

Washington State University PUYALLUP RESEARCH AND EXTENSION CENTER



DRAFT Master Plan

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Washington State University
Capital Planning & Development
For
College of Agriculture, Human,
& Natural Resource Sciences

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Introduction

WSU Puyallup Research and Extension Center opened its doors in 1894, when the Puyallup valley was a sparsely populated farm community in an agrarian region. From its beginning, the Puyallup Center focused on finding realistic, applicable methods to improve crops, dairy, and poultry production.

Since then, the region around the Center has changed dramatically. Instead of miles of open farmland, now approximately 60 percent of the state’s population is located within 50 miles of the campus. In addition, the region is one of the fastest growing areas in the country with another 1.5 million people expected over the next 20 years.

The faculty at WSU Puyallup, located in Pierce County, hold to their mission of providing relevant and applicable research for the

communities of the Puget Sound basin. The historical focus on agricultural techniques has transitioned to research on water, environmental health and sustainability, organic agriculture, and human health.

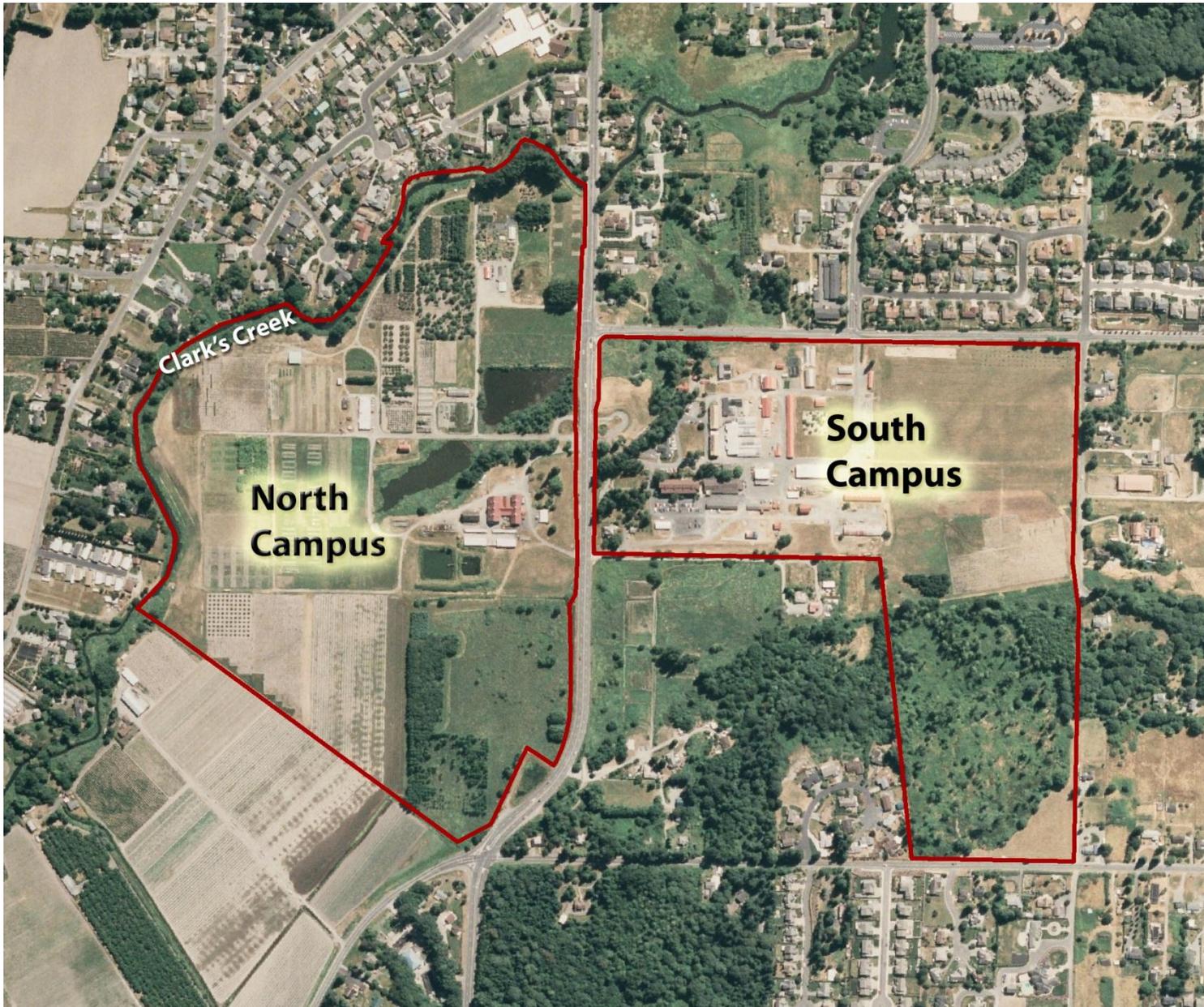
This master plan has been developed in response to the research and education programs at WSU Puyallup. After reviewing existing conditions and structures, recommendations for site revisions and new construction are illustrated. By using newer sustainable and energy efficient building technologies and by renovating older structures, WSU Puyallup will continue to become a center for environmental research and education for the State of Washington and the nation.



Historic barns are iconic features on the North Campus



Administration Building welcomes visitors



The main campus at Puyallup is divided by Pioneer Way. South Campus is more developed and has more utilities readily available. North Campus has historically served an important role in agricultural research and extension.

Vision

“Bridging the past to the future, providing research, instruction and outreach services through an interdisciplinary approach for the study and development of ecologically sound, socially responsible, and economically viable sustainable urban communities.”

Stormwater Low Impact Development Research at WSU Puyallup provides the largest full-scale replicated study in the nation of LID effectiveness.



Master Plan Goals

Provide opportunities for sustainable land use and building design.

- Highlight programs that exhibit sustainable strategies for urban development.
- Provide facilities that use sustainable site design.
- Pursue opportunities for a campus recycling program.
- Enable outreach instruction by providing universal access to sites and facilities.
- Demonstrate stormwater management in all future development.
- Recycle buildings for new uses when possible.



Wetland restoration projects at the Center are possible through student and volunteer environmental education programs.

Address safe circulation for pedestrians, bicycles, vehicles, and parking.

- Plan for public transit to the Center.
- Provide adequate parking for employees and visitors by designing parking spaces reasonably close to working spaces using porous surface parking areas.
- Provide safe bicycle access, parking, and covered storage.
- Create pedestrian trails for walking and biking as part of new project landscaping.
- Enhance safe connectivity between the north and south sides of the Center.
- Identify exterior gathering spaces for both large public functions and small group meetings.



This picnic shelter provides an outdoor space for small group gatherings.

Determine a location for graduate and visiting scholar housing.

- Locate housing site(s) within walking distance to the administrative core of the Center.
- Small and sustainably designed housing (under 800 sq. ft) that demonstrates the mission of the Puyallup Research and Extension Center.
- Low Impact Development (LID) principles will be incorporated at all levels of design.



A small guest cottage provides temporary housing for visiting researchers. Newer cottages are needed.

Establish an infrastructure plan that responds to future program needs.

- When possible, install all future utilities underground.
- Maintain and enhance fiber optic corridors.
- Provide chilled water capacity and distribution.
- Upgrade electrical system to be secure, reliable, and redundant.
- Ensure a potable water supply and distribution system.
- Establish sustainable storm and sanitary treatment systems.
- Upgrade and maintain reliable steam and natural gas distribution systems.

Enhance security

- Provide welcoming, but secure entrances.
- Create a system of dense vegetation and fencing that secures the Center.
- Develop “open to public” zones and “secured for research” zones.

Organize facilities into use zones.

- Create zones that have similar uses when possible. These zones will include:
 - Research
 - Administration & Public Reception Spaces
 - Classrooms
 - Environmental Education Programs
 - Graduate Student Housing
 - Facility Services

Organize facilities for efficient research, instruction and outreach.

- Evaluate the age and usefulness of all facilities to ensure they meet programmatic needs.
- Provide a plan for removal and replacement of structures that are obsolete.
- Present opportunities for siting new programs and cutting edge technology.
- Continue connectivity to satellite facilities such as Goss Research Farm and Meyer's Point.



The Old Federal Building (1017), built in 1917 was condemned in the early 1990s. Funding is needed for demolition because the structure has been determined to be structurally unsound.

Planning Assumptions

- The Puyallup Research and Extension Center will be a leader in low impact development (LID) and sustainable design.
- Deferred maintenance is needed to determine which buildings are beyond a useful life and should be demolished and which buildings should be renovated.
- No new buildings are proposed for the 2011 -2013 WSU Biennial Capital Plan. The Allmendinger Center will be remodeled for a classroom which is proposed as part of the CAHNRS Aggregate Projects request.
- All other funding for new buildings must come from departmental funds, grants and private donations.
- The WHETTS Center currently located in the Conferences and Institutes building (1016) will be relocated into the remodeled Allmendinger Center.
- The Old Federal Building (1017) has been condemned and needs to be demolished.
- The Conferences and Institutes building (1016) will probably be condemned and demolished because remodeling this brick building will be cost prohibitive and does not meet current or future use needs.
- Barn 104 is structurally sound, but underutilized.

- Housing is needed for visiting and graduate researchers. A minimum of four units with one or two bedrooms per unit will be added to existing on-site housing options and expand housing capacity. All new housing must demonstrate LID principles and will be funded by private donations or grants.
- As Puyallup becomes more urbanized, site security is increasingly necessary to protect state resources.
- Increased urbanization is an educational outreach opportunity for WSU Puyallup. The master plan must coordinate physical facilities with education and outreach opportunities.
- New research facilities will also be used as educational outreach and teaching facilities.

Land Characteristics: Geology, Soils, Hydrography, Climate

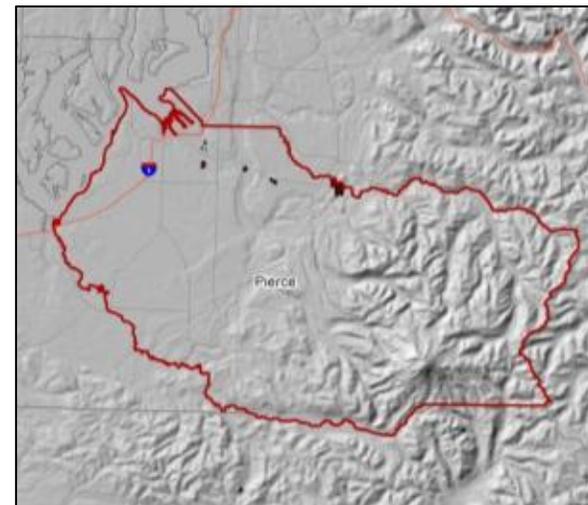
The Puyallup campus is located within the Puget Lowland, a broad, low-lying region stretching between the Cascade Mountains on the east, the Olympic Mountains and Willapa Hills to the west, and the San Juan Islands to the north.



Pierce County extends from Mt Rainier to Puget Sound

The geologic history of the Puget Lowland includes at least four periods of glaciations. The central Pierce County region consists of two major landforms: the Puyallup Valley and the Puget Lowland plateau. The soils of the Puget lowland plateau in central Pierce County are derived from glacial deposits, including till, outwash, and lakebed sediments. Most of the till and lakebed soils have seasonal high water tables, while the outwash soils are coarse-textured and are well drained. The Puyallup Valley soils are derived from alluvial and mudflow deposits from Mt. Rainier, and are prime farmland soils: deep, medium textured, and level, with few rocks. Most of the valley soils have seasonal high water tables.

The major water feature of the area is the Puyallup River, a salmon-bearing waterway located about 1.25 miles north of the Center. Clarks Creek, a tributary of this river and also a salmon-bearing stream, flows along the northeast boundary of the Center. Spring and fall chinook, coho, and chum salmon as well as summer and winter steelhead migrate up the Puyallup River to Clarks Creek to spawn. Woodland Creek, a tributary to Clarks Creek, also flows along the campus.



The climate of western Washington is characterized by dry summers and wet winters with year round mild temperatures. Average annual rainfall recorded between 1931 and 1995 range between 25 and 60 inches. Average temperatures for the Puyallup area range between 76 degrees Fahrenheit in July to 33 degrees in January. A record low temperature of -3 degrees was recorded on Jan 18, 1950. A recorded high of 101 degrees was recorded on June 6, 1955.

History

During recent ethno history, Southern Coast Salish Indians occupied the Puget Sound area. As a subgroup of the Salish Indians, the Puyallup Tribe's territory included the Puyallup River drainage, extending from Mount Rainier to Commencement Bay and including the uplands east of the Tacoma Narrows.



Puyallup Tribe's historic territory

When Euro-American settlers first arrived in the Puyallup River region in the 1800's, they found a land full of quality agricultural opportunities. The abundant cottonwood trees found throughout the valley were ideal for making barrel staves, and soon a large barrel factory was established. In addition, farmers established extremely profitable hops production starting in 1865. Ezra Meeker, a very successful hops farmer, platted the town of Puyallup on his homestead in 1877. The famous 17-room Italianate Victorian mansion he built for his wife still stands today.



Logging helped the economy around Puyallup thrive

In 1891, an infestation of hops lice destroyed the hops crop and devastated many farmers. After this, the State legislature decided that the state's first experiment station should be located in western Washington to focus on the specific needs of the region's farmers. The legislature had established the State College of Washington and Agricultural Experiment Station (later to become WSU) in Pullman the previous year, but many felt that the location was too distant from western farms to be able to adequately serve their differing needs.

The Ross family donated 40 acres of land in Puyallup for the experiment station in 1894. The facility was originally known as "Ross's Station". It later changed its name to the Western Washington Experiment Station, and then finally in 1968 to the Western Washington Research and Extension Center. While hops production never returned to the Puyallup area, the fields were soon replaced by berry, dairy and poultry farms. The new Extension Center has been instrumental in the success of these enterprises.



In the century since its founding, the Center's focus on applied research that benefits the surrounding community has remained the same. However, the environment around the Center has changed dramatically, especially in the past 20 years. Much of the agriculture land has been converted into residential and commercial properties, and the pressures of urbanization have significantly changed the community's needs. New research emphasis is placed on sustainability and the importance of preserving native salmon by promoting Low Impact Development (LID) and other demonstration projects to exhibit environmental stewardship.

Agriculture still exists in the region and it is enthusiastically supported by the local governments and community members, along with a growing interest in locally-grown foods. Human-induced environmental change will be and already are key concerns in the community. The research and outreach provided at WSU has responded to these changes and will continue to respond. The Center's application of research-based science has helped to develop sustainable community resources. Its studies in organic agriculture and drought and disease resistant landscape plants and crops meet the industry and consumer demands. The Center is committed to continue to meet these needs for the future.



Agricultural research supports the surrounding community

Faculty/Research/Programs

A growing number of land grant universities find themselves absorbed into expanding urban communities. How they relate to their new urbanized surroundings is becoming an emerging issue for national associations and universities in every state. Other campuses like Rutgers University, Texas A&M, and University of Minnesota are incorporating urban needs and issues into new programs and centers. Instead of constricting their research opportunities however, many campuses like the Puyallup Center are finding growing opportunities to partner with the community and industry to provide help to all segments of the human experience.

The 125 faculty and staff at the Puyallup Center use an interdisciplinary approach to problem solving. Faculty hail from a diverse range of departments, including Entomology (3), Plant Pathology (1), Crop and Soil Sciences (4), Horticulture and Landscape Architecture (3), Natural Resource Sciences (1), Animal Sciences (1), Biosystems Engineering (1) and College of Pharmacy (1). Their location in the center of a highly-populated area provides an opportunity to engage the urban community. Current programs at the Center focus in areas of youth development, organic and sustainable farming, and nutrition and diabetes education. In particular, the campus is the center of operations for the following state programs:

- WSU Extension State 4-H Youth Development Office,
- WSU Extension statewide SNAP-ED nutrition and diabetes education programs,
- Center for Sustainable Agriculture and Natural Resources (CSANR),
- Urban Integrated Pest Management (IPM) and Pesticide Safety Training Program,
- College of Veterinary Medicine's Avian Health and Food Safety Laboratory,

- Center for Distance and Professional Education (CDPE),
- a non-CAHNRS/Extension conference support program,
- WSU Small Farms Program, and
- WSU Extension Family Programs

The Center has positioned itself to be an example of a sustainable community. Several buildings have been retrofitted using low impact development (LID) techniques such as rain gardens, pervious paving materials, and storm water detention. This project received a 2008 Department of Ecology Stormwater Grant to perform the retrofit as a demonstration project for the broader community. These techniques will significantly reduce storm water volumes, thereby minimizing stream bank erosion and increasing water quality. The ultimate goal is to mimic the natural hydrologic conditions of the site, achieving the storm water runoff equivalent of a forested condition.



Demonstration projects provide hands-on learning opportunities

The Center also recently began a 5-year community effort to restore the banks on the salmon-bearing Clarks Creek that borders the property, demonstrating to other property owners what kinds of stream bank landscapes are both attractive and beneficial for stream health. The Center will create educational programs around this project to develop interest in stream restoration all over the Puget Sound region.



Clarks Creek borders the North Campus



Clarks Creek

Other current research includes:

- LID techniques & effectiveness
- watershed hydrology
- removal of bacteria from Clarks Creek
- effect of low-level pesticide combinations on salmon,
- potential emergence of Sudden Oak Death in Washington forests
- organic agriculture practices for small and medium scale vegetable producers,

In 2007, Governor Chris Gregoire created the Puget Sound Partnership to develop the means to restore and protect the Puget Sound. The Partnership prioritizes cleanup and improvement projects, coordinates federal, state, local, tribal and private resources, and makes sure that all representative groups are working cooperatively. Decisions are based on science, and actions focused on methods that have the biggest impact.

Funding

State support for the Center comes primarily through the Agricultural Research Center and WSU Extension. The three year average of annual funding from these sources between 2005 and 2007 was over \$2.7 million, plus added non-personnel funds of nearly \$185,000. However, personnel and operations shortfalls for the Center are around \$100,000 to \$120,000 annually. The differences are often made up from revenue in an endowment fund for graduate students and the “Unit” share of Facilities and Administration funding which is returned to the Center each year. After the day-to-day needs are paid, few dollars remain to cover upgrades to the campus facilities.

While operational and personnel funds are tight, non-state support funding for campus research is over three times higher, averaging over \$9 million per year for 2005-2007. Grants have doubled since 1998, which reflects the quality of research accomplished at the Center.

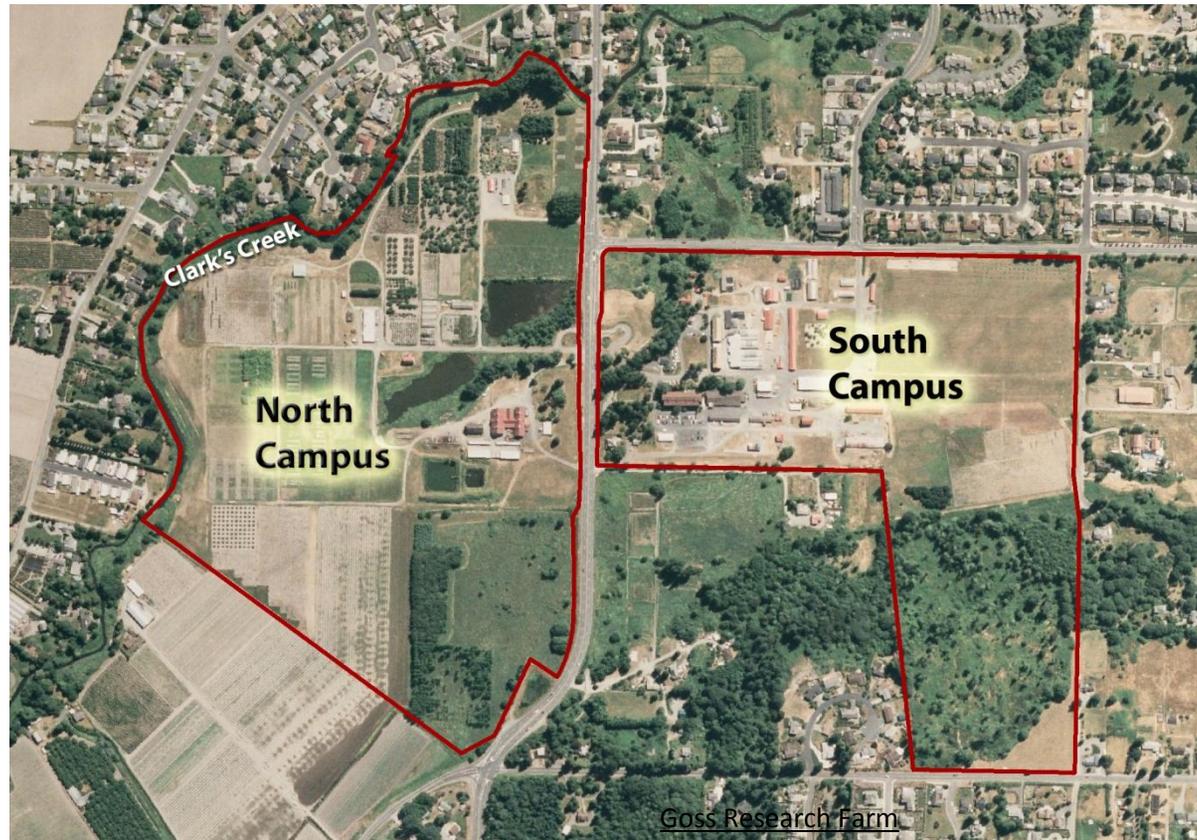


Salmon lab that researches pesticide effects

The Puyallup Campus and Farms

The Puyallup Center consists of two primary locations five miles distant from each other, the Research Center and the Goss Research Farm. Additionally, a forested 5-acre parcel is assigned to the Center. The three sites have a total of 274 acres with over 56,000 SF of research and laboratory buildings. The Research Center is further split into two parcels, one to the north and one to the south of Pioneer Way East. It consists of 162 acres, with 92 acres to the north and 70 acres to the south.

The “north campus” is prime farm land with deep sandy loam and silt loam soils. It is used mostly for research plots, and includes 6 acres of certified organic land. The L-shaped “south campus” has two general landscape zones: the 18 acres closest to the road, which is a mixture of buildings, parking lots, structured landscaping, and small research plots; and the remaining 52 acres, which is primarily undeveloped grass-covered slopes and forest. The east side of the south campus is bordered by Fruitland Avenue. A narrow vehicular tunnel under Pioneer Way connects the south and north parcels.



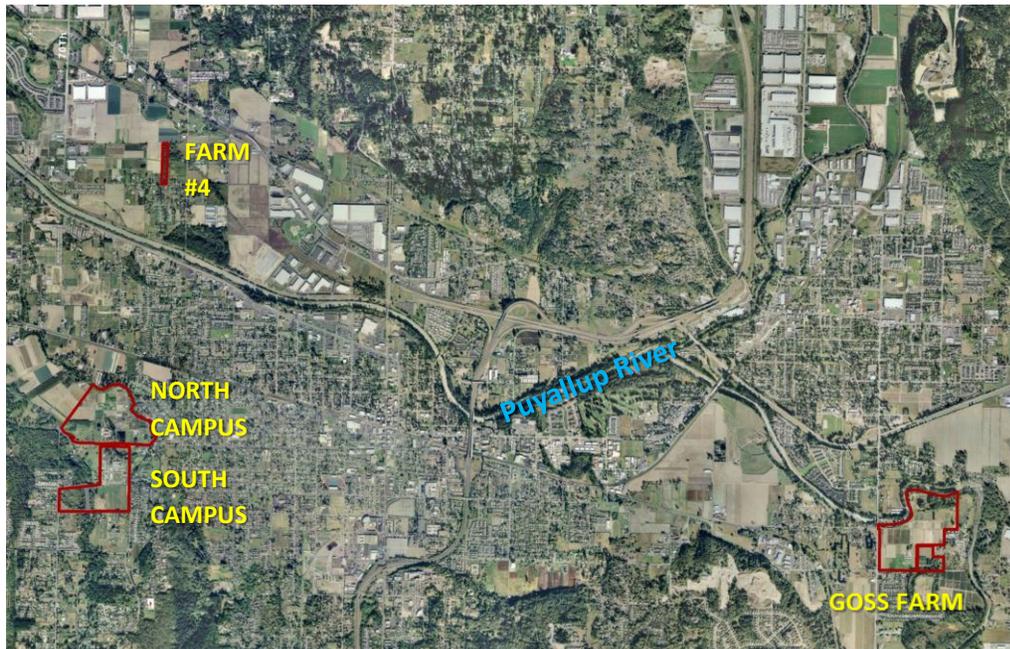
The 107-acre R.L. Goss Research Farm lies five miles to the east of the Research Center. Bounded on the north by the Puyallup River, the prime farmland soils and modified soils for sports turf research are used primarily as research plots for the WSU Turf program, the WSU small fruits breeding program and the hybrid poplar program.

Farm 4

The Center also owns a long and narrow five acre parcel located approximately one and a half miles to the north of the Research Center in the town of Fife known as Farm 4. No research is currently underway at this location. Farm 4 is mostly forested and has 160 ft. wide road access on its narrow southern boundary.



Goss Farm entrance



Regional Locations Map

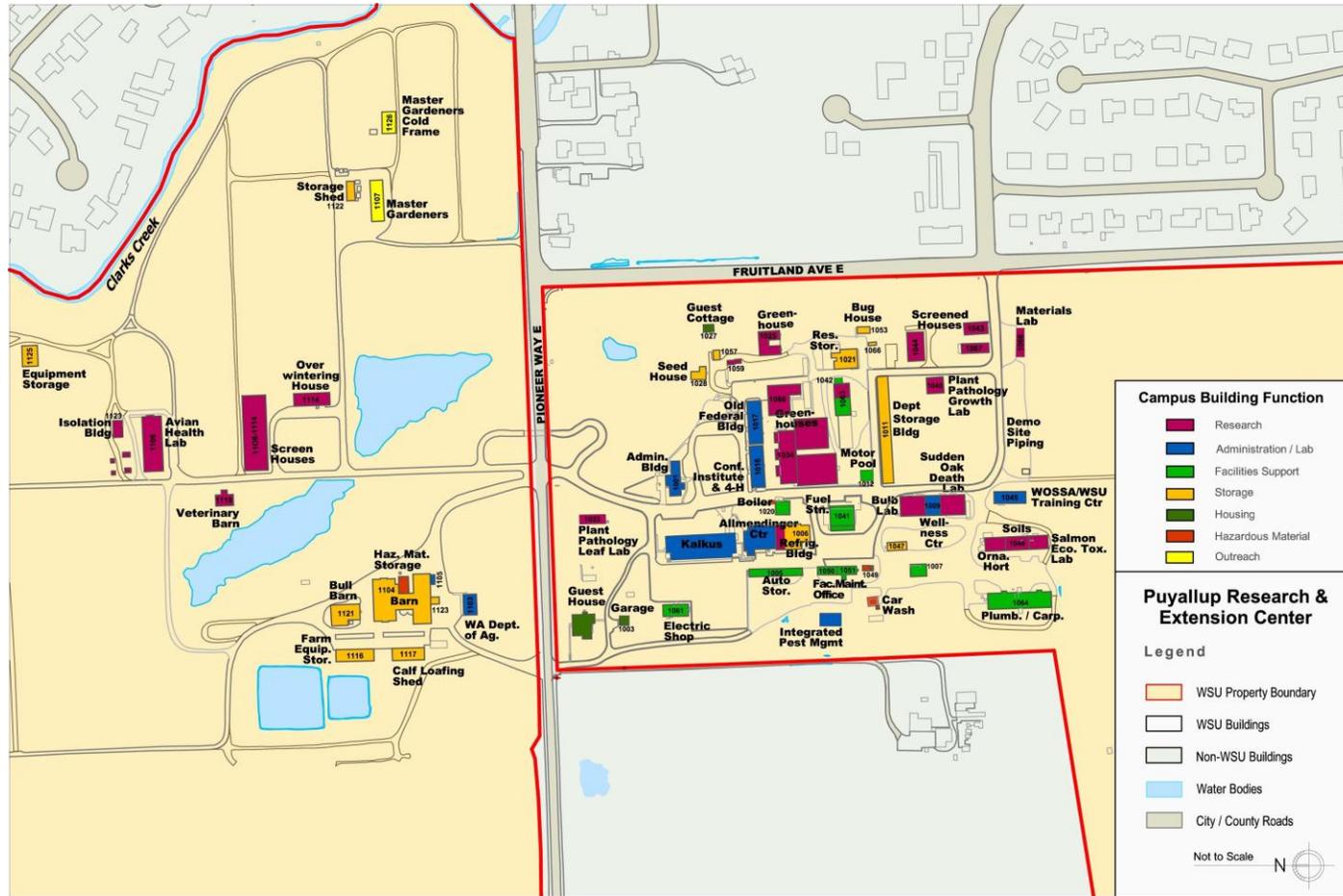


Turf Grass Research lab on Goss Farm

Main Campus Buildings

The Research Center holds over 50 buildings, including administration and office buildings, laboratory buildings, general storage buildings, conference buildings, various maintenance shops, motor pool housing, and equipment maintenance shops and a 24,000 SF 14 year old research greenhouse facility.

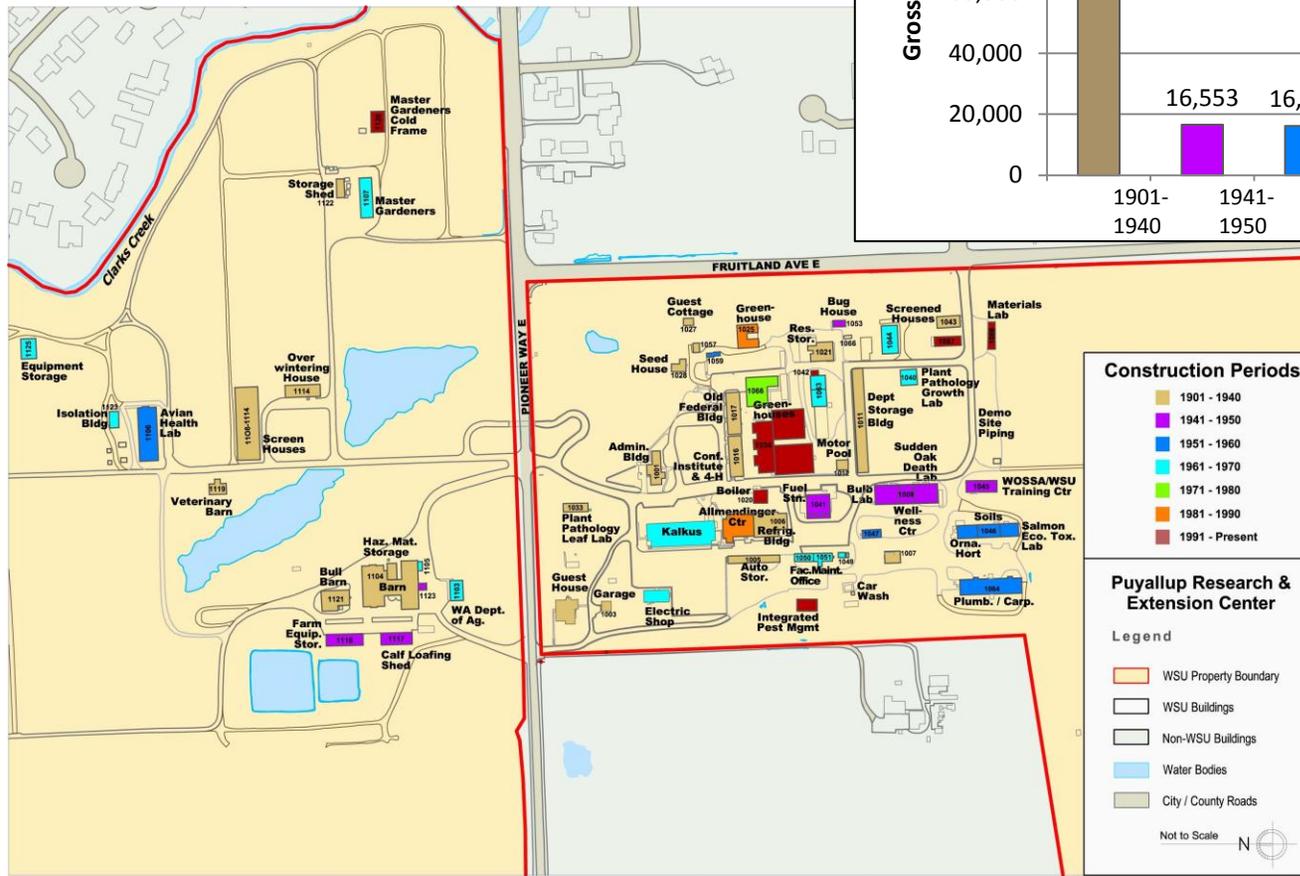
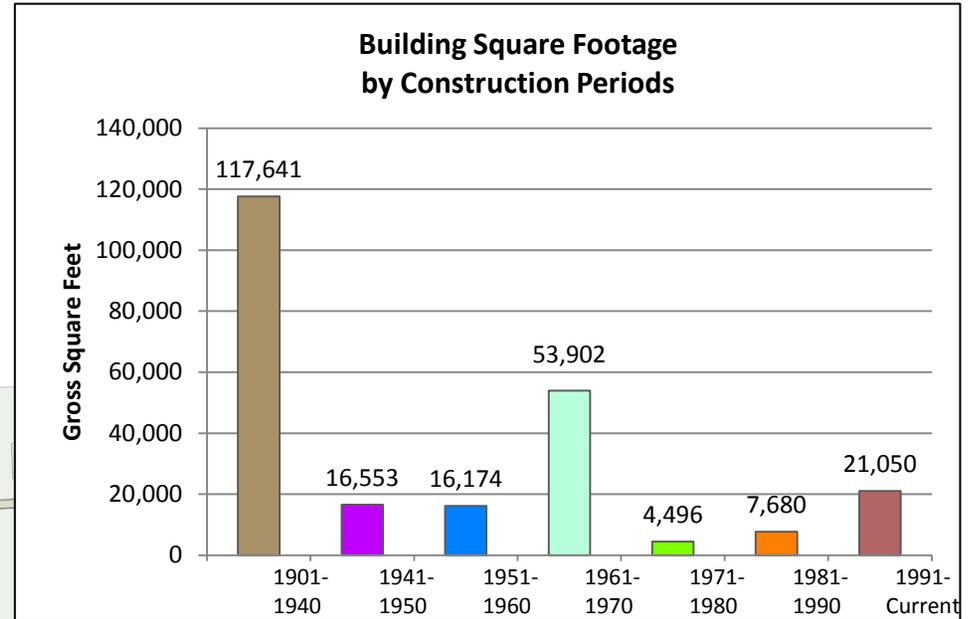
Most of the buildings on the Center are older and aging. The few recent buildings include the greenhouse built in 1997, the Allmendinger Center built in 1985, and a small pest manager/inspector training facility built in 2006.



Administration and housing functions are located near the entrance, facilities support to the west, and research in the center.

Buildings By Age

The Construction Periods map and Building Square Footage table indicates that the center had its strongest growth prior to 1949, with another increase in building construction during the 1960s. Three buildings were added between 1970 – 1990, a twenty year time span with little new construction. During this time, existing buildings were converted for more modern uses to accommodate research programs. In a sense, Puyallup exhibits a strong spirit of sustainability by its reuse of existing buildings.



Administration Building (1001), is a two story building, 4,361 SF office building. It has a large conference room and a series of small offices.



Administration Building



Allmendinger Center

Kalkus Hall (1010), is a three story, 31,000 SF lab and office building built in 1969. It contains individual lab space and shared refrigeration and growth chambers. A new molecular lab with the latest analytical equipment has been recently added to the building. The lab is a shared tool for every research program on the campus which also enhances the capability of the existing diagnostic lab.



Kalkus Hall

The Allmendinger Center, is a single story, 4,291 SF self sustaining conference facility. It provides a critical resource for the Center and many other WSU programs, and has a capacity of 125 people. It is also often rented by the public for weddings, meetings, or parties. The Center plans to enhance the building's functions by remodeling an attached building presently used for storage and refrigeration units into a state of the art distance education classroom with meeting rooms and student lounge areas.

The Urban Structural Pest Management Research and Demonstration Facility was completed in late 2006. Within this building, Puyallup Center faculty provide hands-on training for pest managers and inspectors on the latest methods to identify pests, evaluate damage or health threats, and determine conditions conducive for infestation. Experts from New Mexico, Arizona, Colorado, Montana, Oregon and Washington have attended seminars hosted here.



The Urban Structural Pest Management Research and Demonstration Facility provides hands-on training for pest managers and inspectors

Puyallup Barns, built in 1918 just to the north of Pioneer Way, hearken back to the days when the Puyallup Center focused their research on traditional farming issues. These large connected barns have been maintained adequately over the years and have recently received new metal roofs. They are currently being used to support research and they provide some storage capacity for research equipment. They are prominently located on the property, and are well liked by the surrounding community. In many ways, these picturesque barns present a sense of place for the center and represent connectivity to the community through its nearly 100 year presence.



The Puyallup Barns (1104) are a prominent feature on the Center

Housing

Onsite housing for students, post-docs, and visiting scholars is limited at the Puyallup Center. Most long-term residents find housing easily in the surrounding private rental market. The primary on campus housing is the 4-bedroom Victorian Guest House, which was once the Superintendent's home. Family housing is provided in a small cottage on the Research Center. Another house is available on the Goss Farm. The Center would like to have housing for visiting students and faculty who need short-term accommodations.



The Victorian Guest House has 4 bedrooms available for onsite housing

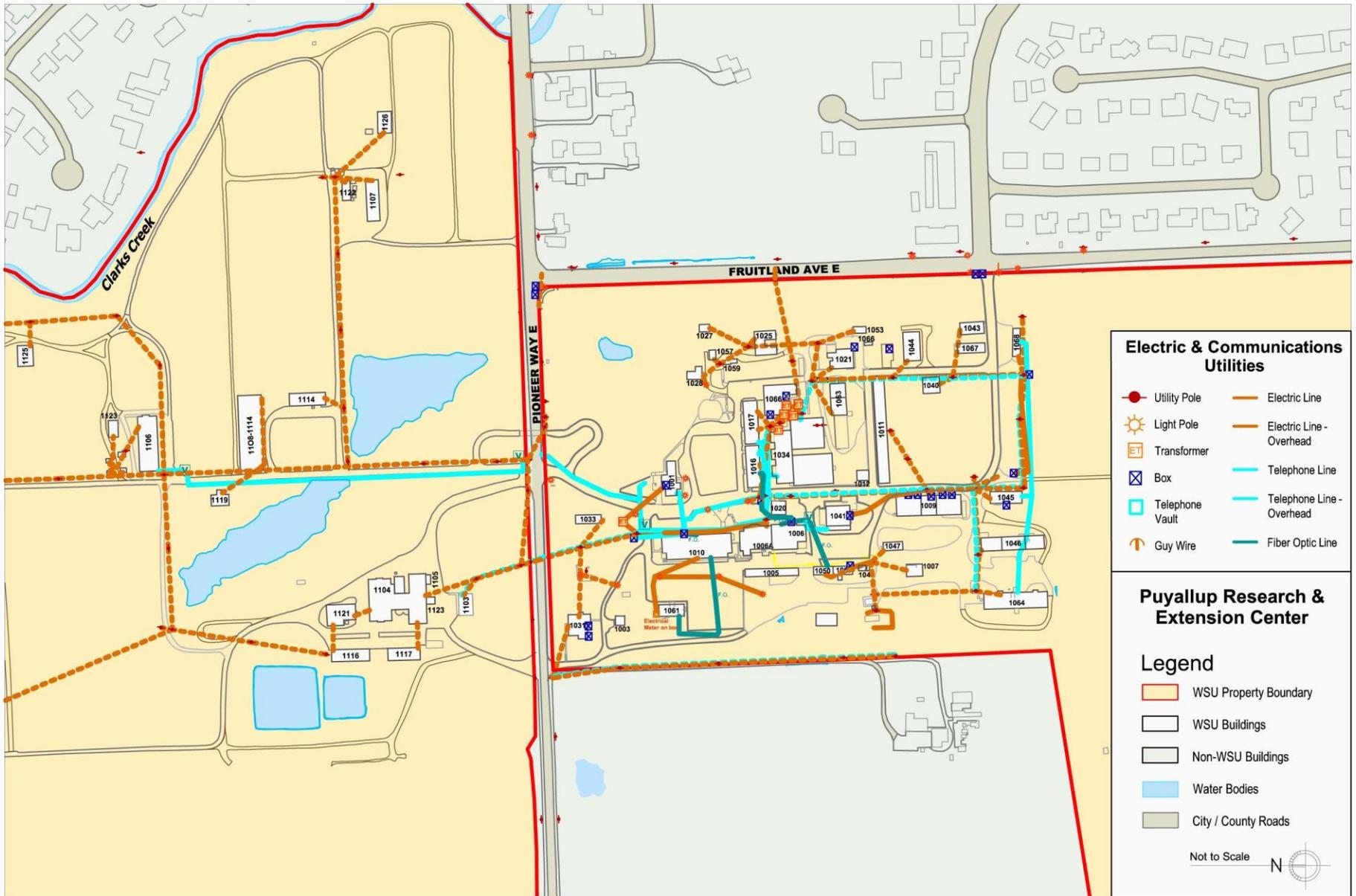
Infrastructure

The south campus is served by a domestic water distribution system, irrigation systems, sewage collection systems, a University-owned primary electrical system, fire alarm systems, access control and security monitoring systems, and a central boiler plant. The entire Puyallup Center campus is served by a fiber-optic network, installed and paid for using local resources. The campus is served by three T-1 lines.

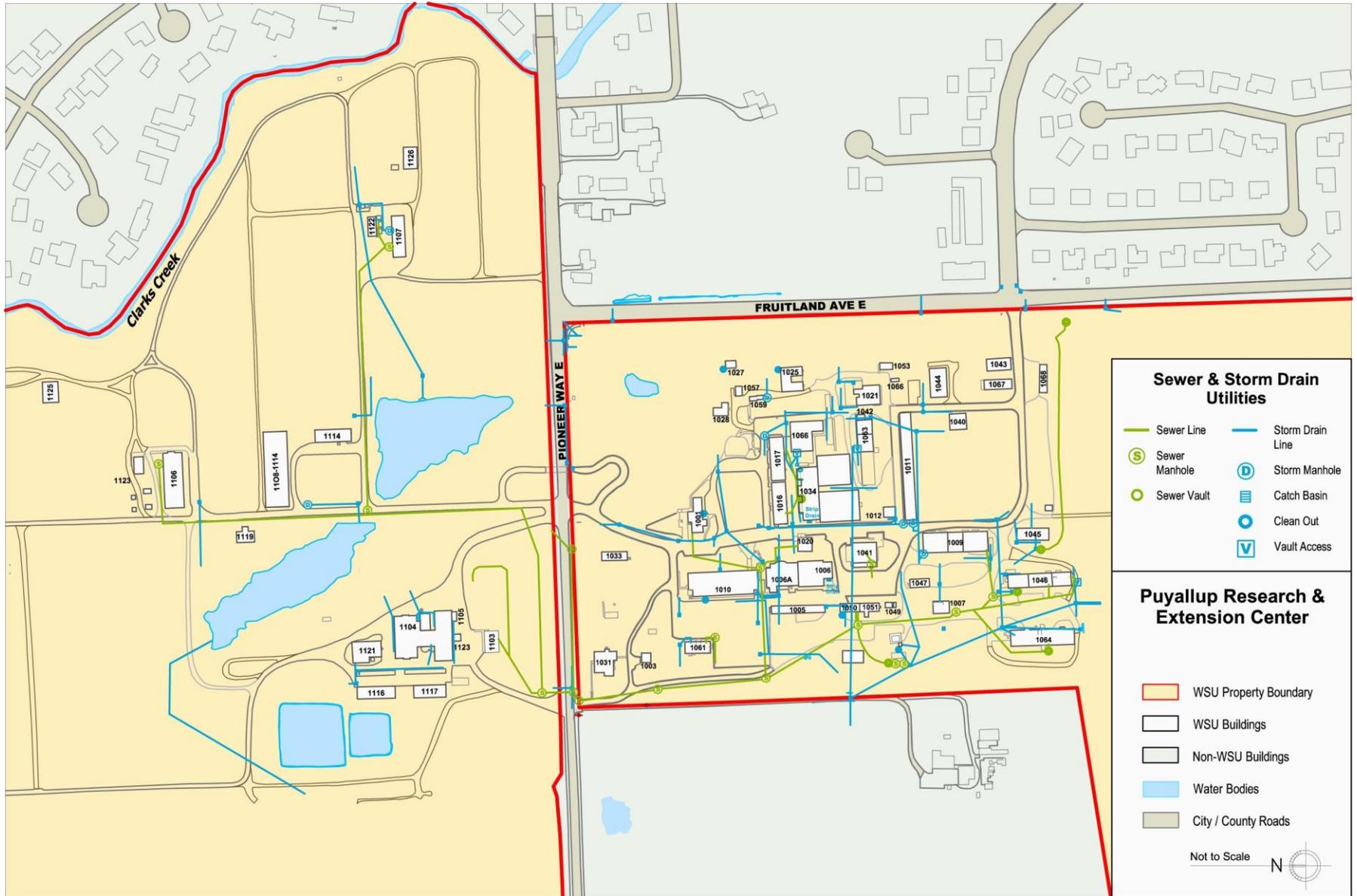
Maintaining an aging infrastructure is a challenge on the campus. A highly skilled and experienced maintenance staff keeps the aging infrastructure working along with a full complement of older equipment and farm vehicles. A four year upgrade of the electrical supply system is presently underway along with an upgrade to the fire fighting water system.

The Infrastructure Maps indicate that utilities have been focused on the south side of the Center.

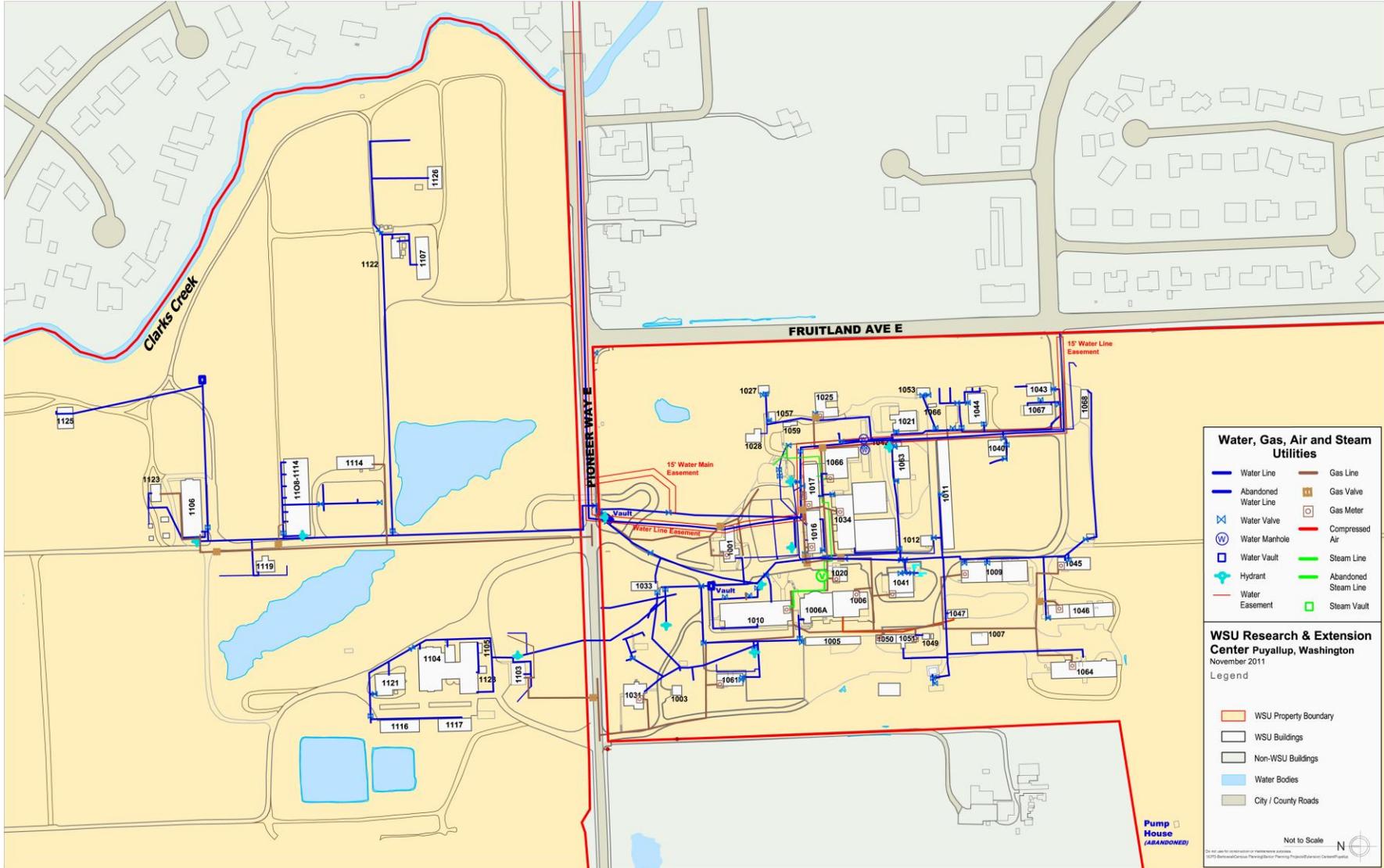
The limiting factor for development on the north campus has been the lack of infrastructure. Although, the water table on the north campus is also a limiting factor in lower elevations, there are approximately 15 acres that are out of the limitation of the high water table, which is roughly half the amount of developed land on the Southside. The need for utilities on the north campus and the lack of investment in this area provides an opportunity for installation of new and underground utilities. The north campus has excellent access and development of this site would enhance the public education aspect of Puyallup Research and Extension Center.



Electricity & Communications Utilities



Sewer & Storm Drain Utilities



Water, Gas, Air and Steam Utilities

Access, Circulation, Parking

The WSU Puyallup Center is located approximately 1.5 miles from downtown Puyallup, where restaurants and shops are easily located. Pierce Community College is a convenient 5 miles from the Center and there are nine K-12 schools within a two mile radius and 58 additional K-12 schools within a five mile radius. Students from these schools provide a ready audience for the programs the Puyallup Center has to offer.

Bus service is provided to the Center with a bus stop at the main entrance on Pioneer Way. The bus schedule for this stop is a reverse commute designed to pick riders up in the morning and take them to Tacoma for work or shopping and then to return them in the afternoon. To provide service to the Center in the morning for WSU staff would require an adjustment to the bus schedule. This kind of transportation adjustment might be worth pursuing because of the opportunities it might open for networking with off-site programs. The intent would be to bring people to the campus for day and evening activities.

Two secondary entrances are located on Fruitland Avenue and at the southern corner of Pioneer Way. The secondary Pioneer Way entrance has recently been gated closed as a security measure. The main paved loop through the campus circles around the central lawn in the Administrative core. A culvert is used to connect vehicles between the south side and north side of the site. The culvert exhibits a tradition of graffiti with every inch in the tunnel painted in street art. It appears to be harmless and costly to paint over or remove. As long as this is not causing any vandalism to the Center, leaving it as a landmark and a place that people remember is a reasonable solution. As one staff member commented, “It literally keeps it as an underground movement.”

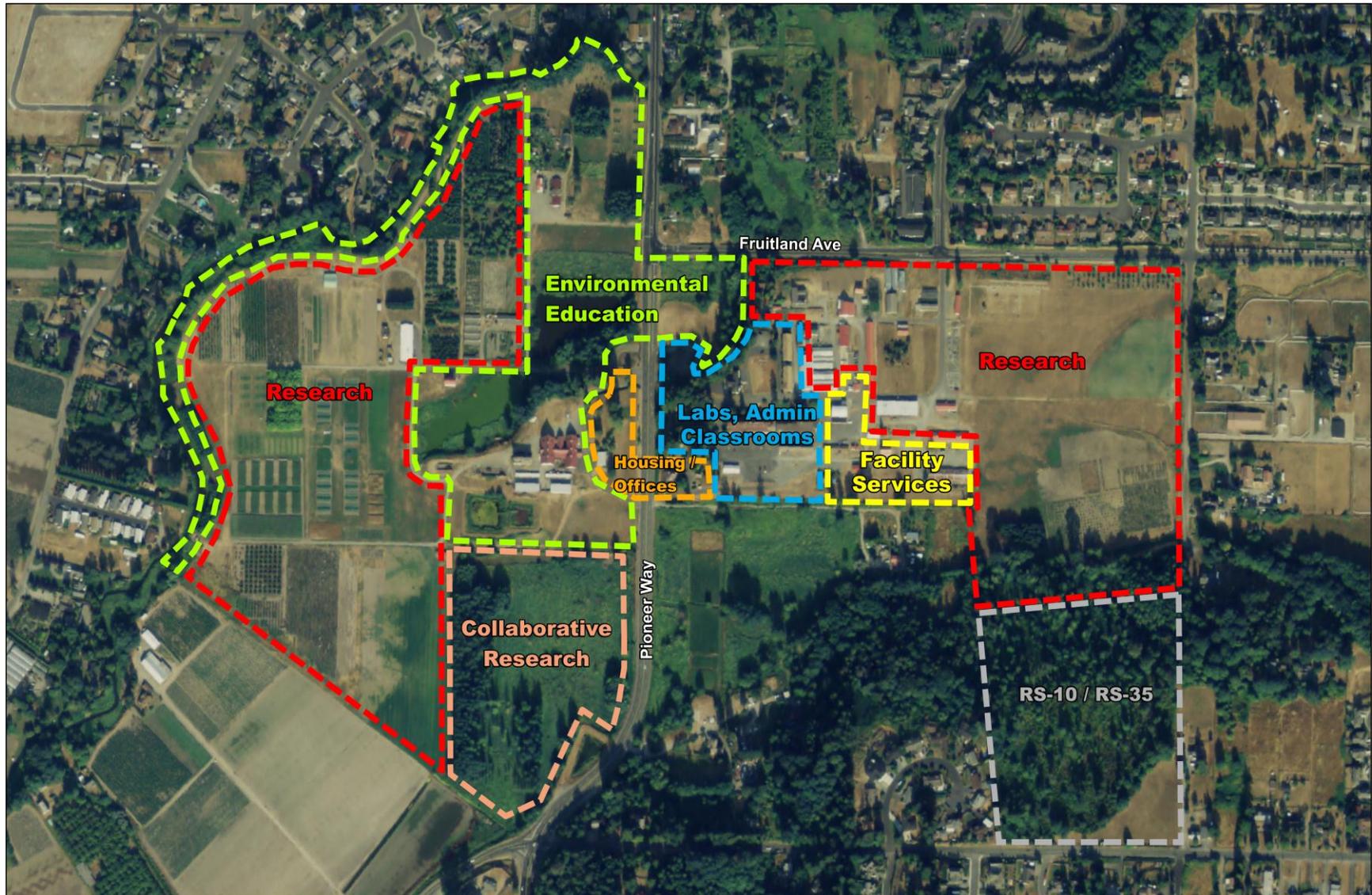
There is ample parking on the Puyallup campus. A large permeable pavement parking lot (approximately 75 spaces) supports Kalkus Hall and Allmendinger Center. A smaller public parking lot (approximately 12 spaces) supports the Administrative Core. Other areas are illustrated on the Campus Circulation Map and informal parking occurs in small pullout areas beside labs for researchers and staff.

State vehicles such as farm trucks are stored in the center of the campus. A fenced area has been created between the green houses and the long poultry shed (now used for storage in 1011). These vehicles are part of the Facilities Services operation and eventually should be relocated into that area of the campus.



State vehicles are stored in the center of the campus

A goal is to improve bicycle paths, and covered parking. The Center would be interested in participating with the City of Puyallup on evaluating bike access to the campus. Another identified improvement would be to install a stoplight at 7th Avenue and Fruitland Avenue.



Functional Uses - A visual evaluation of the WSU Puyallup Research and Extension Center indicates a mixture of building types and styles. The location of the buildings reflects an administrative core with outlying sheds, greenhouses, nursery plots, and utility buildings scattered around the site. Large barns dominate the site north of Pioneer Way. To make sense of how buildings are organized and to give a framework to future programs, functional use zones have been delineated for this master plan.

Administration – The administrative core of the campus is where the research offices and classrooms are located. The Office of the Director for the Center is located here as well as conference space and meeting rooms. Future decisions for relocation of classroom teaching or the business operations for the center should attempt to keep these activities in the administrative core. To accomplish this, two buildings (1017 and 1016) will need to be renovated or demolished and new buildings constructed. A building inspection and assessment will help determine which buildings should be remodeled, when to demolish the old Federal Building (1017), and what to do with the Conferences and Institutes brick building ((1016) once it is empty. Developing a phased building replacement strategy will help prioritize capital funding decisions for the Center.

South Campus Research – Most of the site is used for active research, which is in keeping with WSU’s mission. The southeast portion of the site is where four greenhouses (1034A & B, 1065, 1125) are located. They support many research projects and the central location is important. The Sudden Oak Death research lab and the Bulb Research program is housed in building 1009. The WOSSA/WSU training Center is located in building 1045 with an exterior demonstration project. Ornamental Horticulture, soils research, and the Salmon Ecology Toxicology lab are located in building 1046. At the southeast entrance to the site is the Wood

Materials Engineering project (building 1068) and a series of horticulture screen houses and a Plant Pathology Growth Lab (building 1049).

The departmental storage building (1011) is a converted poultry house. This building provides considerable storage space, but the long, linear nature of this single level building tends to divide the south campus. If a building assessment determines that 1011 should be demolished, this will provide an opportunity for creating a research quad that could accommodate existing and newer research programs.



A poultry house converted into departmental storage (1011)

The field at the southernmost part of the site is used for horticultural research such as the Pot-In-Pots plants program and a Christmas tree research program. The focus of the research on this part of the site is to evaluate water conserving trees for urban environments. This field space is important for future expansion of the campus. It provided a buffer from private housing and allows opportunities for future programs.



South campus open field serves as a buffer and provides for research expansion

North Campus Research – North campus has 92 acres of agricultural open space that is bounded on two sides by Clarks Creek. Most of this area is part of the Puyallup Valley prime farmland. This site has a high water table and flooding is a common event. Buildings on this site are difficult to place because they must be located above the floodplain. Approximately 30 acres are used for a variety of plot type research projects such as organic vegetables and pumpkins. The Avian Health Lab (1106) is also located in this zone along with an equipment storage building and an isolation building.

Environmental Education – Along Clark’s Creek and other wetland areas of the center WSU faculty and local high school teachers have coordinated environmental outreach programs for stream bank restoration. A wetland study of the central ponds located on the north side of Pioneer Way has been used to teach natural resource science to high school students. The Boy Scouts, local high school students, and community volunteers have worked on restoration projects and the State Police participated in a wetland mitigation project using one of the ponds.

The Master Gardener’s is a WSU Extension program that uses the Center. They are assigned a small gathering of older buildings including a cold frame (1126), a storage shed (1123) and a Rhubarb House (1107). The volunteers are responsible for the success of the program and the general maintenance of the structures.

The Puyallup Barn (1104), the Bull Barn (1121), and two calf loafing sheds converted to farm equipment storage are located in the Environmental Education precinct. Although all of these structures are currently used for storage, they have the potential to support a main campus center, classrooms, conference centers and offices.

A small building located at the WSU Wetlands Restoration and Education Program site could be renovated to provide shelter, lab space and classrooms for student programs that currently use popup tents for shelter and learning. These programs use the site as a learning lab, but they need interior space for participants to meet undercover during inclement weather.



The Puyallup Barn (1104) was converted into equipment storage

Compost research - The Compost Research Facility is located in a prime location next to the Bull Barn (1121). It is both a research facility and an education/demonstration site. As the north campus redevelops the barns into better meeting space or if new housing is built on this side of the Center, this facility will need to be relocated.

Lagoon - The settling lagoons were built to support the runoff from the dairy barns. With changes in barn use, the lagoons are a remnant facility. These lagoons have potential to be used for environmental research projects such as oxygenation studies or possibly creating a “Living Machine.” Living Machines are intensive bioremediation systems that can also produce beneficial by-products such as edible and ornamental plants and fish.



Lagoons may be used for water research

Facility Services – The support operations of the center are located primarily southwest of the administrative core. There is an auto storage shed (1005), a maintenance office (1050), a paint shop (1051), chemical storage (1049), a plumbing and carpentry shop (1046), a fueling station (1041) and a tractor shop (1041A) located in this zone. Recently, the Integrated Pest Management demonstration project was established along the western edge. The Facilities Services zone has been a more industrial zone and for many years has been effective for such uses. Future education programs should be grouped in closer proximity to the Administrative Core.

Researcher Housing – On the Functional Use Plan, a proposed zone indicates housing for researchers. A caretaker house was located on this site, but was demolished because it was beyond a useful life. This site is well situated for some type of housing to be used on a short-term basis. Units could be located on this knoll, which is screened from Pioneer Way, but located within walking distance to the Administrative Core. Currently, the Center supports 8 – 10 graduate students, but only one student lives on campus. More graduate researchers are coming to the Center as programs move from Pullman and as the research programs at the Center attract new applicants. Expanding housing with potential for demonstrating sustainable construction would provide flexible housing that a variety of visiting faculty could rent or that would provide the ability to host outreach programs for small conferences.

Future Collaborative Research – Approximately 17 acres located west of the Puyallup Barn is available mostly for future collaborative research.



Facilities Services Building 1005



WSU Guest House 31

Architectural Character

The older agricultural buildings that are painted white with red roofs provide visual unification to the architecture at the Puyallup Center. Most of these buildings are remnants of the early 1920s through the 1940s. Maintaining a sense of place as new buildings are built is an important consideration. Integration of old structures with newer buildings is possible and will help visitors feel a sense of arrival and welcome to the site.



Capital Projects

For a small campus, the Center has an unusual number of buildings that have been decommissioned or that have been converted to storage. Some of these buildings should be demolished and removed to make way for new building opportunities. The Campus Construction Plan makes recommendations for which structures should be removed and which are in need of renovation. It also identifies sites for new buildings, although programs for these proposed new buildings will need to be defined.

Renovations

The highest priority for renovation is the **Refrigerator Building (1006)**, which was built in 1910. It is connected to the Allmendinger Building, and a remodel could support the functions in Allmendinger. The proposed remodel is needed for the WHETTS classroom to be relocated out of the Conferences and Institutes building (1016).

Refrigerator Building 1006



Kalkus Hall was built in 1969 and has not had a significant remodel over 40 years. Technological upgrades have been implemented to accommodate computers and state-of-the-art equipment. It is a different architectural style than any other buildings on the campus, but it is structurally sound and meets many needs for offices and laboratory spaces. Interior renovations will follow programmatic needs.



Kalkus Hall 1010

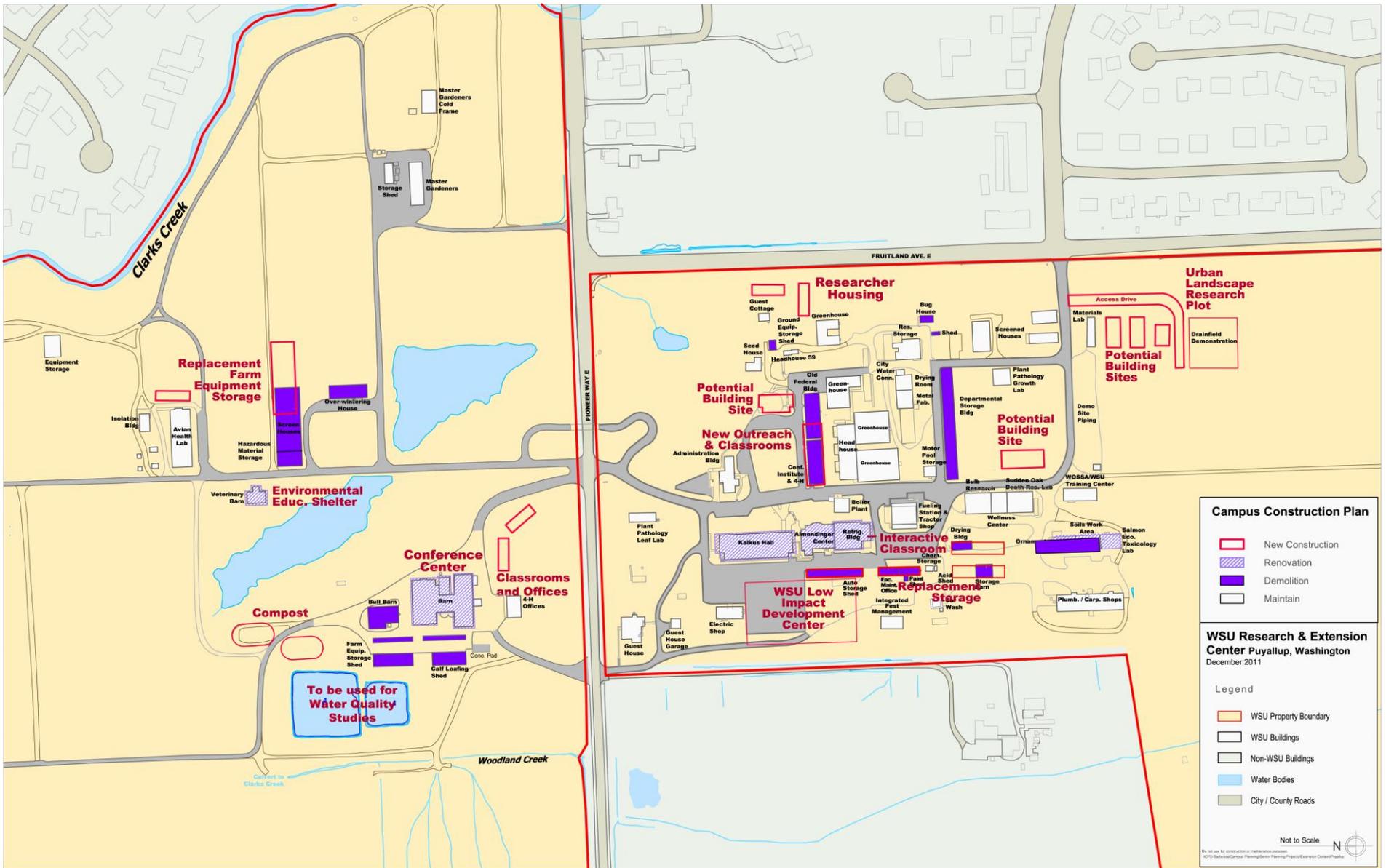
Built in 1918, **Barn 1104** is a picturesque set of barns connected by a central space. The white exterior walls and red metal roof characterizes many of the buildings at the Puyallup Center and Goss Farm. This barn complex is the most visible feature of the Center and represents the public's image of the Puyallup Research and Extension Center. Barn 1104 is structurally sound and currently utilized for storage. Opportunities to demonstrate adaptive reuse of an older building could be considered for Barn 1104, thereby providing program and space opportunities.



Barn 1104

Demolitions

Emptying the Conferences & Institutes Building (1016) creates the opportunity to demolish two large buildings and to rebuild a new outreach and classroom building on those sites. This will maintain the Administrative Core for the campus and centralize the areas for public meeting spaces or offices. An additional building site opportunity is in the small parking lot located on the east side of the central lawn. For example, replacement facilities for a fruit processing lab may need to be accommodated in a future project outside the Administrative Core.



WSU Puyallup Research & Extension Center Development Plan showing Future Campus Construction

As previously mentioned, Department Storage Building (1011) is a converted poultry house that was built in 1937. It provides 5,600 net sq. ft. of storage space. This long linear footprint divides and separates the site into two distinct halves. It also provides a wall to enclose the auto storage yard. This central area of the site is highly visible and should be used to highlight academic or demonstration programs rather than vehicle storage behind a chain link fence. A newer building or two in this location could better create a research quad and at the same time enable pedestrian circulation through the site.

Other utility buildings that will eventually need to be demolished, unless they are renovated or revitalized include:

- Auto Storage Shed (1005), built in 1930, provides vehicular storage space.
- Paint Shop (1051) built in 1962.
- Maintenance Office (1050) built in 1966.
- Drying Building (1047) built in 1957.
- Storage Barn (1007) built in 1910.

The decision to remove these buildings is dependent upon budget and replacement. In the near future, these buildings will remain in use as long as they meet safety standards.

On the north campus, there are a few agricultural structures and remnant cattle loafing sheds that should be removed as part of a renovation strategy for Barn 1104. The renovation of this barn is dependent upon the ability of the Center to locate grants or private donations.



Unused agricultural structures should be removed to support the renovation of Barn 1104

New Construction

The Future Campus Construction map identifies sites for four future academic buildings, replacement structures similar to greenhouses and lath houses to support the Urban Land Research Projects, six replacement storage buildings, and two sites where classrooms or office space would be located. There is available space to build one or two signature buildings in the Administrative Core of the campus. Careful attention to architectural quality and design is important if these are to become part of the public image of the Center. The WSU Low Impact Development Center is indicated. Although most of that project is complete there might be some expansion as results of this research project are evaluated.

The Urban Landscape Plot has recently been constructed to support urban horticulture research called the “Pot-in-Pot” programs. This is a screen house type structure and is awaiting a building number to be assigned.

Researcher housing is a possible proposal on Fruitland Avenue. If built, these could be used to house graduate student researchers for short-term residency programs. Funding will come from grants or private donations.

The historic barns on the north campus provide an iconic reminder of both the university’s and the community’s beginnings in agriculture and the importance of the environment. With the re-focusing of the campus’ mission on water research and human health, it is the long-term plan for the campus to restore and create a premier campus center that can serve as a national model for sustainable construction and Low Impact Development, providing classrooms, conference space, learning laboratories, and offices. The small barn building would serve as a regional center for environmental education. The historic barn could be upgraded and restored based on available grant funding.

Construction Phasing

Most of the major capital construction will involve demolishing old structures to make room for new construction. WSU operates on a biennial funding cycle from the Washington State Legislature. The other way that projects are funded is through private donations or grants. When funding will be available is unpredictable. Priorities are dependent on funding.

Minor Capital projects generally involve remodels of rooms in existing structures. Examples of these include: The Salmon Ecology Toxicology Lab, the Avian Health Lab, and the Kalkus Hall Fume Hood replacement.

Development Standards

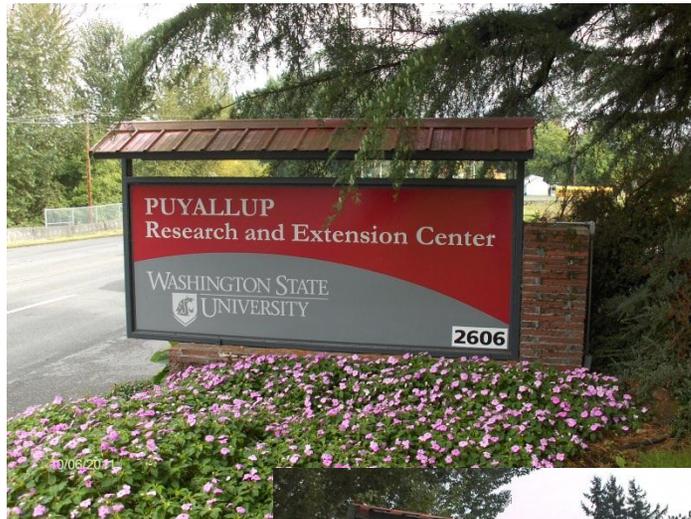
All construction on WSU campuses follows the WSU Uniform Design Standards (UDS), which is available on the Facilities Services web page:

<http://www.cpd.wsu.edu/CapitalProjects/UDCS/>

Although there are no maximum building heights for various uses at the Center, nothing in this master plan indicates buildings taller than four stories. All setbacks and landscape buffers will comply with City of Puyallup zoning. The master plan illustrates conceptual placement of buildings. As part of the request for funding, a project scope is prepared, which includes approximate square footage for a particular major capital project. Until such request for funding is made, all buildings are conceptual and for illustrative purposes. The overall development of the Puyallup R&E Center will not exceed 30% of the site.

Signage and Lighting

There are three exterior signs at the entrances to the Center. The only lighted sign is at the main entrance on Pioneer Way. It has four 60 watt mini flood lights. The sign located at the entrance on 7th and Fruitland Avenues has not lighting, but is similar in character. Finally the Master Gardeners have a sign on the north side of Pioneer Way that is not lit. All future exterior signs will be in the same format and character, although size may vary, none are expected to be larger than the sign at the main entrance to the Center.



Typical exterior signage



There are 4 light poles on campus with two poles in the Kalkus parking lot and one in front of Kalkus. There are three fixtures on each pole that are illuminated by 400 watt metal halide bulbs. There are pedestrian safety lights throughout the campus that are affixed to buildings. These are mercury vapor lights that range from 70 to 150 watts.



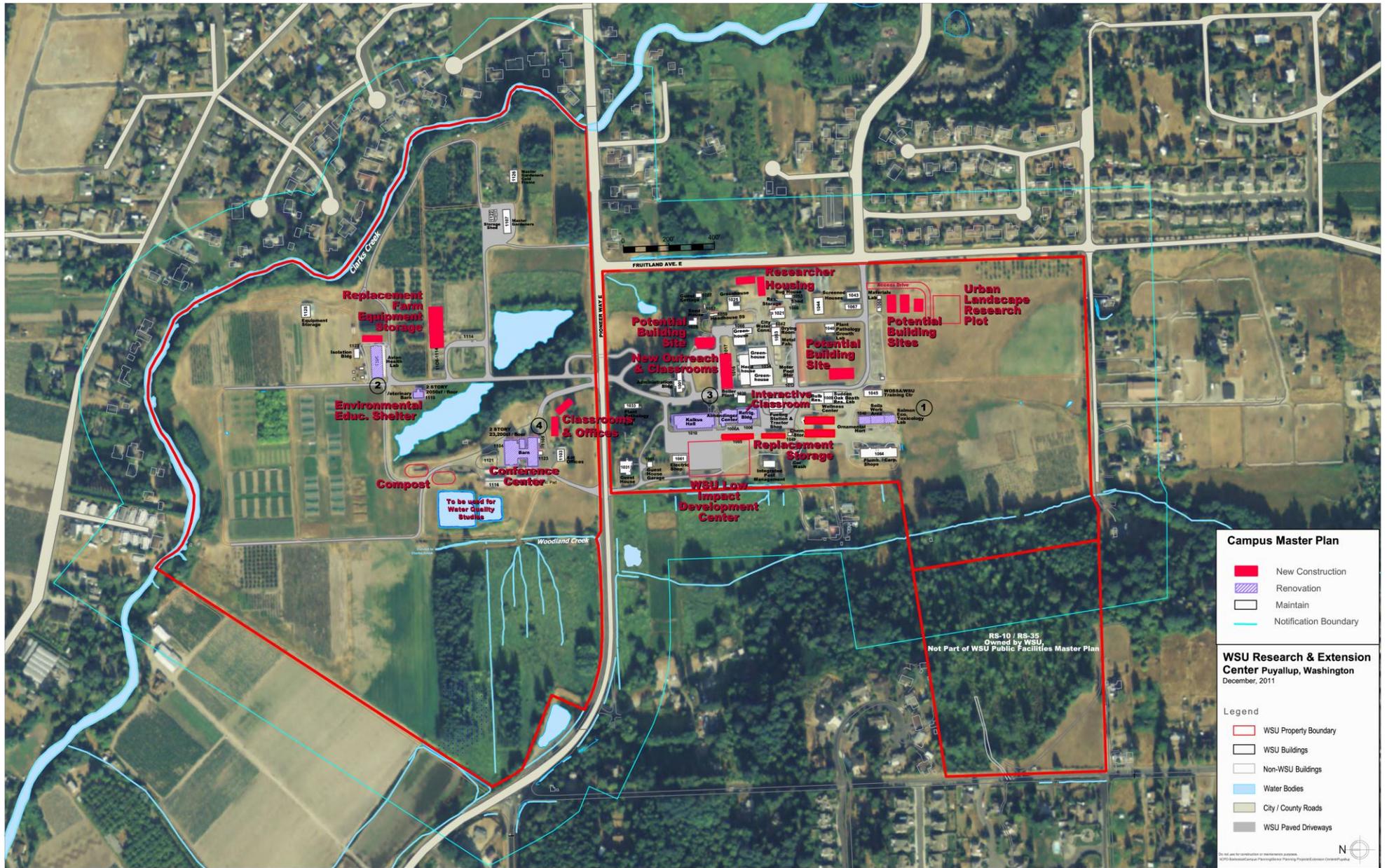
Typical exterior lighting.



WSU Low Impact Development Center

Low Impact Development (LID) incorporates methods for stormwater management into a watershed framework to improve the environment and water quality for a region. Through a Department of Ecology grant, WSU Puyallup has established the WSU Low Impact Development Center that will build a series of demonstration sites on the campus to show how to treat stormwater runoff in a sustainable approach for an urban environment. Phase 1 includes research and demonstration areas for porous pavements, permeable pavers, bioretention features and other LID practices. Retrofitting the south campus with stormwater LID techniques will significantly reduce stormwater volumes and improve water quality. This project will reduce impacts to receiving waters and will provide monitoring sites and public education opportunities for the Puget Sound region.





2012 WSU Puyallup Research & Extension Center Campus Master Plan

WSU Puyallup Research & Extension Center Master Plan

The Puyallup Campus Master Plan (page 41) is similar to the Development Plan, but all buildings proposed for demolition have been removed. Laid over an aerial photograph, it shows more clearly how The Master Plan relates to existing landscape conditions. The buildings are roughly sized as place holders on the landscape. Each new building will require complete construction drawings and a design process that responds to programmatic and space needs.

As previously mentioned, the highest priority is the demolition and construction of the New Outreach & Classrooms Building. The Interactive Classroom as a remodel of the Refrigerator Building and the remodel of the Amendinger and Kalkus Halls are projects that will enhance the ability of the Center to deliver their programs. Support Offices and Housing are also projects that will make the Center a stronger part of the WSU research system. All these projects are contingent on funding.

Recently funded projects include the Salmon Ecology Toxicology Lab, the Avian Health Lab, and the Kalkus Hall Fume Hood replacement.

The agricultural character of the Center will continue with an added emphasis on Environmental Research and Low Impact Development research and training. Open Space remains a large percentage of the site as it provides the landscape and space for future research plots and teaching opportunities.

The legacy and identity of the historic barns north of Pioneer Way provide an architectural aesthetic and sense of pride in this property. They represent WSU's mission of community outreach and service. Although their purpose has changed, these impressive

large white barns with red roofs continue to be an important part of the function and architectural quality of the Center.

Over time urban development has occurred along the edges of this agricultural campus. As the Puyallup Center re-directs its vision toward becoming a leader in water research and human health, it also demonstrates its purpose by providing a rural farm surrounded by a changing urban landscape. WSU Puyallup continues to be a good steward of the land. The integration of this Center into the City of Puyallup is an opportunity for collaborative community development, educational outreach, and high quality research.

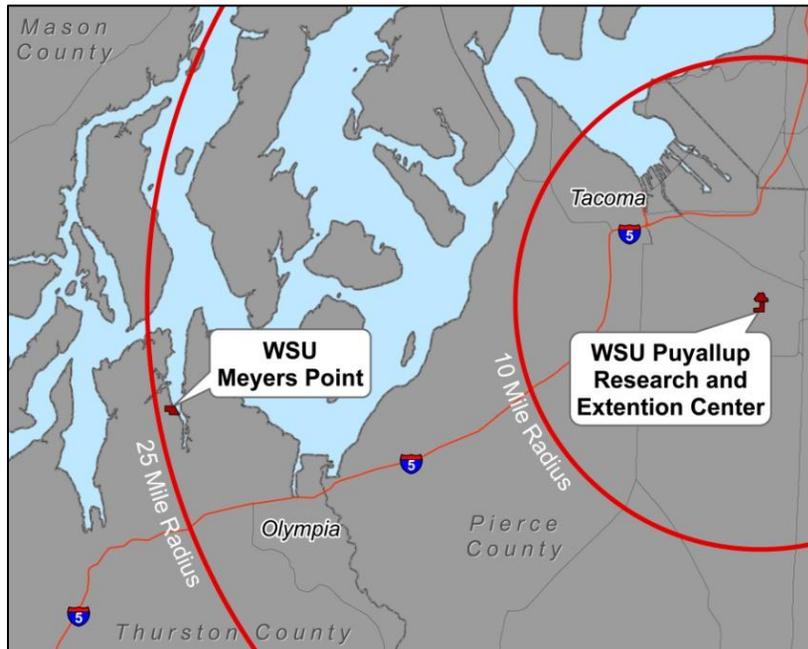


Educational LID workshop at WSU Puyallup

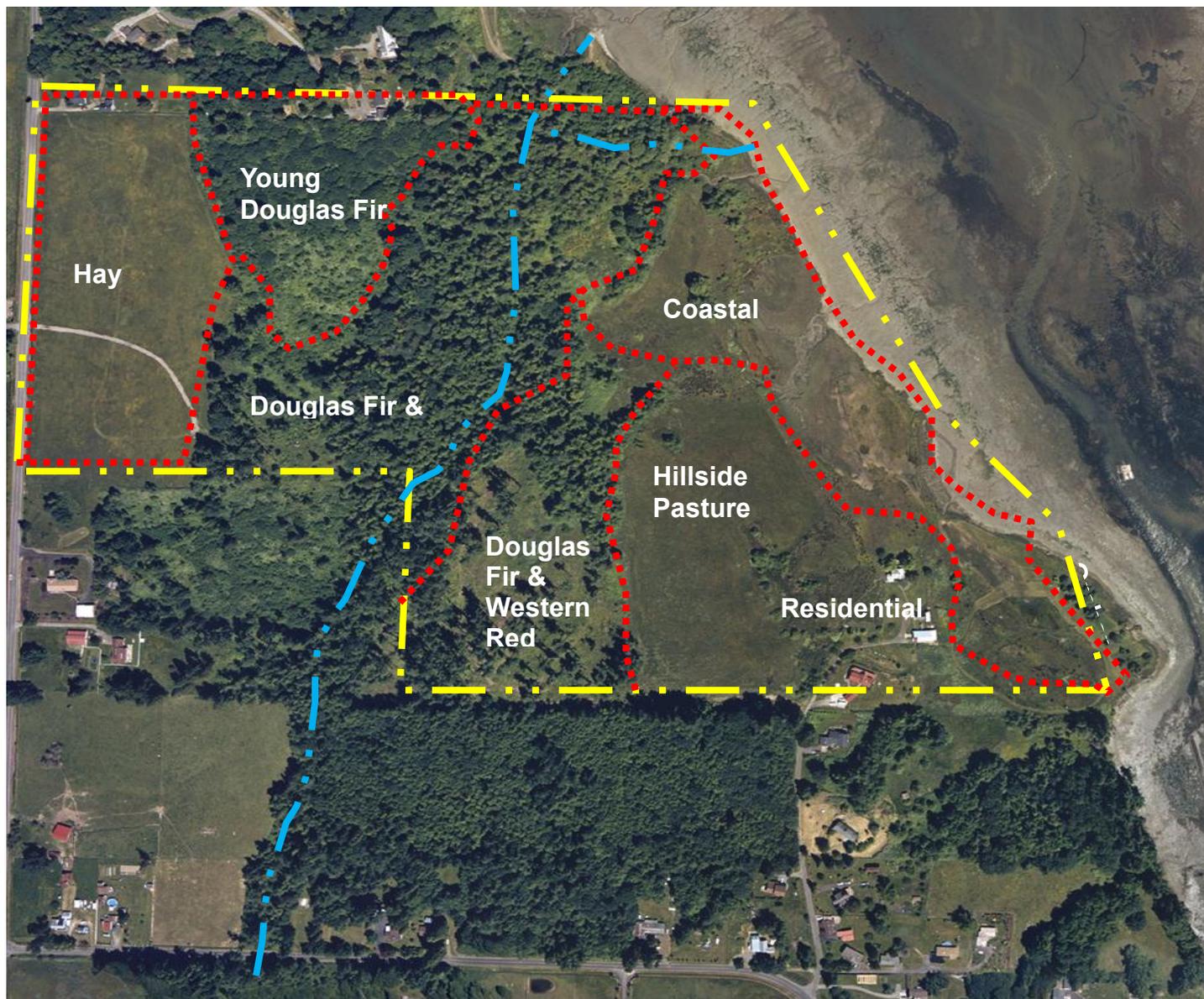
Meyer's Point

Meyer's Point is a parcel of WSU property that is located 25 miles from the Puyallup Center in Thurston County. It is not technically part of the Puyallup Research & Extension Center, but it does offer educational opportunities and partnerships. There are approximately 94 acres of forest, field, and beachfront on this parcel, including 1,650 feet of waterfront. The proximity of this site to the Puyallup campus is a new opportunity for environmental research and education projects.

A barn and office building are available for program use. A modern framed house was built on the property in the early 1990s and it is currently occupied and not available for program use. The Puget Sound Restoration fund has an oyster research project in the intertidal zone of Henderson Inlet.



Meyers Point is not an official part of WSU Puyallup Research and Extension Center. Because of its proximity to the Center, it provides opportunities for environmental education and research.



Summary

The WSU Puyallup Research and Extension Center is experiencing a revival, even in the midst of difficult economic times across the state, the nation and around the world. It is doing this by adapting to the needs of Washington citizens through research and outreach programs. It is also adapting to changing population conditions and growth in Pierce County and in the City of Puyallup. The Center is creating a bright future by providing information and demonstration projects that utilize available expertise across CAHNRS and Extension as well as from new partnerships in other WSU Colleges. New facilities are needed as are described in this master plan. There are resources available on the campus that can be remodeled or upgraded to support existing and new programs. The WSU Puyallup campus, its faculty, and staff are a valuable resource for the university and the State of Washington. The WSU Puyallup Research and Extension Center will continue to strengthen successful competition for resources through excellence in providing quality programs for the region and solutions for its people.



Wetland Restoration project with student volunteers



Organic Research on North Campus



Preparing for probe reading

