Willamette Falls Locks Historic Properties Management Manual

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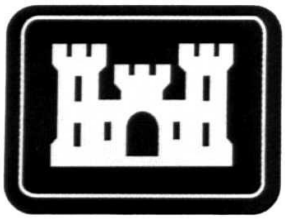

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This project was implemented by HRA Principal Investigators Bradley Bowden, MA; Natalie K. Perrin, MS; and Libby Provost, MA, who meet the Secretary of the Interior's professional qualifications standards for archaeology, architectural history, and history respectively. This report is intended for the exclusive use of the Client and its representatives. It contains professional conclusions and recommendations concerning the potential for project-related effects to historic properties. It should not be considered to constitute project clearance regarding the treatment of historic properties or permission to proceed with a project in lieu of review by the appropriate reviewing or permitting agency.

Executive Summary

The Willamette Lock and Canal Company, with support from the State of Oregon, began construction of the Willamette Falls Locks (WFL) in 1871 and opened the locks in 1873. In 1915, following passage of the Rivers and Harbors Act (Public Law 61-264), the U.S. Army Corps of Engineers (USACE) acquired the deed to the WFL and took over its operation. In 1974, the Keeper of the National Register of Historic Places (NRHP) listed the WFL in the NRHP; the nomination was updated in 2010 (Hanable and Kramer 2010). In 2011, USACE closed the locks due to life safety concerns and potentially unsafe conditions. In 2013, USACE allowed the final vessel to travel through the locks.

Under congressional authority, USACE anticipates transfer of the WFL to an entity identified by the State of Oregon, the Willamette Falls Locks Authority (WFLA). The date of transfer is unknown. USACE's closure and subsequent transfer of the WFL to the WFLA is a federal undertaking and therefore subject to 36 CFR Part 800, Protection of Historic Properties (also known as Section 106 of the National Historic Preservation Act [NHPA] process).

As part of the process, USACE entered into a Memorandum of Agreement (MOA) with the Oregon State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation (ACHP) to mitigate adverse effects that may result from USACE's closure and transfer of the WFL out of public/federal (USACE) ownership (USACE et al. 2023). As amended, the MOA required USACE to prepare a Historic Properties Management Manual (HPMM; this document) for the WFL in consultation with the Oregon SHPO, Tribes, and concurring parties.

This HPMM is a guide for considering and managing effects to the WFL during activities associated with operation and maintenance (O&M) and other activities. The HPMM outlines the significance of the WFL and how the WFL may be affected by O&M and/or other activities, such as proposed improvements to WFL facilities or public access. The HPMM identifies goals for the preservation of historic properties; identifies relevant federal and state laws relating to preservation; establishes guidelines for routine O&M; and establishes procedures for consulting with the SHPO, Tribes and Tribal Historic Preservation Officers (THPOs), and historic preservation experts concerning effects to historic properties.

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1 Introduction

The Willamette Lock and Canal Company, with support from the State of Oregon, began construction of the Willamette Falls Locks (WFL) in 1871 and opened the locks in 1873. In 1915, following passage of the Rivers and Harbors Act (Public Law 61-264), the U.S. Army Corps of Engineers (USACE) acquired the deed to the WFL and took over its operation. In 1974, the Keeper of the National Register of Historic Places (NRHP) listed the WFL in the NRHP; the nomination was updated in 2010 (Hanable and Kramer 2010). In 2011, USACE closed the locks due to life safety concerns and potentially unsafe conditions. In 2013, USACE allowed the final vessel to travel through the locks.

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As part of the process, USACE entered into a Memorandum of Agreement (MOA) with the Oregon State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation (ACHP) to mitigate *adverse effects* that may result from USACE's closure and transfer of the WFL out of public/federal (USACE) ownership (USACE et al. 2023).[2] As amended, the MOA required USACE to prepare a Historic Properties Management Manual (HPMM, this document) for the WFL management area (WFLMA) in consultation with the Oregon SHPO, Tribes, and concurring parties.

The WFLMA includes the NRHP-listed WFL and is located within the boundaries of known archaeological resources, a Traditional Cultural Place (TCP), and high probability areas (HPAs) for encountering additional archaeological resources.

1.1 User's Guide

This HPMM is a guide for considering and managing effects to the WFLMA during activities associated with operation and maintenance (O&M), should the WFLA reopen the WFL, and/or other activities. The HPMM outlines:

1. In Section 1 (this section), an introduction to the HPMM; this user's guide, including the purpose and goals; and the relevant laws and regulatory nexuses that may apply at the WFLMA.

[1] The term *historic properties* is defined in 36 CFR Part 800 as those buildings, structures, objects, sites and districts listed in or eligible for listing in the NRHP.

[2] *Effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP. An *adverse effect* is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. For more on the definition and assessment of *adverse effect*, see Section 5.

2. In Section 2, a description of the WFLMA, including a brief historic context, known historic properties, character-defining features, and past alterations and modifications.
3. In Section 3, the long-term goals that align with the Secretary of the Interior's *Standards for the Treatment of Historic Properties.*
4. In Section 4, a list of allowed activities that would not diminish the character-defining features and integrity of historic properties located within the WFLMA.
5. In Section 5, guidelines for alterations, modifications, and new construction at the WFLMA.
6. In Section 6, treatment measures for the WFL, archaeological sites, TCPs, and HPAs that are located within the boundaries of the WFLMA.
7. In Section 7, a bibliography.

And, in the Appendices:

A. Appendix A: WFL Resources Map.
B. Appendix B: Inadvertent Discovery Plan (IDP).
C. Appendix C: CONFIDENTIAL Archaeological Site Maps, identifying locations of archaeological sites, TCPs, and HPAs within the WFLMA.

1.1.1 Purpose

As previously noted, this HPMM is a guide for considering and managing effects to the WFLMA during O&M and other activities. The HPMM outlines the significance of the WFL, archaeological sites, and the TCP and identifies HPAs in the WFLMA. The HPMM describes how the WFLMA may be affected by O&M and/or other activities, such as proposed improvements to facilities or public access. The HPMM identifies goals for the treatment of historic properties; relevant laws and regulatory nexuses; establishes routine and allowed activities for O&M; and establishes procedures for internal review and external consultation with federal agencies (as appropriate), the SHPO, Tribes and Tribal Historic Preservation Officers (THPOs), other vested consulting parties, and qualified professionals concerning effects to historic properties.[3]

The WFLA recognizes that historic properties and cultural resources management efforts will carry forward in perpetuity.

1.1.2 Goals

The first goal of this HPMM is to clearly define the significant character-defining features of the NRHP-listed WFL. By understanding the character-defining features of the WFL, the WFLA

[3] *Qualified professionals* are those historians, archaeologists, architectural historians, architects, and historic architects who meet the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61). In Oregon, archaeologists must also meet the definition of a qualified archaeologist, which is a person who can apply for a state archaeological permit for archaeological excavations and collection and is defined in ORS 90.235.

can consider, manage, and avoid *adverse effects* to the WFL during activities associated with O&M and other projects.

A second and equally important goal is to inform the WFLA of the presence and recommended treatment of archaeological sites, TCPs, and HPAs for encountering archaeological resources. The WFL, archaeological sites, TCPs, HPAs, and any other historic properties that may be identified within the WFLMA are protected under federal and state laws (see Section 1.2).

The goals of this HPMM align with those of the National Environmental Policy Act (NEPA) and Section 106 of the NHPA and are designed to avoid, minimize, and mitigate adverse effects to historic properties and cultural resources.

- **Avoid**: Whenever possible, the WFLA will avoid adverse effects to the WFL, archaeological sites, TCPs, and HPAs during O&M and/or development of the WFLMA.
- **Minimize**: When avoiding effects is not possible, the WFLA will engage in consultation with federal agencies (as appropriate), the SHPO, Tribes and THPOs, and other vested consulting parties and seek to minimize adverse effects via adjustments to O&M and other activities, such as development plans.
- **Mitigate**: When it is not possible to avoid adverse effects, the WFLA will engage in consultation with the SHPO, Tribes and THPOs, and other relevant consulting parties, to mitigate the effects.

1.2 Relevant Laws and Regulatory Nexuses

Oregon House Bill 2564 (2021) established the WFLA. The WFLA is a public corporation with the mission to "establish ownership, oversight, and management of the Willamette Falls Locks project, for the purposes of (1) enhancing the economic vitality of Oregon through facilitating the resiliency and navigability of the Willamette River and (2) repairing, maintaining, upgrading and operating the Willamette Falls Locks project and associated properties and facilities for commercial, transportation, recreational, cultural, historic, heritage and tourism purposes" (WFLA 2022).

1.2.1 Federal Regulations: 36 CFR Part 800

As previously noted, USACE's closure and subsequent transfer of the WFLMA to the WFLA is a federal undertaking and therefore subject to 36 CFR Part 800, Protection of Historic Properties (also known as the Section 106 process; National Archives and Records Administration [NARA] 2025). As part of the process, USACE entered into an MOA with the Oregon SHPO and the ACHP to mitigate adverse effects that may result from USACE's closure and transfer of the WFLMA out of federal (USACE) ownership (USACE et al. 2023). As amended, the MOA required USACE to prepare this HPMM for the WFLMA in consultation with the Oregon SHPO, Tribes, and concurring parties.

In addition, ongoing maintenance, operations, development, and other actions at the WFLMA may be governed by federal processes (36 CFR Part 800) due to future funding mechanisms (i.e., federal grants) or permitting requirements (i.e., USACE Section 404 permits).

1.2.2 State Regulations: Oregon Revised Statutes

The WFLA, as a public authority of the State of Oregon, is subject to all applicable Oregon Revised Statutes (ORS) pertaining to the protection of historic properties and cultural resources.

Ongoing maintenance, operations, development, and other actions at the WFL may be governed by state laws and processes due to funding mechanisms or permitting requirements. Most actions will be governed by ORS 97.740–97.760, ORS 192.345(11), ORS 358.653, and/or ORS 358.905–358.961, which protect historic properties, archaeological sites, and Native American graves and associated objects on private and non-federal public lands. Additionally, ORS 390.235 requires archaeological permits and other conditions for removal of archaeological or historical materials.

ORS 97.745

ORS 97.745 makes it illegal to "willfully remove, mutilate, deface, injure or destroy any cairn, burial, human remains, funerary object, sacred object or object of cultural patrimony of any native Indian" (OregonLaws 2025a).

An object of cultural patrimony is defined as "an object having ongoing historical, traditional or cultural importance central to the native Indian group or culture itself, rather than property owned by an individual native Indian, and which, therefore, cannot be alienated, appropriated or conveyed by an individual regardless of whether or not the individual is a member of the Indian tribe. The object shall have been considered inalienable by the native Indian group at the time the object was separated from such group" (ORS 358.905[1][h] in OregonLaws 2025b).

A sacred object is defined as an object that "(A) is demonstrably revered by any ethnic group, religious group or Indian tribe as holy; (B) is used in connection with the religious or spiritual service or worship of a deity or spirit power; or (C) was or is needed by traditional native Indian religious leaders for the practice of traditional native Indian religion" (ORS 358.905[1][k] in in OregonLaws 2025b).

ORS 192.345(11)

ORS 192.345(11) addresses exemption of archaeological sites or objects from public records disclosure, unless "the governing body of an Indian tribe requests such information and the need for the information is related to that Indian tribe's cultural or religious activities" (OregonLaws 2025c). The exemption "does not include information relating to a site that is all or part of an existing, commonly known and publicized tourist facility or attraction" (OregonLaws 2025c).

ORS 358.653

ORS 358.653 requires "Any state agency or political subdivision responsible for real property of historic significance in consultation with the State Historic Preservation Officer shall institute a program to conserve the property and assure that such property shall not be inadvertently transferred, sold, demolished, substantially altered or allowed to deteriorate." Public entities, like the WFLA, are required to conserve historic properties and consult with the SHPO to, whenever possible, avoid and minimize negative effects as a result of project actions. The public

entity leads and retains full responsibility for the consultation process and final decision (OregonLaws 2025d; Oregon SHPO 2020).

ORS 358.920

ORS 358.920 makes it illegal to "excavate, injure, destroy or alter an archaeological site or object or remove an archaeological object located on public or private lands in Oregon unless that activity is authorized by a permit issued under ORS 390.235" (OregonLaws 2025e). Further, it is the policy of the State of Oregon to "preserve and protect the cultural heritage of this state embodied in objects and sites that are of archaeological significance" (ORS 358.910 in OregonLaws 2025f).

ORS 390.235

ORS 390.235 notes that "a person may not excavate or alter an archaeological site on public lands, make an exploratory excavation on public lands to determine the presence of an archaeological site, or remove from public lands any material of an archaeological, historical, prehistorical, or anthropological nature without first obtaining a permit issued by the State Parks and Recreation Department" (OregonLaws 2025g). The statute also specifies curation requirements for any archaeological materials encountered during such excavations. Archaeological permits are only issued to qualified archaeologists. Archaeological permits will be reviewed by the Legislative Commission on Indian Services (LCIS), who will forward such permits to the appropriate Tribes for review. (For more on the list of appropriate and interested Tribes who attach cultural and religious significance to lands within the WFL and around Willamette Falls, see Section 1.3.3.)

1.2.3 Local Regulations

The WFL is considered a City of West Linn Historic Landmark. The goal of the City's historic preservation program is to celebrate and protect the City's historic resources. Designated historic resources are subject to a City historic review process to ensure the work is performed in a sensitive manner and preserves the historical aspects of the resource (City of West Linn 2024).

There are no specific Clackamas County regulations that apply to the WFL, as the resource is not located in an unincorporated area (Clackamas County 2024).

1.3 Consulting Parties

The roles of federal agencies, the SHPO, and Tribes in consultation are based on the laws and regulations described in Section 1.2, and are discussed in detail in the following subsections. Additional consulting parties, such as representatives of the City of West Linn Historic Landmark program, may also be appropriate.

1.3.1 Federal Agencies

The WFLA may be required to interact with federal agencies when an activity involves federal fund and/or permitting, particularly USACE. USACE issues permits affecting jurisdictional waters (i.e., for activities within navigable waters of the United States). As noted in Section 5.3,

to enable federal agencies to fulfill their responsibilities under the NEPA and Section 106 of the NHPA, the WFLA may be required to provide information on the potential effects of proposed activities on the WFL, archaeological resources, TCPs, and/or HPAs.

Advisory Council on Historic Preservation

The ACHP is a federal agency that serves as the review body in instances where the parties involved in consultation are unable to reach agreement on actions required to ensure avoidance, minimization, or mitigation of effects to historic properties. The ACHP may provide guidance on effects of individual project activities, the inadvertent discovery or treatment of historic properties, or other instances requiring dispute resolution.

1.3.2 Oregon State Historic Preservation Office

Over the course of operating the WFL, the WFLA will coordinate with the Oregon SHPO to discuss proposed activities; potential effects to the WFL, archaeological resources, TCPs, and/or HPAs; and how to avoid, minimize, or mitigate for adverse effects as a result of activities.

Archaeological Permits and Reviews

In compliance with ORS 390.920 and 390.235, the WFLA may be required to engage a qualified archaeological consultant. Such consultants may apply for an archaeological permit to investigate and/or excavate an archaeological site (or sites) in response to a need to perform subsurface activities within the recorded boundaries of an archaeological resource. State archaeological permits are required for non-federal public lands. Any efforts conducted under a permit issued by the Oregon SHPO will adhere to the conditions of that permit and ORS 390.235.

Architectural Reviews

In compliance with ORS 358.653, the WFLA may be required to engage a qualified architectural historian and/or historic architect. Such consultants will meet the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) and will be qualified to review, advise, and assist with design of appropriate treatments, alterations, and/or new construction at the WFL. Such consultants will advise the WFLA on the appropriate methods for SHPO engagement and review, based on current SHPO guidelines and industry best practices.

1.3.3 Tribes

Identification, investigation, and/or effects to the WFL and/or archaeological resources, including historic properties of religious and cultural significance to Tribes, could trigger the need for consultation with Tribes under the NHPA and/or Oregon state laws. ORS 97.740–994 and 358.905–961 protect Native American ancestral remains, funerary objects, sacred objects, and objects of cultural patrimony associated with Oregon Tribes, and identify criminal penalties for adverse effects to such resources (see Section 1.2.2). Furthermore, these laws recognize and codify the Tribes' rights in the decision-making process regarding ancestral remains and associated objects.

The LCIS maintains a list of the appropriate Tribes for review of items such as archaeological permits. However, due to the significance of the Willamette Falls area, numerous Tribes attach cultural and religious significance to lands within the WFL and around Willamette Falls. USACE consulted the following Tribes during closure and subsequent transfer of the WFL to the WFLA under 36 CFR Part 800:

- Confederated Tribes and Bands of the Yakama Nation
- Confederated Tribes of the Grand Ronde Community of Oregon
- Confederated Tribes of Siletz Indians of Oregon
- Confederated Tribes of the Warm Springs Reservation of Oregon
- Confederated Tribes of the Umatilla Indian Reservation
- Cowlitz Indian Tribe
- Nez Perce Tribe

The WFLA should contact these and any other LCIS-advised Tribes during consultation.

2 The Willamette Falls Locks

2.1 Location and Setting

The WFLMA includes 11.6 acres (Figure 2-1 and Figure 2-2).

The WFLMA is located on the north/west (left) bank of the Willamette River in West Linn, Clackamas County, Oregon. The WFL is located between river mile (RM) 26 and 27, in an area where the river carved a steeply walled canyon from the natural basalt. At the bottom of the canyon flows the 42-foot-high Willamette Falls, around and over which the WFL provided passage. The WFL is located just inland from the west bank of the Willamette River, with industrial development to its north (on the mainland) and south (on Moores Island).

The NRHP-listed WFL is a bypass canal that includes five navigational locks and related operation, recreation, and other support facilities.[4] The canal occupies an approximately 100-foot-wide right-of-way across a narrow basalt shelf that juts out of the north canyon wall. The canal was blasted and cut from the basalt bedrock shelf and reinforced with random ashlar basalt stone blocks quarried at Carver, located on the Clackamas River. The five locks create a vertical rise of 52 feet and serve as elevators that allow river traffic to bypass both the Willamette Falls and a 10-foot-high head dam located at the top of the falls (Hanable and Kramer 2010:1–2).[5]

[4] A lock is the water between two gate pairs. Lock No. 1, for example, is the water contained between Gate No. 1 (downstream) and Gate No. 2 (upstream). At the WFL, the locks and their associated gates are numbered downstream to upstream, specifically Locks Nos. 1–4 and the Guard Lock (the fifth and final lock).

[5] Private entities built the head dam from 1904–1908. It is not part of the WFL (Hanable and Kramer 2010:2).

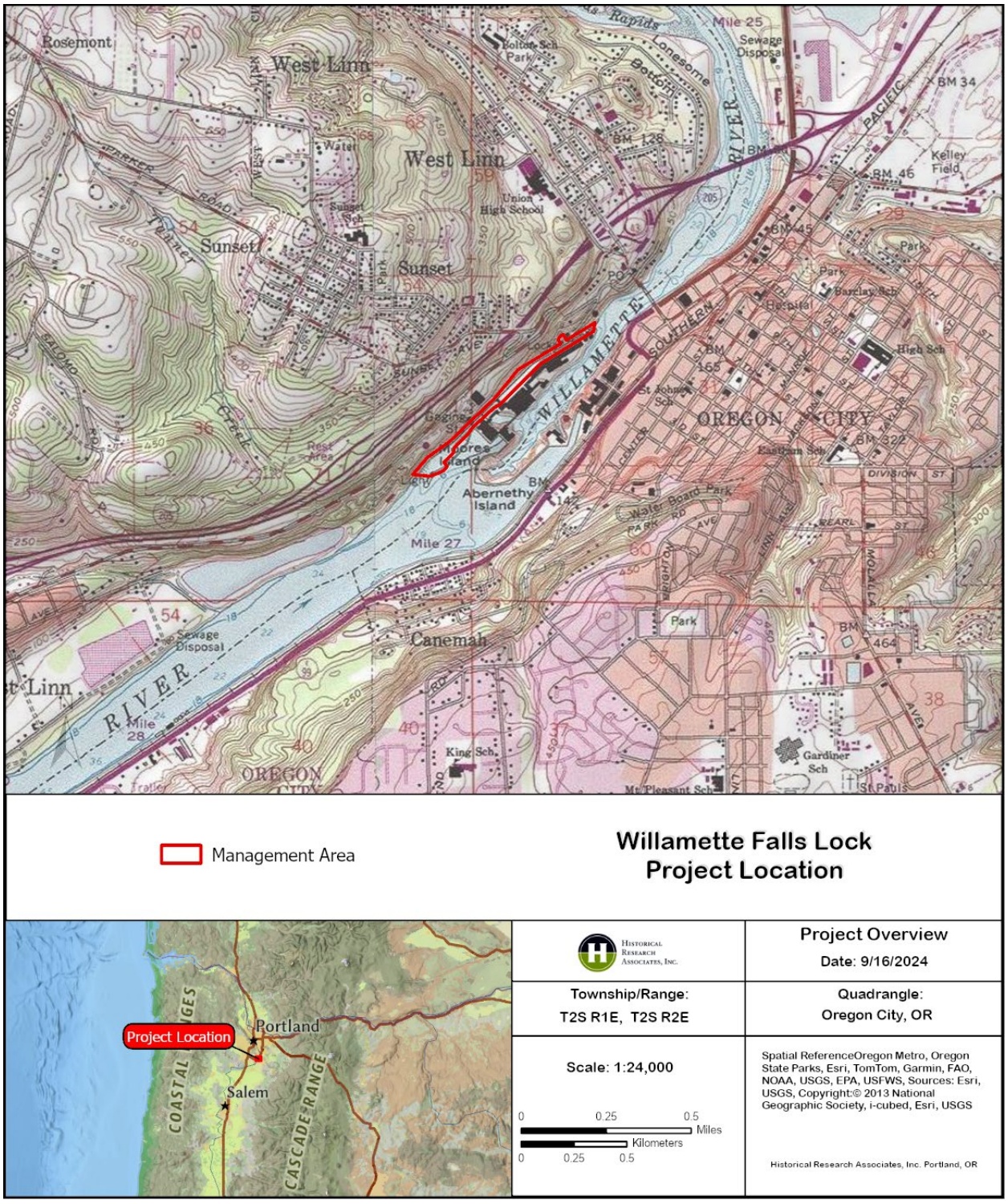

Figure 2-1. Topographic location of the WFLMA.

Figure 2-2. Aerial photograph of the WFLMA.

2.2 Cultural Context

2.2.1 Setting

As noted, the WFLMA is located on the west bank of the Willamette River immediately downstream from Willamette Falls. Willamette Falls was formed by the Missoula floods and the Willamette River cutting through the Portland Hills. The Portland Hills were initially formed by Columbia River basalt flows in the Miocene that were later shaped by downcutting of the ancestral Tualatin, Willamette, and Columbia Rivers (Orr and Orr 2000). The Boring Volcanic Field, a series of volcanic shields formed by localized eruptive events starting about two to three million years ago and ending about 57,000 years ago, formed over Columbia River basalts and later sediments and created several of the named buttes and hills surrounding Portland (Cascades Volcano Observatory 2023). The Late Pleistocene Missoula floods and Holocene localized flooding of the Willamette River cut through millions of years of sediments, exposing Columbia basalt cliffs and terraces along the banks of the river above and below the falls. Most of the soils in this area are classified as "Urban Land," reflective of land alterations surrounding the WFL associated with various industrial developments. Witzel Very Stoney Silt Loam, 3 to 40 percent slopes, is also present, which primarily exists on slopes and comprises colluvium derived from eroding basalt (Natural Resources Conservation Service [NRCS] 2023).

2.2.2 Indigenous History

A discussion of the current archaeological and ethnographic knowledge of the region where the WFLMA is located is helpful in establishing a context for its inventoried archaeological materials, as well as those that might be identified during future activities. The context statement that follows is provided with a significant caveat: this information is based largely on the written record, from publicly available scholarly literature and ethnographic and archaeological research held in the SHPO's database. Much of this work, particularly the ethnographic information, is based largely on accounts gathered by non-Indigenous men working as anthropologists, historians, and geographers. It should be acknowledged that much of the information is from a Western male perspective. It is thus incomplete and does not represent the fullness of Indigenous peoples' cultures or the voices of the people living near the WFLMA today who have ancestral ties to the area and continue to use the area in the present day and into the future.

Precontact Archaeology

The WFLMA is located at the confluence of two cultural areas: the Willamette Valley and the Portland Basin. The Willamette Valley cultural area contains evidence of occupation for at least the last 15,000 years, usually divided into the Paleo-Indian (pre-10,000 years before present [B.P.]) and Archaic periods, with the Archaic period (also sometimes referred to as "Holocene") subdivided into Early (10,000 to 6000 B.P.), Middle (6000 to 1750 B.P.), and Late (1750 to 200 B.P.) periods. The term "Archaic," and its typical subdivisions "Early," "Middle," and "Late," are names used by previous researchers to distinguish different time periods in precontact history where changes occurred, such as the adoption of the bow and arrow. These distinctions are taxonomic in nature (often using *a priori* assumptions about human behavior to categorize artifact assemblages), and archaeologists have used similar classification systems since the

inception of the discipline mirroring other scientific disciplines. But cultural taxonomies can also be misinterpreted to suggest a value-based evolution of human behavior, and the use of terms such as "Archaic" can perpetuate harmful evolutionary thinking. The term should thus be used sparingly and only in direct reference to previously published regional classification systems. This document will use the terms "Early," "Middle," and "Late" to refer to these periods. That being said, chronologies built from artifact assemblages are not without utility; assemblage variation as described by taxonomic categories should be used to generate or test hypotheses about the past.

The Paleo-Indian period (circa [ca.] 15,000–7,500 B.P) is generally thought to be a time when highly mobile hunters and foragers sought big game and traveled great distances while hunting, foraging, and seeking high-quality rock for stone tool manufacture. They are believed to have traveled in small groups, camping in areas seasonally and leaving little archaeological evidence of their occupation. There is little evidence of use of the interior valleys of Oregon and Washington during the Paleo-Indian period, possibly due to the ephemeral nature of occupations, the age and poor preservation environment of the western valleys, and/or Missoula floods that could have buried sites very deeply. The Paleo-Indian period is well studied in other parts of the Pacific Northwest, however, where sites of this period are represented by large, lanceolate projectile points either belonging to the Clovis or Western Stemmed Traditions. The archaeological record for the Paleo-Indian period in the northern Willamette Valley is sparse, represented by a handful of isolated projectile points and sites, mostly identified near the southern end of the valley (Aikens et al. 2011). Somewhat nearer to the WFLMA, approximately 6 miles (mi) to the south near the town of Canby, a projectile point associated with the Clovis tradition was recovered (Ozbun and Fagan 1996). While this point is not associated with radiocarbon dates, evidence of Clovis cultures across North America has been tightly dated to between 12,800 and 13,250 calibrated years B.P. (Waters and Stafford 2007). Deposits of peat dating to the Late Pleistocene are located approximately 18 mi south of the WFLMA in the town of Woodburn, where a diverse assemblage of floral material (seeds, nuts, wood), megafaunal remains, and possible cultural materials were recovered (Aikens et al. 2011; Stenger 2000a, 2000b, 2002). Researchers have argued that the Burnett Site (35CL96), in the town of Lake Oswego, may date to the Paleo-Indian period based on the presence of a potentially older style of projectile point (Burnett 1991; Hamilton and Roulette 2005).

The archaeological record for the Early period is also relatively poorly known for the Willamette Valley. The most diagnostic archaeological materials attributed to this period are large, lanceolate-shaped, Cascade projectile points, associated with the Cascade phase (ca. 9000–5000 B.P.). Cascadia Cave, a rockshelter located along the South Santiam River in the Western Cascade foothills near the town of Cascade, is perhaps the most extensively investigated site associated with this phase. Hundreds of Cascade projectile points have been recovered from excavations at this site. A radiocarbon date of ca. 8650 B.P. was recovered from just above the bedrock floor of the cave, and excavations in the late 1980s produced radiocarbon dates from ca. 7230 B.P. and 5650 B.P. Knives, drills, groundstone tools, and scrapers, all of which point to hide processing and woodworking tasks, were identified in association with these radiocarbon dates. A variety of mammal bones were also recovered. Hazelnuts and hand-grinding stones were identified, indicating that the processing of nuts and seeds were also important activities here. Other stone tools associated with this period include knives, scrapers, drills, modified flakes, manos, metates, hammerstones, and edge-ground cobbles. In the upper Willamette Valley

at Fernhill Reservoir, some charcoal dating to this time period has been identified in association with charred hazelnut, fire-modified rock (FMR), and charred camas bulbs (Aikens et al. 2011).

Early period archaeology in the Portland Basin is even more scant. At the time of his dissertation, Pettigrew (1981) did not include this period because there was so little archaeological evidence from the area. The previously mentioned Burnett Site in old town Lake Oswego contains a substantial Cascade phase component with numerous stone tools and debitage indicative of tool processing, animal hide processing, and possibly clothing manufacture (Bajdek et al. 2016; Hamilton and Roulette 2005). Recent excavations at the Burnett Site have returned a radiocarbon date of 7260 to 7160 B.P., but obsidian hydration and optically stimulated luminescence analyses on collections from these excavations suggest that the site could date to the Paleo-Indian period (Bajdek et al. 2016).

The Middle period represents a time of expansion and intensification of subsistence technologies that had already been in place from the Early period (Aikens et al. 2011). Burtchard and colleagues (1993:18) suggested that this period was a time of increased mass-food processing, reliance on storable foods, and decreased mobility. Most notably, the Middle period was characterized by broad-necked, stemmed and notched projectile points associated with atlatl and dart hunting technology. This innovation allowed Indigenous peoples to successfully hunt smaller, more agile game than was possible with larger, hand-thrown spears that are associated with Early period hunting practices. Other tools associated with this period include knives, drills, gravers, scrapers, reamers, spokeshaves, hammerstones, choppers, anvils, scraper planes, and abrading stones (Cheatham 1988). More expedient stone tools, created by sharpening large flake byproducts from formed tool manufacturing, also became more common during this period, as did partially flaked cobbles likely used as chopping tools for processing wood.

Minor (1983) refers to this period as the Seal Island phase in the Lower Columbia region, dating between 6000 and 2000 B.P. and characterized by broad-necked, stemmed points, cobble flake tools, harpoon darts, adzes, netsinkers, and atlatl weights. The earliest radiocarbon date for this phase is actually ca. 3180 B.P., though Minor (1983:188) believes the period begins much earlier. Pettigrew (1981) has a corresponding phase for the very end of this period called the Marybell phase, ca. 2600–1800 B.P., which includes the introduction of stemmed drills, perforated groundstone pendants, graphite pigment stones, and peripherally flaked pebbles. Ames and Maschner (1999:93) propose a cultural change on the coast ca. 3750 B.P. (termed the Middle Pacific phase), reflecting increased sea-level stability. Interestingly, this date is close to the earliest radiocarbon date for Minor's (1983:188) Seal Island phase.

The Middle period in the upper Willamette Valley has been divided into two cultural phases that describe the environmental variability during this time: the Flanagan and Lingo phases. The Flanagan phase dates from approximately 6000 to 4000 B.P. and coincides with the Hypsithermal interval, a period that was characterized by conditions that were warmer and drier than in previous and subsequent periods. The typical diagnostic tool of this phase is a broad-necked lanceolate projectile point (Toepel 1985:151–153). This period is also referred to as the oak maximum, with acorns likely being an important resource during this time (Toepel 1985:152). The Lingo phase dates from 4000 to 1750 B.P. and was a time marked by a cooler and wetter climate in comparison to the previous period, coinciding with the onset of the Late Post-Glacial period. Diagnostic artifacts from this phase include large stemmed and notched projectile points; lanceolate points decrease in frequency during this phase (Toepel 1985:154).

Widespread occurrence of such points suggests an increase in use of upland environments (Minor et al. 1987). Additionally, a marked increase in mortars and pestles dating from this phase indicates an increased utilization of vegetal resources, further reflected in camas ovens becoming more numerous (Minor et al. 1982). There is some indication that the change in environment may have resulted in decreased emphasis on acorns and increased emphasis on hazelnuts, camas, and other floral resources in the diets of Indigenous inhabitants of the region during this phase (Cheatham 1988:201). The Middle period thus represents a time of expansion and intensification of subsistence technologies that had already been in place from the Early period (Minor et al. 1982), and it is somewhat interesting that it the end of this phase is the first time period from which sites have been identified in the Portland Basin in noticeable numbers (Pettigrew 1981).

The Mill Creek Site complex near Salem includes numerous rock ovens associated with camas roasting dating to this time period. Formed, flaked tools are uncommon, but charred hazelnuts and acorns were quite common, indicating that the sites were primarily associated with the processing of these foods for immediate use and storage (Aikens et al. 2001:295–297). Sites in the Long Tom drainage similarly have Middle period components with an abundance of floral resource processing tools (O'Neill et al. 2004).

Based on various investigations in the Willamette Valley and adjoining areas, the Middle period thus represents a time of expansion and intensification of subsistence technologies that had already been in place from the Early period (Minor et al. 1982), with an increasing emphasis on gathering and possibly processing food for storage.

The climate in the Late period remained much as it had been in the Middle period, which has continued to the present. As a result, settlement and subsistence patterns did not change significantly; however, there is evidence to suggest that there was an increased focus and reliance on camas during this period, coinciding with significant population growth (Toepel 1985:157). There is some indication that the wetter climate may have resulted in decreased use of acorns and increased emphasis on hazelnuts, camas, and other floral resources during this period (Cheatham 1988:201). Cheatham (1988) has argued that the settlement-subsistence system present during the ethnographic period began during the Late period. Winter villages typically held large groups of several families, whereas seasonal camps contained smaller kin-based groups engaged in specific tasks. Cheatham (1988) suggested that larger villages tended to be at the edges of the valley, likely due to periodic flooding of the Willamette and other tributaries during the winter and early spring months. Smaller sites associated with late spring, summer, and fall procurement activities, in contrast, tended to be on the valley floor. Alternatively, Bowden (1997:48–50) has suggested that in certain locations where midden mounds are especially prolific, such as along the Calapooia River, groups may have occupied a series of camas-processing sites over time, moving from site to site based on a multi-year camas-procurement cycle. Such a pattern would produce a series of clustered sites resembling seasonal camps without a large traditional village site because groups moved annually.

Projectile points from the Late period are typically small, narrow-necked, stemmed, and diamond-shaped, replacing the broad-necked points of the preceding Middle period. This change reflects the shift in reliance on the atlatl and dart to the bow and arrow. Other tools associated with this period include knives, drills, gravers, scrapers, reamers, denticulates, spokeshaves, hammerstones, choppers, anvils, scraper planes, and abrading stones (Cheatham 1988; Toepel 1985:155). Additionally, mortars and pestles are much more prevalent during this

period. Camas ovens are very common, and the increased reliance on camas may be linked to significant population growth. This period is also marked by the development of "midden mounds" in the upper Willamette Valley—accumulations of camas-processing debris and other cultural materials that created slight topographic relief on the otherwise flat valley floor. These mounds may represent seasonal camps or villages associated with landforms with particularly prolific camas meadows (Aikens et al. 2011:310).

In the Portland Basin, perforated netsinkers gradually replace notched netsinkers after 700 B.P. (Pettigrew 1981:121). Pettigrew (1981:121–122) believed that 700 B.P. was an appropriate time to identify a cultural break due, in part, to the "Cascade Landslide," which created an earthen dam across the Columbia River upstream near the present location of the Bonneville Dam. This event is believed to have altered the course of the river and salmon runs for a significant period.

Ethnographic Context

The WFLMA is at an intersection of multiple traditional territories due to the singular importance of Willamette Falls as an incredibly productive fishery. As noted above, the following description of Indigenous lifeways is based largely on accounts gathered by non-Indigenous men working as anthropologists, historians, and geographers. Therefore, their descriptions are from Western male perspectives, are incomplete, and do not represent the fullness of Indigenous peoples' cultures. Some modern Tribal groups prefer to transmit their cultural knowledge through oral histories versus written records. The descriptions written by others are thus the primary source available at this time, so they are referred to here.

At least three groups had as many as four villages near the WFLMA: the Clowewalla (Multnomah Chinook), the Clackamas Chinook, and the Kalapuya. The Clowewalla occupied multiple locations along the Willamette from the falls north to the Columbia River (Matthews et al. 2017:22). The Clackamas were a Chinookan-speaking Tribe that also lived on the Willamette River near Willamette Falls, along the Clackamas River, and on nearby tributary streams (Ruby and Brown 1992; Silverstein 1990). Population estimates for Clackamas peoples in the area at the beginning of the eighteenth century are as many as 5,000 (Matthews et al. 2017:10). Willamette Falls was a major gathering point for the Chinookan peoples, especially during the spring and summer salmon runs.

The lifeways of the Clowewalla and Clackamas were very similar. Fish were an important resource year round, and numerous villages were positioned along major waterways to take advantage of their natural abundance. Winter villages comprised multiple cedar-plank houses. Temporary summer housing was established at resource gathering locations, such as seed, nut, and berry harvesting areas in the uplands. A wide variety of plant resources were collected throughout the year for both consumption and construction. Primarily among these was wapato (*Sagittaria* spp.), a water lily species common in the wetlands and estuaries of the Columbia Basin (Coues 1893). Another important staple in the diets of Indigenous inhabitants of the region was camas (*Camassia* spp.). This species of edible lily flourished in moist meadows and in prairies (Stevens and Darris 2017). Areas along rivers and wet meadows would have been occupied by groups during various times of the year as part of the seasonal round. The Clackamas hunted in the woods and uplands surrounding the Portland Basin, acquiring elk, deer, bear, squirrels, raccoons, beavers, otters, rabbits, and other small and large game.

One of the names of the village on the west bank of the river at the falls was wálamt (Matthews et al. 2017:9). This village was occupied by the Clowewalla or Clackamas Chinook. The Clackamas had other villages downstream of the falls on the east side of the river, where Oregon City is now, and nearer to the mouth of the Clackamas River. Sources differ as to which of the groups were guardians of the falls, the Clowewalla or Clackamas. Regardless, tribute had to be paid to the controlling group in order to fish at the falls or pass through to the rest of the valley. The fishers would build cantilevered platforms of cedar in the falls, where they could then spear or use large nets to scoop the migrating salmon from the water (Matthews et al. 2017:11). Women built large drying racks, where they would set up the fish they had cleaned and prepared to be processed for storage and trade.

A number of Clackamas villages have been reported in the vicinity of Willamette Falls, and at least two village sites have been reported on the Clackamas River upstream from its confluence with the Willamette River. On the northern bank of the Clackamas River in the city of Gladstone, approximately 2 mi from the WFL, an Indigenous village site (Site 35CL32) and an Indigenous burial ground (Site 35CL33) were identified during subsurface testing in town along the bank (General Land Office [GLO] 1852a; Woodward n.d., 1979).

The Kalapuya were an inland people who subsisted on vegetal and faunal resources of the valley and adjacent uplands. Their diets relied heavily on the camas bulb and wapato root, which was consumed at all times of the year (Aikens et al. 2011; Clyman 1960:153; Kramer 2000; Zenk 1990). Other gathered foods included acorns, tarweed seeds, hazelnuts, and berries. A variety of game was hunted and included several small mammals, birds, deer, elk, and black bear. Insects such as grasshoppers and caterpillar were also consumed (Zenk 1990:548).

Due to the varied location of the diversity of their food sources, the Kalapuya lived in permanent villages during the winter months and in temporary, transitory camps during the drier times of the year, gathering and processing seasonal foods for immediate consumption and for storage during leaner times. Temporary camps were small and might consist only of a grove of trees or brush for shelter in the summer. Winter villages consisted of rectangular semisubterranean multi-family lodges with either a shed or gabled roof (Zenk 1990:549).

The material culture of the Kalapuya included a wide range of tools manufactured from wood, bone, antler, shell, plant fibers, and stone. They fashioned flaked stone tools (e.g., projectile points, knives, scrapers, awls) from locally available tool stone, and obsidian from central Oregon was also obtained through trade in both core and finished-tool forms. The Kalapuya had a village on the west side of the Willamette described as being upstream of the falls near the mouth of the Tualatin River (Figure 2-3; Matthews et al. 2017:9).

Figure 2-3. Indigenous communities built platforms over the falls to catch fish (Charles Wilkes, 1841, Oregon Historical Society, 46193).

The Molalla, a nearby group, also came to the falls. The Molalla inhabited a broad range on both the east and west sides of the Cascades to the south of the falls (Silverstein 1990; Zenk and Rigsby 1998). The Northern Molalla extended into the Willamette Valley following the Molalla River and moved to these lower elevations in the winter. Their winter houses were single-family dwellings and were described as semisubterranean earth lodges similar to those inhabited by the Indians of the Columbia Plateau (Beckham 1986:32–33). During the summer, the Molalla lived in temporary brush shelters or mat lodges supported by pole understructures. The scant ethnographic literature that exists suggests that the Molalla diet consisted primarily of fish, lamprey (which were abundant at the falls), large game, berries, and roots. However, according to two of Melville Jacobs' Molalla informants, big game hunting was the mainstay of Molalla subsistence (Minor 1987:23). Although no detailed ethnographic description of their material culture exists, their technology was presumably similar to that of other Indigenous groups of the region. The Molalla spoke an isolated language with some words shared with the Cayuse of northeast Oregon. Intermarriage with the Kalapuya was reported. The Molalla also valued marriage alliances with the Lower Columbia peoples and would have used dugout canoes and Chinook-traded canoes to visit these and other riverine groups (Zenk and Rigsby 1990).

Many other Indigenous peoples came to the falls from distant groups to trade and socialize including the Klamath, Cayuse, Nez Perse, Klickitat, and Yakama. Two Pacific Fur Company (PFC) employees were probably the first non-Indigenous people to see the Willamette Falls when they traveled up the river in 1811 to establish a trading post at what would become

Champoeg (Matthews et al. 2017:21). Early foreign visitors to the area reported seeing dozens of canoes along the banks for a half mile upstream of the falls (Matthews et al. 2017:20). Interactions were not always congenial. Historical accounts describe a surprise attack on the Clowewalla village near the falls by what may have been some combination of Cayuse, Nez Perce, or Molallas that resulted in many deaths and the weakening of Clowewalla control over the falls (Matthews et al. 2017:22).

Negative exchanges with the growing numbers of foreigners coming into the area to work for the fur companies began to cause concern among the local Indigenous peoples. Kalapuya bands to the south had already considered driving them out, and in 1815, the Clowewalla joined with them to form a blockade, preventing trapping parties from traveling into the Willamette Valley (Matthews et al. 2017:24). They were successful for a time. Employees of the North West Company (NWC) negotiated a treaty with the Clowewalla to allow for renewed entry into the valley. The Tribes maintained their dominance until the mid-1820s and early 1830s, when epidemics of malaria and measles sickened and killed so many that their population was no longer a deterrent to incursion (Matthews et al. 2017:28).

The Organic Law of 1843, formed by the emerging territorial government of the Oregon Country, allowed for colonizers to claim up to 640 acres within the country, an allowance that was repeated in the Donation Land Claim Act of 1850 for the Oregon Territory (Corning 1956; Schwantes 1996). As colonizers began to take advantage of this law, skirmishes between them and Indigenous populations increased in frequency, resulting in significant casualties and the need for the territorial government to accelerate treaty negotiations throughout Oregon. Territorial leaders began to negotiate treaties with the Indigenous peoples of western Oregon in 1851 and 1852. The initial plan was to create reservations for all Oregon Indigenous peoples east of the Cascades, thereby allowing for unimpeded settlement of the western valleys. Western Oregon Tribes were not willing to move east of the Cascades, however. The U.S. government was reluctant to remove colonizers or pay them to leave the illegal claims in the valley, and the U.S. Senate opposed ratification of the treaties (Lewis 2020, 2021a).

Joel Palmer became superintendent of Indian affairs for the Oregon Territory in 1853 and re-engaged the Oregon Tribes in treaty negotiations soon thereafter. The remaining Chinook peoples were promised a small reservation where Gladstone is now. They moved to the location, but that part of the agreement was not ratified due to opposition by territorial delegates (Matthews et al. 2017:83). Aware of the challenges of the previous treaties, Palmer suggested that a permanent reservation be created on the Oregon Coast but negotiated for temporary reservations within the traditional territory of these populations until the permanent "Coast Reservation" could be established (Beckham 1977; Confederated Tribes of Siletz Indians 2021). President James Buchanan later signed an executive order in 1857 that established the temporary Yamhill Reservation as the Grand Ronde Reservation (Confederated Tribes of Siletz Indians 2021). That same year, the last of the Chinook were removed from the Oregon City area, ending thousands of years of management of the falls by Indigenous peoples (Matthews et al. 2017:85). Many of the remaining Kalapuya and Molalla band members were relocated to the Grand Ronde Reservation according to the terms of a treaty with the U.S. government (Zenk 1990:551). Conditions on the reservation were generally very poor, and mortality rates were high. Although Tribal members could not technically leave the reservations without a work pass, the Indian agencies lacked the workforce to detain all the people who chose to leave. Many Oregon

Indigenous peoples worked as loggers in the growing Oregon timber industry, while others worked as seasonal farm laborers, in fisheries and canneries, and throughout Oregon industries.

During the early years on the reservations, the territorial government sought to educate Indigenous children. Many children were simply too sick from starvation to attend school. The teachers were ill-prepared for the task, and many did not stay long. The schools emphasized manual labor but taught only Euroamerican skills, such as blacksmithing and farming for the boys and sewing, cooking, and cleaning for the girls. Agents also found that taking the children from their families and sending them to boarding schools helped to accelerate the children's indoctrination in Euroamerican cultural norms. The Secretary of the Interior authorized the Indian Industrial and Training School in Forest Grove in 1880, but the school moved to Salem in 1885 due to protests of local colonizers. This school was eventually renamed the Chemawa Training School, and later the Chemawa Indian School. Though several Indian schools existed in the early reservation years, the Chemawa School became the largest. By 1900, Chemawa had 453 students, and by 1922, it had 70 buildings on the 40-acre campus (Beckham 1977:159; Chemawa Indian School 2022; Collins 2024). Graduates of the Indian schools often found professional work as teachers, lawyers, bankers, nurses, and Indian agency staff (Lewis 2021b).

By the late 1870s, a number of prominent non-Indigenous people had begun to voice concerns about the treatment of Indigenous peoples and the reservation system. Government officials and humanitarian reformers believed that the best path forward was to assimilate Indigenous peoples into the American mainstream by breaking down Tribal organization and creating individual autonomy. These ideas about Indigenous assimilation, along with continued pressure to open more land for non-Indigenous people, resulted in the 1887 General Allotment Act, also known as the Dawes Act. Senator Henry Dawes of Massachusetts championed legislation to divide communal Tribal lands into farm-sized allotments assigned to individual Tribal members. The Dawes Act called for the unassigned acres, which were deemed "surplus" lands, to be opened up and sold to land-hungry non-Indigenous people. Given colonizer pressure for access to land in the Oregon Territory, allotment of the Siletz and Grand Ronde Reservations occurred relatively early. In 1892, Siletz allotments totaled 536, representing 46,000 of the reservation's 225,280 acres. At Grand Ronde, allotments covered about 33,000 acres, and about 26,000 acres were ceded to the U.S. government in 1904 (Beckham 1977:169).

The Dawes Act provided for the federal government to hold allotments in trust for 25 years, meaning that the individuals who received allotments did not initially own them outright. Many Indigenous peoples, along with colonizers looking for land, objected to this extended period of uncertainty about the ownership. One hundred and one Siletz Tribal members filed a petition with the U.S. government requesting changes in the law in 1894. At Siletz, Agent Beal Gaither found that White settlers had requested homesteads on the majority of the Tribal allotments (Beckham 1977:162). The act specified that allottees were American citizens, subject to local, state, and federal laws and requirements. Once the federal government removed trust restrictions on an allotment, the owner was obliged to pay local taxes on it. Many Indigenous peoples did not understand this and were not prepared to pay taxes, causing them to lose lands to the county or state. Under an amendment to the Dawes Act, when an allottee died, that person's heirs could request a fee patent for the allotment and then sell it. More land ended up in non-Indigenous people's hands through this mechanism, as the original allottees died. By 1931, few remaining allotments at Grand Ronde remained in Indigenous hands (Lewis 2021b).

The declining lands held by Indigenous peoples led to a steady decline in federal support for the Indian agencies; the Siletz Agency was closed by 1925. The American government's policies toward Indigenous peoples slowly changed after this, however, through the early to mid-twentieth century. In 1934, Congress passed the Wheeler-Howard Act (the Indian Reorganization Act), which essentially repealed the Dawes Act and reestablished allotment lands as Tribal lands (Confederated Tribes of Siletz Indians 2021). The Confederated Tribes of Grand Ronde (Grand Ronde) established a Tribal government under the act in 1936 (Lewis 2021b). Shortly after this positive change in American policy, the federal government would declare it such as success that there was no longer any need to support many Tribes. This grew from an increasing nationalism after World War II despite the service of more than 25,000 Indigenous peoples in that war. Termination proceedings for the Grand Ronde and Siletz Tribes began in 1952 and concluded in 1954 with Public Law 588 signed by President Dwight D. Eisenhower without the support of the Tribes. In yet another change to federal Indigenous policy, a series of bills in 1973 and 1978 called for the restoration of Tribes and a federal recognition procedure. The Siletz Tribe was restored in 1977 and the Grand Ronde in 1983 (Fixico 2021). Chinook, Kalapuya, and Molalla descendants who still live in the region are now commonly members of the Grand Ronde, Confederated Tribes of Siletz Indians, and Confederated Tribes of the Warm Springs Reservation. They and members of the Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Confederated Tribes of the Warm Springs Reservation of Oregon, and Nez Perce Tribe return to the Willamette Falls to fish to this day (Matthews et al. 2017:85).

2.2.3 Known Archaeological Resources, TCPs, and HPAs

In 2022, USACE (Litzenberg et al. 2022:12) conducted research in support of the MOA amendment. Litzenberg and colleagues (2022) identified four resources within the boundaries of the WFLMA: Site 35CL76, Site 35CL127, The Grotto (Site 35CL444), and the Willamette Falls TCP (Table 2-1). One additional resource, 35CL414, is adjacent to the WFLMA but not within the management area. In their report, Litzenberg and colleagues noted that "the Corps has not accessed the [TCP] report yet and is continuing Tribal consultation to identify historic properties of religious and cultural significance to Indian Tribes pursuant to Section 106" (Litzenberg et al. 2022:12). Note that the locations of archaeological resources must be maintained as confidential; location information is included in Appendix C, CONFIDENTIAL Archaeological Site Map.

Table 2-1. Archaeological Resources Within and Adjacent to the WFLMA.

Resource No.	Site/ Isolate	Site Name	Site Type	NRHP Status	Description
35CL76	Site	None	Multicomponent	Not eligible	Lithic scatter, historic-period refuse scatter
35CL127	Site	None	Multicomponent	Eligible	Lithic scatter, historic-period features (formerly Crown Zellerbach Plant)
35CL414	Site	"Buy War Bonds" Petroglyph	Petroglyph	Unevaluated	Petroglyph

Table 2-1. Archaeological Resources Within and Adjacent to the WFLMA.

Resource No.	Site/ Isolate	Site Name	Site Type	NRHP Status	Description
35CL444	Site	The Grotto	Multicomponent	Eligible	Groundstone, lithics, historic structural remains, railroad grade
—	TCP	Willamette Falls TCP	Unknown	Unknown	Unknown

Site 35CL76

Archaeologists tested Site 35CL76 in 1980 and identified a dense mix of precontact and historic-period artifacts. The deposits were apparently mixed by historic-period and modern development, floods, and erosion. The site's poor integrity resulted in a determination of not eligible for listing in the NRHP (Litzenberg et al. 2022; Margler et al. 1984). It should be noted, however, that the precontact artifact assemblage contained more than 70 tools and 2,300 pieces of debitage. In their description of soil stratigraphy in their test pits, Margler and colleagues (1984) stated that lower layers of several test pits contained exclusively precontact artifacts without historic-period artifacts, but they indicated that the soil and artifacts were secondarily deposited due to scouring and deposition caused by repeated flooding.

Site 35CL127

Site 35CL127 contains lithic debitage, flaked lithic tools, faunal remains, and stone net weights. Historic-period and modern material at the site includes concrete foundation remnants, milled lumber, and a trash dump. The artifacts within the trash dump are numerous and diverse, such as fragments of Chinese and European ceramics, bottle and flat glass, nails, brick, metal fragments, and personal items. This site has been determined eligible for listing in the NRHP due to some areas of intact landform containing dense cultural deposits (Litzenberg et al. 2022; Minor 1992).

Site 35CL444

Site 35CL444, known as The Grotto, includes lithic debitage (17 pieces) and one hammerstone, as well as a historic-period railroad grade remnant of the Willamette Falls Railroad. This site also contains structural remnants, specifically concrete blocks, a concrete foundation, ringbolts and hooks in the basalt outcrop, and a carved notch in the top of the basalt "grotto" believed to be associated with a wood platform or chute that facilitated transport of goods between the railroad and ships passing through the locks. Litzenberg and colleagues (2022:25) dated this feature to 1894–1933. This site has been determined eligible for listing in the NRHP (Litzenberg et al. 2022).

Site 35CL414

Site 35CL414 is a historic-period petroglyph with the message "Buy War Bonds" pecked into the rock (Oregon SHPO 2024).

Willamette Falls Traditional Cultural Place

The National Park Service (NPS) defines a TCP as a building, structure, object, site, or district significant to a living community because of its association with cultural beliefs, customs, or practices that are rooted in the community's history and that are important in maintaining the community's cultural identity (NPS 2023:12). The Willamette Falls TCP boundary encompasses the shore of the river adjacent to the WFL (Archaeological Investigations Northwest, Inc. 2002). Details of the TCP are confidential and are intentionally omitted from this document.

High Probability Areas

In addition to the known archaeological resources and the TCP, the WFLMA is in an area considered to be of high probability for encountering buried archaeological resources. Areas that have not been previously or sufficiently surveyed for archaeological resources have a high probability to encounter and identify new archaeological resources.

Specific HPAs are northeast of Site 35CL127, including the area around Site 35CL76, extending to the northern end of the WFLMA (see Appenidx C). While this area has been altered historically, it has the potential to contain deeply buried archaeological resources like those recorded at Site 35CL76. Additionally, the boundaries of Site 35CL76 have not been previously delineated, and the site may extend beyond its currently mapped location.

Actions in HPAs may require advanced archaeological survey if the action includes ground disturbance. Preemptive archaeological surveys will aid in assessing if previously undocumented archaeological resources are present. (For more on the appropriateness of preemptive archaeological surveys, see Section 5 and Section 6.6.1).

2.2.4 Development of the WFL

Almost immediately after Meriwether Lewis and William Clark's 1804–1806 expedition, various non-Indigenous people began to explore the Willamette Valley and encountered Willamette Falls. The PFC, owned by American John Jacob Astor but supported by the NWC, established Fort Astoria in 1811 under the leadership of Alexander Ross and Alexander McKay (Lang 2022). Alexander Ross traveled up the Willamette River in 1811 and provided an early account of activity at Willamette Falls. His account describes a place where fish were abundant as they attempted to ascend the falls, and numerous Indigenous people gathered to fish and engage in many other activities mostly during the summer months (Ross 1904). William Henry and Alfred Seton, clerks of the PFC, established a trading post at Willamette Falls at this time.

Fort Astoria was truly a joint effort between PFC and NWC employees, but this partnership was severed with the onset of the War of 1812. In 1813, the PFC yielded ownership entirely to the NWC, which renamed it Fort George (Lang 2023).

A "portage" roadway between the trading post at Willamette Falls and the one at the small town of Canemah was opened during the 1820s, later improved by Klickitat and Iroquois people under the direction of Dr. Tolmie from Fort Vancouver. An attack on the Clowewella at the falls by another Tribe in 1814 resulted in significant casualties and changed the dynamic of trade and interaction there. After this, Indigenous residents banded together to control and limit passage above the falls (Jette 2015). The NWC negotiated a treaty for safe passage upriver that the

Clowewellas and their neighbors honored for years to come, even as their population was devastated by disease.

The Hudson's Bay Company (HBC), which had absorbed the NWC in 1821, created Fort Vancouver in 1824. Almost immediately, the HBC began to conceive of an industrial center at Oregon City by harnessing and channeling the power of the falls. Chief Factor John McLoughlin claimed 2 square mi from the base of Willamette Falls to Abernethy Creek in 1829 on behalf of the HBC (Ballestrem 2022). McLoughlin had no recognizable authority to claim this land, as there was no territorial government at the time. Nevertheless, he built three houses and a millrace, and had the town surveyed and platted by 1842. McLoughlin moved to the location in the early 1840s, built a home (between 2nd and 3rd Sts. on the east side of Main St.), and renamed the area Oregon City (MIG, Inc. 2017:40). Soon, he would own two sawmills, a gristmill, a granary, a foundry, retail stores, and the town's ferry landing (Tate 2013).

Robert Moore was the first non-Indigenous person in the area later known as West Linn on the west side of the river in the 1840s, building a cabin he called the Robin's Nest on land now encompassing the West Linn Paper Company. Moore, originally from Pennsylvania, made his way to Oregon from Missouri with his wife Margaretta and their children. By the mid-1840s, Moore had established a series of lumber and flour mills with accompanying housing for employees. Moore officially named the settlement Linn City after his friend and former family physician (and later U.S. Senator) Dr. Lewis F. Linn of Missouri (ACHP 2001; City of West Linn 2023; Oliphant 1924).

By 1846, the newly formed town included "one tavern, a chair manufactory, a cabinet shop, a gunsmith shop, and one wagon shop" (West Linn Historical Society 2023). Around the same time, Moore started a ferry service across the Willamette River, and by 1850, he served as the town's first postmaster (City of West Linn 2023; Oliphant 1924). Henry James Warre, who was sent to the soon-to-be Oregon Territory in 1845 by the British military to assess the American presence for a potential war, drew many sketches and illustrations of the Oregon City area and other places in the Pacific Northwest (Figure 2-4; Warre 1818–1898). His sketch of Oregon City from 1846 shows several structures on the West Linn side of the river, as well as trails used to traverse the nearby hills.

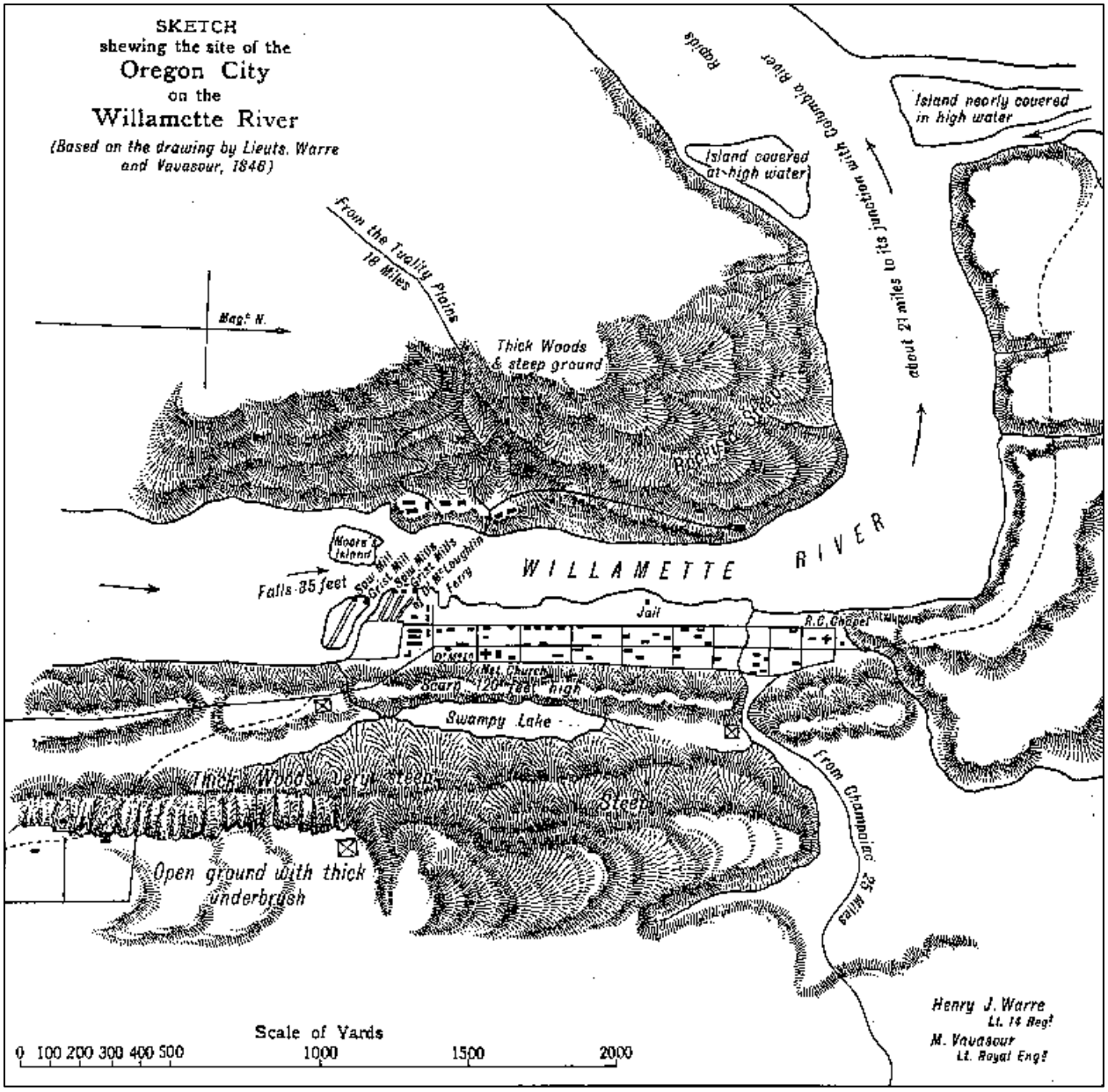

Figure 2-4. 1846 sketch by Henry James Warre (1818–1898) of Oregon City including the area that became West Linn and the WFLMA.

The GLO maps from the 1850s depict organized streets of Linn City near the future location of the WFL, with a wagon road paralleling the west bank of the Willamette River in what is now the Moehnke St. alignment (Figure 2-5; GLO 1852a, 1852b, 1852c). The home of E. Hamilton is shown along what would become Sunset Ave. Two buildings owned by Schnebly are indicated along the wagon road at Tanner Creek. This is likely the location of a former Indigenous village containing human remains reported by fur company employees in 1811 (Matthews et al. 2017:21).

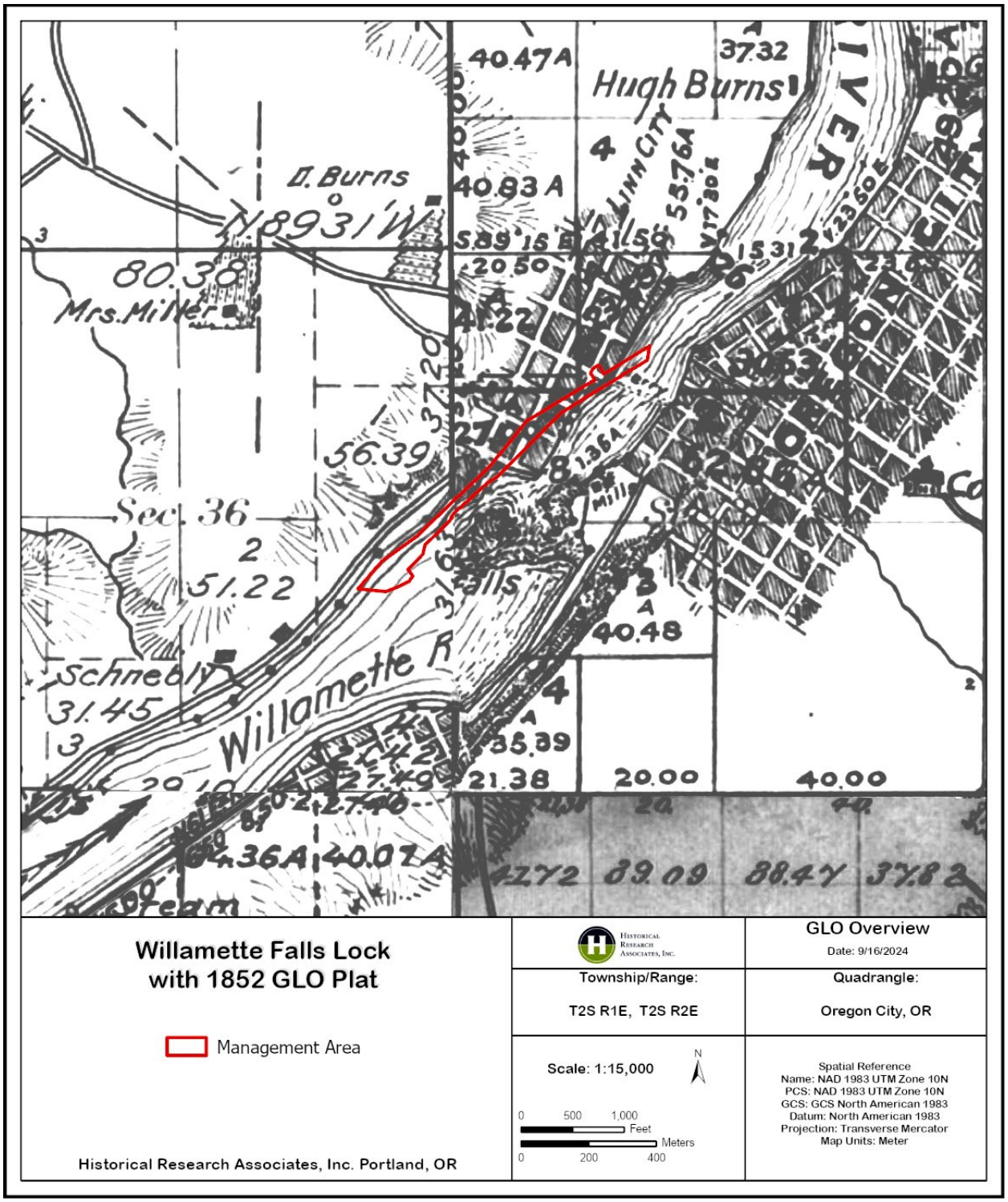

Figure 2-5. 1852 GLO plat of the WFLMA showing the area that became West Linn (north of the river) and Oregon City (south of the river).

By the mid-1850s, established businesses in West Linn included "a gristmill, sawmill, warehouse, wharves, and a breakwater to create a basin for boats to load and unload cargo," called the Linn City Works (City of West Linn 2023). A fire destroyed many of these businesses shortly after Moore died in 1857, and later flooding caused yet more destruction after the area made efforts to rebuild (ACHP 2001; City of West Linn 2023; Oliphant 1924; West Linn Historical Society 2023). Following Moore's death at the age of 73, the county sheriff attempted to settle debts and back taxes Moore left behind by selling off his properties. As a result, the Oregon Milling and Transportation Company purchased and took over operation of the Linn City Works. By 1860, the population of West Linn consisted of 225 residents (City of West Linn 2023; West Linn Historical Society 2023).

Willamette Falls served as an obstacle for transporting goods between Oregon City and West Linn. Additionally, owners maintaining rights of portage used their authority to control what shipments went through and charged fees. By the 1870s, farmers and merchants developed a solution in the form of a lock system, greatly increasing the amount of goods passing across the river and effectively decreasing freight costs (Kramer 2002; West Linn Historical Society 2023).

In 1870, the State of Oregon invested $200,000 in the Willamette Falls Lock Project, hoping to connect farms and businesses in the Willamette Valley to Portland (*Albany Democrat* 1871; *Oregon Cultivator* 1876). The Willamette Transportation and Locks Company organized to complete the project (Hanable and Kramer 2010:6).

Major work on the WFL began in 1871 with the arrival of Chief Engineer Isaac Smith (*Albany Register* 1871; *States Rights Democrat* 1871). Construction workers filled portions of the lower falls area with 40,000 tons of stone to provide a level area for the canal structures (*Weekly Oregon Statesman* 1872). The *Oregonian* advertised for laborers, indicating the Willamette Transportation and Locks Company would hire 400 workers and pay them $2.25 per day (*Oregonian* 1872). Using heavy drills with diamond bits, workers excavated an additional 63,000 cubic yards of earth and rock to build the WFL (*Weekly Enterprise* 1871). Laborers used the excavated basalt, as well as material carted by barge to the project site from nearby quarries at Carver, to wall the canal structures (Hanable and Kramer 2010:7; *Oregonian* 1873). The project used 6,023 cubic yards of masonry, 3,123 pounds of cement, 251,700 pounds of iron, and over 1.3 million feet of lumber (Figure 2-6; *Willamette Farmer* 1873).

Figure 2-6. Construction of the WFL, ca. 1872 (Image courtesy of Oregon Historical Society, as depicted in USACE Portland District 2024a:8).

When the WFL opened, it featured a 3,600-foot-long canal with seven gates and four lock chambers, each 210 feet long and 40 feet wide (*Weekly Enterprise* 1871). The passenger steamship *Maria Wilkins* was the first ship through the WFL on January 1, 1873. This marked a new era in passenger and commercial travel on the Willamette River (*Oregon City Enterprise* 1873).

By 1888, builders constructed the first bridge across the river, connecting West Linn and Oregon City using a cable suspension design. That same year, Parker F. Morey and Edward L. Eastham formed the Willamette Falls Electric Company, becoming the first to successfully generate electricity from the nearby falls (Kramer 2002; Lewis 2023; West Linn Historical Society 2023).

In the early 1890s, the Willamette Transportation and Locks Company joined with Oregon City's Willamette Falls Electric Company to form the Portland General Electric Company

(PGE) while simultaneously building a larger dam at Willamette Falls with the aim to significantly increase the hydroelectricity produced. In 1893, PGE began construction on a hydroelectric plant on the east side of the falls, calling it Station B. That same year, an electric trolley known as the Willamette Falls Electric Line provided PGE workers with transportation between the nearby community of Willamette (originally named Willamette Falls) and the powerhouse located in Linn City (Figure 2-7; U.S. Geological Survey [USGS] 1914). Later renamed the Willamette Falls Railway, the trolley also provided a means of transporting large loads of timber for use at the mills (Kramer 2002; West Linn Historical Society 2023).

The United States purchased the WFL in 1915. After more than a decade of price negotiations, they agreed to purchase the WFL for $375,000. USACE took over operation of the WFL, removing the toll for both freight and passengers. USACE also made several improvements, including lining the lock walls to better accommodate commercial traffic such as rafts of logs (USACE 1930). To accommodate larger ships, USACE also deepened the draft of each lock chamber from 3 to 6 feet (Hanable and Kramer 2010:8).

In 1921, A. B. Guthrie and Company, Inc., began construction of the Oregon City Arch Bridge, connecting West Linn to Oregon City. Conde B. McCollough designed the structure, and upon its opening in December 1922, festivities included a parade and wedding ceremony (West Linn Historical Society 2023). A comparison of aerial photographs from 1929 to the present day depict alterations to the construction of Mill St., some infrastructure additions to the WFL, and the newly constructed water treatment plant to the northwest of the industrial area and WFL (City of Oregon City 2023). In 1937, Oregon City established McLoughlin Boulevard (later also called Highway 99) connecting West Linn and Portland by way of the arched bridge and providing a valuable connection between the various paper industries located on both sides of the river (Ballestrem 2022; West Linn Historical Society 2023).

USACE continued to improve the WFL throughout the middle of the century, responding to the high demands of commercial shipping. Manufactured goods—including paper from the area mills—and large rafts of lumber constituted a large part of the traffic (USACE Portland District 2017:31). At its peak operation in the 1940s, as much as 2.2 million tons of freight passed through the WFL annually (BST Associates 2005:19). In the same decade, USACE replaced the WFL's wood gates with heavy steel gates (Figure 2-8; Hanable and Kramer 2010:8).

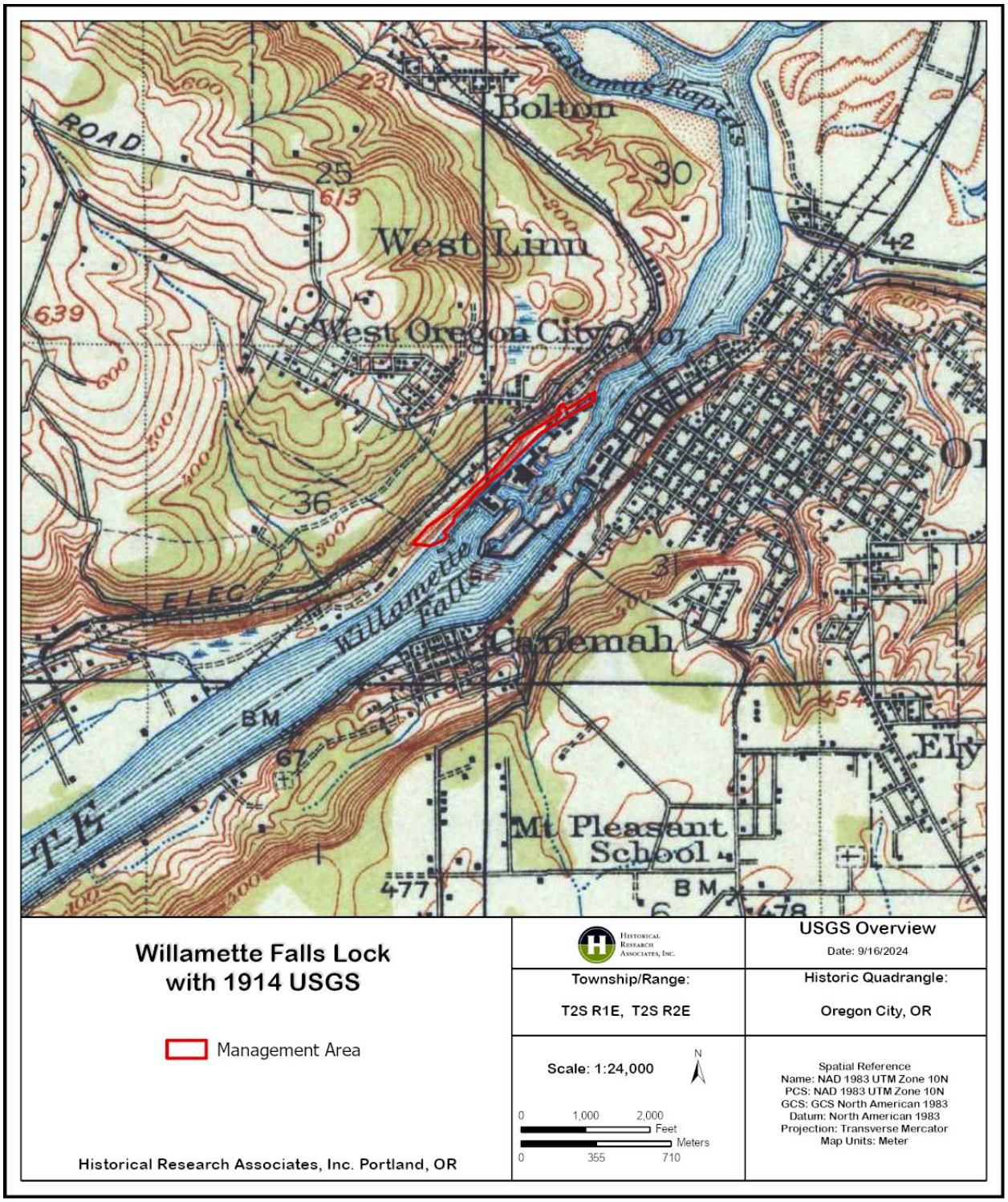

Figure 2-7. 1914 USGS topographic map of the WFLMA showing industrial developments at Willamette Falls and the electric railroad corridor.

Figure 2-8. Commercial goods moving through the WFL, 1958 (USACE Portland District 2024a).

In 1953, PGE replaced and reconstructed major portions of Station B and also changed its name to the T. W. Sullivan Plant after a former hydraulic engineer associated with the company (Kramer 2002). Aerial photographs from 1955 confirm the presence of the electric substation west of the water treatment plant (City of Oregon City 2023). By 1961, increased residential development is present west of the WFL (Figure 2-9; USGS 1961). By 1970, West Linn's population rose to roughly 7,000, and the paper industries once dominating the area began to diminish due to increasing awareness of associated pollution and changing timber suppliers (Ballestrem 2022; West Linn Historical Society 2023). By 1972, the land west of the WFL no longer consisted of agricultural lands, as more residential buildings were constructed, and another large pond was constructed near the river (City of Oregon City 2023). I-205 had been built and brought additional development to the West Linn area.

By the 1980s, West Linn's population continued to increase, with approximately 13,000 people listed as living in the city (West Linn Historical Society 2023). Within the WFLMA, a few more buildings and structures associated with the nearby industrial complex appeared during the decade (Figure 2-10). During the 1990s, the area around the WFLMA remained largely the same, despite a major flood in 1996 (City of Oregon City 2023).

In January 2008, USACE closed the WFL indefinitely due to safety concerns. An inspection of the site revealed significant issues with the miter gates, seepage from the lock walls, and potential seismic dangers. At the height of its operation, the WFL conducted an average of 5,000 locking movements per year. At the time of its closure, the number had dwindled to just 64 vessels

(USACE Portland District 2017). In 2011, USACE officially ceased use of the WFL, ending its continuous use since being established in the 1870s (West Linn Historical Society 2023).

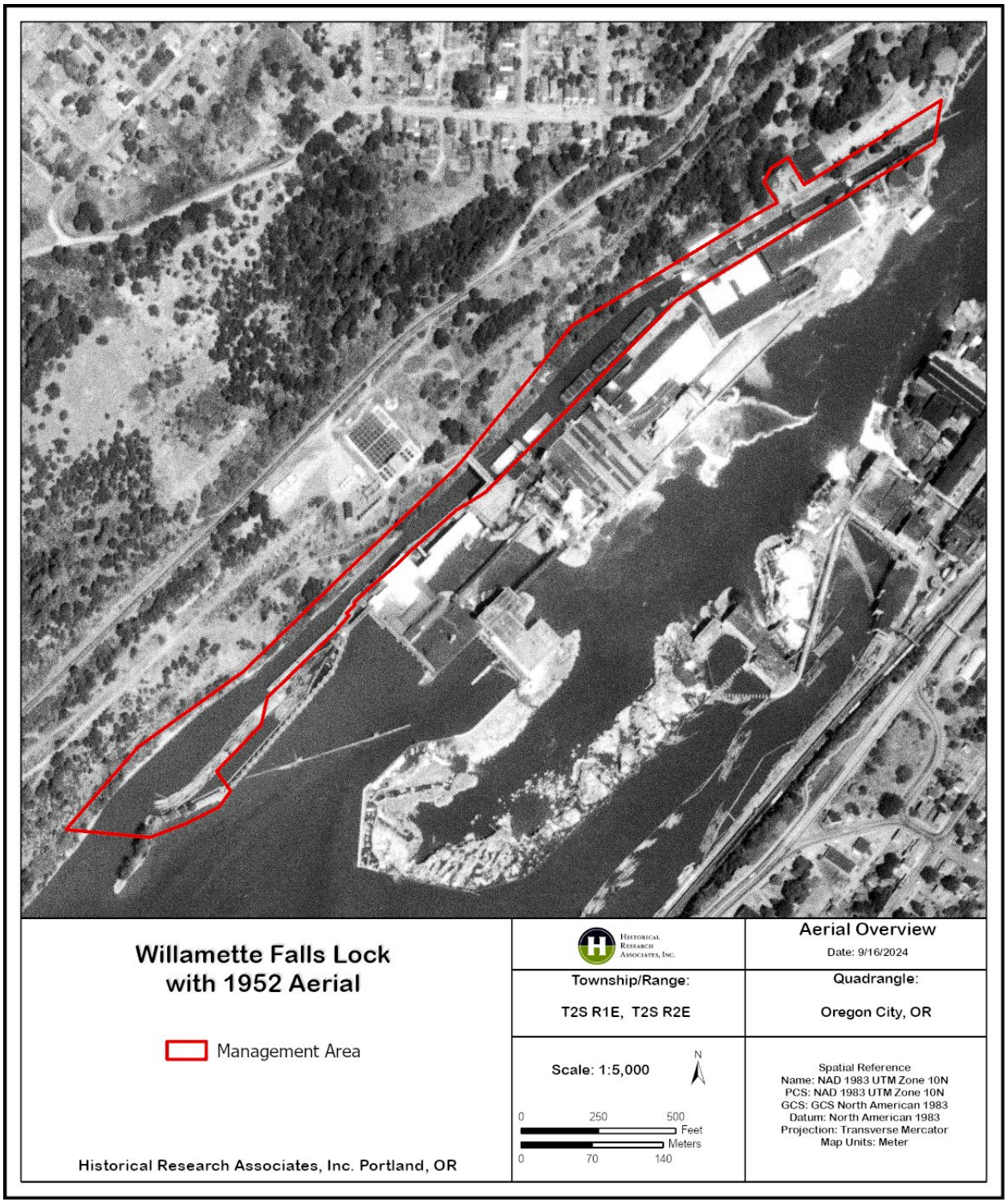

Figure 2-9. 1952 aerial photograph of the WFLMA.

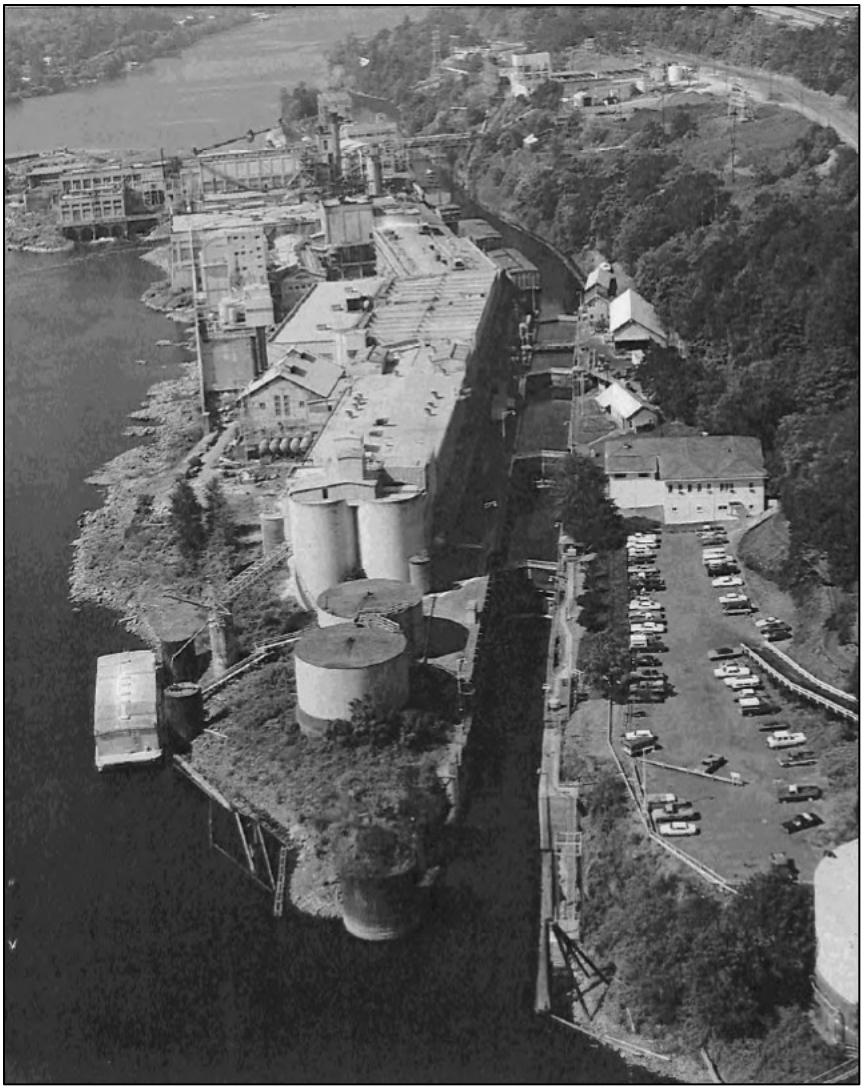

Figure 2-10. Aerial view of WFL, ca. 1985 (USACE Portland District 2024b:35).

2.3 Character-defining Features

In 1974, based on a nomination written by Chuck Mason, the Keeper of the NRHP listed the WFL in the National Register (Mason 1974). In 2010, William S. Hanable and George Kramer updated the nomination (Hanable and Kramer 2010). The WFL was listed in the NRHP under Criterion A, as a property associated with events that have made a significant contribution to the broad pattern of our history; and under Criterion C, as a property that embodies the distinctive characteristics of a type, period, and method of construction. The resource is significant in the areas of Commerce, Engineering, and Transportation. The period of significance was defined as 1873–1954, beginning with the year the WFL opened, including the beginning of federal operation in 1915, and culminating in the last known modifications to the lock gates in 1954 (Hanable and Kramer 2010; Mason 1974).

The WFL is classified as a *structure*.[6] The NRHP listing identifies one contributing and three noncontributing buildings; two noncontributing sites; eight contributing structures; and two noncontributing objects, for a total of sixteen resources (nine contributing and seven noncontributing). Each contributing resource has specific character-defining features that contribute to the significance of the WFL (Appendix A; Table 2-2).

As defined in the NRHP listing (Hanable and Kramer 2010; Mason 1974), the WFL's most distinctive character-defining feature is its basalt bedrock construction reinforced with random ashlar basalt stone blocks, partially clad in timber (Figure 2-11). The NRHP listing also specifically notes the hydraulically operated steel- and wood-frame miter gates, which are approximately 19.5 feet wide with chambered profile and beveled center joint. The gates also include four vertical-sliding filling valves and four butterfly emptying valves in each gate to permit water flow. These features are indicative of the resource's significance under Criterion C.

Though not specifically defined in the nomination, features indicative of the resource's significance under Criterion A include its setting within the Willamette River channel, which illustrates its significance in the history of inland river navigation improvements (Hanable and Kramer 2010:8-1). This setting, within one of only two of America's national inland waterways, combined with the character-defining features noted above, illustrates the feeling and association of the resource within its context as the "first significant facility built to improve navigation on the Columbia–Snake River Inland Waterway" (Hanable and Kramer 20108-1).

[6] As defined in National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (NPS 1997), "the term *structure* is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter."

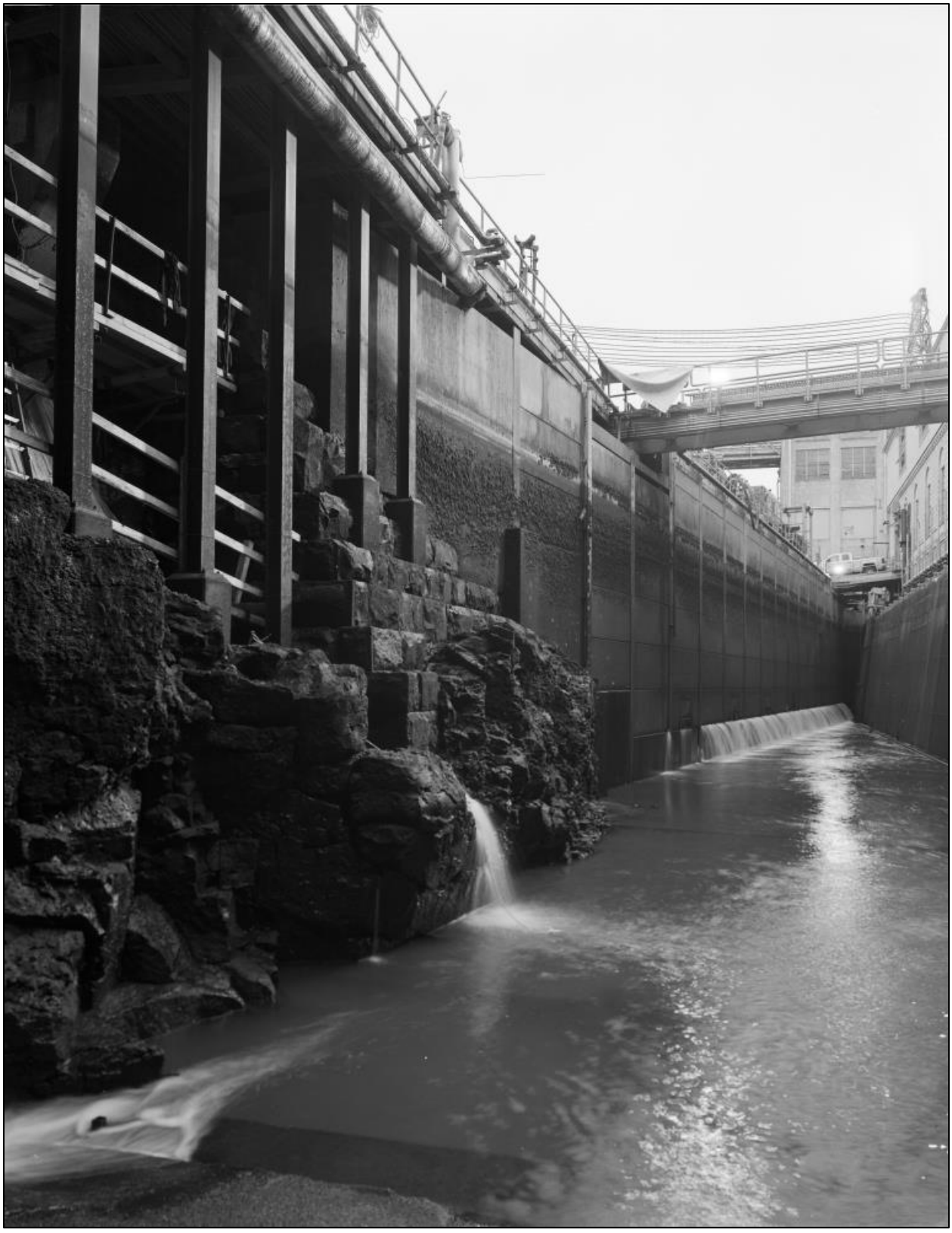

Figure 2-11. View north in a dewatered area outside the Guard Lock in 2024 (USACE Portland District 2024b).

Table 2-2. Contributing, Noncontributing, and Excluded Resources of the WFL. Contributing resources (including character-defining features) are discussed as oriented upstream to downstream.

	Resource Name	Classification	Year Built	NRHP Status	Description	Character-Defining Features
1	Guard Lock (including breakwater/ entry/ upper canal)	Structure	1873	Contributing	Formed by Gates 6 and 7 1,200 feet long, 40 feet wide Includes breakwater, entry, and upper canal.	Basalt bedrock construction reinforced with random ashlar basalt stone blocks, partially clad in timber. Hydraulically operated steel- and wood-frame miter gates (approximately 19.5 feet wide with chambered profile and beveled center joint); includes four vertical-sliding filling valves and four butterfly emptying valves in each gate to permit water flow. Miter base on floor (for gates). Niches in walls (for gates).
2	Canal Basin (Center Canal)	Structure	1873	Contributing	Formed by Gates 5 and 6 910 feet long, 50 to 100 feet wide	
3	Lock No. 4	Structure	1873 Gates: 1941–1954, rebuild 1980–2009	Contributing	Formed by Gates 4 and 5 210 feet long, 40 feet wide	
4	Lock No. 3	Structure	1873	Contributing	Formed by Gates 3 and 4 210 feet long, 40 feet wide	
5	Lock No. 2	Structure	1873	Contributing	Formed by Gates 2 and 3 210 feet long, 40 feet wide	
6	Lock No. 1	Structure	1873	Contributing	Formed by Gates 1 and 2 210 feet long, 40 feet wide	
7	Historic Lockmaster's Office/ Museum	Building	ca. 1915	Contributing	Located on west side between Gates 4 and 5; two-story, rectilinear building	Two-story, rectilinear massing; concrete foundation; side-gabled roof with triangle bracing; (non-original, possibly historic-period) horizontal board siding; one-over-one wood-frame windows.

Table 2-2. Contributing, Noncontributing, and Excluded Resources of the WFL. Contributing resources (including character-defining features) are discussed as oriented upstream to downstream.

	Resource Name	Classification	Year Built	NRHP Status	Description	Character-Defining Features
8	Basalt Stairs (No. 1)	Structure	1873	Contributing	Adjacent to Gate 4 on west side of lock; 10 dry-laid basalt block steps	Dry-laid basalt stone block steps with tooling marks constructed atop random ashlar basalt stone blocks.
9	Basalt Stairs (No. 2)	Structure	1873	Contributing	Adjacent to Gate 4 on east side of lock; 10 dry-laid basalt block steps	Dry-laid basalt stone block steps with tooling marks constructed atop random ashlar basalt stone blocks.
10	West Lock Control Operator's Building	Building	Unknown, non-historic period	Noncontributing	Single-room, rectilinear building adjacent to Gate 4; clad in plywood; hip roof clad in asphalt shingles; vinyl- and aluminum-frame windows; vinyl-frame sliding glass doors	None, noncontributing.
11	Markers/ Monument	Object	1974, 1991	Noncontributing	Near Basalt Stairs No. 1; cast-iron anchor with commemorative plaques	None, noncontributing.
12	Picnic Area/ Interpretive Panels	Site	ca. 1989	Noncontributing	Wayfinding signage located at Lockmaster's Office	None, noncontributing.
13	Lockmaster's Office	Building	ca. 1989	Noncontributing	Single-story, rectilinear building; poured-concrete foundation; horizontal board cladding; gable-on-hip roof clad in standing-seam metal	None, noncontributing.

Table 2-2. Contributing, Noncontributing, and Excluded Resources of the WFL. Contributing resources (including character-defining features) are discussed as oriented upstream to downstream.

	Resource Name	Classification	Year Built	NRHP Status	Description	Character-Defining Features
14	East Lock Control Operator's Building	Building	Unknown, non-historic period	Noncontributing	Single-room, rectilinear building adjacent to Gate 2; clad in plywood; hip roof clad in asphalt shingles; vinyl-frame windows; vinyl-frame sliding glass doors	None, noncontributing.
15	Dock/Signals	Object	Unknown, non-historic period	Noncontributing	Located on the west bank at the downstream end of the WFL; two-stage (red and green) signaling device mounted on a pipe	None, noncontributing.
16	Walkway System	Site	1989	Noncontributing	Access walkway along west bank of WFL; asphalt pavement and ramps	None, noncontributing.
—	Steel Bridge (spanning Lock No. 4)	—	—	—	Located downstream of Gate 5	None. Privately owned; noncontributing The steel bridge is separate from the significance of the locks, thus it is part of a different context and built for a different purpose, which is why it is a noncontributing resource
—	South Lock Control Operator's Building	Building	Unknown, non-historic period	—	Single-room, two-story, rectilinear building adjacent to Gate 6	None, noncontributing..

2.4 Past Alterations and Modifications

Alterations and modifications that occurred within the period of significance (1873–1954) are part of the historic period. Alterations and modifications that occurred after 1954 were made outside of the period of significance and are not considered of historic significance. Repairs and replacements to significant/contributing resources made *in-kind* and completed according to the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68) are deemed appropriate, regardless of the period in which the repair was made.[7] See Section 3 for more information on the *Standards for the Treatment of Historic Properties*.

Though numerous alterations and modifications occurred to the WFL since initial construction in 1873, complete accounting is unfeasible. The following specific modifications are noted herein, as they were specifically documented in the NRHP listing (Hanable and Kramer 2010) and occurred to the most visually notable resources of the WFL. Minor modifications to masonry wall section of the Guardlock occurred between 2023 and 2024 as part of the seismic upgrades (discussed in Section 2.4.1). The remaining upgrades were in-kind replacement of anchors to meet current standards. No other changes to the identified contributing resources have occurred since 2010.

2.4.1 Canal Basin

As initially constructed, the canal basin may have included "an ell-shaped bay formed by a causeway" that provided access to Moore Island's Station B (Hanable and Kramer 2010:4). The Willamette Lock and Canal Company removed that feature in 1904, leading to the "current, largely uniform, width of the central canal" (Hanable and Kramer 2010:4). In 1916, USACE deepened the draft of each locks chamber to accommodate deeper draft vessels. Throughout the historic period, USACE made additional alterations to separate the WFL from adjacent infrastructure and to strengthen or otherwise reinforce the canal walls (Hanable and Kramer 2010:4–5).

USACE constructed a secondary reinforcement wall at the masonry wall section within the Guardlock Area. The new concrete wall was installed in 3 ft wide segments approximately every 3 ft along the upper half of the masonry wall the length on the forebay facing side allowing for 3 ft sections of the masonry wall to remain visible in between. This portion of the wall is not visible from inside the Locks and is covered by the Forebay.

2.4.2 Lock Gates

As originally constructed in 1873, the WFL gates were built of "stout wooden frames and planking," likely operated using balance beams that were later replaced with manual capstans and winches (Hanable and Kramer 2010:4). In 1904, F. F. Sullivan designed repairs for Gate No. 4 that included metal sheeting over the wood gate framing. The design was adopted as the

[7] In-kind repairs are repair or replacement of distinctive features, when necessary, where the new feature matches match the old in composition, design, color, texture, and other visual properties and, where possible, materials.

standard for gate repairs, and the standard continued through 2009 (Hanable and Kramer 2010:4). There have been no substantial gate repairs since 2009.

2.4.3 Historic Lockmaster's Office/Museum

Likely constructed by USACE after acquisition of the WFL in ca. 1915, the Lockmaster's Office was historically used by operators to visually monitor the canal entries and locks. The building appears to feature original one-over-one, wood-frame windows and is clad in non-original but possibly historic-period horizontal board siding. The building was remodeled in the 1980s to serve as a museum and interpretive center, at which time the interior of the space was modified. Modifications include the addition of a drop-ceiling with acoustic tiles, likely the enclosure of the stairway, alterations to interior flooring and wall materials, and the addition of exterior stairs and landings.

3 Treatment Standards

The Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68) consists of four treatment standards: Preservation, Rehabilitation, Restoration, and Reconstruction. USACE defined Preservation as the preferred treatment for the WFL.

> *Preservation* is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project. [NPS 1995]

The *Standards for Preservation* provide direction in making appropriate choices regarding repairs, alterations, and additions that may be part of a rehabilitation project. They are:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken. [NPS 1995]

While Preservation is the preferred treatment for the WFL, Rehabilitation may also be an appropriate treatment, specifically when new facilities might be incorporated into the WFLMA.

> *Rehabilitation* is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

The *Standards for Rehabilitation* are identical to those for Preservation, with the addition of:

1. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
2. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. [NPS 1995]

The standards for Restoration and Reconstruction are intentionally omitted, as they do not appear to be appropriate for the WFLMA.

4 Routine and Allowed Activities

Routine activities are those day-to-day actions and operations required to operate the WFL, and may include, but are not limited to standard operations of the facility, routine repair and maintenance (changing lightbulbs, maintaining machinery, etc.), and general operations for public access (opening gates, collecting tickets, etc.). Such routine operations have no potential to affect the WFL, archaeological resources, TCPs, and/or HPAs.

Allowed activities are broader O&M activities that also have no potential to affect the WFL, archaeological resources, TCPs, and/or HPAs (Table 4-1).

As routine and allowed activates do not have the potential to alter any character-defining features of the WFL, archaeological resources, TCPs, and/or HPAs, they will result in *no effect to historic properties*. Routine and allowed activities require no documentation or external consultation.

Table 4-1. Allowed Activities.

Aquatic Resources
Implementing instream-flow regimes, including bypass flows, instream-flow adjustments, and management of seasonal water levels, provided there are no ground-disturbing activities and no contributing resources or character-defining features of the WFL are affected.
Enhancing native fish populations, including salvage and relocation of live fish from project waterways.
Monitoring and in-kind maintenance of gauge stations, including collection of data and temporary installation of monitoring or gauge stations, provided there are no ground-disturbing activities and no character-defining features of the WFL (both on land and instream) are affected.
Removing logjams and debris dams in water using hand labor or small mechanical devices.
Sediment removal/disposal activities where there will be no new ground disturbance, such as dredging and transportation of dredged material to approved disposal sites. Equipment such as a 4WD truck, dump truck, bobcat, or excavator could be used, assuming there are no ground-disturbing activities and no contributing resources or character-defining features of the WFL are affected.
Terrestrial Resources
Installing nesting platforms and boxes, including on existing power poles, to minimize impacts on birds, provided that no contributing resources or character-defining features of the WFL are affected.
Fence repair and maintenance that does not require blading of the fence line or ground disturbance.
Land Use/Land Management/Facilities
Developing and implementing revegetation plans outside the boundaries of archaeological resources, TCPs, and HPAs.
Visual and physical inspection of facilities, provided the physical inspection does not affect contributing resources or character-defining features of the WFL, archaeological resources, TCPs, or HPAs.
Maintenance activities, including de-watering, debris removal, sediment and/or rock removal; patching with in-kind materials; and inspection activities that require only visual inspections. Equipment such as a 4WD truck,

Table 4-1. Allowed Activities.

dump truck, bobcat, or excavator could be used, assuming no ground-disturbing activities within the boundaries of archaeological resources, TCPs, or HPAs.
Replacing signage that was installed outside the period of significance, when no ground disturbance will occur within the boundaries of archaeological resources, TCPs, or HPAs.
Routine Facility Maintenance
All actions to non-historic/noncontributing facilities pertaining to O&M, when no alterations to historic/contributing resources are involved and no ground disturbance occurs within the boundaries of archaeological resources, TCPs, or HPAs.
Flood or storm damage repair to roads, bridges, and other facilities when the facility involved is not a historic/contributing resource of the WFL and the repair is confined to areas outside of the boundaries of archaeological resources, TCPs, or HPAs.
Exterior painting of facilities, including historic/contributing resources, where exterior materials are already painted (e.g., painting wood or other materials that were previously painted). Painting masonry (stone, brick) or other surfaces not typically or previously painted would NOT qualify as an allowed activity.
Non-historic/noncontributing bridge maintenance and upgrades with no ground disturbance.
Road and Trail Maintenance
Installing new routine signs or markers within or alongside existing roadways or trailways when no ground disturbance occurs within the boundaries of archaeological resources, TCPs, or HPAs.
In-kind maintenance of roads and parking area to appropriate standards, including snow removal, blading, and resurfacing, when confined to the existing road prism or parking lot.
Removing and replacing non-historic/noncontributing culverts outside of the boundaries of archaeological resources, TCPs, or HPAs.
Removing side-casted dirt and rock material stockpiled along roads and/or trails outside of the boundaries of archaeological resources, TCPs, or HPAs.
Vegetation Management
Developing vegetation management plans outside of the boundaries of archaeological resources, TCPs, or HPAs.
Encroachment thinning using hand methods to lop branches and cut small trees.
Mowing to prevent encroachment by brush species and establishment of noxious weeds.
Hazard tree felling using existing skid trails or roads.
Aerial or hand vegetation spraying/fertilization or grass seeding using native grasses.
Eradicating invasive plant species through the application of herbicides and hand removal.
Recurrent brushing (hand, machine, chipping) activities with no ground disturbance to control vegetation within the existing clearing limits of roads, trails, parking lots, or powerline corridors.
Mulching and revegetating through broadcast seeding bare, erosion-prone surfaces such as cuts and fills.

Table 4-1. Allowed Activities.

Vegetation removal in areas that are demonstratively disturbed and outside of the boundaries of archaeological sites, TCPs, and HPAs. Equipment such as a 4WD truck, chainsaw, chipper, or loader with claw shovel may be used.

5 Guidelines for Alterations, Modifications, and New Construction

This section provides guidelines for the WFLA to use during alterations, modifications, and/or new construction at the WFLMA, with the goal of avoiding *adverse effects* to the WFL, archaeological resources, TCPs, and HPAs. (For a list of routine and allowable activities that have no potential to affect the WFL, archaeological resources, TCPs, and HPAs, see Section 4.)

This section provides clarification on *effects*, including *adverse effects*; defines the oversight requirements of a designated cultural resources coordinator (CRC); provides review procedure, including when consultation is required to evaluate potential effects to the WFL, archaeological resources, TCPs, and/or HPAs; and briefly discusses unanticipated effects.

5.1 Understanding Effects

As previously noted, *effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP.

An *adverse effect* is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Examples of adverse effects on historic properties include, but are not limited to:

i. physical destruction of or damage to all or part of the property;

ii. alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access that is not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68, see also Section 3) and applicable guidelines;

iii. removal of the property from its historic location;

iv. change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

v. introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

vi. neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indigenous Tribe or Native Hawaiian organization; and

vii. transfer, lease, or sale of property out of Federal or public ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

As noted in Section 1.1.2, the goals of the HPMM are to avoid adverse effects. When adverse effects cannot be avoided, it is the WFLA's responsibility to resolve (minimize and mitigate) those adverse effects. Options for the resolution of adverse effects may take a variety of forms depending on the nature of the action and resource being affected. The option chosen should be consistent with the scope of the proposed activity and will be decided upon during external consultation (see Sections 5.4 and 5.5).

5.2 Oversight by Cultural Resources Coordinator

The WFLA will, at all times, have a designated Cultural Resources Coordinator (CRC) in charge of oversight of this HPMM. The CRC's responsibilities are to carry out the procedures and protocols identified in this HPMM, through coordination with WFLA onsite operations staff. The CRC will also be the primary point of contact responsible for consultation with federal agencies, the Oregon SHPO, Tribes, and other consulting parties, as appropriate, regarding historic properties and cultural resources.

The CRC should have a background in management, archaeology, architectural history, geology, historic preservation, history, or environmental planning. If the designated CRC does not have these qualifications, the WFLA will provide appropriate training in historic preservation.[8]

The CRC's responsibilities include:

- Review O&M activities that may affect the WFL, archaeological resources, and/or TCPs and lead compliance with this HPMM.
- When an effect cannot be avoided, consult with external entities and coordinate the implementation of treatment measures (minimization and mitigation measures).
- Report the discovery of looting or vandalism to the Oregon SHPO and Tribes and provide a summary of activities taken and any repair or mitigation that occurred as a result.
- Coordinate with individual WFLA/WFL managers and/or staff for planned construction and maintenance activities.
- Arrange for hiring archaeologists and architectural historians who meet professional qualifications standards, when needed.[9]
- Working with the SHPO and Tribes to identify an agreed upon third party mediator in the event of a dispute resolution as described in Section 5.3, Step 6.B.ii.

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[8] For example, the National Preservation Institute (NPI) offers continuing education and professional training for those involved in the management, preservation, and stewardship of cultural heritage. NPI serves a broad spectrum of individuals and groups from the government and private sectors by providing online, on-demand courses and webinars, and in-person seminars in historic preservation and cultural resources management.

[9] As previously noted, *qualified professionals* are those historians, archaeologists, architectural historians, architects, and historic architects who meet the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61). In Oregon, archaeologists must also meet the definition of a qualified archaeologist, which is a person who can apply for a state archaeological permit for archaeological excavations and collection and is defined in ORS 90.235.

5.3 Review Procedures

The following procedures outline the WFLA CRC's process and timelines for reviewing O&M and other activities to ensure all actions avoid effects to the WFL, archaeological resources, TCPs, and HPAs.

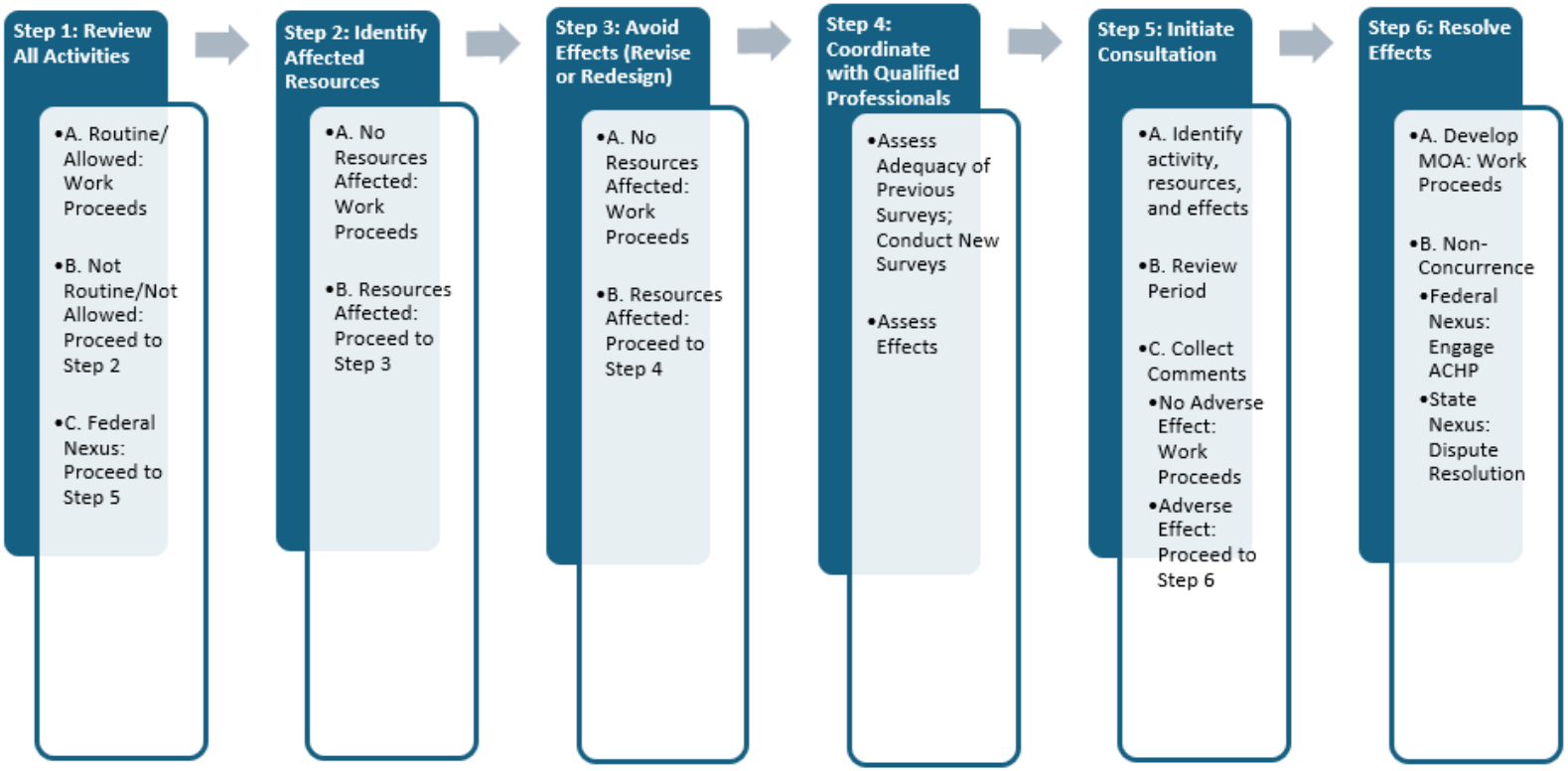

Figure 5-1. Flowchart of review procedures detailed in this Section.

Step 1: Review All Activities

Prior to non-routine operation activities,[10] the WFLA/WFL managers and/or staff will consult with the CRC. The CRC will review this HPMM for locations and details regarding significant/contributing resources of the WFL (see Section 2.3), archaeological resources (see Sections 2.2.3 and 6), TCPs (see Sections 2.2.3 and 6), and/or HPAs (see Sections 2.2.3 and 6) within the vicinity of the activity.

A. Routine/Allowed

The CRC will assess if the activity is an allowed activity (see Section 4, Table 4-1). Allowed activities include those with no potential to affect the WFL, archaeological resources, or TCPs and/or those located outside of HPAs for buried archaeological resources. Such activities require no documentation or consultation and may proceed.

B. Not Routine/Not Allowed

For activities that are not routine and/or allowed activities as defined in Section 4, the CRC will proceed to Step 2: Identify Affected Resources.

C. Federal Nexus

For activities that have a federal nexus (i.e., funds or permitting), the activity is subject to 36 CFR Part 800, Protection of Historic Properties (also known as the Section 106 of the NHPA), and the CRC should immediately proceed to Step 5.

Step 2: Identify Affected Resources

If the CRC assesses that the activity is not a routine and/or allowed activity (as defined in Section 4, see also Table 4-1), the CRC will review the activity to assess if it has the potential to affect the WFL, archaeological resources, TCPs, and/or HPAs.

Because the WFLMA includes the NRHP-listed WFL and has four co-located archaeological resources, a TCP, and various HPAs for encountering buried archaeological resources, it is likely that most activities that are not specifically noted as routine and/or allowed (see Section 4) will have the potential to affect known historic resources and/or identify new archaeological resources.

A. No Resources Affected

In the unlikely event that the proposed activity does not include modifications to contributing resources or character-defining features of the WFL and is located more than 30 meters outside of the known boundaries of previously identified archaeological resources, is not located within the boundaries of the TCP, and is located outside of a HPA, work may proceed without additional review, consultation, coordination, or reporting.

[10] Non-routine operation activities are those not identified in Section 4, Table 4-1, as routine/allowed. Routine operations activities are those day-to-day actions required to operate the WFL, and may include, but are not limited to standard operations of the facility, routine repair and maintenance (changing lightbulbs, maintaining machinery, etc.), and general operations for public access (opening gates, collecting tickets, etc.).

B. Resources Affected

If the proposed activity includes modifications to contributing resources or character-defining features of the WFL or is located within 30 meters of the known boundaries of previously identified archaeological resources, within the boundaries of the TCP, or within an HPA, the CRC will proceed to Step 3: Avoid Effects.

Step 3: Avoid Effects (Revise or Redesign)

If the proposed activity has the potential to affect the contributing resources or character-defining features of the WFL, or is located within 30 meters of the known boundaries of previously identified archaeological resources, within the boundaries of the TCP, or within an HPA, the CRC will attempt to identify an approach for accomplishing the needed improvement that does not affect the resource(s). **This may include revising or redesigning the proposed activity to avoid the resource(s).**

A. No Resources Affected

If the CRC identifies an approach that will result in No Resources Affected (see also Step 2.A), including but not limited to revising the activity to avoid historic properties, work may proceed.

B. Resources Affected

If the proposed activity cannot be revised or redesigned to avoid effects to the resource(s), the CRC will proceed to Step 4: Coordinate with Qualified Professionals.

Step 4: Coordinate with Qualified Professionals

If the proposed activity cannot be revised or redesigned to avoid all effects to the WFL, archaeological resources, TCPs, and/or HPAs, the CRC should engage qualified professionals to:

A. **Assess the adequacy of previous archaeological surveys and, if needed, conduct additional archaeological surveys**.

Activities located within the boundaries of archaeological resources, TCPs, and/or HPAs may require additional surveys in accordance with current SHPO standards and guidelines. The CRC should retain a qualified professional archaeologist to assess the adequacy of previous archaeological surveys and make recommendations regarding the need for additional archaeological investigations. Because the WFLMA is on non-federal public lands, such surveys will require archaeological permits, which necessitate consultation with, at minimum, the SHPO and Tribes (see Step 5).

B. **Assess potential effects to the WFL, archaeological resources, TCPs, and/or HPAs.**

The potential effects of an activity on historic resources will vary based on the activity. Effects assessments may result in a finding of *no adverse effect* or *adverse effect*, depending on the nature of the activity and the resource(s) affected. The CRC should retain a qualified professional archaeologist and/or architectural historian, as needed and appropriate, to

assess potential effects to resources. The qualified professional(s) will make recommendations regarding the level of effect to resources. The CRC will then engage in external consultation to arrive at a consensus determination of the level of effect to historic resources (see Step 5).

Step 5: Initiate Consultation

If a proposed activity will result in any effects to the WFL, archaeological resources, a TCP, or an HPA, regardless of if those effects are assessed as *no adverse effect* or an *adverse effect*, the CRC will Initiate Consultation.

Note that, when an activity requires federal funds (i.e., grants) or permits (i.e., a USACE Section 404 permit), regardless whether the activity will result in *no effect*, *no adverse effect*, or an *adverse effect*, the project will be subject to 36 CFR Part 800. The WFLA/CRC will be required to immediately coordinate with the appropriate federal agency, who may choose to retain status as *lead federal agency* and thus initiate consultation efforts with the Oregon SHPO and Tribes.

The roles of federal agencies (as appropriate), the SHPO, and Tribes in consultation are based on the laws and regulations described in Section 1.2. Additional consulting parties, such as representatives of the City of West Linn Historic Landmark program, may also be appropriate. (For more on the roles and responsibilities of the various consulting parties, see Section 1.3).

To initiate consultation, the CRC will:

A. Identify the proposed activities, affected resources, and potential effects.

The CRC and any qualified professionals will draft letters to the appropriate consulting parties (see Section 1.3) identifying the proposed activity, any and all affected resources, and any and all potential effects to those resources.

i. Federal nexus.

Note that, if the activity involves a federal nexus (i.e., funds or permitting), the WFLA/CRC will work directly with the subject federal agency, who may act as the *lead federal agency* for purposes of consultation under 36 CFR Part 800.

As appropriate, the WFLA may be required to provide federal agencies with scopes of work and/or research designs created by qualified professionals and afford the federal agency the opportunity to comment on the adequacy of, for example, previous archaeological surveys and/or effects assessments (see Step 4).

The CRC will submit a project description to the lead federal agency (if appropriate) and/or the Oregon SHPO and Tribes, along with an assessment regarding potential effects to the resource(s).

B. Provide opportunity for review and comments.

Specific instances and timeframes for reviews and comments will be managed on a case-by-case basis, though generally a minimum 30-calendar-day period will be provided for review by consulting parties.

It is strongly recommended that, in addition to the letters drafted to consulting parties in Step 5.A, the CRC conduct an (in-person and/or virtual) meeting with all consulting parties to introduce the proposed activities, affected resources, and potential effects. This meeting can be held during the minimum 30-calendar-day review period.

The lead federal agency (if appropriate), SHPO, and Tribes will review this information and provide written comments.

C. Collect comments and, if needed, resolve effects.

Following the minimum 30-calendar-day review period, the CRC will distill comments from consulting parties. The comments may include requests for additional information; if so, the CRC will respond to these requests, as necessary and appropriate.

i. No Adverse Effect

a. If the CRC recommends that the activity will have *no adverse effect* on the resource(s), and the lead federal agency (if appropriate), SHPO, and/or all of the Tribes concur, work will proceed. The CRC will draft a letter closing consultation, which notes that all parties have concurred on a finding of *no adverse effect*.

b. If the CRC recommends that the activity will have *no adverse effect* on the resource(s) and either the lead federal agency (if appropriate), SHPO, and/or all of the Tribes do not respond within 30 calendar days, work will proceed. The CRC will draft a letter closing consultation, which notes which parties concurred on a finding of *no adverse effect* and which parties did not comment.

ii. Adverse Effect

If either the CRC, the lead federal agency (if appropriate), SHPO, or any of the Tribes conclude that the activity will have an *adverse effect* on the resource(s), the CRC will proceed to Step 6: Resolving Effects.

Step 6: Resolving Effects

It is the WFLA's responsibility to resolve effects that may occur to the WFL, archaeological resources, TCPs, and/or HPAs. Such effects may be caused by:

- Ground-disturbing activities.
- Demolition, modifications, or additions to the WFLMA that may result from changes of use, modernization, operational efficiency, or technological advances.
- Replacement of character-defining features of the WFL (as detailed in Section 2.3) with incompatible materials.
- Constructing/building new facilities within the WFLMA.

Options for the resolution of adverse effects to the resource(s) may take a variety of forms depending on the nature of the action and resource being affected. The option(s) chosen should

be consistent with the scope of the proposed activity and will be decided upon following consultation with consulting parties.

A. Consult to Resolve Effects

If either the CRC, the lead federal agency (if appropriate), SHPO, or any of the Tribes conclude that the activity will have an *adverse effect* on the resource(s), the CRC will consult with the SHPO and Tribes on appropriate treatment measures (see Section 5.4). Consultation to resolve effects will include the following:

i. The CRC will discuss proposed treatment measures with the lead federal agency (if appropriate), the SHPO, and Tribes via informal communication (e.g., phone, email) or via an (in-person or virtual) meeting, as needed and appropriate. The CRC will also make a good-faith attempt to identify any additional parties that have a vested interest in the resource and invite them to participate in discussions regarding treatment options.

ii. The CRC will present treatment options in writing in the form of an MOA for review by the lead federal agency (if appropriate), the SHPO, Tribes, and any additional parties that have a vested interest in the resource. Proposed measures will include a timeframe for completion and a record of consultation efforts.[11]

iii. Within 30 calendar days, the SHPO, Tribes, and any additional parties that have a vested interest in the resource will respond in writing with concurrence on treatment measures or will provide suggestions regarding changes to or alternative measures. As needed, the CRC will facilitate coordination to arrive at a consensus resolution to the adverse effects.

iv. Following the review period and any additional consultation (as needed) regarding treatment alternatives, the CRC will provide the lead federal agency (if appropriate), the SHPO, and Tribes with a final MOA, detailing treatment measures.

v. If the lead federal agency (if appropriate) and the SHPO agree to the proposed treatment measures and signs the MOA, and no disagreements are received in writing from any of the Tribes within 30 calendar days, the CRC will proceed with the measures as detailed in the executed MOA. The Tribes should also be given the opportunity to sign the MOA as concurring parties. If the project includes a federal nexus/agency, both the federal agency (as noted) and the ACHP should also be given the opportunity to sign the MOA as concurring parties.

vi. If the lead federal agency (if appropriate), the SHPO, or any of the Tribes disagrees in writing to the proposed treatment measures presented in the MOA, the CRC will proceed to Step 6.B.

[11] The Oregon SHPO maintains a standard MOA template that the CRC should use for MOA drafts. The CRC should review the SHPO website or contact the SHPO directly to obtain the current MOA template.

B. Non-concurrence

i. Federal Nexus: Engage ACHP

If either the CRC, the lead federal agency, SHPO, or any of the Tribes do not concur on the determination regarding effects to the resource(s) or disagree in writing to the treatment measures for adverse effects to historic properties, and such disagreement cannot be resolved, the CRC will request the lead federal agency and/or SHPO contact the ACHP to formally coordinate with the WFLA, the lead federal agency, SHPO, and Tribes. The process will follow 36 CFR Part 800.

ii. State Nexus: Dispute Resolution

If either the CRC, SHPO, or any of the Tribes do not concur with the determination regarding effects to the resource(s) or disagree in writing to the treatment measures for adverse effects to historic properties, and such disagreement cannot be resolved, the CRC will request the SHPO and Tribes engage with the WFLA in dispute resolution. The CRC shall consult with the objecting party for 30 calendar days, or another time period agreed upon, to resolve the objection.

If the CRC determines that such objection cannot be resolved, the CRC will forward all documentation relevant to the dispute, including the CRC's proposed resolution, to a neutral third party (mediator) who will facilitate discussions to help parties reach a resolution.

After consulting to resolve effects and engaging a mediator, if resolution still cannot be reached, the CRC, SHPO, and/or Tribes may determine that further consultation will not be productive and terminate consultation. Any party that terminates consultation shall notify the other consulting parties and provide them with the reasons for terminating consultation in writing. The CRC will document the reasons for termination and may continue to execute a MOA to resolve adverse effects without the terminating parties' involvement.

5.4 Unanticipated Effects

Unanticipated effects specifically relate to any effects to the WFL, archaeological resources, TCPs, and/or HPAs that have not been previously anticipated within the guidance of this document. (Treatment of previously identified archaeological resources, TCPs, and HPAs known to exist within the WFLMA are discussed in Section 6.)

Actions that have the potential for unanticipated effects to previously undocumented archaeological materials and/or human remains are addressed in an Inadvertent Discovery Plan (IDP; Appendix B). The IDP follows a template developed by the Oregon SHPO but includes information specifically pertinent to the WFLMA. Briefly, the IDP calls for a work stoppage whenever archaeological materials or human remains (as defined by state law) are encountered during any ground-disturbing activities. The IDP requires a buffer area of 100 feet be established around an identified resource where no work can occur until the identification is resolved. Consultation with the lead federal agency (if appropriate), Oregon SHPO, and Tribes is required

to resolve the identification, including efforts to assess the significance (NRHP eligibility) of the resource, and then avoid, minimize, or mitigate effects to the resource depending on its significance and relationship to the work being conducted.

6 Treatment Measures

As previously noted, whenever possible, the first option of the WFLA should be to **avoid** effects to the WFL, archaeological sites, TCPs, and HPAs during O&M and other activities, such as development of the property (see Section 5.3).

When avoiding effects is not possible, the WFLA will seek to **minimize** adverse effects via adjustments to O&M and other activities, such as development plans. However, minimizing effects may still result in *adverse effects*. As such, Consultation is required (see Section 5.3).

When it is not possible to avoid effects, the WFLA will **mitigate** the effects. Mitigation may take a variety of forms depending on the nature of the action and resource being affected. The option chosen should be consistent with the scope of the proposed activity and will be decided upon in consultation with federal agencies (if appropriate), the SHPO, Tribes, and other vested parties, as appropriate, during consultation (see Section 5.3).

6.1 WFL

Treatment of contributing resources of the NRHP-listed WFL should conform to the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68), specifically the *Standards for Preservation* (see Section 3). Treatment of noncontributing resources and/or other areas of the WFLMA should conform to the *Standards for Rehabilitation*, as well as other guidance provided in this section for the treatment of archaeological resources, TCPs, and HPAs. Assessment of appropriate treatment should be completed by qualified professionals, who will make recommendations that should be concurred upon by federal agencies, the SHPO, and Tribes, as appropriate.

6.2 Site 35CL76

Because Site 35CL76 is not eligible for listing in the NRHP, it is arguably inappropriate to discuss potential future adverse effects to this resource. Having said this, it should be noted that while the site was noted to have suffered a great deal of disturbance from precontact to historic-period flooding and historic-period construction, a great deal of precontact lithic material was recovered from the test pits, some of which came from the lowest alluvial deposits that were devoid of historic-period artifacts. As discussed above, Margler and colleagues (1984) indicated that these layers were secondarily deposited by significant flooding and likely did not represent their primary depositional environment, and this was one of the main reasons why the site was determined not eligible for listing in the NRHP.

Margler and colleagues (1984) completed their report more than 40 years ago, however, and opinions about the potential of redeposited materials to be eligible for listing in the NRHP have changed since that time, especially when considering the volume of artifacts recovered, and the site's location adjacent to the Willamette Falls TCP. Likewise, the report does not include the level of detail and photographic evidence typically included in an archaeological report sufficient for modern researchers to confirm that the lower levels are indeed redeposited materials. Additionally, the boundaries of this site were not delineated; rather, the excavations that identified the site were targeted specifically to the footprint of a new structure being constructed

on the site. As such, it is unknown whether portions of the site extend beyond its current boundary, and if they do, whether they have the potential to make the site eligible for listing in the NRHP.

Future actions within the boundaries of this site and in its vicinity (i.e., HPAs, see Section 2.2.3) require consultation with the Oregon SHPO. If archaeological materials are identified more than 30 meters from the site's boundary, they may be recorded as a new archaeological site. If archaeological materials are identified within 30 meters of its boundary, they may be considered part of Site 35CL76, and the site's boundaries would need to be expanded appropriately. Any identification of archaeological materials identified outside of the current site boundaries will require evaluation of their potential significance and NRHP eligibility, either as evaluation of a new site, or re-evaluation of Site 35CL76, depending on their location.

If a new site, or extension of Site 35CL76, were to be found eligible for the NRHP, and any given action were to affect it, then the procedures in Section 5.3 should be followed to ensure appropriate consultation and resolution of effects. As with other archaeological sites, appropriate treatment will depend on the nature of the action and what makes the resource eligible for listing in the NRHP.

6.3 Site 35CL127

Site 35CL127 was determined eligible for listing in the NRHP under Criteria A and D. Only the precontact component is eligible under Criterion A, but both the historic-period and precontact components are significant under Criterion D. The precontact component is significant under Criterion A for its association with Willamette Falls as an important fishery to Indigenous populations through time. Further, the identification of intact deposits represents the potential for the precontact component to shed additional light on the lifeways of Indigenous peoples at Willamette Falls. Likewise, additional intact historical deposits could shed light on the lifeways of people living at the locks while they were being constructed and later during their operation (Litzenberg et al. 2022:32–33).

Any future actions with the potential to affect Site 35CL127 must consider what makes the site significant to determine appropriate assessment and treatment; however, given that the precontact component of Site 35CL127 is eligible under Criteria A and D, any future actions should strongly seek to avoid or minimize effects to this resource. Complete removal of Site 35CL127 could be seen as an unacceptable and therefore un-mitigatable adverse effect, considering the relative lack of archaeological evidence of precontact use and occupation of the Willamette Falls area despite a well-documented use of this area by Indigenous peoples.

Otherwise, appropriate mitigation efforts for archaeological sites eligible under Criterion A should include a public educational component. The site is significant to the area as a fishery for the last 1,500 to 2,000 years. Educational efforts should focus on this aspect of the site's history. This may include onsite or nearby permanent signage, educational displays in nearby museums or other public venues, educational packets for public schools, components of public tours, investment in Tribal programs related to fisheries, and/or other appropriate educational tools.

Archaeological data recovery is one of the most common forms of treatment for archaeological sites eligible under Criterion D. Data recoveries first involve the development of a research design that guides the recovery efforts; such designs are included in archaeological permit

applications to the Oregon SHPO. As discussed in Litzenberg and colleagues (2022:33), while the design and construction of the WFL itself has been well researched, little attention has been paid to the lives of those who worked at the WFL and their families. The artifact inventory from previous investigations suggests some potential to pursue this avenue of research, and future research designs should include research questions that speak directly to domestic life in and around the WFL. For the precontact component, Litzenberg and colleagues (2022:33) suggest that the site contains relatively intact sediments that could provide further insight into precontact lifeways and cultural practices of Indigenous populations at Willamette Falls. Thus, future research designs should contain a wide range of research questions that address precontact domestic and social life (including seasonal gatherings of many regional Tribes), subsistence and settlement (including fishing as an industry), and exchange and trade through time.

A research design must also include appropriate field and laboratory methods for excavation, artifact recovery, analysis, and reporting. Field efforts should follow Oregon SHPO guidelines, including excavation in 10 centimeter levels with soils screened through 1/8-inch hardware mesh. Artifact analysis should follow current methodologies for precontact and historic-period artifact analysis, faunal analysis, and special analyses including, but not limited to, radiometric dating, obsidian sourcing and hydration studies, fine mesh screening for macrobotantical remains, pollen analysis, and blood and plant residue analysis.

6.4 Site 35CL444 (The Grotto)

Site 35CL444 has been determined eligible for listing in the NRHP under Criteria A and D, but only the precontact component is significant under Criterion D, due to the potential for additional artifacts to yield important information about precontact lifeways at Willamette Falls. The historic-period component is associated with the transport of goods between ships using the WFL and trains using the railway on the west bank. As such, it represents a relatively unique aspect of the industrial history of the WFL, that of the intersection between aquatic and terrestrial transportation systems as the WFL became not only an important place for transporting goods from place to place but also for manufacturing goods including pulp and paper and sawdust.

The site's significance during the historic period comes from its unique role in the development of the WFL as a transportation and manufacturing hub from the late nineteenth to the mid-twentieth centuries. As such, treatment options for any future effects to the historic-period components of this resource should focus on educational venues (like those proposed in Section 6.3 for Site 35CL127) to highlight this aspect of the WFL's history.

The precontact component to date contains a relatively sparse artifact assemblage (17 pieces of debitage and a hammerstone) and would not contribute significantly to educational efforts (like those proposed in Section 6.3 for Site 35CL127). Rather, treatment for potential effects to the precontact component should focus on archaeological data recovery to identify additional artifacts and/or features that may be able to shed additional light on the lifeways of Indigenous populations living and fishing at the falls. The research design components (discussed in Section 6.3) for Site 35CL127 are also appropriate to Site 35CL444. However, because little is currently known about the temporal range and functions of the precontact component of Site 35CL444, research questions would be broad and designed to capture these primary components of the site's historic context to better assess its future research potential.

6.5 Willamette Falls Traditional Cultural Place

As discussed in Section 2.2.3, details of the Willamette Falls TCP are confidential and cannot be shared here, nor can appropriate treatment options for future potential effects. Boundaries of the TCP overlap roughly the southern half of the WFLMA, so it is reasonable to conclude that most future actions within the WFLMA have the potential to affect this historic place. As such, the WFLA should engage the Oregon SHPO and Tribes in all planned O&M and development projects to assess potential effects and seek input on appropriate treatment options (see Section 5.3). It may be appropriate to have an annual meeting that includes a list of proposed actions for the upcoming year to facilitate this interaction.

6.6 High Probability Areas

As noted in Section 2.2.3, in addition to the known archaeological resources and the TCP, the WFLMA is in an area considered to be of high probability for encountering buried archaeological resources. Areas that have not been previously or sufficiently surveyed for archaeological resources have a high probability to encounter and identify new archaeological resources.

Specific HPAs are northeast of Site 35CL127, including the area around Site 35CL76, extending to the northern end of the WFL (see Appendix C). While this area has been altered historically, it has the potential to contain deeply buried archaeological resources like those recorded at Site 35CL76. Additionally, as noted in Section 6.3, the boundaries of Site 35CL76 have not been previously delineated, and the site may extend beyond its currently mapped location.

Actions in HPAs may require advanced archaeological survey if the action includes ground disturbance. Preemptive archaeological surveys will aid in assessing if previously undocumented archaeological resources are present. (For more on the appropriateness of preemptive archaeological surveys, see Section 5 and Section 6.6.1). Such surveys will require coordination with the Oregon SHPO, who administers archaeological permits for investigations on non-federal public lands, and Tribes, who will be requested to comment on the permits and any associated research designs (see Section 1.2 for additional information on the regulatory laws and Sections 1.3.2 and 1.3.3 for more information on the roles of SHPO and Tribes).

6.6.1 Archaeological Surveys

Archaeological surveys may be required in advance of project activities that require ground-disturbing activities within HPAs. An Oregon-qualified professional archaeologist will request an archaeological permit from the Oregon SHPO. The permit will, at minimum, require a research design and for the archaeologist to coordinate with Tribes. The results of the survey may require additional investigations or monitoring and/or may result in the identification of new archaeological resources that should be managed under the guidance of this HPMM.

6.6.2 Archaeological Monitoring

Archaeological monitoring may be utilized when an activity could affect archaeological resources. During monitoring, an Oregon-qualified professional archaeologist is present during ground-disturbing operations and is authorized to halt operations should archaeological material be identified or have the potential to be affected. Upon halting the operation, the monitor evaluates the material/effects and assesses potential significance/effects. Monitoring may be recommended during consultation as part of resolving effects and require development of an activity-specific monitoring plan.

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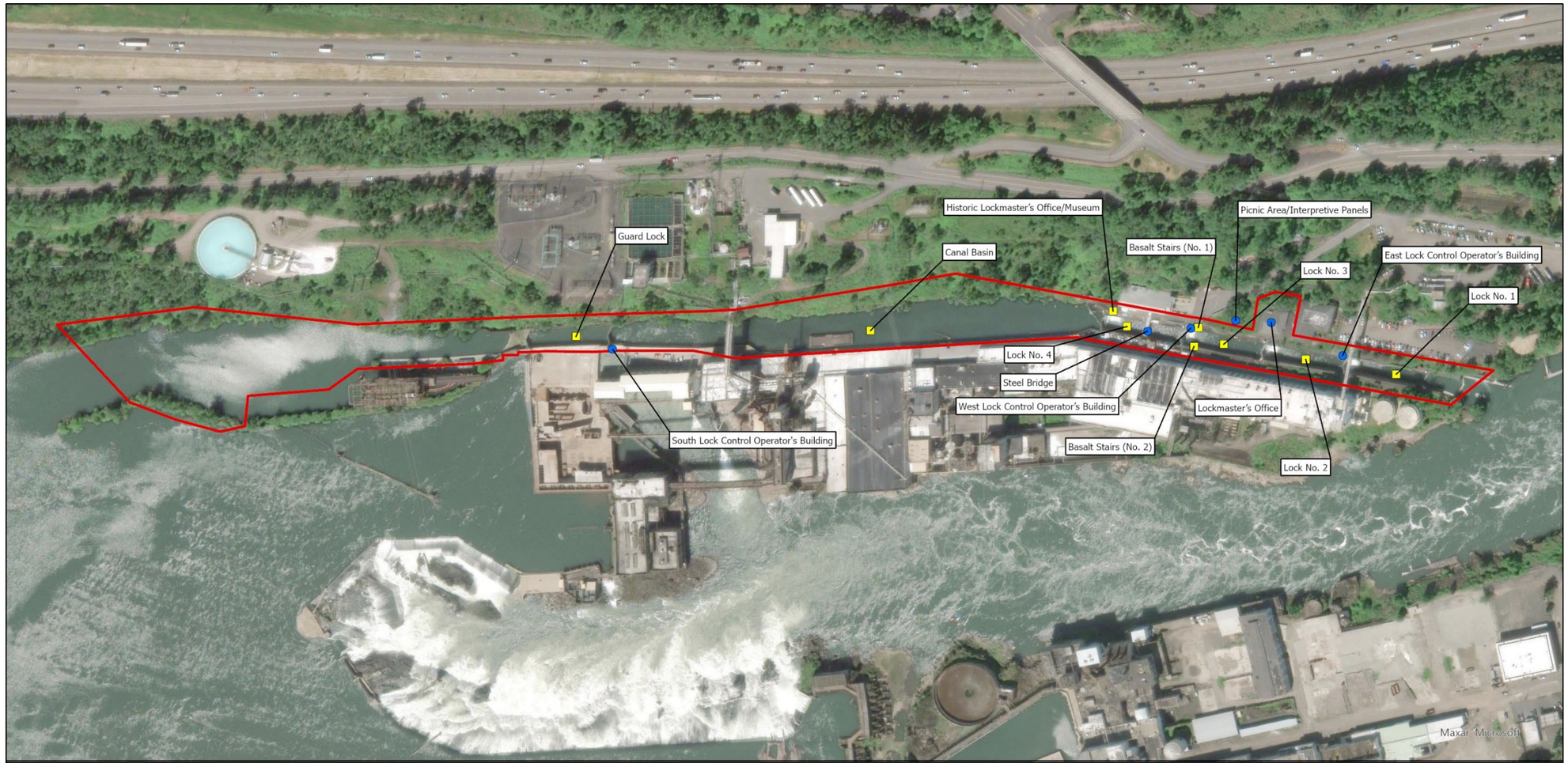
Appendix A: WFL Resource Map



SCALE: 1:3,000

0 200 400 800
Feet

0 25 50 100 150 200
Meters

Produced by Historical Research Inc. Project Team. The spatial information used to construct this map is based on collected or sourced GIS data for the most current project area, and is considered reliable only at the scale at which the data was created and the scale at which the map was published. This drawing is prepared solely for the use of the contractual team partners and assumes no liability to any other party for any representations contained in these drawings. This map must be printed at full scale (100%) in order for the scale to remain correct.

- Contributing (Character-Defining)
- Non-Contributing
- Management Area

Willamette Falls Locks Resources

April 2025

Historical Research Associates, Inc.

Appendix B: Inadvertent Discovery Protocol

[Updated September 2024]

ARCHAEOLOGICAL AND HUMAN REMAINS INADVERTENT DISCOVERY PLAN (IDP)

[Project Name]
[Project Manager] [Landowner Agency] [Date] [SHPO case number]

This document outlines procedures and protocols to be followed if archaeological objects or features, or human remains are encountered in the course of work. These procedures are intended for circumstances where there is not an expectation or anticipation of encountering cultural resources or human remains. **This is not a replacement for due diligence, robust project design, and consultation with appropriate Native American Tribes**.[1] Prior to undertaking project work, an assessment of the likelihood for disturbance to cultural resources and tribal heritage should be completed. All personnel will be briefed on all procedures and reporting structures before the start of any work.

CONTENTS OF THIS DOCUMENT

A. *PROCEDURES FOR INADVERTENT DISCOVERY OF ARCHAEOLOGICAL FEATURES AND MATERIALS*

*(DOES **NOT** INCLUDE HUMAN REMAINS, BURIALS, FUNERARY OBJECTS, OBJECTS OF CULTURAL PATRIMONY, OR SPIRITUAL OBJECTS)*

It is expected that ALL artifacts, features, structural elements, and other cultural items that are identified will be reported to required project, agency, and Tribal contacts, and accounted for as soon as possible. It is understood that there will be a single project point of contact to coordinate with the project archaeologist, SHPO, LCIS, and appropriate Native American Tribes.

Step 1. Stop work (immediately after discovery)

[1] Appropriate Native American Tribes will be identified by LCIS

If any person believes that they have located an archaeological object[2] or site[3], all work must stop immediately.

Discovery made in field _____(date/time) _____ (initials of discoverer)

Step 2. Secure and protect the area (within first hour after discovery)

Establish a **minimum** 30 meter/100-foot area of protection, or more as necessary, around the find(s). Exclude all vehicle traffic and non-essential foot traffic. Non-ground-disturbing work may continue outside of the area of protection with caution until the situation is assessed by a qualified archaeologist.[4]

Buffer established _____ (time) _____ (initials of person responsible)

Step 3. Notify (within first hour after discovery)

Notify the project manager, agency official (if applicable), and project archaeologist. If there is not an archaeologist on-site, or on retainer for the project, the project manager will contact an Oregon Qualified Archaeologist (which include agency and Tribal archaeologists) to assess the find.

Project Manager contacted _____ (time) _____ (initials of contactor)
Agency Official contacted _____ (time) _____ (initials of contactor)
Project Archaeologist contacted _____ (time) _____ (initials of contactor)

Step 4. Identify and Follow Guidance (timeline variable, as soon as possible)

If the archaeologist determines the find is an archaeological feature or object, or other cultural item or feature, OR if no qualified archaeologist can be contacted within the first hour of discovery, the **State Historic Preservation Office (SHPO) and appropriate Native American Tribes must be contacted,** and their guidance must be followed. SHPO, Native American Tribes, and project and agency personnel will determine in consultation how or if work may continue at the site. If the discovery is determined to *not* be archaeological or a cultural item, you may continue work. This determination should be confirmed in writing to the project manager and agency official.

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[2] "Archaeological object" means an object that is at least 75 years old (or 50 years if there is a federal nexus), is part of the physical record of an indigenous or other culture found in the state or waters of the state, and is material remains of past human life or activity that are of archaeological significance including, but not limited to, monuments, symbols, tools, facilities, technological by-products and dietary by-products (ORS 358.905).

[3] "Archaeological site" means a geographic locality in Oregon that contains archaeological objects and the contextual associations of the archaeological objects with each other or biotic or geological remains or deposits (ORS 358.905).

[4] Ground-disturbing work on different landforms distant from the find and outside of the buffer may continue.

SHPO contacted _____ (time) _____ (initials of contactor)

Appropriate Native American Tribes[5] _____ (time) _____ (initials of contactor)

B. *PROCEDURES FOR INADVERTENT DISCOVERY OF HUMAN REMAINS*

(INCLUDES HUMAN REMAINS, BURIALS, FUNERARY OBJECTS, OBJECTS OF CULTURAL PATRIMONY, AND SPIRITUAL OBJECTS)

It is expected that ALL potential human remains, burials, funerary objects, or objects of cultural patrimony that are identified will be reported and accounted for within 3 hours of discovery.[6] It is understood that there will be a single project point of contact to coordinate with the project archaeologist, SHPO, LCIS, OSP and appropriate Native American Tribes.

Step 1: Stop work (immediately after discovery)

If any person believes that they have located human remains[7], ALL work will stop immediately. Any human remains, regardless of antiquity or ethnic origin, will always be treated with dignity and respect.

Step 2. Secure and protect the area (as soon as possible, within c. 10 min)

Secure and protect the area of inadvertent discovery with a **minimum** of 100 meter/300 foot buffer, or more as necessary. The location and other information about the find should be treated as confidential and shared on a **need to know basis only**. Prevent all vehicle traffic and unauthorized foot traffic from entry. Block remains from view and protect them from damage or exposure without touching or disturbing the remains, and leave them in place.

Do not take photographs unless approved by the appropriate Native American Tribes and Oregon Legislative Commission on Indian Services (LCIS), and only for the purpose of identification. **Do not speak to the media or public** or post any information about the find on social media. Non-ground-disturbing work may continue outside of the buffer with caution.[8]

Buffer established _____ (time) _____ (initials of person responsible)

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[5] ALL Tribes designated by LCIS must be notified. Contacting one or some of the Tribes does not fulfill the obligation to notify.

[6] Modifications to reporting timelines can be made in consultation with SHPO and Tribes.

[7] Bone may be fragmented, weathered, or otherwise modified to make it difficult to identify, so when in doubt, stop work and call it in.

[8] Ground-disturbing work on different landforms distant from the find and outside of the buffer may continue.

Step 3. Notify (within first hour after discovery) – see contact list below (section D)

1. Project Manager _____ (time) _____ (initials)
2. Agency Official _____ (time) _____ (initials)
3. Oregon State Police[9] **DO NOT CALL 911**[10] _____ (time) _____ (initials)
4. State Historic Preservation Office (SHPO) _____ (time) _____ (initials)
5. Commission on Indian Services (LCIS) _____ (time) _____ (initials)
6. Appropriate Native American Tribes[11] _____ (time) _____ (initials)

Name of Tribe(s) Contacted and Individual(s) contacted:

_____
_____
_____
_____

Step 4. Follow guidance (timeline variable, may be up to several days or more)

If the site is determined not to be a crime scene by the Oregon State Police, **do not move anything!** The remains will continue to be *secured in place* along with any associated funerary objects, and protected from weather, water runoff, and shielded from view. Follow all guidance provided by OSP, LCIS, SHPO, and appropriate Native American Tribes. Continue to maintain the work stoppage within the buffer until a plan is developed and carried out between the Oregon State Police, SHPO, LCIS, and appropriate Native American Tribes and you are directed in writing by the project manager that work may proceed.

C. *ROLES AND RESPONSIBILITIES*

Person Responsible	**Responsibility**
[Name]: [555-555-5555] will…	Notify the Project Manager [Name]: [555-555-5555]
[Name]: [555-555-5555] will…	Notify the Agency Official [Name]: [555-555-5555]
[Name]: [555-555-5555] will…	Notify the Contracted Archaeologist [Name]: [555-555-5555]

[9] OSP will be responsible for contacting the county or state medical examiner's office as appropriate.
[10] Unless remains are clearly modern.
[11] ALL Tribes designated by LCIS must be notified. Contacting one or some of the Tribes does not fulfill the obligation to notify.

[Name]: [555-555-5555] will…	Notify the State Agencies (OSP, LCIS, SHPO)
[Name]: [555-555-5555] will…	Notify the Native American Tribes identified by LCIS
[Name]: [555-555-5555] will…	Enforce the work stoppage and buffer

D. *CONTACT INFORMATION*[12]

Agency	**Position/Contact**	**Contact Information**
Project Manager	[Name]	[555-555-5555]
Agency Official	[Name]	[555-555-5555]
Contracted Archaeologist	[Name]	[555-555-5555]
Legislative Commission on Indian Services (LCIS)	Primary Contact: Dr. Elissa Bullion, State Physical Anthropologist	971-707-1372
	Secondary Contact: LCIS Office	503-986-1067
Oregon State Police (OSP)	Primary Contact: Sgt. Ryan Tague	541-576-4393
	Secondary Contact: Dispatch, northern command[13]	800-442-0776
	Secondary Contact: Dispatch, southern command[14]	800-442-2068
State Historic Preservation Office (SHPO)	[SHPO archaeologist who reviewed submission]	[555-555-5555]
	Primary Contact: John Pouley, State Archaeologist	503-480-9164
	Secondary Contact: Jamie French, Asst. State Archaeologist	503-979-7580

[12] Contact information should be regularly updated for all individuals. Up to date contacts for LCIS, OSP, SHPO, and Native American Tribes can be found on the LCIS cultural resources page: Commission on Indian Services archaeology (oregonlegislature.gov)

[13] Northern command: Benton, Clackamas, Clatsop, Columbia, Crook, Deschutes, Gilliam, Hood River, Jefferson, Klamath, Lane, Lincoln, Linn, Marion, Multnomah, Polk, Sherman, Tillamook, Wasco, Washington, Wheeler, Yamhill

[14] Southern command: Baker, Coos, Curry, Douglas, Grant, Harney, Jackson, Josephine, parts of Klamath, Lake, Malheur, Morrow, Umatilla, Union, and Wallowa

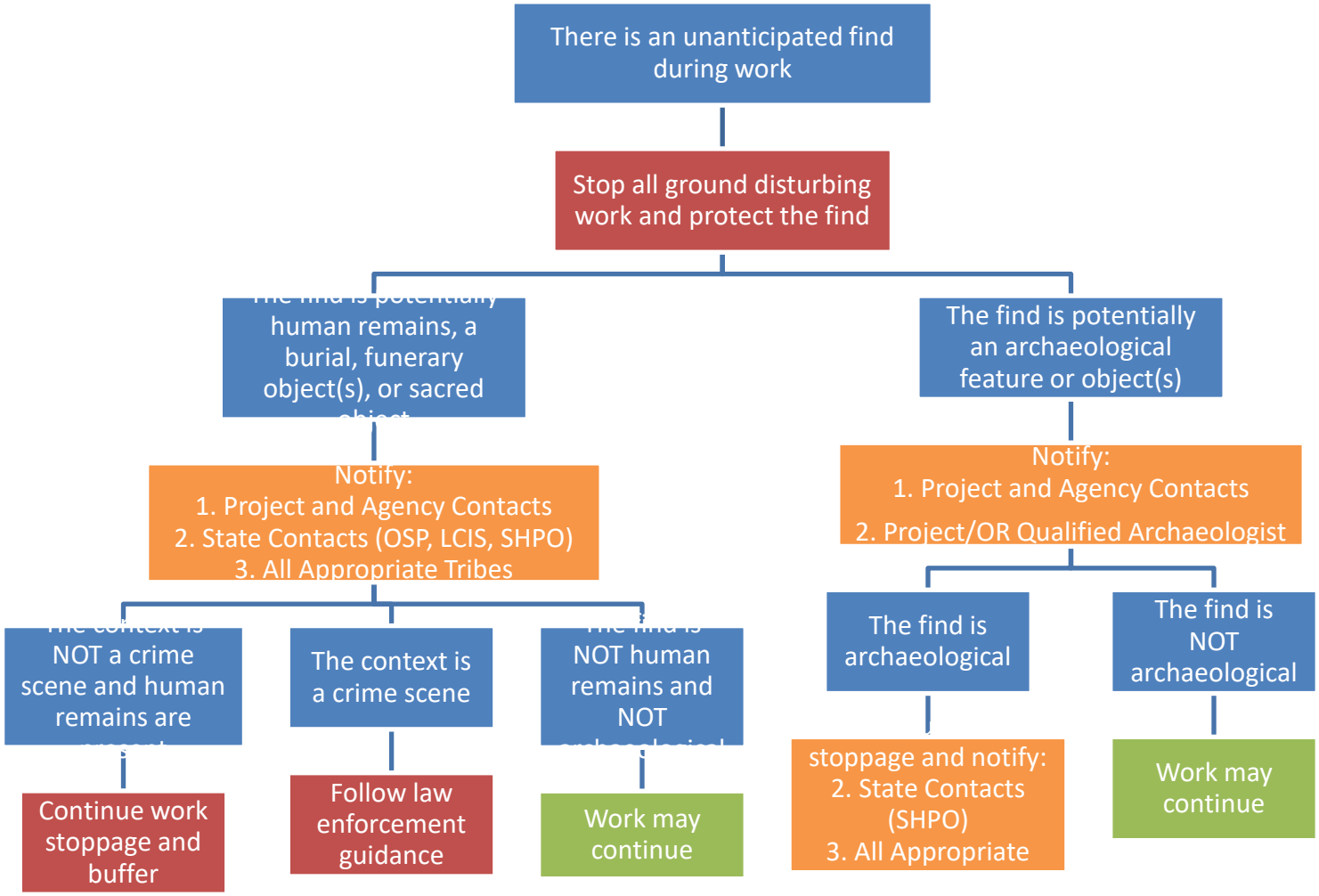
Native American Tribes	[add tribes as provided by LCIS]	[555-555-5555]
	[add tribes as provided by LCIS]	[555-555-5555]
	[add tribes as provided by LCIS]	[555-555-5555]

E. CONFIDENTIALITY

[The project] and employees shall make their best efforts, in accordance with federal and state law, to ensure that its personnel and contractors keep the discovery confidential. The media, or any third-party member or members of the public are not to be contacted or have information regarding the discovery, and any public or media inquiry is to be reported to [lead agency]. Photos shall not be taken except for when authorized by LCIS, SHPO, and Native American Tribes for identification purposes, and no photos will be circulated publicly or on social media. Prior to any release, the responsible agencies and Tribes shall concur on the amount of information, if any, to be released to the public.

To protect fragile, vulnerable, or threatened sites, the National Historic Preservation Act, as amended (Section 304 [16 U.S.C. 470s-3]), and Oregon State law (ORS 192.345(11)) establishes that the location of archaeological sites, both on land and underwater, shall be confidential.

F. *PROCEDURE FLOW CHART*



G. Visual Reference Guide for Archaeology in Oregon (Modify based on region/context)

Lithics and stone tools

Figure 1. Stone flakes

Figure 2. Stone projectile points

Figure 3. Ground stone tools: (left) pestle, (right) net weights,

Basketry/Cordage

Figure 4. Open diagonal twine basket fragments from Fort Rock Cave (UOMNCH).

Figure 5. Three-strand braid, sagebrush bark from Paisley Caves (UOMNCH).

Shell Middens

Figure 6. Cross section of shell midden.

Beads

Figure 7. Dentalium shell beads (UOMNCH).

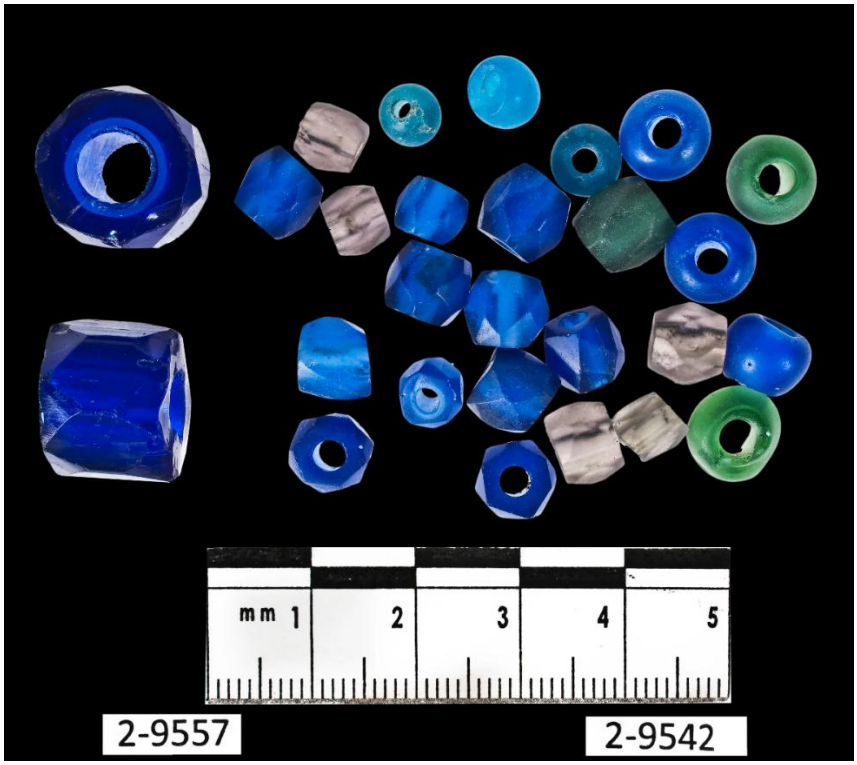


Figure 8. Glass trade beads, Upper Columbia River (UOMNCH).

Fish Weirs

Figure 9. Wooden fish weir

Figure 10. Fishing weir.

Figure 11. Close up of fishing weir.

Figure 12. Example of peeled pine.

Figure 13. Arborglyph on aspen tree

Historic Artifacts

Figure 14. Historical glass

Figure 15. Historical metal artifacts

Appendix C: CONFIDENTIAL
Archaeological Site Map and HPA Map