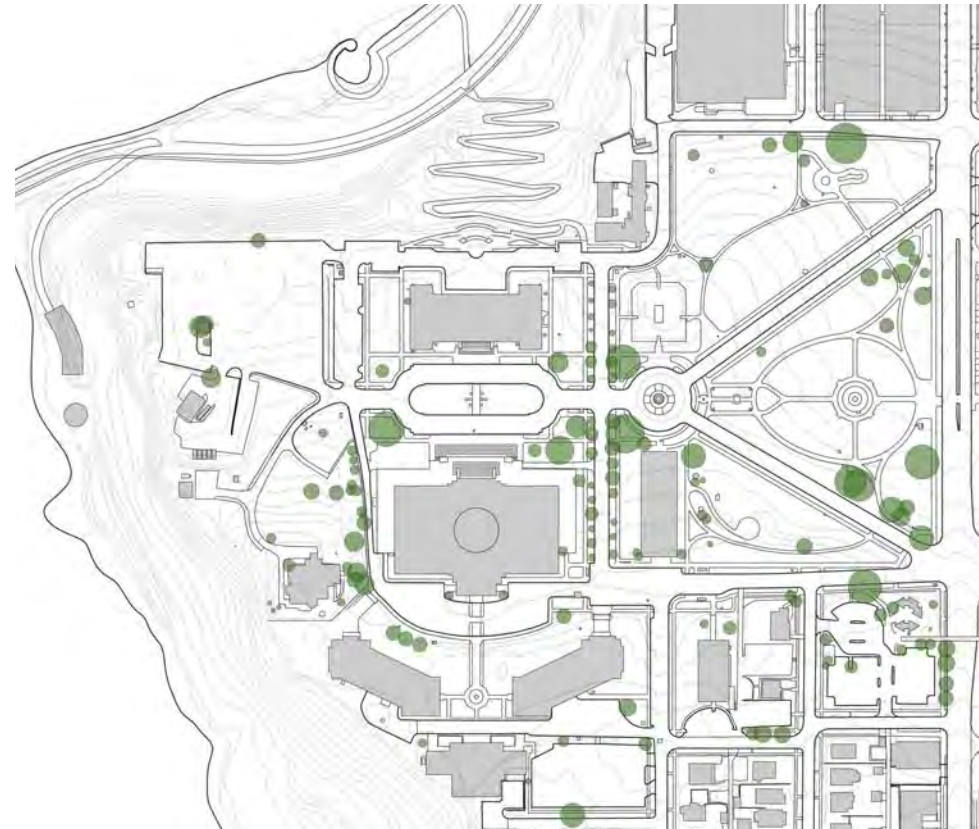


Fig. 7.2b Trees in good or excellent health, based upon Tree Condition Survey

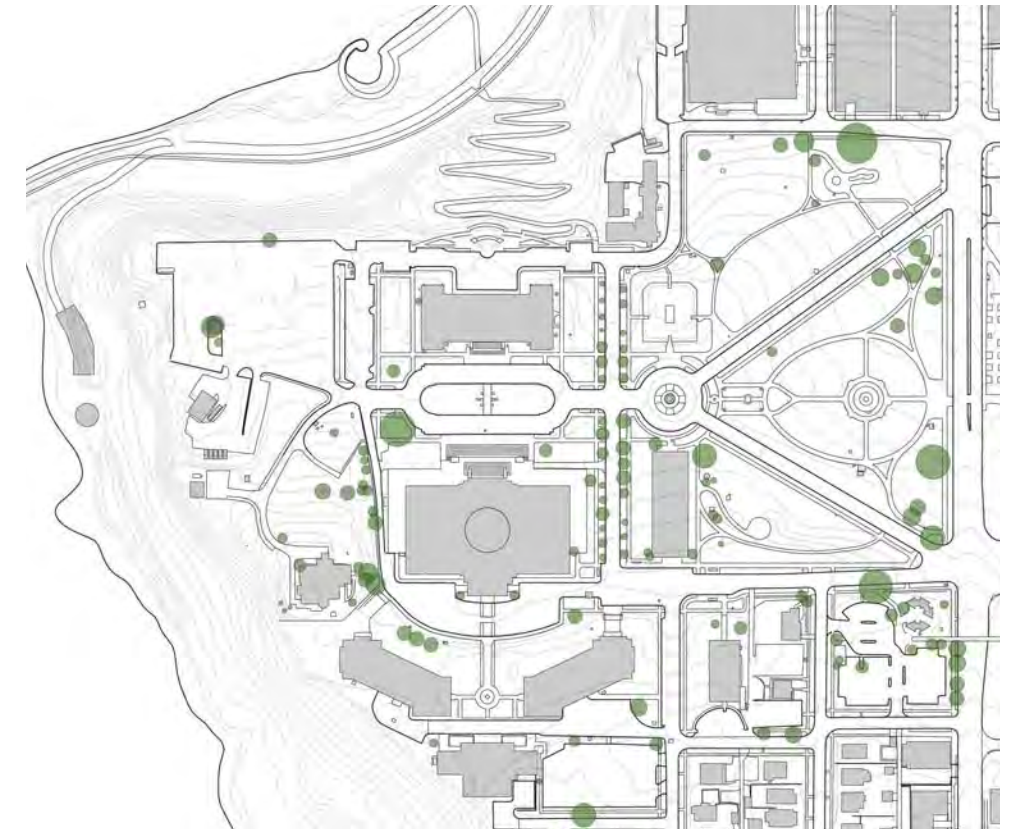


Fig. 7.2c Trees in good or excellent health, without a current risk, based upon Tree Condition Survey

Existing Tree Condition

The above diagrams illustrate the Campus tree canopy today and in the near future, in the absence of consistent, ongoing preventive care and replacement plantings, based upon the 2008-09 visual tree assessment conducted by Arbutus Design, LLC. The Tree Condition Survey (Fig. 10.4.4 and the Table of Trees (C. 10.9, p. 249) summarizes the results of the 2008-09 visual tree assessment. A comparison with the pre-existing 2001 tree data set revealed that the Campus tree population had declined almost 15 percent since 2001, and only two thirds of the lost trees had been replaced. Nearly *half* of the existing Campus trees (Fig. 7.2a) are in poor or fair condition, and in the near future, if actions are not undertaken to prevent further decline and attrition, and if replenishment efforts are not commenced soon, the canopy will resemble Fig. 7.2b. Well over a third of the existing trees exhibit current or potential risk. Fig. 7.2c shows the canopy composition that would result from the additional loss of trees with a current risk.

Note: The forest edge has been excluded from the above diagrams for purposes of clarity.



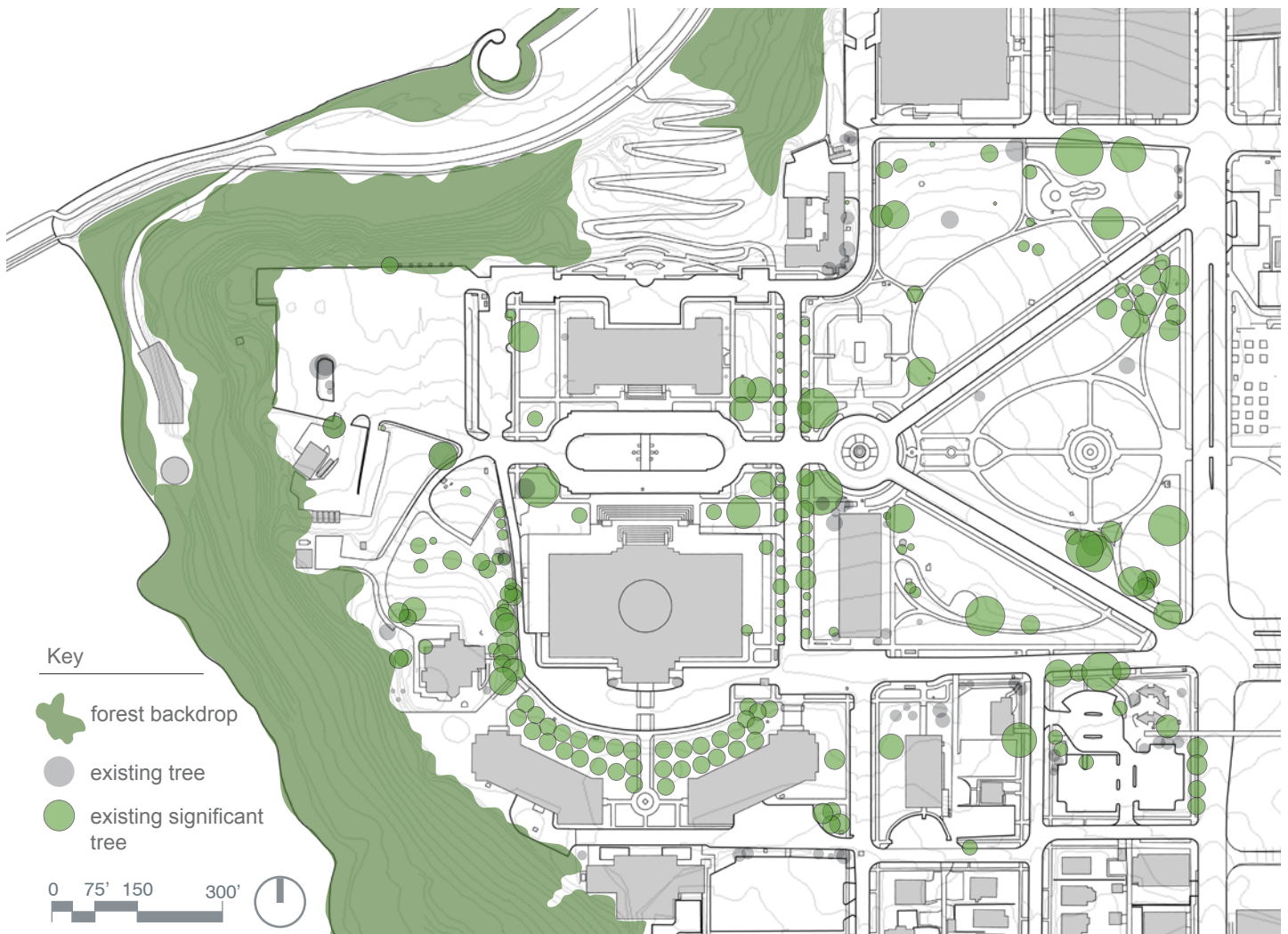


Fig. 7.3 Diagram of Significant and Memorial Trees: existing Campus Base Plan overlain with existing trees

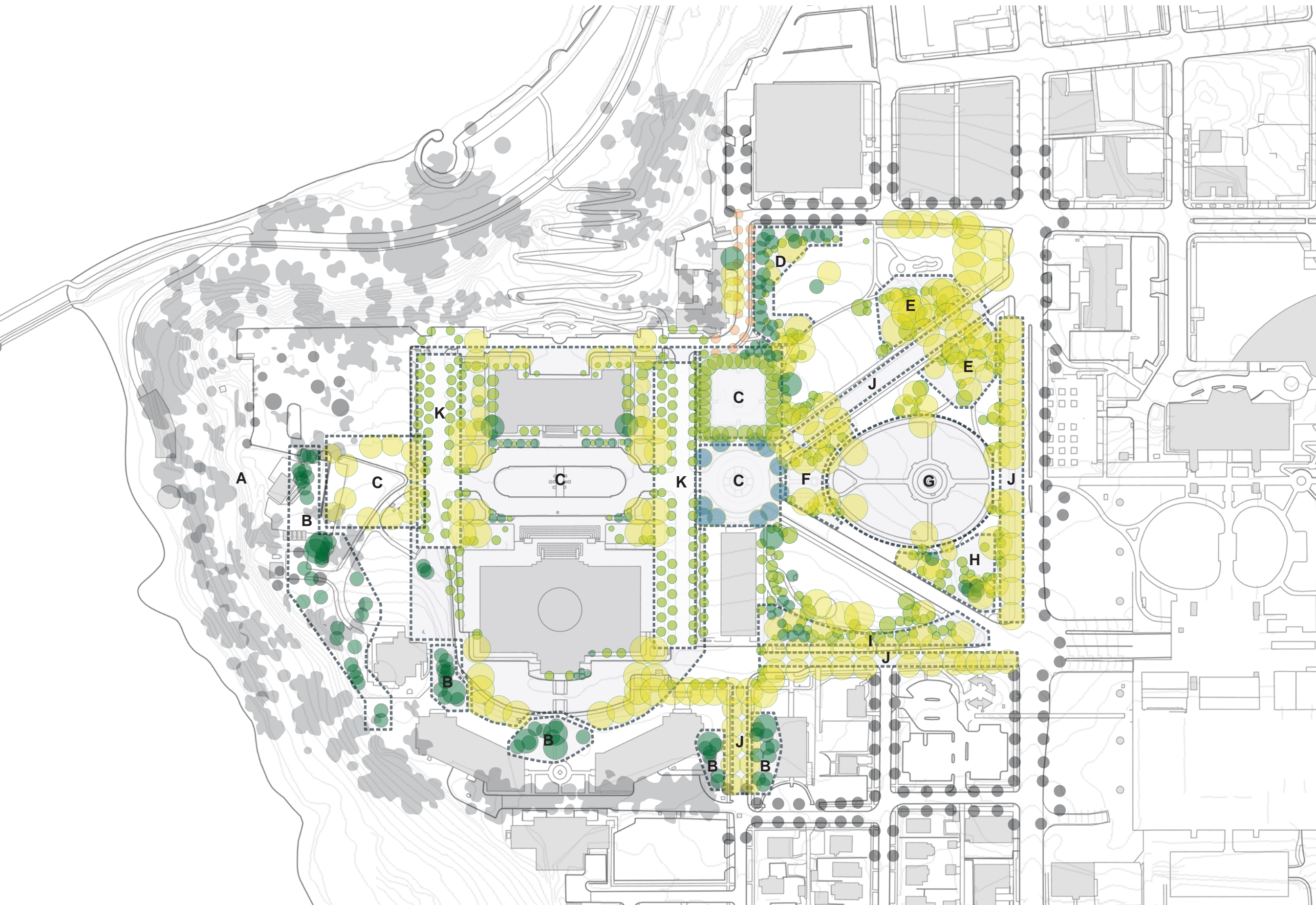
Existing Significant and Memorial Trees

Roughly fifty five percent of the existing trees throughout the Campus study area are considered significant. The percentage in terms of *canopy area*, though not calculated, is far greater than fifty five, as most of the significant trees are of mature size and breadth. In addition, the **forest backdrop** contains a substantial proportion of significant trees - mature natives that provide the setting for the Capitol. Significance is based upon the following:

- Memorial trees or trees with special associations such as Arbor Day trees or sister city gift trees, or
- Unusually large or broad specimens, or
- Trees dating from the Period of Significance or earlier, or
- Mature native trees

Design for the LTL plan began with the assumption of preserving the significant trees, except in cases of advanced decline or current risk where arboricultural reparation measures would be unusually difficult, exorbitant, or futile. (See the Table of Trees) In addition, some of the existing significant trees are located in places that are ultimately unsuitable (too close to a building, for example) or that substantially detract from the larger organization of the Campus. Most of these trees can be allowed to run the natural course of growth, maturity, decline, and attrition. Others might pose enough of a problem that they should be replaced with other species or arrangements, or replenished in other locations. Decisions were also gauged against the list of additional considerations that follow.

Fig. 7.5 1929 Olmsted Trees: Characteristics



- Key**
- flowering understory tree
 - broadleaf deciduous tree
 - broadleaf evergreen tree
 - unidentified tree
 - coniferous tree
 - Surrounding context of street trees and native forest indicated in the 1928 Olmsted Brothers General Plan.
- A** Native edge
 - B** Native character
 - C** Formal planting design
 - D** Predominantly native coniferous canopy, with some broadleaf deciduous groups, and flowering understory - many native dogwoods.
 - E** Mixed deciduous canopy and flowering understory.
 - F** Semi-symmetrical, balanced groves of broadleaf deciduous and flowering understory.
 - G** Symmetrical grouping
 - H** Mixed group, predominantly native
 - I** Rhythmic pattern of mixed canopy and flowering understory
 - J** Street trees
 - K** Double row of flowering street trees



A graphed comparison (right) between the historic tree composition and the existing tree composition - in terms of tree type - revealed key differences:

- The total number of existing trees represents about a third of what was shown on the Olmsted Brothers planting plan.
- The proportions of the different types of trees vary, as well. The flowering understory trees exist today in roughly the same proportion as historically intended, though further analysis reveals that the species composition is less correlated. Cherries play the dominant flowering understory role today, comprising over *90 percent of the existing flowering understory trees*, but the historic plans intended a range of different species fulfilling this role: dogwoods, crabapples, cherries, hawthorns, and lilacs, with dogwoods leading the group.
- The proportions of broadleaf deciduous trees and conifers today are inverted from the historic planting plan.

The percentage of tree types shown in the LTL shifts the balance of tree types closer to the historically intended proportions.

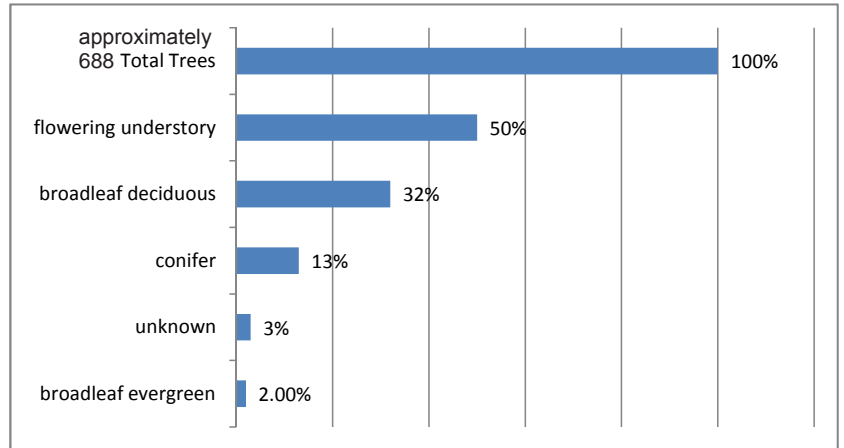


Fig. 7.6 Approximate percentage of tree types shown in the **1929 Olmsted Brothers Planting Plan**, excluding the native edge trees.

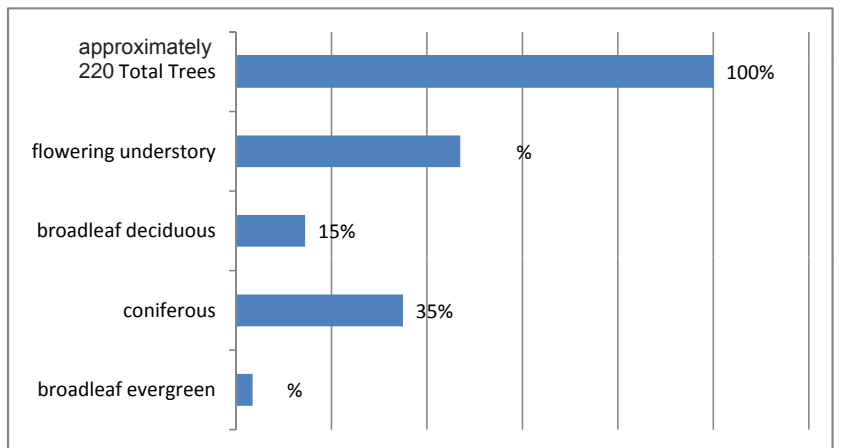


Fig. 7.7 Approximate percentage of tree types that **exist today**, within the same general area as 1929 plan (See Fig. 3.3).

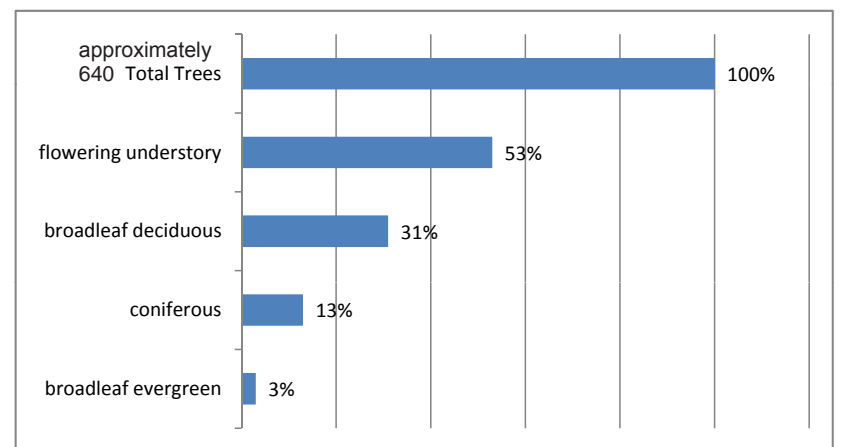


Fig. 7.8 Approximate **future** percentage of tree types based upon **LTL planting plan**, within the same general area as 1929 plan (See Fig. 3.3).

Large Tree Layer Plan

'Structural' Trees:

The Olmsteds often arranged rows and groupings of singular tree species in forming allees, framing views, defining landscape rooms, and reinforcing axes and symmetry. These arrangements of 'structural' trees created and reinforced the Campus three-dimensional landscape hierarchy. The Olmsteds commonly enlisted *elms* toward this purpose, positioning them in prominent locations. The elm's graceful, arching habit, broad canopy, and distinctive stature fulfilled this capacity well. This diagram highlights the use of elms in structuring the West Campus.

The LTL balances the repetition of this singular species with the goal of disease resistance, achievable, in part, through increased genetic diversity. Elms shown on the LTL draw upon the historic pattern, but entail some modern species selection considerations:

- Elms must be Dutch Elm Disease resistant cultivars, such as *Ulmus americana* 'Princeton.'
- Possible substitutions: Hybrids with the closest form and scale include 'Accolade' and 'Danada Charm'. *Ulmus parvifolia* 'Allee' and elm hybrid 'Homestead,' have a similar, but shorter, form. *Zelkova serrata* 'Halka' has a similar form and is considered to be the fastest growing zelkova variety.
- Red Oak, an excellent street tree and a species included on the original list, was substituted for some of the elms along Capitol Way, except at entrance locations, where the elms serve as 'gateway' trees.

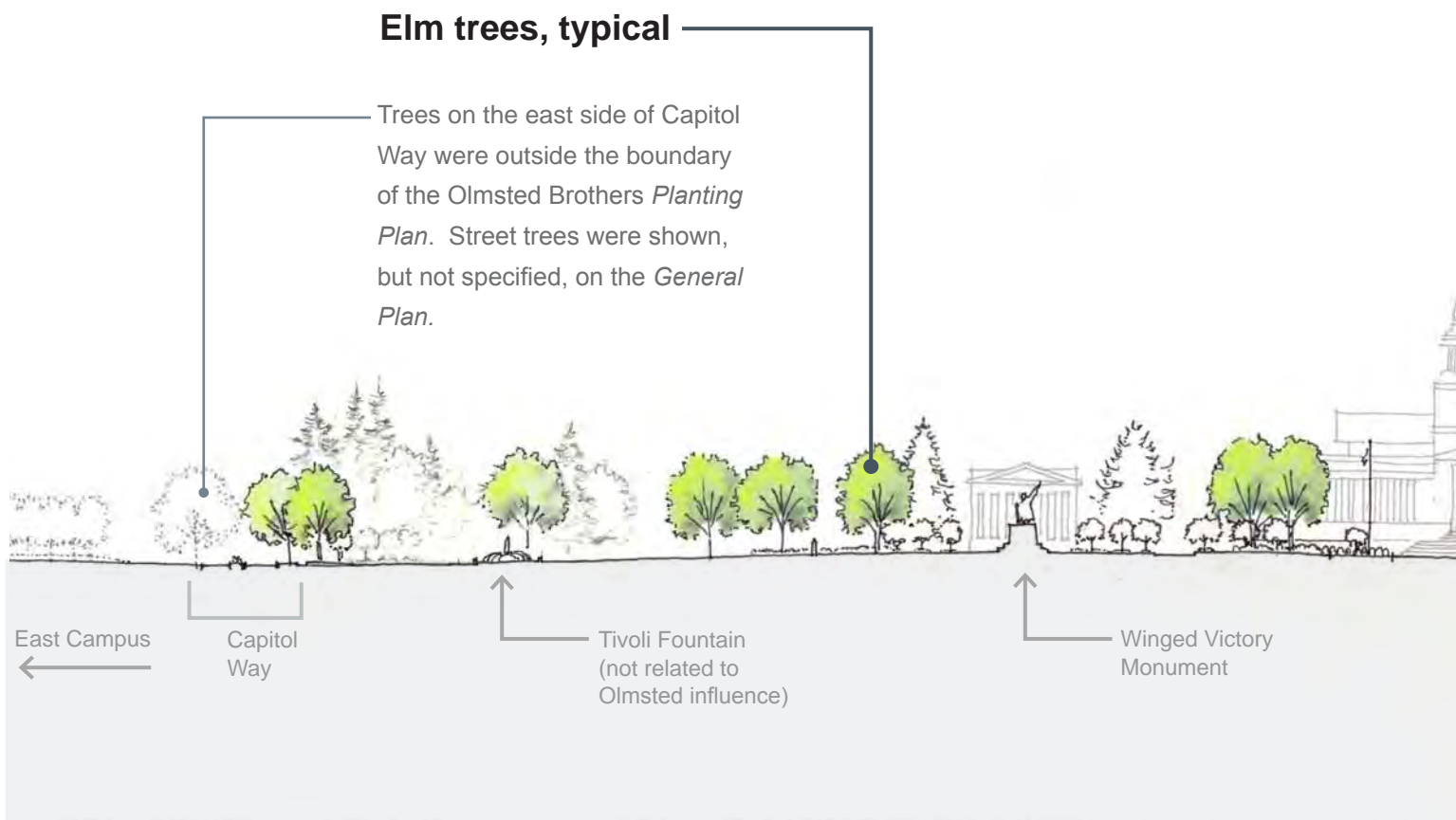


Fig. 7.9 Campus Section highlighting Elm Trees shown in 1929 Olmsted Brothers Planting Plan

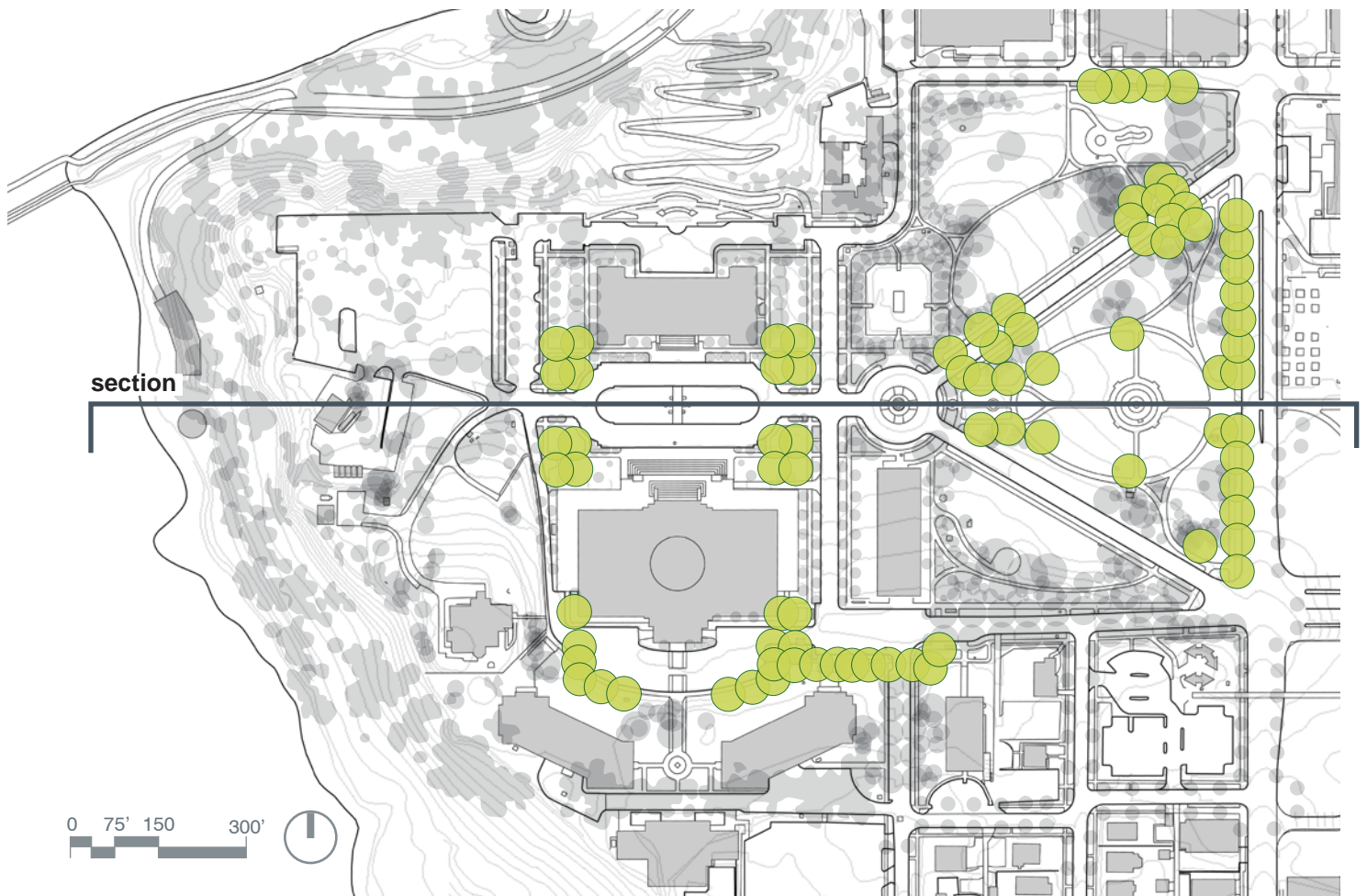
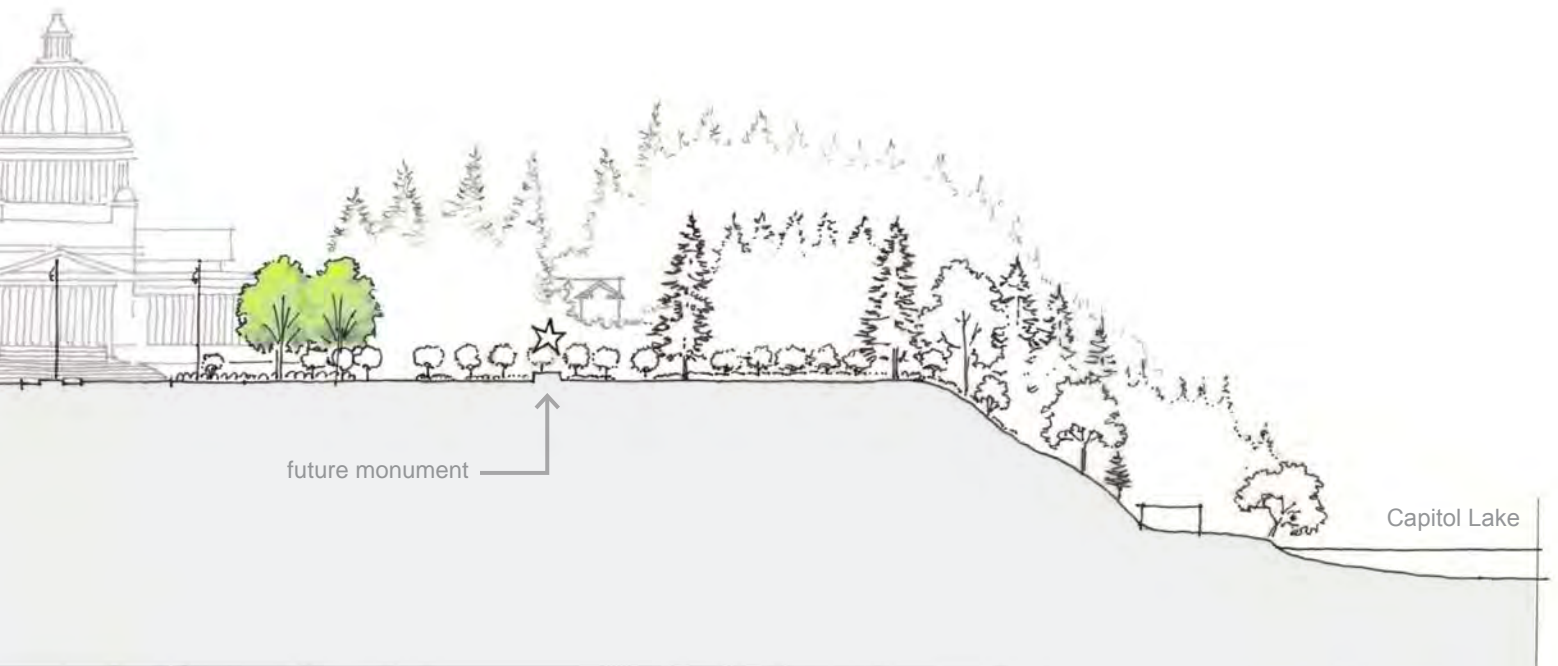


Fig. 7.10 Diagram of Elm Trees shown in 1929 Olmsted Brothers Planting Plan: Existing Campus Base Plan overlain with historically intended trees



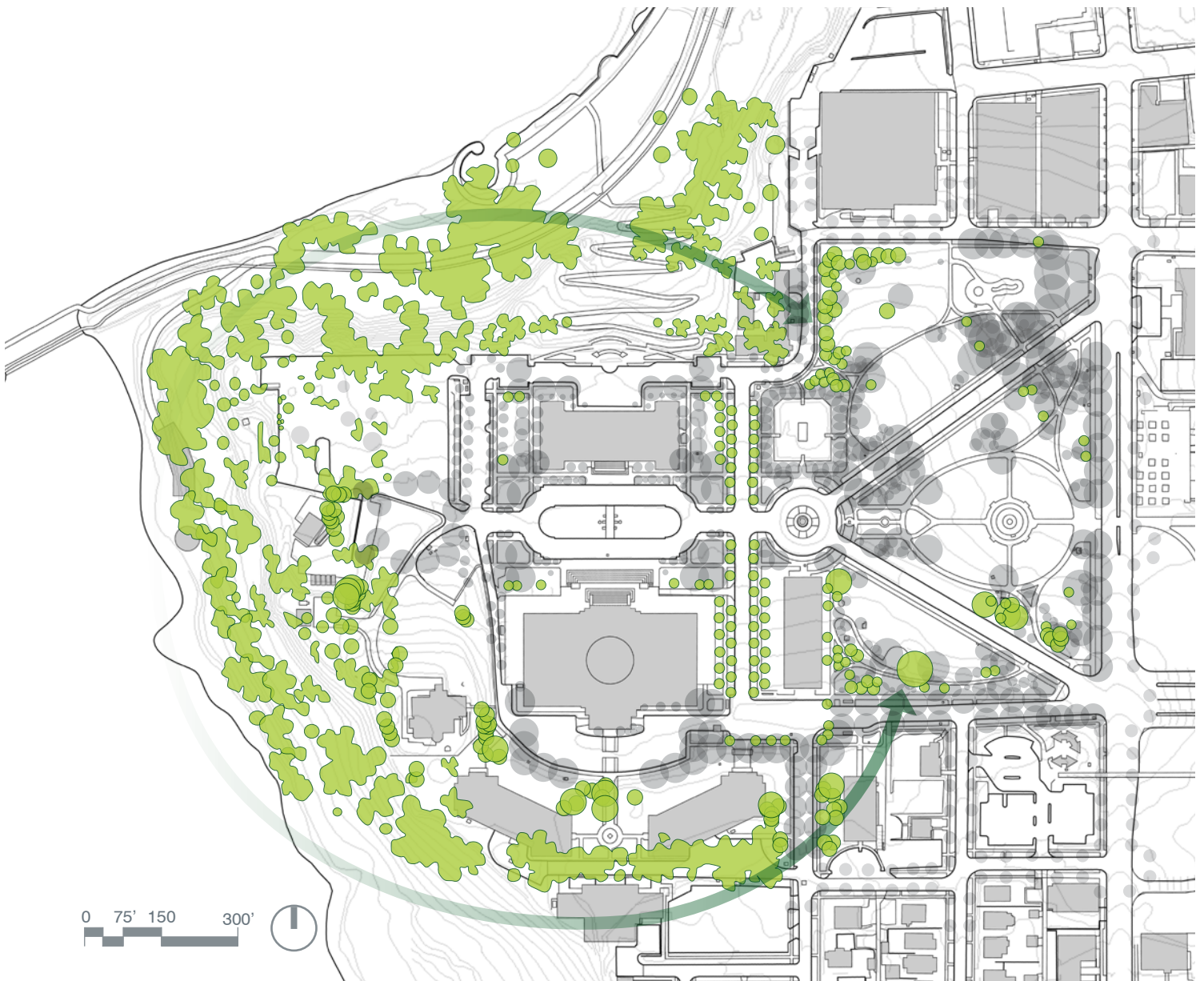


Fig. 7.11 Diagram of Native Trees shown in 1929 Olmsted Brothers Planting Plan: Existing Campus Base Plan overlain with historically intended trees

Sustainability and Maintenance Considerations

Native plants, non-invasive plants, and biodiversity

The Sustainable Sites Initiative promotes species diversity, native species, and non-invasive species as important contributors toward healthy ecosystems. Benefits of these species include:

- Reduced maintenance
- Reduced water use
- Greater resilience and resistance to disease and insect damage
- Increase habitat value
- Greater 'sense of place'

Disease resistance

Many of the trees included on the Olmsted Brothers planting plan and plant list are commonly susceptible to diseases, pests, and other horticultural problems. In addition to causing diminished stature or other visible ill effects, disease often necessitates costly treatment or care for affected trees, siphoning Campus resources that could be appropriated elsewhere. Alternative varieties and cultivars exist today that have been developed by botanists and horticulturists to have greater resistance to potential infestations. The LTL has compiled a list of ‘substitutions’ in cases where the historically specified trees would not thrive.

Unfortunately, many of the Douglas firs throughout the Campus evidence a disease that would likely be transferred to replenishment trees planted in close proximity. In affected Campus areas, alternative conifer species have been recommended.

Adaptable species

The well-documented, challenging soil conditions and drainage issues throughout the Campus have influenced the LTL species selection. Some of the trees included on the Olmsted Brothers planting list naturally grow in conditions that are markedly different from what they would encounter on site. In cases where the historically specified tree would be ill-adapted to local conditions, trees that have similar characteristics, but greater site suitability, have been specified on the LTL.

Rare or unavailable species

Some of the historically specified plants are unavailable or rare within the nursery trade. In these cases, substitutions of similar stature, color, size, and texture, but greater availability, have been made.

Tree attrition and replenishment

Landscapes grow and change over time. Allees and formal arrangements of trees raise difficult questions about replacement – all at once, or one at-a-time. A mixed-age composition at the informal Greensward area or at the Native Edge reinforces these characters. Mixed age composition, and the associated uneven stature, may not be ideal for the most formal areas, such as the Flag Circle.

Tree Spacing and Safety

The density and arrangement of trees depicted in the Olmsted Brothers plan is consistent with the historical notion of “plantations.” The concept of plantations is described in a National Association for Olmsted Parks Workbook:

“Most Olmsted office planting plans for park landscape used dense collections of trees with understory masses of shrubs and groundcovers along a park’s perimeter or along the edges of naturalistic water features. The plantings created picturesque edges, controlled views in and out of the landscape along the perimeter, and controlled access to the water.... Originally known as ‘plantations’ the groupings were usually composed of young trees, shrubs and ground covers that were extremely densely planted, well maintained, and thinned frequently.... This approach required substantial maintenance to assure the proper air circulation necessary to maintain healthy vegetation. Contemporary fiscal constraints render this approach impractical.” (Birnbaum, 5-7).

Large Tree Layer Plan

Though the LTL shows a substantial *increase* in the number of trees from what exists today, it shows *notably fewer* trees than what was depicted on the historic plans. This spacing of trees offers a compromise between the notion of ‘plantations’ and the modern realities of maintenance and safety.

Likewise, the future design of the Campus *Shrub Layer* will need to translate the historic character of the Campus edges to be compatible with important considerations regarding safety, visibility, and maintenance. A recommended approach is to “limit the height of understory shrub materials” (Birnbaum, *Landscape Composition*, 7). Shrub layers along the Campus perimeter should not impede views in and out of the Campus. (See also Figs. 6.17 - 6.18)

Trees adjacent to buildings were spaced to allow for their mature size, and in accordance with the *Landscape Setback Standards* included in the 2001 Regeneration Study.

Phasing and Implementation

The Large Tree Layer Plan is intended to facilitate the gradual implementation of the Campus tree layer over time. Opportunities for gradual implementation include incremental capital investments, living memorials, and donations and endowments. (Ch. 9: Cost Analysis includes outline criteria for donations and endowments.)

Once planted, tree growth and landscape maturity takes time, and especially with gradual implementation, the landscape will always be in a state of varied life phases – planting, establishment, growth, maturity, decline, attrition, and replenishment. Layering generations of trees will reinforce the historic character in the Native and Greensward areas. However, as discussed in the Tree Attrition section, rehabilitating some of the Formal Landscape areas of Campus (allees and symmetrical foundation plantings) will entail difficult choices about replacing groups of trees all-at-once, or transitioning gradually. For those areas, a gradual transition may never achieve the intended balance and symmetry. Decisions will need to be weighed against the full range of aforementioned considerations.

Opportunities for incremental installation of the LTL and associated shrub areas are shown on an annotated phasing and implementation diagram alongside high-level cost estimates in Ch. 9: Cost Analysis.

Large Tree Layer Planting Key

The LTL Planting Key, located on the following pages, is linked to the foldout map located on the back-inside cover of the document - for bound copies - or at the end of the file - for electronic copies. The LTL Key indicates the species shown on the LTL. For ease of use, the Key has been sorted two different ways: 1) sorted alphabetically by abbreviations indicating proposed trees, and 2) sorted numerically by inventory numbers indicating existing trees. The former list is also a composite of the two types of information (existing and proposed trees), including quantities.

Fig. 7.12
Large Tree Layer Key

Large Tree Layer Abbreviation	Existing Inventory Number	Botanical Name	Common Name	Quantity New	Quantity Existing	Quantity sub-total
	9-5, 9-6	<i>Abies amabilis</i>	Pacific Silver Fir		2	2
Ab co		<i>Abies concolor</i>	White Fir	2		2
Ac ci		<i>Acer circinatum</i> 'Pacific Fire'	Vine Maple	4		4
Ac m	2-23, 2-24, 3-4, 3-5, 13-41	<i>Acer macrophyllum</i>	Bigleaf Maple	2	5	7
	2-16	<i>Acer</i> 'Pacific Sunset'	Pacific Sunset Maple		1	1
	13-40	<i>Acer palmatum</i>	Japanese Maple		1	1
	1-6	<i>Acer palmatum</i> 'Dissectum'	Japanese Maple		1	1
	11-18	<i>Acer palmatum</i> 'Bloodgood'	'Bloodgood' Japanese Maple		1	1
	13-4, 1-5, 1-22, 2-1, 2-26	<i>Acer platanoides</i>	Norway Maple		5	5
Ac s		<i>Acer saccharum</i>	Sugar Maple	18		18
Ac r	13-28, 13-29, 13-30, 13-31	<i>Acer rubrum</i>	Red Maple	6	4	10
Am 'A. B.'		<i>Amelanchier</i> 'Autumn Brilliance'	Autumn Brilliance Serviceberry	22		22
	13-37, 13-39	<i>Arbutus menziesii</i>	Pacific Madrone		2	2
	13-47	<i>Auracaria auracana</i>	Monkey Puzzle Tree		1	1
Be 'H'		<i>Betula nigra</i> 'Heritage'	Heritage Birch	10		10
	13-44	<i>Betula pendula</i>	Weeping Birch		1	1
	2-25	<i>Betula pendula</i> 'Youngii'	Young's Weeping Birch		1	1
	10-49	<i>Catalpa speciosa</i>	Western Catalpa		1	1
	1-23, 3-23	<i>Cedrus atlantica</i>	Atlas Cedar		2	2
Ce li		<i>Cedrus libani</i>	Cedar of Lebanon	1		1
Ce ja		<i>Cercidiphyllum japonicum</i>	Katsura	12		12
	13-6, 13-7	<i>Chamaecyparis pisifera</i> 'Filifera'	Stringleaf Japanese Falsecypress		2	2
Cl l		<i>Cladrastis lutea</i>	Yellowwood	1		1
	1-10	<i>Cornus</i> 'Eddie's White Wonder'	'Eddie's White Wonder' Dogwood		1	1
	12-24, 12-25, 12-27, 13-32	<i>Cornus florida</i>	Flowering Dogwood		4	4
Co		<i>Cornus</i> 'Starlight', 'Venus', 'Eddie's White Wonder', or other disease-resistant selection	Flowering Dogwood	74		74
Cr c. g.		<i>Crataegus crus-galli</i> Inermis	Thornless Cockspur Hawthorn	15		15
Cr l		<i>Crataegus x lavalleyi</i>	Lavalle Hawthorn	17		17
Cr ja 'Y'		<i>cryptomeria japonica</i> 'Yoshino'	Cryptomeria	2		2
	13-22	<i>Fagus sylvatica</i>	European Beech		1	1
	13-2	<i>Fagus sylvatica</i> 'Atropunicea'	Beech		1	1
	1-19	<i>Ginkgo biloba</i>	Maidenhair Tree		1	1
	7-8, 7-12	<i>Ilex opaca</i>	American Holly		2	2
Ju ci		<i>Juglans cinerea</i> (existing)	Bush Butternut		1	1
Ko		<i>Koelreuteria paniculata</i>	Varnish Tree	1		1
	13-33, 13-34	<i>Laburnum anagyroides</i>	Golden Chain Tree		2	2
Mag d		<i>Magnolia denudata</i>	Yulan Magnolia	4		4
	5-1, 7-4, 7-5, 7-17, 7-19	<i>Magnolia grandiflora</i>	Southern Magnolia		5	5
Mag s	5-2	<i>Magnolia soulangiana</i>	Saucer Magnolia	6	1	7
Mag st		<i>Magnolia stellata</i> 'Centennial'	Centennial Star Magnolia	14		14
Mag v		<i>Magnolia virginiana australis</i>	Sweetbay Magnolia	12		12
Mag k		<i>Magnolia x kewensis</i> 'Wada's Memory'	Wada's Memory Kew Magnolia	9		9
Mal		<i>Malus</i> 'Adirondack', 'Firebird', 'Professor Sprenger', 'Sargent', 'Sutyzam' or other scab- and mildew-	Crabapple	15		15
Ma 'G. R.'		<i>Malus</i> 'Golden Raindrops'	Golden Raindrops Crabapple - scab and mildew-resistant	29		29

Large Tree Layer Plan

Fig. 7.12

Large Tree Layer Key (continued)

Large Tree Layer Abbreviation	Existing Inventory Number	Botanical Name	Common Name	Quantity New	Quantity Existing	Quantity sub-total
Mal 'P.S.'		Malus 'Professor Sprenger'	Professor Sprenger Crabapple	40		40
	1-17, 1-18	Metasequoia glyptostroboides	Dawn Redwood		2	2
	13-36	Photinia serrulata	Chinese Photinia		1	1
Pi om	7-1, 7-2, 7-9, 7-10, 7-13, 7-23, 7-24	Picea omorika	Serbian Spruce	3	7	10
Pi si		Picea sitchensis	Sitka Spruce	5		5
Pi co	12-29	Pinus contorta contorta	Shore Pine	13	1	14
	9-15	Pinus monticola	Western White Pine		1	1
	13-5	Platanus acerifolia	London Planetree		1	1
	13-35	Prunus (species)			1	1
	13-21	Prunus cerasifera 'Newport'	Newport Cherry Plum		1	1
	13-10, 13-11, 13-13, 13-14	Prunus serrulata	Japanese Flowering Cherry		4	4
Pr s 'K'	4-1 to 4-32 (except 4-3)	Prunus serrulata 'Kwanzan'	Kwanzan Cherry	2	31	33
	3-6, 3-7, 3-9	Prunus serrulata 'Shirofugen'?	Shirofugen flowering cherry		3	3
	2-2, 2-4, 2-10, 2-14, 11-3	Prunus yedoensis	Yoshino Cherry		5	5
Pr y 'S Y'		Prunus x yedoensis 'Shidare Yoshino'	Weeping Yoshino Cherry	4		4
Ps me	1-11, 1-14, 1-15, 1-16, 2-22, 2-27, 2-28, 2-29, 2-31, 2-32, 9-1, 9-2, 12-20, 12-21, 12-22, 12-23, 13-24, 13-25, 13-26, 13-27	Pseudotsuga menziesii	Douglas Fir	6	20	26
Py c		Pyrus calleryana 'Autumn Blaze'	Autumn Blaze Flowering Pear	15		15
Qu co		Quercus coccinea	Scarlet Oak	2		2
Qu ga		Quercus garryana	Garry Oak	11		11
Qu ro	1-4	Quercus robur	English Oak	2	1	3
Qu ru	13-3	Quercus rubra	Common Red Oak	21	1	22
So h		Sorbus x hybrida	Oaklead Mt. Ash or Rowan	3		3
St j		Styrax japonicus	Japanese Snowbell	15		15
Sy		Syringa japonica	Tree Lilac	4		4
	3-24	Taxus baccata 'Hibernica'	English Yew		1	1
Th pl	1-9, 1-12, 3-10, 7-20, 13-23	Thuja plicata	Western Red Cedar	5	5	10
Ti		Tilia selection with resistance to honeydew problem: Tilia tomentosa 'Green Mountain' or 'Sterling'; or Tilia platyphyllos, petiolaris, maximowicziana, or mongolica.	Linden	8		8
	8-4	Trachycarpus fortunei	Windmill palm		1	1
Ul a	1-3, 1-7	Ulmus americana: New Elms must be DED-resistant selection: 'Princeton' or other DED-resistant substitution such as 'Accolade,' 'Danada Charm,' Ulmus parvifolia 'Allee,' 'Homestead,' or Zelkova serrata 'Halka'	Elm	63	2	65
Ze s		Zelkova serrata 'Halka'	Halka Zelkova	4		4
Total Large Tree Layer Trees (50 years +/-)						640

Fig. 7.13

Existing Tree Inventory Key

Existing Inventory Number	Botanical Name	Common Name
1-3	<i>Ulmus americana</i>	Elm
1-4	<i>Quercus robur</i>	English Oak
1-5	<i>Acer platanoides</i>	Norway Maple
1-6	<i>Acer palmatum</i> 'Dissectum'	Japanese Maple
1-7	<i>Ulmus americana</i>	Elm
1-9	<i>Thuja plicata</i>	Western Red Cedar
1-10	<i>Cornus</i> 'Eddie's White Wonder'	Dogwood
1-11	<i>Pseudotsuga menziesii</i>	Douglas Fir
1-12	<i>Thuja plicata</i>	Western Red Cedar
1-14	<i>Pseudotsuga menziesii</i>	Douglas Fir
1-15	<i>Pseudotsuga menziesii</i>	Douglas Fir
1-16	<i>Pseudotsuga menziesii</i>	Douglas Fir
1-17	<i>Metasequoia glyptostroboides</i>	Dawn Redwood
1-18	<i>Metasequoia glyptostroboides</i>	Dawn Redwood
1-19	<i>Ginkgo biloba</i>	Maidenhair Tree
1-22	<i>Acer platanoides</i>	Norway Maple
1-23	<i>Cedrus atlantica</i>	Atlas Cedar
2-1	<i>Acer platanoides</i>	Norway Maple
2-2	<i>Prunus yedoensis</i>	Yoshino Cherry
2-4	<i>Prunus yedoensis</i>	Yoshino Cherry
2-10	<i>Prunus yedoensis</i>	Yoshino Cherry
2-14	<i>Prunus yedoensis</i>	Yoshino Cherry
2-16	<i>Acer</i> 'Pacific Sunset'	Pacific Sunset Maple
2-22	<i>Pseudotsuga menziesii</i>	Douglas Fir
2-23	<i>Acer macrophyllum</i>	Bigleaf Maple
2-24	<i>Acer macrophyllum</i>	Bigleaf Maple
2-25	<i>Betula pendula</i> 'Youngii'	Young's weeping birch
2-26	<i>Acer platanoides</i>	Norway Maple
2-27	<i>Pseudotsuga menziesii</i>	Douglas Fir
2-28	<i>Pseudotsuga menziesii</i>	Douglas Fir
2-29	<i>Pseudotsuga menziesii</i>	Douglas Fir
2-31	<i>Pseudotsuga menziesii</i>	Douglas Fir
2-32	<i>Pseudotsuga menziesii</i>	Douglas Fir
3-4	<i>Acer macrophyllum</i>	Bigleaf Maple
3-5	<i>Acer macrophyllum</i>	Bigleaf Maple
3-6	<i>Prunus serrulata</i> 'Shirofugen'?	Shirofugen flowering cherry
3-7	<i>Prunus serrulata</i> 'Shirofugen'?	Shirofugen flowering cherry
3-9	<i>Prunus serrulata</i> 'Shirofugen'?	Shirofugen flowering cherry
3-10	<i>Thuja plicata</i>	Western Red Cedar
3-23	<i>Cedrus atlantica</i>	Atlas Cedar
3-24	<i>Taxus baccata</i> 'Hibernica'	English Yew
4-1 to 4-32 (except 4-3)	<i>Prunus serrulata</i> 'Kwanzan'	Kwanzan Cherry
5-1	<i>Magnolia grandiflora</i>	Southern Magnolia
5-2	<i>Magnolia soulangiana</i>	Saucer Magnolia
7-1	<i>Picea omorika</i>	Serbian Spruce
7-2	<i>Picea omorika</i>	Serbian Spruce
7-4	<i>Magnolia grandiflora</i>	Southern Magnolia
7-5	<i>Magnolia grandiflora</i>	Southern Magnolia
7-8	<i>Ilex opaca</i>	American Holly
7-9	<i>Picea omorika</i>	Serbian Spruce
7-10	<i>Picea omorika</i>	Serbian Spruce

Fig. 7.13

Existing Tree Inventory Key (continued)

7-12	<i>Ilex opaca</i>	American Holly
7-13	<i>Picea omorika</i>	Serbian Spruce
7-17	<i>Magnolia grandiflora</i>	Southern Magnolia
7-19	<i>Magnolia grandiflora</i>	Southern Magnolia
7-20	<i>Thuja plicata</i>	Western Red Cedar
7-23	<i>Picea omorika</i>	Serbian Spruce
7-24	<i>Picea omorika</i>	Serbian Spruce
8-4	<i>Trachycarpus fortunei</i>	Windmill palm
9-1	<i>Pseudotsuga menziesii</i>	Douglas Fir
9-2	<i>Pseudotsuga menziesii</i>	Douglas Fir
9-5	<i>Abies amabilis</i>	Pacific Silver Fir
9-6	<i>Abies amabilis</i>	Pacific Silver Fir
9-15	<i>Pinus monticola</i>	Western White Pine
10-49	<i>Catalpa speciosa</i>	Western Catalpa
11-3	<i>Prunus yedoensis</i>	Yoshino Cherry
11-18	<i>Acer palmatum</i> 'Bloodgood'	'Bloodgood' Japanese Maple
12-20	<i>Pseudotsuga menziesii</i>	Douglas Fir
12-21	<i>Pseudotsuga menziesii</i>	Douglas Fir
12-22	<i>Pseudotsuga menziesii</i>	Douglas Fir
12-23	<i>Pseudotsuga menziesii</i>	Douglas Fir
12-24	<i>Cornus florida</i>	Flowering Dogwood
12-25	<i>Cornus florida</i>	Flowering Dogwood
12-27	<i>Cornus florida</i>	Flowering Dogwood
12-29	<i>Pinus contorta contorta</i>	Shore Pine
13-2	<i>Fagus sylvatica</i> 'Atropunicea'	Beech
13-3	<i>Quercus rubra</i>	Common Red Oak
13-4	<i>Acer platanoides</i>	Norway Maple
13-5	<i>Platanus acerifolia</i>	London Planetree
13-6	<i>Chamaecyparis pisifera</i> 'Filifera'	Stringleaf Japanese Falsecypress
13-7	<i>Chamaecyparis pisifera</i> 'Filifera'	Stringleaf Japanese Falsecypress
13-10	<i>Prunus serrulata</i>	Japanese Flowering Cherry
13-11	<i>Prunus serrulata</i>	Japanese Flowering Cherry
13-13	<i>Prunus serrulata</i>	Japanese Flowering Cherry
13-14	<i>Prunus serrulata</i>	Japanese Flowering Cherry
13-21	<i>Prunus cerasifera</i> 'Newport'	Newport Cherry Plum
13-22	<i>Fagus sylvatica</i>	European Beech
13-23	<i>Thuja plicata</i>	Western Red Cedar
13-24	<i>Pseudotsuga menziesii</i>	Douglas Fir
13-25	<i>Pseudotsuga menziesii</i>	Douglas Fir
13-26	<i>Pseudotsuga menziesii</i>	Douglas Fir
13-27	<i>Pseudotsuga menziesii</i>	Douglas Fir
13-28	<i>Acer rubrum</i>	Red Maple
13-29	<i>Acer rubrum</i>	Red Maple
13-30	<i>Acer rubrum</i>	Red Maple
13-31	<i>Acer rubrum</i>	Red Maple
13-32	<i>Cornus florida</i>	Flowering Dogwood
13-33	<i>Laburnum anagyroides</i>	Golden Chain Tree
13-34	<i>Laburnum anagyroides</i>	Golden Chain Tree
13-35	<i>Prunus species</i>	
13-36	<i>Photinia serrulata</i>	Chinese Photinia
13-37	<i>Arbutus menziesii</i>	Pacific Madrone
13-39	<i>Arbutus menziesii</i>	Pacific Madrone
13-40	<i>Acer palmatum</i>	Japanese Maple
13-41	<i>Acer macrophyllum</i>	Bigleaf Maple
13-44	<i>Betula pendula</i>	Weeping Birch
13-47	<i>Auracaria auracana</i>	Monkey Puzzle Tree

Sustainable Design and Sustainable Landscape Management

Washington State's national leadership role

As with many sustainable challenges, the issues at the West Capitol Campus are as much about the irreparable losses that come with inaction, as the value created in taking action. In the face of the current global environmental crisis, the Washington State Capitol Campus has a responsibility to set the highest standard of excellence for sustainable landscape design, development, and management for the State. Washington State's role as a leader in sustainable policy and practices provides it with a unique position to influence others throughout the State and the Nation that look toward the Washington State Capitol for inspiration and guidance in making the transition to sustainable landscape management. Historic preservation of cultural landscapes is a core sustainable approach - providing a much needed example that encompasses cultural, natural, and economic resources. Ultimately, a successful rehabilitation of the West Campus balances these resources, preserving and realizing the historic landscape character, while protecting local ecology.

The first and most critical step is to adopt and commit to an umbrella policy.

The State has already committed to the LEED standard for new buildings (Leadership in Energy and Environmental Design), a series of strategies tied to ongoing monitoring that move us toward a more sustainable future. The site and landscape version of LEED is the Sustainable Sites Initiative. The U.S. Green Building Council (USGBC), a stakeholder in the Initiative, anticipates incorporating these guidelines and performance benchmarks into future iterations of the LEED Green Building Rating System. In addition, the Initiative is developing partnerships that will allow for the third party certification of projects that meet the rating tool's criteria. We recommend and anticipate the adoption of the Sustainable Sites Initiative to support the ongoing stewardship of the West Capitol Campus.

The most fundamental aspect of the Sustainable Sites Initiative that will impact Campus management and operations will be the development of a landscape maintenance plan based upon the rating tool's criteria. In comparing the criteria with existing Campus operations, it is evident that many of the required strategies are already underway or in practice on the West Campus; others are recommended as part of the proposed Vegetation Management Plan.

Sustainable Sites Initiative

The Sustainable Sites Initiative's prerequisites and criteria support many of the existing State and Campus initiatives, mandates, and strategies.

The GA's continued role as a facilitator that strengthens ties to these existing programs and develops collaborations that help the State meet its goals and objectives will be of critical importance. The following is a preliminary list of existing sustainable programs and opportunities:

- Policies adopted by the 2006 Master Plan for the Capitol of the State of Washington
 - **Policy 3.3 – Environmental Stewardship**

The state shall, in the process of developing, redeveloping and maintaining its real estate assets, be a model to the citizens of the state by employing the highest standards of environmental protection.
 - **Policy 6.3 – Integration with Local Infrastructure**

“Apply standards developed by... LEED to new buildings, as well as to major building upgrades.”
- Initiatives for water conservation
 - **“Purple water” option** – also linked to recommendations in 2001 Regeneration Study: “Prepare a Campus wide Water Supply and Delivery System Study. The water delivery system should undergo a system-wide survey and assessment. This effort should provide a clear picture of system performance as well as life cycle status. Other sustainable options for water supply and delivery should also be examined, including storm water capture/storage, water reuse and water reduction programs.” Based upon interviews with GA staff, water-use reduction has already been achieved, and further reduction is being pursued.
- Western Climate Initiative
 - “WCI was created to identify, evaluate, and implement collective and cooperative ways to reduce greenhouse gases in the region, focusing on a market-based cap-and-trade system.”
- National Pollution Discharge Elimination System (NPDES)
- Total Maximum Density Load (TMDL) – concerning pollution levels in the Deschutes Watershed, especially nutrients and fertilizers associated with grounds management. Problems have been identified; the next step is the development of a management plan.
- Governor Gregoire's sustainability goals
- President Obama's sustainability goals

The existing Campus success stories can be celebrated, and practices can be legibly enhanced through the framework of the Sustainable Sites Initiative.

The West Capitol Campus already conducts many of the practices encouraged in the Sustainable Sites Initiative such as managing invasive species, integrated pest management and reducing potable water consumption. The tool strives to shift practices toward many of the goals shared by the State of Washington such as net-zero waste, improved water quality and carbon-neutral practices. The State's influence through purchase volume can also positively impact the practices of vendors through plant procurement requirements noted in the Initiative.

The Initiative's benchmarks are designed to preserve or restore a site's sustainability within the context of ecosystem services – the idea that healthy ecosystems provide goods and services of benefit to humans and other organisms. Performance benchmarks are used to ensure that bio-regional differences are incorporated in the tool, to encourage innovation, inspire a change in thinking and provide flexibility.

The Sustainable Sites Initiative is organized chronologically for a project's typical development:

- site selection: select locations to preserve existing resources and repair damaged systems
- pre-design assessment and planning: plan for sustainability from the onset of the project
- site design/ecological components: protect and restore site processes and systems
- site design/human health components: build strong communities and a sense of stewardship
- site design/materials selection: reuse/recycle existing materials and support sustainable production practices
- construction: minimize effects of construction-related activities
- operations and maintenance: maintain the site for long-term sustainability

A draft of the Initiative guidelines and performance benchmarks can be found at www.sustainablesites.org. By the end of 2009 the Initiative will be accepting applications for pilot projects to test the rating system.

Gradual Measures

In addition to the sustainable actions described in the Vegetation Management Plan, gradual and visible measures that can improve sustainable landscape performance, build public support, and ensure the success of larger implementation areas include:

- eco-lawn testing area, accompanied by interpretive signage
- raingarden demonstration or testing area, accompanied by interpretive signage (see Figs. 8.1 - 8.7)
- removal of invasive plant species, accompanied by interpretive signage
- relocation of a surface parking area, replaced by a demonstration garden or public amenity

Sustainable Design and Sustainable Landscape Management
Sustainable Strategies

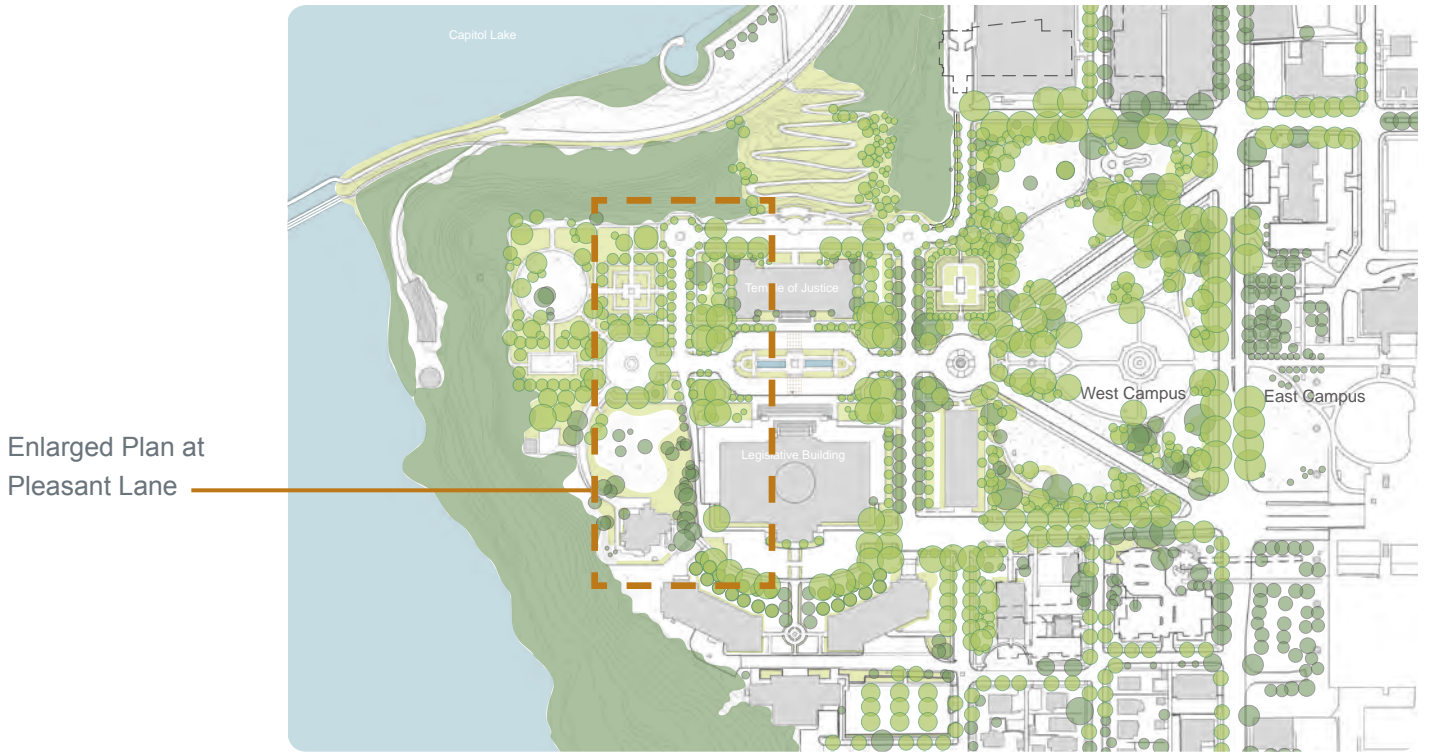


Fig. 8.1 Key map of plan enlargements, below

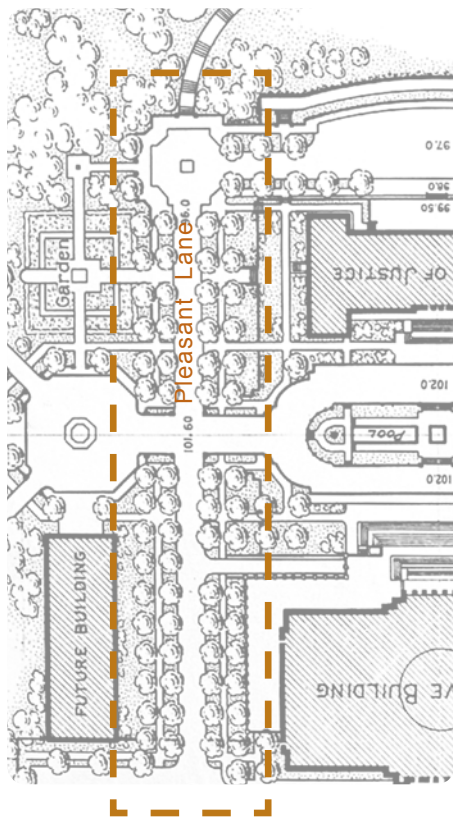


Fig. 8.2 PAST: 1928 Olmsted Brothers General Plan showing a double allee of trees along Pleasant Lane

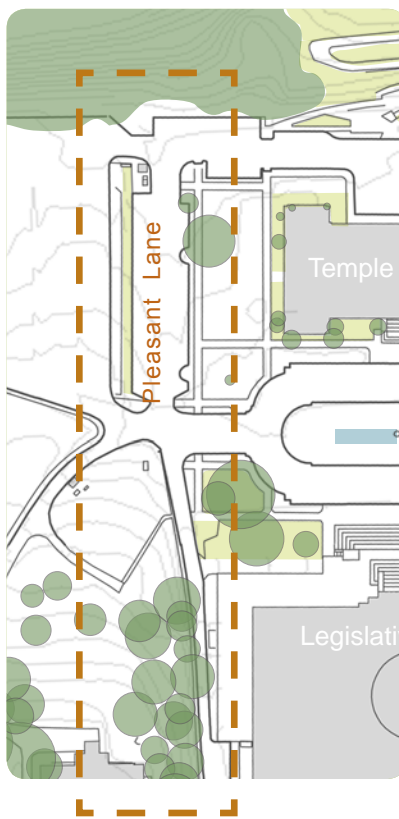


Fig. 8.3 PRESENT: Existing Plan at Pleasant Lane

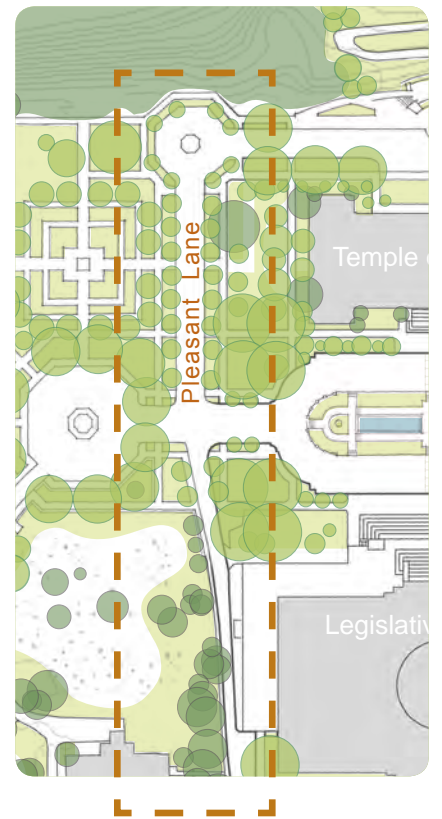


Fig. 8.4 FUTURE: Master Plan at Pleasant Lane showing historically intended allee

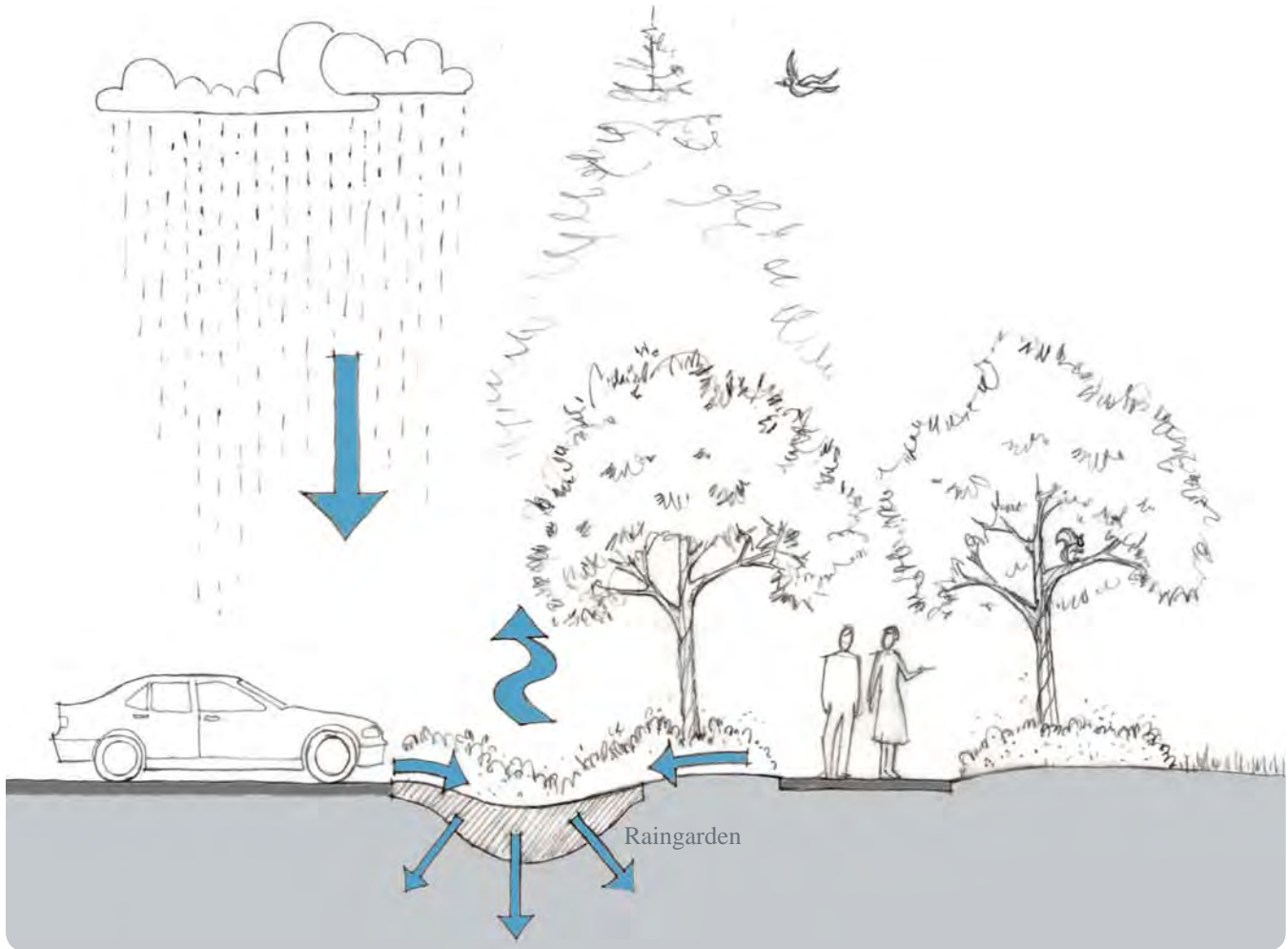


Fig. 8.5 Install raingardens to increase stormwater function at surface parking areas. Along Pleasant Way, raingardens could be integrated with the installation of the historically intended allees of flowering trees and layered understory.



Fig. 8.6 Existing parking area along Pleasant Way (Sept. 2008, Source: Mithun)



Fig. 8.7 Raingarden at High Point Neighborhood, Seattle (2008, Source: Mithun)

Context for Cost Analysis

As described in Chapter 3: Context and Resources, GA and the extended project team initially anticipated identifying actions and strategies that would yield the highest cultural, environmental, and economic value. The recent economic downturn has affirmed the importance of this approach.

Trees are appreciating assets; those planted or preserved by previous generations have tremendous value today. While the State is looking for ways to decrease costs and reduce waste, it would be egregious and short-sighted to squander the investments made by previous generations by reducing landscape care and maintenance. To avoid unnecessary further decline and attrition of the existing resources, and to ensure the maturity of the investments, ongoing stewardship and preventive care cannot be overstated.

As we are protecting previous investments, it is likewise important that our generation continue to make *additional incremental investments* in the landscape, to plant ‘seeds’ that will grow and appreciate, becoming assets for future generations. Incremental investments would yield positive returns and communicate our respect for previous generations and our responsibility to future generations, not only in bequeathing our historic heritage, but in setting the compass toward a sustainable future.

Methodology

This chapter includes an **operational cost analysis** and a **capital cost analysis**.

The **operational cost analysis** provides a big-picture view of the *long-term maintenance costs* associated with the fully-implemented Master Plan, compared to the maintenance costs associated with the existing landscape. The analysis focused on areas with the clearest direction, particularly the existing greensward areas and formal planting areas, and excluded areas outside the critical project scope, even if directly adjacent. For example, there are too many factors that would affect the accuracy of a cost analysis for the unrealized far west end of the Campus. General trends from the cost analysis of the core areas can be extrapolated and applied to less defined areas.

The operational cost analysis involved interviews with GA grounds staff and managers, a landscape questionnaire, review of the 2003 Sterling Report, Landscape Standards, hourly expenditure data, and equipment parameters. We ran a preliminary cost estimate based upon the existing square-footage and composition of the campus - areas of lawn, areas of shrubs, trees - then compared the existing conditions to the proposed conditions. The Vegetation Management Plan contains a list of strategies to more closely align maintenance practices with the Vision for the Campus. These strategies have been rated according to their high level cost/benefit; see Fig. 9.3.

The **capital cost analysis** focused on potential future projects identified in the phasing plan located in Ch. 6 (Fig. 6.3) As described, the projects were organized into two general types: *incremental implementation*

Cost Analysis

opportunities, and *capital projects*. Smaller, *incremental* opportunities are primarily vegetation-based and achievable through donations, operational re-allocations, and smaller capital investments - primarily with existing in-house expertise and labor, enlisting external consultation as needed. The *capital project* opportunities would entail additional, detailed analysis of amassed historic documentation, further design and review, public outreach, bidding, and construction, and would involve significant external consultation. Incremental opportunities are shown along with high-level cost information on Fig. 9.4. Rough order of magnitude numbers for one large capital project, the Flag Circle, have also been provided. See pgs. 142-145.

Operational costs

The Landscape Preservation Master Plan eventually calls for triple the number of existing trees and more than quadruple the shrub area. Areas of layered trees and shrubs would replace portions of energy- and resource-intensive lawn. This transition alone would yield a significant reduction in maintenance cost over time while considerably improving the tree canopy, habitat value, water holding-capacity, and heat island reduction. Additional changes that have been factored into the cost analysis include a 50 percent reduction in the amount of annual color in existing Management Areas 1 and 2 (replaced by perennials), and bi-annual mulching of the shrub bed areas at an average of 1.5 inches of mulch depth.

Overall, implementation of the Master Plan for the core areas of the West Campus would generate a 1-2 percent annual labor savings over existing practices.

This is time that could be allocated toward other tasks that the grounds team identified as priorities and sources of pride, such as the Sunken Garden care and tree care.

Operational Recommendations and Considerations:

- **Equipment:** Mowers should be updated to keep up with mulching technology. As much turf area as possible should be mulched. Mulching would reduce cost for collection of clippings and disposal off site, reduce materials cost for fertilizer and improve soil health.
- **Soil:** Mulching leaves into bed and turf areas wherever possible will reduce off-site disposal and improve soil health.
- **Annuals:** Removal of annuals for seasonal color would be a major reduction in cost. Replacement with perennial plantings would require less labor and materials.
- **Integrated Pest Management:** Use of herbicides to control weeds and invasive species is a major cost savings and does not need to be excluded from a sustainable plan when responsibly managed. IPM practices must continue to respond to the best available horticultural science. Removal of invasive, diseased, or overgrown plant materials placed improperly will reduce pruning labor and chemical input.
- **Turf:** We made assumptions about the type of equipment that would be used in each area based on the equipment list provided and established a production rate for each. It is interesting to note that by replacing turf with shrubs in the low production rate areas (areas where small mowers are required) the

efficiency of the overall mowing increased by 8 percent, because a much larger percentage of the total square footage could be mown with high production mowers.

- **Shrub Bed Areas:** We left the average production rate the same for the existing table and the proposed table, because even though new plantings will require more time for weeding, they will conversely require less time for pruning. As the new landscape beds mature the weed seed population should decrease while the pruning requirement increases. The production rates will be heavily affected by the relative presence of new weed seed sources such as adjacent fields (not a big deal here) and seed introduced in poorly composted mulches. Failing to remove weeds prior to seed production will have a large affect, as well.
- **New plantings** that are designed with room for each plant or plant grouping to grow to maturity without crowding each other or creating clearance problems on walks, drives, and buildings will greatly reduce the amount of pruning that will be required in the future.
- **Shrub bed category** assumes hand weeding 35 times annually, weed spraying 16 times, hand pruning 4 times, shearing hedges 6 times, bed raking 35 times, and fertilizing 1 time.

Fig. 9.1 West Campus **Existing** Area Take-offs, based upon geographic areas shown on Fig. 10.6.20.

Area	Lawn Area s.f.	Hours	# of Trees	Hours	Shrub Area s.f.	Hours	Bark Mulch Area s.f.	Hours	Annuals Area s.f.	Hours	Total Hours
Area 1: North Diagonal	148,704	717	19	19	1622	10	11,309	49	18494	1514.47	
Area 2: Middle Diagonal	153,954	796	31	31	0	0	10,372	45	450	36.8505	
Area 3: South Diagonal	65,898	341	20	20	8,962	53	2050	9	0	0	
Area 4: Cherry Lane	14,813	248	31	31	0	0	475	2	0	0	
Area 5: Legislative Building	683	5	4	4	8,893	53	0	0	0	0	
Area 6: Flag Circle	31,647	253	9	9	11,567	68	0	0	1218	100	
Area 7: Temple of Justice	20,419	163	22	22	13,822	82	0	0	0	0	
Area 8: Conservatory	0	0	9	9	5,173	31	0	0	0	0	
Area 11: O-Brien Building	25,308	202	17	17	1,996	12	0	0	173	14	
Area 12: Cherberg Building	34,592	277	28	28	9,069	54	2,766	12	173	14	
Area 13: Newhouse Building	24,474	196	15	15	1,183	7	0	0	0	0	
Totals	520492	3,197.70	205	205	62287	368	26972	117	20508	1679	5568
Average Labor Hours per 1000 Square Feet	6.14				5.91		4.35		81.89		

Fig. 9.2 West Campus **Proposed** Area Take-offs based upon geographic areas shown on Fig. 10.6.20.

Area	Lawn Area s.f.	Hours	# of Trees	Hours	Shrub Area s.f.	Hours	Bark Mulch Area s.f.	Hours	Annuals Area s.f.	Hours	Total Hours
Area 1: North Diagonal	93,791	452	167	167	77091	634	0	0	9247	757.237	
Area 2: Middle Diagonal	113,665	588	105	105	41276	339	0	0	225	18.4253	
Area 3: South Diagonal	36,510	189	81	81	46,860	385	0	0	0	0	
Area 4: Cherry Lane	0	0	33	33	16012	132	0	0	0	0	
Area 5: Legislative Building	0	0	15	15	9,576	79	0	0	0	0	
Area 6: Flag Circle	0	0	44	44	35,061	288	0	0	0	0	
Area 7: Temple of Justice	7,191	57	64	64	34,277	282	0	0	0	0	
Area 8: Conservatory	0	0	18	18	5,923	49	0	0	0	0	
Area 11: O-Brien Building	25,135	201	22	22	3,577	29	0	0	0	0	
Area 12: Cherberg Building	32,013	256	34	34	14,241	117	0	0	0	0	
Area 13: Newhouse Building	0	0	42	42	0	0	0	0	0	0	
Totals	308305	1,743	625	625	283894	2335	0	0	9472	776	5479
Average Labor Hours per 1000 Square Feet	5.65				8.22				81.89		

Note: The tree count is based upon the Large Tree Layer draft plan. Final adjustments to the Large Tree Layer Plan increased the number of trees to 640. This increase in trees would add 15 labor hours, but would maintain the 1-2 percent cost savings, overall.

Cost Analysis

- **Trees:** We used a baseline number of 1 hour per tree into both tables. This is one number that will increase over the years as new trees reach maturity, both in terms of the hours necessary to prune and fall leaf control, but more consideration is needed regarding this aspect. It is important to consider that the WCC has a lot of mature trees and trees requiring chemical treatment for disease. If the demographic shifts younger (or at least more staggered), and if new trees are well chosen, sited, and tended during establishment, per tree maintenance should decline over current demand.
- **Other Activities:** Road maintenance, trash collection, snow removal, and special event preparation and cleanup, were assumed to be constant in the comparison between existing conditions and proposed conditions
- **Further study:** We recommend a near-future baseline cost/resource study to help establish resource budgets for water, energy, and waste, to guide goal-setting for reduction, and to generate a timeline for implementation.

Operational Cost / Benefit Analysis

Implementation priorities described in the Vegetation Management Plan were analyzed according to their relative costs and benefits. This analysis identified some of the least costly, but most effective, strategies to advance sustainable grounds operations and to make progress toward the larger Campus vision. See Figure 9.3.

Operational Planning Tool

Another priority described in the VMP is to build upon ongoing tree monitoring efforts by purchasing and using a computerized tree management program. Tree management software offers powerful tools for planning, maintaining, managing risk, budgeting and record-keeping related to current and future West Campus trees. Available off-the-shelf, PC-based products are highly refined, versatile and user-friendly. Software varies in cost according to platform, vendor support and capabilities, from **\$500 to \$12,000 or more**. Once GA identifies what features it needs, the process of procurement can be quick and setup straightforward.

A key related cost consideration is staff training and responsibility for importing tree records and putting software to use. Employees ranging from gardeners to upper-level managers can tap and contribute to tree data, but one person must assume the lead in electronic tree management. Although existing work assignments can be reconfigured, an urban forester or certified arborist should handle this transition and fill this role, perhaps initially on a contract basis. Software alone will provide only marginal benefit.

Fig. 9.3 Cost / Benefit Analysis of Implementation Priorities described in the Vegetation Management Plan

MANAGEMENT ACTION	COST	BENEFIT	COST EFFECTIVE PRIORITY	NOTES
Canopy:				
Treework to abate immediate risk	Moderate	High	3	
Treework to abate potential risk	Moderate	High	3	
Periodic inspection / monitoring	Low	High	1	
Establish routine pruning cycle	Moderate	High	3	
Reduce canopy crowding / thin stems	Moderate	High	3	
Remove invasive-species trees	Moderate	High	3	
Plant replacement trees	High	High	5	
Plant trees in new locations	High	High	5	
Remove turf / mulch to dripline	Low	High	1	
Underplant trees	High	Moderate	6	
Exclusion fencing / vegetation	Low	Moderate	2	This has a significant aesthetic impact.
Health treatment - significant trees	Moderate	Moderate	4	
Create habitat snags	Low	High	1	
Understory:				
Move / remove poorly-sited plants	Low	High	1	
Replace diseased / declining plants	Moderate	Moderate	4	
Remove invasive ornamentals	Low	High	1	
Priority prune - restore, reduce, repair	Moderate	high	3	
Cyclical maintenance pruning	Moderate	High	3	
Mechanical weed / invasives control	High	High	5	
Chemical weed / invasives control	Low	High	1	
Install new understory plants	High	Moderate	6	
Infill understory plant gaps	High	Moderate	6	
Plant spring bulbs / seasonal color	High	Moderate	6	
Plant summer-fall seasonal color	High	Moderate	6	
Add perennial/woody plant color	Low	Moderate	2	Cost relative to annual color
Lawn:				
Install corrective drainage	High	Moderate	6	
Convert lawn to planting beds	High	High	5	
Mulching mow, leave clippings	Low	High	1	
Mow fallen leaves & leave on lawn	Low	High	1	
Shred leaves to mulch beds/trees	Moderate	High	3	
Collect leaves to compost offsite	High	Low	7	

(continued)

Cost Analysis

MANAGEMENT ACTION	COST	BENEFIT	COST EFFECTIVE PRIORITY	NOTES
Prep soil and install "ecolawn"	Moderate	Low	6	Introducing Ecolawn to the site could require increased use of herbicide to control weeds in <i>formal</i> (non eco-lawn) turf areas.
High frequency aerate, thatch, reseed	Moderate	Moderate	4	
Low frequency aerate, thatch, reseed	Low	Moderate	2	
High frequency fertilization	Moderate	Moderate	4	
Low frequency fertilization	Low	Moderate	2	
Install permanent edging	Moderate	Low	6	Permanent edging still requires occasional use of power equipment to maintain.
Periodic edging to contain lawn	Low	Low	3	Benefit is aesthetic in value only
Site & Soil:				
Install corrective drainage	High	High	5	
Air spade to relieve compaction	High	Moderate	6	It would be lower cost to high value to follow above recommendation for mulch to dripline
Limited +/- establishment irrigation	Low	Moderate	2	Cost relative to standard irrigation
Efficient, Maxicom-based irrigation	High	High	5	
Test soil pH & nutrients annually	Low	High	1	
Test soil during bed prep	Low	High	1	
Apply organic fertilizer	Moderate	Moderate	4	
Amend soil with organics	Moderate	High	3	
Create elevated berms for planting	Moderate	Moderate	4	Most planned bed areas under existing trees. Addition of soil in these areas would suffocate tree roots.
Apply organic mulch annually	High	Moderate	6	
Apply woodchip mulch on bare areas	High	Moderate	6	
Sheet mulch invasives	Moderate	High	3	
Retain snags / scatter woody debris	Low	High	1	Cost relative to total removal

Donations and Endowments

Historically, the West Campus was under construction during the onset of the Great Depression. Consequently, the State needed to reduce expenditures, and the majority of the trees and shrubs that were intended to structure the Campus were never planted. The Olmsteds responded to this situation by writing letters to cities and influential individuals throughout the state and the nation, requesting tree donations for the Campus.

Today, tree donation programs are becoming increasingly popular as a way to extend the limited resources of public organizations and operations while improving the quality and meaning of the landscapes within which the trees reside. The Seattle Parks Foundation offers a tree donation program with several tiers of participation ranging from the adoption of a legacy tree to supporting the ongoing care of an existing tree.

We recommend the creation of a vegetation donation program for the West Campus with the following parameters and considerations:

- Different levels of donation, ranging from a complete endowment for a new tree or grove, to the ongoing support of an existing or new tree within the Campus.
 - Specimen tree + site preparation and establishment care + ongoing maintenance and care
 - Grove of trees + site preparation and establishment care + ongoing maintenance and care
 - Rehabilitation of a campus area, such as a bed of shrubs and trees
 - Adopt-a-tree fund to contribute to preventive and ongoing care of existing trees
- The donation program should accept monetary gifts, but with the exception of unusual circumstances, should not accept gifts of physical trees, since these often arrive with irreparable defects.
- Once an appropriate location and species is determined based upon the Large Tree Layer, Campus trees should be selected or approved by an arborist for good structure and overall health and vigor.
- Ground preparation should include, but is not limited to, turf removal, soil testing, soil amendments, and drainage improvements.
- It is not advisable to plant single specimen trees within an area that needs a larger, more comprehensive rehabilitation.

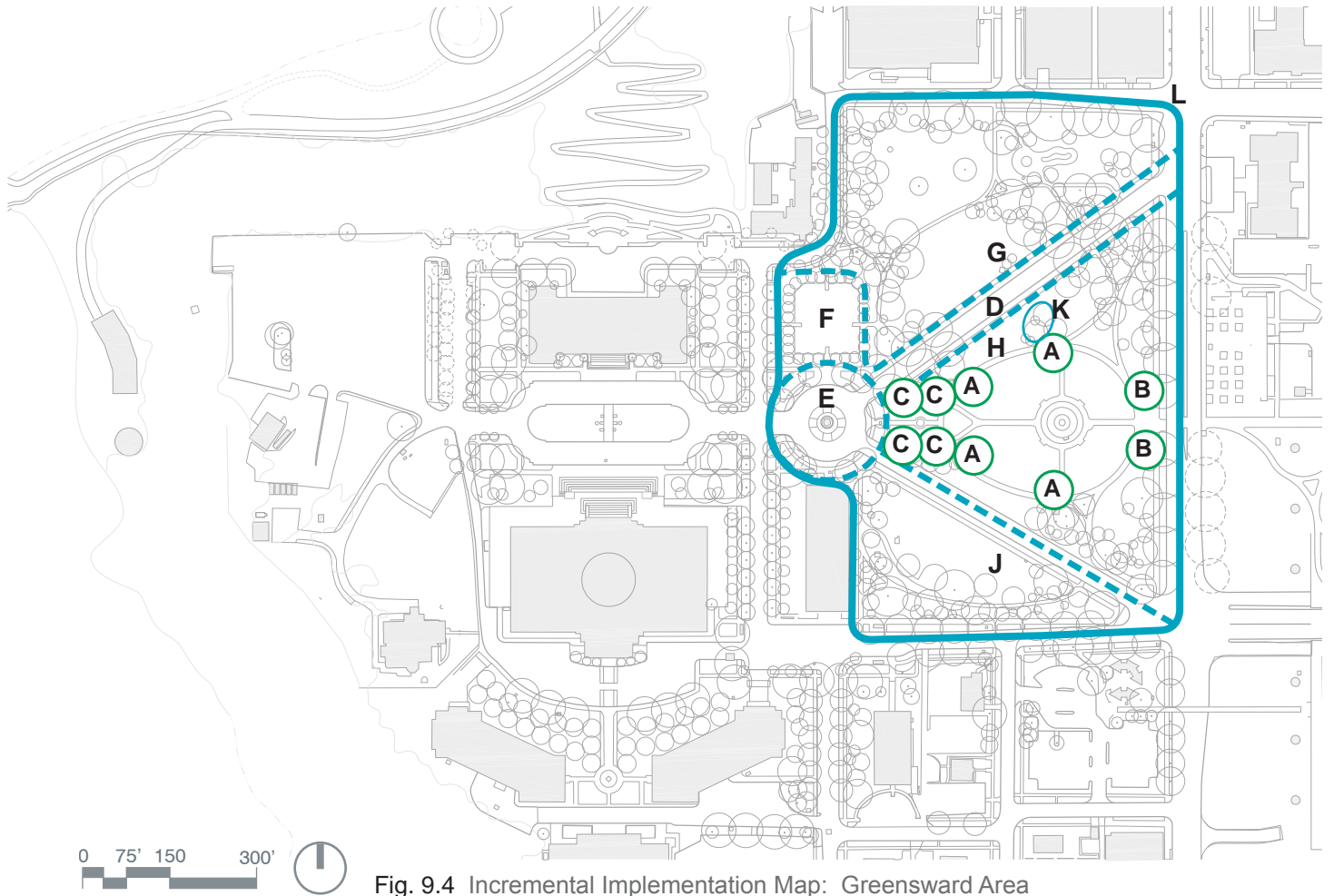


Fig. 9.4 Incremental Implementation Map: Greensward Area

Key

A	Four 'structural' elms at Greensward oval	\$ 3,800.00
B	Two 'gateway' elms at Greensward oval	\$ 1,900.00
C	Four 'structural' elms at Greensward apex	\$ 3,800.00
D	Twelve street tree elms along North Diagonal	\$ 11,400.00
E	Ten trees at Winged Victory circle + shrubs, groundcovers	\$ 58,520.00
F	Sunken Garden restoration (vegetation only)	\$ 54,656.00
G	North Diagonal trees + shrub areas	\$ 267,400.00
H	Middle Diagonal trees + shrub areas	\$ 226,150.00
J	South Diagonal trees + shrub areas	\$ 184,882.00
K	Garry Oak grove / plant community	\$ 16,530.00
L	Total Greensward (vegetation only)	\$ 803,008.00

Incremental Implementation Opportunities

Cost analyses for incremental implementation opportunities focused on the Greensward area, due to the range of benefits associated with the proposed increased in layered vegetation. Implementing the vegetated edges and 'structural' trees would help to achieve cultural, environmental, economic and experiential objectives for the Campus. Fig. 9.4 builds upon the previous phasing plan included in Ch: 6 (Fig. 6.3), outlining smaller planting projects that can be implemented over time.

Estimates were based upon the criteria included in Section 6 of the Vegetation Management Plan: Management and Maintenance Practices. Additional assumptions include:

- The capital cost analysis used industry standards for labor and installation costs, with a fifty percent margin and equipment rental.
- Estimates were extrapolated from unit- and square footage costs, with some savings achieved through larger implementation areas.
- Estimates include measures to counteract localized drainage problems, such as curtain drains, french drains, and flowells. In the long-term, a Campus-wide drainage, stormwater, and irrigation analysis and design is necessary.
- Installation costs include the removal of existing turf.
- Trees were estimated as 2" caliper, either balled and burlapped or large container, standard nursery variety.
- Shrub installation costs were based upon an average 2 gallon size nursery stock, using 4' centers throughout the shrub bed.

Cost Analysis

Large Capital Project Example: Flag Circle / Civic Plaza

The Flag Circle, or Civic Plaza, currently exists as a large oval of 'temporary' lawn inscribed within a parking loop. Three existing flags punctuate the space. Future relocation of parking provides the opportunity to rethink this important civic space and to create a functional and uplifting place for people. The rough order of magnitude costs provided below are based upon the Olmsted's historic vision as depicted in plans and correspondence: sunken gardens, flags, reflecting pools, low architectural balustrades, and formal arrangements of trees, shrubs, and flowering perennials. (See Fig. 6.10)

Rough Order of Magnitude Cost Summary:

Hard Costs

Demolition:	\$ 173,400
Installation:	\$1,010,150
GC O&P 10%:	\$ 135,695
Est Contingency 15%	\$ 203,542
Hard Cost Sub-Total	\$1,522,787

Soft Costs

Design + consultants 14%	
Permits 2%	
Project management 6%	
Testing/inspections/etc. 3%	
Change order contingency 5%	
Equipment & furnishings 10%	
Management reserve 5%	
Project Soft Costs @ 45%	\$ 685,254

Total ROM Estimated Cost: \$2,208,041

Demolition estimate includes:

- Lawn removal
- Removal of existing paving at center of oval
- Removal of existing paving at n/s crossing of parking area
- Excavation

Installation estimate includes:

- Build low “architectural balustrade” – Wilkeson Sandstone or other high-end material
- Build low garden seat walls – Wilkeson Sandstone or other high-end material
- Water feature – reflecting pools
- Soil for raised beds
- Plants for raised beds (formal arrangement of low shrubs and perennials)
- Plaza paving – high end material, such as Wilkeson Sandstone
- Pedestrian crossing paving - high end material, such as Wilkeson Sandstone
- Plants for raised beds Soil work and plants (shrubs and perennials) for beds surrounding plaza
- Plant 16 ‘structural’ Elm trees
- Plant 8 crabapples (4 @ each entry)
- Rehabilitate shrub beds immediately surrounding Flag Circle

Utilities, drainage, irrigation, and other infrastructural improvements have not been included with these ROM costs, as there are too many unknowns at this time.

Cost estimates for **selected lighting projects** are included in Chapter 11: Lighting Considerations, Fig. 11.15.



**West Capitol Campus
Vegetation Management Plan**

Note to reader: The Vegetation Management Plan is a companion volume to the 2009 West Campus Landscape Preservation Master Plan. Pagination, section headings, and figure numbers are based upon the fully-integrated, bound document, where the VMP is included as Chapter 10. Bibliographic information, appendices, and other linked figures and sections are included with the full document. (A select number of documents have been bound as two separate volumes.)

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Section 10.1: Introduction and Executive Summary



Fig. 10.1.1 U.S. Capitol (March 2009, Source: Arbutus Design)



Fig. 10.1.2 Washington State Capitol (April 2009, Source: Arbutus Design)

10.1.1 Introduction

Except for the Federal Capitol, Washington State's West Capitol Campus is considered among the best-realized capitol grounds designed by the Olmsted landscape architecture firm over its 100-plus year practice. This Olmsted design origin - while highly significant – has been overlain by generations of landscape change visible in the growth, alteration and attrition of its vegetation. The Olmsted legacy at this campus was particularly affected by timing. Its Depression era implementation prevented completion of much planting, compromising the intended landscape character. Today Washington's historic Capitol Campus combines a rich mix of plants, imprints and human events.

This Vegetation Management Plan ("VMP") seeks to direct conservation of landscape character within the dynamic realities of societal and landscape change. Because plants are growing organisms, they cyclically mature, decline, die and are replaced by new generations; whether this process is directed or left alone distinguishes gardens from wild places. A designed landscape requires active management to conserve the designer's vision; without, these qualities are lost.

VMP Section 10.1: Introduction + Executive Summary

In addition, this document seeks to support the reclaiming of key Olmsted landscape qualities never previously achieved, in a manner respectful of the natural environment and earth's finite resources. As a companion to the 2009 Master Plan, this VMP lays out specific steps and practices that over time will help bring the Master Plan to fruition. Planting and maintenance practices are as powerful an influence on landscape character as any capital project. A great deal of responsibility and influence, then, lie in the hands of those who care for the Capitol grounds day-by-day and year-by-year. This VMP provides a bridge between design ideas and practical realities.

Although no landscape can be frozen in time, management guided by clear objectives can safeguard historic qualities while accommodating evolving conditions. Today, parts of the West Capitol Campus vegetation have lapsed from active management in face of constrained resources. Resulting erosion of historic character goes hand in hand with issues of user safety, tree loss, and incursion of invasive species. Put to use, this Vegetation Management Plan will become a tool by which landscape stewards can combine long-term vision with action, appropriately applied over time.

10.1.2 VMP Format

This VMP is organized and can be used in a variety of ways, depending on one's orientation. The plan can be digested in its entirety or in parts, read for broad ideas and information, or for guidance about particular park areas or topics. From this introductory chapter, the document moves to goals and objectives for vegetation management, followed by summary and analysis of existing conditions, area-specific recommendations for vegetation management, maintenance and management techniques, and concluding with discussions of implementation approach and priorities, and guidance on monitoring for VMP fulfillment.

Although this document contains much stand-alone material, successful implementation of recommendations depends on the integrated research, management objectives, and sequenced actions described herein, grounded in the 2009 Campus Master Plan. Vegetation management inherently involves multiple players interacting with the landscape over many years. At best, piecemeal activity yields mixed results. Conversely, by using this plan consistently over its twenty-year lifespan, much can be achieved in way of vegetative health, longevity and beauty.



Fig. 10.1.3 View from pedestrian bridge on a snowy day (March 2009, Source: Arbutus Design)

10.1.3 Executive Summary

The overall goal of the West Capitol Campus Vegetation Management Plan is:

To sustain through time the West Capitol Campus's vegetation, consistent with both its Olmsted Brothers design heritage and the needs, vision and resources of the 21st Century.

Overarching Objectives in support of this goal are:

- To support realization of the 2009 Master Plan for the Capitol's Olmsted heritage landscape.
- To help fulfill through Campus vegetation a common landscape vision supported by State government at all levels.
- To manage vegetation to provide a safe, dignified and welcoming environment for Capitol users.
- To enhance and demonstrate environmental sustainability of the Capitol Campus landscape.

Specific Objectives based on current landscape condition and needs are:

- To provide practical guidance for appropriate vegetation management.
- To stabilize significant vegetation to minimize continuing deterioration or loss.
- To regenerate landscape plantings while protecting historic buildings.
- To proactively address current tree risk and minimize future tree risk.
- To increase and enrich native vegetation and habitat.
- To justify funding commensurate with identified needs.

The above Goal and Objectives derive from assessing the multiple influences affecting Campus vegetation, as part of the dual Preservation Master Plan and VMP development process:

- Landscape history and evolution
- Existing vegetation composition and condition
- Current maintenance practices and limitations
- Contemporary Campus uses, issues and opportunities
- Planning, policy, design and management direction

This evaluation was distilled into findings that reveal a picture of what needs to be addressed through vegetation management. Key findings are summarized below, together with management implications.



Fig. 10.1.4 Heritage Norway Maple has received special structural supports and health treatments (October 2009, Source: Arbutus Design)



Fig. 10.1.5 Kwanzan cherries in 13 Colonies grove suffer decay from poor drainage (April 2009, Source: Arbutus Design)

Trees

- Population is skewed in composition toward mature and declining generations: immediate and ongoing tree replenishment is needed.
- Pruning and selective removals to reduce crowding and competition are overdue.
- While few trees pose immediate risk, prevalence of structural defects, constant use, and multiple targets indicate more active monitoring and tree care are needed.
- Horticultural problems, especially compaction and poor drainage, contribute to pests and pathogens that adversely affect numerous campus trees.
- Population is severely skewed toward ornamental cherries, which have multiple horticultural problems on this site; better-adapted flowering trees should be emphasized to replenish plantings.
- The campus possesses significant mature trees that warrant special management and preservation, and proactive replacement planting before their ultimate removal.
- Native trees are historically, aesthetically and environmentally important to the Capitol landscape but need special attention to insure their abundance and health.
- Some trees match the 1929 Olmsted plan but intended vistas, openings, enclosures and vegetative layers could be reclaimed through active management.
- WCC needs but lacks historically intended mixed-height tree canopy to support heritage, aesthetic, habitat and sustainability objectives.
- Irregular monitoring and arboricultural attention have contributed to risk conditions and abbreviated life expectancy. The Capitol needs a dedicated arborist.
- The existing landscape and Olmsted plant list include several invasive tree species that need to be eliminated from present and future plantings.
- Problem-prone trees are a maintenance burden and aesthetic liability, and should be replaced with improved modern varieties.

Understory

- Almost-total absence of understory vegetation on the east half of the grounds is a dramatic departure from Olmsted design intent, and would confer many benefits.
- Existing shrub species mostly derive from the Olmsted plant list, but lack intended range and abundance; measures to expand and enrich Campus understory are needed.
- Treelike overgrown shrubs impact safety, light to buildings and landscape character, and need significant pruning, relocation or removal.
- High-visibility shrub beds are tidy but receive neither mulch nor periodic pruning. Altered maintenance priorities, materials and techniques would improve landscape appearance, security and plant health.
- Invasive plants are a limited problem on Campus, but a major issue along much of the native edge, and need to be assertively controlled in both areas.
- Drainage and compaction problems affect turf and shrub health; extent and locations of turf bear re-evaluation.
- Lawn maintenance consumes disproportionate resources, while shrubs and trees suffer neglect; this balance needs correcting given the high value and long-term impacts on tree canopy.
- Annual color program requires significant landscape resources; more use of permanent plants for seasonal color would be more cost effective and incorporate Olmsted list flowering groundcovers, low shrubs, perennials and perennial bulbs.
- Plantings associated with memorials are simple and generally subordinate to the broader landscape context; future memorial plantings should meet these criteria also.
- The degraded bluff periphery offers opportunities to add species-rich native habitat to the landscape; native understory should be further incorporated throughout the grounds, as shown in the Olmsted plan.
- Deer frequent the Campus and need to be considered in regard to plant palette; deer-attracting species should be used sparingly & more resistant species highlighted.



Fig. 10.1.6 Veronica in lawn indicates poor drainage. Shrubs beyond obscure windows and crowd building (April 2009, Source: Arbutus Design)



Fig. 10.1.7 Healthy native understory at NW corner of bluff contrasts with ivy-engulfed ground and trees nearby. (March 2009, Source: Arbutus Design)



Fig. 10.1.8 Winged Victory memorial is a key Olmsted plan element. Intended circling evergreen magnolias are absent (April 2009, Source: Arbutus Design)

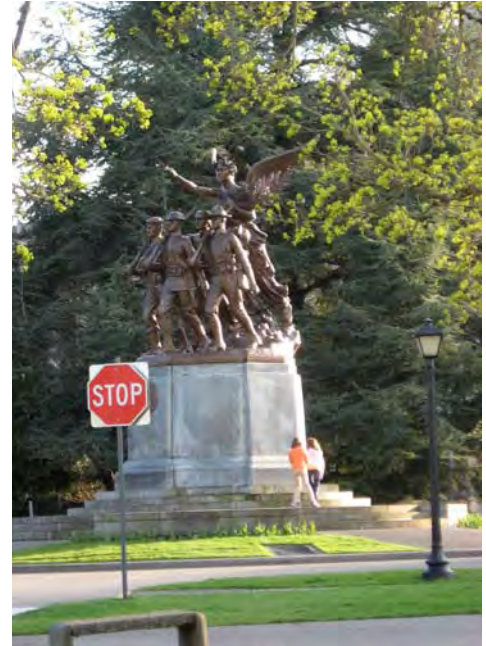


Fig. 10.1.9 Typical lobbying day scene: visitors swarm from buses, congregate under and trample root zones of heritage Atlas cedars at edge of Winged Victory circle (February 2009, Source: Arbutus Design)

History

- Portions of the Olmsted Brothers design were implemented (see 2009 Landscape Master Plan Assessment of Resources, Chapter 5); **preservation of intact elements should be a high priority for landscape management.**
- Altered contemporary uses and maintenance levels affect what and how much of original landscape is feasible to retain; historic vegetation should be preserved to maximum extent possible, and intended character honored.
- The West Capitol Campus's landmark designation, statewide importance, Olmsted Brothers design and prominent location give it great significance; this valuable landscape merits a level of care currently not fully conferred on it.
- Maintenance has declined over a long period, causing acute problems in recent years, tree loss being the most serious; securing consistent funding in relation to need and expectations must supplant juggling priorities and "working smarter."
- Grounds maintenance staff are organized as semi-autonomous generalists, resulting in inconsistent landscape care; specialization, partnering, horticultural training and assigned-area maintenance bear careful scrutiny with change in mind.

Contemporary Uses

- Population growth and increasing visitation have intensified Capitol landscape use; vegetation management can help mitigate and prevent impacts on plants.
- Vehicles detract from vegetation quality and prominence; exclusion of vehicles from Campus would improve landscape health, appearance and visitor experience.
- Security is considered an issue on Campus; intentional gaps in vegetation can facilitate surveillance, as can careful plant layering, species selection and density.
- The West Capitol Campus is part of a regional greenspace system; vegetation management can strengthen those connections through sustainable maintenance practices and increased native vegetation.

In order to best determine and direct management actions where needed, the VMP divides the WCC site into five Management Areas (Fig. 10.6.21). These are defined primarily by landscape character, not geographical location, and include:

- Greensward (Formal, Informal)
- Formal Landscape (Civic Plaza, Feature Gardens & Memorials)
- Street Edge
- Native Edge (NE, N, NW, W, Service Yard [Y] & SW)
- Governor's Mansion

While vegetation management recommendations are provided for each MA, they fall under the following broad directives, which apply to varying degree across management areas:

- Maintain trees for safety of people and property, through regular monitoring, tree care and timely risk abatement pruning and removals.
- Provide replenishment generations of trees through continuous, strategic replanting.
- Selectively prune and remove vegetation to preserve and reopen key internal and external vistas defined by the Olmsted plan.
- Reclaim vegetation layers lost to cumulative shrub overgrowth and denuding of low understory, through targeted pruning, plant removal and replanting.
- Invest in soil health, fertility and drainage to improve growing conditions for all plants, from trees to lawn.
- Reduce long-term landscape upkeep by replacing invasive and high-maintenance species with durable plants consistent in character with the original Olmsted plant palette.

Chapter 5 is the heart of this VMP. It provides vegetation management recommendations that describe What needs to be done and sets Priorities for each MA. The following chapter, Management and Maintenance Practices details How, When and by Whom recommended actions should be undertaken. These practices include maintaining, improving, and restoring Campus vegetation, as well as removing, installing and establishing new plants. These chapters are meant to work together for VMP implementation.

Monitoring provides a method for determining whether or not management actions are achieving hoped-for results. Periodic monitoring of landscape quality must encompass both projects and routine maintenance. Greenbelt edge vegetation needs at least informal monitoring, as well.

To be effective, specific measurements must be taken, findings reviewed and a response developed at pre-determined intervals. A course correction can nip in the bud what might otherwise derail positive outcomes. This cycle of measuring, evaluating and making modifications constitutes “adaptive management.” It insures results-based, cost-effective vegetation management.

With demands for Capitol campus care outstripping current resources, grounds staff and managers especially need to appreciate and focus on key vegetation management priorities. The following actions are important to address within the coming year:

General measures:

- Improve soil drainage
- Reduce turf maintenance demand
- Expand mulch application
- Provide grounds staff training
- Cultivate public support

Tree-related measures:

- Mitigate immediate tree risk
- Evaluate individual trees of concern
- Remove ivy from trees
- Initiate electronic tree management
- Plant & establish new trees
- Enhance special tree care

Implementation requires resources, knowledge and institutional willingness to change, and leadership in all three areas. Resources for implementation can take many forms, conventional and unconventional. Based on the premise that “where there’s a will there’s a way,” cultivating WILL is probably the most important part of attracting resources. This VMP can help raise awareness and stimulate support within and beyond the halls of government. The best possible catalyst to implementation, regardless of available resources, is an enthusiastic staff, excited by their role in making new landscape goals a reality.



Fig. 10.1.10 Yoshino cherries (April 2009, Source: Arbutus Design)

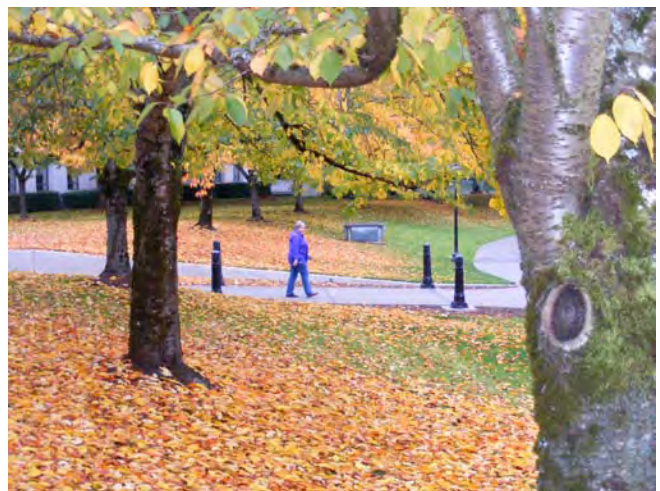


Fig. 10.1.11 Yoshino cherries (October 2008, Source: Arbutus Design)

Section 10.2: Vegetation Management Goals and Objectives

10.2.1 VMP Goal

The overall goal of the West Capitol Campus Vegetation Management Plan is:

To sustain through time the West Capitol Campus's vegetation, consistent with both its Olmsted Brothers design heritage and the needs, vision and resources of the 21st Century.



Fig. 10.2.1 Spring view of Norway Maple and Capitol Group (April 2009, Source: Arbutus Design)

10.2.2 Overall Objectives

Objectives serve to translate the overall vegetation management goal into more tangible form. A range of actions that will help fulfill these objectives forms the heart of this Vegetation Management Plan (hereafter simply “VMP”). The intent is that all management activities directly support the goal for the West Capitol Campus landscape.

Broad objectives include:

- To support realization of the 2009 Master Plan’s goals and direction for the Capitol’s Olmsted heritage landscape.
- To implement vegetative aspects of a landscape vision that is consistently understood and supported by all levels of State government.
- To manage vegetation to provide a safe, dignified and welcoming environment for Capitol users: visitors, neighbors, elected officials and staff.
- To enhance and demonstrate environmental sustainability of the Capitol Campus landscape, adapting management to reflect best available science.

More specific objectives include:

- To provide practical guidance for appropriate vegetation management, to encompass planting, removal, pruning and beneficial tree care and horticultural practices.
- To stabilize significant vegetation to minimize near-term deterioration, failure, destruction or loss.
- To proactively address tree risk to site users, structures and other potential targets, and minimize future tree risk.
- To regenerate historic landscape plantings in a manner that enhances and protects heritage Capitol structures.
- To extend and enrich native vegetation and habitat within and surrounding the Capitol campus.
- To use available capital and operational resources to maximize landscape longevity and quality, and justify funding commensurate with identified needs.



Fig. 10.2.2 Today trees provide softening Capitol foreground, but vehicles mar (October 2008, Source: Arbutus Design)



Fig. 10.2.3 North Diagonal before installation of Olmsted landscape shows native forest setting and absence of canopy and base plantings (Source: Library of Congress)

10.2.3 Sources for Goals and Objectives

The above Goal and Objectives were established based on evaluating many factors that affect West Capitol Campus vegetation:

- Landscape history and evolution
- Planning, policy, design and grounds management direction
- Contemporary Campus uses, issues and opportunities
- Current maintenance practices and limitations
- Existing vegetation composition and condition

Since the VMP is both a stand-alone and a companion document to the 2009 Master Plan, most factors above underlie both. Those particularly relevant to vegetation management are discussed in Chapters 2 and 3 below.

Section 10.3: Assessment of Existing Resources

10.3.1 Assessment Overview

Vegetation management begins with documentation of existing landscape elements, to establish an objective baseline for plan development. Aspects evaluated for the West Capitol Campus include:

- Tree canopy character and condition
- Understory vegetation composition and condition
- Soil, slope stability and drainage characteristics
- Irrigation practices
- Wildlife habitat and impacts
- Site constraints
- Current grounds maintenance and management

Existing historic plantings, especially Olmsted Brothers' design vestiges, are a special feature that bears heavily on future management direction. The 2009 Master Plan gives considerable attention to this resource and its appropriate treatment, which this document reflects but does not repeat.



Fig. 10.3.1 2009 inventory of Native Edge added 175 new tree records, plus over 100 more in developed campus areas (March 2009, Source: Arbutus Design)

10.3.2 Canopy Composition and Condition Tree Inventory Overview

Trees are arguably the West Capitol Campus's prime landscape asset, notable for their maturity, variety and seasonal beauty. Their contributions to overall landscape composition as both formal and informal elements cannot be overstated. Managing this resource is the most important aspect of ongoing landscape care.

For purposes of this plan, campus trees were individually assessed in comparison to, and expanding upon, a prior inventory done in 2000-2001. This comparison to the past baseline reveals trends important to developing appropriate management strategies. The inventory yields a snapshot of canopy characteristics at this point in time. Still more useful is the fact that future assessments can be built upon this history, to sharpen our understanding and facilitate adaptive resource management.

Most important from a management perspective is



Fig. 10.3.2 Large Blue Atlas cedar exemplifies tree risk: it can shed heavy limbs and people often sit, stand, or walk under it (February 2009. Source: Arbutus Design)

VMP Section 10.3: Assessment of Existing Resources

tree risk screening to identify trees that need priority attention (pruning, inspection, monitoring or removal). Defects alone do not determine a tree's risk potential.

Risk trees are those with:

- Defect(s) serious enough that failure of a part or the whole can reasonably be expected
- A target or targets (people and/or property) that would suffer damage if failure occurs

AND

- A site occupied frequently enough that targets are often, or always, present.

While many trees require further investigation or monitoring, relatively few require immediate attention to mitigate risk. Recent tree losses heighten awareness that trees don't live forever, or succumb on predictable schedules. Having basic knowledge of a tree's risk status does help landscape managers anticipate and prevent damaging failures.

The tree inventory gathered demographic information concerning stature and species, as well as a general condition rating from "poor" to "excellent." Investigation was limited to visual tree assessment. Not all conditions can be seen, but clues are often visible to the trained eye. Individual records include observations about defects and visible problems in roots, trunk and canopy. Inventory results must be regarded not as definitive, but as a useful management tool. The Table of Trees at the end of this VMP (10.9) includes recommended actions for each tree, to maximize its health, longevity and beauty and to minimize risk potential. The Table of Trees is intended to serve as the primary guide for urgent and ongoing management of the population. Inventory results of particular relevance are described and illustrated below.

Broader Inventory Results:

- Over 500 tree records have been created as a result of 2008-2009 inventory, and their locations mapped. This information forms the basis for a potentially powerful management tool.
- The densely-canopied Governor's Mansion grounds adds to the developed WCC landscape's 250 almost half again as many trees, 106.
- Trees inventoried along the Native Edge total 175, 70% as many as the developed campus total. Greenbelt slopes beyond the VMP boundaries add hundreds more. (see Fig. 3.3)

Canopy Findings 2001 – 2008

253 WCC trees were inventoried in 2001 and/or 2008, including those lost or gained between those dates. In April 2009, records for another 31 Campus trees were added; 2009 combined demographics are presented in the next subsection. This subsection provides key findings from 2001 and 2008 data only, without 2009 additions:

- Counts of current risk status compared to 2001 vs. 2008 tree condition
- Tree distribution by estimated life phase
- Tree counts by horticultural issue, according to tree type (ornamental, native conifer, etc.)

2001 Condition	2008 Risk Status				
	Gone	No	Potential	Yes	Total
Excellent		4		1	5
Good	26	72	5	37	140
Fair	2	8	1	17	28
Poor	5	31	3	19	58
Unknown		1			1
New since 2001		21			21
Grand Total	33	137	9	74	253

2008 Condition	2008 Risk Status				
	Gone	No	Potential	Yes	Total
Excellent		30		1	30
Good		69	3	15	87
Fair		35	6	38	79
Poor		3		21	
Lost since 2001	33				33
Grand Total	33	137	9	74	253

(top) Fig. 10.3.3 2001 Condition and 2008 Risk Status of WCC inventoried trees (2009. Source: Arbutus Design)

(bottom) Fig. 10.3.4 2008 Condition and 2008 Risk Status of WCC inventoried trees (2009. Source: Arbutus Design)

Comparative findings:

- Nearly a third of trees in good or excellent condition in 2001 now present risk.
- Almost 20% of trees rated as in “good” condition in 2001 are now gone.
- Trees rate “good” decreased almost 40% between 2001 and 2008.
- Almost 3 times as many trees are in fair condition now as in 2001.
- The overall trend appears to be one of declining canopy condition and increasing levels of risk.
- Of 219 trees inventoried in 2001, almost 15% were absent in 2008, an average loss of more than 2% per year.
- New trees offset 65% of the 32 trees lost since 2001, yielding a 5% net attrition.

2008 risk vs. condition findings:

- More than one third of current trees show evidence of risk.
- Excluding newly-planted trees (which are virtually risk-free), nearly 40% of trees show signs of risk.
- Among trees in “good” condition, 21% exhibit current or potential risk.
- Over half of “fair” condition trees exhibit risk, the percentage climbing to 90% for trees in “poor” condition.
- Data suggest that this actively used WCC landscape is not receiving tree risk management sufficient to insure the safety of people and property.

No tree remains a perfect specimen after a few years in the landscape; however, most horticultural problems that afflict trees are at least partially preventable.

VMP Section 10.3: Assessment of Existing Resources

Patterns of disease, infestation, structural defects and invasiveness tell a great deal about tree condition and outstanding management needs. As illustrated below, issues vary considerably among types of trees. WCC “Ornamentals” are predominantly cherries, which almost universally suffer from diseases, whereas “Deciduous” trees manifest a variety of problems in limited numbers, partly reflecting species diversity and the resiliency that imparts to a tree population.



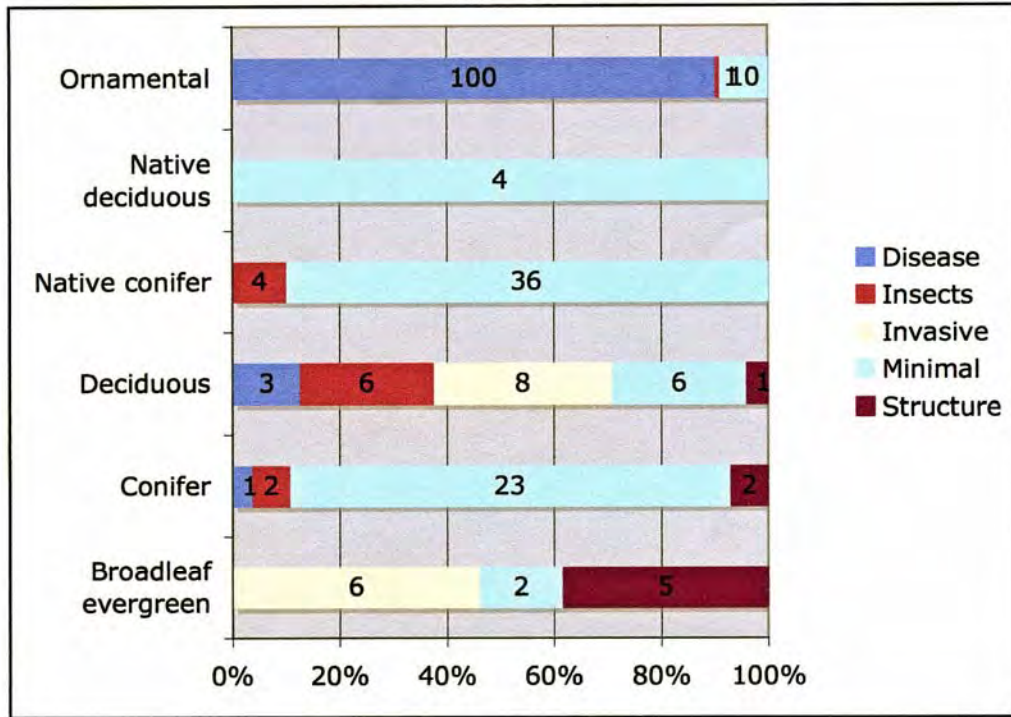
Fig. 10.3.5 Yoshino cherry with tight, co-dominant trunks that may split apart as they enlarge. Early pruning easily corrects such defects and prevents breakout. (December 2008, Source: Arbutus Design)

Tree distribution in the maturity chart below portrays an aging population. At 43% of all trees, those considered “post-mature” outnumber the combined “newly planted” and “juvenile” trees by more than 3:1. This finding fits hand-in-glove with condition and risk statistics, although their prevalence at earlier ages exceeds average expectations.

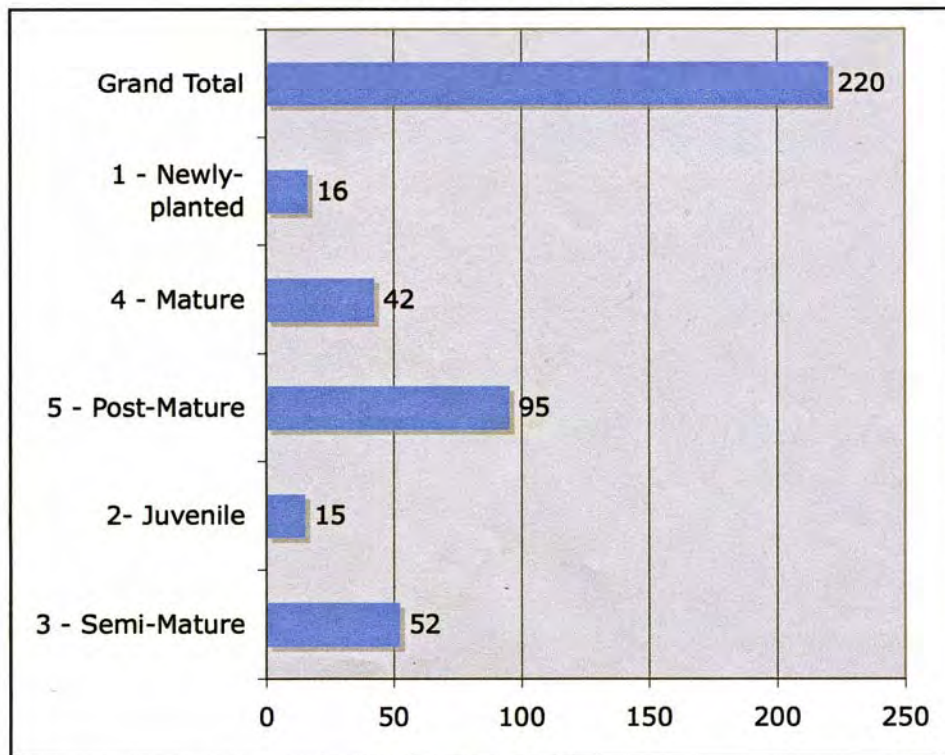


Fig. 10.3.6 Red maple with similar size trunks and defect ‘unzipped’ in busy Seattle park during summer wind squall. (September 2006. Source: Arbutus Design)

CULTURAL ISSUE by SPECIES
Count within Tree Types



TREE MATURITY
Count by Life Phase



(top) Fig. 10.3.7 Cultural Issue by Tree Species. (2009. Source: Arbutus Design)
(bottom) Fig. 10.3.8 Tree Maturity (2009. Source: Arbutus Design)

WCC Tree Inventory Results (excluding Governor's Mansion grounds):

- The current West Campus tree population totals 250, including 31 established trees not inventoried in 2001 and 21 planted since 2001.
 - Over half of existing trees are in good or excellent condition (55%) but nearly half are in poor or fair condition. 76% fall in the middle range.
 - 62 tree taxa exist on the West Campus, of which 42% (26) are represented by a single tree. Population diversity is far less than numbers initially suggest.
 - Although 32 genera are found on the West Campus, 73% of trees are from just 6 of them: Prunus (cherry, plum, laurel), Douglas fir, maple, Western red cedar, spruce & false cypress.
 - Lack of species diversity subjects the population to potential loss from disease or insects, and reduces seasonal richness of the landscape.
- Of trees exceeding 18" trunk diameter, a resounding majority pose current or potential risk and require follow-up inspection, monitoring and/or treatment to prolong their lifespan. Many of the largest, most significant campus trees face near- or mid-term removal to mitigate this risk.
 - Unusually high levels of soil fungi are attacking tree roots, the result of poor drainage, mower damage, compaction from heavy use, and lack of organic mulch.
 - Only 15% of trees are juvenile. Approximately half are middle-aged or post-mature (declining). The population is skewed away from young, replenishment trees.
 - Cherries overwhelmingly outnumber all other trees, over 35% of total. The next most abundant is Douglas fir, with little more than a third as many, at 13%. While beautiful and popular, cherries are plagued by serious horticultural problems on this site.
 - The current tree population only partially matches the Olmsted Brothers' palette,



Fig. 10.3.9 35% of Campus trees are cherries, outnumbering the second most abundant species by almost 3:1 (April 2009, Source: Arbutus Design)



Fig. 10.3.10 Douglas firs are second most abundant in WCC developed landscape (13%) and Native Edge (28%) (November 2008. Source: Arbutus Design)

placement and species emphasis. In addition to cherry trees, dogwoods, crabapples and hawthorns were intended to contribute significant flowering canopy.

- The Olmsted plan called for more than triple the number of trees that exists on the West Campus today.

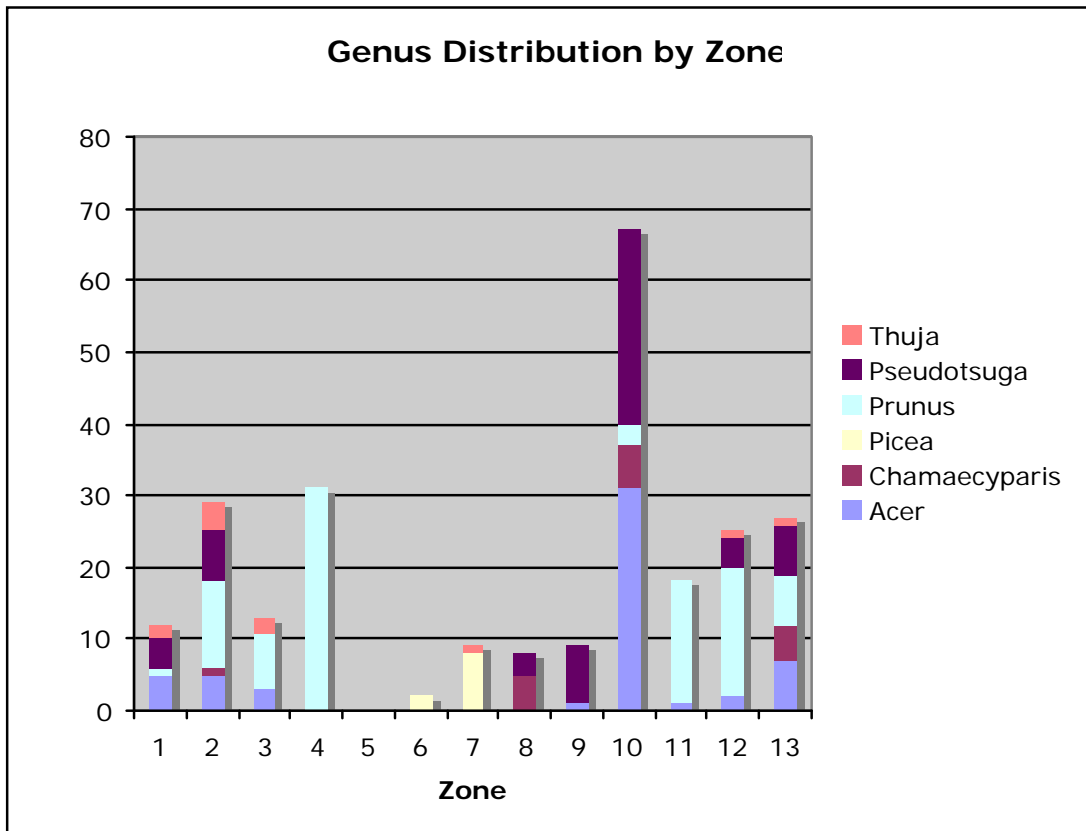
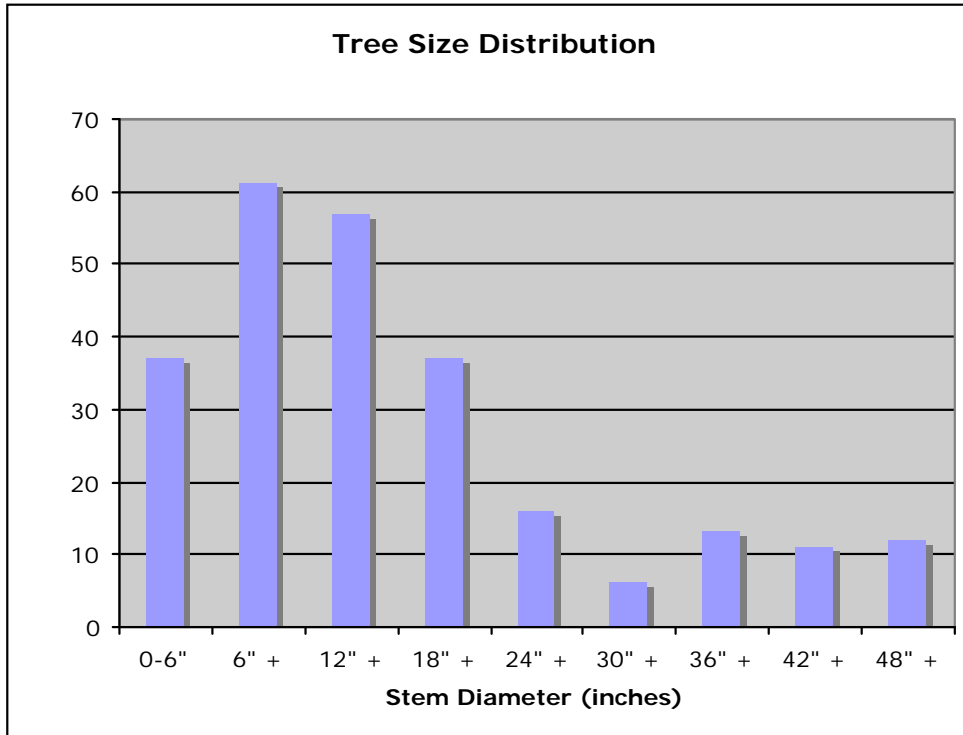
- Native trees were both intended to be, and are today, well represented in the West Campus landscape. However, most are post-mature, at risk and need replenishing.

West Capitol Campus Tree Taxa		
Genus	Species	Total
Abies	Abies amabilis	2
	Abies Total	2
Acer	Acer circinatum	1
	Acer macrophyllum	6
	Acer 'Pacific Sunset'	1
	Acer palmatum	1
	Acer palmatum 'Bloodgood'	1
	Acer palmatum 'dissectum'	2
	Acer platanoides	7
	Acer platanoides 'Royal Redleaf'	1
	Acer rubrum	4
	Acer Total	24
Arbutus	Arbutus menziesii	2
	Arbutus Total	2
Auracaria	Auracaria auracana	1
	Auracaria Total	1
Betula	Betula pendula	4
	Betula pendula 'Youngii'	1
	Betula Total	5
Cedrus	Cedrus atlantica	2
	Cedrus Total	2
Chamaecyparis	Chamaecyparis lawsoniana	1
	Chamaecyparis lawsoniana aureovariegata	5
	Chamaecyparis pisifera	2
	Chamaecyparis pisifera 'Filifera'	3
	Chamaecyparis Total	11
Cornus	Cornus 'Eddie's White Wonder'	1
	Cornus florida	5
	Cornus Total	6

West Capitol Campus Tree Taxa (continued)		
Crataegus	Crataegus lavalleyi	1
	Crataegus Total	1
Cryptomeria	Cryptomeria japonica	1
	Cryptomeria Total	1
Fagus	Fagus sylvatica	1
	Fagus sylvatica 'Atropunicea'	1
	Fagus Total	2
Ginkgo	Ginkgo biloba	1
	Ginkgo Total	1
Ilex	Ilex aquifolium	2
	Ilex opaca	2
	Ilex Total	4
Juniperus	Juniperus virginiana?	2
	Juniperus Total	2
Laburnum	Laburnum anagyroides	2
	Laburnum Total	2
Liriodendron	Liriodendron tulipifera	5
	Liriodendron Total	5
Magnolia	Magnolia grandiflora	5
	Magnolia soulangiana	2
	Magnolia stellata	1
	Magnolia Total	8
Malus	Malus 'Farrel's Crimson'	1
	Malus pendula	2
	Malus Total	3
Metasequoia	Metasequoia glyptostroboides	2
	Metasequoia Total	2
Photinia	Photinia serrulata	1
	Photinia Total	1
Picea	Picea omorika	8
	Picea pungens glauca	2
	Picea Total	10
Pinus	Pinus contorta contorta	1
	Pinus monticola	1
	Pinus Total	2
Platanus	Platanus acerifolia	1
	Platanus Total	1

West Capitol Campus Tree Taxa (continued)		
Prunus	Prunus ceradifera 'Newport'	1
	Prunus cerasifera 'Atropurpurea'	1
	Prunus lusitanica	4
	Prunus serrulata	5
	Prunus serrulata 'Kwanzan'	31
	Prunus serrulata 'Shirofugen'	4
	Prunus serrulata?	1
	Prunus species	1
	Prunus yedoensis	46
	Prunus Total	94
Pseudotsuga	Pseudotsuga menziesii	33
	Pseudotsuga Total	33
Quercus	Quercus robur	1
	Quercus rubra	3
	Quercus Total	4
Sequoiadendron	Sequoiadendron giganteum	1
	Sequoiadendron Total	1
Taxus	Taxus baccata	3
	Taxus Total	3
Thuja	Thuja occidentalis	4
	Thuja plicata	7
	Thuja Total	11
Trachycarpus	Trachycarpus fortunei	1
	Trachycarpus Total	1
Tsuga	Tsuga heterophylla	2
	Tsuga Total	2
Ulmus	Ulmus americana	2
	Ulmus sibirica	1
	Ulmus Total	3
GRAND TOTAL		250

Fig. 10.3.11 West Capitol Campus Tree Taxa. (2009, Source: Arbutus Design)



(top) Fig. 10.3.12 Tree Size Distribution. (2009, Source: Arbutus Design)

(bottom) Fig. 10.3.13 Genus Distribution by Zone. (2009, Source: Arbutus Design)

The 'Genus Distribution by Zone' chart illustrates the enormous variation in canopy among Campus zones, in terms of both quantity and variety. (Note: The "zones" for this chart were created for the 2000-01 tree inventory, as shown at Fig. 10.4.4, and used in 2008-09 for purposes of consistent data gathering and tree numbering. They differ from both grounds

staff work zones and VMP Management Areas introduced in Section 5). This chart displays only the six most prevalent genera, but three-quarters of the WCC grounds tree population. Tree density on the Governor's Mansion Grounds (Zone 10 in chart) far exceeds that for all but parts of the Native Edge Management Area.

VMP Section 10.3: Assessment of Existing Resources

Tree Condition 2009					
Genus	Excellent	Good	Fair	Poor	Total
Abies		1	1		2
Acer	4	9	8	3	24
Arbutus		1	1		2
Auracaria		1			1
Betula		2	2	1	5
Cedrus		2			2
Chamaecyparis		2	1	8	11
Cornus	1	2	2	1	6
Crataegus				1	1
Cryptomeria		1			1
Fagus		1	1		2
Ginkgo		1			1
Ilex	2	2			4
Juniperus	2				2
Laburnum		2			2
Liriodendron		3	2		5
Magnolia		6	1	1	8
Malus		2		1	3
Metasequoia			2		2
Photinia			1		1
Picea	6	3	1		10
Pinus		2			2
Platanus			1		1
Prunus	7	42	39	6	94
Pseudotsuga		12	17	4	33
Quercus	3	1			4
Sequoiadendron		1			1
Taxus	1		2		3
Thuja	5	2	2	2	11
Trachycarpus		1			1
Tsuga	1	1			2
Ulmus		2	1		3
Grand Total	32	105	85	28	250

Green = Top 6 Genera (10 or more trees)

Fig. 10.3.14 Tree Condition 2009. (2009, Source: Arbutus Design)

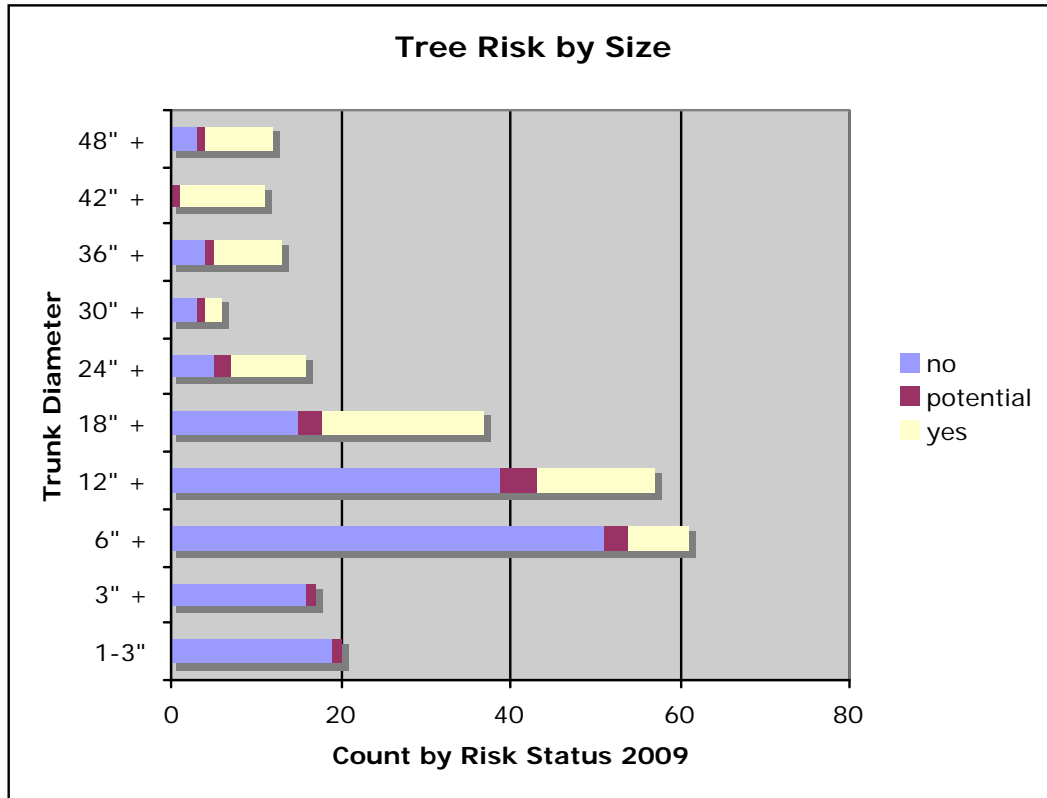


Fig. 10.3.15 Tree Risk by Size. (2009, Source: Arbutus Design)

Tree risk and tree condition often go hand-in-hand, but not always. A tree in poor condition can pose no risk if it is declining but has neither major defect nor target. Conversely, a healthy, vigorous tree may pose a risk if its structure is flawed and prone to breakage. Both condition and risk are parameters that predict tree longevity in the landscape (Fig. 10.4.4). Active management sometimes can improve condition or risk status, through pruning, health treatment, diverting foot traffic, etc.

Governor’s Mansion Grounds

The concentration of Western Washington natives (65%) distinguishes this site from the rest of the West Capitol Campus. Douglas fir is the dominant species at 25%, followed by Vine Maple (15%) and Incense Cedar (same but all in a single screen / hedge).

Remaining taxa are widely distributed in small or single numbers each.

Tree condition follows a similar pattern on the Mansion property to that in the remaining developed WCC landscape, with 57% of trees rated good or excellent, 43% poor or fair. Trees exhibiting current or potential risk total 25% of the population, and represent just five of 21 taxa. The vast preponderance are large old Douglas firs. In fact, 70% of Douglas firs were identified as posing current or potential risk – an unfortunate finding given the character-defining importance of this species to the Mansion grounds.



Fig. 10.3.16 Douglas firs dominate Mansion landscape, vestige trees from adjacent native forest. Specimens growing in lawn are especially affected by root decay. (April 2009, Source: Arbutus Design)

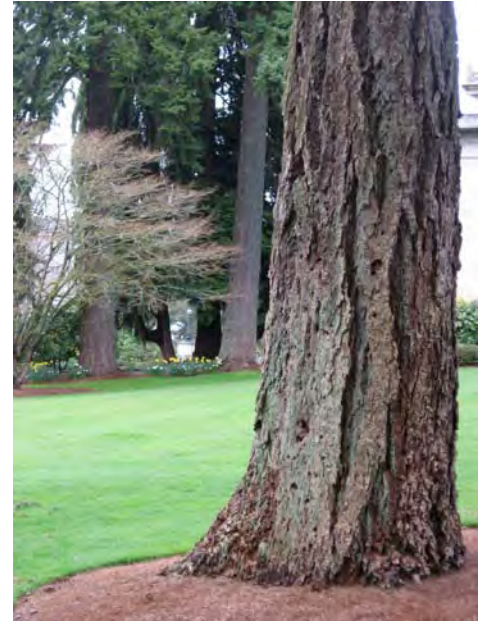


Fig. 10.3.17 70% of Douglas firs exhibit some risk; fewer than half are in good to excellent condition (April 2009. Source: Arbutus Design)

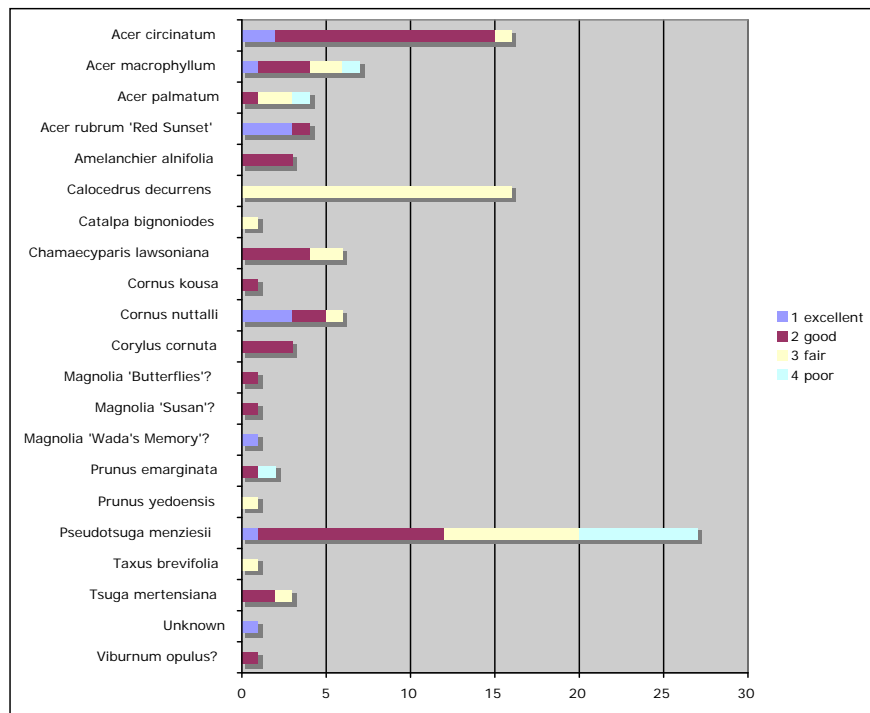


Fig. 10.3.18 Graph of Condition and Count of Tree Species (2009. Source: Arbutus Design)

Condition 2009					
Species	Excellent	Good	Fair	Poor	Total
Acer circinatum	2	13	1		16
Acer macrophyllum	1	3	2	1	7
Acer palmatum		1	2	1	4
Acer rubrum 'Red Sunset'	3	1			4
Amelanchier alnifolia		3			3
Calocedrus decurrens			16		16
Catalpa bignoniodes			1		1
Chamaecyparis lawsoniana		4	2		6
Cornus kousa		1			1
Cornus nuttalli	3	2	1		6
Corylus cornuta		3			3
Magnolia 'Butterflies'?		1			1
Magnolia 'Susan'?		1			1
Magnolia 'Wada's Memory'?	1				1
Prunus emarginata		1		1	2
Prunus yedoensis			1		1
Pseudotsuga menziesii	1	11	8	7	27
Taxus brevifolia			1		1
Tsuga mertensiana		2	1		3
Unknown	1				1
Viburnum opulus?		1			1
Grand Total	12	48	36	10	106

Fig. 10.3.19 Table of Condition and Count of Tree Species (2009. Source: Arbutus Design)

Risk Status 2009				
Species	No	Potential	Yes	Total
Acer circinatum	16			16
Acer macrophyllum	3	3	1	7
Acer palmatum	4			4
Acer rubrum 'Red Sunset'	4			4
Amelanchier alnifolia	3			3
Calocedrus decurrens	16			16
Catalpa bignoniodes			1	1
Chamaecyparis lawsoniana	4	2		6
Cornus kousa	1			1
Cornus nuttalli	6			6
Corylus cornuta	3			3
Magnolia 'Butterflies'?	1			1
Magnolia 'Susan'?	1			1
Magnolia 'Wada's Memory'?	1			1
Prunus emarginata	1		1	2
Prunus yedoensis	1			1
Pseudotsuga menziesii	8	8	11	27
Taxus brevifolia	1			1
Tsuga mertensiana	3			3
Unknown	1			1
Viburnum opulus?	1			1
Grand Total	79	13	14	106

Fig. 10.3.20 Table of Risk Status by Tree Species (2009. Source: Arbutus Design)

Native Edge Trees

The Native Edge tree inventory was completed in April 2009 and includes a total of 175 trees over 4” in trunk diameter. The inventory area extended fifteen feet beyond the developed Campus edge at the top of the bluff, from the Law Enforcement Memorial all the way around behind the Pritchard Library to 16th St. Where the grade fell away steeply, this distance was limited by safe access; however, no trees posing obvious

risk to developed landscape targets were omitted. Where the bluff extended at gentle grade further out from the Campus proper, additional inventory area was included. Trees were individually tagged. The approximate Native Edge MA boundaries and sectors are delineated on the map included at Figure 10.5.15 and Figure 10.6.2. Individual tree locations are mapped on CAD drawing only.



Fig. 10.3.21 Douglas fir dominates the west bluff's mixed deciduous-coniferous forest; some are well over a century old. (April 2009, Source: Arbutus Design)



Fig. 10.3.22 Most 'green' on the slide prone north greenbelt slope is English Ivy growing in and under deciduous trees. (April 2009. Source: Arbutus Design)

Summary statistics about the native trees inventoried follow in tabular form.

Trunk diameter:		
<12"	63	36.0%
<24"	44	25.1%
24" + up	68	38.9%

Type:		
Conifers	79	45.1%
Broadleaf Evergreen	2	1.1%
Deciduous	94	53.7%

Condition:		
excellent	7	0.6%
good	69	34.5%
fair	81	58.6%
poor	18	3.4%

Native status:		
Native trees	157	89.7%
Non-natives	18	10.3%

NOTE: over 2/3 of bluff edge trees are of 2 native species: Bigleaf maple and Douglas fir

Risk status:		
no	110	51.7%
potential	27	17.2%
yes	38	31.0%

Fig. 10.3.23 Summary statistics about inventoried trees. (2009, Source: Arbutus Design)

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The overall species distribution is shown below, along with data for individual sectors, NE to SW. The species distribution reveals different canopy characters from one area to another. Native Edge may all look like “greenbelt” but is by no means uniform in character. Management priorities will need to be tailored accordingly, to achieve consistent native canopy composition in the long run.

Native Edge Management Area Tree Species Distribution

Native Edge MA Species (all sectors)

Count of Species		
Species	Total	%
Abies grandis	1	0.6%
Acer macrophyllum	69	39.4%
Alnus rubra	9	5.1%
Arbutus menziesii	2	1.1%
Asimina triloba (Pawpaw)	1	0.6%
Betula pendula	2	1.1%
Calocedrus decurrens	1	0.6%
Chamaecyparis pisifera	3	1.7%
Chamaecyparis pisifera filifera	1	0.6%
Cornus nuttalli	1	0.6%
Prunus emarginata	11	6.3%
Prunus species	1	0.6%
Pseudotsuga menziesii	49	28.0%
Sequoia sempervirens	5	2.9%
Taxus baccata	1	0.6%
Thuja plicata	13	7.4%
Thuja plicata 'Zebrina'	2	1.1%
Thujopsis dolobrata	2	1.1%
Tsuga heterophylla	1	0.6%
Grand Total	175	trees
	19	taxa

NE Sector Species

Count of Species		
Species	Total	%
Abies grandis	1	3.4%
Acer macrophyllum	15	51.7%
Alnus rubra	4	13.8%
Asimina triloba (Pawpaw)	1	3.4%
Pseudotsuga menziesii	3	10.3%
Sequoia sempervirens	5	17.2%
Grand Total	29	100.0%

N Sector Species

Count of Species		
Species	Total	%
Acer macrophyllum	13	59.1%
Chamaecyparis pisifera	2	9.1%
Chamaecyparis pisifera filifera	1	4.5%
Prunus emarginata	1	4.5%
Pseudotsuga menziesii	1	4.5%
Taxus baccata	1	4.5%
Thuja plicata 'Zebrina'	1	4.5%
Thujopsis dolobrata	2	9.1%
Grand Total	22	100.0%

Fig. 10.3.24 Native Edge Management Area Tree Species Distribution. (2009, Source: Arbutus Design)

Service Yard Species

Count of Species		
Species	Total	%
Acer macrophyllum	13	59.1%
Chamaecyparis pisifera	2	9.1%
Chamaecyparis pisifera fil	1	4.5%
Prunus emarginata	1	4.5%
Pseudotsuga menziesii	1	4.5%
Taxus baccata	1	4.5%
Thuja plicata 'Zebrina'	1	4.5%
Thujopsis dolobrata	2	9.1%
Grand Total	22	100.0%

NW Sector Species

Count of Species		
Species	Total	%
Acer macrophyllum	5	36.4%
Prunus emarginata	1	9.1%
Prunus species	1	9.1%
Pseudotsuga menziesii	4	18.2%
Thuja plicata	3	27.3%
Grand Total	14	100.0%

SW Sector Species

Count of Species		
Species	Total	%
Acer macrophyllum	14	53.8%
Alnus rubra	5	19.2%
Betula pendula	2	7.7%
Cornus nuttalli	1	3.8%
Prunus emarginata	1	3.8%
Thuja plicata	2	7.7%
Thuja plicata 'Zebrina'	1	3.8%
Grand Total	26	100.0%

W Sector Species

Count of Species		
Species	Total	%
Acer macrophyllum	22	31.9%
Arbutus menziesii	2	2.9%
Chamaecyparis pisifera	1	1.4%
Prunus emarginata	8	11.6%
Pseudotsuga menziesii	31	44.9%
Thuja plicata	4	5.8%
Tsuga heterophylla	1	1.4%
Grand Total	69	100.0%

Fig. 10.3.24 (continued) Native Edge Management Area Tree Species Distribution. (2009, Source: Arbutus Design)

10.3.3 Understory Composition and Condition

The most obvious characteristic of the West Capitol landscape is the commanding dominance of lawn. Turf receives a proportionally overwhelming share of landscape maintenance labor and resources – nearly half. Despite this investment, lawn is unsuccessful or undesirable in several locations:

- Where shade- and/or drought-stressed under canopy trees
- When lawn irrigation adversely affects tree health, especially natives
- Where heavy foot traffic compacts and wears out turf
- Where poor drainage makes mowing difficult and creates an environment favorable to moisture-adapted weeds (buttercup, veronica) and disease
- Where fragmented or hard to access (such as within Tivoli fountain fence)
- Under surface-rooting trees, notably Yoshino and Kwanzan cherries

The east half of the WCC is bereft of Olmsted-intended “shrubberies,” with the result that the entry landscape lacks spatial definition, human scale, aesthetic richness, genetic diversity and habitat value. High impact annuals & bulbs, particularly in the Sunken Garden, relieve this monotony of both vegetation and topography. Scattered trees of remarkable age and stature also offer a counterpoint to these expanses of lawn. Were there more trees, each might seem less individually significant. Without trees, this landscape would be scale-less.

Shrub layer vegetation is mostly limited to the formal landscape at the heart of the Campus. Historically, base plantings were intended to help anchor the monumental buildings to the ground and provide a human scale. In general appearance, extant base plantings are tidy, evergreen and dignified. Trim lawn complements shrubs and seasonal color plantings that provide winter-to-spring bloom corresponding to the Legislative session. Understory vegetation also includes limited groundcovers but few if any perennials.



Fig. 10.3.25 Overgrown base plantings crowd trees and obscure view of Capitol; on right, new perimeter vegetation will restore intended scale. (January 2009, Source: Arbutus Design)



Fig. 10.3.26 Lush native vegetation partially surrounding the Governor’s Mansion extends habitat from forest into the developed campus landscape (April 2009. Source: Arbutus Design)

A handful of shrub species is used extensively: boxwood, Japanese holly, rhododendron, azalea and camellia. Deciduous species are present in limited quantities and locations: barberry, lilac, spirea, privet and again, azalea. Holly and English and Portugal laurel shrubs have achieved great size, crowding the Insurance Building in particular. In addition, these species are invasive into planting beds and natural areas nearby, sown from bird-digested fruit. In places, Campus understory vegetation has merged with or effectively become canopy. Management for tree and understory health is closely interconnected in these areas.

Native species are sparsely represented, except in the Governor’s Mansion compound (which has extensive “naturescaping”), the west parking lot island, and portions of the forested upper west bluff. In the developed landscape are lush beds of creeping Oregon grape (*Mahonia repens*) that flank the Law Enforcement Memorial. Diverse natives have been planted to stabilize the “Heather Slope” below the viewpoint, which oddly contains no heather. Despite considerable investment, this high visibility landscape has yet to achieve established, abundant growth. The harsh site and limited maintenance may contribute to this condition. If the vegetation fails to thrive, its prominent location and slide susceptibility all but require that further efforts be made.

Common Name	Botanical Name
Vine maple	<i>Acer circinatum</i>
Western hazel	<i>Corylus californica</i>
Indian plum	<i>Oemleria ceraciformis</i>
Ocean spray	<i>Holodiscus discolor</i>
Red huckleberry	<i>Vaccinium parvifolium</i>
Salmonberry	<i>Rubus spectabilis</i>
Thimbleberry	<i>Rubus parviflorus</i>
Snowberry	<i>Symphoricarpos albus</i>
Bald-hip rose	<i>Rosa gymnocarpa</i>
<i>Mahonia aquifolium</i>	Tall Oregon grape
<i>Mahonia nervosa</i>	Low Oregon grape
Salal	<i>Gaultheria shallon</i>
Sword fern	<i>Polystichum munitum</i>
Bracken fern	<i>Pteridium aquilinum</i>
Lady fern	<i>Athyrium filix-femina</i>
Creeping blackberry	<i>Rubus ursinus</i>
False Solomon’s seal	<i>Smilacina</i>
Western trillium	<i>Trillium ovatum</i>
Stinging Nettle	<i>Urtica dioica</i>
Horsetail	<i>Equisetum</i>

Fig. 10.3.27 West Capitol Campus Understory Natives (2009). Source: Arbutus Design)

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Native understory species found in the wooded campus perimeter March-April 2009 are listed at Figure 10.3.27. These offer the basis for restoring a multi-layered native plant community surrounding the developed Campus landscape. Taxa shown in boldface were most frequently encountered, thus the backbone for future, invasive-free understory. Additional natives may be found and added to this palette.

In developing this VMP, campus understory species were documented informally by type, location and relative abundance. Species composition and proportion were broadly compared to original Olmsted-specified taxa and to planting plan distribution. The 1929 Olmsted planting plan and accompanying plant list paint a picture of Campus understory vegetation quite different from what one observes today, in terms of location, predominance, scale and to a lesser extent, species composition. That said, certain “backbone” shrubs remain - many in abundance. Today, large evergreen shrubs dominate, especially aforementioned rhododendron, azalea and camellia.

Regarding understory condition, several observations point to under-addressed or misaddressed maintenance needs:

- Lack of mulch or decomposing plant debris in beds – moss, bare soil
- Compaction & exposed surface roots (especially trees)
- Sheared & shaped shrubs, with little evidence of interior or basal pruning, or radical renovation (cutting back hard to re-grow)
- Naked lower stems, removed for visibility or lost from self-shading in absence of regeneration pruning
- Holly self-seeded into box hedges especially
- Some bindweed, ivy, blackberry in shrub beds

in high visibility areas, and a great deal along Campus periphery

- Serious pest and disease pockets, notably boxwood, rhododendrons and skimmia

Maintenance crewmembers are acutely aware that pruning is not being done to the extent needed, victim to the unrelenting demands of turf care and leaf collection. Campus understory is a shadow of what it could become if given more or somewhat altered care.

10.3.4 Soils, Slope Erosion & Drainage

The native soil underlying the West Campus varies, but is mostly poorly drained clay of average fertility. Ornamental beds, particularly those recently renovated or used for seasonal display, are well amended and richer in organic matter than the native soil. Mulch is inconsistently used and varies from bark to wood chips to compost. Fallen leaves typically are gathered in beds then removed off site, rather than being left to decompose in place into organic cover for bare soil.

Due to heavy foot traffic and year-round use of equipment on wet soils, lawns and planting beds suffer from compaction to varying degrees. While this condition cannot be eliminated, the landscape can be managed to reduce compaction and associated negative impacts to plant health. Chapter 5 describes such measures in detail.

Steep slopes surround the Capitol Campus but are basically absent within the developed landscape area. Cross-site drainage flows generally north and east, intercepted in large part by storm drains. Adjacent bluff edges are vulnerable to erosion, and surface sloughing has occurred on slopes below. Native vegetation provides variable cover, while much less protective invasive plants - English ivy and Himalayan



Fig. 10.3.28 Tree uprooted by recent north bluff landslide further opens canopy to invasives and soil to erosion. (March 2009, Source: Arbutus Design)

blackberry -dominate in several areas. Deep slides on the north bluff have been corrected through geotechnical improvements and surface vegetation installed to strengthen the upper soil layer. New slides are evident further west along the slope, and have uprooted multiple trees. Landscape management atop the bluff must help protect rather than damage these vulnerable edges.

Poor drainage and soil-borne pathogens pose considerable challenges to plant health throughout the campus landscape. Multiple root rots affecting significant trees have been diagnosed and treated over the course of the past decade. Some trees have been lost. Decay takes a continuing, largely invisible toll on both trees and shrubs. Factors of species susceptibility, compaction, physical damage, poor drainage and old age combine to threaten valuable campus vegetation. Decay cannot be reversed, but can be slowed or even arrested through aggressive management. That said, decay is a natural part of plant senescence. As living systems, landscapes need periodic regeneration planting.



Fig. 10.3.29 Compaction and water-borne soil fungi contribute to butt and root decay in campus trees like this conifer. (November 2008. Source: Arbutus Design)

10.3.5 Irrigation

The West Campus has a patchwork of irrigation infrastructure, much of it aging. Irrigation throughout the landscape is controlled by a manually adjusted Maxicom computer system. One grounds staff person with considerable experience and personal knowledge manages all irrigation maintenance, repair and alteration needs. A local weather station has been funded that will soon help automate adjustments as evapotranspiration rates and precipitation change in real time.

Watering is tricky in this varied landscape, where drainage issues make over watering as significant a concern as underwatering. Environmental directives have resulted in a 30% reduction in water use over the past decade. Further conservation may be mandated, making soil moisture retention, water recycling and appropriate plant selection increasingly important. Current standards such as LEED and Sustainable Sites Initiative (SSI_ have set an even higher target of 60% reduction in irrigation.

Little evidence of drought stress was found in

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examining campus vegetation. Newly installed landscape areas and high-demand species like rhododendrons and annuals will always require adequate watering to protect these vegetative assets. Native vegetation should never receive artificial irrigation or runoff water, except as part of habitat restoration.

10.3.6 Wildlife

The West Campus is ensconced by forested and aquatic wildlife habitat, to a degree unusual in an urban setting. The Campus is part of a linked greenspace system that extends outward to more rural areas, enhancing its benefit to wildlife. Proximity to Capitol Lake and Puget Sound offers another significant attractant, especially for avian species. Community members frequent the Campus to view wildlife, and advocate for habitat improvements.

The Olmsted Brothers valued the Capitol's natural setting and sought to draw it into the developed landscape, retaining native trees and including native understory within planting areas. Today, several

veteran Douglas firs and bigleaf maples survive on Campus, but native understory is absent except at the Governor's Mansion. Healthy native vegetation, from trilliums to towering conifers, remains abundant on portions of the west perimeter. Invasive species and degraded tree canopy compromise habitat quality on other edges. Forest restoration offers excellent opportunities to increase wildlife abundance and variety surrounding the Capitol.

The presence of wildlife is a joy to many visitors, but presents landscape management challenges as well. Black-tail deer visit the grounds and browse tender plants, particularly roses, of which far more existed on site a generation ago. The notion of "deer-proof plants" obscures the fact that deer have variable tastes affected by region, season and population pressure. Species that are widely eaten should be avoided in the landscape, and those generally left alone featured. Generally, deer prefer tender forbs, buds and fruits, and avoid leathery, fuzzy, prickly and strongly-scented foliage.

When large numbers of young plants are added to the



Fig. 10.3.30 Deer frequently browse rosebuds, but avoid thorny plant parts. (December 2008, Source: Arbutus Design)



Fig. 10.3.31 Deer leave crocus and native trillium (above) alone, but feast on many other bulbs. (April 2009, Source: Arbutus Design)

grounds, they will require establishment protection. Because exclusion entails obtrusive full perimeter fencing inconsistent with an “open” campus, repellents and motion-activated deterrents will be more practical. Plant selection can reduce the problem, although historic character may require that deer-attracting species be retained in limited numbers.

10.3.7 Site Constraints

Portions of the West Campus are currently considered un- or underdeveloped. Obsolescent buildings and expanses of parking on the south and west peripheries especially will see more concentrated use in the future. Vegetation in transitional areas must be maintained in the interim. This VMP catalogs and provides recommendations for care of the trees, and there is little understory requiring care. The Preservation Master Plan offers a vision for, or touches on, these sites. New street tree plantings, at minimum, should be possible regardless of redevelopment timeframe.

A network of underground utilities crisscrosses the Campus; periodic repairs and upgrades, some

extensive, can be anticipated. Directly related to the landscape, both irrigation and drainage systems need major attention. In the past, significant trees have suffered preventable root damage for lack of coordination, enforced tree protection, and some believe, disregard for the value of this key landscape element. Mechanisms must be identified quickly to codify and promote tree protection, and avert future conflicts through careful tree site selection. Both trees and utilities are part of WCC infrastructure.

10.3.8 Current Maintenance and Management Organization

The Department of General Administration (GA) manages the Capitol grounds as well as multiple related State properties. Maintenance staff specifically assigned to the West Campus landscape totals six employees, one of them a working lead. Another employee, whose responsibilities include the East Campus, provides significant support, particularly in procurement of materials and additional services such as major pruning and spraying. The longevity among the WCC crew is exceptional, with little



Fig. 10.3.32 West end of campus has potential for landscape development that fulfills 1928 Olmsted General Plan. (January 2009, Source: Arbutus Design)



Fig. 10.3.33 Surface parking lots and structures along south campus edge are slated for new buildings and plantings. (March 2009, Source: Arbutus Design)

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turnover but varying extent of horticultural background. Demonstrated horticultural knowledge is required

for recent hires, as educational opportunities have increased in the area.

ACTIVITY DESCRIPTION	HRS	EXT COST	% Grounds care hours	% Total staff hours
Turf Care	4,231	170,345	44.5%	25.4%
Trees & Shrubs	2,013	81,944	21.2%	12.1%
Flower bed care & planting	2,398	95,506	25.2%	14.4%
Sweeping & blowing of leaves	715	28,387	7.5%	4.3%
Irrigation system	123	4,887	1.3%	0.7%
Noxious weed treatment	31	1,232	0.3%	0.2%
TOTALS	9,510	\$382,300	100.0%	57.2%
Available hours (6 FT x 16 mo.)	16,637			100.0%

Fig. 10.3.34 Sample Maintenance Records. (2009, Source: Arbutus Design)

Extensive knowledge of grounds history resides in the memories and records of a few individuals, notably tree health care treatment and irrigation. The Maxicom irrigation control system uses a computer interface, but few other maintenance procedures are supported electronically other than for tracking labor hours by category. The latter has been very helpful in showing how crew time is allocated. Figure 10.3.34 is derived from partial 2008 data.

At present, the West Campus is divided geographically into zones for which individual crewmembers assume maintenance responsibility. A strength of this organizational approach is that it can foster a sense of personal “ownership” among employees. (Figure 10.6.20) Crew pride and commitment to sustain high quality landscape appearance is evident in the

results achieved despite challenging equipment and time constraints. It also showed forth in a survey administered in the first phases of this project, results of which are included in the appendix.

The limitations of zone-based maintenance may compromise benefits, and bear considering as managers struggle to produce expected results with limited resources. The major issue is quality control: insuring consistent landscape appearance and maintenance practices campus-wide. Mulch, for example, varies from compost to bark to uncovered soil, from no mulch circles to circles that extend the full diameter of a tree’s canopy. This VMP offers specific guidance for maintenance practices, and if followed will eliminate such discrepancies. However, as organized, crew members will continue to pursue

personal priorities, with different skill sets and uneven results.

Another question is that of efficiencies, of sharing equipment and juggling tasks. Often large landscapes have specialized crews or individuals, who focus on mowing, shrub bed care, display garden installation and care, tree maintenance, or non-plant upkeep like trash pickup and snow removal. This approach allows closer matching of assignments with individual interests and competencies. It also facilitates skill building, as experienced crewmembers mentor newer ones in developing greater competency. Regardless of organizational structure, campus-wide oversight is fundamentally important to insure that this premier landscape expresses State pride throughout.

Tree Care Challenges

The GA does not employ an arborist or maintain a tree crew, despite the large acreage under its responsibility. Given the compromised state of many West Campus trees, arboricultural expertise is badly needed on

a continual, not a sporadic basis. Individuals who know a site and see its trees every day can best watch over them, while performing routine tasks like monitoring, planting and establishment care. As the West Campus's most valuable landscape asset, trees need skilled and consistent care throughout their lives to insure their ever-increasing value. Many property managers consider averted liability alone to justify the investment, beyond trees' benefits for air, water and aesthetic quality.

Contracting out tree work can be expensive, inefficient, and emergency-driven. It has a definite place for special projects, less so for routine care. One example is the intensive restoration efforts devoted to Campus heritage trees over the past ten years by plant pathologist/arborist Olaf Ribiero, arborist Rob Lloyd and plant health care provider Neal Wolbert. This work has produced dramatic improvements in tree health and garnered national attention, but erratic funding impedes program continuation. The issue of where to apply scarce tree care dollars should be



Fig. 10.3.35 Front: row of vine maples and rhododendrons damaged by misdirected hard pruning. Rear: specimen bigleaf maple well-pruned by professional arborist. (March 2009, Source: Arbutus Design)



Fig. 10.3.36 Tree care experts Lloyd & Wolbert (with Susan Olmsted) and Ribeiro have devoted years to improving health of aging specimen trees. (April 2009, Source: Arbutus Design)

VMP Section 10.3: Assessment of Existing Resources

addressed in the context of the whole population.

Although WCC trees were catalogued in 2001, no mechanism or mandate to maintain individual records was put in place. Because the original inventory has been updated and expanded for this VMP, tree management software introduced at this juncture would capitalize on this investment and yield great benefits. Off-the-shelf software is available at reasonable cost (\$500 up), and designed to be extremely user-friendly for non-computer oriented staff. Tree management programs provide integrated functions that facilitate tracking of tree additions and losses, pruning, monitoring and treatment events, work order planning and fulfillment, and budget development through detailed data reports.

Maintenance Challenges

Mowing equipment is used every week of the year and urgently needs upgrading to take advantage of improved technologies and efficiencies. New mowers would reduce fuel consumption and off site disposal of clippings and fallen leaves, as well as saving on fertilizer and mulch and the labor to spread them. The GA has initiated a small pilot composting program on the East Campus, and is exploring the feasibility of procuring a package composting system to process yard waste currently being hauled away. The more plant waste that can be recycled directly into the landscape the better from both the sustainability and cost perspectives.

Area available for storage of landscape materials, vehicles and equipment is extremely limited on the West Campus. While maintenance facilities on-site do provide crew efficiencies, space constraints require that green waste be hauled frequently, offsetting travel economies. With the closing of the Capitol Greenhouse and potential reforestation or construction

on that site, as well as the west side of the Campus, off site facilities may be needed. Both WCC yard areas also raise compatibility issues in relation to Campus heritage landscape character, circulation and optimal functioning for operations purposes. The 2009 Landscape Master Plan recommends future relocation of these facilities.

Through concerted effort, pesticide use has declined steadily on the Campus. The great majority of material, particularly herbicides, is applied to turf. Integrated Pest Management (IPM) has been in practice on site for twenty years, representing impressive leadership in the field. Future reductions can be anticipated as the combined effects of several initiatives take hold, including:

- Expanded use of organic soil treatments like fulvic acid and beneficial fungi
- Health-promoting horticultural practices such as mulching
- Lawn area reductions and partial conversion to “eco-turf”
- Elimination of disease-prone and invasive ornamentals in the landscape

Section 10.4 - Findings

10.4.1 Findings and VMP Scope

As a result of evaluating the West Capitol Campus's existing vegetation, landscape design intent and contextual influences, a short list of observations and findings relating to vegetation emerges. These findings reveal a picture of what this document's management recommendations need to address, to the extent possible.

A vegetation management plan cannot directly or fully address all identified concerns and opportunities, since policy, politics, resource allocation, law enforcement and other forces may wield considerable influence. The VMP may, however, influence actions in those important arenas. Key findings are grouped by subject.

10.4.2 Trees

- The West Campus tree population is skewed in composition toward mature and declining generations, with insufficient juvenile trees present; ongoing replenishment will be needed.
- Crowding and competition among trees, adjacent buildings and overgrown shrubs exists in mixed planting beds, and affects user safety, plant health and aesthetic quality of the landscape. Pruning and selective removals are overdue.
- While relatively few trees pose immediate risk of failure, many are stressed, disease-affected or in decline. The prevalence of mature trees with structural defects, near-constant grounds use, and multiple potential targets suggest that risk must be addressed continually and proactively, through monitoring and tree care.
- Disease has threatened or eliminated several mature trees and exacted expensive, temporary remedies (fungicide treatments, props). Cultural problems including monoculture planting, compaction, poor drainage, mower damage and nutrient stress are contributing to pests and pathogens that adversely affect tree health and longevity.
- The tree population possesses moderate species richness, but in relative numbers is severely skewed toward ornamental cherries, which have multiple cultural problems. Such problems are not readily resolved or prevented, given adverse site conditions and species limitations in the Pacific Northwest. More emphasis needs to be placed on better-adapted flowering tree taxa for replenishment planting.
- The campus possesses several trees of remarkable stature and/or historical associations. One, the English oak, is a national champion (Tree #1-4). Special heritage tree management measures should be enacted to identify, actively protect and eventually replace such trees.
- Native tree species exist both on and surrounding the developed campus, and contribute an important natural context. Native trees can enhance wildlife habitat if increased in appropriate locations and combined with indigenous understory plants. Those in lawn areas are mostly disease-affected; future lawn plantings should be limited if not eliminated.
- Olmsted-specified tree species and heir planting locations correspond to the original plan in several places. Elsewhere, accretions and alternate selections and placement compromise intended design character. Attention is needed to help reclaim lost vistas,

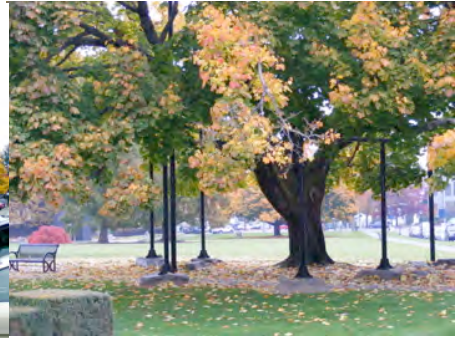
VMP Section 4: Findings



Trees & tall shrubs crowd walls. Beyond: heritage cedar suffers from compaction & drops limbs in storms.



Weeping crabapple in unlikely site: dwarfed by the Capitol. pendulous branches block cars & pedestrians.



Historic maple in decline stands only with external supports; no nearby replacement has been planted yet.



Commemorative trees deserve special care, but several are old, defective, sick or poorly sited.



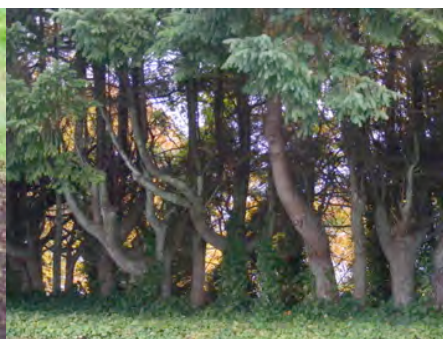
Many remnant native trees have been lost; some that remain pose a risk due to decay, defects & size.



Mature cherry tree with congested, weak branch structure is too big to fix by pruning & prone to breakage.



Poor drainage & compaction promote girdling & surface roots in lawn. If scalped, roots decay.



Topped, ivy-choked native firs on bluff edge are too damaged to restore; firs also block a key vista.



Fungi at tree base & rootzone suggest advanced decay. Many diseases affect trees on campus.

Fig. 10.4.1 Images of Tree Findings. (2009, Source: Arbutus Design)

openings, enclosures and vegetative layers through active management.

- Lower canopy trees are seldom found in association with upper canopy species, a natural and Olmsted-intended association. Future plantings should emphasize mixed-stature plantings to support heritage, aesthetic and habitat enhancement objectives.
- Campus trees do not receive regular monitoring or arboricultural attention, resulting in uncorrectable structural defects, physical damage and premature decay. Lack of consistent care for this high value asset has contributed to risk conditions and abbreviated life expectancy. The campus needs a dedicated arborist to properly plant, prune, protect, treat and monitor trees.
- Both the existing landscape and the Olmsted plant list include invasive tree species to avoid in future planting: Sycamore and Norway maples, English holly, Portugal Laurel, Common Hawthorn, Golden Chain and Horsechestnut. These species self-seed into both local forests and planting bed areas.
- Historic precedent in some cases compromises landscape sustainability. Problem-prone trees should be avoided and similar varieties used in place of Pacific Dogwood and disease-prone cherries, hawthorns, crabapples and elms. (See Fig. 7.12, Large Tree Layer Key)
- Where present, shrub species largely adhere to the Olmsted plant list, but with missing taxa and far fewer individual species and varieties. Plants drawn from outside the Olmsted palette are for the most part compatible in appearance. Enrichment planting rather than wholesale replacement is needed to reclaim intended historic character.
- Shrubs have grown to enormous size in some beds, many now effectively small trees due to natural maturation or intentional “arborization” pruning. Building, view and light blockage, and competition with canopy trees have resulted. Significant renovation will be required.
- Most shrub beds in high visibility areas are tidy: well-edged and clear of weeds and leaf litter. However, mulch is largely absent, there are large areas of bare, compacted and mossy soil, and little rejuvenation pruning is evident. Power shearing and skirting up are dominant pruning measures, the intent of which is not always clear. Altered maintenance priorities, materials and techniques would improve landscape appearance, security and plant health.
- Invasive plants have taken hold in limited areas, but not to the extent that they will be difficult to eradicate (except in the wooded periphery). Holly, blackberry, ivy, cotoneaster and bindweed were found growing in beds.
- Drainage and compaction problems affect turf and shrub health as well as that of trees. Maintaining turf to high standards presents major challenges in wet areas; the extent and locations of turf use bear re-evaluation.
- At present, lawn maintenance consumes disproportionate resources, to the extent that shrubs and trees suffer neglect. Master

10.4.3 Understory

The near-total absence of understory vegetation east of the Insurance Building and Sunken Garden is a dramatic departure from Olmsted design intent. Introduction of shrub beds would shift landscape character and maintenance focus, but not total load.

VMP Section 10.4: Findings

Plan implementation will entail rebalancing these priorities as relative proportions and expectations shift.

- Although popular and consistent with original plan intent for formal landscape areas, annual color plantings compete with the broader landscape for finite staff resources. This balance needs to be evaluated and alternate approaches to satisfying both needs examined. The Olmsted plant list includes many groundcovers, low shrubs, perennials and perennial bulbs that can provide seasonal color.
 - Plantings associated with memorials are generally very simple and well fitted to the broader landscape context. Complicated, attention-demanding landscape treatments would be out of character and demanding to maintain. Future memorials should meet these criteria, and subordinate to the overall campus character.
 - Native understory species grow on the Capitol Campus in combination with ornamental and invasive species, but as communities only in the west parking lot island and Governor's Mansion grounds. The degraded bluff periphery offers opportunities to integrate species-rich native habitat into the landscape. Olmsted Brothers specified native shrubs to underplant retained native trees and incorporate in mixed plantings.
 - Deer frequent the Campus and need to be considered in regard to plant palette selection. "Deerproofing" will not be feasible short of fencing, but concentrated attractants like the old rose garden can be avoided and favored species used sparingly.
- implemented, portions not. Preservation of intact elements should be a high priority for landscape management.
- Vegetation management can and should respect original design intent, but cannot do so to the full extent or in full detail. Altered contemporary uses and maintenance levels affect what and how much is feasible to preserve.
 - The West Capitol Campus's landmark designation, Statewide importance, connection with Olmsted Brothers Landscape Architects, prominent location and enormous popularity confer on it special status. A resource of such significance merits a level of care currently not fully conferred to this landscape.
 - A pattern of declining maintenance has occurred over a very long period, with acute problems emerging as a result in recent years. Plant disease and tree loss are chief among these consequences, in addition to diminished landscape quality and character. Working "smarter" or changing priorities can only go so far to reverse this decline. Consistent funding in relation to need and expectations is the one lasting solution.
 - For the past several years, grounds maintenance staff have been organized as semi-autonomous generalists rather than specialists. While this system has fostered individual pride in areas maintained, consistency has been lost and key tasks missed. Specialization, teamwork, training and area responsibility rotation all bear revisiting.

10.4.4 History

- Portions of the Olmsted Brothers design were



Nandina in planters has been sheared, although its natural habit & texture would work well here.



Boxwood hedge around sunken garden suffers disfiguring dieout probably due to root disease.



Turf within fence is inefficient to mow. Low flowering perennials & shrubs would enhance this feature.



Leggy rhodies in mossy, bare soil; note leaf litter is being removed. Dying plant likely has fatal root rot.



Mower tracks and moss in poorly-drained lawn area. Wet season mowing increases compaction.



Old azaleas by Sunken Garden are lichen filled & need rejuvenation pruning. Note invasive holly (left).



Lack of understory vegetation allows foot traffic under high value tree and compacts its rootzone.



Treelike Portugal laurel is resprouting from base. REMoving decayed trunks above can renew it.



Large camellias & rhodies engulf trunks of historic tulip poplars & need deep regeneration pruning.

Fig. 10.4.2 Images of Understory Planting Findings. (2009, Source: Arbutus Design)

10.4.5 Current Landscape Character - see

Figure 10.4.3

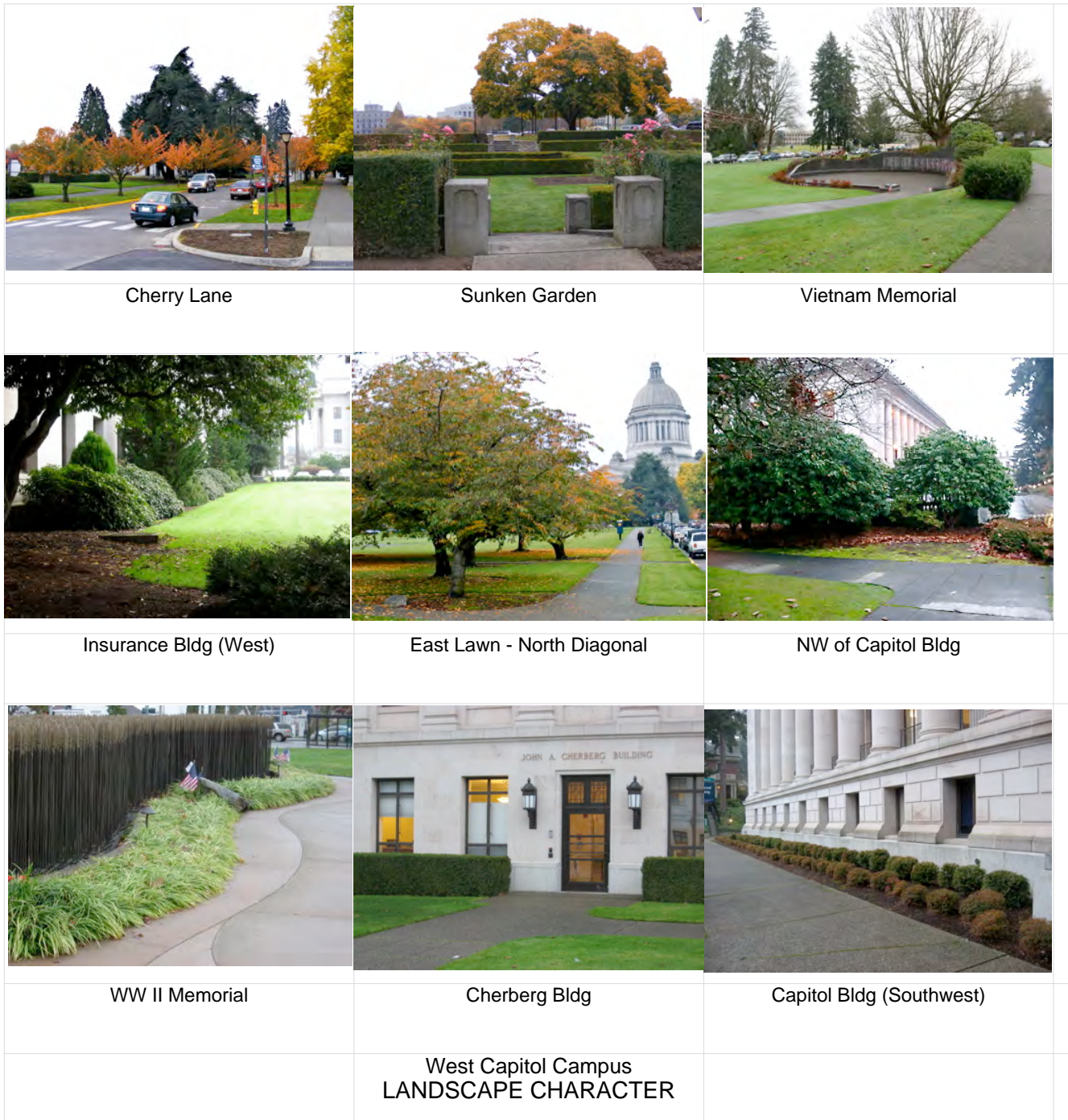
10.4.6 Contemporary Uses

- Population growth and increasing visitation have intensified Capitol landscape use and consequent impacts to vegetation, notably compaction, trampling and turf wear.
- Parking and vehicular dominance throughout the Capitol Campus detract from vegetation quality and prominence. Air and water pollution as well as compaction and physical damage to trunks, branches and roots cumulatively degrade plant quality. Exclusion of vehicles would improve the health, appearance and visitor experience of this civic landscape. (See 2009 Landscape Master Plan vehicular parking removal recommendations, Fig. 6.7b)
- Security is an issue for any public landscape accessible 24 hours a day. Lighting at ground level and intentional gaps in vegetation can facilitate surveillance. Attention to plant layering, type and density may discourage illicit activity and encampment.
- The West Capitol Campus plays an important role as a pivotal piece of green infrastructure in a region-wide system, consistent more than ever with its original intended function. Vegetation management needs to acknowledge and strengthen those connections, through responsible use of resources and link to native vegetation.

10.4.7 Summary of Issues

Key issues relating to vegetation management are:

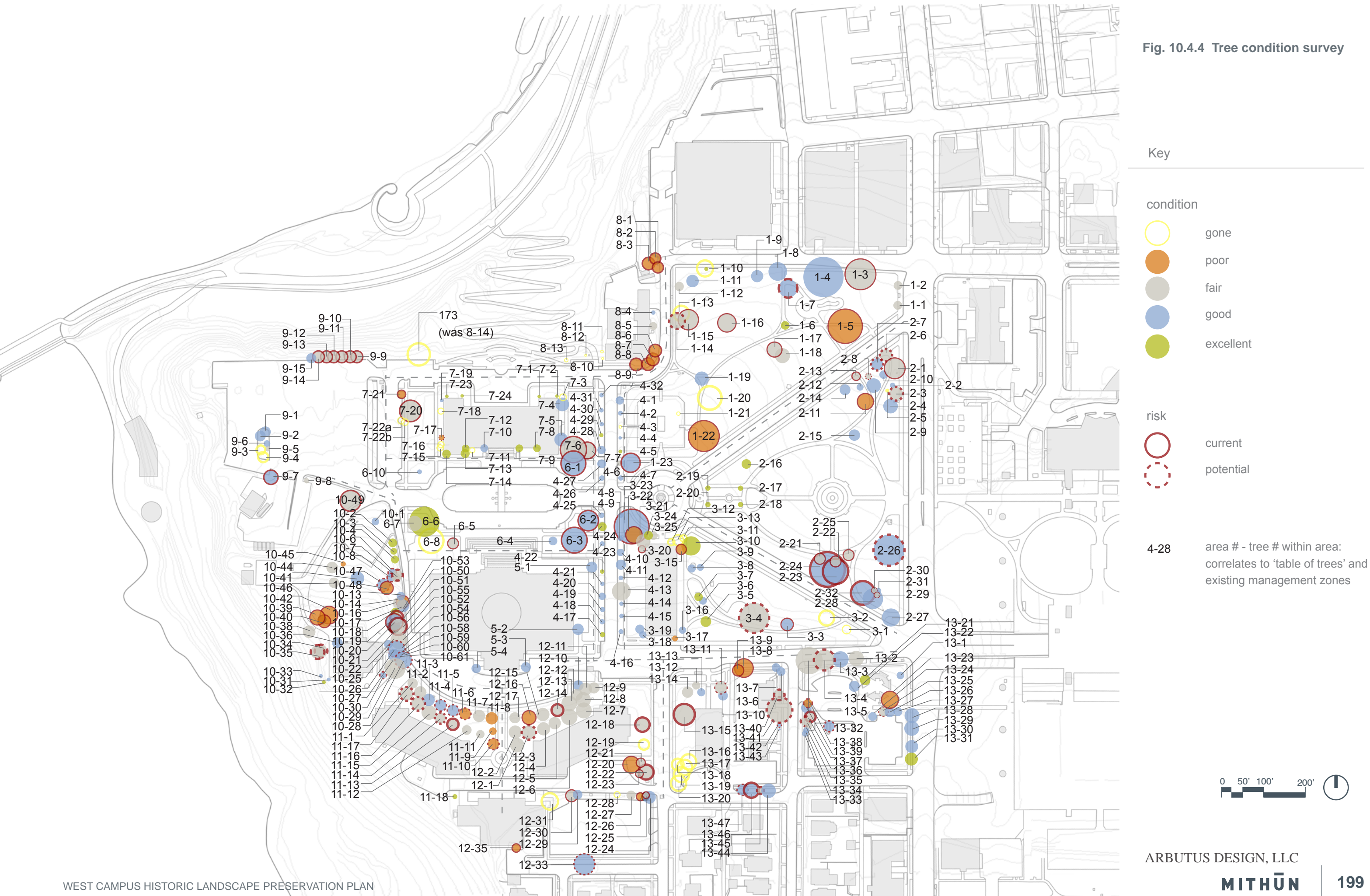
- Reconciling historic character and design intent with contemporary resource maintenance constraints.
- Insuring perpetuation of landscape heritage through sustained vision, replenishment planting and sensitive care.
- Proactively addressing the realities of plant growth and change through time.
- Rebuilding lost landscape quality due to neglect, alteration and overuse.
- Aligning vegetation management with advancing sustainable landscape practices.
- Enhancing political and community support, appreciation and advocacy.



Vegetation Management currently focuses on sustaining public visitation areas of the very highest quality: lush, trim lawns, shaped & sheared shrubs, weed- & litter-free beds, seasonal color focal points, dignified memorial gardens, and trees rising cleanly from lawn singly, in groves and in uniform rows. Other priorities are secondary to preserving this dignified & beautiful civic character. The maintenance staff appreciates how their care inspires pride & patriotism in all who visit the Capitol.

Fig. 10.4.3 Images of Landscape Character. (2009, Source: Arbutus Design)

Fig. 10.4.4 Tree condition survey



Chapter 10.5 - Vegetation Management Recommendations

Introduction

Vegetation management recommendations are the heart of this plan. These recommendations respond to a combination of three primary influences:

- Existing landscape conditions
- Anticipated site and vegetative changes
- Identified goals and objectives

This chapter describes What needs to be done, and identifies Priorities in the WCC Management Actions Matrix (Fig. 5.5). The next chapter, Management and Maintenance Practices, details How, When and by Whom recommended actions should be undertaken.



Fig. 10.5.1 Active Tree Management: Left: Mature trees on UW Capitol Campus pruned to safely extend their lives. Right: New memorial butternut tree planted on West Capitol Campus, spring 2009 (April 2009, Source: Arbutus Design)

10.5.1 Overall Vegetation Management Recommendations

Several management recommendations apply campus-wide, across multiple types of management areas:

- Maintain trees for safety of people and property, through regular monitoring, tree care and timely risk abatement pruning and removals.
- Provide replenishment generations of trees through continuous, strategic replanting.
- Selectively prune and remove vegetation to preserve and reopen key internal and external vistas defined by the Olmsted plan.
- Reclaim vegetation layers lost to cumulative shrub overgrowth and denuding of low understory, through targeted pruning, plant removal and replanting.
- Invest in soil health, fertility and drainage to improve growing conditions for all plants, from trees to lawn.
- Reduce long-term landscape upkeep by replacing invasive and high-maintenance species with durable plants consistent in



Fig. 10.5.2 Organic mulches improve soil health & fertility and reduces compaction. (2004, Source: Seattle Parks and Recreation)

character with the original Olmsted plant palette.

10.5.2 Vegetation Management Areas

The West Capitol Campus landscape includes a broad array of vegetation, from native woodland to formal gardens. Vegetation management for different planting types depends on three factors:

- Landscape composition
- Location
- Patterns of use

For purposes of this VMP, the campus is divided into five Management Areas (MA's) defined by intended vegetative character. As a result, some MA's are discontinuous, and their size and configuration vary significantly. It bears noting that MA delineation differs from the more broadly defined landscape typologies shown in the 2009 Landscape Master Plan, and from the thirteen geography-based areas of the 2001 Landscape Regeneration Study. Management Areas are shown in Figure 10.6.21, and include:

- Greensward (Formal, Informal)
- Formal Landscape (Civic Plaza, Feature Gardens & Memorials)
- Street Edge
- Native Edge (NE, N, NW, W, SW & Service Yard)
- Governor's Mansion

For each Management Area (MA), a goal and vegetation-related issues and objectives are described below, followed by a matrix describing key actions needed to fulfill them.

In the case of the Governor's Mansion grounds, only tree management recommendations are provided. Great benefit would be derived from follow-up to address the site's remaining vegetative components.

This iconic landscape is mature, complex and large. Strategic management actions can perpetuate its beauty and dignity, if executed in a timely manner. Without accelerated attention, disease, overgrowth and invasive plants will take a toll that cannot be shielded from public eye or addressed incrementally. Wholesale restoration would be both expensive and aesthetically disruptive.

In campus areas south of Sid Snyder Way, all existing trees have been inventoried and mapped, with management recommendations provided in the WCC Campus Table of Trees (Fig. 10.9). Except for street tree locations translated from Olmsted's General Plan, this south edge is otherwise beyond 2009 Master Plan boundaries. This VMP covers landscape areas within this margin not subject to redevelopment, such as the Water Street corridor.

Substantial portions of the West Campus are expected to remain in transition for years or decades to come. Obviously, these future landscapes have yet to be designed. In locations where the 2009 Master Plan designates an intended landscape character, these have been included in the appropriate VMP MA. At a later time, it would be simple to add recommendations for remaining sites under the umbrella of this plan, which is intended to be an evolving, not a static guide.

These management recommendations emphasize the immediate needs of campus vegetation, but are intended to cover a timeframe of a generation or more, at least twenty years. This document should be revisited at that point and modified, based on progress made in providing effective vegetation management for the historic Capitol Campus. Chapters 6, 7 and 8 provide supporting guidance on how to perform specific tasks, set project priorities, and monitor success in meeting objectives over time.



Fig. 10.5.3 Greensward (April 2009, Source: Arbutus Design)

10.5.3 Greensward Management Area

Goal:

To fulfill the Olmsted greensward vision within a modified cultural landscape, increasing diversity, health and sustainability of vegetation.

Defining Greensward:

The term “greensward” refers to an English design tradition emulating 18th & 19th C. rural landscapes, with specimen trees and groves set amid expanses of lawn or meadow. Frederick Law Olmsted found inspiration in his extended travels through the

British countryside and pastoral estates designed by Capability Brown and his peers. Olmsted brought this approach to America in his first commission (with Calvert Vaux), Central Park’s famous Greensward Plan. The Olmsted firm continued to use this device for large public landscapes, to create democratic “pleasure grounds” accessible to all people. While not the only vocabulary applied in Olmsted work, greensward is the most recognized component.



Fig. 10.5.4 Heavy foot traffic and bare soil under native trees in remnant grove contribute to compaction, poor drainage & root damage/decay. (December 2008, Source: Arbutus Design)



Fig. 10.5.5 Leaves collected under canopy of English oak provide root-protecting mulch (October 2008, Source: Arbutus Design)

Location & Character:

John Charles Olmsted intended that Capitol visitors experience movement through a green and peaceful setting, filtered from the surrounding city. Plantings were to be designed so that views of the Capitol Dome would appear, disappear and reappear framed by trees, some formal, some informal in configuration. At present, few shrub beds exist, basically only trees and lawn. In the future, this balance is expected to shift more toward the landscape character envisioned in the original design, with outdoor “rooms” and canopied spaces inviting users both to linger and to progress toward the heart of the campus.

The West Campus Greensward is made up of lawn areas and related trees and planting beds not directly abutting campus buildings. Two categories of Greensward are included, distinguished by level of use and maintenance. Special landscapes within the Greensward MA are included in Formal Landscape MA recommendations above.

Formal Greensward is characterized by heavy public use and high visibility, and conforms with Level 1 landscape standards. Formal Greensward includes the central lawn surrounding the Tivoli Fountain, and serves as the ceremonial “front yard” for the Capitol. As additional campus areas are developed, portions are expected to fall into this management category.

Informal Greensward includes areas of lawn, trees and shrubs peripheral to the central lawn, north and south of the diagonal approaches. What distinguishes this landscape type from Formal Greensward are its less manicured character and generally quieter location. Turf here is expected to be less perfect-looking and less demanding of resources to maintain. Parts emulate the meadow-like lawns of the Olmsted era, more rustic than generally seen in public landscapes today. Informal Greensward is intended to offer visitors both open areas and intimate eddies for passive recreation on the Capitol grounds.

VMP Section 10.5: Vegetation Management Recommendations.

Issues:

- Preservation of historic and significant trees
- Tree decline and risk
- Relative lack of young replenishment trees
- Lawn care resource consumption and storm water impacts
- Expansive, uniform character inconsistent with Olmsted design
- Poor drainage affecting landscape health and usability
- Human impacts including compaction, vehicular dominance and landscape alterations

Objectives:

- Insure maximum longevity and vitality of significant trees
- Abate tree risk and reduce its causes
- Increase extent, species range and age diversity of canopy
- Introduce space-defining understory plantings consistent with security needs
- Address drainage problems

- Maintain quality but reduce resources devoted to lawn
- Lessen adverse human impacts on landscape
- Improve quality of visitor experience

Actions:

Vegetation management in this large MA requires both remediation for existing horticultural and arboricultural problems, and landscape modification to improve sustainability and fidelity to Olmsted-intended character.

Modified practices for care of lawn, trees, soil and shrubs will improve plant health and reduce off-site disposal needs. Decreased lawn area will free resources for shrub and tree care. The accompanying WCC Landscape Table of Trees, Large Tree Layer Plan and 2009 Landscape Master Plan are integral to vegetation management in the entire Greensward area, especially as it evolves.



Fig. 10.5.6 Formal landscape at civic plaza. (December 2008, Source: Arbutus Design)



Fig. 10.5.7 Formal landscape at feature gardens and memorials (November 2008, Source: Arbutus Design)

10.5.4 Formal Landscape Management Area

Goals:

To reclaim and sustain the character of the original Olmsted Brothers Civic Plaza planting design, to the maximum extent possible in the 21st Century context. To maintain in excellent condition special-focus campus landscapes consistent with the documented intent of their respective designers, sponsors and visitors.

Location & Character:

This MA encompasses the most formal, symmetrical and ornamental vegetative features of the campus, associated with major governmental buildings. This area is a prominent and highly maintained landscape component, and possesses a high degree of integrity relative to the 1929 Olmsted design. Over time, the scale and composition of plantings has changed. A recent Temple of Justice landscape renovation respects but does not replicate the original Olmsted Brothers planting plan.

A second component of this MA is special-purpose landscapes designed as unique settings for

remembrance, celebration and inspiration. These landscape elements are discontinuous and are diverse in character. They include the West campus war memorials, the Law Enforcement Memorial overlook, Tivoli Fountain, Olmsted sunken garden, seasonal color displays and future memorial sites. In all cases, visitation and expectations are high. With the exception of the Sunken Garden, plantings are quite simple.

Issues:

- Preservation of historic and significant trees
- Tree decline and risk
- Relative lack of young replenishment trees
- Overgrown shrub layer causing scale and security problems
- Excess and insufficient pruning reducing plant quality
- Bare, compacted ground adverse to plant health and rainwater infiltration
- Poor drainage affecting plant health
- Budget constraints on seasonal color program
- Tree: turf conflicts weakening turf and damaging tree roots



Fig. 10.5.8 Diseased, unattractive boxwood hedge. (Source: Arbutus Design)



Fig. 10.5.9 Typical Yoshino cherry root condition. (Source: Arbutus Design)

VMP Section 10.5: Vegetation Management Recommendations.

Objectives:

- Insure maximum longevity and vitality of significant trees
- Abate tree risk and reduce its causes
- Increase extent, species range and age diversity of canopy
- Introduce space-defining understory plantings consistent with security needs
- Address drainage problems
- Maintain quality but reduce resources devoted to lawn
- Lessen adverse human impacts on landscape
- Improve quality of visitor experience

Actions:

Management emphasis for Formal Landscape areas targets vegetation preservation and restoration. Tree risk abatement, monitoring, pruning and growing condition improvements lead the list. Other actions are directed toward rejuvenating overgrown, sparse, damaged and deteriorating shrubs. Plant replacements and additions that revive the Olmsted Civic Center plan (including Flag Circle) will depend for the long-term success on excellent site preparation, including drainage improvements. Adherence to routine schedules for shrub and tree pruning and mulch application will do more than anything else to promote and sustain vegetation quality.

Areas of special challenge include the Sunken Garden and the double Yoshino cherry row on the slope facing the Capitol. Priority measures for the Sunken Garden are replacement of failing boxwood hedges with alternate species, drainage improvements, and reduced use of annual bedding for summer color.

The slope Yoshino cherries suffer from disease and root decay, and lawn beneath them is dying under the increasingly dense canopy. Despite the slope,

drainage is a major problem on the O'Brien Building side. Turf should be replaced by large mulch circles that protect roots and allow opportunities for shade-adapted underplanting. Cherries should be allowed to decrease in number by attrition, and less problem-prone spring-flowering trees informally interspersed. A tapestry of shade- and moisture-tolerant groundcovers eventually will replace lawn. The result will be a gradual conversion, from formal to informal, from monoculture to genetically diverse, from unsustainable to sustainable landscape.

10.5.5 Street Edge Management Area

Goal:

To create street-defining plantings that strengthen the Campus's Olmsted design character, in a manner that insures optimal tree quality and longevity.

Location & Character:

The Street Edge MA includes planting strips and street margins within and surrounding the West Capitol Campus. This environment poses extra challenges for vegetation: constrained planting spaces, vehicular damage and emissions, animal urine, and pedestrian vandalism and compaction. Typically, street edge vegetation is composed of regularly spaced, single-species trees underplanted with lawn. Statistically, street tree condition, stature and longevity are greatly compromised in usual urban settings. Innovation in both paving and planting approach are needed.

The Olmsted planting plan called for perennials rather than lawn in the linear beds flanking Dogwood (now Cherry) Lane. This concept is worth pursuing for horticultural as well as historical reasons. Because very few of the Olmsted-intended street trees exist, there will be abundant opportunities for innovation ahead. Although often neglected, this landscape type

needs continual care to insure vegetation health and longevity.

Issues:

- Absence of street trees to define WCC perimeter
- Deficit of internal street trees to reinforce axial views
- Turf: root conflicts resulting in damage to cherries
- Inadequate turf-free, mulched areas to protect trees
- High water table compromising health and survivability of cherry trees
- Widening and loss of historic crabapples from Pleasant Lane
- Inadequate growing space for large trees along Sid Snyder Way
- Parking-caused tree damage and root compaction
- Unrealized opportunities for diverse street tree palette, scale and season of interest



Fig. 10.5.10 Street Edge. (October 2008, Source: Arbutus Design)

VMP Section 10.5: Vegetation Management Recommendations.



(top) Fig. 10.5.11 Last surviving red crabapple from Olmsted designed Pleasant Lane street tree allee (October 2008, Source: Arbutus Design).

(bottom) Fig. 10.5.12 The rest have given way to parking and a snow-damaged arbovitae hedge (January 2009, Source: Arbutus Design)



Fig. 10.5.13 Pair of columnar maples provide the only West Campus street trees along Capitol Way. They lack rooting space and the broad, arching form of Olmsted-intended elms. (October 2008, Source: Arbutus Design)

Objectives:

- To increase street tree canopy associated with WCC
- To design planting sites to accommodate and support trees through maturity
- To select species that are horticulturally appropriate for intended locations
- To utilize Olmsted-intended taxa or modern equivalents wherever possible
- To provide proper establishment care and training
- To minimize use of turf for underplanting and provide large mulch circles
- To improve growing environment when next replacing Cherry Lane trees
- To provide regular mulching and pruning
- To protect vulnerable trees from insect & disease by least toxic means
- To remove wires from trees promptly after holiday lighting
- To replace lost or severely damaged street trees within one season

VMP Section 10.5: Vegetation Management Recommendations.

Actions:

Street Edge vegetation will become a significant component of the WCC landscape over time. Optimal tree selection and installation, as well as early and sustained aftercare bear the utmost importance. Some tasks fall within the scope of capital project design and installation, but should utilize VMP best practices. Often, too, trees are added incrementally: proper planting and establishment care are critical every time.

Existing street trees on Cherry Lane face severe problems that VMP actions are intended to help

alleviate, slowing future losses. Conversion of planting strip lawn to continuous mulched beds for perennials and groundcovers will reduce compaction and root damage, accommodate berms for replacement tree planting, and strengthen Olmsted-intended character. Planting dogwoods parallel to existing cherries in double rows will further fulfill the Olmsted plan for what was to be “Dogwood Lane.” While the cherry allee is beloved, disease-resistant dogwoods will add genetic diversity to the Prunus-dominated WCC tree population, expand seasonal interest and require little care.



Fig. 10.5.14 Native edge. (left: December 2008, right: March 2009, Source: Arbutus Design)

VMP Section 10.5: Vegetation Management Recommendations.

10.5.6 Native Edge Management Area

Goal:

To make an attractive, species-rich native margin that unites the developed landscape and adjacent greenbelt woodland, while maintaining historically intended vistas to and from the Capitol.

Location and Character:

One of the key features of the Olmsted Capitol Campus design was the native backdrop that gave the seat of government a distinctly regional character. This MA includes the bluff periphery that wraps around the campus on three sides. Where developed grounds border forested areas, multi-layered native plants can fulfill many functions: surface water control and recharge, visitor protection from steep slopes, wildlife enhancement, and aesthetic enrichment among them. This condition currently exists in westerly portions of the Native Edge MA. Elsewhere, invasive ivy and blackberry overwhelm the understory, creating complete monocultures without native regeneration.

Besides the main surrounding arc, this MA encompasses several remnant patches that penetrate further into the developed landscape. These native groves are dominated by bigleaf maples and Douglas firs. Understory vegetation is largely absent in these areas. If reinstated, these groves will better fulfill Olmsted plan intent and ecological function. Once established, maintenance in this MA will consist largely of replenishing native trees and keeping invasive species at bay.

The Native Edge MA includes six segments that share common management objectives but currently exhibit different conditions from one another. Trees in this management area are catalogued in Fig. 10.10. A handful of trees originally inventoried as part of Zone 9 in 2001 remain in the WCC Campus Table of Trees.

These are to be managed in conjunction with adjacent native edge trees. Native Edge MA Sectors are described in Figure 10.5.15.

Issues:

- Trees posing current and future risk
- Ivy climbing or engulfing high value trees
- Invasive groundcovers smothering natives and halting natural tree regeneration
- Limited canopy species and age diversity (varies by sector)
- Slope stability— slides and erosion
- Absence of multilayer native understory (varies by sector)
- Disturbance, debris and material storage at NW point
- View blockage along north bluff, from above and below
- Unrestricted visitor access to steep slopes
- Aesthetic degradation relative to Olmsted vision (varies by sector)

Objectives:

- To mitigate current tree risk and reduce its future potential
- To eliminate ivy from all trees
- To protect areas of high quality native vegetation from degradation
- To generate over time mixed-age, diverse native tree canopy
- To establish multilayer native vegetation that enhances edge habitat and beauty
- To manage plant layers for self-sustaining, long-term view protection
- To reinforce top of slope vegetation to reduce erosion
- To discourage greenbelt access without eliminating visibility

VMP Section 10.5: Vegetation Management Recommendations.

Actions:

Recommendations for the Native Edge MA should be integrated with a full slope restoration plan, for which an obvious (and on the north slope urgent) need exists. This VMP provides guidance for managing the

campus landscape's wild perimeter, including existing top of bluff trees. Broad VMP recommendations will need to be translated to create specific area restoration plans.

Northeast	Just west of Memorial viewpoint to west side of Pleasant Lane
North	From Pleasant Lane to west edge of parking lot
Northwest	From above steam plant to point of bluff northwest of parking lot
West	West of service yard south along west Mansion grounds fenceline
Southwest	From south end of Mansion grounds along bluff to 16th Street end
Service Yard	Grove at southeast corner of service yard next to Mansion fence

Fig. 10.5.15_ Native Edge MA Sectors (2009, Source: M. Eliza Davidson)



Fig. 10.5.16 Ivy on trees. (Source: Arbutus Design)

VMP Section 10.5: Vegetation Management Recommendations.

Aerial ivy control should be undertaken quickly, without waiting for projects to materialize. Likewise, invasive plant removal from areas of high quality native understory should begin immediately. Both actions are predicated on the need to “protect the best” first – an efficient and effective strategy. Trained volunteers can perform this work under supervision. Although tempting, a natural site should never be replanted until invasive species are under control and establishment care is assured.

Primary management actions for Native Edge MA sectors are summarized below. The emphasis varies with starting condition and adjacent Campus uses.

Northeast:

- Control ivy in trees and on ground
- Corrective prune or remove current risk trees
- Perform proactive pruning that eliminates or reduces risk
- Remove overgrown Douglas fir hedge
- Plant native trees, especially conifers
- Add multi-tier native buffer along pavement edge
- Create under-canopy view corridor from Pleasant Lane north

North:

- Control ivy in trees and on ground
- Eradicate Himalayan blackberry
- Corrective prune or remove current risk trees
- Perform proactive pruning that eliminates or reduces risk
- Remove view-obstructing, topped Douglas firs
- Plant native trees, especially conifers
- Add multi-tier native buffer along pavement edge

Northwest:

- Control ivy on ground and in trees, especially major conifers
- Eradicate Himalayan blackberry & Scot’s broom
- Thin crowded alder and maple saplings
- selectively remove young conifers to preserve water views
- Supplement native understory vegetation – limit height to maintain view
- Remove storage & debris at far corner of parking lot

West:

- Corrective prune or remove current risk trees
- Perform proactive pruning that eliminates or reduces risk
- Remove invasive plants from areas with intact native understory
- Control ivy on ground and in trees, especially major conifers
- Plant native trees, especially madronas, understory species & conifers
- Infill native understory where bare or degraded

Southwest:

- Corrective prune or remove current risk trees
- Perform proactive pruning that eliminates or reduces risk
- Control ivy on ground and in trees, especially large specimens
- Convert strip of lawn & compacted soil to native barrier / buffer planting
- Plant native trees, especially conifers

10.5.7 Governor's Mansion Grounds

Goal:

To sustain the beauty, safety and diverse functions of the Mansion landscape, through continual regeneration of a conifer-dominated tree canopy and associated native and ornamental vegetation.

Location and Character:

The Governor's Mansion is sited immediately west of the Capitol Building, within its own wooded compound. The Mansion landscape contributes a gracious and private setting for the Governor's residence. It also

provides a substantial forested backdrop for the entire WCC Campus, reinforcing the regional setting the Olmsted Brothers sought to integrate in their design. For ecological reasons as well, native canopy trees are key vegetative elements within and beyond the Mansion grounds.

This MA contains over 100 trees, including 21 Douglas firs of enormous stature (exceeding 30" diameter) as well as dozens of other natives. These stately conifers predate construction of the Governor's Mansion in 1909 by half a century or more. In contrast, fewer than



Fig. 10.5.17 Governor's Mansion. (April 2009, Source: Arbutus Design)

VMP Section 10.5: Vegetation Management Recommendations.

a dozen trees are non-native to the Pacific Northwest.

The condition of large firs in the lawn and near the drive is cause for concern. While these trees contribute enormously to the Mansion landscape's character, many also exhibit clear signs of deterioration and potential failure. Periodic treatment for soil-borne fungi and beetles has slowed decline over the past decade, but cannot arrest or reverse it. Few young replacement conifers are growing on the grounds, despite the presence of large native garden areas.

A central lawn that slopes up toward the Mansion has ornamental shrubs and trees concentrated near its edges. Many of these specimens also will need replenishing to perpetuate their aesthetic contributions to the landscape.

Issues:

- Risk associated with large firs in deteriorating condition.
- Lack of natural canopy regeneration
- Invasive species overtaking native vegetation
- Ivy climbing major trees, threatening their health and stability
- Absence of organic mulch, especially under canopies of lawn trees
- Pruning and lack thereof that compromise tree structure, beauty and longevity

Objectives:

- To mitigate major tree risk
- To develop a computer-linked tree monitoring program
- To implement corrective, structural and training pruning for trees
- To improve soil conditions for tree and garden health

- To eliminate ivy from trees
- To plant continuing generations of native and ornamental trees
- To control invasive species in understory areas
- To protect vegetation while addressing security needs

Actions:

Recommended management actions for each identified tree or group are provided in the WCC Landscape Table of Trees (Fig. 10.9). Trees located in the Governor's Mansion MA are designated 10-1 through 10-88.

Key canopy management measures include:

- Confirming and abating major tree risk in high occupancy areas
- Investigating structural integrity and disease diagnosis in identified trees
- Creating "survival rings" and severing ivy growing into trees
- Initiating a computer-linked, arborist-led tree monitoring program

As major issues with existing trees come under control, cyclical and restorative pruning, invasive plant removal and new tree planting can begin as well.

WCC Management Actions Matrix

Management Area	Greensward		Formal Landscape				Street Edge			Native Edge						
	Formal	Informal	Civic Plaza	Cherborg - O'Brien Cherries	Sunken Garden	Memorials	Seasonal Display	Cherry Lane	Existing Street Trees	New Street Locations	NE	N	NW	W	SW	Service Yard
Management Action																
Canopy:																
Treework to abate immediate risk	◆	◆	◆	◆		◆		◆	◆		◆	◆		◆	◆	◆
Treework to abate potential risk	◆	◆	◆	○		○		○	◆		◆	○		○	○	○
Periodic inspection / monitoring	◆	◆	◆	◆		◆		◆	◆	◆	○	○		○	○	◆
Establish routine pruning cycle	◆	◆	◆	◆		◆		◆	◆	◆	○	○	○	○	○	◆
Reduce canopy crowding / thin stems			○						○		○	○	◆	○	◆	◆
Remove invasive-species trees	○	○	○								◆	◆	◆	◆	◆	
Plant replacement trees	◆	◆	○	○		○		○								
Plant trees in new locations	◆	◆	○		○			◆		◆	◆	◆	○	◆	○	
Remove turf / mulch to dripline	◆	◆	◆	◆				◆								
Underplant trees	◆	◆	◆	◆	○	○		◆	○	○	◆	◆			◆	◆
Exclusion fencing / vegetation	◆	◆	◆								◆	◆	○	○	◆	
Health treatment - significant trees	◆	◆	◆	◆				◆	◆							
Create habitat snags											○	○		○	○	○
Understory:																
Move / remove poorly-sited plants			◆		○											
Replace diseased / declining plants		◆	◆		◆											
Remove invasive ornamentals			◆													
Priority prune - restore, reduce, repair		◆	◆		◆	○										
Cyclical maintenance pruning	○	◆	◆		◆	◆										
Mechanical weed / invasives control	○	○	◆	○	◆	○	◆				◆	◆	◆	◆	◆	○
Chemical weed / invasives control			○								○	○	○	○	○	
Install new understory plants	◆	◆	○	○	○			◆	○	○	◆	◆			◆	○
Infill understory plant gaps			◆		◆	○	◆									
Plant spring bulbs / seasonal color	○	○	○	○	○		◆	○								
Plant summer-fall seasonal color					○		○									
Add perennial/woody plant color	○	○	○	○	◆	○	◆	○			○	○	○		○	○

KEY:	
High priority	◆
Moderate priority	○
Not a priority	blank

Fig. 10.5.18 WCC Management Actions Matrix - continued on following page. (2009, Source: Arbutus Design)

VMP Section 10.5: Vegetation Management Recommendations.

WCC Management Actions Matrix (continued)

Management Area	Greensward		Formal Landscape				Street Edge			Native Edge						
	Formal	Informal	Civic Plaza	Cherborg - O'Brien Cherries	Sunken Garden	Memorials	Seasonal Display	Cherry Lane	Existing Street Trees	New Street Locations	NE	N	NW	W	SW	Service Yard
Lawn:																
Install corrective drainage	◆	◆	○	◆	◆			◆								
Convert lawn to planting beds	◆	◆		◆				◆								
Mulching mow, leave clippings	◆	◆	◆	◆	◆	◆		◆								
Mow fallen leaves & leave on lawn		◆		◆				◆								
Shred leaves to mulch beds/trees	◆	○	◆		◆	◆		○	◆	◆						
Collect leaves to compost offsite	○		○	○					○	○						
Prep soil and install "ecolawn"		◆														
High frequency aerate, thatch, reseed	◆		◆		◆	◆										
Low frequency aerate, thatch, reseed		◆														
High frequency fertilization	◆		◆													
Low frequency fertilization		◆														
Install permanent edging	○	◆	○		◆	◆	○	○								
Periodic edging to contain lawn	◆		◆	○			◆									
Site & Soil:																
Install corrective drainage	◆	◆	○	◆	◆	◆	○	◆								
Air spade to relieve compaction	◆	◆	◆						◆							
Limited +/- establishment irrigation		◆							◆	◆	◆	◆	◆	◆	◆	◆
Efficient, Maxicom-based irrigation	◆		◆	◆	◆	◆	◆	◆								
Test soil pH & nutrients annually	◆	◆	◆		◆	◆	◆									
Test soil during bed prep	◆	◆	◆	◆				◆		◆						
Apply organic fertilizer	◆	○	◆	○	◆	○	◆	○								
Amend soil with organics	◆	◆	◆	◆	◆											
Create elevated berms for planting			◆	○				○	○		○	○			○	○
Apply organic mulch annually	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆						
Apply woodchip mulch on bare areas											◆	◆	◆	◆	◆	◆
Sheet mulch invasives											◆	◆	◆	◆	◆	
Retain snags / scatter woody debris											◆	◆	◆	◆	◆	○

KEY:	
High priority	◆
Moderate priority	○
Not a priority	blank

Fig. 10.5.18_ WCC Management Actions Matrix - continued from preceding page. (2009, Source: Arbutus Design)

Section 10.6 – Management & Maintenance Practices

10.6.1 About Management & Maintenance Practices

This section provides specific direction concerning vegetation management practices recommended in Section 5. These two chapters are intended for use together for VMP implementation. The following sections should provide enough detail to carry out maintenance and project-specific work outlined in this VMP. They describe methods, materials and sequences for maintaining, improving, and restoring vegetation of all types, as well as removing, installing and establishing new plants.

These protocols represent current best practices. However, emerging science and practical application on this site may generate modifications. While methods and materials will continue to evolve., those laid out here should be consistently applied until and unless revised by amending this chapter. Monitoring provides an accurate way to objectively gauge the success of these practices, in a process of “adaptive management.” Chapter 8 discusses what, how when and why to perform monitoring.

10.6.2 Modifying Drainage

Drainage Issues

The West Capitol Campus has extremely poorly-drained soil throughout most of the landscape and adjacent bluff. The site is underlain with impervious glacial till at varying depths, translating to inconsistent patterns of saturation across the site. Subsurface water flows from south- southeast northwest toward the bluff face, where it emerges as springs and contributes to slides.

On the whole, drainage is worse in low areas like the

sunken garden and southeast lawn, somewhat better on higher ground. However, wet spots are found at tops of slopes and wherever soil is compacted. Large expanses of lawn and trampled bare soil increase surface water accumulation downslope as does rapidly applied or excessive amounts of irrigation. Thus, drainage is not just a winter concern.

Saturated conditions allow water-borne fungi and other plant pathogens to proliferate, contributing significantly to plant disease and mortality. Year-round lawn mowing is difficult, and together with foot traffic, crushes soil pores that hold and slowly release water. Heavy landscape use continually exacerbates already difficult conditions. Despite all these factors, drainage can be improved.

Current Practices

- Standard practices already in use include frequent mechanical lawn aeration or “plugging.” Effectiveness can be increased by backfilling holes with sand.
- Another practice that has proven helpful is spot drainage improvement through diversion pipes, intercept trenches or French drains. Such installations are often effective short-term in small areas, but seldom long-term over a wide area.
- Under trees with compacted root zones, air spades have been used to loosen soil while also permitting disease treatment, decay evaluation and root pruning. Again, this is an effective but localized and fairly expensive procedure.
- Vestiges of historic drainage networks have been found on Campus but never tested or mapped. Presumably most clay drain tile has long since collapsed or decoupled and ceased to function.

VMP Section 10.6: Management & Maintenance Practices

Piecemeal drainage installations can transfer water problems elsewhere, or consume resources better applied to a comprehensive subsurface drainage system, the only permanent solution. If there were ONE funded capital project for the WCC grounds, it should be the design and construction, even in phases, of a Campus-wide drainage system. (See VMP Section 9)

Additional Practices

Measures that protect or build soil tilth also improve drainage, allowing water to move through soil horizons

away from the surface.

- Mulching is the easiest and most effective technique for improving soil tilth and vitality. Organic mulches should be applied annually to all landscape areas. Consistent application of wood chips, leaf mulch or compost onto the soil surface effectively adds organic content back to the soil and helps reverse compaction. Choice of material depends on formality of planting area, as well as availability and cost of materials. Wood chips should be composted before application, to avoid



Fig. 10.6.1 Careful drainage system planting & installation could have prevented tree root damage. (August 2005, Source: Arbutus Design)

spreading decay fungi to living, healthy trees. This single practice if continued over time makes a dramatic difference in drainage and plant health.

- Berms are a simple device that raises roots above anaerobic, saturated soil where disease and decay can overwhelm all but the most adaptable plants. This technique is especially useful when creating new beds or installing groups of plants. However, even a single tree can be planted high to improve survivability, as was done recently for the memorial butternut. Berm soil must be blended with existing surface soil to prevent a perched water table from forming. This could transfer saturation above ground into the new soil mass.
- Soil in beds should not be worked when saturated, nor planting holes dug or filled.
- Maintenance traffic across wet ground should be avoided at all cost, and visitors should be encouraged to stay on paved surfaces, enlisting temporary fencing or signage if necessary.
- Plant selection to fit wet conditions improves vegetation survival and quality. Many species can tolerate, or even require, considerable soil moisture. No plant that requires good drainage should be attempted in this adverse environment. It will survive briefly if at all. Lists of tolerant taxa are available in references cited.
- Monitor and apply irrigation carefully, and repair leaks as soon as possible. Reduced lawn area also reduces irrigation demand and chances of applying excess water to poorly drained soils.
- Install understory plantings to exclude people from high traffic areas vulnerable to compaction. Reduced runoff be generated,

because absorption will occur where rain or irrigation falls, within the planting bed. This is a basic premise of sustainable landscape management.

Water except where beds have been elevated. Sandy loam adequate to support tree and shrub growth. Organic content varies depending on localized soil management practices. In areas, compaction severely impedes drainage. The primary functions of amendment are to improve soil fertility, structure (pore space), beneficial microfloral environment, and water-holding capacity. Site-adapted plant selection, irrigation and mulch application work in tandem with amendment to insure optimal-quality vegetation.

10.6.3 Amending Soil

Soils should be amended based on soil testing, which indicates baseline organic content and nutrient levels. Incorporating compost is a recommended practice for any new planting project. Amending should be done throughout a planting area, not by adding nutrient-rich soil to individual plant pits. Generally, the best way to add soil amendments is to clear the area of weeds and unwanted plants, aerate or scarify the soil if necessary, then spread amendment (e.g. compost or equivalent) on the surface throughout the planting area to a typical depth of 3-4 inches.

If possible, tilling should be used to incorporate amendments into existing topsoil layer, avoiding the root zones of mature trees. Surface application or hand-digging near trees and mature shrubs is recommended, rather than leaving soil unimproved. Seasonal timing should be such that bare soils are not exposed to winter rains. Therefore, if done in the fall after summer weed removal, soil should be seeded or covered with wood chips whether or not site is planted



Fig. 10.6.2 Heritage Norway maple ‘miracle tree’ regained vigor after organic soil amendments & mulch were applied, along with air spade root treatment, pruning, & drainage work. (January 2005, Source: Arbutus Design)

at that time.

Special additions to the soil may include, as needed, fertilizers, lime, humic acid or mycorrhizal fungi. Incorporation of these materials should be based on horticultural evaluation and/or soil testing, not routine practice. Tests for suspected pathogens can also be performed, based on plant symptoms, and generally require tissue samples as well. As described above, amendment need not involve active incorporation of material into the ground. Amendment by mulch application can be equally effective.

10.6.4 Planting

The basic procedure for plant installation is essentially the same for both a developed landscape and a natural area. Site preparation, species selection, and planting layout are site-specific and depend on the goals of the project as well as site growing conditions. Instructions for planting trees, shrubs, and herbaceous material are given below. Planting practices have changed somewhat in recent years, so that familiar techniques may need to be adjusted. Horticultural practice continues to evolve as new knowledge is tested and applied.

VMP Section 10.6: Management & Maintenance Practices

Trees

The two basic steps in planting are preparing the site, and setting the tree or shrub. Proper preparation will encourage root growth rather than adding to the challenges already facing newly planted trees or shrubs.

- Ideal planting hole is 2-3x the diameter of the root spread or the root ball (depending on existing soil conditions)
- Minimum planting hole is 12" wider than root spread or root ball
- Hole shall be no deeper than the ball and the ball shall sit firmly on undisturbed soil.
- Plant trees no deeper than depth at which they were growing in the nursery. Remove excess soil from container or top of ball if necessary to expose root flares.
- Hole shall be watered and allowed to drain before planting, and tree roots shall be thoroughly moist, whether bare, balled or in container.
- Balled-and-burlapped trees shall be placed in the hole gently by the ball, not the stem, and plumbed vertically. All rope shall be removed from around the trunk of the tree and at least the top 1/3 of the burlap shall be folded back



Fig. 10.6.4 _ Newly planted trees replenish canopy on the US Capitol grounds. (March 2009, Source: Arbutus Design)

down into the hole. Whenever possible completely remove burlap by cutting it away with a sharp knife. Do not remove any B&B packaging material until the tree is placed in the hole and securely set in its final position.

- Trees in wire baskets must have all of the basket removed, using bolt cutters
- Spread roots and check for defects prior to backfilling. Correct minor kinks or circling roots by pruning, but if severe or extensive reject the tree.
- Native soil shall be used to backfill the planting hole except where existing soil is contaminated or filled with rubble or pure clay
- Backfill soil in lifts of 4-6" at a time with compaction of each layer. Do not compact muddy backfill. Water thoroughly after backfilling to settle the soil, eliminate air pockets and re-wet the root system.
- If project scope allows, watering soil rather than compacting is preferred. Backfill ½ the soil in the tree pit and thoroughly drench with water to settle. Complete backfilling then thoroughly drench with water again. This method is preferred for removing air pockets and settling soil, but can be impractical on big jobs or jobs using volunteers.
- Trees should NOT be fertilized at the time of planting
- Trees planted in well-drained soils should have a 3" high saucer erected just past the perimeter of the planting hole to funnel water to the root ball and contain mulch.
- Berms should not be constructed in clay soils or on heavily compacted sites.
- Place organic mulch such as wood chips 3-4" deep over exposed soil after planting, but avoid direct contact between mulch and stem.
- Stake tree only in situations where normal

planting procedure does not yield a stable plant, otherwise, staking is not generally required.

- Staking is sometimes used as a vandal deterrent or to prevent mechanical injury from mowers or trimmers. Ties for stakes should be biodegradable or flexible fasteners that won't girdle trunk if not removed in a timely fashion.
- Stakes and ties shall be removed at the end of the first year.
- Do not wrap tree trunks.

Shrubs (refer to general guidelines for trees, above)

- If needed, incorporate fertilizer into soil before adding plants.
- Wait until plants are established before adding chemical fertilizer.
- Plant at proper depth taking into consideration room for mulch.
- Plant shrubs with proper spacing to allow for spread at mature size.
- Plant bareroot stock at the same grade as grown in the nursery.

Herbaceous Plants

- Prepare weed-, rock- and debris free planting bed.
- Plant groundcovers, annuals and perennials densely enough to provide adequate coverage to compete with weeds, but do not crowd.
- In landscape beds, plant in quantities sufficient for effective display.
- Remove containers prior to placement in the planting pit.
- Tease pot-bound roots with hands or tools prior to final placement in planting pit.
- Protect bare root plants from drying prior to and immediately after planting, and water gently.



Fig. 10.6.5 Compost mulch improves plant establishment, appearance and health. (February 2006, Source: Arbutus Design)

10.6.5 Mulching

Mulching is one of the easiest and most important maintenance practices for protecting and nurturing all types of vegetation. Mulching is an essential element of planting projects, as well as ongoing grounds maintenance. Benefits provided by organic mulches include: suppressing weeds and invasives (thereby reducing root competition and pesticide need), conserving soil moisture, keeping soil cooler in summer and warmer in winter, reducing compaction, preventing erosion and minimizing storm runoff, and adding /replenishing soil organic matter.

In informal beds and natural edge areas, the most desirable mulch will be 3-4" of composted wood chips. Compost, GroCo, or leaf mulch can be added either on top of or underneath the chip layer if soil amendments are desired. Where large areas of invasive plants have been removed (e.g. blackberry thickets or blankets of ivy), the entire planting area may be sheet mulched with thick cardboard overlain by 4-6" of wood chips to minimize re-invasion and reduce follow-up

maintenance. This technique should not be used in the vicinity of mature trees as it reduces air and water availability to established root zones.

In most cases, wood chips are available from tree services at no cost. When tree and shrub removals are done on site, debris should either be chipped and blown directly into beds, or stockpiled on-site for future use. Direct recycling eliminates considerable transport and labor expense. Plastic, landscape fabric or inorganic mulch should be avoided in most cases, except as specified for highly invaded areas, where it may be the most effective non-chemical strategy to achieve control.

Formal landscape beds should be mulched with a finer material than wood chips, such as Steerco, GroCo or Cedar Grove compost. While better than no mulch whatsoever, bark should be avoided as mulch anywhere on the WCC grounds. Its benefits are questionable, it excludes irrigation water when dry,, and its character is inappropriate to a heritage landscape.

Wherever individual plants or groups of plants are to be mulched, follow guidelines below.

Trees (newly planted or established)

- Clear weeds and grass from under the tree, in a circle out to the drip line at the tips of the branches.
- Where weeds are very aggressive, use an underlying "sheet mulch" of thick layers of newspaper or cardboard (for new trees only).
- Spread 3-4" deep layer of organic mulch in a circle out to the tree's drip line or in a 3' diameter circle (whichever is greater).
- Keep mulch away from the tree trunk to prevent crown rot or insect damage: avoid

piling against stem (“volcano mulching”).

- Maintain mulch (annually during 3-year establishment period and beyond, as needed).

Shrubs and Herbs

- Follow similar procedures as for trees, above.
- Spread layer of organic mulch 2-4” deep to shrub dripline.
- To avoid smothering, sub-shrubs, groundcovers and herbs need less mulch depth than taller shrubs.
- Cover entire planting area with mulch where

applicable.

- Keep mulch away from contact with crown of plant; this applies even to small herbaceous material and requires hand placement.

10.6.6 Watering

In the Pacific Northwest, watering is essential for plant establishment and important for long-term survival. Non-drought adapted plants that experience



Fig. 10.6.6 A Denver riverfront park combines irrigated lawn with lush shrub plantings requiring little or no watering. (September 2006, Source: Arbutus Design)

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either acute or protracted water stress over weeks or seasons will gradually decline or succumb. In general:

- Water new trees and shrubs thoroughly at planting, regardless of season or weather.
- Water new trees and shrubs (weekly at least 1") during first two summers, tapering watering (to 1/2" weekly) in the third year or extending watering interval to ten days.
- Begin watering in June to prevent drought stress, but only when natural precipitation is insufficient to supply full weekly need. Water on a weekly basis between at least mid-July and late August.
- Continue watering until, into or through September, until rains return and soil moisture is replenished. Fall drought stress is not uncommon, and can compromise plant condition going into winter.

Watering is an important factor in establishing new plantings to achieve optimal survival and growth. Olympia receives relatively little rain during the growing season and almost none during times of peak evapotranspiration (July-August). Plants grown in a nursery are adapted to exactly the opposite condition: they receive regular watering to facilitate rapid growth. Summer watering for the first three seasons after planting is critical to help plants acclimate to a radically different moisture regime. They must grow an entire new root system before they can survive in the summer dry season. This is why summer watering for new plants, even drought-tolerant natives, is important.

Some vegetation requires routine summer irrigation once established, such as high-use turf, ornamental seasonal plantings, and moisture-demanding trees and shrubs. As for establishment watering, about 1" per week during peak summer season is needed. To limit disease, do not direct water spray on tree trunks,

and minimize spray on foliage as much as possible. During irrigation season, staff should monitor vegetation frequently for signs of drought stress, or conversely, pooling and over-watering, and make adjustments or repairs immediately. Irrigation should be applied in early morning hours, avoiding mid- and late-day applications known to waste water and invite disease.

Lack of automatic irrigation will not pose a problem for Campus areas where the target plant palette is adapted to natural levels of precipitation. Establishment watering can be provided through hand-watering or a temporary system. Native edge restoration plantings fit this category, and for the most part are easily accessible to water sources.

Water is becoming an increasingly expensive and limited resource. Conservation successes to date will grow even more with full operation of the new Maxicom-linked weather station on Campus. While costly up front, an upgraded irrigation system would maximize the benefits of Maxicom controls, and improve water delivery. At the point when investment in new irrigation infrastructure occurs, tying in recycled or gray water may become a feasible alternative to using potable water.

Reducing watering demand is also a key part of the equation – by means of plant selection, grouping plants with like water needs, mulching, capturing runoff and actively monitoring need and use.

10.6.7 Three Year Establishment Care


For a period of three years, all new plantings should have follow-up care that is intensive and frequent. This requirement applies equally to individual replacement trees, renovated beds and reclaimed

invasive sites. At a minimum, the components of a three-year care program are mulching, watering, and weeding. A three-year calendar for these actions is shown below. Detailed instructions on how to perform specific maintenance actions can be found in this chapter under the title of each practice involved. Once the three-year period is over and plantings have become well-established, their care should be incorporated into any regular ongoing maintenance

that occurs within the management area where they are located.

Weed control should absolutely be done with diligence at any planted site, timed to precede seed production for flowering species. Plant vigor and survival must be monitored yearly and lost material promptly replaced. Training pruning for trees, if needed, should be performed during this period and ties and stakes

Three Year Establishment Care Calendar												
Action	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
At Time of Installation:												
Mulching												
Watering												
Year 1												
Mulching												
Weeding				•	•							
Watering						•	•	•	•	•	•	•
Year 2												
Mulching												
Weeding				•	•							
Watering						•	•	•	•	•	•	•
Year 3												
Mulching												
Weeding					•							
Watering						•	•	•	•	•	•	•
Removing Inorganic Mulch												

 Indicates time period when action may be taken, timing and frequency to be determined by site conditions

• Indicates specific time to perform action

Fig. 10.6.7 Three Year Establishment Care Calendar. (2009, Source: Arbutus Design)

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removed at end of the first growing season.

Adjustments to the calendar, in terms of actions taken, should be made depending on particular project site conditions. Monitoring plays a crucial role in staying aware of site conditions affecting establishment. Material planted, soil, aspect, drainage, slope, shade, competition, and past level of invasive infestation all can affect intensity of establishment care needed. Although occasionally tempting, planting projects should not be undertaken where provision for adequate after-care cannot be guaranteed.

10.6.8 Pruning

Pruning should be performed on a regular basis in all developed landscape areas, for shrub renovation and maintenance and to insure longevity and safety of trees. Pruning can produce strong, healthy, attractive plants, but only if done well. Pruning must be done by or under supervision of trained professionals. Continuing education for grounds staff may be necessary to develop the necessary skills and underlying horticultural understanding. Technical expertise is required to avoid damaging valuable vegetation. Excessive power shearing, shrub skirting



Fig. 10.6.8 Shrubs should be pruned only for hedging or topiary, not size control. Without pruning, these plants would have fit narrow planting beds at maturity. (December 2008, Source: Arbutus Design)

and heading back have occurred in the past.

If plants are grown in appropriate places from the outset, long-term pruning needs will be minimized. Future plantings can be improved in this regard, but much of the existing plant material is overcrowded, over-large and neglected, necessitating extensive pruning over several seasons. In an era of limited labor resource, serious attention to future plant selection for appropriate ultimate size and character will pay dividends in reduced workload.

When pruning always use clean, sharp tools including hand pruners, loppers, handsaws, pole pruners, shears and chainsaws, matched to plant type and size. Ladder work should be performed from stable orchard-type ladders. Dead, diseased and damaged wood can be removed at any time of year, although visibility may be better in one season than another (in leaf for dead or diseased wood, bare limbs for damage and structure),

All trees must be pruned in conformance with ANSI 300 Standards. Except for the purposes of snag



Fig. 10.6.9 Example of retrenchment pruning of veteran tree on US Capitol grounds. (March 2009, Source: Arbutus Design)

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creation or retrenchment pruning, never top trees. Tree pruning is to be undertaken to achieve defined objectives, which may include:

- Removing damaged, dead or diseased parts
- Structural training or corrective pruning
- To balance crown or reduce excess end weight on limbs
- Breakage repair
- “Retrenchment pruning” to preserve declining trees
- Root pruning
- Thinning or “windowing” to reclaim important vistas
- Limb skirting to improve clearance or security

Evergreen shrubs are best pruned in spring as new growth begins to push and frost danger is past. Dormant season is appropriate for most deciduous plant structural and renovation pruning. To avoid stimulating new growth that cannot harden for winter, do not prune too late in growing season (after mid-August), other than deadwooding. Prune spring-flowering plants during or after bloom rather than winter before, which removes flower buds.

Conifers may be pruned in any season; most species cannot break bud from bare interior wood so cut carefully and maintain any sheared plants regularly. Restrict shearing to plants adapted for this type of pruning: groundcovers like heaths, herbs,



Fig. 10.6.10 Long unpruned deciduous azalea has large stems with severe decay cavities at base. (December 2008, Source: Arbutus Design)



Fig. 10.6.11 Nearby azalea has well-spaced stems and nice form resulting from basal renovation pruning. (December 2008, Source: Arbutus Design)

formal boxwood and conifer hedges, etc. Refer to a comprehensive pruning encyclopedia for species-specific information as needed.

Legitimate reasons for pruning trees and shrubs are provided below, with examples. Never prune without knowing specific objective(s) for doing so.

Trees

Prune for Safety:

- Remove branches that grow too low and could cause injury or property damage.
- Trim branches that interfere with sight lines on streets or driveways.
- Remove branches that grow into utility lines.
- Remove or trim branches that pose a hazard to public safety.

Prune for Health:

- Create a strong structure when tree is young.
- Remove dead, diseased or damaged branches to increase strength and longevity of trees.
- Thin crown to increase airflow and reduce pest and disease problems.
- Remove crossing and rubbing branches.
- Do not apply dressing to pruning wounds, as this may invite disease.

Prune for Appearance:

- Enhance the natural form and character of the tree.
- Never “top” trees.

Shrubs

Prune for Health:

- Follow principles of natural target pruning.

- Make cuts as close to the bud as possible.
- Do not make flush cuts.
- Do not leave stubs.

Prune for Appearance:

- Enhance balanced, natural shape of shrub species.
- Remove crowded and crossing branches.
- Remove terminal bud to stimulate lower branching.
- Remove reverted shoots.
- Enhance flowering and fruiting.

Prune to Restore:

- Cut limbs to base to regenerate plant (appropriate species only)
- Remove one third to one half of plant to ground to regenerate more gradually over multiple seasons.
- Mulch, fertilize and water following “radical renovation” to foster strong regrowth.
- “Arborize” by removing lower limbs from treelike shrubs only where resulting plant size and form are functionally and aesthetically appropriate.
- Confirm pruning objective before starting: plant removal may be more appropriate than pruning where severe crowding and visibility issues exist.



Fig. 10.6.12 Huge stump by parking area may have been a risk to tree removal. Such high target sites are unsuited for creating habitat snags. (March 2009, Source: Arbutus Design)



Fig. 10.6.13 Trees were selectively removed along street edge in Volunteer Park, Seattle, to reduce crowding and made way for installation of Olmsted-intended perimeter shrub border. (February 2006, Source: Arbutus Design)

10.6.9 Removing Plants

Tree removals may become necessary for any of the following reasons, some of which are preventable with proper selection and maintenance:

- Poor tree architecture that cannot be corrected
- Frequent branch drop in high use areas
- Increased wind exposure
- Root loss, unstable rooting or girdling roots
- Severe trunk lean, cracks, cankers, conks, seams, decay and/or cavities

And applying equally to shrubs:

- Unfavorable soil conditions
- Chronic insect or disease problems
- Crowding, decline or death
- Invasiveness

Trees may become a risk because of defects related to old age, storm damage, poor structure, past

construction activities or death of the tree. Risk exists only if both a serious defect and a “target” are present (property or persons that would be damaged if the tree fails). Dead trees in little-used, “low target” areas may be left standing to enrich wildlife habitat.

Risk trees that cannot be made safe or functional by corrective pruning or moving the target must be removed. Mechanical supports as a general rule should not be used as substitutes for structural integrity. In the case of significant Campus trees, exceptions may be warranted, but only after careful evaluation of costs and benefits and all reasonable alternatives.

It is imperative to alert the public well before a tree removal begins, with prominent advance signage that communicates reasons and provides opportunity for comment. The decision of whether to keep or remove

a major Campus tree should occur in consultation with at least one consulting arborist qualified as a Tree Risk Assessor. The GA should develop standard procedures for tree removal public process, if not already in place.

At times, trees and shrubs may be removed for landscape renovation, facility or infrastructure improvements, access, or other reasons not related to the plant's viability. Cost and availability of funds for tree-spade work should be weighed against the cost of replacing a tree with a new, smaller caliper tree. Establishment of relocated larger trees is often slower and less successful than planting young replacements.

Regarding transplanting trees:

- Determine value of specimen to be transplanted, by appraisal, when considering replacement vs. transplanting.
- Transplant high-value trees smaller than 10-12" in diameter with a large tree-spade; small caliper trees (3" or less) may be hand dug then balled-and-burlapped.
- Remove plants for reuse only during appropriate season - generally late fall or early spring, depending on species.
- When large trees are removed, recycle as much of the woody debris on site as possible.

Regarding transplanting shrubs:

- Transplant shrubs by carefully digging a rootball and placing in pots or balling and burlapping.
- Do not let roots dry out.
- Remove plant material that is too large for the allotted space.
- Remove plant material that is diseased or dead and dispose off site.

Woody plants removed from natural areas can be left in situ as DWD, Downed Woody Debris, unless it is unsightly from prominent locations or so abundant that it constitutes a fire hazard. Dead wood contributes humus and habitat to the forest ecosystem.

10.6.10 Taking Care of Turf

Turf is the term applied to any lawn or grasses grown in developed landscape areas. "Ecoturf" refers to grasses grown together with a mix of broadleaf, often flowering plants, requiring lower inputs of irrigation, fertilizer, pesticides and mowing. Lawns contribute fundamental landscape character to the West Capitol Campus, but turf type and locations are to be adjusted as part of 2009 Landscape Preservation Master Plan recommendations

Upkeep presents challenges where shaded, over-used or under-irrigated, or where roots and turf compete. Where site conditions make sustaining vigorous turf impossible and such conditions cannot be sufficiently altered, suitable vegetation or coarse organic mulch should replace it. This situation pertains for the Yoshino cherry slope and under many major trees. These should be mulched to their driplines regardless.

Maintenance levels vary according to site standards to be met:

Prominent Irrigated Lawn Areas:

These are high visibility or high use landscapes and include the majority of WCC lawns.

Fertilization: 5-1-4 NPK ratio at 2 to 6 lb. N per year applied in 3 to 4 applications.

Aeration: 2 to 3 times per year with conventional 0.75" hollow tines.

Overseeding: Once per year at 5 lb. per 1000 sq. Monthly applications in heavy wear areas.



Fig. 10.6.14 (top) 'Ecoturf' lawn on Pennsylvania Avenue, Washington D.C. (March 2009, Source: Arbutus Design)

Fig. 10.6.15 (left) Increasing shade under cherry canopy and poor soil drainage make turf weak and seasonally muddy. Long-term, grass should be replaced with shade-adapted groundcovers. (December 2008, Source: Arbutus Design)

Fig. 10.6.16 (right) Greensward lawn in low-lying area develops moss and is easily rutted by mowers. Excess soil moisture year-round needs to be remedied to improve lawn usability and maintenance. (December 2008, Source: Arbutus Design)

General Irrigated Lawn Areas:

Fertilization: apply 5-1-4 NPK ratio at 1 to 2 lb. N per year applied in 1 to 2 applications.

Aeration: 1 to 2 times per year with conventional 0.75" hollow tines.

Overseeding: as needed, in April/May and October.

Non-Irrigated Lawn Areas:

Fertilization: apply 5-1-4 NPK ratio once October/November.

Overseeding: as needed, in October.

Steep Slopes:

Replace existing lawn on slopes with "low grow" turf cultivars or vigorous woody and herbaceous groundcovers requiring little regular irrigation or pruning.

Design and Construction Issues:

Construct turf areas with a minimum slope of 2% to promote surface drainage and a maximum of 25% to allow riding mowers to safely access the areas.

Standard turf maintenance requirements include:

Mowing

Frequency

- Mow weekly from MARCH through OCTOBER; bi-weekly in FEBRUARY and NOVEMBER; and at least monthly in DECEMBER and JANUARY.

Cutting Height

- Mow to a height of 2 to 2.5 inches (avoid removing more than 1/3 leaf blade height at any one time). Care should be taken in areas where tree roots protrude above the ground surface, and mower height should be raised

whenever possible to avoid excessive root damage.

Mulch Mowing

- Do not remove grass clippings from mowed turf areas.
- Alternate mowing patterns to avoid ruts and compaction from the wheels.
- Avoid driving on frozen turf.
- Avoid driving on wet ground where ruts will remain.

Trimming

- Use walk- behind mowers and line trimmers where site cannot be accessed by riding mowers, and around trees to avoid trunk damage from riding mowers.

Edging

- Edge 2 to 4 times per year, sufficient to minimize grass infestation of shrub beds.
- Consider installing permanent edging to eliminate repeat labor

Fertilization

- Soil test routinely fertilized turf on a 4-year cycle.
- Provide turf fertilizer 5-1-4 NPK unless otherwise indicated by soil tests.
- Apply approximately 1 lb. of N per 1000 square feet.
- Fertilizers N should be approx. 50% water insoluble N preferable with some organic sources.
- Avoid applications during heavy rainfall to avoid runoff.
- Avoid applications in very hot weather.
- Irrigation systems should be operational before growing season applications.
- Mark sprinkler heads to avoid damaging them

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during truck applications.

- Add micronutrients and lime as soil tests indicate.
- Use site-specific fertilizers, and organic formulations wherever possible for extended release and reduced toxicity and migration to streams via runoff and groundwater.

Irrigation

- Apply approximately one inch of water per week but only if needed.
- Monitor automatic irrigation effectiveness on a weekly basis.

Aeration

- 2 to 3 times per year using .75 inch hollow tines.
- Best periods: March/April, late June, late August.
- Make two passes at 90 degree angles.

Top Dressing

- Use 80% coarse sand and 20% composted organic material.
- Most effective when done lightly and frequently.
- Apply ¼ inch, each application.
- Monthly applications in heavy wear areas during peak seasons.

Overseeding

- Overseed entire area at least once per year.
- Overseed in fall and slicer seed in spring.
- Overseed 5 lb. / 1,000 square feet.
- Site characteristics, usage, and maintenance practices guide seed selection. Ideal sites (full sun, good drainage, reasonable fertility) are suited for perennial ryegrass blends. Lawns that are in partial shade or on poorly drained sites should be seeded with mixes of perennial rye and fescues. Avoid Kentucky bluegrass.



Fig. 10.6.17 Bird-sown holly emerging from low viburnum should be removed now, before it matures enough to crowd out landscape plants and develop berries. (December 2008, Source: Arbutus Design)



Fig. 10.6.18 Native island garden in west parking lot needs self-sown trees and invasive species removed before its beauty and habitat value are lost - an easy, rewarding potential volunteer project. (January 2009, Source: Arbutus Design)

10.6.11 Weeding and Invasive Plant Control

Weeding and controlling invasive plants (“invasives”) will be necessary ongoing maintenance activities throughout the WCC landscape and native perimeter. Planting projects in outlying areas of the campus may include initial removal and ongoing control of invasives as a major component of the project. Invasive control is also an important part of 3-year establishment care for all newly planted areas. The most commonly occurring and problematic non-native invasive species on the grounds are English ivy and Himalayan blackberry, and to a lesser extent holly, laurel, bindweed and Scot’s broom.

The most effective long-term control of invasive species is achieved by using a combination of control methods, reducing site disturbance, and establishing healthy plant communities. Infestations that pose the greatest threat to healthy, desirable plant communities should be targeted as a top priority, rather than trying to “rescue” heavily degraded habitat. In addition, new infestations should be targeted for control before they become widespread or well established.

In brief, invasive control should focus on those species and specific infestations that are:

- Fastest growing
- Most potentially threatening but least established
- Most functionally and aesthetically disruptive
- Listed noxious weeds with mandated control (none of which are known to grow on WCC grounds at this time).

By reducing seed-source populations, hand removing plants before they mature, and maintaining weed-suppressing mulch, herbicide usage may be eliminated for all but eradication of the most tenacious invasives on restoration sites. Mulch alone should suppress most weeds and invasives within the developed landscape. Initially, a program of prompt and thorough cultivation or hand removal may need to supplement mulching, until weed populations decline.

See Bibliography for reference material that includes specific direction on how to control the following weedy species:

Trees:	Shrubs:	Vines:
Sycamore Maple	English Laurel	English Ivy
Norway Maple	Portugal Laurel	Wild Clematis
Black Locust	English Holly	Field Bindweed
Horsechestnut	Himalayan Blackberry	
Golden Chain		
Hawthorn		
Domestic Cherry		
European Mountain Ash		

Fig. 10.6.19 Weedy Species. (2009, Source: Arbutus Design)

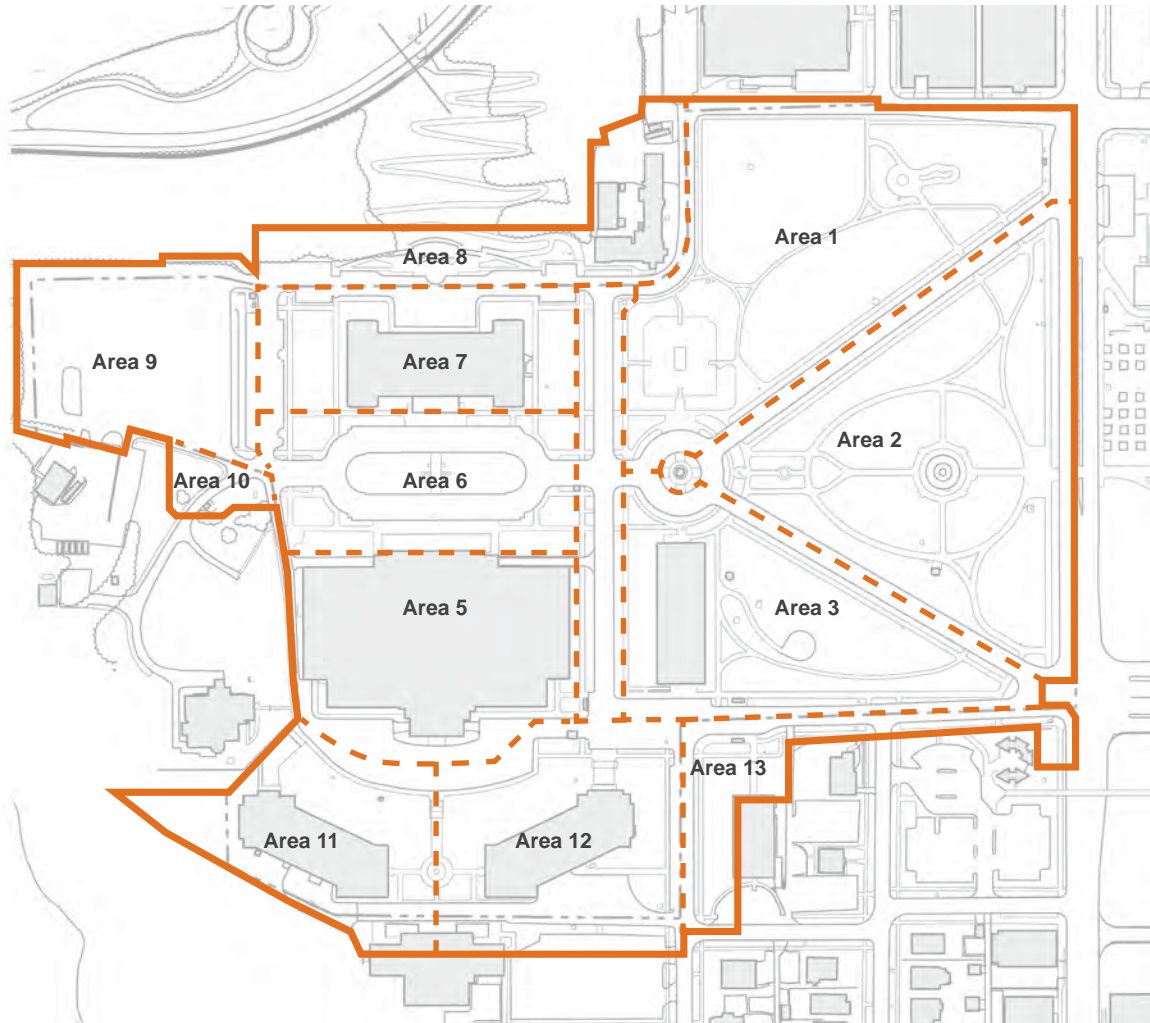
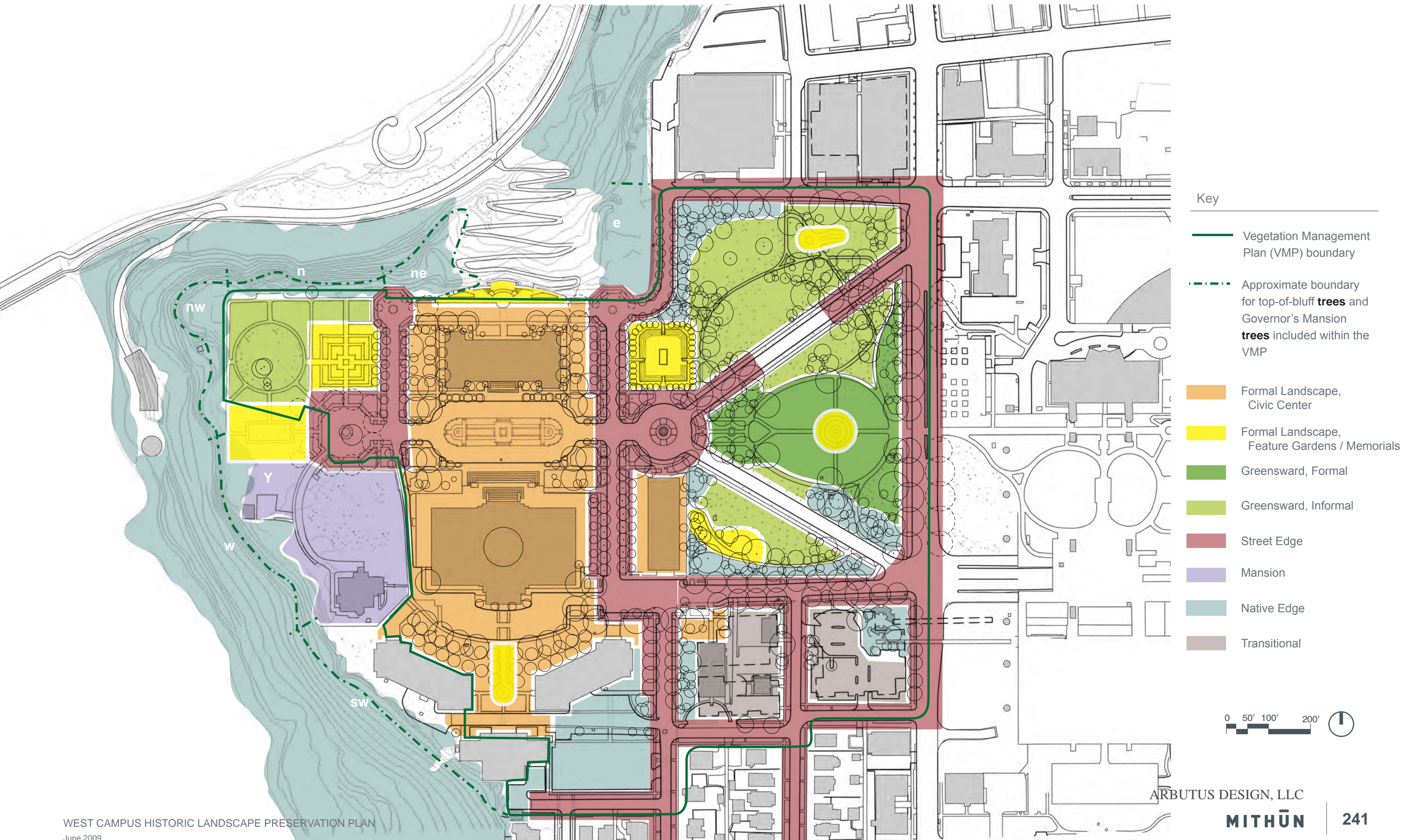


Fig. 10.6.20 Existing Management Areas

Fig. 10.6.21 Vegetation Management Areas



Section 10.7 - Implementation

With demands for Capitol campus care outstripping current resources, it is imperative that grounds staff and managers understand and focus on key priorities. This chapter identifies landscape management priorities, based on current vegetation condition, functional demands, and opportunities for greatest benefit relative to investment. These include maintenance tasks as well as capital projects. Some will require a shift in routine activities and methods, at little or no cost beyond staff training. Other priorities target cumulative enhancements to landscape quality and staff effectiveness. The over-riding motive driving these actions is sustainability, in the context of historic resource stewardship.

ACTION	BY	REMARKS
Mitigate immediate tree risk	Treework contract	Risk trees identified in Table of Trees
Expand mulch application	Grounds staff	Annually mulch all beds & tree rings
Organize tree management	Staff & consultant	Electronic tree records & work orders
Remove ivy from trees	Volunteers & staff	Infested campus & forest edge trees
Begin planting new trees	Staff / contractor	Replacements & per Olmsted plan
Improve soil drainage	Consultant / contractor	Full campus plan, implement in parts
Reduce turf care demands	Grounds staff & mgrs.	Decrease area, chemical use & labor
Enhance special tree care	Contractor & staff	Monitor & treat for decline / decay
Evaluate trees of concern	Consulting arborist	Excavate, resistograph, lab tests, etc.
Provide grounds training	Consultant / staff	Techniques, tools & timing per VMP
Educate & engage public	Staff & volunteers	Find volunteers, model best practices

Fig. 10.7.1 Table of Actions. (2009, Source: Arbutus Design)

10.7.1 Implementation Priorities

Priority actions listed below are important to address in the near-term. Within six months most should be initiated, some completed. After one year all should be “in the works” or already accomplished. Reduced tree risk and resource consumption, and improved landscape quality will result, compounding over time.

10.7.2 Implementation Strategies

This vegetation management plan is worthwhile only to the extent it improves landscape quality and stewardship. Identifying issues and opportunities is an important first step in making improvements. Defining a clear landscape vision and objectives is another. Offering direction on what needs to be done, where

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and when is a third. The final, all-important step is putting recommendations into action then clocking progress along the way. Without implementation strategies, this VMP can go nowhere.

Implementation requires resources, knowledge and institutional willingness to change, and leadership in all three areas. The existence of this document may itself stimulate interest in the Capitol grounds, and raise concerns compelling enough to attract funding. In conjunction with the Master Plan it should provide inspiration as well as a concrete roadmap. This VMP needs to be tapped, to raise awareness and stimulate support within and beyond the halls of government.

Resources for implementation can take many forms: Operations and Maintenance funds, Capital Improvement funds, user fees, special partnerships and programs, grants, and contributed labor and materials among them. Based on the axiom that “where there’s a will there’s a way,” cultivating WILL is probably the most important part of attracting resources.

Support can take the form of community involvement, as advocates, partners and volunteers. The Capitol grounds welcomes thousands of visitors and supports dozens of local events every year. All this goodwill can be put to use, igniting a new “Friends of the Capitol”, garden club sponsorships, community service projects, horticulture internships, positive press and more. A small investment in staff outreach can yield citizen support that pays dividends for both the near term and the long haul. As the campus becomes better known for its beauty, sustainability and great Olmsted legacy, awareness will compound and bring with it expanding opportunities for implementation.

The most immediate, concrete implementation strategies involve using existing resources in more effective ways. Equipped with a list of priorities for landscape care, managers can examine how this task list differs from current practices. Can work assignments, equipment and supplies be deployed differently without abandoning essential functions? Detailed evaluation of available staff resources will probably be necessary, applying time and skills where most needed. The Master Plan and VMP both suggest replacing certain practices with others. These trade-offs create opportunities for redirecting labor, not simply adding to it.

Reorganization, training and technology all should be deployed as effectively as possible. Where horticultural or collaborative skills are uneven, invest in training. Where untapped talent exists, create fresh opportunities to further VMP initiatives. When resources allow, invest in electronic tools and systems to leverage record keeping, scheduling and resource monitoring. Systemic changes in ways landscape management is done require leadership, commitment, encouragement and cooperation. Inertia, not lack of resources, poses the greatest potential impediment to VMP realization. Conversely, the best possible catalyst is an enthusiastic staff, excited by their role in making new landscape goals a reality.



Fig. 10.7.2 Students arrive for Capitol tour (February 2009, Source: Arbutus Design)



Fig. 10.7.3 Rally on Capitol Steps, Campus trees beyond (April 2009, Source: Arbutus Design)

Section 10.8 - Monitoring

10.8.1 Measuring Progress

Monitoring is the method by which one knows if actions taken are leading in the direction of success, or not. Specific measurements must be taken, findings reviewed and a response developed at pre-determined intervals. Monitoring rarely pays dividends in absence of a responsible party and interested advocates to insure that data are gathered and appropriate follow-up steps taken. A course correction can nip in the bud what might otherwise derail or compromise a positive outcome. This cycle of measuring, evaluating and making modifications constitutes “adaptive management.”

Monitoring for the WCC falls into two categories: projects and maintenance, and within maintenance trees and general landscape care. In addition, greenbelt edge vegetation, not part of the developed landscape, needs at least informal monitoring.

10.8.2 Tree Monitoring

Systematic tree monitoring is the single most important tool needed to safely and effectively manage the WCC landscape. Its absence historically has adversely affected canopy condition. Tree monitoring should become part of a “cradle to grave” system for tracking individual trees. A starting point exists in the comprehensive inventories conducted in 2000-01, expanded and updated in 2008-09. Figure 10.9 is the Table of Trees databases covering developed campus and native edge trees respectively.

WCC tree monitoring should have three components, all performed by individuals trained in arboriculture, preferably certified arborists. Results should be entered into the electronic database or uploaded if recorded electronically in the field.

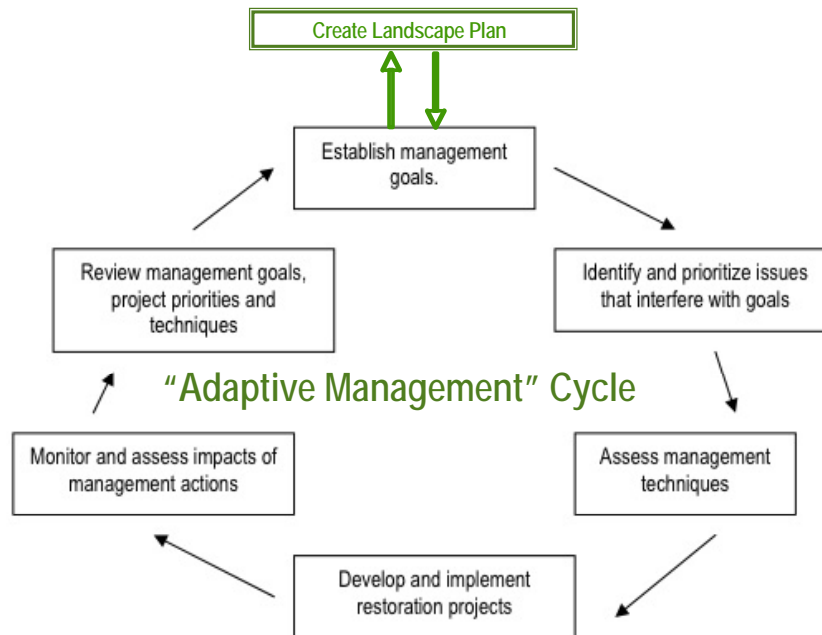


Fig. 10.8.1 Adaptive Management Cycle diagram (2009, Source: Arbutus Design)

By: _____ WCC Supplemental Tree Inventory April 2009

Area	#	Qty	Species	DBH	Spread	Est. ht.	Cond	Roots	Trunk	Canopy	Risk	Remarks / Recommendations	Photo(s)
Bluff	200												
Bluff	199												
Bluff	198												
Bluff	197												
Bluff	196												
Bluff	195												
Bluff	194												
Bluff	193												
Bluff	192												
Bluff	191												
Bluff	190												
Bluff	189												
Bluff	188												
Bluff	187												

Fig. 10.8.2 Sample inventory form used for WCC VMP - update must match main data fields even if format is electronic (April 2009, Source: Arbutus Design)

Periodic full inventory update:

- Provide at 3-5 year intervals
- Update individual tree records continually: planting, pruning, diagnosis, treatment, special status, damage, failure, removal, etc.

- Inspect after establishment period at 2- to 5-year intervals to gauge success of species & location

Trees of concern visual inspection:

- Check for adverse changes annually in winter and after all major storm events.
- Include trees identified in Table of Trees to monitor or having current / potential risk
- Add trees to list if warranted, when noticed
- Take immediate action if status changes to imminent risk or dead

While the temptation is to pay closest attention to trees with obvious defects or decay, young trees especially warrant regular inspection to confirm or enforce proper training and care. Given a good start, a well-chosen tree can live a long, trouble-free life.

New tree monitoring:

- Monitor as part of 3 year establishment care protocol

10.8.3 Project Monitoring

Monitoring of specific projects helps document 1) the success of the project’s design; and 2) the success of the project’s implementation. A monitoring plan should be developed concurrent with site restoration or improvement planning, whether donor-, volunteer- or capital appropriation-driven. Each monitoring plan will

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be different, but all need to include:

- Clear goals and concrete supporting objectives
- Measurable parameters by which to quantify success or lack thereof (% survival at one year, % ground covered, shoot elongation, species richness & ratio, area of weeds, etc.)
- Qualified, independent monitor not otherwise invested in project
- Identified responsible party to review results and initiate modifications if needed (adaptive management)
- Repository for documentation

By tracking project implementation, much can be learned to improve both design and execution of subsequent projects. Overall quality of landscapes and return on investment grows.

10.8.4 Maintenance Monitoring

Monitoring of regular maintenance serves multiple purposes within the overall umbrella of insuring sustained landscape quality. Monitoring insures that:

- Work is being performed where, when and how it is supposed to be done
- Work being done is having the desired results
- Adjustments are made to maintenance actions if intended goals and objectives are not being met.

Monitoring to evaluate effectiveness of ongoing maintenance in meeting VMP objectives should be done at least annually in early stages of VMP implementation. When new maintenance methods and sequences are well-established and universally adopted by grounds staff, monitoring interval can be lengthened to two years.



Fig. 10.8.3 Monitoring butt decay - pencil for scale (December 2008, Source: Arbutus Design)

Individuals performing maintenance monitoring should not themselves be responsible for a landscape's care, but should be knowledgeable about such work. As with all monitoring, specific, consistent measurements should be made that provide good indicators of condition and change. Supervisors or managers should take time to review field forms, to identify progress, problems and effectiveness of maintenance actions. Information assembled should be used to continuously refine routine maintenance procedures and resource allocation.

Fig. 10.9 Table of Trees

KEY: RED Gone since 2001 inventory
 BLUE Post-2001 replacement or addition
 GREEN Significant: Olmsted plan, size, age, commemorative, specimen
 ** Spread 2008 equals approximate canopy diameter (ft.)
 Data not recorded
 Spread 2001 assumed to equal radius (ft.)

NOTE: 1.) West Capitol Campus Table of Trees updates records for trees inventoried in 2000-01 by Susan Black & Associates, and adds trees planted since 2001 as well as existing trees in Zones 10, 12, and 13 not previously inventoried.
 2.) Bluff-edge trees were first inventoried in April 2009, with records segregated in West Capitol Campus Native Edge Table of Trees

Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
1	1	Acer platanoides	16.5	16	50	fair	Enlarge tree pit or use pavers, replace with tall spreading species		
1	2	Acer platanoides	15.5	18	50	fair	Enlarge tree pit or use pavers, replace with tall spreading species		
1	3	Ulmus americana	36.5	62	55	fair	Mulch, crown clean S & SW sides, monitor decay at breakout sites	treated for disease/fungicide	Size, commemorative
1	4	Quercus robur	69.5	84	90	excellent	Mulch, underplant to protect rootzone from foot traffic compaction		Champion specimen
1	5	Acer platanoides	39.5	57	40	poor	Reduce endweight, crown clean large stubs, monitor decay especially beyond E prop	treatment, some cabling/cracking	Olmsted
1	6	Acer palmatum 'dissectum'	12.0	16	8	excellent	Prune for ground clearance, to reveal structure & to control spread (at maximum now)	no treatment	Specimen
1	7	Ulmus americana	18.0	25	35	good	Expand tree circle, underplant, add mulch, minor crown clean vs. Dutch elm disease, remove S & W girdling roots, inspect NE root for anchorage	no treatment at this time	Commemorative
1	8	Prunus cerasifera 'Atropurea'	11.0	21	18	fair	Structural defects & probable decay limit life expectancy - included bark @ multiple scaffold unions, sapsuckers, splits, slight lean: monitor; thin & structural prune; enlarge mulch ring to protect surface roots & compacted soil	in treatment program	
1	9	Thuja plicata	23.0	30	40	good	Remove girdling root N side, keep low branches, expand mulch ring as tree grows		Commemorative
1	10	Cornus 'Eddie's White Wonder'?	3	8	15	excellent	Replaces Prunus cerasifera 'Atropurea' but to east, after 2001; slightly sparse scaffold spacing & congested whorls - minor training pruning; enlarge mulch ring. Confirm species ID.		?Commemorative
1	11	Pseudotsuga menziesii	18.0	24	40	good	Maintain mulch		Commemorative

(continued)

Table of Trees

KEY: RED Gone since 2001 inventory
 BLUE Post-2001 replacement or addition
 GREEN Significant: Olmsted plan, size, age, commemorative, specimen
 ** Spread 2008 equals approximate canopy diameter (ft.)
 Data not recorded
 Spread 2001 assumed to equal radius (ft.)

NOTE: 1.) West Capitol Campus Table of Trees updates records for trees inventoried in 2000-01 by Susan Black & Associates, and adds trees planted since 2001 as well as existing trees in Zones 10, 12, and 13 not previously inventoried.
 2.) Bluff-edge trees were first inventoried in April 2009, with records segregated in West Capitol Campus Native Edge Table of Trees

Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
1	12	Thuja plicata	27.0	30	45	good	Remove small girdling root, maintain mulch ring, monitor stress indicators: heavy cones, off-color foliage	treatment	Commemorative
1	13	Pseudotsuga menziesii					Removed 2008	treatment 2000	
1	14	Pseudotsuga menziesii	39.0	40	60	fair	Remove small girdling root, add mulch, crown clean, monitor stress: heavy cones	treatment 2000	Olmsted
1	15	Pseudotsuga menziesii	47.0	49	65	fair	Crown clean, add mulch, inspect root anchorage - large fruiting body found	treatment 2000	Olmsted
1	16	Pseudotsuga menziesii	48.5	32	75	fair	Enlarge tree ring, add mulch, inspect root anchorage, monitor - thinning top	treatment	
1	17	Metasequoia glyptostroboides	29.0	20	55	fair	Remove girdling roots, inspect E base & SW root integrity - fungi present	original commemorative sequoia died 1982	Commemorative
1	18	Metasequoia glyptostroboides	33.5	21	40	fair	Remove small crossing roots, monitor trunk decay, crown clean, mulch & underplant	planted same time as Dixie Lee Ray Tree	Commemorative
1	19	Ginkgo biloba	21.0	30	45	good	Remove mulch on trunk, underplant, structural prune broken leader		Commemorative
1	20	Cedrus libani					Gone	came from private garden (1892)	
1	21	Pinus mugo					Gone		
1	22	Acer platanoides	40.0	52	35	poor	Remove decayed NE scaffold, reduce endweight throughout, underplant & mulch, inspect root anchorage - fruiting bodies present NE & SE	treatment	Olmsted
1	23	Cedrus atlantica	50.5	75	50	good	Crown clean stubs & breakage, reduce endweight & thin E scaffold, move picnic table underplant & mulch to reduce compaction	treated	Size
2	1	Acer platanoides	35.5	52		fair	Reduce endweight, inspect Cobra cables, monitor decay - fruiting bodies present	in treatment, wet feet	Olmsted

(continued)

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
2	2	Prunus yedoensis	14.0	20		good	Remove smal girdling roots	Wet conditions	Commemorative
2	3	Prunus yedoensis	20.0	36		fair	Monitor for stability - major girdling root, crown clean twiggy deadwood		Commemorative
2	4	Prunus yedoensis	22.0	37		good	Crown clean		Commemorative
2	5	Prunus yedoensis					Gone	replanted with same tree	
2	6	Prunus yedoensis	14.0	27		fair	Prune dead stubs & for clearance @ SW, inspect N root - flare absent		Commemorative
2	7	Prunus yedoensis	20.0	36		good	Crown clean, structural prune, monitor trunk decay - has cavities		Commemorative
2	8	Prunus yedoensis	18.5	21		fair	Crown clean, structural prune, consider removing (suppressed)	treatment	Commemorative
2	9	Prunus yedoensis	23.0	40		good	Duplicate SW leader too large to prune out; protect surface roots		Commemorative
2	10	Prunus yedoensis	18.0	24		good	Remove girdling root, large stub, monitor trunk decay @ break-out point	treatment	Commemorative
2	11	Prunus yedoensis	29.5	51		fair	Fruiting bodies @ root flare & trunk - resistograph +/- or excavate, remove if inspection confirms advanced decay; crown clean, lighten scaffold over walk		Commemorative
2	12	Prunus yedoensis	8.5	21		good	Remove girdling root if feasible, prune to balance canopy lean toward light		Commemorative
2	13	Prunus yedoensis	23.5	26		fair	Crown clean; fruiting bodies @ root flare & trunk - resistograph +/- or excavate, remove if inspection confirms advanced decay.		Commemorative
2	14	Prunus yedoensis	17.5	36		good	Remove all possible girdling roots, protect rootzone from mowers		Commemorative
2	15	Sequoiadendron giganteum	55.0	30		good	Girdling root caused swelling at E base, previously excavated & corrected; monitor lean, stunting & sparse canopy - compromised vigor; prognosis as major specimen poor	treatment	

(continued)

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2	16	Acer 'Pacific Sunset'	6.5	20	22	excellent	Structural prune immediately to correct congested branch framework; tree replaces former #2-16 Norway maple lost since 2001 inventory.		
2	17	Thuja occidentalis	multi-stem	6	15	excellent	Excellent condition but deviates from Olmsted planting plan - replace?		
2	18	Thuja occidentalis	multi-stem	6	15	excellent	Excellent condition but deviates from Olmsted planting plan - replace?		
2	19	Thuja occidentalis	multi-stem	6	15	excellent	Excellent condition but deviates from Olmsted planting plan - replace?		
2	20	Thuja occidentalis	multi-stem	6	15	excellent	Excellent condition but deviates from Olmsted planting plan - replace?		
2	21	Chamaecyparis lawsoniana	45.5	28			Extensive white fungal mats in butt, at soil line and radially NE from trunk suggest advanced annosum rot: confirm pathogen, priority removal.	treatment	Size
2	22	Pseudotsuga menziesii	48.5	44			Remove large deadwood; excavate +/- resistograph base for root / butt decay; remove if inspection confirms loss of strength or anchorage	treatment	Olmsted
2	23	Acer macrophyllum	39.5	66		good	White fungi in decay pockets - resistograph, remove if decay is extensive; mulch & underplant to reduce compaction & improve soil.	treatment	Olmsted
2	24	Acer macrophyllum	50.0	65		good	White fungi in decay pockets & seams - resistograph, remove if decay is extensive; aerial inspection for decay, prune stubs, deadwood & reduce endweight on S scaffold w/cavity; reduction prune if retained.	treatment	Olmsted
2	25	Betula pendula 'Youngii'	24.5	38		fair	Mulch & underplant to reduce compaction; consider replacing - disfigured by clearance pruning & galls; decay from multiple wounds likely.	treatment	Olmsted

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
2	26	Acer platanoides	41.0	72		good	Remove girdling root & hanger, crown clean, monitor - multiple trunk scars w/ decay; consider root crown inspection & reduction pruning.	treatment	Olmsted
2	27	Pseudotsuga menziesii	40.0	52		good	Minor crown clean, remove small girdling root, mulch & underplant to reduce compaction & improve soil; monitor for further decline	treatment	Commemorative
2	28	Pseudotsuga menziesii	38.0	38		good	Crown clean - large deadwood present; inspect NE butt (beetles) & SW root - lacks flare; mulch & underplant to reduce compaction & improve soil; monitor for further decline	treatment	Olmsted
2	29	Pseudotsuga menziesii	25.5	30		fair	Inspect NE butt for decay - flat, beetles & fungi present; mulch & underplant to reduce compaction & improve soil; monitor for further decline	treatment	
2	30	Pseudotsuga menziesii	27.0	33		fair	Inspect S butt for decay - flat, beetles extend high up trunk; inspect or resistograph trunk offset 20 ft. up - suspect structural weakness or decay; consider reducing height to create snag; mulch & underplant natives	treatment	Olmsted
2	31	Pseudotsuga menziesii	35.5	34		good	Mulch & underplant natives; low live crown ratio - avoid future limb removals unless broken - vigor compromised	treatment	Olmsted
2	32	Pseudotsuga menziesii	48.5	52		good	Remove deadwood over path & reduce endweight on limb over S diagonal drive; resin flows & bark beetle suggest decay - resistograph; remove if advanced; mulch & underplant natives.	treatment	Olmsted

(continued)

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
2	33	Tsuga heterophylla	4.0	12	20	excellent	Planted since 2001 near SE corner fronting native fir & maple grove; mulch compacted bare soil & provide adequate irrigation - moisture-demanding species on slope; monitor woolly adelgid populations - minor infestation		
3	1	Pinus pinea					Gone	Italian Stone Pine, some storm damage	
3	2	Acer macrophyllum					Gone	scarred trunk	
3	3	Acer platanoides 'Royal Redleaf'	20.0	32		good	Future replacement - structural problems uncorrectable & will cause branch failure as size increases; mulch, remove girdling root if possible		Commemorative
3	4	Acer macrophyllum	53.0	70		fair	White fungi at base, in seams & patches on scaffolds, trunk cavities: inspect trunk & root crown: remove if decay is extensive, if not reduce branch endweight & canopy height as tree declines with age	treatment	Olmsted
3	5	Acer macrophyllum	5.5	12	18	excellent	Replacement in kind for # 3-5 that failed after 2001 inventory, but 10' to W; correct minor crossing branches while small		
3	6	Prunus serrulata 'Shirofugen'?	8.5	21		good	Crown clean duplicate branches, prune up for lawn clearance, monitor decay @ SW base.		Commemorative
3	7	Prunus serrulata 'Shirofugen'?	7.5	21		excellent	No action required		Commemorative
3	8	Prunus serrulata 'Shirofugen'?	7.0	18		good	Consider removal - siting problem: clearance over walk too low, scalped scaffold, poor pruning cuts.		Commemorative

(continued)

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3	9	Prunus serrulata 'Shirofugen'?	4.5	12		good	Crown clean, structural prune crossing scaffolds if possible; mulch exposed roots & monitor codominant trunk for separation		Commemorative
3	10	Thuja plicata	57.0	51		excellent	Crown clean interior deadwood, underplant, mulch & consider barrier to exclude foot traffic compacting rootzone: valuable specimen		Olmsted
3	11	Taxus baccata					Removed 2008 - crowded building	3 Clumps	
3	12	Taxus baccata					Removed 2008 - crowded building	multi-trunk... 1 female, 2 males	
3	13	Taxus baccata					Removed 2008 - crowded building	multi-trunk... 1 female, 2 males	
3	14	Ilex aquifolium	4 @ 5-8"	14	20	good	Staged renovation prune or remove & replace with non-invasive species further away from wall; meanwhile crown clean stubs		
3	15	Thuja plicata	16.5	20	30	poor	Remove & grind roots - major structural problems & too close to wall causing risk; replace further from building w/ narrower conifer.		
3	16	Prunus lusitanica	18.0	21	18	good	Overgrown shrub encroaches on walk & wall: remove stored wood; renovate to ground or replace with more compact, non-invasive species.		
3	17	Prunus lusitanica	5 @ 4-16"	16	15	poor	Overgrown shrub with decay & deadwood: renovate to ground or replace with more compact, non-invasive species.		
3	18	Prunus lusitanica	13.0	17	16	good	Overgrown shrub with decay, crowds building & ramp: renovate to ground or replace with more compact, non-invasive species.		
3	19	Ilex aquifolium	9 @ 4-8"	17	24	good	Overgrown shrub with decay; replace with smaller non-invasive species.		Olmsted

(continued)

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3	20	Prunus lusitanica	27.0	30	25	fair	Overgrown shrub with extensive decay, crowds building & yew; renovate to ground or replace with more compact, non-invasive species.		
3	21	Taxus baccata	3 @ 10-14"	18	36	fair	Suppressed: prune to clear building & other trees, or cut to base & regrow/maintain as shrub.		
3	22	Crataegus lavallei	20.0	25	32	poor	Suppressed w/ severely decayed leaders; priority removal, replant 10-20 ft. S in enlarged bed away from Atlas cedar.		
3	23	Cedrus atlantica	72.0	80	70	good	Crown clean multiple stubs, prune to clear walk, sign, light pole; remove picnic table, underplant & exclude foot traffic for safety & to reduce compaction. Major specimen, anticipate & monitor future limb breakage	Size	
3	24	Taxus baccata	2 @ 10.5, 12"	28	24	excellent	Restoration prune (topped) & for clearance @ walk & cedar to W		
3	25	Taxus baccata		18	22	fair	Prune to ground or remove - obscures façade & competes w/ adjacent yew, suppressed & damaged.		
4	1	Prunus serrulata 'Kwanzan'	12.5	15	14	good	Minor crown clean - stubs, crossing branches; protect roots from further scalping; large girdling root means future problems	treatment	Commemorative
4	2	Prunus serrulata 'Kwanzan'	11.0	19	18	good	Enlarge mulch ring to protect scalped roots now in lawn	treatment	Commemorative
4	3	Prunus serrulata 'Kwanzan'					Gone	treatment	Commemorative
4	4	Prunus serrulata 'Kwanzan'	6.0	12	16	good	Clearance prune @ street light, enlarge mulch ring to protect scalped surface roots	treatment	Commemorative

(continued)

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4	5	Prunus serrulata 'Kwanzan'	7.5	16	20	excellent	Minor crown clean - crossing; clearance prune from Atlas cedar on S & E	treatment	Commemorative
4	6	Prunus serrulata 'Kwanzan'	9.0	24	30	fair	Consider removing - large girdling root & major conflict with Atlas cedar; if retained, clearance prune, enlarge mulch ring - scalped surface roots	treatment	Commemorative
4	7	Prunus serrulata 'Kwanzan'	11.0	21	25	good	Enlarge mulch ring to protect scalped roots, minor crown clean - crossing	treatment	Commemorative
4	8	Prunus serrulata 'Kwanzan'	9.0	30	35	good	Prune clearance @ Atlas cedar & corrective prune bent scaffolds; enlarge mulch ring to protect scalped roots	treatment	Commemorative
4	9	Prunus serrulata 'Kwanzan'	9.0	30	26	good	Prune clearance @ Atlas cedar & corrective prune bent scaffolds; enlarge mulch ring to protect scalped roots; remove basal suckers	treatment	Commemorative
4	10	Prunus serrulata 'Kwanzan'	10.5	25	20	good	Prune girdling root, large crossing leader & branch congestion W side	treatment	Commemorative
4	11	Prunus serrulata 'Kwanzan'	13.5	30	27	good	Structural prune multiple bent, crossing limbs; remove basal suckers; crowded scaffolds with included bark too large to correct - future failure likely; enlarge mulch ring to protect scalped roots; remove basal suckers	treatment	Commemorative
4	12	Prunus serrulata 'Kwanzan'	8.5	20	18	good	Minor crown clean - crossing; remove basal suckers; enlarge mulch ring to protect scalped roots.	treatment	Commemorative
4	13	Prunus serrulata 'Kwanzan'	19.5	36	32	fair	Major crown clean, remove basal suckers; clearance prune over walk; enlarge mulch ring to protect scalped roots; girdling roots, incipient basal decay & uncorrectable structural problems will limit lifespan & safety	treatment	Commemorative
4	14	Prunus serrulata 'Kwanzan'	7.5	14	14	god	Crown clean; remove suckers; expand mulch ring to protect damaged roots	treatment	Commemorative

(continued)

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4	15	Prunus serrulata 'Kwanzan'	7.5	14	22	good	Crown clean - crossing / duplicate branches; remove basal suckers; enlarge mulch ring to protect scalped roots; maintain clearance over road	treatment	Commemorative
4	16	Prunus serrulata 'Kwanzan'	8.5	19	18	good	Structural prune congested & duplicate branches; remove suckers; enlarge mulch ring to protect surface roots.	treatment	Commemorative
4	17	Prunus serrulata 'Kwanzan'	8.5	15	20	excellent	Minor crown clean - crossing; clearance prune for stop sign; remove circling root & expand mulch ring to protect roots.	treatment	Commemorative
4	18	Prunus serrulata 'Kwanzan'	9.0	20	20	good	Crown clean & thin congested scaffolds; expand mulch ring to protect scalped major roots now in lawn	treatment	Commemorative
4	19	Prunus serrulata 'Kwanzan'	8.0	14	20	good	Crown clean - crossing / duplicate branches; enlarge mulch ring to protect scalped roots; monitor basal bulge - likely past injury, may decay.	treatment	Commemorative
4	20	Prunus serrulata 'Kwanzan'	13.0	28	30	good	Crown clean - crossing / congested branches; remove small girdling root; expand mulch ring to protect scalped roots	treatment	Commemorative
4	21	Prunus serrulata 'Kwanzan'	9.0	16	20	good	Structural prune small NW scaffold, crown clean; enlarge mulch ring to protect scalped roots in turf; monitor decay @ basal wound E side	treatment	Commemorative
4	22	Prunus serrulata 'Kwanzan'	5.0	13	17	excellent	Crown clean - crossing & duplicate branches	treatment	Commemorative
4	23	Prunus serrulata 'Kwanzan'	8.5	24	22	good	Crown clean - crossing & duplicate branches; monitor cankers & swelling for decay; enlarge mulch ring to protect scalped root	treatment	Commemorative
4	24	Prunus serrulata 'Kwanzan'	12.0	28	27	excellent	Remove crossing branch; enlarge mulch ring to protect surface root	treatment	Commemorative

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4	25	Prunus serrulata 'Kwanzan'	8.5	16	20	good	Clearance prune @ crosswalk; enlarge mulch ring to protect scalped surface roots; crown clean & structural prune; remove 2-3 smallest branches @ congested graft union	treatment	Commemorative
4	26	Prunus serrulata 'Kwanzan'	11.0	16	25	good	Minor crown clean; maintain clearance @ stop sign; enlarge mulch ring to protect roots & flares from further damage; monitor for basal decay	treatment	Commemorative
4	27	Prunus serrulata 'Kwanzan'	13.5	24	30	good	Clearance prune or relocate "reserved parking" sign; minor crown clean but interior overthinned; monitor decay in crack/seam - fruiting bodies present; enlarge mulch ring to protect scalped roots & flares	North section major drainage problems 1-7, 26-32	Commemorative
4	28	Prunus serrulata 'Kwanzan'	11.5	24	25	good	Remove small girdling root; structural prune - crossing scaffolds, clearance @ tulip tree; enlarge mulch circle to protect scalped roots	North section major drainage problems 1-7, 26-32	Commemorative
4	29	Prunus serrulata 'Kwanzan'	5.5	9	16	excellent	Minor crown clean - crossing; maintain clearance @ street light	North section major drainage problems 1-7, 26-33	Commemorative
4	30	Prunus serrulata 'Kwanzan'	5.0	12	16	good	Remove crossing branch; monitor basal root scar for decay, E side; graft height doesn't match other trees (high).	North section major drainage problems 1-7, 26-34	Commemorative
4	31	Prunus serrulata 'Kwanzan'	5.0	11	16	good	Enlarge mulch ring to protect scalped roots	North section major drainage problems 1-7, 26-35	Commemorative
4	32	Prunus serrulata 'Kwanzan'	6.5	12	13	good	Remove small circling root; structural prune congested scaffolds - remove smallest 2 while young; monitor small cavity below SW scaffold for decay; enlarge mulch ring to protect scalped roots; graft height low	North section major drainage problems 1-7, 26-32	Commemorative

(continued)

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5	1	Magnolia grandiflora	26.0	25	35	good	Crown clean, clearance from rhodies - prune both; mulch to cover extensive exposed roots & reduce compaction; plant groundcover?		Size
5	2	Magnolia soulangiana	2 @ 6, 7.5"	20	28	good	Overthinned interior - remove stubs; pull mulch away from trunk; monitor decay in cavities on both trunks		Commemorative
5	3	Malus pendula	10.0	20	12	good	Form presents clearance problems below & laterally, skirting affects appearance & health; consider replacing with more upright tree	treatment	
5	4	Malus pendula	9.0	18	12	good	Holes in trunk indicate insects, stress; clearance problems below & laterally, skirting affects appearance & health consider replacing with more upright tree; continue to remove basal suckers (evidently copious)	treatment	
6	1	Liriodendron tulipifera	36.5	42	60	good	Major crown clean - hangers, stubs, structure; clearance prune over parking; sapsuckers & slime @ base suggest decay in trunk - resistograph; maintain leaf mulch & underplanting to reduce compaction	specimen, healthy some treatment	Size, Specimen (group)
6	2	Liriodendron tulipifera		45	60	good	Aerial inspection & restoration prune breakout & regrowth in upper canopy; trim circling surface roots; monitor trunk for decay - narrow hollow beneath major scaffold attachment could weaken & cause failure	specimen, healthy	Size, Specimen (group)
6	3	Liriodendron tulipifera	45.0	60	70	good	Clearance prune @ sidewalk & rhodies (prune both); remove girdling root; aerial inspect & crown clean major deadwood & stubs; mulch	specimen, healthy	Size, Specimen (group)
6	4	Picea pungens glauca	21.0	27	45	good	Monitor resin flow on trunk - significant increase could indicate decay	thin lower limbs, treatment	Commemorative

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6	5	<i>Picea pungens glauca</i>	20.0	28	55	fair	Fungi on surrounding soil NE & SW and trunk resin flow - suspect decay: excavate roots to confirm; high codominant trunk may break out, not repairable; monitor, mulch & underplant to relieve compaction & protect surface roots. Consider removal, replacing	poor form	Commemorative
6	6	<i>Quercus rubra</i>	42.0	72	70	excellent	Major crown clean; clearance prune for magnolia & camellias underneath	treatment	Size
6	7	<i>Magnolia soulangiana</i>	4 @ 5-9"	36		fair	Fungal plaques, cavities, sapsucker holes indicate decay; clearance prune: suppressed & asymmetrical, crowded. Declining, limited lifespan	4 trunks, old specimen	
6	8	<i>Magnolia soulangiana</i>					Gone		
6	9	<i>Quercus rubra</i>	38.0	78	75	excellent	Remove major deadwood & hangers, monitor cavities under scaffolds for decay; enlarge bed, mulch & underplant to reduce compaction		Size
6	10	<i>Cryptomeria japonica</i>	9.0	15	30	good	Remove dead / dying branches low on NW side; enlarge mulch ring to match spread; heavy cone crop indicates stress		Commemorative
7	1	<i>Picea omorika</i>	1.0	4	7	excellent			
7	2	<i>Picea omorika</i>	1.0	4	7	excellent			
7	3	<i>Ilex opaca</i>					Removed 2008		
7	4	<i>Magnolia grandiflora</i>	3.0	8	14	good	Replacement 2008; bottom branch broken - prune out storm damage & monitor for future breakage affecting structure		
7	5	<i>Magnolia grandiflora</i>	3.0	8	14	good	Replacement 2008; breakout SE side - prune out storm damage & monitor for future breakage affecting structure		

(continued)

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 BLUE Post-2001 replacement or addition
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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
7	6	Liriodendron tulipifera	43.0	45	70	fair	Declining tree - crown clean past breakout & hanger; trunk scars & swelling suggest decay or weakness - resistograph?; enlarge bed & mulch scalped roots. Consider crown reduction & eventual replacement.	treatment	Size, Specimen (group)
7	7	Liriodendron tulipifera	44.5	45	70	fair	Crown clean major stubs, remove failed E scaffold; loose bark & beetle holes suggest trunk decay - resistograph; reduce height of camellias & rhodies beneath, interplant bare area, mulch.	treatment	Size, Specimen (group)
7	8	Ilex opaca	2.0	7	12	excellent		treatment	
7	9	Picea omorika	1.0	4	7	excellent		treatment	
7	10	Picea omorika	1.0	4	7	good	Structural prune - triple leader	treatment	
7	11	Hibiscus					Removed 2008	treatment	
7	12	Ilex opaca	2.0	7	12	excellent			
7	13	Picea omorika	1.0	4	7	excellent			
7	14	Juniperus virginiana?	2.0	8	14	excellent	Confirm species ID - cultivar or J. chinensis, scopulorum? & adequacy of distance from building		
7	15	Magnolia stellata					Removed 2008		
7	16	Magnolia stellata					Removed 2008		
7	17	Magnolia grandiflora	3.0	8	10	poor	Leader broken in storm & E scaffold missing - disfigure canopy form & probable future decay: remove and replace tree	variegated	
7	18	Syringa vulgaris					Removed 2008	tall shrub	
7	19	Magnolia grandiflora	3.0	8	14	good	Small split on lower trunk w/decay: monitor or replace tree if under warranty. Defect will compromise tree longevity.		

(continued)

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7	20	Thuja plicata	45.0	54	60	fair	Move picnic table away, mulch & underplant to exclude foot traffic; inspect W scaffold - defects on underside & supports tight codominant leader; 4 leaders add risk; compromised W roots, sparse foliage, heavy cone crop & stunted height relative to girth s	weeping, poor condition	Size
7	21	Malus 'Farrel's Crimson'	10.0	20	14	poor	Trunk cavities & swelling, lack of root flare indicate advanced decay; remove tree before it falls onto road or sidewalk; replace this and rest of lost crabapple row with similar-looking, disease-resistant cultivar.	disease and infested	Olmsted
7	22a	Malus, fairrels crimson					Gone	low leader	
7	22b	Malus, fairrels crimson					Gone	disease and infested	
7	23	Picea omorika	1.0	4	7	excellent			
7	24	Picea omorika	1.0	4	7	excellent			
7	25	Picea omorika			7	good	Heavy cone crop - monitor for stress during establishment		
7	26	Juniperus virginiana?	2.0	8	14	excellent	Confirm species ID - cultivar or J. chinensis, scopulorum & adequacy of distance from building		
8	1	Pseudotsuga menziesii	20.0	20	70	poor	Poor condition: remove	no treatment/topped	
8	2	Pseudotsuga menziesii	20.0	24	70	poor	Poor condition: remove	treatment	
8	3	Pseudotsuga menziesii	24.0	20		poor	Poor condition: remove	treatment	
8	4	Trachycarpus fortunei	9.5	7		good	Clear ivy off trunk		Specimen, rare
8	5	Chamaecyparis lawsoniana aureovariegata	3 @ 5 - 16.5"	25	20	fair	Topped, leans - remove	topped leaders, 2 trunks	
8	6	Chamaecyparis lawsoniana aureovariegata	2 @ 13.5, 19"	30	20	poor	Topped, lean, codominant: remove	topped leader, variegated	

(continued)

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8	7	Chamaecyparis lawsoniana aureovariegata	19.5	25	20	poor	Topped, ivy infested, leans - remove	topped leader	
8	8	Chamaecyparis lawsoniana aureovariegata	22.5	25	20	poor	Topped, lean, codominant: remove	topped leaders	
8	9	Chamaecyparis lawsoniana aureovariegata	3 @ 9.5 - 14.5"	27	20	poor	Topped, lean, codominant, fruiting bodies present in basal crotches: remove immediately	3 leaders	
8	10	Magnolia soulangiana (butterfly)					Gone		
8	11	Magnolia soulangiana (galaxy pink)					Gone		
8	12	Oxydendron arboreum					Gone	newly planted	
8	13	Rhus glabra					Gone		
8	14	Paw-Paw Tree(s)					Relabeled #173 - see Native Periphery Table of Trees	grove	
9	1	Pseudotsuga menziesii	28.0	40	60	good	Damaged top - aerial inspect for decay; mulch bare ground & underplant more natives	topped leader	Specimen (group)
9	2	Pseudotsuga menziesii	25.0	45	55	good	Heavy cone crop, trunk offset @ 50', bark beetles suggest trunk decay - resistograph / aerial inspect & monitor; retain native understory	topped leader	Specimen (group)
9	3	Pseudotsuga menziesii						topped leader	
9	4	Pseudotsuga menziesii						topped leader	
9	5	Abies amabilis	7.0	12	25	fair	Remove competing vines & clear engulfing shrubs; crown clean; upper canopy healthier		
9	6	Abies amabilis	10.5	18	30	god	Reduce competing vegetation, volunteer maple; remove ivy up trunk; crown clean dead lower branches.		

(continued)

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
9	7	Tsuga heterophylla	2 @ 14, 15"	40	50	good	Crown clean; consider bolting or cabling tight codominant stems together; safer is to remove & replace with structurally-sound tree.	2 trunks	
9	8	Acer palmatum 'Dissectum'	8.5	9		fair	Decay & breakage in main scaffolds - expect continued decline; start growing replacement offsite to transplant when removed.	cut-leaf, multi-trunk	Specimen
9	9	Pseudotsuga menziesii	21.0	9	70	fair	Topped @ 20 ft. - heavy, weak structure above & probable decay column; remove & replant tree as part of slope forest restoration.		
9	10	Pseudotsuga menziesii	21.5	9	65	fair	Topped @ 20 ft. - heavy, weak structure above & probable decay column; remove & replant tree as part of slope forest restoration.		
9	11	Pseudotsuga menziesii	23.5	9	75	fair	Topped @ 20 ft. - heavy, weak structure above & probable decay column; remove & replant tree as part of slope forest restoration.		
9	12	Pseudotsuga menziesii	25.5	9	75	fair	Topped @ 20 ft. - heavy, weak structure above & probable decay column; remove & replant tree as part of slope forest restoration.		
9	13	Pseudotsuga menziesii	20.5	9	65	fair	Topped @ 20 ft. - heavy, weak structure above & probable decay column; remove & replant tree as part of slope forest restoration.		
9	14	Pseudotsuga menziesii	22.0	9	65	fair	Topped @ 20 ft. - heavy, weak structure above & probable decay column; remove & replant tree as part of slope forest restoration.		
9	15	Pinus monticola	21.0	30	60	good	Remove blackberry underneath; monitor tight secondary codominant stem on N side; avoid further limbing-up		Specimen (native)

(continued)

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10	1	Acer rubrum 'Red Sunset'	8.5	18	25	good	Monitor sapsucker banding @ 4.5' ht.		Commemorative, specimen (row)
10	2	Acer rubrum 'Red Sunset'	7.0	20	25	excellent	Remove mulch high on trunk, upslope side. Structural prune tight codom. stem E side ASAP before too large - currently 1.5" diam.		Specimen (row)
10	3	Acer rubrum 'Red Sunset'	6.0	16	30	excellent	Remove mulch high on trunk, upslope side. Structural prune tight codom. stem @ 18" N side ASAP before too large - currently 1.5" diam.		Specimen (row)
10	4	Acer rubrum 'Red Sunset'	6.0	18	20	excellent	Remove mulch high on trunk, upslope side.		Specimen (row)
10	5	Abies grandis					Gone		
10	6	Chamaecyparis lawsoniana	19.0	20	60	good	Monitor lean, remove stub @ 8'; diameter taken @ 3', below major scaffold - bark below gone/popped by lean?		
10	7a	Chamaecyparis lawsoniana	14.0, 19.5	20	60	fair	Monitor lean & foliage color, remove endweight & thin/structural prune. Single stem to 4', 30" diameter below. Trunk touches DF #10-8 on SW		
10	7b	Chamaecyparis lawsoniana	6.5, 10.0	30	15	fair	Offsets from #10-7a to S side of DF #10-8. Consider removing - crowds DF, or reduce endweight & crossing branches, crown clean		
10	8	Pseudotsuga menziesii	44.5	22	90	good	Consider resistographing @ swelling & codom. junction for decay		Specimen (group w/#47, 48), Size
10	9	Chamaecyparis lawsoniana	14.5	20	60	good	Monitor for foliar signs of phytophthora root disease (yellowing, dieback) - susceptible species		
10	10	Salix species					Gone		
10	11	Alnus rubra					Gone		
10	12	Alnus rubra					Gone		

(continued)

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10	13a	Corylus cornuta	0.5 - 2.0	20	15	good	Let natural form develop - no heading back. Reduce endweight over drive by Leg Bldg.		
10	13b	Corylus cornuta	ms @ 0.5	6	8.0	good	Recently cut to ground, regenerating as shrub; selectively thin stems for even, open structure		
10	14	Corylus cornuta	ms @ 0.5	8	8.0	good	Recently cut to ground, regenerating as shrub; selectively thin stems for even, open structure. Multistem madrona seedlings @ 1' E & 10' SE - protect.		
10	15	Pseudotsuga menziesii	22.0	30	90	good	OK		Specimen (group)
10	16	Pseudotsuga menziesii	29.0	30	85	poor	Monitor decay, lean to NE. Topped @ 65', multiple bulges.		Specimen (group)
10	17	Pseudotsuga menziesii	35.0	30	100	good	OK		Specimen (group), Size
10	18	Cornus nuttalli	9.0	20	48	excellent	Monitor & treat for anthracnose as needed; remove dead branches caught in canopy		Specimen (native)
10	19	Pseudotsuga menziesii	36.0	30	100	fair	Monitor: pitch flow SW & SE @ old wounds. Lacks root flare - suspect decay. Remove ivy S side.		Specimen (group), Size
10	20	Pseudotsuga menziesii	38.0	40	100	good	Remove hangers over drive, monitor		Specimen (group), Size
10	21	Pseudotsuga menziesii	39.0	40	100	fair	Monitor, consider root excavation or resistograph		Specimen (group), Size
10	22	Pseudotsuga menziesii	42.0	40	100	poor	Monitor, consider root excavation or resistograph - good potential habitat snag		Size
10	23	Sorbus species					Gone		
10	24	Sorbus species					Gone		
10	25	Acer circinatum	5.0	20	30	good	Replacement for Sorbus. Monitor decay @ uncallused wound		
10	26	Pseudotsuga menziesii	39.0	40	100	good	Repeat ivy removal, move electric box away from base. Monitor bulge - resistograph for decay?		Size

(continued)

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10	27	<i>Pseudotsuga menziesii</i>	22.5	30	65	good	Crown clean dead wood; remove ivy & create ivy-free survival ring		Specimen (group)
10	28	<i>Pseudotsuga menziesii</i>	27	40	70	good	Monitor for stress & lean, fertilize if soil test indicates; remove ivy & create ivy-free survival ring		Specimen (group)
10	29	<i>Pseudotsuga menziesii</i>	24	25	55	fair	Monitor for stress, fertilize if soil test indicates; remove ivy & create ivy-free survival ring		Specimen (group)
10	30	<i>Acer macrophyllum</i>	3 @ 3-5	15	20	good	Volunteer replacement for removed <i>Quercus coccinea</i> . Remove: future risk due to location, crowds adjacent DF & cedar hedge		
10	31	<i>Amelanchier alnifolia</i>	10 @ 0.5-1.5	8	14	good	Replacement for <i>Cornus</i> species. Mulch, underplant.		
10	32	<i>Acer circinatum</i>	2 @ 2	8	12	excellent	Replacement for <i>Acer macrophyllum</i> . Underplant.		
10	33	<i>Acer circinatum</i>	multi @ 0.5-2	6 to 10	12 to 15	good	Replacements for <i>Acer macrophyllum</i> (6 trees). Crown clean dead wood, crossing branches.		
10	34	<i>Pseudotsuga menziesii</i>	35	30	100	fair	Monitor, resistograph @ bulge & topping point @ 75' ht. Inspect root flares for decay.		Specimen (group), Size
10	35	<i>Pseudotsuga menziesii</i>	45	32	90	fair	Monitor, aerial inspect for decay @ topping point, remove stubs.		Specimen (group), Size
10	36	<i>Cornus kousa</i>	10.5 @ 2'	25	30	good	Monitor S leader decay, crown clean, clearance prune @ house as needed, remove fir branches.		Specimen
10	37	<i>Acer macrophyllum</i>					Gone		
10	38	<i>Prunus yedoensis</i>	16.5 @ 3'	30	40	fair	Remove ivy, crown clean; no major target (sidewalk occasional only).		
10	39	<i>Pseudotsuga menziesii</i>	41.0	35	85	poor	Root crown excavate for decay diagnosis; reduce height or remove?		Specimen (group), Size

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10	40	<i>Pseudotsuga menziesii</i>	40.0	20	100	poor	URGENT excavate root crown to inspect anchorage: reduce height or remove? Signif trunk decay.		Specimen (group), Size
10	41	<i>Pseudotsuga menziesii</i>	48.0	30	100	poor	URGENT excavate root crown to inspect anchorage: reduce height or remove? Signif trunk decay.		Specimen (group), Size
10	42	<i>Pseudotsuga menziesii</i>	43.0	42	85	poor	URGENT excavate root crown to inspect anchorage: reduce height or remove? Signif trunk decay.		Specimen (group), Size
10	43	<i>Acer palmatum</i>	5 @ 5 - 9	24	18	fair	Remove holiday lights or monitor to keep loose on stems. Crown clean dead wood, maintain mulch & fertility. Prepare to replace in kind with new tree nearby.		Specimen (group)
10	44	<i>Acer palmatum</i>	5 @ 4 - 6	27	18	fair	Remove holiday lights or monitor to keep loose on stems. Crown clean, remove excess mulch against trunks. Prepare to replace in kind with new tree nearby.		Specimen (group)
10	45	<i>Acer palmatum</i>	3 @ 2 - 7	12	12	poor	Remove holiday lights or monitor to keep loose on stems. Crown clean. Remove within 3 years; plant replacement tree nearby now.		Specimen (group)
10	46	<i>Acer palmatum</i>	6 @ 4 - 9	32	28	good	Remove holiday lights or monitor to keep loose on stems. Crown clean dead wood. Clearance prune @ DF on NE side.		Specimen (group)
10	47	<i>Pseudotsuga menziesii</i>	52.5	30	100	good	Root disease likely but no fruiting bodies; monitor lean, foliage color, consider root crown excavation or resistograph for anchorage.		Specimen (group), Size

(continued)

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10	48	<i>Pseudotsuga menziesii</i>	50.5	30	100	poor	Cauliflower-size <i>Phaeolus schweinitzii</i> fruiting body @ W base & lean to E suggest advanced decay. Root crown excavate or resistograph IMMEDIATELY to determine anchorage. Likely priority removal. If retained, check decay @ trunk offset & monitor lean.		Specimen (group), Size
10	49	<i>Catalpa bignonioides</i>	24.0	25	45	fair	Declining - hollow trunk, seams, sapsuckers; scalped root decaying; do not thin canopy further: minor crown clean; enlarge mulch ring to protect damaged surface root; plant replacement now to E. Olmsted palette species - commemorative tree site and primary axis terminus?		Specimen
10	50	<i>Cornus nuttalli</i>	4.0	15	24	good	Priority remove 1 of 2 duplicate leaders ASAP or bolt/cable together later. Remove ivy, low dead wood.		
10	51	<i>Pseudotsuga menziesii</i>	33.0	35	100	good	Remove ivy		Size
10	52	<i>Taxus brevifolia</i>	3.5, 5.0	24	20	fair	Asymmetrical to E, N leader suppressed. Remove hangers.		Specimen (native)
10	53	<i>Cornus nuttalli</i>	5.0	18	2	fair	Remove SE scaffold to reduce load @ weak point; monitor decay.		
10	54	<i>Acer circinatum</i>	3.0, 4.5			good	Clearance prune @ DF. Cable in future?		
10	55	<i>Acer circinatum</i>	10 @ 0.5 - 2.5	25	20	good	Regenerating from deep cuts: remove center stem w/stub & decay & stub on W, dead wood. Reduce # stems for balance & open form.		
10	56	<i>Tsuga mertensiana</i>	4.0, 4.5, 6.0	18	20	2 good & 1 fair	3 trees closely planted: remove suppressed N stem. Consider removing 2 of 3 & retain best. Crown clean dead wood, keep ivy off.		
10	57	<i>Cornus nuttalli</i>	1.5	10	12	excellent	Remove dead wood, keep ivy off.		
10	58	<i>Acer macrophyllum</i>	4.5	20	25	excellent	Keep ivy off, monitor for future cavities.		

(continued)

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10	59	Acer circinatum	3 @ 2.5 - 3.0	20	25	good	Monitor W& NE leader for decay; consider removing NE stem - long tear @ 3-6' ht has decay.		
10	60	Acer circinatum	2.5	10	18	fair	Monitor for future decay; NW scaffolds gone.		
10	61	Unknown	1.0	9	12	excellent	Replant straight ASAP - recent planting.		
10	62	Acer circinatum	2.0, 3.0	9	12	excellent	Maintain clearance @ house & walk, underplant. Planted tight to corner of building.		
10	63	Amelanchier alnifolia	3 @ 1.0 - 3.0	8	18	good	Reset upright? Clearance prune as needed.		
10	64	Acer circinatum	5 @ 1.0	12	14	good	Clearance prune @ cedar to SW, remove ivy.		
10	65	Viburnum opulus?	11 @ 1.0 - 3.5	18	16	good	Prune endwood on E side, remove outlying stem to E, remove stubs.		
10	66	Amelanchier alnifolia	4 @ 0.5 - 1.0	6	9	good	Remove basal stub, underplant slope above.		
10	67	Acer macrophyllum	2.0, 3.5	15	25	good	Remove NW stem ASAP, or cable in future. Underplant & shift path 2' to W.		
10	68	Acer macrophyllum	2 @ 2.0	8	18	good	Monitor tear locations on stem for future decay.		
10	69	Cornus nuttalli	4.0	18	20	good	Monitor defect for future decay; underplant.		
10	70	Cornus nuttalli	4.5	16	18	excellent	Prune out duplicate branches for structure while small.		
10	71	Prunus emarginata	16.0	35	70	poor	In decline, monitor or create snag. Crown clean & endweight reduction if retained.		

(continued)

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 BLUE Post-2001 replacement or addition

GREEN Significant: Olmsted plan, size, age, commemorative, specimen
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NOTE: 1.) West Capitol Campus Table of Trees updates records for trees inventoried in 2000-01 by Susan Black & Associates, and adds trees planted since 2001 as well as existing trees in Zones 10, 12, and 13 not previously inventoried.
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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
10	72	<i>Pseudotsuga menziesii</i>	49.0	32	100	fair	Root crown excavation & aerial inspection @ topping location to evaluate decay: potential habitat snag. Remove ivy.		Size
10	73	<i>Chamaecyparis lawsoniana</i>	18.0	16	60	good	Mulch, underplant		
10	74	<i>Pseudotsuga menziesii</i>	34.5	24	90	good	OK		Size
10	75	<i>Acer circinatum</i>	multi @ 1.0 - 2.0	8, 16	12, 18	good	OK		
10	76	<i>Pseudotsuga menziesii</i>	41.0	30	110	good	Remove ivy, old fencing debris.		Size
10	77	<i>Acer macrophyllum</i>	14.0	25	50	fair	Remove ivy & create ivy-free survival ring. Reduce end weight & clearance prune.		
10	78	<i>Pseudotsuga menziesii</i>	40.0	32	90	fair	Monitor root decay; priority to remove ivy & holly @ base. Twin with #10-79.		Size
10	79	<i>Pseudotsuga menziesii</i>	47.0	30	100	fair	Aerial inspect @ hook for decay; priority to remove ivy. Twin with #10-78.		Size
10	80	<i>Acer macrophyllum</i>	5.0, 17.0	40	60	fair	Remove ivy & create survival ring ASAP. Remove dead 2" stem @ base, crown clean.		
10	81	<i>Acer macrophyllum</i>	3 @ 3.0 - 6.0	25	45	poor	Reduce to snag - leans over garage, has multiple trunk defects.		
10	82	<i>Prunus emarginata</i>	6.0, 10.0	20	50	good	Remove end weight (future); trunks wrap around each other.		
10	83	<i>Pseudotsuga menziesii</i>	2.0	8	13	excellent	Keep ivy away; perfect specimen - hazel crowds on SE & NE; move.		
10	84	<i>Chamaecyparis lawsoniana</i>	7.0	16	25	good	Clearance prune @ guard station as needed; mulch & underplant.		

(continued)

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10	85	Calocedrus decurrens	6.0 - 18.0	8	20 to 40	fair	16 trees @ 6' centers, 1-2 stems ea. Overgrown hedge, topped @ 6-9', anticipate future risk. Crown clean. Plant lower replacements then remove - suggest mixed native screen.		
10	86	Magnolia 'Wada's Memory'?	4.0	10	12	excellent	Structural prune to open up, crown clean crossing branches; confirm cultivar.		Specimen (group)
10	87	Magnolia 'Susan'?	4.0	10	14	good	Wounds forming callus but extensive: monitor for trunk decay, crown clean. Confirm ID.		Specimen (group)
10	88	Magnolia 'Butterflies'?	2.0	8	8	good	Crown clean, monitor trunk decay/decline.		Specimen (group)
11	1	Prunus yedoensis	17.5	30		fair	Crown clean; probable decay limits life expectancy - split trunk, sapsuckers, damaged surface roots; enlarge mulch ring to protect scalped roots; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	2	Prunus yedoensis	16.0	30		fair	Crown clean; probable decay limits life expectancy - sapsuckers, damaged surface roots; enlarge mulch ring to protect scalped roots; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	3	Prunus yedoensis	18.5	30		good	Crown clean; probable decay limits life expectancy - crack w/resin flow, lack of root flare, damaged surface roots; enlarge mulch ring to protect scalped roots; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)

(continued)

Table of Trees

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
11	4	Prunus yedoensis	15.0	30		good	Crown clean; monitor codominant central scaffolds w/included bark - bolt?; probable decay limits life expectancy - split bark, lack of root flare, damaged surface roots; enlarge mulch ring to protect scalped roots; evaluate replacement alternatives to che	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	5	Prunus yedoensis	13.5	30		good	Reduce endweight on downslope scaffold, crown clean; included bark & probable decay limit life expectancy - sapsuckers, crack, girdling & damaged surface roots; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	6	Prunus yedoensis	12.5	30		poor	Crown clean; probable decay limits life expectancy - trunk seam, loose bark, basal decay, lack of root flare, girdling roots; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	7	Prunus yedoensis	15.5	30		fair	Crown clean; defects & incipient decay limit life expectancy - included bark@ major scaffold, cracks, girdling & damaged surface roots; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	8	Prunus yedoensis	16.0	30		poor	Crown clean deadwood & suckers; probable decay limits life expectancy - bark crack, severe girdling & surface root damage; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	9	Prunus yedoensis	8.0	30		poor	Roots fully girdle trunk - anchorage and canopy vigor compromised; remove tree & evaluate replacement alternatives to cherries & /turf	poor form, and condition, drains have collapsed	Commemorative, Specimen (group)

(continued)

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
11	10	Prunus yedoensis	9.5	30		poor	Structural defects limit life expectancy - codominant scaffolds with semi-included bark, large girdling root & damaged surface roots; crown clean & reduce endweight or remove tree; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	11	Prunus yedoensis	12.5	30		fair	Crown clean, balance canopy asymmetry; monitor lean, bark crack & possible fungal patches for decay; girdling & damaged surface roots - enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	12	Prunus yedoensis	10.0	30		fair	Minor crown clean - sparse canopy; monitor girdling & damaged roots and trunk cracks for decay; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	13	Prunus yedoensis	16.0	30		fair	Structural prune - crossing & tight codominant scaffolds; monitor bark split & possible fungal patches for decay; girdling root, bare soil - enlarge mulch ring to protect roots & reduce compaction; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	14	Prunus yedoensis	13.5	30		fair	Crown clean, maintain clearance from building; probable decay limits life expectancy - loose bark with rot, seam, lack of root flare; enlarge mulch ring to protect bare, compacted rootzone; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)

(continued)

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
11	15	Prunus yedoensis	18.0	30		fair	Crown clean; probable decay limits life expectancy - abundant sapsuckers, seam & basal damage, scalped surface roots; enlarge mulch ring to protect roots & bare, compacted soil; evaluate replacement alternatives to cherries & /turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	16	Prunus yedoensis	13.0	30		fair	Crown clean; probable decay limits life expectancy - trunk crack, damaged surface roots & fungal mat over SW rootzone; monitor lean; enlarge mulch ring to protect roots & bare, compacted soil; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	17	Prunus yedoensis	16.5	30		fair	Crown clean; probable decay limits life expectancy - sapsuckers, possible fungal patches on trunk, girdling & damaged surface roots with fruiting bodies present: excavate to confirm anchorage or removal; enlarge mulch ring to protect roots; evaluate repla	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
11	18	Acer palmatum 'Bloodgood'	6.0	18	20	good	Pull mulch away from stem; reduce endweight on triple, narrow-crochted leader; keep rhodie height down or replace w/lower species; clearance prune for light E side.	new planting 1998, result of remodel	Commemorative, Specimen (group)
12	1	Prunus yedoensis	14.0	30		fair	Crown clean; probable decay limits life expectancy - small trunk cavities, possible fungal patches on trunk, girdling & damaged surface roots, lack of root flares: enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)

(continued)

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
12	2	Prunus yedoensis	17.5	30		fair	Crown clean; girdling root & missing root flares point to choking +/or decay limiting life expectancy; damaged surface roots - enlarge mulch ring to protect; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	3	Prunus yedoensis	10.0	30		fair	Crown clean; decay limits life expectancy - bark split, absent root flares, damaged surface roots with armillaria fruiting bodies @ base & out 4 ft.; excavate to confirm root loss; if retained enlarge mulch ring to protect roots; evaluate replacement alte	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	4	Prunus yedoensis	16.5	30		fair	Crown clean - stubs, SW canopy poor; monitor bark cracks & splits for development of decay; in-curved base - examine for decay / girdling root subsurface; damaged surface roots - enlarge mulch ring to protect; evaluate replacement alternatives to cherries	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	5	Prunus yedoensis	19.0	30		fair	Structural defect & decay limit life expectancy - sapsuckers, spiral trunk seam, small scaffold cavity & scar, girdling & damaged surface roots; monitor; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	6	Prunus yedoensis	13.0	30		fair	Clearance prune @ building; crown clean - deadwood; structural defects & probable decay limit life expectancy - extensive sapsuckers, spiral trunk seam, tight codominant scaffolds, girdling & damaged surface roots; monitor; enlarge mulch ring to protect r	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)

(continued)

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Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
12	7	Prunus yedoensis	16.5	30		fair	Decay limits life expectancy - sapsuckers, possible fungal patches on trunk, multiple bark splits & cracks, girdling & damaged surface roots; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	8	Prunus yedoensis	17.0	30		fair	Crown clean - stubs, clearance prune @ building; decay limits life expectancy; monitor - sapsuckers, basal seam & bark split w/ fungal fruiting bodies, girdling & damaged surface roots; enlarge mulch ring to protect roots & bare, compacted soil; evaluate	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	9	Prunus yedoensis	15.5	30		fair	Incipient decay & girdling roots limit life expectancy - lack of root flares, trunk crack & damage, scalped surface roots w/decay; monitor; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	10	Prunus yedoensis	16.5	30		good	Crown clean; girdling roots & possible decay limit life expectancy - trunk seam, basal borers, missing root flare, damaged surface roots; monitor; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	11	Prunus yedoensis	11.5	30		fair	Crown clean - deadwood, crossing branches; clearance prune to adjacent trees; roots girdle most of circumference & limit life expectancy; enlarge mulch ring to protect damaged surface roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)

(continued)

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12	12	Prunus yedoensis	17.0	30		fair	Crown clean - deadwood, crossing branches; clearance prune to adjacent trees; decay & girdling roots limit life expectancy - basal decay pocket, missing root flare, damaged surface roots; monitor; enlarge mulch ring to protect damaged surface roots; evaluate	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	13	Prunus yedoensis	13.0	30		fair	Girdling root & decay limit life expectancy - missing root flares, large crack in trunk w/decay, damaged surface roots; monitor; enlarge mulch ring to protect roots & compacted, bare soil; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	14	Prunus yedoensis	17.0	30		fair	Clearance prune to adjacent trees; potential decay & girdling roots limit life expectancy - missing root flare, trunk seam, damaged surface roots; monitor; enlarge mulch ring to protect roots; evaluate replacement alternatives to cherries & turf	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	15	Prunus yedoensis	13.0	30		fair	Structural defects & decay limit life expectancy - tight codominant scaffolds, trunk seam w/decay & sapsuckers, missing root flare, damaged surface roots, fungal mat extending SE from trunk; excavate to confirm extent of decay; if retained, enlarge mulch r	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	16	Prunus yedoensis	17.0	30		poor	Remove hanger & reduce endweight NW side; Clearance prune @ adjacent tree; structural defects limit life expectancy - missing root flares, roots girdle over 50% of circumference, tight scaffolds with included bark; monitor; enlarge mulch ring to protect d	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)

(continued)

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12	17	Prunus yedoensis	14.0	30		fair	Crown clean - stubs & deadwood; decay & structural defects limit life expectancy - spiral bark cracks w/ sapsuckers, large gall, scaffolds w/ included bark, missing root flare, damaged surface & girdling roots; monitor; enlarge mulch ring to protect roots; e	grove, condition affected by poor drainage, drains have collapsed	Commemorative, Specimen (group)
12	18	Thuja plicata	44.5	36	55	fair	Risk from uncorrectable defects: multiple heavy scaffolds, secondary leaders, cavity, sapsucker holes & decay - high target location; remove, plant replacement(s) nearby	topped	Olmsted
12	19	Calocedrus decurrens					Died & removed 2008, probable root disease	treatment	Arbor Day 1986
12	20	Pseudotsuga menziesii	46.0	36	90	poor	Rootzone fungi, extensive bark beetle holes & resin flows on trunk suggest advanced decay; excavate & resistograph to determine remaining sound roots & bole - probable risk-abatement removal; replacement depends on pathogens present in soil - test; merge	treatment	Size, specimen (group)
12	21	Pseudotsuga menziesii	26.0	32	80	fair	Lack of root flares & beetle damage - suspect decay; excavate roots, resistograph bole for sound wood; possible removal; replacement depends on pathogens present in soil - test; merge circles under fir into single bed & underplant natives	treatment	Specimen (group)
12	22	Pseudotsuga menziesii	39.5	36	100	fair	Thinning canopy, heavy cone crop, lack of root flares suggest decay; poor scaffold attachments add failure risk - excavate roots; possible removal; replacement depends on pathogens present in soil - test; merge circles under fir into single bed & underpl	treatment	Size, Olmsted, specimen (group)

(continued)

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12	23	<i>Pseudotsuga menziesii</i>	45.0	32	100	fair	Fruiting bodies found on root flares - resistograph to confirm decay; probable risk abatement removal; replacement depends on pathogens present in soil - test; merge circles under firs into single bed & underplant natives	treatment	Size, Specimen (group)
12	24	<i>Cornus florida</i>	14.5	28		good	Fungal hyphae in small cavity near crotch - monitor stem decay; underplant & mulch - not bark; nice canopy	2 trunks, 3" from fg	
12	25	<i>Cornus florida</i>	11.0	20		fair	Reduce endweight on scaffold over street; monitor lean & decay - cavity, loose bark, semi-included codominant crotch defects present.		
12	26	<i>Cornus florida</i>	9.5	12		poor	Major deadwood, unbalanced canopy, competes with adjacent dogwoods - remove.	2 trunks	
12	27	<i>Cornus florida</i>	16.0	20	28	fair	Major restoration pruning needed to correct past malpruning; monitor internal decay - small cavity @ primary scaffold junction		
12	28	<i>Cornus florida</i>					Gone	3 trunks, poor form and condition	
12	29	<i>Pinus contorta contorta</i>	22.0	22	50	good	Crown clean dead limbs, hanger; clearance prune for light to W; place mulch over surface roots & pull away from stem on S side; monitor decay @ base where large stem was removed.		
12	30	<i>Prunus serrulata?</i>	28.0	25	30	fair	Fruiting bodies in rootzone & trunk decay @ defects, on slope; declining tree - remove or test to confirm adequate sound wood and crown clean.	old specimen	
12	31	<i>Magnolia soulangiana</i> 'Rustica Rubra'					Gone	3 trunks, 30" from fg	

(continued)

Table of Trees

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12	32	Magnolia stellata	ms 7 @ 1-6	12	12	good	Mulch, underplant; remove W stem to base, structural prune & crown clean. Future breakout of N stem likely - prune to base at that time.		Specimen
12	33	Acer macrophyllum	66.5	50	60	good	Crown clean; inspect & monitor decay in main crotch & N scaffold under scar; add mulch, underplant, exclude foot traffic; maintain clearance for wires.		Size
12	34	Acer circinatum	n/a	n/a	n/a	poor	3 trees: recut flush to ground, select 3-5 new shoots & develop new canopy. Option: transplant to woodland edge & replant bed w/multi-layer vegetation including evergreen trees & native species.		
12	35	Betula pendula	10.5	20	40	poor	Risk tree: topped, decay - remove. Replant bed with evergreen trees & natives.		
13	1	Pseudotsuga menziesii	16.0	18	50	good	Remove small girdling root; fungi SE & SW rootzone - possible decay; tight codominant stems with included bark - bolt or remove tree and replant after testing soil pathogens to select resistant replacement. Tree appears vigorous but has significant incip		
13	2	Fagus sylvatica 'Atropunicea'	20.5	32	50	fair	Remove girdling root, large stubs, hangers; bulge near S base may indicate decay; enlarge mulch ring to protect scalped roots	poor condition	Olmsted
13	3	Quercus rubra	36.0	70	75	good	Remove large girdling root if feasible; crown clean - past breakout, hanger; enlarge mulch circle to protect roots. Do not repeat previous height reduction & interior pruning unless dieback occurs.	treatment	Olmsted

(continued)

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13	4	Acer platanoides	28.0	30	60	fair	Uncorrectable large girdling roots may destabilize & choke off nutrients, causing decline; codominant leaders; crown clean - breakout stub; do not repeat height reduction pruning; enlarge mulch circle.	treatment	Olmsted
13	5	Platanus acerifolia	43.0	48	50	fair	Resistograph trunk & inspect roots; suspect decay - scalped roots, sapsucker holes, trunk depression, possible fungal plaques; enlarge mulch ring; heavy fruiting & stunted height for girth suggest stress also.	treatment	Size
13	6	Chamaecyparis pisifera 'Filifera'	2 @ 13.5, 22"	24	20	good	Crown clean much small deadwood; maintain clearance @ stair & sidewalk; retain vinca underplanting	3 trunks, some damage	
13	7	Chamaecyparis pisifera 'Filifera'	5 @ 9.5 - 12.5"	24	20	good	Crown clean stubs & interior deadwood; maintain clearance as above.	5 trunks, droopy branches	
13	8	Chamaecyparis pisifera	3 @ 21 - 22.5"	15	60	poor	Butt decay, extensive borer & sapsucker activity; lean over sidewalk & tight codominant stems all significant defects; remove tree asap	3 trunks	
13	9	Chamaecyparis pisifera	2 @ 19, 31"	16	50	poor	Butt decay, extensive borer & sapsucker activity; lean over sidewalk & topped, tight codominant stems all significant defects; remove tree asap	2 trunks	
13	10	Prunus serrulata	16.5	28	30	good	Crown clean; enlarge mulch circle to protect surface roots; basal swelling may indicate decay or relate to girdling roots	treatment	
13	11	Prunus serrulata	21.0	27	30	fair	Crown clean; possible root loss - excavate to check soundness	treatment	
13	12	Prunus serrulata	5.0	14	16	fair	Remove basal suckers; crown clean; loose bark on trunk & much brown rot - treat or replace with more resistant species. This tree was planted within past 5 years but is not thriving.	treatment	

(continued)

KEY: RED Gone since 2001 inventory
 BLUE Post-2001 replacement or addition
 GREEN Significant: Olmsted plan, size, age, commemorative, specimen
 ** Spread 2008 equals approximate canopy diameter (ft.)
 Data not recorded
 Spread 2001 assumed to equal radius (ft.)

NOTE: 1.) West Capitol Campus Table of Trees updates records for trees inventoried in 2000-01 by Susan Black & Associates, and adds trees planted since 2001 as well as existing trees in Zones 10, 12, and 13 not previously inventoried.
 2.) Bluff-edge trees were first inventoried in April 2009, with records segregated in West Capitol Campus Native Edge Table of Trees

Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
13	13	Prunus serrulata	11.5	18	24	good	Crown clean - minor brown rot; monitor small basal bark split & swelling for decay; expand mulch ring to protect scalped roots & remove circling if feasible.	treatment	
13	14	Prunus serrulata	13.0	22	24	fair	Remove stubs; armillaria fungi found south of trunk & swelling @ base - inspect for sound bole & anchorage; remove tree if decayed	treatment	
13	15	Pseudotsuga menziesii	52.5	45	100	fair	Suspect root & trunk decay - excavate & resistograph to confirm extent of sound wood; prominent location, high target; possible removal; replant after testing soil pathogens & selecting resistant native species. Multiple firs lost/removed to S also shoul	treatment	Size, Olmsted
13	16	Pseudotsuga menziesii					Gone	treatment	
13	17	Pseudotsuga menziesii					Gone	removed in 2000	wood donated for fire wood
13	18	Pseudotsuga menziesii					Gone	treatment	
13	19	Pseudotsuga menziesii					Gone	treatment	
13	20	Pseudotsuga menziesii					Gone	removal likely	
13	21	Prunus cerasifera 'Newport'	8.0	24	18	excellent	Crown clean, add groundcover. Nice form.		
13	22	Fagus sylvatica	27.5	25	60	good	Remove ivy from base; aerial inspect swelling @ 10', offset @ 40' for decay.		Specimen

(continued)

KEY: RED Gone since 2001 inventory
 BLUE Post-2001 replacement or addition
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NOTE: 1.) West Capitol Campus Table of Trees updates records for trees inventoried in 2000-01 by Susan Black & Associates, and adds trees planted since 2001 as well as existing trees in Zones 10, 12, and 13 not previously inventoried.
 2.) Bluff-edge trees were first inventoried in April 2009, with records segregated in West Capitol Campus Native Edge Table of Trees

Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
13	23	Thuja plicata	45.0	40	50	poor	E half of E leader dead w/ major decay & cavities, NW leader major cavities: aerial inspect decay @ breakout points & reduce height as required to make safe; remove dead limbs @ top of W side, prune secondary leaders' endweight mulch & thorny underplanting or fence to exclude foot traffic. Monitor - declining tree in high target location, but has excellent habitat value.		Specimen (native)
13	24	Pseudotsuga menziesii	19.0	20	50	good	Too close to building: prune to maintain clearance from wall, roof, mulch & underplant. Stress cone crop.		
13	25	Pseudotsuga menziesii	19.0	22	50	fair	Remove girdling roots if possible; crown clean, monitor lean to E; sparse, heavy cone crop - stressed. Mulch & underplant natives and/or fence to reduce compaction & improve rooting environment.		
13	26	Pseudotsuga menziesii	19.0	24	50	good	Crown clean twiggy interior & prune as needed to maintain clearance over pedestrian bridge. Mulch & underplant natives and/or fence to reduce compaction & improve rooting environment.		
13	27	Pseudotsuga menziesii	16.0	20	50	good	Crown clean twiggy interior & prune for clearance over pedestrian bridge. Mulch & underplant natives and/or fence to reduce compaction & improve rooting environment.		
13	28	Acer rubrum	7.5	22	35	good	Street tree: enlarge mulched area, remove girdling root, add mulch.		Specimen (row)
13	29	Acer rubrum	8.5	20	35	good	Street tree; enlarge mulched area, add mulch; possible future cable for codominant leaders above 11'. Nice form.		Specimen (row)

(continued)

KEY: RED Gone since 2001 inventory
 BLUE Post-2001 replacement or addition
 GREEN Significant: Olmsted plan, size, age, commemorative, specimen
 ** Spread 2008 equals approximate canopy diameter (ft.)
 Data not recorded
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NOTE: 1.) West Capitol Campus Table of Trees updates records for trees inventoried in 2000-01 by Susan Black & Associates, and adds trees planted since 2001 as well as existing trees in Zones 10, 12, and 13 not previously inventoried.
 2.) Bluff-edge trees were first inventoried in April 2009, with records segregated in West Capitol Campus Native Edge Table of Trees

Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
13	30	Acer rubrum	9.0	20	30	good	Street tree: multiple scalped surface roots: enlarge mulched area, add mulch.		Specimen (row)
13	31	Acer rubrum	8.0	20	30	excellent	Street tree: enlarge mulched area, add mulch, remove girdling root. Excellent form.		Specimen (row)
13	32	Cornus florida	ms 2 @ 9.5, 10	25	25	good	Minor crown clean deadwood, suckers; monitor for codominant trunk separation @ bottom crotch & 5 ft; remove large limb. Mulch & underplant to discourage foot traffic. Parking lot peninsula. Broad, handsome canopy.		Specimen
13	33	Laburnum anagyroides	ms 2 @ 5, 5.5	12	14	good	Recut stem stubs to ground, remove E codominant stem & crown clean; remove ivy.		
13	34	Laburnum anagyroides	ms 3 @ 2,3,4	12	18	good	Remove NW stem to ground: corrective prune & crown clean; remove ivy.		
13	35	Prunus species	ms 3 @	25	25	fair	Crown clean, remove new center leader & stubs to base, clearance prune from adjacent trees; remove ivy. Monitor N trunk for decay - extensive sapsucker holes & bark split base to 3'.		
13	36	Photinia serrulata	11.0	25	20	fair	Remove ivy; raise canopy, reduce endweight E side, minor crown clean deadwood & trunk suckers. Monitor major lean to E & resistograph or drill for decay in main trunk - sapsuckers. Clearance prune from adjacent trees.		
13	37	Arbutus menziesii	17.5	24	35	fair	Reduce endweight, crown clean, clear ivy away from root crown (holds moisture); evaluate root anchorage on upslope tension side - canker & rockery compromise root integrity downhill side; DO NOT WATER		Specimen (native)

(continued)

KEY: RED Gone since 2001 inventory
 BLUE Post-2001 replacement or addition
 GREEN Significant: Olmsted plan, size, age, commemorative, specimen
 ** Spread 2008 equals approximate canopy diameter (ft.)
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NOTE: 1.) West Capitol Campus Table of Trees updates records for trees inventoried in 2000-01 by Susan Black & Associates, and adds trees planted since 2001 as well as existing trees in Zones 10, 12, and 13 not previously inventoried.
 2.) Bluff-edge trees were first inventoried in April 2009, with records segregated in West Capitol Campus Native Edge Table of Trees

Area	Tree #	Species	Diam 2008	Spread 2008**	Est. Ht. 2008	Condition 2008	Recommended Action(s)	2001 Remarks	Significance
13	38	Chamaecyparis pisifera 'Filifera'	2 @ 8, 8.5	20	25	poor	In decline: sparse, structural defects uncorrectable - remove in favor of adjacent madronas		
13	39	Arbutus menziesii	3.0	8	12	good	Remove ivy from base, clear trunk no cankers, some leafspot = nice young specimen in favorable location; DO NOT WATER		Specimen (native)
13	40	Acer palmatum	16.5 @ 18"	24	30	fair	Major breakout and decay; reduce endweight, crown clean, reduce central leader to side branch below decay zone, monitor.		
13	41	Acer macrophyllum	32.0	60	60	fair	Aerial inspect / resistograph ring of compressed bark w/sapsucker holes @ 25 ft. Crown clean, thin suckers & reduce endweight on SW limb over parking lot.		Size
13	42	Ulmus sibirica	1 to 4	4 to 10	10 to 20	good	Grove: remove all stems, treat or grind out roots - Dutch elm disease vector & brittle wood when mature. Clear ivy & replant slope w/multilayered natives		
13	43	Pseudotsuga menziesii	1	4	7	good	Sapling - retain; remove ivy, underplant w/natives as part of full bed renovation		
13	44	Betula pendula	23	35	70	good	Create curb-to-sidewalk mulch area, add mulch		
13	45	Betula pendula	16	16	70	fair	Basal & trunk decay, suppressed; remove or crown clean & monitor, enlarge mulch area.		
13	46	Betula pendula	22	36	70	good	Remove hanger over street; create curb-to-sidewalk mulch area & add mulch; probe crotch decay; clearance prune from adjacent monkey tree or consider removal - crowded		
13	47	Auracaria auracana	28.5	27	50	good	Enlarge mulched area, crown clean dead branches & raise canopy over sidewalk; monitor tight codominants @ 20 ft. for separation. Crowds birch.		Specimen

Fig. 10.10 Table of Trees - Native Edge

KEY: GREEN Significant tree
 Data not recorded

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
SW	25	Cornus nuttalli	2 trees @ 6.5, 8	12	50	good	no	Remove ivy to 25' priority. Raise limbs of adjacent large deciduous tree for clearance & to encourage fuller canopy development.	Unique
SW	26	Thuja plicata	5.0	16	24	good	no	Prune large dead limbs on deciduous tree above away to protect from leader breakage. Keep ivy off.	
SW	27	Acer macrophyllum	19.5	40	60	good	no	Reduce end weight over path & to maintain clearance from library. Remove ivy to 25'.	
SW	28	Prunus emarginata	11.0	24	60	good	no	Remove ivy to 20'. Phototropic lean to NE, canopy mixes with tree #27.	
SW	29	Acer macrophyllum	12.5, 22, 30, 37.5	5	75	fair	yes	Multiple targets: library, path, equipment & major decay: monitor closely. Remove ivy to 20', crown clean on risk side. Major trunk cut to ground & many limbs removed.	Size
SW	30	Alnus rubra	17.0	18	60	good	no	Ivy to 20' remove.	
SW	31	Acer macrophyllum	9, 18	40	50	fair	yes	Dense ivy to 35' remove ASAP to inspect suspected breakout @ 16' for decay. Reduce end weight or create habitat snag 12' ht, E stem. Very close to Pritchard Library target.	
SW	32	Alnus rubra	12, 21	30	40	poor	yes	Remove ivy to 20': declining but will fail downslope away.	
SW	33	Acer macrophyllum	24.0	35	60	good	yes	Huge ganoderma conk @ NW base: resistograph flares for decay ASAP, remove if unstable. If retained, monitor closely & remove poorly-attached suckers @ limb removals. reduce end weight S side.	
SW	34	Acer macrophyllum	25.5	50	60	good	no	Reduce end weight on lower scaffold NW over shelter. Small basal cavity S side. Mulch & underplant natives, fence area to discourage foot traffic.	Size
SW	35	Thuja plicata 'Zebrina'	17.5	30	30	good	no	Crown clean low dead branches & open slightly for visibility. Do NOT limb up.	Rare cultivar

(continued)

Table of Trees - Native Edge

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

KEY: GREEN Significant tree

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
SW	36	Acer macrophyllum	31.0	40	65	good	no	Crown clean over smoking shelter & lawn as dead wood accumulates. Remove lawn, underplant natives & mulch to reduce compaction.	Size
SW	37	Betula pendula	20.0	30	60	fair	no	Monitor extensive basal decay & sapsucker activity. Remove holly @ E base. Resistograph trunk for sound wood,	
SW	38	Betula pendula	11.0	12	50	poor	no	Basal decay, sapsuckers, epicormics to 30'. Create snag to avoid damage to tree #39. Failure downslope likely. Remove 3" leader to N - poor form, also holly, ivy.	
SW	39	Acer macrophyllum	30.0	35	70	fair	no	Remove ivy. Anticipate S half, limbs to break out downslope - no target issue.	
SW	40	Acer macrophyllum	32.5	45	65	fair	potential	Declining - suspect decay in trunk seams E & S sides. Will fail downslope so no target issue.	
SW	41	Acer macrophyllum	38 @ 30" ht	45	65	fair	potential	Reduce end weight on N leader over lawn, vehicles. Future decay from limb removal wounds likely. Allow dead wood elsewhere to break & fall onto slope.	Size
SW	42	Acer macrophyllum	30.0	40	55	poor	yes	Reduce to snag or remove - multiple defects, target. Anticipate codominant stem failure on lawn, building, vehicles. Option: reduce endweight & monitor.	
SW	43	Acer macrophyllum	45.5	50	70	fair	no	Allow to shed major dead limbs & damaged, decayed central eader. No target issue.	Size
SW	44	Acer macrophyllum	31.5	45	55	fair	potential	Drain outlet 12' NW downslope. Reduce end weight & thin E leader branches to reduce potential for codominant stem breakout @ 8' ht. Removed nylon webbing around base - some bark chafed off prior.	Size
SW	45	Acer macrophyllum	19, 19	50	60	fair	no	Crown clean dead wood over lawn (rest aesthetic issue only). Anticipate codominant stem breakout, but will fall away, across or down slope. Large drain pipe daylight 10' above - potential slope damage?	

(continued)

KEY: GREEN Significant tree
 NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
SW	46	<i>Thuja plicata</i>	28.5	2	50	fair	no	Topped @ 35', heavy candelabra - probable decay. Woodpecker & animal cavities. Will fall away from lawn when fails.	Size
SW	47	<i>Acer macrophyllum</i>	44.0	36	80	fair	potential	3 fused trunks w/included bark: monitor for separation. Remove large dead limb over lawn. Entwined with cedar #46.	Size
SW	48	<i>Alnus rubra</i>	25.0	25	65	fair	no	Ivy to 20' remove, also holly. Anticipate break @ stem defect but will fall away downslope when fails.	Size
SW	49	<i>Alnus rubra</i>	est. 22	na	60	fair	yes	Remove thick ivy to 50' ASAP: leans 15 degrees E - fence, lawn potential targets.	Size
SW	50	<i>Alnus rubra</i>	5 @ 2 - 5	25	30	excellent	no	Part of grove extending N, S & W. Remove ivy & N stem, scaffold that rub S stem.	
W	51	<i>Thuja plicata</i>	est. 32	40	70	good	no	Remove ivy to 15'. Monitor for decline (sapsuckers, sparse foliage).	Size
W	52	<i>Tsuga heterophylla</i>	est. 32.5	35	80	fair	no	Remove extensive ivy ASAP.	Size
W	53	<i>Prunus emarginata</i>	3 @ 6, 8, 9	20	20-55	poor	yes	DEAD leaders: reduce to snag ASAP. (1 stem ok)	
W	54	<i>Acer macrophyllum</i>	est. 30	45	70	fair	potential	Raise or remove limbs over fence.	Size
W	55	<i>Pseudotsuga menziesii</i>	17.5	20	80	poor	no	Create snag: exposed location. Fence & trees in Mansion garden potential targets.	
W	56	<i>Chamaecyparis pisifera</i>	14.0	15	50	fair	no	Remove ivy, crown clean for appearance from Mansion. Tight codominant, very sparse. Leans away from fence so no risk.	
W	57	<i>Acer macrophyllum</i>	est. 27	35	75	fair	yes	Remove dead scaffold & large diameter limbs that could fall to E. Thick ivy to 30': remove to inspect offset @ 30' - suspect breakout with decay.	Size
W	58	<i>Pseudotsuga menziesii</i>	25.5	25	75	good	no	Remove ivy.	

(continued)

Table of Trees - Native Edge

KEY: GREEN Significant tree
 NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
W	59	Acer macrophyllum	18.0	30	55	poor	yes	Remove limb over guard shack, reduce end weight or snag. Basal cavities, asymmetrical.	
W	60	Acer macrophyllum	27.0	50	75	poor	yes	Declining, very weak trunk: reduce to snag or remove dead wood over fence. Clear ivy off trunk.	
W	61	Pseudotsuga menziesii	est. 34	20	75	fair	yes	Large diameter ivy stems have pulled loose bark: remove ASAP. Potential to blow down on Mansion grounds - windward.	Size
W	62	Pseudotsuga menziesii	est. 35	20	825	fair	yes	Massive ivy to 70' - remove ASAP! Potential to blow down on Mansion grounds - windward.	Size
W	63	Pseudotsuga menziesii	est. 24	20	60	fair	yes	Massive ivy to top - remove ASAP! Uprooted snag adjacent. Potential to blow down on Mansion grounds - windward.	
W	64	Acer macrophyllum	8.0	15	50	poor	yes	Snag @ 8' ht. Long cavity w/decay W side base to 6' up.	
W	65	Acer macrophyllum	8.5	16	40	poor	potential	Weak trunk & lean: allow to fail in place or make snag.	
W	66	Acer macrophyllum	14.5	30	60	poor	potential	Remove ivy. Multiple defects but no target: allow to fail in place.	
W	67	Thuja plicata	est. 26	24	60	good	potential	Remove ivy to 50' ASAP.	Size
W	68	Prunus emarginata	12.5	24	50	fair	no	Remove ivy to 18'.	
W	69	Pseudotsuga menziesii	est. 42	30	100	good	no	Ivy engulfing to 70': remove ASAP, also holly below.	Size
W	70	Pseudotsuga menziesii	est. 32	30	100	good	no	Ivy engulfing to 70': remove ASAP.	Size
W	71	Pseudotsuga menziesii	43.0	35	100	good	potential	Pitch flow W side @ 16' & suspect root decay on SW: resistograph, monitor. Remove iv to 16' priority.	Size
W	72	Acer macrophyllum	7, 8	25	30, 50	fair	yes	Remove end weight or snag S leader.	
W	73	Pseudotsuga menziesii	46.0		100	good	no	Remove ivy ASAP to 60': champion old growth fir.	Size

(continued)

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

KEY: GREEN Significant tree

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
W	74	Acer macrophyllum	18.0		50	fair	potential	Remove ivy to 12' ht. Aerial inspect codominant crotch @ 30'; grows NE over fence. Could fall close to garage. Consider making snag.	
W	75	Acer macrophyllum	8.5, est. 13.5		60	fair	potential	Remove huge amount of ivy to 16'; target fence & maple to N. DF snag rests in crotch @ 4' ht.	
W	76	Pseudotsuga menziesii	est. 35		90	good	no	Remove ivy to 60' ASAP & holly underneath.	Size
W	77	Pseudotsuga menziesii	31.5		100	fair	yes	Phaeolus schweinitzii conk S side @ 7' ht: resistograph ASAP. Could hit garage, trees. Potential habitat snag. Remove ivy to 16'.	Size
W	78	Pseudotsuga menziesii	16.0		80	fair	potential	Slight lean to E: monitor - fence potential target.	
W	79	Acer macrophyllum	10, 10		60	good	no	Priority remove ivy to 45' ht.	
W	80	Arbutus menziesii	7		30	excellent	no	Excellent specimen: keep ivy off. Stem canker free. Remove hangers.	Unique
W	81	Pseudotsuga menziesii	37		100	good	no	Remove ivy to 12' priority: very nice tee.	Size
W	82	Acer macrophyllum	15 @ 4' ht.		60	poor	potential	Reduce to habitat snag: could hit large DR, cherry, fence.	
W	83	Pseudotsuga menziesii	39		100	good	no	Beautiful tree on promontory, all native understory - protect!	Size
W	84	Pseudotsuga menziesii	9		50	fair	no	OK: multiple defects but no target. Immediately S of DF #85.	
W	85	Pseudotsuga menziesii	38		100	good	no	OK	Size
W	86	Acer macrophyllum	3 @ 9		50	fair	no	Multiple defects but limited target - rarely used social trail to E	
W	87	Acer macrophyllum	2 @ 4.5		45, 30	good	no	Remove suckers NE side, especially 3" stems ingrown to chainlink fence.	
W	88	Acer macrophyllum	4, 9		50	good	no	OK - trail immediately W	
W	89	Thuja plicata	12		50	good	no	OK	
W	90	Thuja plicata	9		45	good	no	OK	
W	91	Acer macrophyllum	9		50	fair	yes	Remove dead limbs & hanger.	

(continued)

Table of Trees - Native Edge

KEY: GREEN Significant tree
 Data not recorded

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
W	92	<i>Pseudotsuga menziesii</i>	38		100	fair	yes	<i>Paeolus schweinitzii</i> conk @ 8' @ branch removal bulge, also basal cavities with decay W side. Priority resistograph: could hit fence, DF to E.	Size
W	93	<i>Prunus emarginata</i>	2 @ 6, 14.5		30, 60	fair	no	Leave dead wood - no target risk. Smaller cherry to E leans 40 degrees. Trillium underneath.	
W	94	<i>Prunus emarginata</i>	est. 10		45	fair	no	Spaced 10' W of DF #111 across slope and 8', 12' N. Remove holly & ivy.	
W	95	<i>Prunus emarginata</i>	9.5		40	good	no	OK	
W	96	<i>Pseudotsuga menziesii</i>	26.0		75	good	no	OK	
W	97	<i>Acer macrophyllum</i>	8.0		40	good	no	Reduce end weight on side of lean in future when tall enough to hit service yard.	
W	98	<i>Pseudotsuga menziesii</i>	43.0		100	good	potential	Monitor due to size, age, proximity to fence.	Size
W	99	<i>Pseudotsuga menziesii</i>	42.5		100	good	no	Remove sapling growing out of E base. Monitor due to size, age, proximity to fence.	Size
W	100	<i>Acer macrophyllum</i>	9.0		35	good	no	Remove dead wood & stems, blackberry.	
W	101	<i>Pseudotsuga menziesii</i>	41.0		100	fair	yes	Extensive basal decay: resistograph root flares for soundness ASAP. Multiple potential targets: other large firs, service yard, shed. 12" snag DF immediately S in advanced stage of decomposition.	Size
W	102	<i>Acer macrophyllum</i>	6.0		30	fair	no	OK	
Y	103	<i>Calocedrus decurrens</i>	8 tree row @ 2 - 9	6 to 12	12 to 40	poor	no	Remove topped, unmaintained hedge: crowds cedars #104 & 105 above. Replace with mixed native understory vegetation.	
Y	104	<i>Thuja plicata</i>	8.5		30	fair	yes	Remove debris, dead wood & suppressed codominant stem to prevent future splitting out.	
Y	105	<i>Thuja plicata</i>	32.0		75	good	potential	Monitor stress: foliage sl. sparse & beetle attack. Remove debris.	Size

(continued)

KEY: GREEN Significant tree
 Data not recorded

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
Y	106	<i>Pseudotsuga menziesii</i>	33.0		100	fair	yes	Large <i>Phaeolous schweinitzii</i> conk NE base: confirm extent of decay ASAP before removing or habitat snagging. 2 DF stumps immediately NW & W possible prior disease losses.	Size
Y	107	<i>Pseudotsuga menziesii</i>	43.0		100	excellent	no	Great tree.	Size
Y	108	<i>Pseudotsuga menziesii</i>	12.5		70	fair	no	Suppressed, spindly tree. Excavate to expose SW flare., Move hoses & wood away from rootzone.	
W	109	<i>Acer macrophyllum</i>	2 @ 6.5, 9		45	good	no	Grows tight to N side of DF #113 (bark wraps).	
W	110	<i>Prunus emarginata</i>	2 @ 4, 6	25	50	poor	no	Declining: allow to die in place - no risk.	
W	111	<i>Pseudotsuga menziesii</i>	29.5	20	80	good	no	Excellent native understory - protect. Remove minor ivy.	
W	112	<i>Pseudotsuga menziesii</i>	28.5	20	80	good	no	Excellent native understory to W downslope. Priority ivy removal to protect.	
W	113	<i>Pseudotsuga menziesii</i>	50.0		100	good	potential	Excavate or resistograph root crown - nice specimen but basal decay & beetle damage.	Size
W	114	<i>Pseudotsuga menziesii</i>	36.0	25	100	fair	potential	Monitor root anchorage & soundness: white mycelial fan @ W base: vehicles & equipment potential targets. Remove blackberry NE side.	Size
W	115	<i>Acer macrophyllum</i>	3 @ 8, 10.5, 11.5	25	40	fair	yes	Remove 8" leader: minor risk. Remove invasives.	
W	116	<i>Pseudotsuga menziesii</i>	32.5	2	90	good	no	Remove invasives, ivy on trunk. Dead wood but no target.	Size
W	117	<i>Acer macrophyllum</i>	4, 9.5	18	35, 50	good	no	Remove ivy, holly. Future endweight reduction over yard. Smaller untagged tree 4' NE.	
W	118	<i>Pseudotsuga menziesii</i>	36.0	35	100	good	no	Remove ivy, holly. OK to leave multiple breakout stubs.	Size
W	119	<i>Arbutus menziesii</i>	14.5	30	35	good	no	Remove ivy & dead leader. Minimal target (edge of shed).	Unique

(continued)

Table of Trees - Native Edge

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

KEY: GREEN Significant tree

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
W	120	<i>Pseudotsuga menziesii</i>	34.0	30	90	fair	potential	Remove ivy, inspect root crown for decay once cleared. Monitor lean. Retain Indian plum.	Size
W	121	<i>Pseudotsuga menziesii</i>	36.0	30	100	excellent	no	Remove ivy.	Size
W	122	<i>Pseudotsuga menziesii</i>	20.5	25	80	good	no	Remove ivy. Monitor lean & broken top.	
W	123	<i>Prunus emarginata</i>	4.0	15	30	fair	no	Remove ivy & holly.	
W	124	<i>Prunus emarginata</i>	2 @ 6, 8	20	40	fair	no	Remove ivy to 10' ht. & blackberry, retain Indian plum. Defects but no target.	
W	125	<i>Pseudotsuga menziesii</i>	41.5	35	90	good	no	Remove ivy & blackberry, retain Indian plum.	Size
	126							Could not locate - unused tag?	
Y	127	<i>Pseudotsuga menziesii</i>	29.5		80	good	no	OK	
Y	128	<i>Pseudotsuga menziesii</i>	19.5		70	good	no	OK	
Y	129	<i>Pseudotsuga menziesii</i>	28.0		75	good	no	Install soil retention upslope to unbury root flare - potential decay.	
Y	130	<i>Thuja plicata</i>	17.5		50	excellent	no	Relocate firewood & dumped boughs away from rootzone.	
Y	131	<i>Pseudotsuga menziesii</i>	36.0		90	fair	yes	<i>Phaeolus schweinitzii</i> conk NW side @ 1' ht: Excavate ASAP to inspect for root decay: multiple targets (shed, fence, other trees). Potential habitat snag. Remove boughs piled beneath.	Size
Y	132	<i>Pseudotsuga menziesii</i>	34.0		80	fair	potential	Resistograph @ bulges	Size
Y	133	<i>Pseudotsuga menziesii</i>	27.0		75	fair	potential	Monitor lean to N & pitch flow - suspect decay.	
Y	134	<i>Thuja plicata</i>	18		50	good	no	Basal decay below long trunk wound. Crown clean for appearance from parking lot - prominent.	
Y	135	<i>Pseudotsuga menziesii</i>	31		80	good	no	Remove "private" sign from trunk.	Size
NW	136	<i>Acer macrophyllum</i>	5 @ 4 - 33	40	50	fair	no	Stump sprouts w/ major basal decay: anticipate failure but no target.	Size
NW	137	<i>Pseudotsuga menziesii</i>	43.5	58	70	good	potential	Priority resistograph @ bulge: target gas enclosure & pipes 8' to E. Monitor decay.	Size
NW	138	<i>Thuja plicata</i>	33.0	25	55	fair	no	Thinning, sapsuckers suggest decline. Retain as snag if dies.	Size

(continued)

KEY: GREEN Significant tree
 Data not recorded

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
NW	139	Acer macrophyllum	6, 28	4	55	fair	no	Reduce height to minimize damage to cedars below if fails.	
NW	140	Thuja plicata	17.0	20	50	good	no	Remove rubble. May split apart when larger: tight codom stem @ 20' ht.	Size
NW	141	Acer macrophyllum	7.5, 16	25	50	fair	no	Remove ivy. Decline likely but no target: wounds on S base of lg. stem, SW & W on sm. trunk @ 4-7' ht.	
NW	142	Acer macrophyllum	4 @ 3-7, 12 @ 1-2		50	fair	no	Remove ivy to 8'; remove small stems (2"-)	
NW	143	Thuja plicata	24.0	40	70	good	no	Remove ivy, minor rubble	Size
NW	144	Pseudotsuga menziesii	26.5		80	good	no	Remove rubble. Nice native undersory.	
NW	145	Prunus emarginata	11, 12		60	fair	no	Remove rubble, reduce S leader to 16' to reduce damage to DF's to N & S if fails. Remove holly beneath. Other cherries nearby 4, 5" diameter.	
NW	146	Prunus species	3 ms trees @ 1 - 10		20	fair	no	Keep ivy & blackberries off.	
NW	147	Pseudotsuga menziesii	36.0	45	90	fair	no	Suspect butt & trunk decay but no target (W base no root flare, holes & decay). Remove ivy.	Size
NW	148	Acer macrophyllum	8 @ 6 - 13	50	40	poor	no	Remove fruiting ivy asap to reduce spread by birds. Allow to fall apart downslope. Note: protect 8-10 juvenile DF, cedar & hemlock planted to N, S & W.	
NW	149	Pseudotsuga menziesii	est. 45	40	100	excellent	no	Remove fruiting ivy ASAP! Outstanding tree severely infested.	Size
N	150	Acer macrophyllum	5, 23	45	75	fair	no	Multiple defects but will fall down steep slope to N if fails, or into another maple.	Size
N	151	Acer macrophyllum	14, 15.5	60	60	good	no	Remove blackberry, plant natives upslope to stabilize vs. erosion.	
N	152	Acer macrophyllum	6 @ 2 - 11.5	20	60	fair	no	Remove smallest stem, N side - poorly attached. Main stem may fall but parking lot not a target.	

(continued)

Table of Trees - Native Edge

KEY: GREEN Significant tree
 Data not recorded

NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
N	153	Acer macrophyllum	8 @ 2 - 17.5	35	60	good	no	Remove 2 smallest stems, scatter debris. Remove blackberry.	
N	154	Acer macrophyllum	13.5	25	50	good	yes	Reduce end weight S side over parking lot. Remove signs & construction debris pile S side. Remove blackberry & suckers.	
N	155	Acer macrophyllum	10.5, 12	25	60	fair	yes	Reduce both leaders to safe snag height (15' approx.): target parking lot & tree #154.	
N	156	Acer macrophyllum	6 @ 4.5 - 9	25	55	good	no	Remove, scatter dead stems as dead woody debris.	
N	157	Acer macrophyllum	10 @ 2 - 6	15	40	fair	no	Potential failure but no target.	
N	158	Acer macrophyllum	20.0	20	60	good	no	Future breakout possible @ tight crotches but will fall downslope. Remove dead suckers SE.	Size
N	159	Acer macrophyllum	7, 16	50	50	fair	yes	Reduce end weight & height to prevent damage to parking lot if tree fails @ base.	
N	160	Acer macrophyllum	4 @ 6 - 20	60	60	good	yes	Reduce end weight on E leader branches to reduce risk to parking lot. Leave 6" stem for snag (will fall down bluff, away from parking).	
N	161	Acer macrophyllum	10 @ 2 - 12	60	50	fair	no	Remove poorly placed small stems & minor ivy.	
N	162	Prunus emarginata	2 @ 11.5	25	50	fair	no	Remove dead scaffold & 2 dead trees @ W side (lean to NW): potential parking lot target. Clear ivy beneath, monitor decline, snag to safe height when top dies.	
N	163	Acer macrophyllum	8, 10	20	50	good	no	Priority remove ivy to 30' & clear base. Removal of DF hedge will release canopy to light.	
N	164	Thuja plicata 'Zebrina'	5, 9	12	20	fair	potential	Structural prune & crown clean - remove least well-attached. Could raise canopy for visibility under.	Rare cultivar
N	165	Pseudotsuga menziesii	15 trees @ 5 - 18	15	45	poor	yes	Remove whole row: all damaged & risk to parking lot if fail. Retain 3-5 as snags, scatter dead woody debris (DWD) on slope. Remove ivy.	

(continued)

KEY: **GREEN** Significant tree
 NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
N	166	Chamaecyparis pisifera	5, 5.5	10	18	poor	no	Remove to favor #167 adjacent to S: bad structure, very suppressed.	
N	167	Chamaecyparis pisifera	11.0	1	20	fair	no	Remove low W scaffold, end weight, S codominant stem @ 8' ht. Crown clean, remove ivy.	
N	168	Thujaopsis dolabrata	8.5	16	30	fair	no	Structural prune to reduce candelabras. Crown clean, reduce end weight, reduce # stems above topping point. Keep ivy away.	Rare
N	169	Chamaecyparis pisifera filifera	12.0	12	35	fair	yes	Structural prune & raise canopy for yew #171 clearance. Remove ivy, monitor codominant crotch for split.	
N	170	Thujaopsis dolabrata	12+ @ 1.5 - 4	10	20	poor	no	Remove: too crowded with surrounding conifers (4 trees within 8').	
N	171	Taxus baccata	5 @ 5 - 8	32	15	good	no	Remove low scaffolds / stems and crossing branches; reduce branch end weight. Prune DF above for clearance, to allow more vertical growth. Remove ivy. NOTE: 2 untagged vine maples planted just W 8 & 12' tall. Trim conifers to provide clearance for canopies. Major basal stem wound on 12' tree.	
NE	172	Acer macrophyllum	10 @ 5 - 9	20	45	good	potential	Clear ivy away from base to examine attachments. Remove any poorly attached or dead stems.	
NE	173	Asimina triloba (Pawpaw)	4 trees @ 4.5 - 8	16	25	fair	yes	Relabeled: was #8-14 in 2000-01 inventory. Remove alder, ivy, E paw paw (largest, decayed, closest to parking lot). Select 3 replacement stems, remove rest of suckers, herbicide cuts while fresh.	Rare
NE	174	Pseudotsuga menziesii	27 in row @ 5 - 12	na	45	fair	yes	Remove entire row - overgrown hedge. Replant with native forest edge trees & understory.	
NE	175	Acer macrophyllum	8+ @ 2 - 10	50	60	good	no	Remove ivy to inspect attachments. Remove stems if poorly attached/decayed, cull smallest stems to base. Parking lot potential target.	

(continued)

Table of Trees - Native Edge

KEY: **GREEN** Significant tree
 NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
NE	176	Acer macrophyllum	2	30	50	fair	no	Remove ivy, cull minor stems. Large clump downslope to W also.	
NE	177	Acer macrophyllum	3 @ 5 - 7.5	16	45	fair	no	Remove ivy & low dead stem. Larger, similar clump immediately below.	
NE	178	Acer macrophyllum	3 @ 3 - 6	20	60	good	no	Remove 2 smaller stems & ivy.	
NE	179	Acer macrophyllum	11 @ 2 - 6	50	60	good	no	Remove smaller stems & ivy.	
NE	180	Acer macrophyllum	5 @ 2 - 8	12	50	fair	no	Remove ivy.	
NE	181	Alnus rubra	12 trees @ 4 - 12	15	40-70	fair	yes	Remove 3-4 smallest, suppressed trees. 2 largest ok, trees below present risk, especially E tree w/bad top	
NE	182	Sequoia sempervirens	7.0	15	22	good	potential	Remove codominant leader ASAP. Remove ivy.	
NE	183	Sequoia sempervirens	6.5	18	28	excellent	no	Remove ivy ASAP from canopy; crown clean duplicate limbs, small split.	
NE	184	Acer macrophyllum	3 @ 1 - 3	15	30	fair	potential	Clear away ivy to inspect base. Remove if stems are poorly attached.	
NE	185	Sequoia sempervirens	3.0	8	15	good	potential	Remove E leader ASAP - future risk tree if retained (bench & trail targets). Remove adjacent post & rebar.	
NE	186	Acer macrophyllum	3 @ 1 - 4.5	16	20	good	no	Remove 2 small stems, keep larger vertical leader only. Remove ivy.	
NE	187	Acer macrophyllum	2	15	25	fair	yes	2 clumps: remove damaged W & center stems - failure risk	
NE	188	Acer macrophyllum	8.0	16	40	good	no	Remove to favor conifer to W	
NE	189	Abies grandis	est. 27.0	35	50	fair	yes	Remove ivy, dead wood, suppressed secondary leader N side @ 50': potential to fall on trail. Aerial inspect upper canopy where topped for decay, leader attachment.	Unique, Size
NE	190	Sequoia sempervirens	31.0	30	24	good	no	Remove dead wood & codominant stem; keep ivy off. Remove some maples to W to give more light.	Size

(continued)

KEY: **GREEN** Significant tree
 NOTE: Sector Y cover conifer grove @ SE corner of west service yard (Y), slightly east of Sector W (west bluff edge).

Data not recorded

Sector	Tree #	Species	Diam 2008	Spread 2008	Est. Ht. 2008	Cond 2008	Risk 2008	Recommended Action(s)	Significance
NE	191	Alnus rubra	9.5, 11.5	40	60	fair	no	Remove ivy; semi-corrected lean.	
NE	192	Alnus rubra	12.5	40	60	good	yes	Remove ivy & dead stems below. Semi-corrected lean, could fall toward parking lot if stem splits.	
NE	193	Acer macrophyllum	6 @ 1 - 6	16	75	fair	no	Remove small stems, retain 3 best placed / largest	
NE	194	Acer macrophyllum	5 @ 7 - 14	40	60	fair	no	Repeat ivy removal; monitor for stem separation	
NE	195	Acer macrophyllum	10 @ 1 - 5	16	50	poor	no	Remove; treat cut stump with herbicide to prevent resprouting.	
NE	196	Acer macrophyllum	4+ @ 1 - 4	8	40	fair	potential	Remove: ivy, poor stem attachments, crowds DF above	
NE	197	Alnus rubra	10.0	20	60	fair	no	Ivy off, anticipate future codom stem failure but minimal target	
NE	198	Pseudotsuga menziesii	26.0	25	60	fair	yes	Ivy off, crown clean, monitor tight codom stems for split - consider bolting together	
NE	199	Pseudotsuga menziesii	36.0	45	30	fair	yes	Ivy off, crown clean, monitor tight codom stems for split - consider bolting together	Size
NE	200	Sequoia sempervirens	37.0	24	65	fair	yes	Ivy off, monitor for future codom stem split - potential removal to open view from below	Size

Introduction

A discussion of exterior lighting for the West Capitol Campus must balance an understanding of the historic context of the landscape with a lighting scheme that has been implemented and has evolved over time. Changes in technology and lighting practice over time would likely result in different decisions being made if the lighting design were approached anew today. The challenge lies in attempting to divine what the original lighting design intent was, and whether that original intent was influenced by the technology limitations of the time. Very often, there is little, if any, documentation on design intent for lighting, in large part because the practice of lighting design as we know it today did not come about until the 1960s.

Even without documentation, it is possible to draw on the overall design parameters, and in this case, the Olmsted design principles, to fashion a lighting design philosophy that properly reveals the elements of the West Capitol Campus into a cohesive composition. It is important in considering all exterior lighting to acknowledge that spaces are experienced differently during day and night, as patterns of light and dark present during the day cannot, and should not, be replicated at night.

In addition to the challenges posed by creating a nighttime landscape composition that enhances the overall hierarchy of spaces on a site, albeit in a different way than daylight would, other interpretations must be made. To what extent should future lighting changes incorporate new technologies? How should current lighting practice, whether in the aesthetic realm or in terms of safety and security, be addressed in a historically sensitive way? How should new lighting elements be changed or added in a cohesive way?

The best guide in this circumstance is to follow the big picture, and in the case of the West Capitol Campus, it is one of rich spatial experience, of layered views, and unified composition. Keeping these principles in mind can help clarify how lighting can improve the experience without stepping outside the realm of historical context.

The description of lighting in this plan begins with the landscape, but, by necessity, also addresses buildings and other site elements to take the overall nighttime composition of the Campus into account.

Lighting Considerations

Lighting Goals

Although this is not a stand-alone Lighting Master Plan for the West Capitol Campus, there are certain goals that should be met by the Campus lighting. These include:

Reinforce the overall design

In the case of the West Capitol Campus, this encompasses a variety of elements. Lighting is not a stand-alone element, it serves functional and aesthetic purposes in concert with other design disciplines, including architecture and landscape architecture. Users of the Campus experience it from a variety of viewpoints as they move through spaces. It is important that lighting reinforce the sense of space and visual hierarchies that are already established, and not detract from them.

Historic preservation

Lighting for the Campus should honor and enhance the original design, without adhering slavishly to the confines of historic technology limitations. New technology should be carefully applied to enhance the historic fabric, not detract from it. As lighting for new buildings and monuments it introduced into the landscape, it should do so in a way that does not copy historic styles, but instead takes the totality of the Campus into context.

Safety and security

Although it is not within the scope of this document

to determine whether the current lighting scheme meets current recommended practices for light levels and uniformity, a determination on how current standards should be applied to the Campus should be made in the future. Areas requiring attention should be identified. Safety and security concerns are addressed in this document in discussions of lighting at pedestrian and vehicle circulation areas and the Governor's Mansion.

Operation and maintenance

Utilizing improved lighting technology can improve operations by decreasing energy costs and easing maintenance. As new lighting is added or existing lighting is improved, it should address operation and maintenance concerns.

Fixture standards

Fixture typologies should be defined to clarify what is historic and what is new, and a parti for future lighting at opportunity sites should be developed.

Sustainability

Relating to exterior lighting, sustainability can be addressed through energy efficiency, via the selection of the right lighting equipment, and light trespass, by reducing light directed off the campus site. This needs to be balanced with the special requirements of the West Capitol Campus and its standing as a special place, which drives certain design decisions outside of the norm – for example, lighting of civic buildings and the Legislative Building, in particular.

Lighting Composition and Hierarchy

The existing lighting composition generally complements the Olmsted Brothers' design intent. The predominant nighttime element is the Legislative Building Dome. Aside from some other building lighting at the Temple of Justice, all other lighting is experienced on a pedestrian scale, ensuring that the Dome maintains prominence from nearly all viewpoints on campus.

Lighting reinforces the strong east-west axis created by the Tivoli Fountain, Winged Victory Monument, and the Flag Circle, although the hierarchical position of these elements is quite different than during the day, owing to luminous differences that put the fountain in the most prominent nighttime position. However, the strength of this axis is still experienced by the viewer, although in a different way.

The open expanse of the Greensward is maintained at night by placement of light poles at the perimeter walkways only. Leaving the central walkway unlit allows the major elements of the east-west axis to hold their prominence and ensures that the open space at the center of the Greensward is not interrupted during the day by lighting structures.

Areas to the west of the flag circle seem to be less about the spatial experience and more purely functional. As landscape elements in this area are developed, the lighting should continue to reinforce the east-west axis.

Other significant lighting axes are developed at the diagonal drives and between the Sundial Circle and the Legislative Building. In the case of the diagonal

drives, these are appropriate and correspond with view corridors intended in the Olmsted design. In the case of the pedestrian walkway between the Sundial Circle and the Legislative Building, this is a new addition, and one that detracts from the overall lighting composition of this area by placing prominence on bollard luminaires and detracting from the Legislative Building.

Lighting at the West Capitol Campus should maintain the hierarchy of the prominence of the Legislative Building Dome and the strong east-west axis. Maintaining this hierarchy requires that special attention is given to elements that should recede at night. In the case of the Greensward, for example, a large-scale landscape lighting program would define the planting edges that are visible during the day; however, it would need to be handled carefully so as not to detract from the east-west axis and the prominence of the Dome in the distance. Instead, this area can be treated with lighting accents of selected trees or planting areas to create a different experience at night – one that is already defined differently by the more marked definition of the perimeter walking paths with a connected “necklace” of visible light from lamp posts.

Providing an intermediate viewpoint by lighting plant materials between the immediate area – the walkway – and the distant – the Dome – could serve to enhance the feeling of security, as it would mitigate the perception of a large, dark expanse between the two. Care must be taken, however, to do this subtly, so that these new elements do not detract from existing ones.

Lighting Considerations

Existing Lighting Conditions

References to existing conditions are based on existing site photographs and observations made during a site survey, which was conducted on January 15, 2009. The campus lighting was observed during both daytime and nighttime conditions.

Light sources

The predominant light source on the West Campus is currently high-pressure sodium (HPS). HPS is distinctive for its amber color. While it is an efficacious light source in terms of light output per watt of energy consumed, it is a very poor light source in terms of color rendering capability. HPS light sources are currently used in the carriage lanterns in circulation zones, bollards between the Sundial Circle and the

south entrance of the Legislative Building, and for floodlighting at the Legislative Building, the Temple of Justice, and the Winged Victory Monument.

Although there are a number of other light sources in use in more limited applications, including incandescent, fluorescent, and metal halide (MH), the main differentiator is that they provide “whiter” light than the HPS. These whiter sources are generally used at newer memorial sites, at decorative fixtures near building entries, and for architectural lighting at the Legislative Building and Temple of Justice entry porticos.



Figure 11.1 Lighting at porticos of Temple of Justice (source:Dark|Light Consulting, LLC, 2009)

Lighting conditions and fixture types

The existing campus lighting condition is generally well-organized, if sometimes under-realized. It is not clear whether a master idea for the lighting of the Campus was defined or implemented. Given that, the overall lighting structure of the Campus appears orderly.

Buildings

Most buildings on campus are not lit from an architectural point of view. Obvious exceptions are the Legislative Building and the Temple of Justice.

The predominant illuminated element on the Campus is the Legislative Building, mostly at the dome structure. Because of this, the dome is visible from a great distance. This is certainly in line with the overall hierarchy of the campus.

The Legislative Building Dome is currently illuminated with an array of HPS floodlights. The Dome structure is not well illuminated, instead, most light falls on the vertical drum structure below. This area is further highlighted by lighting behind the columns supporting the dome – unfortunately, the light source itself is visible from some viewing angles. A lantern glows in the cupola, whether the light source is intended to be visible is not known.

Porticos at the Legislative Building and the Temple of Justice are lit in silhouette via lamps at the ceiling. The north side of the Temple of Justice is also illuminated with floodlights.

The lighting at the north side of the Temple of Justice may not be a purposeful application of architectural lighting, rather, it appears that the building is illuminated by spill from floodlights mounted on the building to illuminate the parking areas below.

Parts of other building surfaces on the West Campus are illuminated by “accidental” lighting as a result of

spill light decorative fixtures adjacent to the buildings.

Decorative fixtures

With the exception of circulation zones, decorative light fixtures on the West Campus are located at building entries or directly adjacent to buildings. Most of these share the consistent fixture typology of the luminous globe, mounted on a variety of post and armature types. Notable exceptions include wall-mounted Gothic style lanterns on the Legislative Building and the Temple of Justice.

Circulation

Illuminated pedestrian and vehicle circulation areas are lit with carriage-lantern style post-top luminaires with HPS lamping.



Figure 11.2 Carriage lantern style pole-mounted fixture (source: Dark|Light Consulting, LLC, 2009)

Lighting Considerations

Certain pedestrian circulation areas are not illuminated, most notably within the Flag Circle and sidewalks on the central axis of the Civic Green. Walkways on the perimeter of the Greensward are illuminated.

During the survey, it was noted that holiday string lights appear to be powered by outlets in enclosures attached to pole bases with duct or packing tape.

Capitol Way

While not entirely in the scope of this master plan, is addressed here because it defines the eastern boundary of this Plan's scope of work and because it is an important link between the east and west campuses. It is currently lit in a style typical of high-volume arterial roadways, with "cobra-head" style fixtures on long extension arms over the road.



Figure 11.3 *Electrical outlet attached to light pole base as observed during site survey (source: Dark|Light Consulting, LLC, 2009)*

Parking

Parking is located along many streets on campus, as well as in the Flag Circle. A parking lot at the northwest quadrant of the West Campus is illuminated with "typical" parking lot lighting – full cutoff pole-mounted fixtures, with good uniformity. Other smaller parking areas are lit by the carriage-lantern style post-top fixture or by roadway-style "cobrahead" fixtures.

Destinations/nodes

- **Flag Circle**
Flag poles are illuminated via metal halide floodlights mounted in four grated in-ground vaults. Because of the limited fixture quantities and their locations, not all flags are illuminated.
- **Winged Victory Monument**
This bronze monument is illuminated with four HPS floodlights located in grated in-ground vaults around the base of the monument. At the time of the survey, one of the fixtures was not operational.
- **Medal of Honor Obelisk**
Four in-grade uplights are located at the base of the obelisk, but at the time of the survey, none were operational. The appearance of the fixtures indicates they have not been functional for some time.
- **Tivoli Fountain**
At the time of the survey, the fountain had been drained, however, several submersible LED fixtures were visible in the fountain pool. It was noted by State staff that the fixtures are capable of color-changing.
- **Sunken garden**
The sunken garden itself is not illuminated, but each entry stair (four in total) is marked with a single carriage-lantern style post-top fixture.

- **World War II Memorial**
 The brightest nighttime objects at the WWII Memorial are the U.S. and Washington state flags, which are lit to much higher levels than those located at the flag circle. A small number of low-voltage landscape-style lanterns are located within the plantings. The five engraved metal monuments are lit with low-voltage incandescent in-grade uplights, although these do not provide legibility of the text for viewers.

- **Law Enforcement Memorial**
 The Law Enforcement Memorial is brightly lit, with both illuminated surfaces and fixture brightness visible from a distance. Using metal halide, incandescent, and fluorescent sources, lighting at this memorial is a contrast to the amber-toned light of surrounding areas. This area serves as the head of the path down the Heather Slope, which is also illuminated with whiter light sources. In this case, the fixtures themselves distribute most light at visible angles, instead of lighting the walking surface.

- **Governor’s Mansion**
 The Governor’s Mansion itself does not appear to be lit, although at the time of the survey, holiday lighting was present along the roofline. The predominant feature of the Governor’s Mansion at night is the glare of floodlights at the guard station and on the front lawn, presumably for security purposes. However, these fixtures, because of their aiming angles, create disabling glare for viewers, which would include security staff in addition to the general public. These floodlights are the brightest visible source noted on the entire campus.



Figure 11.4 *Bollards at Sundial Circle (source: Dark|Light Consulting, LLC, 2009)*

- **Sundial Circle**
 The sundial circle itself is lit by carriage-lantern post-top fixtures located on 15th Avenue to the south, along with a substantial amount of spill light from HPS bollards on the walkway between the circle and the Legislative Building. These bollards are extremely bright, to the point of creating glare, and are the predominant nighttime element in this space because of their brightness and their sheer quantity, detracting from both the Sundial Circle and the Legislative Building.

Proposed Lighting Strategies

Recommendations for lighting improvements are made with the understanding that the scope of this document is mainly focused on the landscape design as envisioned by the Olmsted Brothers. However, the West Campus, as a significant outdoor space, is used and viewed a wide variety of people after dark. Because of this, recommendations are made with the totality of the West Campus, viewed from near and far, in mind. Lighting improvements will most certainly be implemented over a period of time and should be phased to maintain a cohesive campus look during the transition period.

Historical context

Color of light

The wide use of HPS as the primary light source on Campus is problematic from both a historic and functional perspective. In circulation areas, it provides extremely limited color rendering capabilities, which may be of concern from a safety and security standpoint. There is also research indicating that a “whiter” (i.e., richer in blue wavelength) light source may provide a higher perceived light level than an equally-measured (with a light meter) amount of HPS. In the floodlighting application, the use of HPS alters the perception of illuminated surfaces because of the amber color cast. For example, the Legislative Building dome, which appears white during the day, does not appear white at night. Similarly, the bronze of the Winged Victory monument is difficult to discern at night because of the limited color rendering of the HPS light source.

In the context of the adhering to the Olmsted Brothers’ design intent, it is assumed that white light sources were intended to be used at the Campus, as HPS was not available until about 1960. Historic documentation indicates that the original pole-mounted lighting was lamped with incandescent sources. What is clear is

that the current amber light color produced by HPS lamps was not intended by the Olmsted Brothers.

As the HPS lighting is clearly not original, it was likely installed in a move toward energy-efficiency. However, the current availability of energy-efficient and long-life white sources makes the original intent of white light on Campus achievable again. In addition to providing much better color rendering, it also provides a more natural and pleasing light quality that not only makes surfaces and people look better, but makes inhabitants of the outdoor spaces feel more comfortable.

As HPS lighting is replaced or upgraded, it should be replaced with whiter light sources. Care should be taken to phase this work so that the nighttime aesthetic of the campus does not suffer.

Fixture types

The current fixture typology draws clear distinctions between differing places and functions. The design language of round globe fixtures at building entries is a good example of this. Although there are different configurations and ornamentation patterns, this provides consistency throughout the Campus without requiring adherence to a rigid standard of design.

In other areas, the fixture design seems to be incongruent with patterns established elsewhere. The carriage lantern fixtures used for circulation areas are an example of this. They sharply depart from the globe typology used nearly everywhere else on the campus. Although there are historic photos showing a similar carriage-lantern type fixture, there is some design documentation to indicate that these were not the fixture type intended by the Olmsted Brothers for this application, and they may have been installed due to cost or availability issues.

Historic design documentation shows that an “acorn” type fixture with a verdigris pole finish may have been

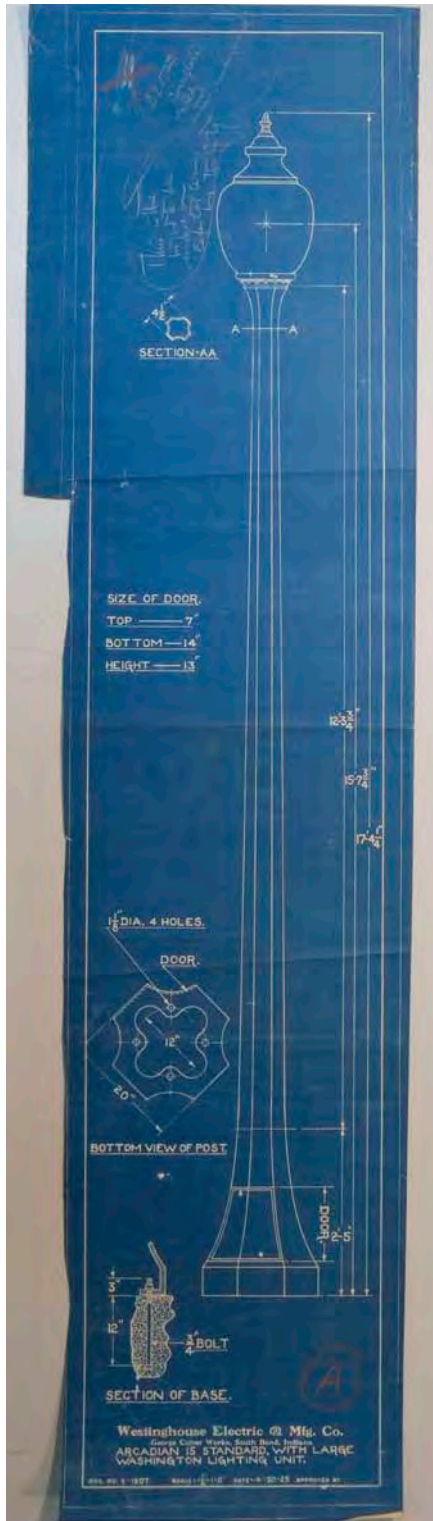


Figure 11.5 Historic documentation showing “acorn”-style pole-mounted lighting fixture (source: 5350_53A_TU, Frederick Law Olmsted National Historic Site, National Park Service)

intended for street lighting and pedestrian pathways. This would more closely align with the round language of the globe fixtures, as opposed to being the sole square fixture on campus, and strike a more coherent tone in keeping with the stature of the Campus architecture, instead of offering a discordant note.

Whether intended as the original design or not, the carriage lantern form was originally installed, but it is unlikely that the existing fixtures are original. First, the original fixtures would not be expected to have survived in the approximately 80 years since their installation. Second, comparing current and historic photos of the fixtures shows differences in fixture scale and detailing.

In any case, the replicas themselves have now become a part of the history of the campus.



Figure 11.6 Comparison of historic and current carriage lantern lighting poles [source: Frederick Law Olmsted National Historic Site, National Park Service (historic photo), Dark|Light Consulting, LLC (2009 photo)]

Components of campus lighting composition

Overall visual hierarchy

The luminous composition at night should provide an interesting visual experience that directs views to elements considered important within the overall context of the Campus. The human visual system generally directs attention to the brightest objects in the field of view. Because of this, care must be taken

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to ensure that the brightest objects are indeed the most important, and that less important elements do not inadvertently gain precedence.

This is somewhat challenging in an environment that calls for subtlety and elegance, especially when luminaires contain visible lighting elements, as those at the pedestrian walkways and streets do. These fixtures become the brightest objects in the field of view. Fortunately in this case, the sheer mass of the Legislative Building Dome restores this most important element to the visual prominence it deserves.

As future lighting projects are planned, the emphasis should be on the lighting of surfaces and materials, not on fixtures with illuminated elements visible to campus users. Fixtures with visible lighting elements should be actively discouraged, unless they extend the existing pedestrian pathway lighting scheme or continue the globe typology for building entries. Where they are used, they should provide a soft glow only, and do not overpower the viewer by being too bright.

View corridors

The experience of a Campus visitor will constantly



Figure 11.7 *Post-top fixture between Prisoner of War Monument and Winged Victory Monument (source: Dark|Light Consulting, LLC, 2009)*

change as they move through the landscape; however, certain view corridors should be taken into account. After dark, the character of views on campus changes, as the Legislative Building Dome becomes an even more prominent element as it glows against the night sky. Especially from the Greensward, the Dome is the predominant visual element. This is as it should be, but the Dome should not stand alone. Instead, it should be part of a composition of other illuminated elements that lead the viewer to understand the spatial context in which the Legislative Building resides.

The strong east-west axis from the Tivoli fountain through the flag circle consists of a sequence of elements of varying prominence. The fountain itself, when illuminated, is the most substantial ground-level luminous element on this axis, and serves as a solid foreground for this view corridor.

The next major illuminated element on this axis is the Winged Victory Monument. While it should certainly not be as bright as the Legislative Building Dome or the fountain, the overall light level on the monument should be increased to enhance its luminous presence in the landscape. While this is complicated by the dark finish of the bronze, a whiter light source, coupled with a multi-layered approach to lighting – providing a subtle ambient approach with highlights of selected elements – would improve the appearance of the monument.

There is one location where unfortunate fixture placement interrupts this view corridor, both during daytime and at night. Between the Prisoner of War Monument and the Winged Victory Monument, there is a post-top fixture. This fixture should be relocated if possible to correct this condition.

One of the most dramatic nighttime view corridors on the campus is looking southwest from the east end of the north diagonal drive. From this viewpoint, a string

of coach lanterns guides the eye down the diagonal to the Winged Victory Monument while the Legislative Building Dome rises in the background.

- **Buildings**

In this discussion, the term “architectural lighting” is used to mean illumination of building surfaces, materials, and forms. “Decorative lighting” relates to luminous fixtures which are meant to be viewed as objects unto themselves, not as instruments to illuminate architecture, although some adjacent surfaces may be lit by these fixtures.

Architectural lighting

As part of an overall master plan for the campus, consideration should be given to relighting of the Legislative Building and the Temple of Justice in the future. Although these buildings are the only ones subjected to any architectural lighting, the lighting effect is not as strong as the architecture of these important structures. A more complete lighting scheme for these anchor buildings would render them dramatically and reinforce them as the symbols of democracy and justice that they are. In both cases, the HPS light source improperly renders building materials.

The Legislative Building should be relit with an eye towards a layered lighting approach that provides a base level of illumination but highlights selected elements to render the detail and form of the building and the dome structure.

Both the Legislative Building and the Temple of Justice would benefit from additional lighting treatment at ground level. The current silhouetting of the columns is effective in communicating their forms but it also has the



Figure 11.8 Craftsman-style light fixture (source: Dark|Light Consulting, LLC, 2009)

effect of rendering the outermost edifice dark, which does not communicate the message of openness and public access that it should.

To offset this, additional layers of light could be applied from ground level. A gentle wash on all building surfaces would still allow the forms on the columns to be visible but would reduce the contrast that makes them appear foreboding. An additional brighter layer along the plinth would visually ground the buildings and reinforce the multi-layered architecture.

Decorative fixtures

The current pattern of globe-shaped decorative fixtures differentiated by

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configuration and ornamentation is one that should continue to be used where decorative fixtures need to be added in the future. There are exceptions to this, especially where wall-mounted lanterns are attached to buildings. In these cases, Gothic fixture styles are found and are appropriate. One instance of a Craftsman-style fixture (believed to be a modern reproduction) was noted during the survey, care should be taken to ensure that as decorative fixtures need to be replaced, that forms and materials for new fixtures adhere as closely as possible to the original fixture.

▪ Destinations

Flag Circle

The Flag Circle is currently a dark zone between the Legislative Building and the Temple of Justice. The current lighting vault locations could be utilized to better illuminate the flags. This may be able to be done without modifying the vaults and utilizing fixtures with more directed beams to highlight the flags.

Future hardscape improvements should incorporate lighting to create a comfortably lit space between these two premier buildings and improve the luminous balance of these interconnected spaces.

Trees

Selected trees and other landscape plantings should be lit. These should be selected based on locations that will bring luminous balance to the nighttime composition of the campus. Currently, the nighttime visual composition typically consists of foreground elements (i.e., memorials or post-top lighting) and background elements (i.e., the Legislative Building dome) with few illuminated elements in between. Lighting trees or other landscape

materials at the edges of the Greensward would visually define the boundaries of the Greensward at night, and provide a mid-ground element to provide visual depth to Campus users as they progress through outdoor spaces throughout the Campus.

It is recommended that any tree or landscape lighting be installed with newly planted trees or shrubs for ease of installation and to avoid root damage to existing historic trees.

From a maintenance standpoint, placing fixtures in grated ground vaults would bring better results than an in-grade upright fixture. If existing trees are selected for illumination, the determination should be made whether light vaults could be used or whether in-grade luminaires would be necessary based upon the root structure and condition of each tree. Where in-grade luminaires are used, they should be the cool-temperature type to reduce risk of injury due to high lens surface temperatures.

Winged Victory monument

The existing light vault locations should be utilized in relighting of the monument. Relighting should use metal halide sources. A new lighting scheme would offer the opportunity to illuminate this campus focal point in a layered fashion – with a base layer of ambient light as well as stronger highlights for selected elements of the sculpture.

Obelisk

The non-functional in-grade fixtures should be replaced with newer in-grade fixtures to softly light the obelisk. These fixtures should provide cool-temperature operation to reduce the risk of injury resulting from contact with hot fixtures.

Tivoli Fountain

The fountain lighting is fairly new and operating with LED technology. The lighting should remain in place, however, it should be operated so that the light color is white at all times, with exceptions for very limited holiday or celebration periods, if at all.

This would acknowledge the connection between the original Tivoli fountain and uphold the subdued elegance of the Capitol Grounds and the Capitol itself. Colored lighting, especially in such a large scale and traditional setting, would detract from the overall environment of the West Campus.

WWII Memorial

Lighting at the WWII Memorial should be rebalanced so that the memorial itself is illuminated softly but in a way that provides legibility, highlights sculptural elements, and provides ease of maintenance. The flags are currently the brightest objects on the Greensward, which detracts from the strong east-west axis connecting the fountain to the Winged Victory Monument. The fixtures should be mechanically dimmed or relamped/ rebalasted to reduce light levels while still properly highlighting the flags.

Sunken garden

Because the layout of the planting beds and the plantings themselves changes over time, a landscape lighting scheme that focuses attention on plant materials and structure is not practical in this location. However, providing symmetry to the four entrances could be achieved by adding a second post-top luminaire at each location so that the fixtures flank the stairs. This would reinforce the symmetry and formality of the space, and provide additional light within the garden itself.

Law Enforcement Memorial

Because the memorial is new and the lighting appears to be in good condition, no recommendations for change are made. However, the lighting for the Law Enforcement Memorial could be considered to be overly bright in the context of the Campus as a whole. Lighting for future memorials should more carefully take the Campus context into account or, over time, memorial lighting may become an overpowering nighttime presence.

Governor's Mansion

Lighting at the Governor's Mansion should be rebalanced to correspond with the dignity of this position while allowing for the needs of security staff. A combined landscape and building lighting scheme would provide the proper balance of light levels and security. By lighting plantings at the perimeter of the lawn and by softly lighting the Mansion itself, security needs would be met, as an intruder would be visible to security staff as a silhouette against the illuminated background. A more architecturally sensitive lighting scheme would also eliminate the overly harsh lighting aesthetic currently in place.

Sundial Circle

The Sundial Circle currently suffers from a lack of focus on the circle itself, as the brightest objects in the field of view include the interior of the library, carriage-lantern fixtures on 15th Avenue, and, most notably, the high concentration of light bollards to the north leading to the Legislative Building. The quantity of bollards should be reduced, and if possible, the fixture type should be changed to one that shields direct view of the light source.

The circle itself could benefit from low-level lighting integrated into planter walls around

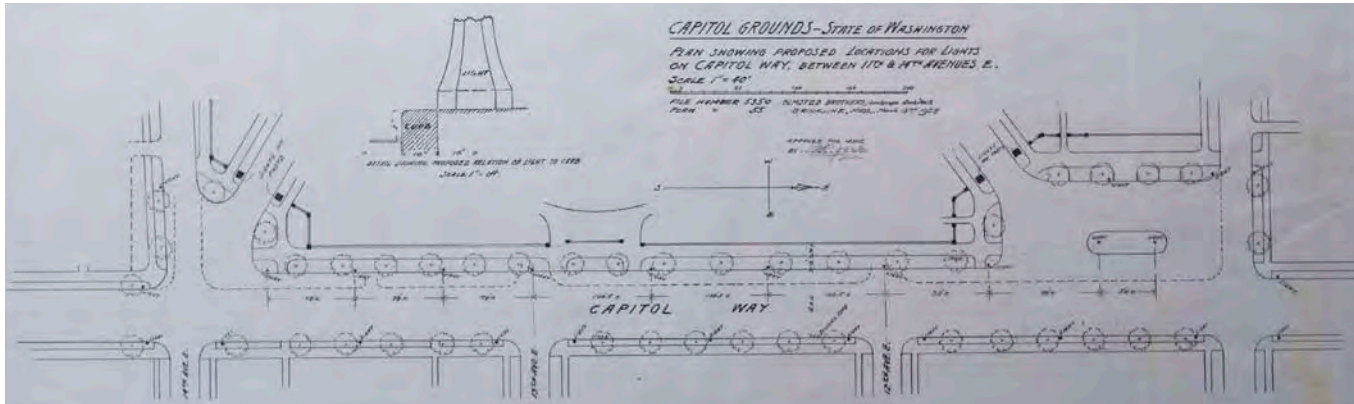


Figure 11.9 Historic documentation showing lighting along Capitol Way, and intended portal elements at entries to diagonal drives (source: 5350_55_TU, March 13, 1928, Frederick Law Olmsted National Historic Site, National Park Service)

the perimeter and from a subtle highlight of the sundial.

Future memorials

Future memorials or landscape nodes should be lit with the overall character of the Capitol Campus in mind. This would mean the fixtures with visible brightness would be avoided – instead, materials, surfaces, and plantings should be illuminated. Overall brightness of these surfaces should not exceed that of more significant elements on the campus.

▪ Circulation

Streets and Pedestrian Pathways

It is unlikely that the lighting for streets and pedestrian pathways meets current recommended practices for light levels and uniformity. It should be determined whether a lighting program should be undertaken to bring these areas into alignment with current practices.

If that decision is made, it would likely be a departure from the Olmsted’s approach to the landscape experience, as current lighting industry practice and security concerns eschew darkness and value uniform

illumination.

Any program involving the West Campus approach to pathway and street lighting should also examine the form of the fixture that delivers this illumination. Although the carriage-lantern style fixture has historic precedence in having been on Campus from the beginning, its design language is not congruent with other lighting elements on campus, and use of a historically accurate “acorn” style fixture may bring this lighting element back into alignment with the original design intent. When the time comes to reconsider the post-top fixture typology on campus, further research should be undertaken to better understand the history of the post-top fixtures.

Should any replacement or rework of the post-top fixtures be undertaken, a parallel effort to provide safe and accessible receptacle power for holiday lights or other power needs should be undertaken, to avoid further use of the taped-on metal enclosures noted during the site survey.

Diagonal drive entries

The entry points to the diagonal drives are not

well-delineated at night. A lighting study found in historical documentation indicates that some type of entry marker may have been intended at the entries to the diagonal drives. If such an element were incorporated into the landscape, integrating lighting through a luminous post-top element on the structure, and lighting of the structure itself, would provide nighttime cues to these entry points and further strengthen the diagonal axes at night.

Capitol Way

Because Capitol Way forms the eastern edge of the West Campus, its lighting should speak to the experience of this part of the roadway as part of the Campus, not just a way through it. Lighting that reinforces the Campus feeling, both during the day and the night, would integrate this section of Capitol Way into the Campus instead of simply bisecting it. Historic documentation indicates that the Olmsted Brothers intended some post-top lighting fixtures along Capitol Way.

Working with all jurisdictions having authority over this part of Capitol Way, a lighting plan should be developed that not only improves the fixture aesthetic, but also speaks to the lighting language of the campus. This system obviously needs to address the functional needs of the roadway. Fixtures and poles can be modified to accept arms at a higher level for roadway lighting while providing additional mounting points at a lower level for pedestrian lighting. This type of two-tiered system would serve traffic and pedestrian needs while bringing a humanizing element to the streetscape.

- **Interface with proposed Heritage Center**

When complete, the Heritage Center itself will

become part of the nighttime fabric of the West Campus, as its southern façade is visible at the northern edge of the Greensward.

An effort should be made to coordinate the new lighting associated with the Heritage Center with the overall feeling and luminous hierarchy of the West Campus. Upon initial review of exterior lighting plans for the Heritage Center, there are some design decisions that, while standing alone, relate well to the Heritage Center, may have unintended consequences when viewed in the context of the West Campus as a whole.

The first is the need for new post-top fixtures within the confines of the Greensward, as the reconfiguration of Water Street would create the need to provide new fixtures from the Heritage Center to the Sunken Garden. The fixtures selected are quite close to the existing fixtures in terms of the shape of the lantern head and the finish. However, the selected fixture differs from the existing fixtures in terms of lantern glass (clear for the new scheme vs. frosted in the existing scheme) and in terms of lamping (white light vs. HPS for the existing). Although this master plan advocates the use of white light, this change should be made consistently, not in a piecemeal fashion.

The second issue requiring coordination is the type of fixture used on the exterior of the Heritage Center, especially in the zone along the bluff at the former Conservatory location. The currently selected fixture would bring another luminous element into the Campus lighting composition at night. During the day, this fixture would introduce an additional fixture typology to the Campus - one that is unlike other fixtures on the campus in form

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and finish. This is especially important to consider as this area will act as the visual terminus at the north end of Water Street. Creating an end to this view corridor that consists of glowing white elements with a form previously not introduced onto the campus will not enhance the overall image of the campus.

This is not to say that lighting in this newly-developed area should attempt to replicate the historic campus lighting. Another fixture already proposed for the project projects all light downward and does not serve as a luminous element on its own. A fixture with these characteristics may provide a better solution in this location. In any case, pole-mounted fixtures in this area should be scrutinized to determine their impact on the West Capitol Campus during both night and day.

Sustainable design measures

Like all new building and landscape design, all lighting design needs to be examined in the concept of overall sustainability. In the case of lighting, there are multiple components to sustainability, the most important of which are energy conservation and light trespass.

Avoiding light trespass is difficult in the context of the Capitol campus. Decorative fixtures, glowing elements, and architectural uplighting are important elements of the campus lighting composition. To eliminate all uplight from the Campus would be to change the character of the entire place.

Although uplight cannot be realistically eliminated, it can be used judiciously. An effort to offset uplight on the West Campus with reductions elsewhere could also be undertaken. An immediate reduction in uplight could be realized by relighting the Governor's Mansion grounds. Removing the high-powered floodlights which

are aimed at high angles would reduce uplight leaving the campus and improve visibility for security.

If new pedestrian walkway and street lighting fixtures are selected, this could offer the opportunity to select a fixture type that offers a glowing luminaire appearance while directing much less light upwards.

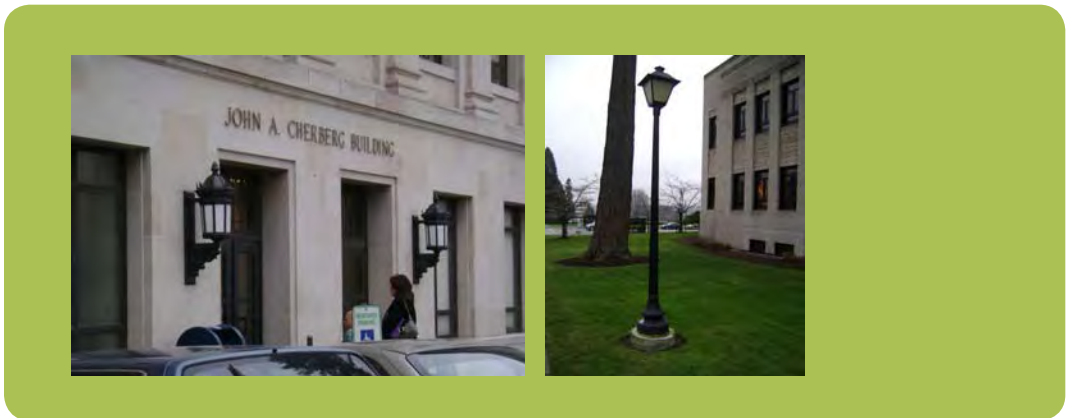
A second component of lighting sustainability is energy efficiency. It is unknown how much lighting energy is being consumed on the West Campus site, but future lighting improvements should be developed with energy efficiency in mind. LED technology should advance significantly within the next few years and may offer viable options for some lighting elements to be undertaken. Other improvements in existing light sources, such as metal halide, offer white light with greater efficacy, improved color rendering, and longer lamp life to offer a wide range of lighting options for the variety of uses on the campus.

As lighting technology advances, any lighting designed in conjunction with master plan work should be re-examined to ensure that it utilizes the best technology possible for aesthetics and sustainability within the context of the overall goals of the master plan.

historic globe-style fixtures



other appropriate historically-styled fixtures



inappropriate historically-styled fixtures

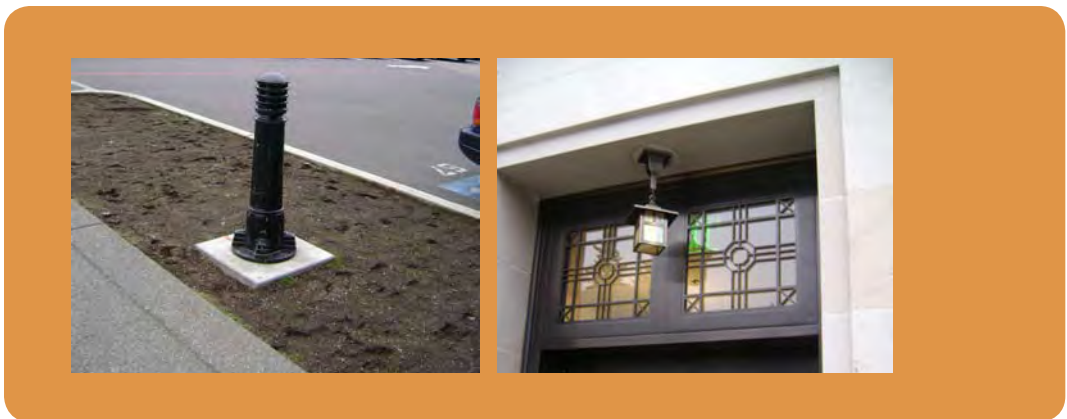


Figure 11.10 Chart showing lighting fixture typologies for the existing campus (source: Dark|Light Consulting, LLC, 2009)

* Fixtures shown on the Cherberg building are originals that were refinished during the building rehabilitation project. The light standard shown in the adjacent photograph is original dating to the campus electrical work done in the late 1930s under supervision of Joseph Wohleb (information source: Artifacts Consulting).

This plan discusses the existing square carriage lantern pole fixtures elsewhere. While it may not have been the originally intended fixture and it may, after further research, be replaced with a different fixture, it does have a historic presence on the West Capitol Campus.

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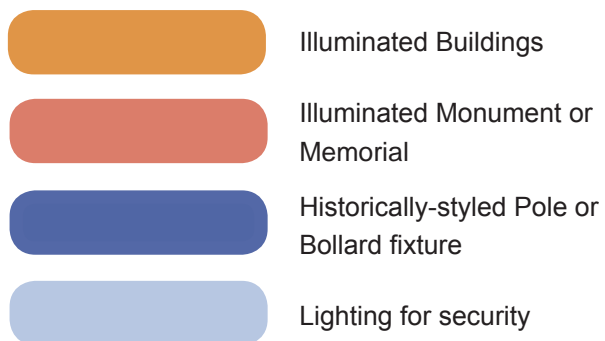
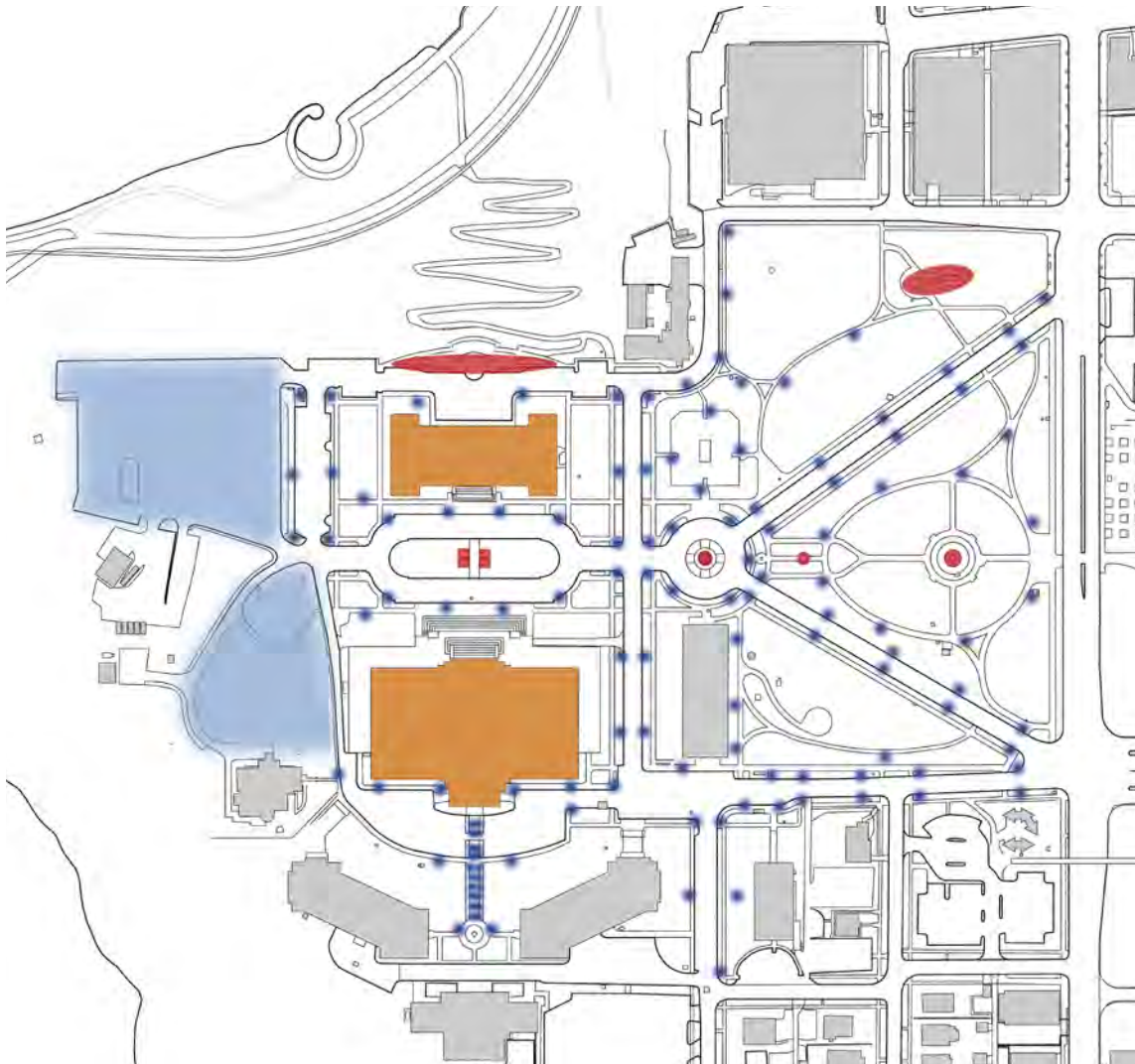
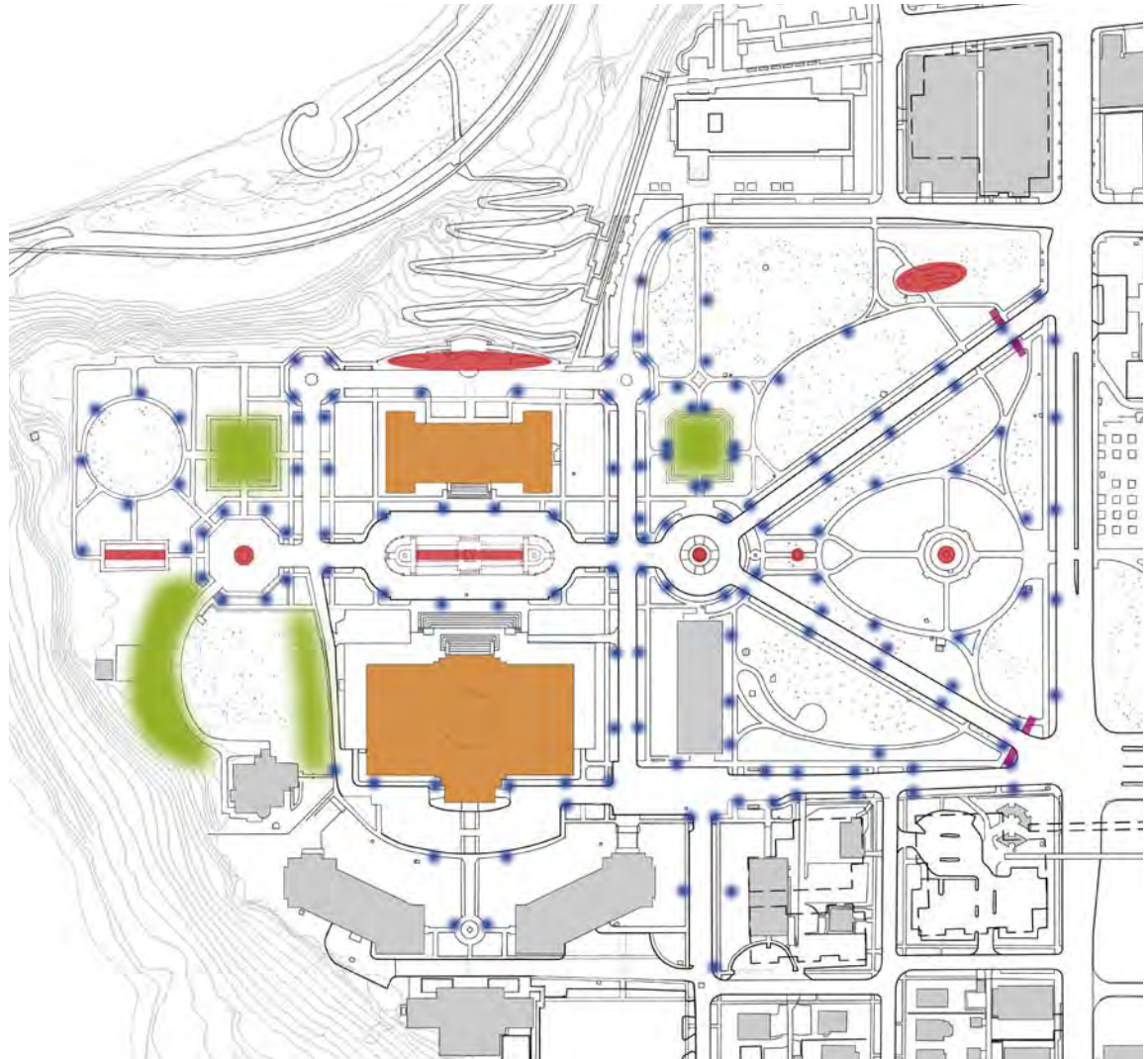


Figure 11.11 Diagram of schematic lighting types for the existing campus (source: Dark|Light Consulting, LLC)




-  Illuminated Buildings
-  Illuminated Monument or Memorial
-  Historically-styled Pole or Bollard fixture
-  Illuminated landscapes
-  Entry threshold

Figure 11.12 Diagram of schematic lighting types for the future campus, as the area west of the flag circle is developed (source: Dark|Light Consulting, LLC)

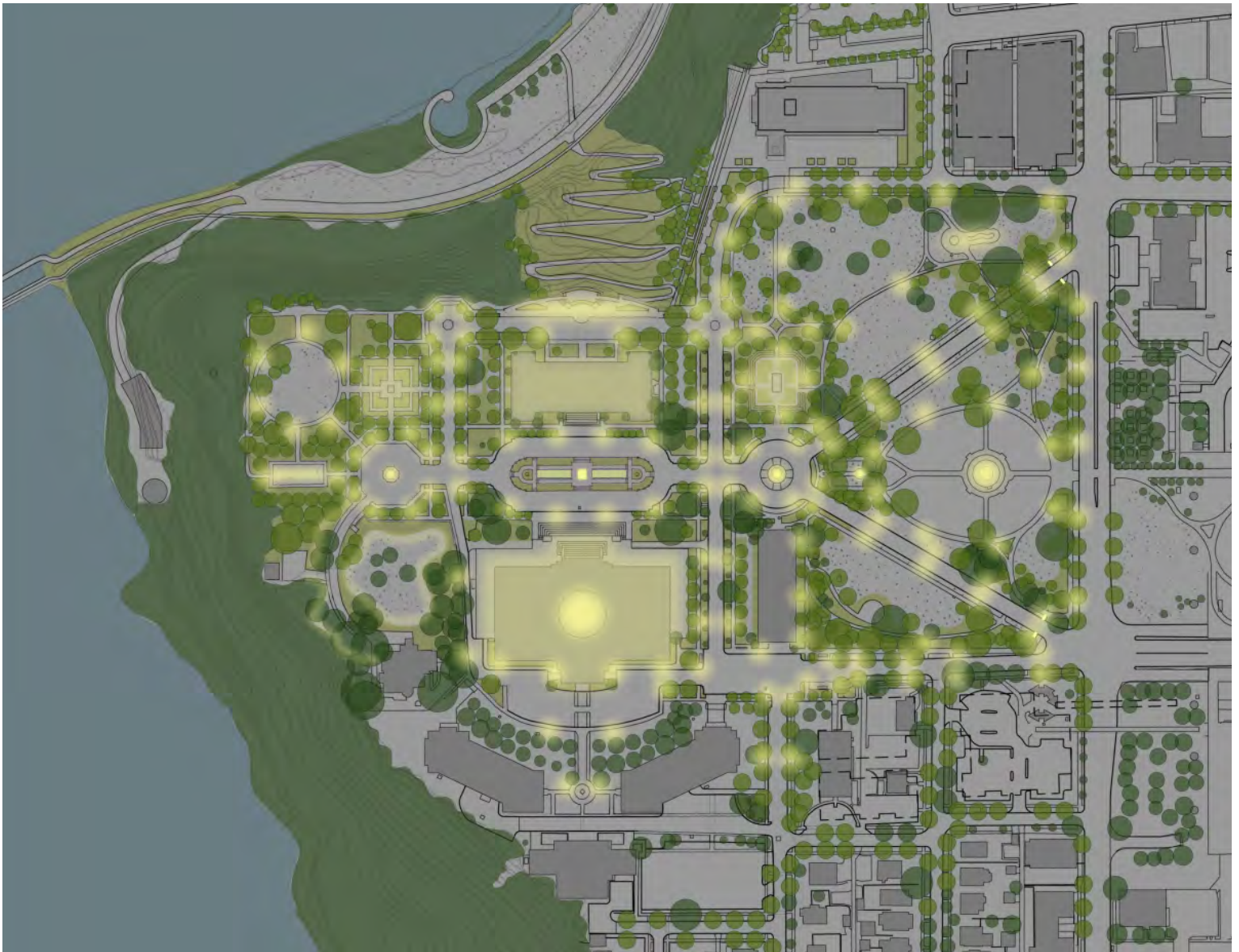


Figure 11.13 *Diagram showing luminous balance for a future campus (source: Dark|Light Consulting, LLC)*



Figure 11.14 One possible alternative for lighting of the Legislative Building. In this alternative, a layered lighting approach is favored over general floodlighting of selected building elements. This layered lighting emphasizes detail, form, and the depth of the architecture. The podium base is uniformly lit to visually ground the building, while lighting within the porticos silhouettes the columns to highlight depth. The entry portico is illuminated to a higher level to aid in wayfinding and provide visual interest. A continuous band of light above reveals the filigree element in silhouette, rendering this element differently at night and providing the viewer with an understanding of the intricacy of these elements. Lighting within the cupolas above and below, along with the columns supporting the dome, provide a different type of layering, as the columns are seen in silhouette toward the viewer, while the inside is illuminated. Finally, the dome itself is softly lit to be seen both within the context of the West Capitol Campus and from distant viewpoints near and far. Together, these elements come together to form a cohesive lighting composition that creates a strong nighttime anchor for the Campus. (source: Dark|Light Consulting, LLC)

Lighting Cost Estimate for Selected Projects	Approximate Fixture Cost	Approximate Installation Cost	Fixture Quantity	Total
Replace existing carriage lantern fixtures and poles with ceramic metal halide fixtures. Installation estimate includes new concrete pole base.	\$ 3,000	\$ 2,000	108	\$ 540,000
Light significant tree using below-grade vaults with metal grating. Installation estimate includes precast concrete vault.	\$ 2,000	\$ 2,000	4	\$ 16,000
Relight Winged Victory Monument with metal halide fixtures from existing vault locations. Two fixture types are assumed - one type for general floodlighting and one type for highlighting of selected sculpture elements.	\$ 1,200	\$ 200	4	\$ 5,600
	\$ 1,200	\$ 500	6	\$ 10,200
				\$ 15,800
Replace in-grade fixtures at Medal of Honor obelisk. Installation estimate includes concrete cutting and patching	\$ 1,200	\$ 2,000	4	\$ 12,800

Figure 11.15 *Lighting Cost Estimate for Selected Projects. Lighting cost estimates are for fixtures and installation labor only. Cost estimates are rough order of magnitude only and assume existing power locations and branch conductors would be reused. If new power distribution would be required, costs would need to be estimated based on the lighting load, conductor run distance, and other site conditions that are not known at this time.*

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Landscape Maintenance Questionnaire Results

1. Please list three things that you consider especially positive about current landscape maintenance. What works well? What looks good? What are you most proud of?

Proud of:

- Grounds always look good
- Historic aspect of landscape
- Natural beauty of site
- Landscape complements buildings
- Role as front line “ambassadors” to Capitol visitors
- Prestige of stewarding a significant public landscape

Looks good:

- Lawns year round
- Shrub & flower beds
- Annual & bulb displays
- Tree wells
- Clear streets & sidewalks

Works well:

- Tree care
- Cooperation with other trades

2. Please indicate how important each of the following is, on a scale of 0 (Not important) to 5 (very important). Add and rate other elements if you wish.

The preponderance of high-end ratings given to individual items (5 - 56%, 4 - 26%) suggests that staff believe all are important concerns. A few items elicited a wide range of opinions as to importance (0-5), but most clustered in the 4-5 range.

Categories that rose to the top include:

- *Tree maintenance*
- *Quality turf upkeep*
- *Leaf & green waste disposal*
- *Drainage problems*
- *Irrigation management*
- *Effective teamwork*
- *Setting / juggling priorities*

This short list highlights key topics the Master Plan, Tree Plan and Vegetation

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3. *Economic and environmental concerns are pushing landscape design and maintenance toward greater sustainability.*

What strategies would you like to see implemented for the Capitol Campus?

- Reduce water use
- Reduce off-site green waste disposal
- Increase non-chemical weed control, especially mulching
- Increase use of natives
- Increase use of adapted plants (like wet-tolerant willows)
- Reduce use of fruit trees, which require spraying for health
- Update tree care & maintenance methods

Have any sustainable practices already have been tested or adopted?

- Heritage tree monitoring & health improvement measures
- Water conservation
- Reduced use of chemicals
- Bark & wood chip mulching
- Authorized weather station to monitor & control water use

If so, what do you think of the results in terms of cost, convenience, plant health, or aesthetics?

- Cost savings
- Bark cost a bit high but looks good & helps plant health
- Need to apply advanced technology to water management – early yet to know outcome
- Beyond a certain point, reduced water & chemical use affects plant quality

4. *Is there anything else you would like to tell us?*

- Instead of looking at ideals for campus of 100 years ago, focus on embracing the technological future.
- New Temple of Justice landscape shows off the building’s architecture.
- Workload management is more a juggling act than a coherent strategy.
- Expectations are extremely high and demands increasing.
- Lack of staff resources – 5 gardeners must handle 50+ acres.
- East & West Campus crews help each other and share equipment as needed.
- Political & budget impacts are unpredictable and variable.
- Predictable, organized routines are hard to come by:
 - Seasonal variables require flexibility
 - Have knowledge & skills but not enough time
- Want to put West Campus “in front of the curve” regarding the environment & changing horticultural practices.

Olmsted Tree Taxa

Botanical Name	Common Name	W. Capitol Campus 1929 Palette	W. Capitol Campus Extant 2008	N. State Hospital 1913 Palette	Seattle Parks Palette 1904-12	NW Private Garden Palette 1926-31	Conifer	Tall Canopy	Mid Canopy	Understory	Limitations to future use
<i>Abies grandis</i>	Grand Fir			n			x	x			
<i>Acer circinatum</i>	Vine Maple		w	n	Volunteer				x		
<i>Acer macrophyllum</i>	Bigleaf Maple	w	w	n	Volunteer			x			
<i>Acer palmatum</i>	Japanese Maple	w	w		Volunteer				x		
<i>Acer platanoides</i>	Norway Maple		w			x		x			Invasive
<i>Acer pseudoplatanus</i>	Sycamore Maple	w				x		x			Invasive
<i>Acer rubrum</i>	Red Maple			n	Volunteer				x		Overused
<i>Acer saccharinum</i>	Silver Maple				Volunteer				x		Falls apart
<i>Acer saccharum</i>	Sugar Maple	w		n	Green Lake				x		
<i>Aesculus carnea 'Briotii'</i>	Red horsechestnut	w			Volunteer				x		
<i>Aesculus glabra</i>	Ohio Buckeye				Green Lake				x		
<i>Aesculus hippocastanum</i>	Horsechestnut			n	Volunteer				x		Invasive
<i>Aralia spinosa</i>	Hercules Club				Green Lake					x	Spiny, suckers
<i>Azara microphylla</i>	Azara	w				?				x	Semi-tender
<i>Betula alba</i>	White Birch	w				?			x		
<i>Betula lutea</i>	Yellow Birch	w		n		x			x		
<i>Betula nigra</i>	River Birch				Green Lake				x		
<i>Betula occidentalis</i>	Western (Water) Birch			n					x		
<i>Betula papyrifera</i>	Paperbark Birch	w				?			x		
<i>Carpinus betulus</i>	European Hornbeam				Green Lake				x		
<i>Castanea americana</i>	American Chestnut				Green Lake				x		Messy nuts
<i>Catalpa ovata</i>	Chinese Catalpa					x			x		Messy pods
<i>Catalpa speciosa</i>	Northern (Hardy) catalpa	w	(w)		Volunteer				x		Messy pods
<i>Cedrus deodara</i>	Deodar Cedar				Hiawatha		x	x			Falls apart
<i>Celtis occidentalis</i>	Common Hackberry			n	Green Lake				x		
<i>Cercidiphyllum japonicum</i>	Katsura				Hiawatha				x		
<i>Cladrastis lutea</i>	Yellowwood	w			Green Lake				x		
<i>Cornus florida rubra</i>	Pink Dogwood	w				x				x	Disease
<i>Cornus kousa</i>	Korean Dogwood	w	?			?			x	x	
<i>Cornus nuttali</i>	Pacific Dogwood	w		n	Volunteer				x	x	Disease
<i>Crataegus phaenopyrum</i>	Washington Thorn	w				?				x	
<i>Crataegus crus-galli</i>	Cockspur Hawthorn	w		n	Volunteer					x	
<i>Crataegus lavaliei</i>	Lavalle (Carriere) Hawthorn	w	w			?				x	x
<i>Crataegus laevigata (oxyacantha)</i>	English Hawthorn			n	Volunteer					x	Rare in trade
<i>Crataegus laevigata 'Rosea plena'</i>	Double Pink English Hawthorn	w				?				x	Rare in trade
<i>Crataegus laevigata 'Paul's Scarlet' (splendens)</i>	Paul's Scarlet Hawthorn	w		n		?				x	Disease!
<i>Cryptomeria japonica</i>	Japanese Cedar (Cryptomeria)		w			x	x	x	x		Loses limbs
<i>Cryptomeria japonica 'Elegans'</i>	Plume Cryptomeria					x	x	x	x		
<i>Chamaecyparis lawsoniana</i>	Lawson Cypress	w	w			x	x	x			Disease
<i>Fagus americanus</i>	American Beech			n					x	x	
<i>Fagus sylvatica</i>	European Beech			n	Volunteer				x		Insects
<i>Fagus sylvatica purpurea</i>	Purple Beech	w	w		Green Lake				x		Insects
<i>Fraxinus americana</i>	White Ash				Green Lake				x		
<i>Fraxinus excelsior</i>	Common (European) Ash				Green Lake					x	Seeds
<i>Fraxinus latifolia (oregona)</i>	Oregon Ash			n					x	x	
<i>Ginkgo biloba</i>	Ginkgo, Maidenhair tree	w	w		Volunteer					x	Male only
<i>Ilex aquifolium</i>	English Holly	w	w		Volunteer					x	
<i>Koelreuteria paniculata</i>	Golden Rain Tree	w		n	Volunteer					x	
<i>Laburnum vulgare</i>	Golden Chain Tree	w		n		x				x	Invasive!
<i>Lagerstroemia indica</i>	Crape Myrtle				Green Lake					x	
<i>Liquidambar styraciflua</i>	Sweet Gum				Volunteer				x		Surface roots
<i>Liriodendron tulipifera</i>	Tulip Poplar	w	w		Hiawatha				x		
<i>Magnolia acuminata</i>	Cucumber Tree				Hiawatha					x	
<i>Magnolia denudata (conspicua)</i>	Yulan Magnolia	w				?				x	x
<i>Magnolia grandiflora</i>	Southern Magnolia	w	w		Volunteer					x	Falls apart
<i>Magnolia macrophylla</i>	Bigleaf Magnolia				Hiawatha				x	x	Wind sheltered
<i>Magnolia soulangeana</i>	Saucer Magnolia	w	w		Hiawatha					x	
<i>Magnolia soulangeana 'Lennei'</i>	Lenne Magnolia	w				?				x	Shrubby
<i>Magnolia tripetala</i>	Umbrella Magnolia				Hiawatha					x	Shrubby form
<i>Malus Arnoldiana</i>	Arnold Crabapple	w				?				x	Disease, rare

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<i>Malus x atrosanguinea</i>	Carmine Crabapple	w	w			?			x		Disease?
<i>Malus baccata</i>	Siberian Crabapple					x			x		Disease?
<i>Malus coronaria</i>	Wild Sweet crabapple			n	Hiawatha				x		Disease
<i>Malus floribunda</i>	Japanese Crabapple	w		n	Green Lake				x		
<i>Malus Halliana 'Parkmanii'</i>	Parkman Crabapple	w							x		Disease?
<i>Malus ioensis 'Plena'</i>	Bechtel Crabapple	w		n	Hiawatha				x		Use 'Improved
<i>Malus Scheideckeri</i>	Scheidecker Crabapple	w				?			x		Disease?
<i>Malus spectabilis</i>	Chinese Crabapple	w				?			x		Disease
<i>Malus Sargentii (toringo)</i>	Sargent (Pygmy) Crabapple					x			x		
<i>Nyssa sylvatica</i>	Sourgum, Tupelo				Volunteer		x	x			
<i>Oxydendrum arboreum</i>	Sourwood, Sorrel tree				Hiawatha			x	x		
<i>Paulownia tomentosa</i>	Empress tree				Hiawatha		x	x			Surface roots
<i>Phellodendron amurense</i>	Chinese Cork Tree				Green Lake				x		
<i>Photinia serrulata</i>	Chinese Photinia	w				?			x		Disease
<i>Pinus densiflora</i>	Japanese red pine				Volunteer		x	x			
<i>Pinus monticola</i>	Western White Pine	w	w	n	Volunteer		x	x			Disease/insect
<i>Pinus mugo</i>	Mugo Pine	w			Volunteer		x		x		
<i>Pinus ponderosa</i>	Ponderosa Pine	w				?	x	x			Sunny dry only
<i>Platanus orientalis</i>	Oriental plane tree	w	(w)	n	Hiawatha		x				Disease
<i>Populus nigra 'Italica'</i>	Lombardy poplar				Hiawatha		x				Suckers
<i>Prunus avium 'Plena'</i>	Double Flowered Mazzard Cherry	w				?			x		
<i>Prunus serrulata 'Pendula'</i>	Pink Weeping Cherry	w				?			x		
<i>Prunus pendula 'Pendula Plena Rosea' rosa plena</i>	Double Weeping (Higan) Cherry	w				?			x		
<i>Prunus laurocerasus (Laurocerasus Officinalis)</i>	English Laurel	w	w	n	Volunteer				x		Invasive!
<i>Prunus lusitanica</i>	Portugal Laurel		w			x			x		Invasive
<i>Prunus serrulata 'James Veitch'</i>	Fugenzo (Veitch) Cherry	w				?			x		Drainage
<i>Pseudotsuga menziesii</i>	Douglas Fir		w	n	Volunteer		x	x			
<i>Sorbus americana</i>	American Mountain Ash					x			x	x	
<i>Quercus alba</i>	White Oak				Volunteer		x				
<i>Quercus bicolor</i>	Swamp White Oak				Green Lake			x			
<i>Quercus cerris</i>	Turkey Oak				Green Lake			x			
<i>Quercus coccinea</i>	Scarlet Oak	w			Hiawatha			x			
<i>Quercus palustris</i>	Pin Oak			n	Hiawatha			x			
<i>Quercus phellos</i>	Willow Oak							x			
<i>Quercus robur</i>	English Oak	w	w			x		x			
<i>Quercus rubra</i>	Red Oak	w	w	n	Volunteer			x			
<i>Quercus robur 'Fastigiata'</i>	Fastigate Red oak				Hiawatha			x	x		
<i>Robinia pseudoacacia</i>	Black Locust					x		x	x		Invasive, brittle
<i>Salix pentandra</i>	Laurel (Bay) Willow				Green Lake				x		
<i>Sorbus aucuparia</i>	European Mountain Ash				Hiawatha				x		Poor fragrance
<i>Syringa reticulata (Japonica)</i>	Japanese Tree Lilac	w		n	Volunteer					x	
<i>Taxus baccata</i>	English Yew	w	w			?				x	
<i>Tilia americana</i>	Basswood	w			Volunteer			x	x		Suckers
<i>Tilia cordata</i>	Littleleaf Linden	w				?		x			Insects
<i>Tilia x europa (vulgaris)</i>	European or Common Linden	w		n	Volunteer			x			Insects?
<i>Tilia platyphyllos</i>	Bigleaf Linden				Green Lake			x			Insects?
<i>Tilia tomentosa</i>	Silver Linden	w				?		x			Insects?
<i>Tsuga (Abies) heterophylla</i>	Western Hemlock		w	n			x	x			Insects
<i>Tsuga mertensiana</i>	Mountain Hemlock				Hiawatha		x	x			Insects
<i>Ulmus americana</i>	American Elm	w	w	n	Volunteer			x			Disease
<i>Ulmus campestris</i>	Common Elm			n				x			Disease
<i>Ulmus procera</i>	English Elm				Hiawatha			x			Disease

**HCEOB
Landscape Design Criteria
Site Workshop**

January 2009

General: Planting Considerations

- Many of the original Olmsted plant choices were unsuitable, either because they were prone to disease in our climate or to deer predation—which, apparently, is a problem on the Campus (e.g. loss of rose garden).
- The original planting plan was eclectic, combining ornamental exotics with regionally native plants and Eastern hardwoods. We maintained this approach, selecting the most durable plants from the Olmsted plan, and adding others that would complement their design intentions.
- As much as possible, drought-resistant plants were selected.
- The Olmsted planting plan emphasized spring flowers; to this we add an emphasis on fall color to reinforce the distinct Campus identity of the HCEOB.

General: Tree Selection

- Trees were selected for durability and longevity, with the intent that they develop a substantial presence on the Capitol Campus for many decades to come.
- To ensure against weather extremes, all trees exhibit a degree of drought tolerance once established, while trees in areas prone to drainage failure can also withstand periods of saturated soil.
- To minimize losses due to pests or disease, trees that have been overplanted in the Olympia area were avoided in favor of increasing biodiversity. The presence of less common trees also reinforces the perception of the Campus as a special place.

Building Zone and Street Frontages

- Growth rate of trees was taken into consideration to maintain proper scale over time relative to the building.
- Foundation plantings were designed to maintain a year-round presence, while still expressing seasonality.

North Green

- Parking lot trees were chosen for drought and heat tolerance, as well as ability to thrive in poor, compacted soils of limited volume.
- The formation of a dense canopy will reduce absorbed heat in summer.
- A mass of brilliant fall color will offer a long-lasting autumn spectacle at the interface between downtown and the Campus, as well as from across the lake.

Olympic Terrace and Slope Restoration

- Anticipating Mithun's Olmsted Landscape Restoration, which may add rows of dogwoods along Cherry Lane per the original planting plan, we extended the dogwoods along the road between the terrace and Olmsted Green, as well as down the slope. As a hybrid, *Cornus* x 'Starlight' inherits the habit and drought-tolerance of our native Pacific Dogwood with the disease resistance of *C. kousa*. The dogwoods knit together the Olmsted landscape with the native plantings of slope restoration.
- As noted in the arborist report, the slope and wetland are significantly degraded. The ultimate success of the slope restoration depends largely on clearing out exotic invasives such as ivy and blackberries, along with native red alder which tends to form monocultural stands. The area cleared during construction will be replanted with native conifers to ensure the long-term health of the wooded slope. Additionally, slope-stabilizing native plants will create a lush understory to enhance the pedestrian experience down the slope path. However, without a more comprehensive restoration, and full scope of restoration design in this area, these plantings will soon be overtaken by any invasives remaining in the area.

shrub heights are used to shape view corridors toward the Capitol dome. In certain areas along the pathways, the view is deliberately obscured to offer a moment of drama when comes to a clearing with full view of the dome. At other points, trees and shrubs hide less significant features to better emphasize key views.

- The shrub masses are tied together by evergreen groundcovers, which contrast with the shrubs' fall color.

Irrigation

- A project goal is to utilize gray-water from LOTT, the regional water alliance for all irrigation water
- Low volume spray (1/3 of total area) and drip irrigation (2/3 of total area) will be used to sustain the plantings. Given the urban and on-structure conditions of the landscape there is no plan or recommendation for 'non-irrigated' plantings

Hardscape/Walls/Furnishings

- Over 5,000 sf of engineered gabion basket structures are being used as a massive wall to retain and stabilize the west slope of the project. The gabions will be filled with rubble from a local sandstone quarry. This configuration is free- draining, low impact installation and furthermore will be planted with native material for a vertical green effect.
- Pervious paving at the north parking area was modeled, designed and priced. Subsequently, the owner made the decision to abandon this direction due to costs.
- Site Lighting is minimized while maintaining appropriate coverage, applying cut-offs/shielding to high visibility and adjacent properties and addressing the aesthetics of the site.
- Site furnishings include recycled timber from an existing Sequoia on the west side slope

West Capitol Campus Landscape Rejuvenation Statement

Capitol Campus Design Advisory Committee, 2007

Currently the West Capitol Campus landscape lacks the three-dimensional structure, spatial hierarchy and design integrity of its intended landscape plan.

Existing plantings are aging, and there are no design goals to guide replacement plantings or respond to changing context, conditions or campus additions.

Goal

“The goal of this rejuvenation effort is a West Capitol Campus landscape that respects the design principles of the original Olmsted plan. This effort will honor characteristic features and concepts of the historic design while acknowledging the dynamic and increasingly urban context of the historic capitol grounds.”

Objectives and Actions

1. Restore Axis Strength and Symmetry

Actions to consider:

- Restore trees with appropriate shape and texture to North Diagonal
- Plant (DED Resistant) American Elm trees (6) to support the campus' central axis and Eastern Gateway.
- Install Tulip Tree (2) at the southwest corner of the Temple of Justice.

2. Preserve or Improve Views

Actions to consider:

- Provide termini as appropriate where lacking: light the Catalpa at the west end of the Flag Circle, install Tulip Tree at the southwest corner of the Temple of Justice.
- Acknowledge and capture views of significant off-site elements.

3. Establish 3-Dimensional Spatial Hierarchy throughout the West Campus

Actions to consider:

- Develop spatial hierarchy of trees and shrubs that reinforces ceremonial entrance to government and honors community participation.
- Begin regenerative planting activities, including historic trees and foundation planting plans
- Heritage tree plantings
- Develop a shrub-layer planting plan that reinforces infrastructure, tree canopy and spatial arrangement.

4. Define Gateways and Reinforce Seams

Actions to consider:

- Enhance “seams” at perimeter of historic landscape by installing street tree program consistent with Olmsted Plan where no conflicts exist or are anticipated.
- Create gateways in response to new developments on the north and south perimeters of the Campus and new circulation initiatives
- Restore Olmsted Landscape street edges and infrastructure, remove temporary parking installed in 2001
- Create new pedestrian circulation and way-finding program related to defined gateways and functional uses.

IN COLLABORATION WITH:



PROJECT:
West Capitol Campus
Historic Landscape
Preservation Plan

LOCATION:
Olympia, WA

PREPARED FOR:
The Washington State
Department of General
Administration



SYMBOL KEY: See also Large Tree Layer Planting Key

- Existing tree with inventory number
- Proposed tree with lettered abbreviation
- dashed circle indicates a tree recommendation subsequent to a parking re-location, alongside an existing tree loss and replenishment, or associated with other future alteration

NOTE:
Replenish existing native trees in-kind, whenever possible. If disease prevents replenishment of Douglas firs, possible substitutions (abbreviations) include: Th pl, Pi s, Pi co, Ts he, Sa se. Substitutions for other species are listed on the Large Tree Layer Planting Key.

PRIMARY SOURCES:
Table of Trees, Ch. 10: VMP, last section

2001 Regeneration Study (Artifacts Consulting & Susan Black Associates)

5350_88-pt1 and 5350_88-tc1: General Planting Plan, Olmsted Brothers, 1929

5350_66: General Plan, Olmsted Brothers, 1928

5350_85: Tree Moving Plan, Olmsted Brothers, 1929

LARGE TREE LAYER PLAN

PROJECT NO:
0833600

DATE:
JUNE 15, 2009

