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CITY OF LAKEWOOD
COMMUNITY DEVELOPMENT



Washington State
Department of Social
and Health Services

WESTERN STATE HOSPITAL

Master Plan 2020

07-MAY-2020



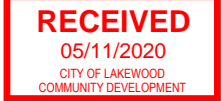


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EXECUTIVE SUMMARY

PROJECT NEED

The primary intent of this master plan is to accommodate a set of facility improvements to the existing Western State Hospital (WSH) campus in Lakewood, Washington. Many of the existing facilities are aging and no longer comply with federal standards for the care of mental health patients.

The approach to behavioral health care has also evolved, meaning that many of the WSH facilities are no longer well-suited to the provision of core services. Significantly, the State has adopted a new approach to behavioral health care, recognizing that the needs of “forensic commitment” patients (those accused of a crime) are different than those of “civil commitment” patients (those determined by the courts to be a potential danger to themselves or the public, but not accused of a crime).

A core goal of the new state policy is to distribute services for civil commitment patients throughout the state, so that patients can be near family and community support. The model for this care is a combination of community hospitals and residential treatment facilities of 16 to 48 beds each.

As new civil commitment facilities become available in western Washington, civil patient capacity at WSH will be reduced. Under this model, Western State Hospital itself will concentrate on treatment of forensic-commitment patients.

PROJECTS IN CURRENT DEVELOPMENT

Two projects are in development on the WSH site under approvals separately from this master plan:

- A 58-bed addition to the existing Center for Forensic Services (CFS) facility (“Building 28”) and renovations to Building 29, that will result in an additional 40-bed capacity.
- An 18-bed residential cottage for Child Study and Treatment Center (CSTC)

PROJECT DESCRIPTION

To address the needs described above, the master plan for WSH calls for a new 350-bed forensic hospital. This will include demolition of several existing buildings that are out-moded. At the CSTC, a second 18-bed residential

Table 1: Existing & Projected Bed Counts

Bed Type	Baseline		Master Plan		Long Term*
	2019	In Dev't.†	Near Term	Mid Term	
			1-5 yrs.	6-10 yrs.	> 10 yrs.
Center for Forensic Services (CFS) Bldgs 21, 27, 28, 29	360	458	458	183	tbd
Civil Commitment Bldgs 17, 18, 19, 20, 21, 27 & 29	500	500	348	153	tbd
Child Study & Treatment Center (CSTC) Adolescent Services	47	65	65	65	83
New Forensic Hospital	0	0	0	350	350
New Community RTF	0	0	0	48	48
Total:	907	1,023	871	817	481+

* Long Term projections are beyond the planning horizon, provided for information only.

† See on page iii “Projects in Current Development” on page iii

cottage will be developed, as well as a treatment and recreation center.

The master plan also allocates space for a new community residential treatment facility (RTF) of 48 beds, contingent on completion of a parallel study to site community facilities throughout the region. With or without the community RTF, this plan projects a significant decrease in civil commitment patients served at WSH.

Taken together, the changes in WSH and CSTC facilities will support the patient projections shown in Table 1.

INFRASTRUCTURE & SUPPORTING SYSTEMS

In support of the primary program-based investments, infrastructure and circulation improvements are planned, including:

- Improved internal circulation for cars and other modes of travel
- Potential shifts in the vehicular access points to the campus to reduce congestion and direct site access to entries along Steilacoom Boulevard
- Parking to be updated, expanded and re-allocated to meet demand and reduce past informal parking practices on open space areas
- Upgrades to the sewer system and rainwater management infrastructure
- Improved gas and electricity service, as well as investments aligned with the State's net zero energy policy
- Improved public access to extant facilities associated with historic Fort Steilacoom
- Continued access to open space and recreational lands on the northern area of the site
- Protection of natural resources on and bordering the site

- Evaluating the potential for conversion of water service from the existing on-site system to the Lakewood Water District system

APPROVALS PROCESS

This campus master plan has been prepared for submission to the City of Lakewood for approval, consistent with the state Growth Management Act and policies stemming from that Act at the local, county and regional level. Primary requirements of these policies are addressed in the "Planning Regulatory Context" section.

Western State Hospital, the Child Study and Treatment Center and the new Residential Treatment Facility are recognized as "Essential Public Facilities" under these policies. As a state facility, the requirements of the State Environmental Protection Act (SEPA) apply to this state facility.

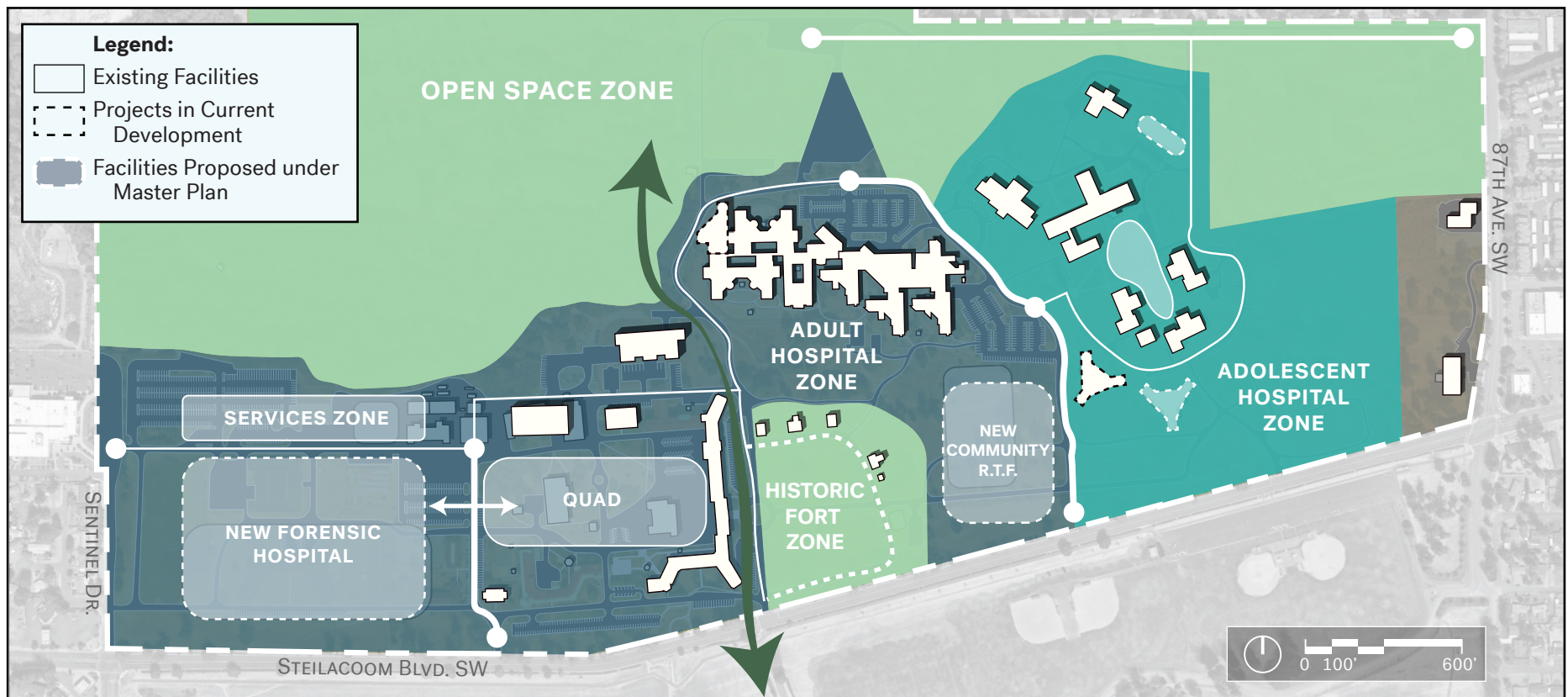




Figure 2: Governor Inslee at Western State Hospital, May 2018
The governor announced the State's new approach to behavioral health care.

PLANNING CONTEXT

Introduction

In May of 2018, Governor Jay Inslee came to Western State Hospital (WSH) to make a significant policy statement, launching a major shift in how the State of Washington will manage behavioral health going forward.

This policy shift recognizes that the needs for patients committed on a 'civil' basis are different than the needs of patients with a 'forensic' commitment. The Department of Social and Health Services (DSHS) - with other state agencies and community partners - is charged with developing new facilities to be distributed throughout the state to serve the civil commitment patients.

Under the new policy, WSH itself is to be modernized with new facilities. This master plan identifies facilities investments needed to modernize the WSH campus recognizing the fact that many of the legacy facilities are poorly suited to contemporary treatment practices and the significant existing investments in the existing campus.

PURPOSES OF THE MASTER PLAN

This master plan for the WSH campus is both an internal guiding document for DSHS to guide facility investments and a land use plan for coordination with local and regional jurisdictions.

Washington's Growth Management Act (GMA) requires county and municipal governments to engage in comprehensive planning, and requires that planning be integrated with state agencies. State agencies are specifically required to comply with local comprehensive plans*.

WSH is located in Pierce County and the City of Lakewood (see "Figure 3: Regional Vicinity" on page 2). This plan has been developed to comply with the current adopted plans of those jurisdictions. Coordination with regional plans is also addressed (see "Planning Regulatory Context" on page 5 for more detail).

* RCW 36.70A.103 This code section also clarifies that local compliance does not affect the state's authority to site essential public facilities.

DSHS Mission, Vision, & Values

Mission

As a Department we are tied together by a single mission: to transform lives. Each administration within DSHS has a refined focus on this mission. Individually we have the following missions:

- Aging and Long-term Support Administration – to transform lives by promoting choice, independence and safety through innovative services.
- Behavioral Health Administration – to transform lives by supporting sustainable recovery, independence and wellness.
- Developmental Disabilities Administration – to transform lives by creating partnerships that empower people.
- Economic Services Administration – to transform lives by empowering individuals and families to thrive.
- Facilities, Finance and Analytics Administration – to transform lives by promoting sound management of Department resources.
- Office of the Secretary – to transform lives by helping those who serve succeed.

Values

DSHS is also tied together by the following set of values:

- Honesty and Integrity – because leadership and service require a clear moral compass.
- Pursuit of Excellence – because it is not enough to get the job done, we must always challenge ourselves to do it better.
- Open Communication – because excellence requires teamwork and a strong team is seen, heard and feels free to contribute.
- Diversity and Inclusion – because only by including all perspectives are we at our best and only through cultural competency can we optimally serve our clients.
- Commitment to Service – because our challenges will always exceed our financial resources, our commitment to service must see us through.

Vision

- People are healthy.
- People are safe.
- People are supported.
- Taxpayer resources are guarded.

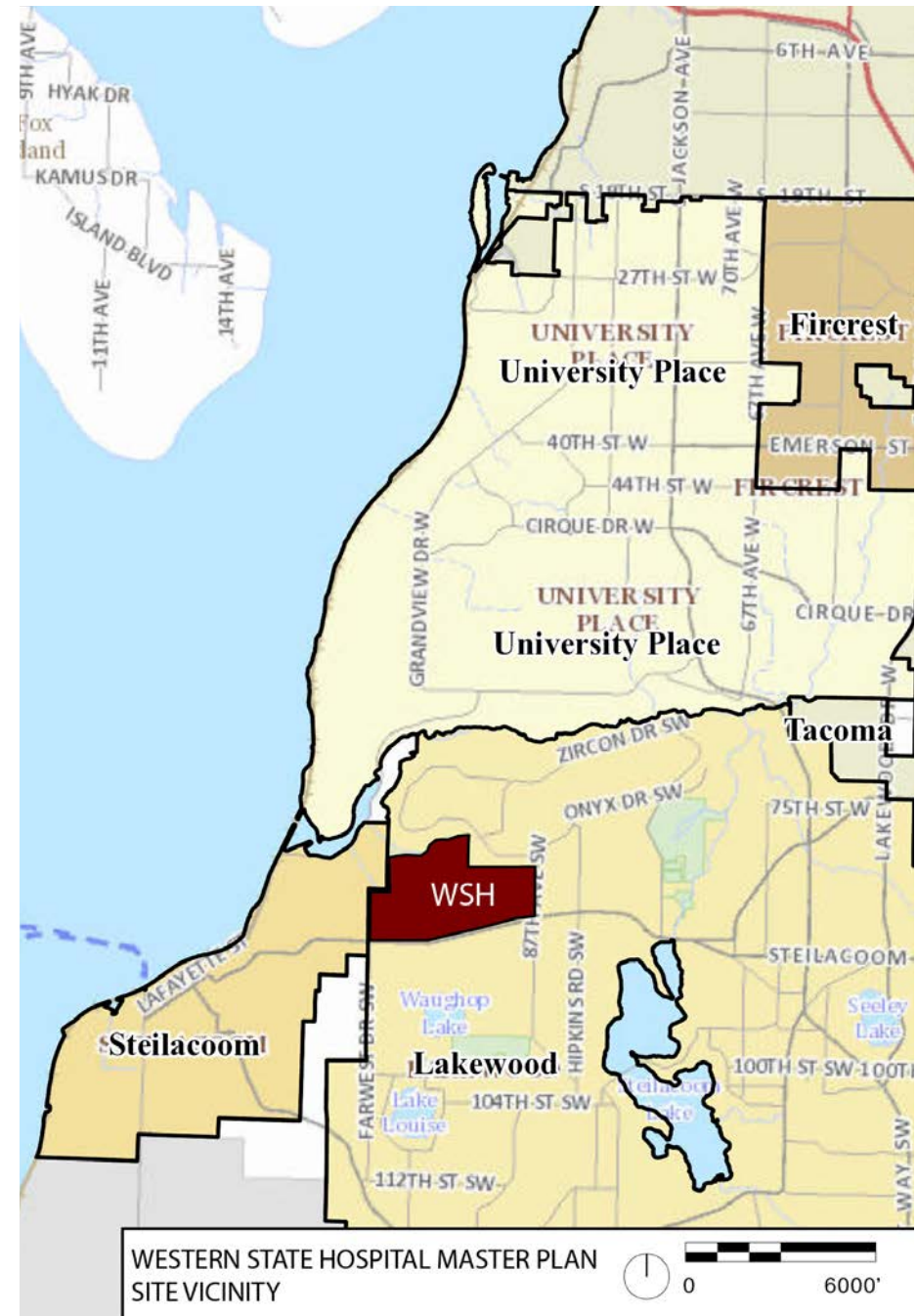


Figure 3: Regional Vicinity

Historic Preservation Initiatives

Multiple organizations are working to preserve and interpret the history of the Fort Steilacoom/WSH site.

- The **Historic Fort Steilacoom Association (HFSA)** is dedicated to preservation of elements of the fort itself. The Association operates the Fort Steilacoom Museum, focusing on the four extant cottages and associated grounds - a portion of the former parade grounds - immediately east of Circle Drive. The HFSA seeks to create a visitor center in this area to expand its interpretive efforts.
- A committee of WSH staff manages elements considered by DSHS to be of historical significance to the hospital.
- The **Grave Concerns Association** is engaged in the Western State Hospital Cemetery Restoration Project, which is located at Fort Steilacoom Park, south of Steilacoom Boulevard and east of Lake Waughop. This site is the burial site of patients associated with the hospital. By contrast, the smaller cemetery on the WSH grounds is associated with early American settlers in the area.

Registrations

The WSH grounds and surrounding area are listed on the National Register of Historic Places (NRHP) and Washington Heritage Register (WHR) as the Fort Steilacoom Historic District.

The structures listed as 'Primary' in the NRHP listing are:

- "Ft. Steilacoom Officers Row" — the four surviving 1-story cottages constructed in 1857.
- State Hospital Buildings — specifically, the morgue and bakery, dating from 1887-89.

Additional structures are listed as 'Secondary' in the NRHP listing, including several proposed for demolition/removal in this master plan.

The 2008 Cultural Landscape Assessment identified multiple facilities of the hospital as 'Contributing' to the historic character of the WSH campus, and recommends a period of significance dating up to 1961.

HOSPITAL HISTORY

Western State Hospital has grown over its history, in response to both growing demand and changes in treatment practices.

The site that houses Western State Hospital was developed for agriculture by Euro-American settlers. The U.S. government developed Fort Steilacoom beginning in 1849 (see sidebar "Site History: Timeline"). Several facilities are extant from the Fort's era and are identified as an historic resource. In 2008 a cultural landscape assessment* was prepared, followed in 2011 by a resource management plan† detailing the status of historic resources and identifying priorities for preservation.

The hospital was established in the 1870's, growing in cycles over the decades. The most prominent building - Administration Building #2 - was built in the 1930's, replacing a prior building on the same site. The Administrative Building faces the parade grounds of the former fort.

In recent years, WSH has been challenged to adapt to contemporary models of care, in part due to the out-dated facilities. The State has committed to reinvesting in behavioral health care through a combination of distributed residential treatment facilities and new hospital facilities for forensic care patients.

Physical growth has included the addition of multiple support facilities to the west of the main administration building, and later companion facilities have been developed in separate clusters to the east. These include the Child Study & Treatment Center (CSTC), as well an "East Campus" cluster at Buildings 28 & 29.

* Western State Hospital Cultural Landscape Assessment

† Western State Hospital Cultural Resource Management Plan, by MSGS Architects

Site History: Timeline

Pre-1840s	Steilacoom tribe active in the area
1840s	Early Euro-American settlers
1849-68	Site used as Fort Steilacoom
1871	Hospital established by Washington Territory as "Insane Asylum"
1870s	WSH patients and staff clear nearby lands for agriculture, establishing vegetable gardens and orchards and starting a farming operation that would last until 1965.
1886-87	Administration Building #1 built
1889	Washington statehood; the facility is renamed Western State Hospital
1880s-90s	Significant growth in facilities
1914-16	Rock wall and gates built on south of campus
1930s-40s	Expansion utilizing WPA & CCC, including infrastructure upgrades, i.e. wells and pipe system.
1934-35	Main wing of Administration Building #2 built, with WPA grant, replacing earlier Administration Building on the site. Additional wings added over time.
1950s-60s	Expansion to west to meet growing need for additional wards. Former Military Cemetery remains relocated to S.F. Presidio, to accommodate commissary expansion.
1965	On-site Farm closed after declining use.
1982	Building 29 constructed for geriatric patients
2000	CFS Building 28 constructed



Figure 4: Administration Building, circa 1892
(Source: Pacific Coast Architecture Database commons.wikimedia.org)



Figure 5: Fort Steilacoom circa 1960
(Source: fortwiki.com, Creative Commons)

Planning Regulatory Context

CITY OF LAKEWOOD

The Western State Hospital campus lies within the City of Lakewood. The City's Development Code includes the following provisions that are particularly relevant to this master plan:

- Comprehensive Plan (Future Land Use) Designation: Public & Semi-Public Institutional, and;

Designation of the surrounding Oakbrook/Fort Steilacoom area as a Center of Local Importance (CoLI), which recognizes the role of civic facilities such as the hospital, Pierce College - Fort Steilacoom, and the historic Fort Steilacoom lands, among other uses.

- Zoning Designation: Public/Institutional (PI):

This designation allows for continued use of lands for public uses if legally existing prior to adoption of the zoning code (18A.30.830.1.a.), as well as recognized Essential Public Facilities (18A.30.830.1.b.). Both of these provisions apply to WSH lands.

- Lands zoned PI and over 20 acres in aggregate are required by Lakewood Zoning to be governed by a master plan (18A.30.840.B.).

Policies related to a master plan for an essential public facility include:

- Requirement to provide an Operational Characteristics Description;
- Requirement for a Compatibility Study;
- Adaptive Reuse of facilities would require an amendment to the adopted master plan.
- Provision for multi-modal transportation;
- Provision of utility infrastructure, roads and emergency services;
- Public safety and safety of visitors and staff;
- Protection of critical areas and provision of usable open space.

Compatibility of Uses

Lakewood's Development Code requires that the following criteria be addressed as part of a Compatibility Study for an Essential Public Facility (18A.40.060.B.6.):

- a. The purpose of the proposed essential public facility civic use;
- b. An operational characteristics description of the proposed essential public facility civic use and an operational characteristics description of the existing use or uses;
- c. An evaluation of the potential effects of the proposed essential public facility civic use upon the existing use or uses;
- d. An evaluation of the potential effects of the proposed essential public facility civic use upon the adjacent properties;
- e. An evaluation of the potential effects of the proposed essential public facility civic use upon at-risk or special needs populations, including but not limited to children and the physically or mentally disabled; and
- f. Identification of any applicable mitigation measures designed to address any potential effects identified through the evaluation required herein.

Each of these six criteria are addressed below:

- a. Purpose of the Proposed use:

The master plan does not propose a change in the general use of the site, but does propose modernized facilities to improve care within the facilities. The Goals and Purpose of the developments under the plan are to modernize existing facilities, addressing deferred maintenance and adapting to new models of care for behavioral health.

In the process, multiple facility improvements will be made, including:

- Demolition of several buildings
- Improved circulation and parking
- Improved access to historic facilities of public interest
- Improved security measures

These are more fully described in the sections "Goals & Project Needs" on page 19 and "Facilities Development" on page 25.

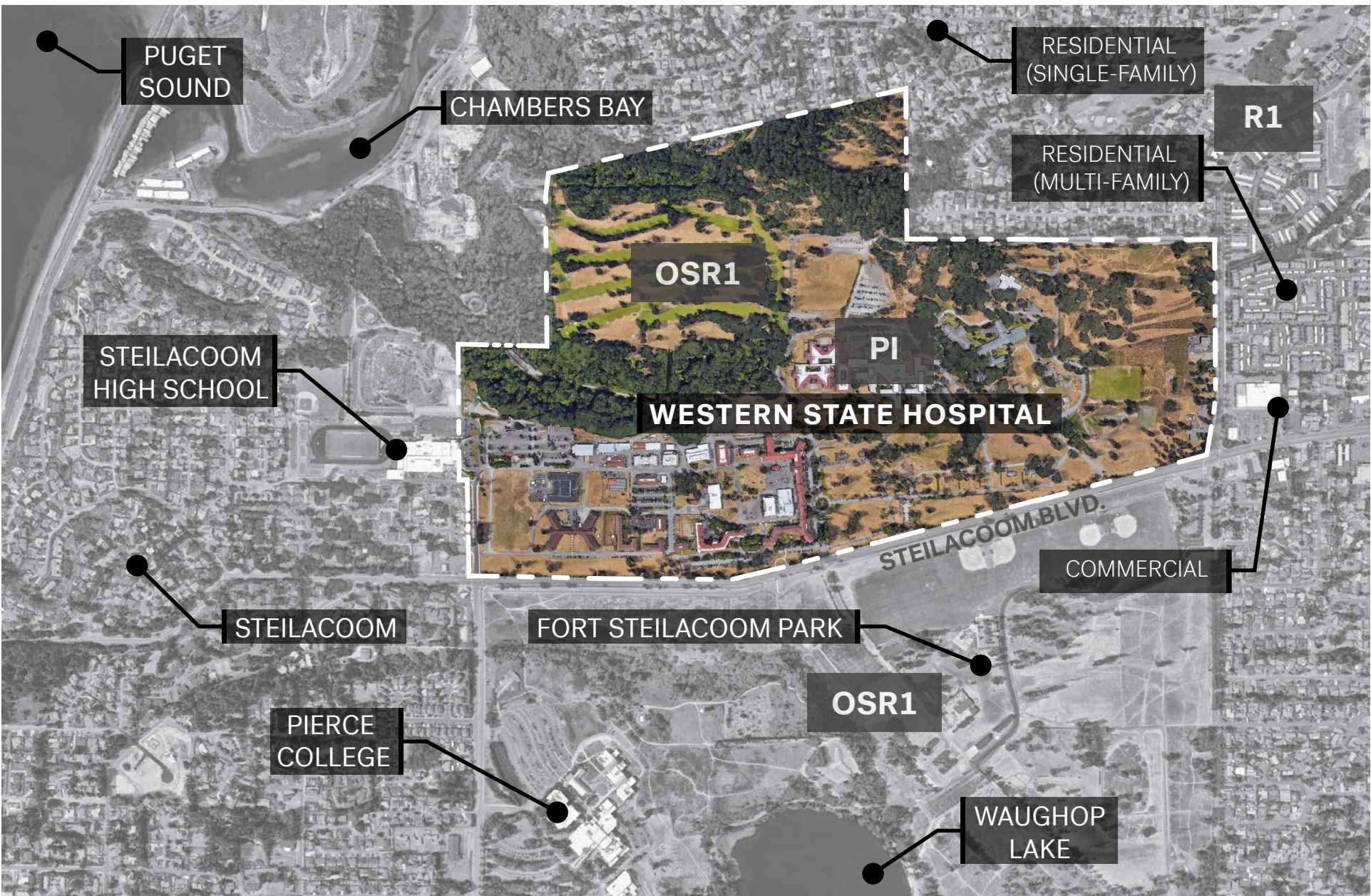


Figure 6: Site Context & Surrounding Uses

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b. Operational Characteristics

These are fully described in the section “Operational Characteristics Description” on page 28.

c. Potential Effects on Existing Uses

The proposed uses are explicitly to modernize the Hospital’s facilities. The new facilities will be fully integrated with those existing facilities that will remain.

d. Potential Effects on Adjacent Properties

Given the age of the hospital, the surrounding uses have changed through economic expansion and local planning over its history. Current surrounding uses are indicated in Figure 6.

The effects from this plan and related projects should be neutral to positive on surrounding areas. Programs provided will be internal to the WSH campus.

Travel to and from the campus will be similar to current patterns, with potential improvements from potential changes in entry points (see item f, below).

e. Potential Effects on At-Risk & Special Needs Populations

The Hospital’s purpose and program directly serve a segment of Washington’s special needs population, specifically those with behavioral health needs. The investments being proposed are being made to improve the delivery of those services.

With regard to children, the WSH site includes the Child Study & Treatment Center (CSTC), which provides services to minors with behavioral health treatment needs.

f. Applicable Mitigation Measures

The modernization of the facilities is largely “self-mitigating”, in the sense that consolidation of program into a contemporary facility, with enhanced security will further reduce any potential effects of the WSH operations on the surrounding community.

Regular staff access to the campus from the east (87th Ave.) and west (Sentinel Drive), will be reduced by access control, and changes to the access points from Steilacoom Blvd. are suggested to reduce congestion along that route.

PIERCE COUNTY

Pierce County also has regulatory jurisdiction affecting WSH planning. The primary planning policy for the County is the **Countywide Planning Policies for Pierce County, Washington**. One key section of that policy addresses the “Siting Of Essential Public Capital Facilities of a Countywide Or Statewide Significance”.

Key provisions of the Essential Public Facilities (EPF) policy dictate that:

- EPFs must have a useful life of 10 years or more and must serve the entire County, multiple counties, or the whole state (Policy EPF-1.1.)
- County and local implementing policies shall require that: *“the state provide a justifiable need for the public facility and for its location in Pierce County based upon forecasted needs and a logical service area, and the distribution of facilities in the region and state.”* (Policy EPF-3.1.)
- *“A requirement that the state establish a public process by which the residents of the County and of affected and ‘host’ municipalities have a reasonable opportunity to participate in the site selection process.”* (Policy EPF-3.2.)

KEY EVALUATION CRITERIA

As identified in Pierce County requirements (Policy EPF-4), a master plan for Essential Public Facilities should address the following. For each item, the reader is directed to the pertinent information.

- Specific facility requirements:
 - Minimum acreage
See “Facilities Development” on page 25.
 - Accessibility; transportation needs and services
See “Access, Circulation, & Transportation” on page 31.
 - Supporting public facility and public service needs and the availability thereof
See “Utilities & Infrastructure” on page 39.
 - Health and safety
Behavioral Health is a primary function of the facility, See “Western State Hospital Goals” on page 19 for a description of care.
For safety and security measures, refer to “Site Security” section
 - Site design
See “Figure 13: Campus Framework Concept”, “Figure 16: Master Plan Development” and “Open Space & Landscape” section.

- Zoning of site
Public/Institutional. See Figure 9.
- Availability of alternative sites; community-wide distribution of facilities.
For a discussion of site selection criteria, see the sub-section “Facility Siting” on page 19.
- Natural boundaries that determine routes and connections as described in “Hospital History” and illustrated in “Western State Hospital Lands”
- Impacts of the facility:
 - Land use compatibility
The site is specifically zoned for Public/Institutional uses
 - Existing land use and development in adjacent and surrounding areas; existing zoning of surrounding areas; existing Comprehensive Plan designation for surrounding areas
See “Figure 6: Site Context & Surrounding Uses”
 - Present and proposed population density of surrounding area
 - The residential areas to the north and east of the site are single-family and low-rise multi-family estimated to range in density from 4 to 15 units per gross acre.
 - Environmental impacts and opportunities to mitigate environmental impacts
A summary of potential impacts is included in the SEPA checklist, included in the Appendices to this report.
 - Effect on agricultural, forest or mineral lands, critical areas and historic, archaeological and cultural sites
No agricultural, forest or mineral lands are impacted by this campus redevelopment. Parts of the site are within the Fort Steilacoom Historic District, which is on the National Register of Historic Places as well as the Washington Heritage Register. See “Documentation of Listed Structures” on page 27.
 - Effect on areas outside of Pierce County
WSH serves needs throughout the western portion of the state, and will continue to do so for forensic patient services. The State is studying a revised care model for civil commitment patients that would distribute services to multiple localities, throughout the state. That process is proceeding in parallel to this planning process.
 - Effect on designated open space corridors
- The currently designated open space is not proposed for development in this plan. The plan proposes increasing public access to connect between open space areas to the south - Fort Steilacoom Park - and the ravine to the north, which in turn connects to Chambers Bay.
- “Spin-off” (secondary and tertiary) impacts
The only potential “spin-off” from the modernization investments on the WSH campus would be the increased distribution of facilities serving civil commitment patients. As described in the program, one community treatment facility of 48 beds may be accommodated on the campus, while others would be developed in other communities around the state.
- Effect on the likelihood of associated development being induced by the siting of the facility
Since staffing is not projected to grow significantly, a growth inducement impact is not expected. Staff spending in the community is anticipated to remain fairly constant, as the plan does not propose significant new amenities on campus that would shift patterns of behavior.
- Impacts of the facility siting on urban growth area designations and policies:
 - Urban nature of facility
The hospital’s services are an urban use, and there are direct benefits to patient care by being near the state’s major population centers. The ability of family and friends to readily visit patients is a factor in their care and recovery.
 - Existing urban growth near facility site
Surrounding uses include single-family and multi-family housing to the east and northeast, commercial development along Steilacoom Boulevard to the east, open space and a campus of Pierce College to the south, and Steilacoom High School to the northwest. All of these uses post-date the hospital’s presence on the site and its last major period of growth.
 - Compatibility of urban growth with the facility
The proposed uses in the area surrounding the hospital are similar to existing adjacent uses.
 - Compatibility of facility siting with respect to urban growth area boundaries

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The facility is being sited on the existing WSH campus, generally infilling over existing structures and sites of existing buildings to be demolished. There is no shift in siting relative to the urban growth area boundaries.

- o Timing and location of facilities that guide growth and development. The projected timing of the WSH facilities are indicated in Table 1 on page iii.

REGIONAL PLANNING

The Puget Sound Regional Council (PSRC) provides coordination across the region, focusing on growth management, economic development and transportation.

PSRC policy documents include:

- Vision 2050, draft plan (Summer 2019)

The draft plan identifies Lakewood as one of 16 “core cities”, a category of major cities second only to the largest “metropolitan cities” in their influence on the economy.

- Vision 2040 - the fully adopted regional growth strategy, preceding the current Vision 2050 process
- Regional Transportation Plan (adopted 2018), prioritizing transportation investments

PSRC’s draft Vision 2050 plan extends policies from the Vision 2040 plan calling for growth to be concentrated in established urban areas, protection of existing open space and sprawl reduction.

STATE OF WASHINGTON

Land Use in Washington is governed primarily by the Growth Management Act (GMA). This law establishes the requirements for planning by cities and counties, and requires that agencies of the state comply with local comprehensive plans and development regulations.(RCW 36.70A.103).

State law also addresses the siting of Essential Public Facilities, requiring that “each county and city ... shall include a process for identifying and siting essential public facilities” (RCW 36.70A.200).

Additional requirements derive from the State Environmental Protection Act (SEPA), specifically to assess the potential impacts of planned development on natural systems and related infrastructure. A SEPA checklist is included in “Appendix 2: SEPA Checklist”.

COORDINATION WITH OTHER JURISDICTIONS & AGENCIES

Entities that will be affected by this plan were contacted as the plan took shape, to hear their issues of interest or concern, and these meetings will continue through the master plan review process. These meetings are summarized in “Appendix 1: Stakeholder Meetings” and updates to this appendix will be provided as additional meetings are held.



Figure 7: Western State Hospital, aerial view

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Existing Conditions

SITE OVERVIEW

The full WSH campus site is about 288 acres in size. Table 2 on page 12 details the site area by parcel number and City zoning designation. As a legacy of the site's gradual evolution, the WSH campus includes many facilities from different eras and functions.

The total building area serving DSHS programs is 1,435,000 gross square feet (GSF). Table 3, along with Figure 11 and Figure 12 list the existing facilities on the campus, including their current function and year built. This master plan addresses replacement and/or renovation of those facilities that have significant deferred maintenance, and especially those that are poorly suited to providing restorative care to patients.

OPEN SPACE AREAS

The northwestern area of the site includes open spaces of varying types. The former golf course is zoned for open space uses, and the ravine to its south is an area of sensitive lands, with steep slopes around the gulch that holds Garrison Springs, site of a fish hatchery dating from the 1970s.

FORT STEILACOOM LANDS

While much of Fort Steilacoom laid on lands south of what is now Steilacoom Boulevard, the area immediately east of the main Administration Building includes a core cluster of historic cottages dating from the original fort settlement. The Fort Steilacoom Historic Association has stated a preference to restore this area to be an open parade grounds type of environment. This initiative would remove roads from the area. This objective is reflected in the planning for the hospital's facilities and circulation planning.

Three other key historic facilities are extant west of the Administration Building: i) a settlers' cemetery, ii) a morgue structure immediately adjacent of the cemetery, and iii) a former bakery/butchery structure from the early hospital era. This plan seeks to protect those and ultimately to make them more accessible to the public.

COTTAGE ROW

Two sets of cottages exist to the east of the Administration building:

- A set of four dating from the Fort Steilacoom era (1850s) and organized in a partial crescent around a central open space and allée of trees

This group is managed by the Fort Steilacoom Historical Society, along with other areas associated with the fort. The hospital and DSHS are collaborating with the society on preservation of these facilities.

- A linear row of cottages along Cottage Row to the east of the Fort-era structures, dating from the 1930s

This latter group were built to house hospital staff, are vacant and are no longer contributing to the hospital's functions.

EAST CAMPUS EDGE

Two independent facilities are on campus lands facing 87th Avenue SW:

- A fire station operated by West Pierce Fire & Rescue
- Oakridge community facility, operated by the Department of Children, Youth and Families.



Figure 8: Fort Steilacoom cottages on the WSH campus

Table 2: WSH Parcels & Land Area

Zoning	Tax Parcel Number	Land Acres
PI*	220321022	215.71
OSR	220283027	29.75
	220321007	36.73
	220283026	6.15
All OSR		72.63
Total		288.34
* Includes approximately 25 acres in Sensitive Areas/Steep Slopes		

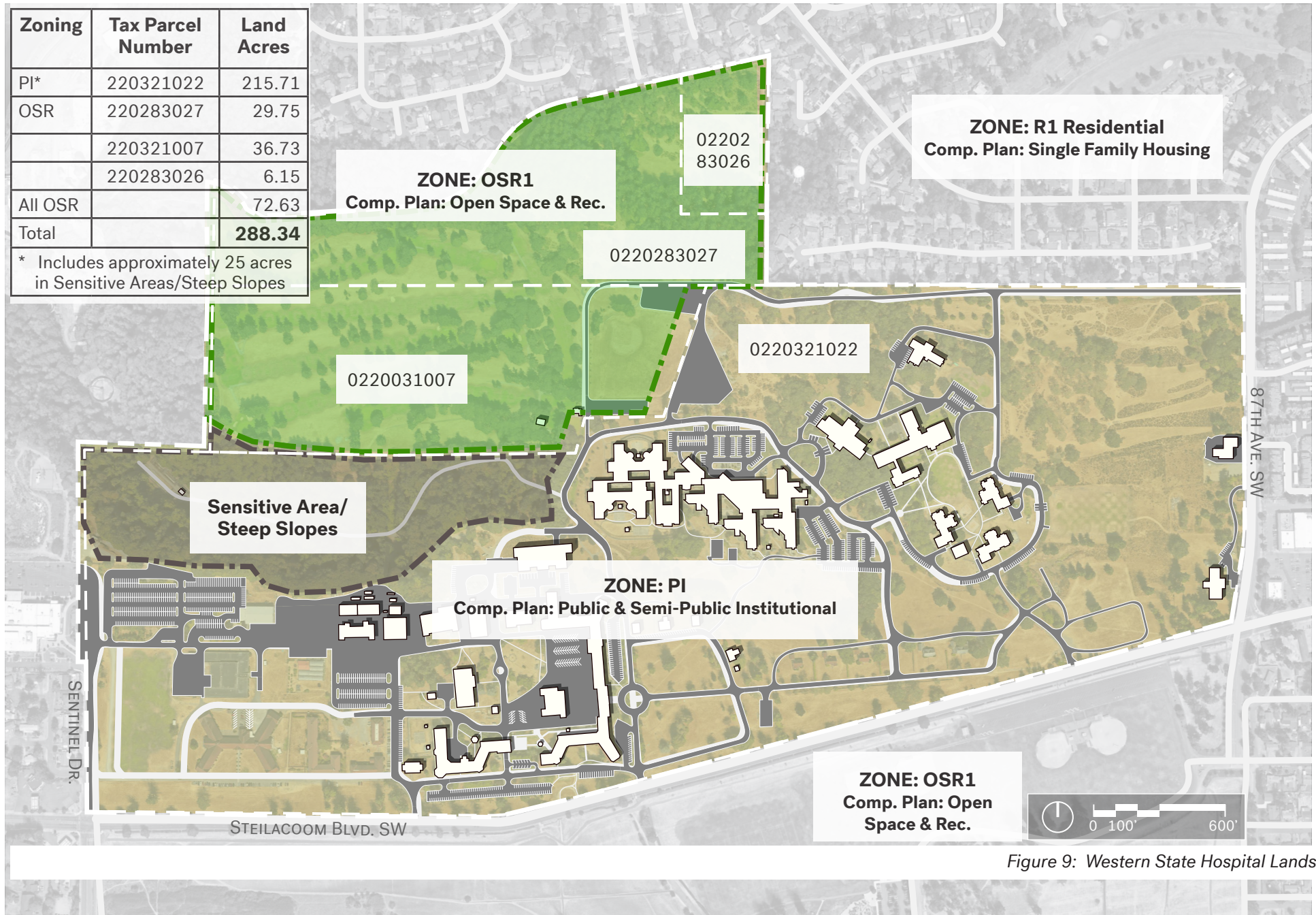


Figure 9: Western State Hospital Lands

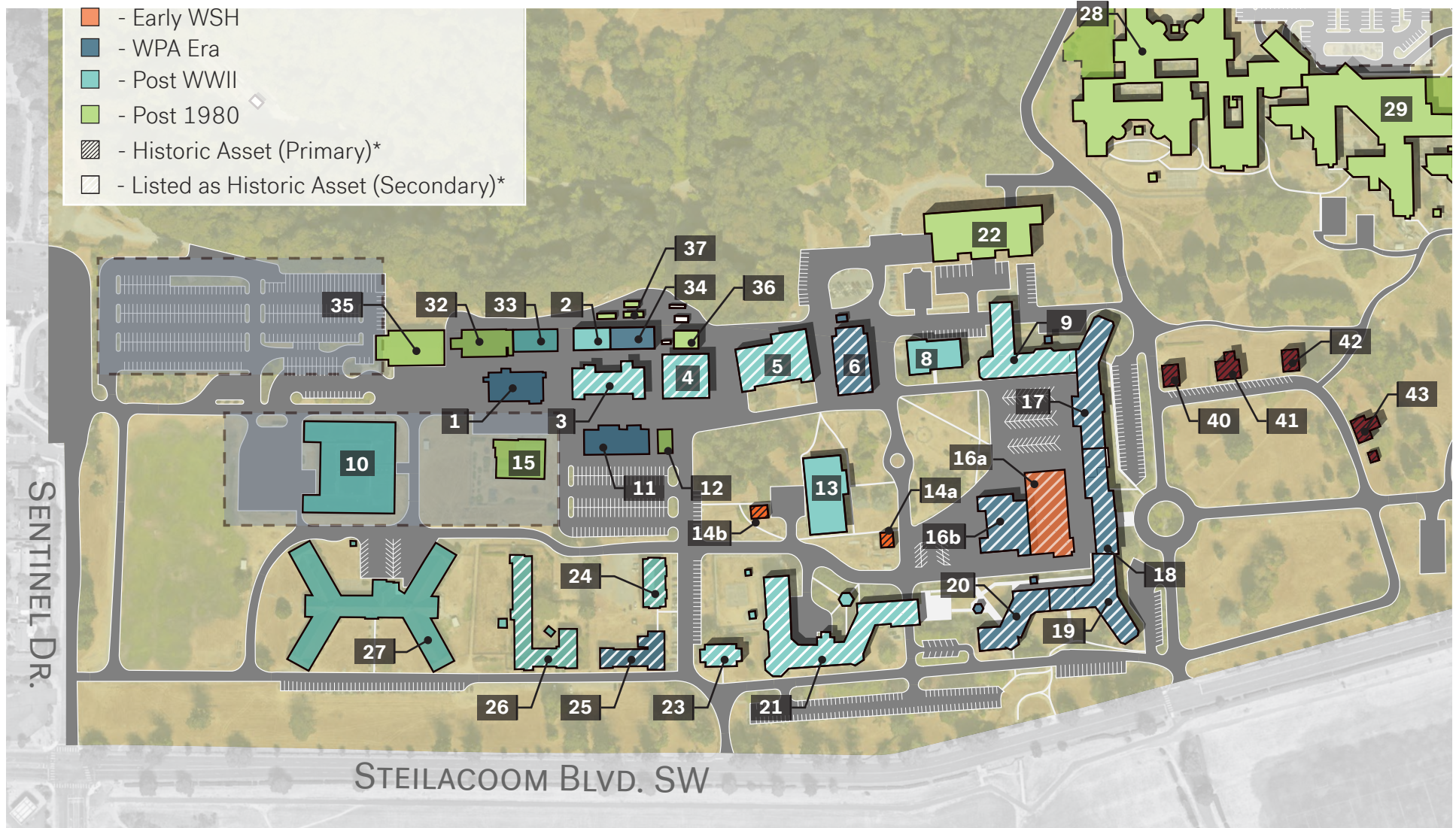
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Figure 10: Existing Facilities

LEGEND

- - Fort / Historic
- - Early WSH
- - WPA Era
- - Post WWII
- - Post 1980
- ▨ - Historic Asset (Primary)*
- - Listed as Historic Asset (Secondary)*



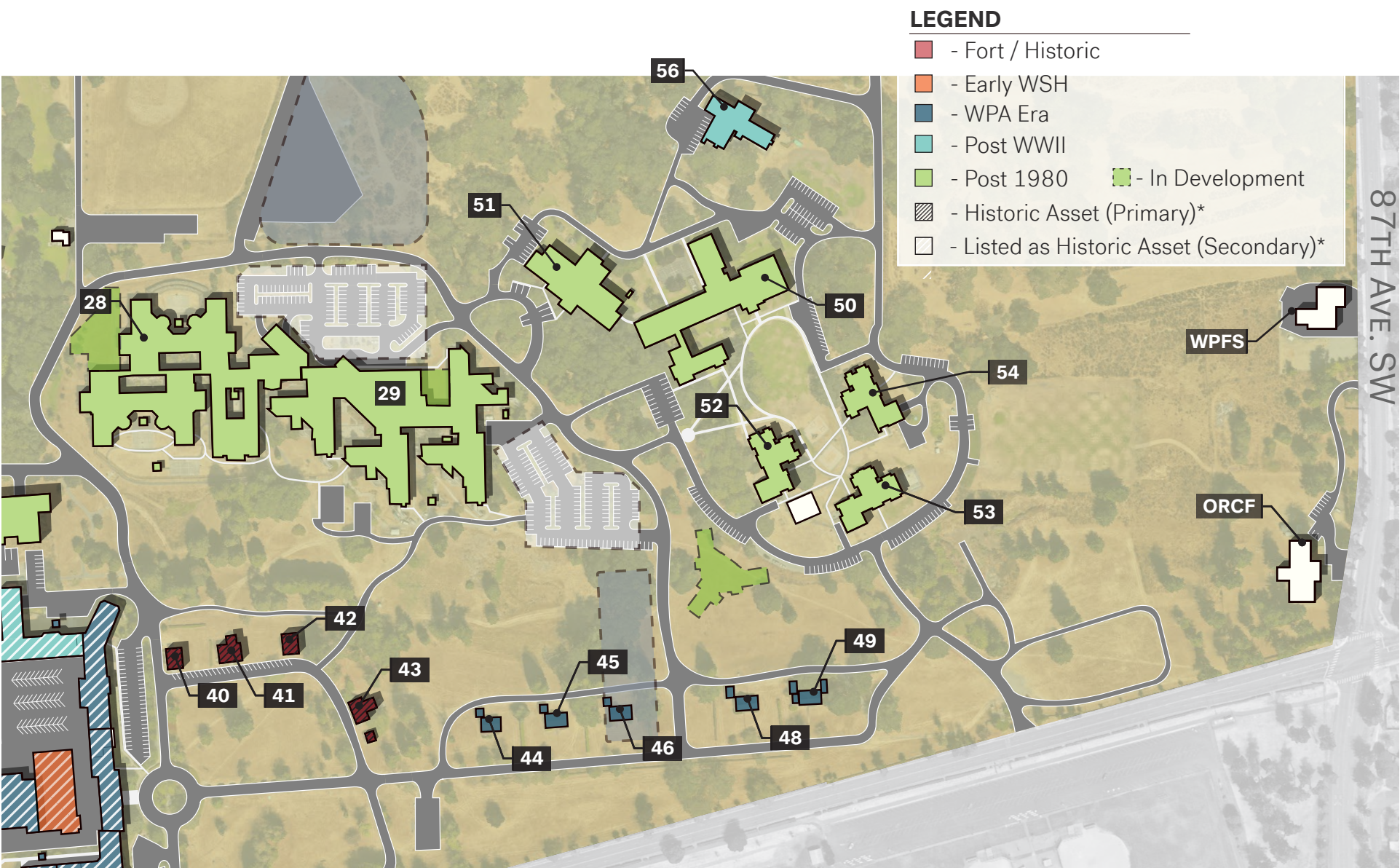
* Facilities listed as historic assets are as determined in the listing of the Fort Steilacoom Historic District for National Register of Historic Places and/or the **Western State Hospital Cultural Landscape Assessment**. See "Documentation of Listed Structures" on page 27

Figure 11: Existing Facilities, West Campus

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Table 3: Existing Buildings

Bldg.	Building Use	Built	GSF	Bldg.	Building Use	Built	GSF
1	MOD Maintenance Office	1937	7,623	24	Employee Health, Infection Prevention & Patient Financial Services	1937	11,149
2	MOD Storage	1958	3,936	25	North West Justice, Legal Services, & Department of Assigned Council	1938	22,001
3	MOD Plumbing, Garage, Glass, Sign, Paint & Machine Shops	1917	9,382	26	Vacant - Not in Use	1945	75,644
4	MOD Boiler House	1917	26,376	27	WSH: Patient HMH Wards W1N & W1S and Fort Steilacoom Residential Treatment Facility	1960	41,144
5	MOD Laundry & Grounds Shop	1917	19,892	28	Center for Forensic Services Patient Wards F1 - F8 & Treatment Mall	2000	202,160
6	Art Center, Infinity Center, Beauty/Barber Shop, etc.	1933	31,797		Patient Wards F9 & F10	2020	40,742
8	Library, Key Shop & Staff Offices	1948	25,448	29	CFS Patient Wards E1 - E8, Treatment Mall & Clinic	1982	158,111
9	Staff Offices	1948	114,327	30	Connex Container: Emergency Management Supplies	2016	160
10	Staff Development Training Center & HMH Carpentry	1960	41,227	31	Connex Container: Emergency Management Supplies	2016	160
11	Commissary	1934	22,620	32	Inventory Control Warehouse	1985	6,161
12	MOD Storage	1986	1,560	33	MOD Life, Health & Safety Shop	1979	5,600
13	Pharmacy & Central Services	1975	15,235	34	MOD Carpentry Shop	1972	5,641
14A	Vacant - Historic Bakery	1904	880	35	Maintenance Materials Warehouse & HMH Program Space	1982	12,000
14B	Vacant - Historic Morgue	1888	1,516	36	MOD Main Chiller Plant	1994	2,079
15	Green House & Industrial Hygienist	2000	1,826	37	Prime Mover Enclosure: Generator No. 1	1994	476
16A	Main Kitchen & HMH Java Site	1908	33,275	38	Prime Mover Enclosure: Generator No. 2	1994	476
16B	Staff Offices, Fashion Center & Laundry Folding	1930	18,180	40	Historical Society Cottage No. 1	1855	2,602
17	Patient Wards & Treatment Mall	1934	44,091	41	Historical Society Cottage No. 2	1855	3,400
18	Communications Center & Administration Offices	1938	36,662	42	Historical Society Cottage No. 3	1855	2,600
19	Patient Wards C1 - C3	1938	46,633	43	Historical Society Cottage No. 4	1855	3,450
20	Patient Wards C4 - C6	1934	44,328				
21	Patient Wards S1 - S10	1948	149,865				
22	Patient Support Center	2019	48,190				
23	Chapel	1925	7,492				



* Facilities listed as historic assets are as determined in the listing of the Fort Steilacoom Historic District for National Register of Historic Places and/or the **Western State Hospital Cultural Landscape Assessment**. See "Documentation of Listed Structures" on page 27

Figure 12: Existing Facilities, East Campus

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Table 3, continued

Bldg.	Building Use	Built	GSF	Bldg.	Building Use	Built	GSF
44	Vacant: Cottage No. 5	1934	1,350	52	Residential Unit (Camano)	1987	11,209
45	Vacant: Cottage No. 6	1934	1,730	53	Residential Unit (Orcas)	1987	11,984
46	Vacant: Cottage No. 7	1934	1,802	54	Residential Unit (Ketrone)	1987	10,484
48	Vacant: Cottage No. 9	1934	1,650		New Cottage, CSTC	2020	19,360
49	Vacant: Cottage No. 10	1934	1,926	56	Maintenance	1961	9,394
FP	Fuel Pump Station	1993	32	Facilities owned/operated by others			
50	Administration & Elementary School	1995	36,105	ORCF	Oakridge Community Facility		
51	High School	1992	19,816	WPFS	West Pierce Fire & Rescue, Station #24		

Table 4: Patient Bed Count, by Ward & Building

as of Fall 2019

Bldg	Center	Physical Ward	Logical Ward	Service Type	Beds	Bldg	Center	Physical Ward	Logical Ward	Service Type	Beds
						28	CFS	F1	WS48	Admission	29
						28	CFS	F2	WS14	Admission	29
17	PTRC*	C7	WS56	Rehabilitation	30	28	CFS	F3	WS85	Admission/Acute	31
17	PTRC	C8	WS77	Acute	30	28	CFS	F4	WS61	Acute	29
19	PTRC	C2	WS63	Rehabilitation	30	28	CFS	F5	WS50	Admission	29
19	PTRC	C3	WS31	Acute	30	28	CFS	F6	WS18	Rehabilitation	31
20	PTRC	C5	WS41	Acute	30	28	CFS	F7	WS62	Rehabilitation	31
20	PTRC	C6	WS25	Acute	30	28	CFS	F8	WS16	Rehabilitation	31
21	CFS†	S4	WS83	Transitional/Extended	15	29	CFS	E1	WS51	Rehabilitation	30
21	CFS	S10	WS82	Rehabilitation	30	29	PTRC	E2	WS81	Rehabilitation	27
21	PTRC	S3	WS76	Rehabilitation	30	29	CFS	E3	WS09	Admission	20
21	PTRC	S7	WS73	Rehabilitation	32	29	CFS	E4	WS78	Admission	20
21	PTRC	S8	WS72	Rehabilitation	30	29	PTRC	E5	WS05	Admission	30
21	PTRC	S9	WS74	Rehabilitation	30	29	PTRC	E6	WS08	Rehabilitation	26
27	HMH‡	W1N	WS47	Rehabilitation	15	29	PTRC	E7	WS70	Rehabilitation	28
27	HMH	W1S	WS45	Rehabilitation	15	29	PTRC	E8	WS59	Rehabilitation	27

Total Bed Count**825**

* Psychiatric Treatment and Recovery Center

† Center for Forensic Services

‡ Habilitative Mental Health

PATIENT POPULATIONS & CARE APPROACH

Washington's two state psychiatric hospitals today serve patients with differing backgrounds and needs. Patients are served in two primary categories:

Civil Commitment Patients

Individuals determined by the Court system to be a danger to themselves or others may be civilly committed to the state hospitals for care and treatment. These individuals have not been accused of a crime.

Forensic Commitment Patients

Forensic patients are those patients that have been accused of a crime. In the process of a prosecution, the Courts may commit an individual to the state hospital for a competency evaluation to stand trial. If found competent, the individual is returned to jail to stand trial. If found not competent, the individual stays in the hospital until competency is restored.

Another population of forensic patients are those who have been found by the Courts to be not guilty by reason of insanity (NGRI). These individuals are committed to the state hospitals for care and treatment.

Models of Care

Civil patients receive care in Buildings 17-21, 27 and 29. The environment of care differs from building to building, but generally consists of 25-30 bed units connected end to end.

The organization of the facilities lend themselves to an archaic custodial model of care, where large numbers of patients are housed with limited opportunity for on-unit therapy. For those farther from the Treatment Mall, access to program space becomes more challenging and often results in an inadequate amount of active therapy. Thus, length of stay is often longer than can be achieved with a more contemporary model of care.

Forensic patients reside and receive treatment in a secure environment in Buildings 28 and 29. Inpatient Units are typically comprised of 30 beds supported by 2 group activity spaces and a porch. A generous amount of circulation space surrounds the Nurse Station allowing a high degree of direct observation but little opportunity for staff and patient interaction. All 30 patients share the same limited amount of social space, resulting

in a high social density and/or many patients remaining in their rooms, disengaged.

The only significant place for therapy in the forensic hospital is the Treatment Mall. This portion of building 28 is strategically located between the residential units of 28 and 29. It offers a variety of program space including a gym fitness rooms, classrooms and multi-purpose rooms.

EXISTING INFRASTRUCTURE

This section provides a brief summary of existing services and known constraints that should be addressed in implementing this plan. Systems are further described and proposed solutions addressed in "Utilities & Infrastructure" on page 39.

- **Electrical** service to the WSH campus is provided by Tacoma Power via two feeder connections, fed from separate utility substations, as shown in Figure 22 on page 38.
- **Natural gas** is provided to the Western State Hospital campus by Puget Sound Energy (PSE). There are three feeds to the campus, shown in Figure 22 on page 38. Each building provided with a natural gas connection is individually metered by the utility.
- **Steam Heat:** Boilers in Building 4 provide steam to most of the campus for heating, domestic water, and process loads. Facilities currently served by steam heat are indicated in Figure 22.
- **Water Supply:** Western State Hospital currently acts as its own Water District; all of the water supplied to and used by the campus is owned, operated, and maintained by Western State Hospital, from groundwater wells on the site.
- **Sanitary Sewer:** The campus sewer system is privately owned and maintained, and discharges to the public sewer system operated by the Town of Steilacoom. The Town's collection system feeds via pump to the Pierce County Wastewater Plant, located along Chambers Creek.
- **Rainwater:** Currently, catch basins flow to a combination of campus retention ponds and the gulch above Garrison Springs.

Goals & Project Needs

DSHS GOALS

As a result of the State's policy directive, a core goal for DSHS is to provide more of the state's services to civil commitment patients through distributed models, both private and state-run. These facilities are projected to be a combination of small residential treatment facilities (RTFs) of 16 or 48 beds per facility. During this master planning process, DSHS initiated a pre-design study for up to three of these facilities.

The distributed residential treatment facilities will provide stabilization of individuals in psychiatric crisis or experiencing an episode of acute mental illness. These RTFs provide medical and therapeutic services to people on a short-stay basis and connect them to the continuum of psychiatric services upon discharge.

The model relieves the pressure on local emergency departments to address the emergent needs of people in distress who require short, focused, person-centered care so that they can re-enter their communities as quickly as possible.

The residential treatment facilities provide care to those individuals who are managing their mental illness but still require the support that a structured residential environment can offer. This type of facility may provide social services in-house, but facilitates its residents' outpatient psychiatric care. By living in a residential setting with a small number of peers, people are able to exercise their coping skills and connect with others in a more manageable group size.

The distributed facilities for civil commitment patients will be coupled with reinvestment in Western State Hospital's campus and facilities, which will continue to serve forensic commitment patients and a limited number of civil commitment patients. This approach recognizes the significant investments that have been made in the current site over the years.

WESTERN STATE HOSPITAL GOALS

The primary goal of the 2019 master plan is to prepare for the investments in new and renovated facilities anticipated by the governor and legislature's policy directives. To support this goal, several objectives have been identified:

- 1 Establish a planning framework for the entire campus, recognizing the multiple functions accommodated on the site
- 2 Identify a site for a hospital facility to serve forensic commitment patients, replacing the existing outmoded facilities
- 3 Accommodate a potential residential treatment facility to serve civil commitment patients
- 4 Accommodate a second new cottage and a treatment/recreation facility for the Child Study and Treatment Center (CSTC)

FACILITY SITING

The decision to site the new replacement facility on the current campus was made based on several key considerations:

Washington State Demographics

The current State population of 7.67 Million is expected to increase to 8.90 Million by 2040. Over half of the State population resides along the I-5 corridor between Olympia to the South and Everett to the North. The counties with the highest population in Washington are King and Pierce. A 2015 report from the Washington State Institute for Public Policy found that the prevalence rates for mental health conditions in the state are among the highest in the U.S., with 7% of the population meeting the criteria for "serious" mental illness. The WSH Lakewood Campus is located within this population center, close to where patients and their immediate family members live.

Qualified Physicians and Staff

The highest concentration of qualified physicians and staff (3,600) in the State needed for the care of the patient population reside in the 1-5 corridor, between Olympia and Everett. They are supported by the highest concentration of education institutions that provide training and certification for mental health professionals.

History

A hospital for individuals with mental illness was established at this location in 1871, 18 years before Washington became a State and 125 years before Lakewood incorporated as a City.

Community Benefit

The operation of the Western State Hospital facilities provides the following benefits to the local community:

1. The WSH Campus has reduced its size over time from a total of 762 acres to 286 acres today, donating over 470 acres to the City of Lakewood and Pierce College for public parks and educational facilities.
2. WSH employs over 2,800 people, most residing in the City of Lakewood and Pierce County.
3. WSH's annual operating budget is \$225 Million and has a staff payroll that exceeds \$14 Million per month.

Replacement Cost

The State of Washington has made significant investment in WSH facilities, infrastructure and operations over its history. Replacing the property, facilities and programs in-kind would result in costs ranging from \$1.9 to \$2.0 Billion, including:

- Land value, 80 acres @ \$1.6 million/acre: \$128 million
- Replacement structures, construction cost
1.3 million GSF @ \$880/GSF: \$1,144 million
- Associated project costs, 25% to 30%: \$318-\$382 million
- Escalation @ 3.5 %/year for 6 years: \$334-\$348 million

PROJECT PROGRAM

The program for projected facilities is summarized in Table 5.

Table 5: Summary of New Program Elements

Program Element	Bed #	Change in GSF
Projects in Development*		
CSTC Cottage (CLIP) A†	18	19,360
Addition to Building 28‡	58	40,472
Renovations to Building 29	40	0
MASTER PLAN PROJECTS		
New Construction		
CFS: New Forensic Hospital	350§	approx. 575,000
Community Residential Treatment Facility	48	60,000
CSTC Cottage B	18	19,360
CSTC Treatment/Recreation Facility	0	15,000
Demolitions¶		
Building 27	- 30, CFS -30, Civil	- 41,144
Building 21	152	149,865
Others, w/o inpatient beds	0	approx. - 227,077
Uses on site by others		
Fort Steilacoom Visitor Center	n/a**	3,000

* These projects are approved separately from this master plan. Project data is informational only.

† This project has been submitted for a permit as BP-00357

‡ This project has been separately permitted.

§ Maximum bed count for this proposed project.

¶ See Table 7 on page 27 for list of buildings projected for demolition.

** This use is not related to Hospital or DSHS operations. It would be developed and operated by the Historic Fort Steilacoom Association.

MASTER PLAN



Figure 13: Campus Framework Concept



Figure 14: Functional Zones

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Guiding Principles

Several high-level principles have informed the planning for the next generation of investments at Western State Hospital.

TRANSFORM THE MODEL OF CARE

Providing a new facility that serves contemporary standards of care is a central consideration in the redevelopment of the campus. Western State Hospital is committed to establishing a forensic service that embodies the recovery model of care. This model is person-centered; care staff and the patient work together, often with the involvement of family, to develop a specific and holistic treatment plan for each individual suffering from mental illness.

In addition to acceptance of medical treatment that can alleviate some of the symptoms of mental illness, the patient is guided through multiple therapies that assist in the acquisition and exercising of coping skills. The path to recovery belongs only to each individual patient.

The hospital's delivery of the recovery model of care can and should, within the constraints of the justice system, lead to the return of the individual to the community with the goal of leading a fulfilling life.



Figure 15: Connecting to Nature

Views of plants, daylight and fresh air all support a restorative environment.

IMPROVE CAMPUS EFFICIENCIES

In the process of modernizing the approach to behavioral health care at WSH, this master plan seeks to address inherent inefficiencies that have resulted from prior *ad hoc* site development.

Primary functional areas of the overall Western State Hospital campus have been identified as part of this planning process. These are intended to cluster uses with similar needs and issues together in order to enhance security and reduce a sprawling distribution of services.

The areas are shown on Figure 14 and provide several benefits:

- Delineation of open space areas along the northern campus edge. These open spaces are of three types:
 - Lands zoned as “Open Space/Recreation” by the City of Lakewood
 - Lands with steep slopes along Garrison Springs
 - Lands that are zoned for Institutional development, but are not proposed for development under this master plan
- Separation of the campus areas serving adult populations - the western and central areas - from the youth-serving facilities the CSTC area.
- Recognition of the historic Fort Steilacoom facilities as a unique resource on the WSH campus grounds.



Figure 16: Master Plan Development

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Facilities Development

In order to modernize the WSH facilities, a combination of new and renovated facilities are projected under this master plan. Development standards are indicated in Table 6

NEW FACILITIES

The largest and most transformative development on the campus will be the development of a new 350-bed forensic hospital in the western campus area. This will be developed to contemporary standards, with a focus on treatment over incarceration.

The new forensic hospital will be a free-standing facility in which all residential and treatment services are provided in one building. The new building will also include administrative and support services.

The newly constructed Patient Support Center will continue to provide nutrition and pharmacy services to this new forensic building as well as other treatment buildings on campus. The new building will be designed in conformance with all applicable Codes and FGI* Guidelines for the Design and Construction of Hospitals. The building and its program will adhere to the CMS† Conditions of Participation.

The new hospital building will support WSH’s commitment to the recovery model of care. It will be comprised of 25-bed inpatient units that are subdivided into smaller apartments of 8-9 patient bedroom pods, each with their own social spaces. The organization of the units will allow care staff to observe and engage patients in a variety of spaces of differing character.

By creating a greater number of smaller social spaces, patients have more opportunity to choose where to be and with whom they want to socialize, and thus experience a lower social density. This factor of choice - in addition to access to nature, personal privacy and the opportunity to control one’s own environment - is proven to reduce the incidence of violence and aggression.

Within the new forensic hospital, in-patient units are connected by neighborhood zones which offer a multitude of consultation, therapy and

activity spaces that allow patients to emerge from their residential area to join neighboring patients in a different environment. These neighborhoods are where recovery work takes place.

Beyond the comfort of the neighborhood is the downtown which offers the unique real-life places where patients can demonstrate their recently acquired skills for coping with their illnesses and prepare for life in the community. The new facility takes advantage of its building perimeter to enclose outdoor courtyards for patient use. There will be no significant amount of security fence visible from the surrounding public ways.

In addition, land is identified that would be appropriate for a community hospital or residential treatment facility to serve civil commitment patients. As described further in “Goals & Project Needs”, facilities of this type are to be developed state-wide, and will typically have 16 to 48 beds.

Table 6: Maximum Heights and Minimum Setbacks for New Construction	
Maximum Height of New Construction	up to 5 stories, and less than 100 ft.
Minimum Setbacks from Street Frontages	
Steilacoom Boulevard SW	75 ft.
Sentinel Dr.	100 ft.
87th Avenue SW (no projects proposed along this frontage at this time)	general alignment with existing structures, 45 ft. +/-

RENOVATIONS

Two existing facilities at the East Campus - **Buildings 28 and 29** - are proposed for significant renovation. Building 28 is operated under the Center for Forensic Services, while Building 29 houses both forensic and civil commitment patient. Together, these two buildings provide patient wards, treatment malls and a clinic. The renovations are primarily to better serve patients found to be not guilty by reason of insanity (NGRI), as well as patients with special needs and security requirements.

* Facility Guideline Institute, an independent, not-for-profit organization developing guidance for the planning, design, and construction of hospitals and health care facilities.

† Centers for Medicare & Medicaid Services, an agency of the Department of Health and Human Services (HHS)

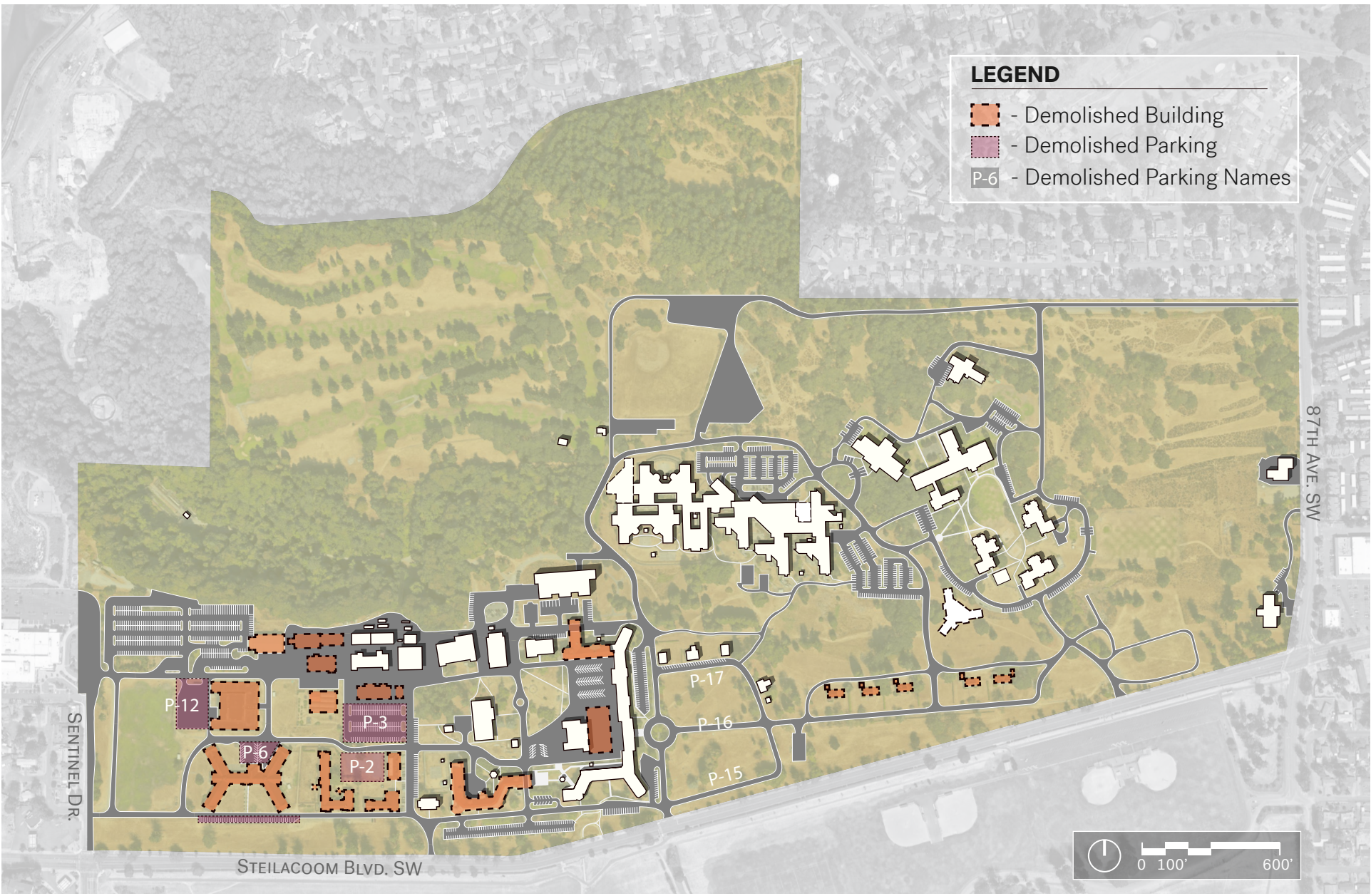


Figure 17: Anticipated Building & Parking Demolitions

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Additionally, minor renovations to portions of the Administration Building are expected, to better serve administrative functions of the hospital. These will not result in a change of use for the facility, and are likely to be phased.

DEMOLITIONS

Several outmoded facilities are proposed for demolition, both to clear land for the new facilities and to address deferred maintenance on older facilities of marginal useful value. These are indicated in Figure 17 and summarized in Table 7.

DOCUMENTATION OF LISTED STRUCTURES

The Cultural Resources Assessment considers four generally distinct eras as part of the historic assessment:

- Aboriginal pre-historic to ongoing
- Exploration and settlement 1830s to 1849
- Fort Steilacoom 1849 to 1868
- Western State Hospital 1871 to 1961

The National Register of Historic Places (NRHP) listing for the Fort Steilacoom Historic District identifies as “primary resources” the extant structures from the fort era - the four cottages on the parade ground- and two buildings from the 19th Century associated with the early hospital era - the Morgue and Bakery.

These primary resources are maintained under this master plan, as is the Settlers’ Cemetery and the parade grounds landscape.

Several structures that are proposed for demolition in this master plan are listed in the NRHP listing as secondary resources, and are identified as “Contributing” to the Hospital era in the Cultural Landscape Assessment. These secondary resources include (see Figure 11 and Figure 12):

- The five 1930s-era cottages to the east of Officer’s Row
- “Powerhouse, Heating Plant and Utility Structure” (Building 4)
- “South Hall and Wards D, E, F, G, and W-I” (1940’s)
- “Nurses’ Dormitory and Geriatrics Building” (1945)

Mindful of the *Secretary of the Interior’s Standards for the Treatment of Historic Properties*, DSHS will take appropriate action prior to demolition of any of these structures.

Table 7: Facility Status under Master Plan

#	Facility Name/Function	Area
New Construction		(estimated)*
-	Forensic Hospital	571,000
-	FCS (Bldg 28) Addition	40,740
	Community Hospital (48-bed)	60,000
-	Cottage # (CSTC)	17,000
-	Cottage # (CSTC)	17,000
-	CSTC Treatment/Recreation	15,000
-	Historic Fort Visitor Center	3,000†
	Total New Construction	≈ 723,740
Demolition		
1	CMO Maintenance office	7,623
9	Staff Offices	114,327
10	Training Center/Carpentry	36,200
11	Commissary	7,540
12	CMO Storage	1,560
15	Green House	1,826
21	Patient Wards	149,865
24	Health/Financial Services	4,752
25	Legal Services	6,446
26	not in use	22,300
27	Wards W1-N&S, W2-N&S	34,634
30 & 31	Connex Containers	2 x 160
32	Warehouse	6,161
33	CMO LHS Shop	4,000
35	Material Warehouse	12,000
44-49	Cottages	8,500
	Total Demolitions	≈ 418,054

* New Construction areas are based on preliminary facility planning.

† Visitor Center is a non-hospital facility, to be operated by others.

OPERATIONAL CHARACTERISTICS DESCRIPTION

As noted in “Planning Regulatory Context” on page 5 a description of the WSH facilities’ operational characteristics is required for approval by the City of Lakewood. The following are the criteria to be addressed in that description, with notes on the criterion and references to other sections with relevant information.

1 Description of proposed use/project application.

- Modernization of WSH facilities through a combination of building replacements and renovations, addressing facility conditions and changes in behavioral health care practices.
- The largest project will be a new 350-bed forensic hospital on the western area of the current WSH campus. See “Figure 16: Master Plan Development” on page 24.
- Space for a 48-bed community residential treatment facility is reserved. The State is identifying sites for these facilities, to be distributed around the state, where patients can have access to family and other community support.
- A new residential cottage of 18 beds for the Child Treatment and Study Center (CTSC).
- A new treatment/recreation center for CSTC.
- Land is identified for a potential Visitor Center for the Historic Fort Steilacoom Association .
- A full description of the project elements can be found in the section “” on page 20.

2 Extent and type of proposed improvements to the site and/or interior or exterior building remodeling to existing building(s) (i.e. additions to buildings, interior building improvements or alterations, landscaping, proposed signs, additional parking spaces, etc.).

- Refer to “Table 7: Facility Status under Master Plan” on page 27, “Figure 16: Master Plan Development” on page 24, and “Figure 17: Anticipated Building & Parking Demolitions” on page 26.

3 Proposed number of full and part-time employees.

- Current staffing is 2,800 full-time equivalents (FTE) across multiple shifts. At build-out, staffing is likely to drop to 2,700 FTE; see question 5.

4 Proposed number of students on the site at any one time if application is for a day care or educational facility.

- not applicable

5 Maximum numbers of employees on the site at any one time.

Staffing of the hospital varies by shift, as indicated below. Also, staffing levels can fluctuate based on services and the needs of patients. These figures are estimates based on the bed counts indicated in the program.

Shift	Staff FTE (Hospital + CSTC)	Potential RTF
Day	2,040	80
Swing	655	25
Night	340	15

6 Proposed hours, days, place and manner of operation.

- The facilities on the WSH campus operate continuously, with services to residential patients. This pattern is in alignment with existing operations on the site.

7 Type of products or services proposed to be available on the site.

- The services of the site are behavioral health and related services.

8 Number of commercial vehicles proposed to be parked or stored on the site.

Currently, there are approximately 150 commercial or fleet vehicles on the campus, and future numbers are expected to fluctuate around that figure by +/- 10%. They are of several types:

- Maintenance vehicles (currently 82)
- Vehicles assigned to on-site departments (currently 45)
- Vehicles for check out for regional use by staff (currently 19)

9 Traffic (vehicular trips to and from site per day) generated by the use, including deliveries and client-related trips (i.e. any proposed shipping and receiving activities, projected employee trip generation, projected customer trip generation).

- See “Vehicular access & circulation” on page 31

10 Total square footage of the floor area of the tenant space.

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- There are no significant tenant spaces on the campus. Some administrative offices are used by the Courts and the Historic Fort Steilacoom Association. No change in this current use is proposed under this plan.
- 11** Proposed type of equipment/machinery to be used by the business or stored on site (i.e., office equipment, manufacturing equipment, construction equipment).
- General maintenance equipment for landscape and facilities maintenance is currently used. No significant change in these operation is anticipated.
- 12** Proposed use of outdoor space on lot (i.e., outdoor storage, outdoor display and sales of merchandise, parking/open space, recreation space).
- As part of the treatment process, future facilities are expected to have courtyards for patients to recreate and socialize outdoors. These will most likely be fully or partially enclosed by contiguous buildings, as appropriate for treatment and security needs.
 - Existing recreation uses such as the play field at the CSTC facility are to remain and may have minor improvements.
 - The intent of the master plan is to welcome the general public onto areas of interest on the campus grounds, including the Fort Steilacoom area, and the former golf course - working in tandem with the County and others as new uses for that site are proposed.
- 13** If more than one tenant on the site, provide the square footage of each tenant space, business names of tenants, and type of business.
- Western State Hospital's facilities are the primary use of the site
 - The Historic Fort Steilacoom Association maintains a cluster of historic cottages on the site.
 - Oakridge Community Facility operates under a ground lease.
 - West Pierce Fire & Rescue operates a fire station on the eastern end of the property.
 - Facilities for all of these uses are identified in Table 3 on page 15
- 14** Previous use of property.
- Fort Steilacoom was the first Euro-American use of the site, and some buildings are extant from that era.
 - The hospital has been on the site since the 19th Century, although its facilities and site uses have changed over time.
 - See "Hospital History" on page 3 for more detail.
- 15** Existing number of parking spaces.
- Existing and proposed parking is detailed in Table 9 on page 33.
- 16** Surrounding uses and businesses next to proposed business/project site.
- Surrounding uses are noted in Figure 6 on page 6.
 - Specific adjacent businesses and institutions include:
 - Oakridge Community Facility (on WSH lands, but independently operated)
 - Steilacoom High School, located across Sentinel Drive to the west
 - Pierce College at Fort Steilacoom, south of Steilacoom Boulevard
 - Fort Steilacoom Park - south of Steilacoom Boulevard
 - Oakbrook neighborhood - north of the site
- 17** Operational characteristics or functions that create emission of gases, dust, odors, vibration, electrical interference, smoke, noise, air pollution, light, glare, odor or dust in a manner likely to cause offense or irritation to neighboring residents.
- There are not industrial processes on the site that would contribute to these types of impacts.
 - Over the long-term, it is expected that energy loads will be shifted to electrical rather than boiler-based heating and cooling, reducing carbon emissions.
- 18** Site and building design features that minimize land use impacts, such as traffic, aesthetics, etc. or environmental impacts such as noise, vibration, dust or air pollution, glare, odor and dust, etc.
- The scale of new construction will be similar to the scale of existing facilities on the site, with landscaped setbacks from the campus edges.
 - Parking is generally away from the campus edges, limiting the potential for glare from parked cars.
 - Supporting facilities and service areas are internal to the site, away from campus edges, reducing incidental noise impacts off site.
- 19** Storage, distribution, production and/or operations that involve the use of toxic or flammable materials.
- Materials used on campus include typical housekeeping cleaning supplies and fuel for emergency generators.

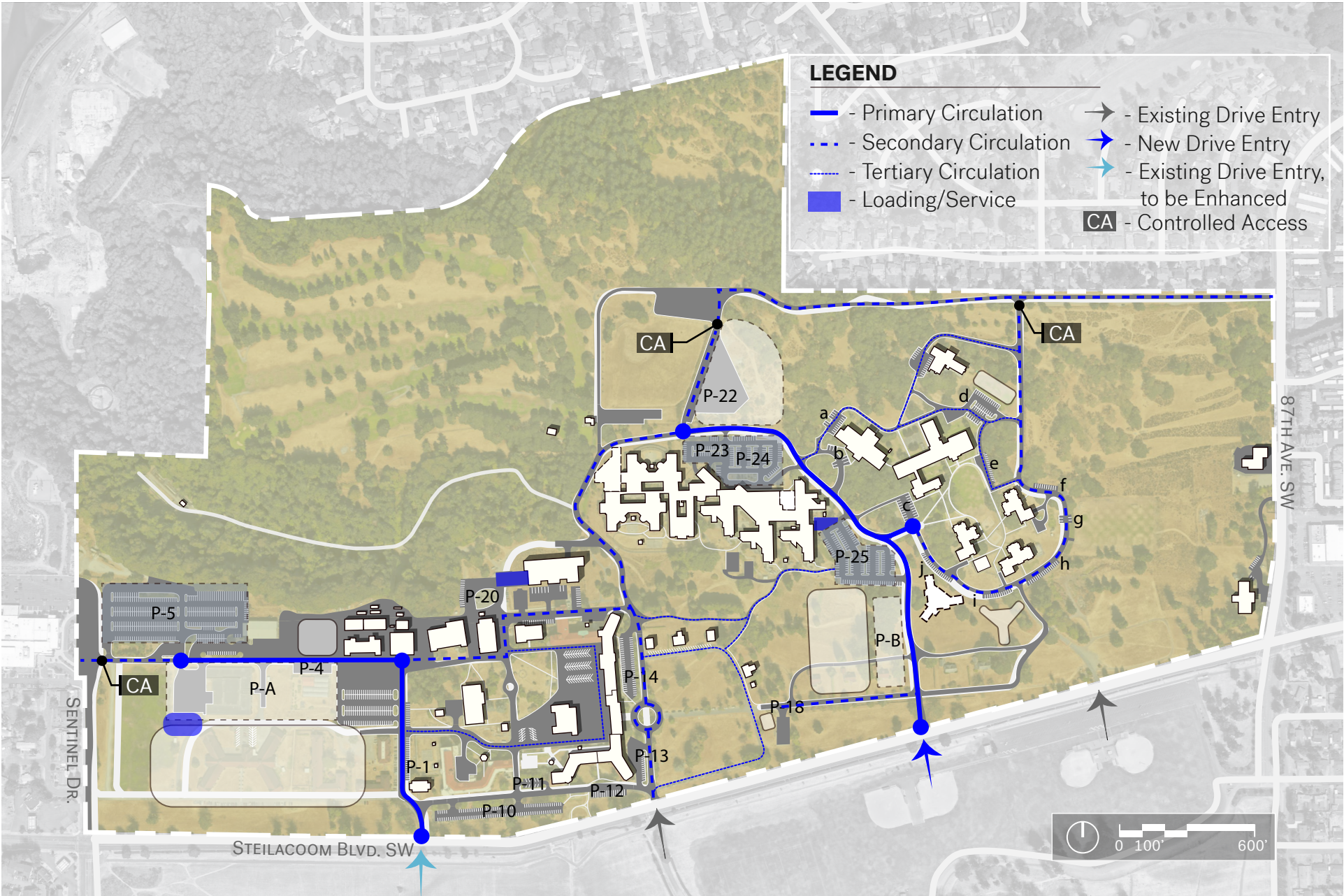


Figure 18: Circulation and Parking

Access, Circulation, & Transportation

MODES OF TRAVEL TO WESTERN STATE HOSPITAL

The majority of staff and visitors to Western State Hospital currently arrive by private vehicle.

WSH participates in the State's Commute Trip Reduction (CTR) program, providing information on commute options to all new hires and various forms of outreach to build awareness of the program.

Alternatives to drive-alone travel include:

- Public transit service: **Pierce Transit** operates regularly scheduled buses, as well as vanpool support and paratransit services. Route 212 serves the site, with stops along Steilacoom Boulevard, and service west to the Steilacoom ferry landing and east to the Lakewood Transit Center.

Transfers at Lakewood provide connections to the rest of Pierce Transit's service area, including Tacoma, Gig Harbor and Puyallup.

Approximately 900 employees receive an employer purchased transit pass for Pierce Transit, while 2,023 receive an ORCA pass, for use on the larger regional transit network.

- Carpooling: WSH provides ride-matching services - both internal and regional - as well as dedicated carpool parking based on demand (see "Table 9: Parking Inventory")
- Bicycle and pedestrian network: While the bicycling network around the WSH campus is incomplete, there are paths that would serve local trips well. A trail system in Fort Steilacoom Park - including a multi-use path paralleling Steilacoom Blvd. - help connect the campus to Steilacoom and central Lakewood.

Pierce Transit provides bike racks on all of their buses, providing support for blended bus/bike commuting for longer commutes.

Other programs in place to support commute trip reduction include:

- An internal circulator system for internal campus trips
- A guaranteed ride home program, to support carpool riders who may need to work late or leave early for unscheduled circumstances

VEHICULAR ACCESS & CIRCULATION

The projected traffic volumes are expected to decline as a result of the master plan, as summarized in Table 8 on page 31. These are based on the projected bed counts described in the program.

This master plan proposes several improvements to the vehicular circulation system, to address the following objectives:

- Relocation of vehicular entries to reduce congestion risk on Steilacoom Boulevard

Moving the eastern Steilacoom Blvd. entry westward will increase separation from the intersection at 87th Av. SW and help separate CSTC-bound trips from those accessing the adult forensic facilities to the west

- Simplification of the on-site circulation system, to improve wayfinding and reduce internal traffic and taking advantage of changes in the campus security system, i.e., with main routes not needing to enter secured areas to cross the site

Table 8: Projected Trips & Change from Existing Conditions*

	Projected	Change from Existing
Average Daily Trips	5,407	-12%
AM trips, 6:30 - 7:30	731	-12%
AM trips, 7:00 - 8:00	603	-11%
PM trips, 2:15 - 3:15	673	-12%
PM trips, 4:00 - 5:00	325	-12%

* Per TSI, Traffic Impact Analysis, WSH Master Plan, January 14, 2020, page 1

- Collaborate with the Fort Steilacoom Historical Society on removal of roads and parking within the core Fort area, east of the main Administration Building

VEHICULAR PARKING

Table 9 summarizes both existing and planned parking areas. Lots that will be removed to accommodate planned development will be offset with new spaces.

Currently, most of staff parking demand is accommodated in parking lots, but there is also a significant amount of informal parking on lawn areas. An objective of this plan is to provide parking that is well distributed and will meet the needs of staff and visitors. Parking will be provided in lots developed to City of Lakewood standards and near facilities with significant staffing.

- In addition to the existing lot on the west campus, a new lot will be built north of the new forensic hospital.
- A lot will be provided adjacent to the potential residential treatment facility.

PATHS & PEDESTRIAN CIRCULATION

Currently, the WSH campus has some dedicated pedestrian paths between major facilities. Many pedestrians also choose to walk along the roadways on the site. Given the numerous building access points within the central quadrangle of the campus, pedestrian circulation within this area connects to the larger campus system at limited points.

With the change in service model and security approach (see “Site Security” on page 43), there will be opportunities to develop a more deliberate paths system. The WSH master plan proposes a path network to connect major facilities while reducing the potential for pedestrian/vehicular conflict along primary roadways.

SERVICE & LOADING

Service access to the site will be accommodated at the main entries from Steilacoom Boulevard, as well as a service entry from Sentinel Drive to the west. Distribution facilities and loading areas for primary facilities are indicated in the circulation diagram, Figure 18 on page 30.



Figure 19: Parking Shifts

This plan seeks to remove parking from the Fort Steilacoom parade grounds and lawn areas, adding parking near major facilities.

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Table 9: Parking Inventory

Area	Tag*	General	ADA	Fleet	Spaces		Status under Master Plan	Net
					2020	Future		
EXISTING PARKING LOTS								
Hosp	1	39	2	0	41	0	Demo	-41
Hosp	2	29	2	0	31	0	Demo	-31
Hosp	3	116	6	0	123	123	Maintain	0
Hosp	4	15	1	16	32	0	Demo	-32
Hosp	5	350	3	0	355	355	Maintain	0
Hosp	6	12	2	0	16	0	Demo	-16
Hosp	7	68	2	3	73	73	Maintain	0
Hosp	8	22	0	0	22	0	Demo	-22
Hosp	10	93	2	0	99	99	Maintain	0
Hosp	11	7	4	2	15	15	Maintain	0
Hosp	12	5	8	1	16	16	Maintain	0
Hosp	13	11	4	3	21	21	Maintain	0
Hosp	14	22	6	10	41	41	Maintain	0
Hosp	15	25	0	0	25		Demo	-25
Hosp	16	17	0	0	17		Demo	-17
Hosp	17	39	0	0	39		Demo	-39
Hosp	18	26	0	0	26	26	Maintain	0
Hosp	22	175	0	0	175	220	Expand & pave	45
Hosp	23	34	0	9	43	43	Maintain	0
Hosp	24	65	23	13	108	108	Maintain	0
Hosp	25	118	6	0	126	126	Maintain	0
Hosp	I				62	24	Partial demo	-38
Hosp	II	0	0	3	3	3	???	0
SVC	III	0	0	150	150	150	Maintain	0

Area	Tag*	General	ADA	Fleet	Spaces		Status under Master Plan	Net
					2020	Future		
CSTC	a	19	1	0		0	Maintain	0
CSTC	b	8	1	0		0	Maintain	0
CSTC	c	19	1	0		0	Maintain	0
CSTC	d	41		0		0	Maintain	0
CSTC	e	10	2	0		0	Maintain	0
CSTC	f	11	1	0		0	Maintain	0
CSTC	g	6		0		0	Maintain	0
CSTC	h	18		0		0	Maintain	0
CSTC	i	6	1	0		0	Maintain	0
CSTC	j	18	1	2		0	Maintain	0
NEW PARKING LOTS								
Hosp	A					390	New	390
RTF	B					160	New	160
TOTALS								
		1,444	79	212	1,659	1,993		334

* Parking lots are shown in Figure 18 on page 30

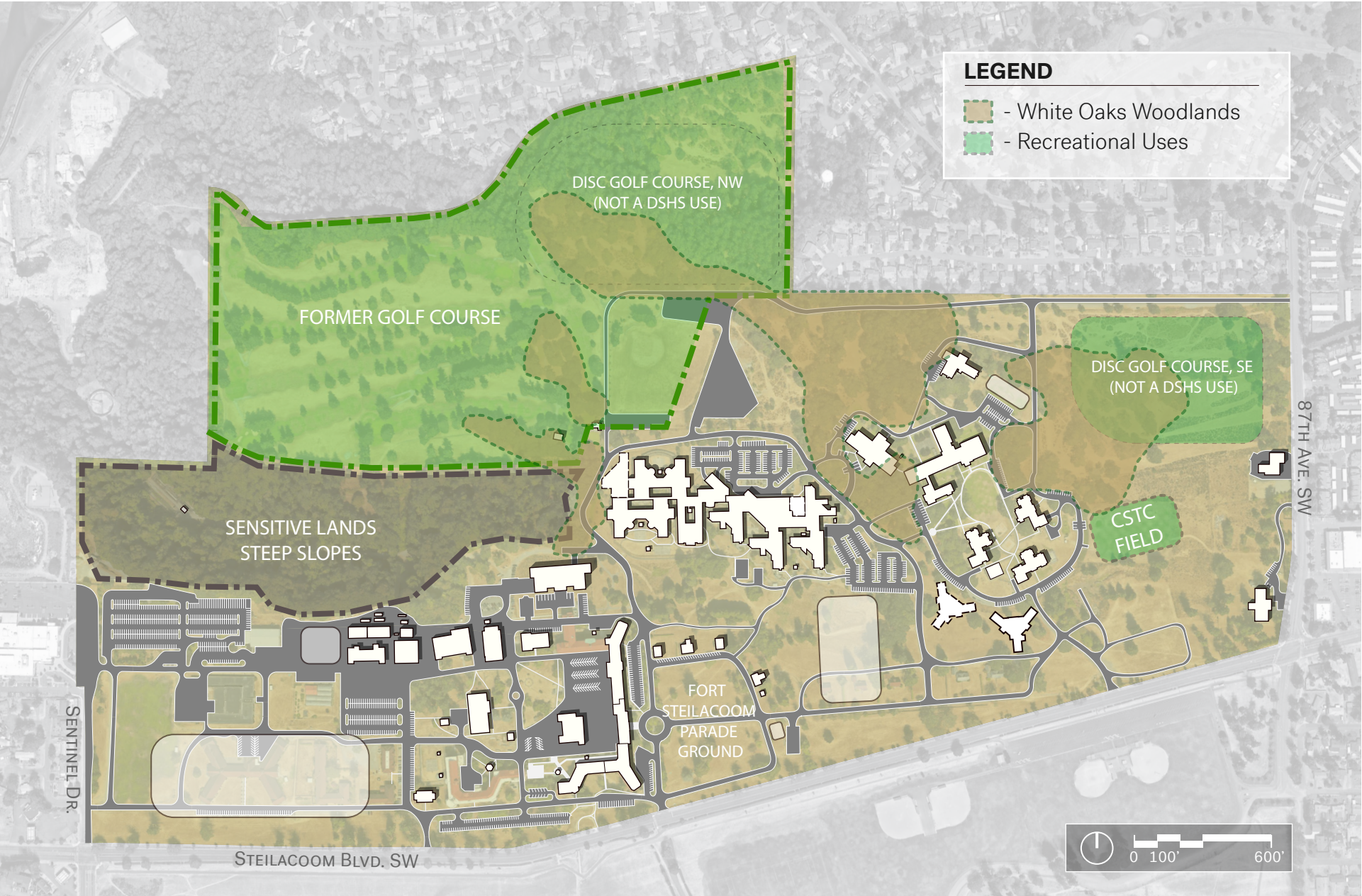


Figure 20: Landscape and Open Spaces

Open Space & Landscape

RECREATIONAL USES

The former golf course is zoned by the City as Lakewood as Open Space and Recreation, Type 1 (OSR1). This category is intended for passive recreation, and limits any development to uses that are accessory to recreation. This area has historically been accessible to the public and this master plan does not propose to alter that.

Other areas on the site are used for recreation, either by patients of WSH, or by others. For example, the CSTC facility includes a playfield to the east of the building complex, for use by patients of the facility. In recent years, a disc golf course has been established by a local club on the northeastern corner of the site, although no formal agreement has been made with WSH or DSHS for this land use.

OPEN SPACE & TREATMENT

Managed open space supports treatment practice. Outdoor walks and recreation for patients provide many wellness benefits. The campus grounds are at times utilized for supervised walks.

While specific design is yet to be developed, the new forensic hospital will include courtyards and other appropriate open areas for patient activities. These will allow regular access to outdoor areas by patients.

HISTORICAL LANDSCAPE ELEMENTS

The WSH site has a unique character that reflects the pre-settlement period, historic site development and current development. There are large groves of Oregon White Oaks and individual Oregon White Oaks spread across the site that have been growing since pre-settlement times. There are also many large Douglas-fir trees across the site that are second growth trees, the old growth Douglas-firs would have been logged at the time of settlement. The old-growth oaks still exist because there was not a market for their wood. There are also many native Madrone trees growing across the site. The Madrone trees are faster growing and shorter lived than the Oaks and Firs and the oldest would be around 100 years old.

With the development of the site rows of trees were planted along roads and hedges were planted between sites to delineate and organize spaces.

This combination of existing old growth trees and the rows of street trees and hedges significantly contribute to the unique character of the site.

Some elements of the landscape have been identified in the Cultural Landscape Assessment report as contributing to the historic character of the Fort Steilacoom Historic District. The primary elements of concern are:

- The former settler cemetery
- The parade grounds east of Circle Drive and partially enclosed by the Fort-era cottages.

These facilities are not impacted by proposed projects under this master plan. DSHS and WSH will continue to collaborate with the Historic Fort Steilacoom Association on measures to protect and restore the parade grounds, in relation to that organizations preservation and interpretation mission.

SENSITIVE LANDS

The ravine between the existing hospital and the former golf course has steep slopes and supports the Garrison Springs fish hatchery. No development is proposed in these areas.

TREE RETENTION & PROTECTION

The new forensic hospital has been sited in a previously developed area of the site, significantly reducing the potentiality impact on trees, relative to other areas studied.

The identified oak tree stands on the site are indicated in Figure 20 on page 34. Facilities anticipated in this master plan have been sited to reduce impacts on the oaks to the greatest extent possible. Impacts on the mature oaks can be further reduced in implementation of the plan:

- As site-specific designs are prepared, care should be taken to avoid development of hardscapes and building footprints under the drip line of the oaks.
- Irrigation plans for future landscaped areas near the oak stands should avoid over-watering of the root zone.

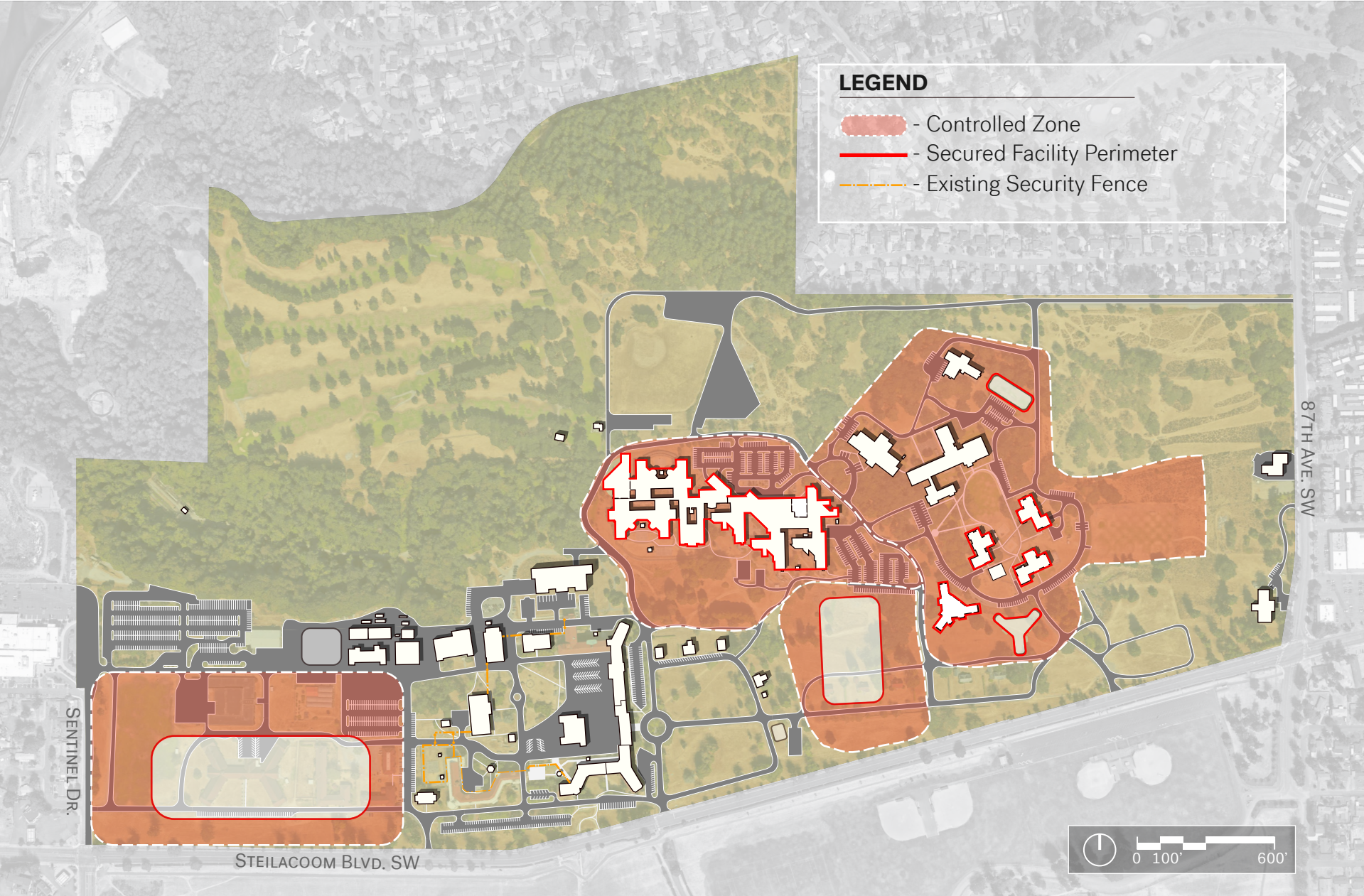


Figure 21: Site Security Approach

Open Space & Landscape (continued)

The Western State Hospital site has significant groves of large existing trees, many of them are older than the 19th century settlement of the site. These significant trees contribute to the character of the site and to the City of Lakewood and are subject to the City of Lakewood Municipal Code 18A.50.320 'Significant Tree Preservation'.

The Lakewood Municipal Code (LMC) considers any *Quercus garryana* (Oregon White Oak) over 6 inch diameter (measured at 4.5' above ground) and any conifers or other deciduous tree species over 9 inch diameter to be 'Significant Trees' that are protected under the LMC.

During construction, all significant trees are to be protected by approved tree fencing located at the drip-line of the trees. There is to be no disturbance to the soil within the tree drip-line or materials store within the drip-line.

A tree retention plan locating all significant trees by species, caliper of each tree and all tree drip-lines accurately located is required for project permitting. Any significant trees to be removed will need to be replaced according to a formula provided in the Code.

ADULT FORENSIC FACILITIES

Forensic patients will be housed in the new forensic hospital and the existing facilities in Buildings 28 and 29. The existing facilities will house patients found not guilty by reason of insanity (NGRI). Both of these facilities will be secured at the building perimeter with controlled locked perimeter doors, with vestibules and internal compartmentalization of sub-areas.

The new hospital will include integrated courtyards to allow patient access to the outdoors within the secured area. Patient transport and deliveries will be managed with vehicle sallyports.

CHILD STUDY & TREATMENT CENTER (CSTC)

The CSTC is not fenced, but the grounds are observed via electronic and general observation. Residential facilities are secured at their entries.

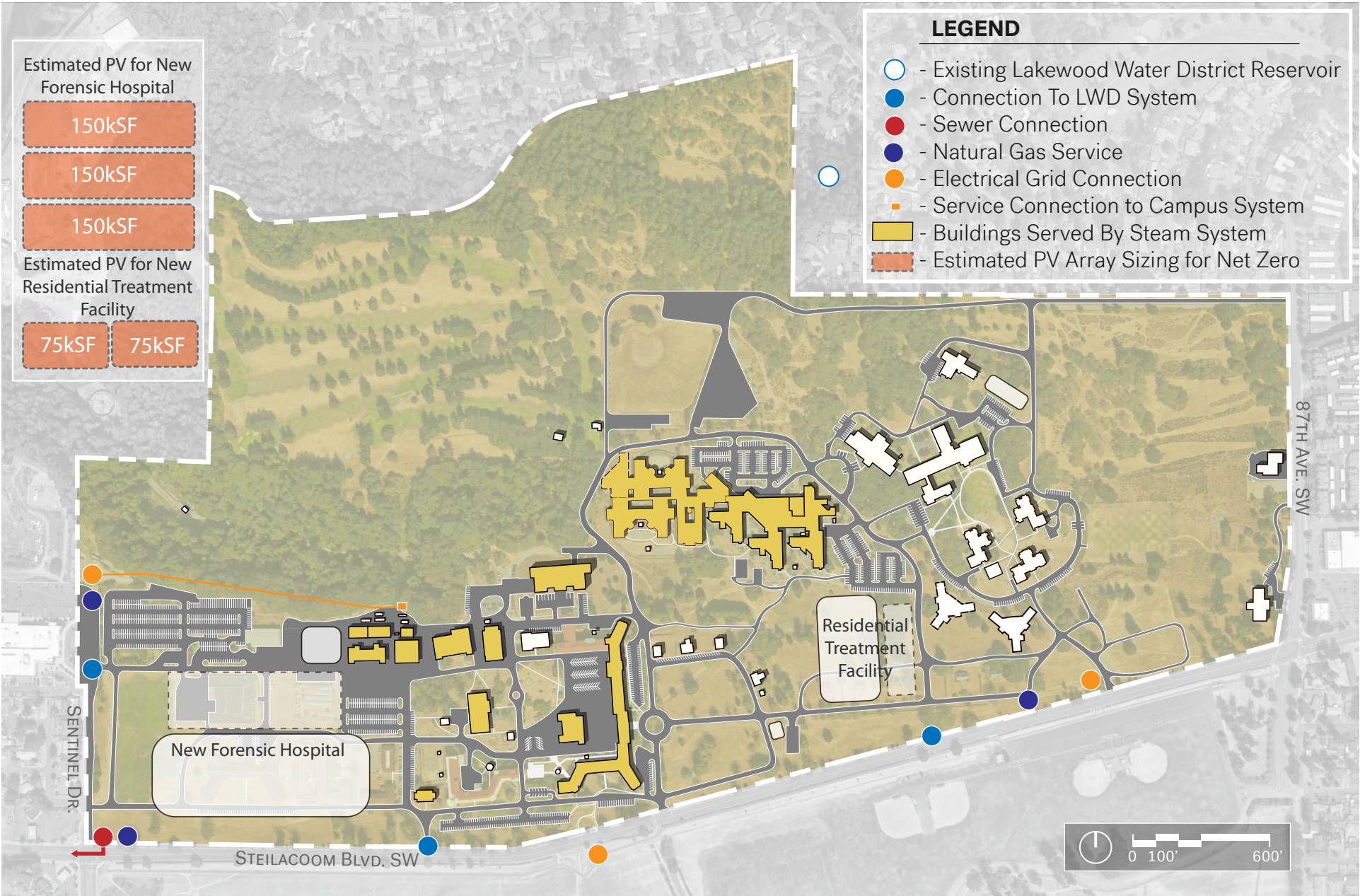


Figure 22: Utility Services and Opportunities

Utilities & Infrastructure

ENERGY SYSTEMS

Facilities built under this master plan are required to comply with the state's Net Zero Policy (see sidebar). The core requirement is that facilities be "net zero capable" for energy use. It is recommended that DSHS further explore strategies to migrate from gas-fired steam for thermal conditioning, and factor this transition into projections of gas and electrical demand.

ELECTRICAL SERVICE

Electrical service to the WSH campus is provided by Tacoma Power. The existing campus distribution system has two (12.47kV) feeder connections, fed from separate utility substations, as shown in Figure 22.

Capacity

Each substation has a nominal capacity of 8MW with a short term thermal rating of 16MW. The conductors that feed that campus have a nominal rating of 4MW each. Tacoma Power has indicated that up to 1 MW of additional demand could be accommodated on each feeder, but that loads in excess of that would require a detailed study of the system*.

A 2018 Campus Essential Electrical Systems of the on-site DSHS distribution system indicated that a substantial portion of the campus essential electrical system is at the end of its useful life. The report recommends replacement of existing equipment to maintain operational redundancies including life safety systems.

Future Demand

With development under this plan - and assuming a similar blend of gas/ electrical fuel split as the campus currently uses - campus electrical use is projected to grow by 55%, with an estimated additional 1 to 2 MW of load on the Tacoma Power grid. There are no infrastructure upgrade projects currently planned for the two substations.

Therefore, if the campus growth does increase demand by more than the 1-2MW preliminary estimate, a new switch and/or new feeder at one

or both of the utility substations may be required. Additionally, campus electrical upgrades and modification would likely be required downstream of the utility meter to support future growth. Future campus growth and redevelopment should integrate the 2018 report recommendations.

STEAM DISTRIBUTION & THERMAL CONDITIONING

The boilers in Building 4 - fueled by natural gas - provide steam to most of the campus for heating, domestic hot water, and process loads. Facilities served are indicated in Figure 22. Given the age of the steam system, the State's Net Zero policy and limits on the gas feed to the boiler room (see below), this master plan assumes that future buildings will not utilize the central steam plant.

In the long-term, DSHS seeks to migrate all facilities from the steam boiler facility and retire it. It is recommended that strategies such as ground-source heat pumps ("geo-exchange") be studied as part of that overall campus conversion. At this time, there is not a specific schedule for doing that.

NATURAL GAS

Puget Sound Energy (PSE) is the natural gas supplier to the WSH campus.

System & Capacity

Three gas feeds serve the campus, shown in Figure 22 on page 38. Their current capacities are:

- 1 A high-pressure (>60psig) service from Sentinel Drive SW to the campus steam system boilers in Building #4. The current demand on this feed is around 37 Therm/hour. This high-pressure line is at capacity and PSE recommends reducing demand on the line.

Depending on how DSHS approaches the State's Net Zero policy, the demand on the campus steam system and therefore on this feeder line can be reduced significantly.

* The system study would require a fee to be paid by Western State Hospital.

Washington's Net Zero Policy

Executive Order 18-01, signed by Governor Inslee, requires that facilities be developed as net zero capable, and that renewable energy sources to achieve net zero should be developed when feasible. The order applies to state-owned facilities including new construction or major renovations at WSH.

"...all newly-constructed state-owned (including lease-purchase) buildings shall be designed to be zero energy or zero energy-capable and include consideration of net-embodied carbon. In unique situation where a cost effective zero-energy building is not yet technically feasible, building shall be designed to exceed the current state building code for energy efficiency to the greatest extent possible."

Meeting this goal at WSH will require investment in sources of thermal and electrical energy from non—fossil fuel sources. Examples of sources include:

Thermal Demand (i.e., space heating & cooling, domestic hot water heating):

- Solar thermal
- Bio fuels

Electrical demand:

- On-site solar photovoltaic or wind generation
- Grid-based solar and wind production

A primary strategy for meeting net zero goals is migration from gas-fired equipment to electrical equipment, when performance and efficiencies can be achieved. Examples of High-Efficient Electric Based Thermal/Domestic Systems are: heat recovery chillers, thermal storage, ground source heat pumps, water-to-water heat pumps

Therefore, a result of meeting the net zero policy mandate over time could be an increase in electrical demand. It is recommended that DSHS develop scenarios to meet the Net Zero policy at WSH in conjunction with providing future demand to Tacoma Power.

Fuel Mix: Tacoma Power

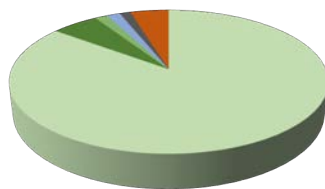


Figure 23: Tacoma Power's fuel mix is mostly hydropower.

This will help the WSH campus to meet the Net Zero mandate

Data Source: mytpu.org/about-tpu/services/power

Hydro Wind Biomass
Nat. Gas Coal Nuclear

- The second service is an intermediate pressure (<60psig) feed from Steilacoom Boulevard near the current eastern driveway and serving the CSTC cluster (Buildings #50-56). The current estimated demand on this feeder is 3 Therm/hour with an estimated future demand of 6 Therm/hour.

PSE has indicated this feed has no additional capacity, and noted that any modifications to the piping network from this feed could trigger a requirement for a complete natural gas service renovation, to comply with current codes.

- The third service is also an intermediate pressure (<60psig) feed from Steilacoom Boulevard on the western end of campus, and serving Building #10. The current estimated demand on this feeder is 1 Therm/hour with an estimated future demand of 16 Therm/hour.

Future Demand

Based on the Master Plan building area growth projections, it is expected the natural gas demand may increase by 30% for the campus as a whole, assuming a more traditional building system design. Options for achieving an all-electric net zero capable building(s) or campus would reduce natural gas.

Puget Sound Energy has indicated the Far West Drive SW high-pressure utility distribution pipe and each of three campus feeds are near capacity. However, the Steilacoom Boulevard intermediate pressure utility distribution pipe has sufficient capacity to support campus growth.

While the two feeds from Steilacoom Boulevard are at capacity, the utility has indicated the intermediate pressure distribution main in that street has sufficient capacity for increased demand if a new service is brought onto campus.

Based on Master Plan development/expansion on the west side of campus in particular, the current service would need replacement. Additionally, care should be taken for the routing of new services and avoid crossing over/under existing natural gas lines.

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WATER SYSTEMS

WATER SUPPLY

Groundwater has met the needs of Fort Steilacoom and the hospital since the start of American settlement on the site that is now WSH. WSH maintains its water rights and wells to meet present needs. The campus system includes two wells with storage tanks and a network of supply lines.

Existing water main sizes vary from 4 inches to 8 inches and are made from various materials, as they have been extended over time. Fire suppression - including fire hydrants and sprinkler systems - and domestic services are tapped from these private water mains.

Lakewood Water District (LWD) and DSHS have had preliminary discussions regarding the potential to incorporate Western State Hospital into the LWD service area, either partially or entirely[†].

LWD has “connection-ready” services extended to each of the campus supply lines in the event the well supply is either unavailable or unsafe. These connection points would be utilized if a decision is made to fully connect the campus to the District’s system.

Discussions on conversion of the overall system are on-going, although DSHS’ intent is that new major facilities - the new forensic hospital and potential residential treatment facility - would be connected to LWD service.

Prior to assuming any of Western State Hospital’s existing infrastructure into their purview, LWD would need to confirm the condition of the existing water infrastructure, including wells, storage facilities, and supply lines. Depending on results of these evaluations, LWD may incorporate only some of the existing water lines and the campus may elect to build new water infrastructure as part of a developer extension agreement.

If the District’s service is extended to the WSH campus, the following criteria would apply:

- Provide at least two points of connection to the off-campus system, with interconnection on the campus
- Upgrade the on-campus system wherever it will be part of the LWD main distribution network

- Provide a through-campus connection to the existing LWD reservoir east of the former golf course site
- Provide appropriate metering and backflow prevention at all points where the LWD mains will connect to WSH-maintained distribution lines

SANITARY SEWER

The campus sewer system is privately owned and maintained, and discharges to the public sewer system operated by the Town of Steilacoom. The Town’s collection system feeds via pump to the Pierce County Wastewater Plant, located along Chambers Creek.

Based on conversations with both WSH operations staff and Steilacoom Public Works, the internal collection system has adequate capacity, particularly since some new developments will replace existing developments, thus offsetting some of the additional capacity requirements. Determining the existing sewage flow through this campus sewer system is complicated since there are presently few water meters to provide a baseline for water use information. Also, many of the existing buildings are old enough, are varied in use, and have unique uses which make standard engineering estimates unreliable for this campus. As an assumed baseline, Steilacoom Public Works is charging Western State Hospital 1,500 REU’s (residential equivalent units) each month.

The connection to the Steilacoom sewer system is at the southwest corner of the WSH campus, as indicated in Figure 22 on page 38. This connection is being upgraded, including the addition of a meter. Western State Hospital, in agreement with Steilacoom Public Works, will soon install a flume on the last section of private sewer main to measure the actual sewer flow discharging to the public sewer system. This data will allow for updated data on actual collection from the hospital campus.

Future development will require additional sewer capacity charges and will be based on the calculated sewer demand from Pierce County Public Works and Utilities “Documented Water Use Data”. The total future sewer capacity will be the current sewer capacity of the current campus development plus the sewer demand for any proposed developments and minus the removed buildings.

Any new developments which include food preparation facilities will need to include grease interceptors between the source of grease waste and the sewer main. These interceptors typically include exterior concrete vaults that will capture and store grease.

[†] Lakewood Water District is an independent district - e.g., not a city agency - and secures its water fully from groundwater sources.

RAIN WATER

Western State Hospital is situated on gravely-sandy soils with medium to high infiltration rates. Currently, catch basins on campus are piped and flow to a combination of campus retention facilities or direct discharge to Chambers Creek. Infiltration systems range from 'formal' designed systems with a defined storage capacity sized per specific development requirements, or 'informal' systems consisting of downspouts spilling onto the ground, for some older facilities.

Proposed developments will need to provide infiltration systems designed to address both treatment and infiltration requirements of the Stormwater Management Manual for Western Washington and other applicable regulations, as administered by the City of Lakewood. Existing storm systems will not need to be replaced unless they are determined to be undersized for runoff discharging from new, upstream developments.

Proposed systems may include open infiltration ponds (where space allows) and underground storage pipes, vaults, and/or trenches. Ideally, infiltration systems will be located near the development, but site-specific features may dictate other locations on campus are more suitable. The gravely nature of the native soils will be conducive for on-site stormwater management systems such as bio-retention areas or porous pavements, particularly for stormwater discharging from 'clean' areas such as roofs or plaza areas.

Runoff from pollution-generating surfaces (i.e. parking lots and access drives) will need to be routed to a water quality treatment facility to remove particulates before discharging to the native soils. Typical water quality treatment systems include bio-retention areas, cartridge media filters, or below-grade concrete storage vaults.

Specific engineering of future systems will be included at the project level. Site-specific geotechnical analysis will be required to determine infiltration rates in the native soil and location requirements (such as setback distances from sensitive areas).



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