February 2020 Proposed Chehalis River Basin Flood Damage Reduction Project SEPA Draft Environmental Impact Statement

Appendix B Cultural Resources Discipline Report

Publication No.: 20-06-002



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About this Document

This discipline report has been prepared as part of the Washington Department of Ecology's (Ecology's) State Environmental Policy Act (SEPA) Environmental Impact Statement (EIS) to evaluate a proposal from the Chehalis River Basin Flood Control Zone District (Applicant).

Proposed Action

The Applicant seeks to construct a new flood retention facility and temporary reservoir near Pe Ell, Washington, and make changes to the Chehalis-Centralia Airport levee in Chehalis, Washington. The purpose of the Applicant's proposal is to reduce flooding originating in the Willapa Hills and improve levee integrity at the Chehalis-Centralia Airport to reduce flood damage in the Chehalis-Centralia area.

Time Frames for Evaluation

If permitted, the Applicant expects Flood Retention Expandable (FRE) facility construction would begin in 2025 and operations in 2030, and the Airport Levee Changes construction would occur over a 1-year period between 2025 and 2030. The EIS analyzes probable impacts from the Proposed Action and alternatives for construction during the years 2025 to 2030 and for operations from 2030 to 2080. For purposes of analysis, the term "mid-century" applies to the operational period from approximately 2030 to 2060. The term "late-century" applies to the operational period from approximately 2080.

Scenarios Evaluated in the Discipline Report

This report analyzes probable significant environmental impacts from the Proposed Action, the Local Actions Alternative, and the No Action Alternative under the following three flooding scenarios (flow rate is measured at the Grand Mound gage):

- Major flood: Water flow rate of 38,800 cubic feet per second (cfs) or greater
- Catastrophic flood: Water flow rate of 75,100 cfs
- Recurring flood: A major flood or greater that occurs in each of 3 consecutive years

The general area of analysis includes the area in the vicinity of the FRE facility and temporary reservoir; the area in the vicinity of the Airport Levee Changes; and downstream areas of the Chehalis River to approximately river mile 9, just west of Montesano.

Local Actions Alternative

The Local Actions Alternative represents a local and nonstructural approach to reduce flood damage in the Chehalis-Centralia area. It considers a variety of local-scale actions that approximate the Applicant's purpose through improving floodplain function, land use management actions, buying out at-risk properties or structures, improving flood emergency response actions, and increasing water storage from Pe Ell to Centralia. No flood retention facility or Airport Levee Changes would be constructed.

No Action

Under the No Action Alternative, no flood retention facility or Airport Levee Changes would be constructed. Basin-wide large and small scale efforts would continue as part of the Chehalis Basin Strategy work, and local flood damage reduction efforts would continue based on local planning and regulatory actions.

SUMMARY

This discipline report describes historic and cultural resources present in the study area. Four categories of historic and cultural resources are discussed in this report: archaeological sites and isolates, built environment, human remains and cemeteries, and Traditional Cultural Properties (TCPs). This report also describes potential impacts on historic and cultural resources from the Proposed Action, Local Actions Alternative, and No Action Alternative. Impacts on geomorphology, fish, tribal resources, and wildlife have been identified in the *Earth Discipline Report* (Shannon & Wilson and Watershed GeoDynamics 2020), *Fish Species and Habitats Discipline Report* (Anchor QEA 2020a), *Tribal Resources Discipline Report* (Anchor QEA 2020b), and *Wildlife Species and Habitats Discipline Report* (Anchor QEA 2020b), respectively.

The analyses and findings from this discipline report are based on research prepared pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 (Section 106). The U.S. Army Corps of Engineers (Corps) is carrying out Section 106 review concurrent with the Proposed Action's compliance with the SEPA and National Environmental Policy Act (NEPA). As a result, cultural resources studies prepared for the Proposed Action are being used to support each of these review processes, and the SEPA process will reflect the outcomes of the Section 106 and NEPA reviews, as they are available.

The eligibility of historic and cultural resources sites to be included in the National Register of Historic Places (NRHP) is being discussed through the separate Section 106 process. If eligible, potential impacts will be reviewed, significance determined, and mitigation agreed upon through the Section 106 process. If there are adverse effects to cultural resources, a Memorandum of Agreement (MOA) would be negotiated among the Corps, Department of Archaeology and Historic Preservation (DAHP), potentially affected Native American tribes, the Chehalis River Basin Flood Control Zone District (Applicant) and other Section 106 parties.

Potential impacts to historic and cultural resources from the Proposed Action, Local Actions Alternative, and No Action Alternative are summarized in Tables B-1 and B-2.

Table B-1

Summary of Historic and Cultural Resource Impacts from the Proposed Action

	IMPACT	MITIGATION PROPOSED (SUMMARIZED, SEE	SIGNIFICANT AND
ІМРАСТ	FINDING	SECTION 3.2.4)	ADVERSE IMPACT
PROPOSED ACTION (FRE FACILITY AND A	IRPORT LEVEE C	HANGES) – CONSTRUCTION	
Construction could affect four recorded archaeological sites (45-LE-978 to 45LE-981) at the FRE facility site, eight NRHP-eligible/potentially eligible archaeological resources (45-LE-116, 45-LE-194, 45-LE-290, 45-LE-511, 45-LE- 787, 45-LE-789, 45-LE-803, and 45-LE- 825) at the airport levee site, and TCPs.	Pending Section 106 finding of eligibility and/or adverse effect	An MOA would be negotiated among the Section 106 parties, if there are adverse effects to NRHP-eligible cultural resources. The MOA would determine mitigation and treatment requirements through the Section 106 process of the NHPA.	To be determined as part of Section 106 process
PROPOSED ACTION (FRE FACILITY AND A	IRPORT LEVEE C	HANGES) – OPERATIONS	
Operation of the temporary reservoir during floods has the potential to affect nine recorded archaeological sites and isolates (45-LE-982 to 45-LE-990) and TCPs.	Pending Section 106 finding of eligibility and adverse effect	An MOA would be negotiated among the Section 106 parties, if there are adverse effects to NRHP-eligible cultural resources. The MOA would determine mitigation and treatment requirements through the Section 106 process of the NHPA.	To be determined as part of Section 106 process

Table B-2

Summary of Historic and Cultural Resource Impacts from Alternatives

IMPACT	IMPACT FINDING
LOCAL ACTIONS ALTERNATIVE	
Construction activities for local actions could occur within or near historic and cultural resources. Impacts could range from significant to minor.	Adverse effects would be identified during required federal or state processes for historic and cultural resources
Historic and cultural resources would continue to be vulnerable during a major or catastrophic flood.	Continuing substantial flood risk
NO ACTION ALTERNATIVE	
Historic and cultural resources throughout the study area would continue to be vulnerable to damage during both major and catastrophic floods.	Continuing substantial flood risk

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1 INTRODUCTION

The analyses and findings from this discipline report are based on research prepared pursuant to Section 106 of the National Historic Preservation Act (NHPA). The U.S. Army Corps of Engineers (Corps) is carrying out Section 106 review concurrent with the Proposed Action's compliance with the State Environmental Policy Act (SEPA) and National Environmental Policy Act (NEPA). As a result, cultural resources studies prepared for the Proposed Action are being used to support each of these review processes, and the SEPA process will reflect the outcomes of the Section 106 and NEPA reviews, as they are available.

1.1 Resource Description

This report describes historic and cultural resources in the Chehalis River Basin. Four categories of cultural resources are discussed in this section: archaeological sites and isolates, historic properties, human remains and cemeteries, and Traditional Cultural Properties (TCPs).

Archaeological sites and isolates can date to the precontact period (prior to ca. 1850s) or the historic period (after ca. 1850s). Archaeological sites and isolates can include: abandoned objects and ruins older than 50 years; resource deposits, which can be on or below the ground surface; and Archaeological Districts (groupings of archaeological sites recognized as historically or scientifically significant). Historic properties can include buildings and structures older than 50 years and Historic Districts (groupings of buildings and structures older than 50 years and Historic Districts (groupings of buildings and structures older than 50 years and Historic Districts (groupings of buildings and structures recognized as historically or architecturally significant). Human remains include Native American and non-Native American skeletal remains, which may or may not be located within defined cemeteries. TCPs include locations that may be eligible for listing in the National Register of Historic Places (NRHP) because of their association with cultural practices or beliefs of a living community. TCPs may be associated with Native American ethnographic locations, such as villages, geographical features, and resource gathering areas, that were documented during the mid-19th and early 20th centuries along with the Native American "place names" for these locations.

Cultural resources can be listed on historic registers, recommended eligible for listing, or determined eligible for listing. In the State of Washington, historic archaeological resources must be determined eligible for listing in the NRHP before they are considered "protected," while all precontact cultural resources are protected regardless of eligibility determinations. Historic and cultural resources that are not listed or lack eligibility recommendations and determinations can qualify for consideration of their potential historic significance due to their age.

This report summarizes historic and cultural resources within the Chehalis Basin study area and focuses on historic register-listed resources, historic resources that have been determined eligible for listing, and recorded archaeological sites. It also analyzes the potential impacts and proposed mitigation measures for the Proposed Action, Local Actions Alternative, and No Action Alternative.

1.2 Regulatory Context

Laws and regulations for determining potential impacts on cultural resources are listed in Table B-3 and described here.

Table B-3

Regulations, Statutes, and Guidelines for Cultural Resources

REGULATION, STATUTE, GUIDELINE	DESCRIPTION
FEDERAL	
National Historic Preservation Act (16 U.S. Code [USC] 470 et seq.)	The NHPA was approved on October 15, 1966 for the management and preservation of historical and archaeological sites. Under this act, the NRHP, National Historic Landmarks List, State Historic Preservation Offices (SHPO), and Tribal Historic Preservation Offices (THPO) were created. Washington State's SHPO is the Department of Archaeology and Historic Preservation (DAHP), which is the state agency that administers NHPA compliance in Washington. The procedures for implementing the NHPA are detailed in the Protection of Historic Places regulations. Section 106 of the NHPA requires federal agencies to consider the effects of project undertakings, project approvals, or project funding on historic properties. This process requires consultation with the relevant THPO, Native American tribes, and Native Hawaiian organizations.
National Environmental Policy Act (42 USC 4321 et seq. [1969])	NEPA was enacted in January 1970 and requires that all major actions sponsored, funded, permitted, or approved by federal agencies (generally referred to as federal undertakings) undergo planning to ensure that environmental considerations, such as effects on cultural resources, are given due weight in decision-making.
Native American Graves Protection and Repatriation Act (NAGPRA; Pub. L. 101-601, 25 USC 3001 et seq., 104 stat. 3048)	NAGPRA was enacted on November 16, 1990, and establishes rights for lineal descendants, Native Americans and tribes, and Native Hawaiian organizations to repatriate their culturally affiliated items, including human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items and intentional and inadvertent discovery of Native American cultural items on federal and tribal lands only.
STATE	
Governor's Executive Order 05-05	Governor's Executive Order 05-05 was enacted in November 2005 and requires state agencies to consider the impacts of project undertakings, project approvals, or project funding on significant cultural and historic properties. This process requires consultation with DAHP, the Governor's Office of Indian Affairs, and relevant Native American tribes.
Abandoned and Historic Cemeteries and Historic Graves (Revised Code of Washington [RCW] 68.60)	Relates to the preservation and protection of abandoned and historic cemeteries and graves including human remains.
Archaeological Sites and Resources (RCW 27.53)	Relates to the conservation, preservation, and protection of archaeological sites and resources.

REGULATION, STATUTE, GUIDELINE	DESCRIPTION
Archaeological Site Public Disclosure	Restricts the distribution of information about the location of
Exemption (RCW 42.56.300)	archaeological sites to the public for the protection and preservation of
	those sites.
Human Remains (RCW 68.50)	Relates to the protection, management, and processes in the care of
	human remains.
Indian Graves and Records	Relates to the protection, management, and processes in the care of
(RCW 27.44)	Native American cemeteries, historic graves, and related records.
Washington Heritage Barn	Relates to the preservation of heritage barns 50 years or older.
Preservation Program	
(RCW 27.34.400)	
Archaeological Excavation and	Relates to procedures of application for and review processes of
Removal Permit (Washington	archaeological excavations and removals; permits are issued by DAHP.
Administrative Code [WAC] 25-48)	
Washington State Main Street	Relates to procedures of application for and designation of Washington
Program (WAC 25-50)	main street communities.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 (Section 106), the U.S. Army Corps of Engineers (Corps) is carrying out Section 106 review concurrent with the Proposed Action's compliance with the SEPA and National Environmental Policy Act (NEPA).

The Governor's Executive Order 05-05 (EO 05-05) process is modeled on the Section 106 process. The Department of Archaeology and Historic Preservation (DAHP) will review what is being done under Section 106 for the Proposed Action. If DAHP verifies that Section 106 appropriately addresses cultural and historic resources, then no separate review would be needed under EO 05-05.

2 METHODOLOGY

2.1 Study Area

The study area (Figure B-1) for historic and cultural resources encompasses areas that could be directly or indirectly affected by the construction or operation of the Proposed Action. These include the area associated with the Flood Retention Expandable (FRE) facility site (Figures B-2 and B-3) and construction activities, quarries, and haul routes; the area of maximum inundation extent for the temporary reservoir; the area associated with construction and resulting changes to the airport levee (Figure B-4); and the area downstream of the FRE facility (the mainstem Chehalis River). The downstream study area extends to river mile (RM) 9, where the modeled water level from a catastrophic flood is no longer distinguishable from normal river water levels.

2.2 Affected Environment

2.2.1 Overview

Archaeological sites, historic properties, and Native American place names exist throughout the Chehalis Basin. Native Americans have lived throughout and utilized these lands, shorelines of major waterways, and their tributaries long before the first non-Native explorers came to the region. Rivers and waterways were used as modes of transportation and locations for gathering food resources. They include areas connected to spiritual practices and named places and are represented within oral tradition stories and historic documents.

Non-Native Americans came to the Chehalis Basin in the 1840s. Regional transportation was difficult and growth was minimal until 1873 when the Northern Pacific Railway built a line to Chehalis. Timber and agriculture were the main economic drivers as the region grew.

Pursuant to Section 106 of the NHPA, an Archaeological and Built Environment Assessment for the Chehalis River Basin Flood Damage Reduction Proposed Project was completed in 2018 (Ostrander et al. 2018) as well as a separate TCP inventory (Shannon et al. 2019). The following sections provide a summary of the cultural setting and findings provided in those two reports. Additional archaeological testing and historic property documentation was completed in 2019 (Ostrander et al. in review); to date, this report has not been finalized. The Corps is carrying out the Section 106 review concurrent with the NEPA and SEPA processes. The SEPA process will include information from the Section 106 and NEPA reviews, as they are available.

Figure B-1

Cultural Resources Study Area



Figure B-2

FRE Facility and Temporary Reservoir Area



Source: Facility drawing HDR 2018

Figure B-3

Topography Near the FRE Facility and Temporary Reservoir



Source: Facility drawing HDR 2018

Figure B-4 Airport Levee Area



2.2.2 Precontact Setting

The precontact archaeological record of this region has yet to be studied in depth. Existing studies have instead focused on the Washington coastlines and interior Puget Sound region, which provide some understanding of larger patterns in Western Washington but do not provide any detail on the Chehalis River region (Nelson 1990; Wessen 1990).

Because of the limited understanding of the precontact history in the region, a two-phase cultural sequence was proposed during an evaluation of proposed flood control measures along the Chehalis River (Herbel and Schalk 2002): the Early Holocene Period (10,000 to 4,000 years before present [BP]) and the Late Holocene Period (4,000 to 100 years BP). These two phases can generally be distinguished by changes in land use. The Early Holocene is marked by a more mobile hunter-gatherer-fisher culture in comparison with the Late Holocene when cultures became more complex, permanent villages were established, and innovations in technology led to a rise in fishing, particularly for salmon. Other characteristics of the Late Holocene include increased food storage, development of art styles, and the use of canoes.

2.2.3 Ethnographic Setting

The study area encompasses the traditional territory of Salish, Athapaskan, and Chinook speakers whose descendants are members of today's federally recognized Confederated Tribes of the Chehalis Reservation, Cowlitz Indian Tribe, Nisqually Indian Tribe, Quinault Indian Nation, and Shoalwater Bay Tribe, as well as the non-federally recognized Chinook Indian Nation (Shannon et al. 2019). Flooding in the study area has been a theme in traditional stories and continues to be a concern to the Native Americans in the region. The Chehalis Basin continues to be utilized by these tribes following their TCPs.

2.2.3.1 Flood Retention Expandable Facility

The FRE is within the traditional territory of the Kwalhioqua, who spoke a dialect of the Athapaskan language (Krauss 1990; Spier 1936:26-27). Two known subgroups exist within the Kwalhioqua, the Willapa and Suwal. The Suwal, Upper Chehalis, and Cowlitz occupied the drainage upriver from Chehalis. The Upper Chehalis and Cowlitz are associated with the vicinities of Chehalis, Boistfort, and Pe Ell. The Upper Chehalis people near the town of Pe Ell are known as the *cax^wásn*? (Hajda 1990). A village, *Tsahmasin,* existed at the site of present Pe Ell (Shannon et al. 2019). The people of this area traditionally hunted the uplands for elk and bear along with seasonal resource gathering along salmon-bearing streams. Clam digging was done at Tokeland by way of a trail between the Willapa and Chehalis rivers (Shannon et al. 2019).

2.2.3.2 Chehalis-Centralia Airport Levee Site

The Chehalis-Centralia Airport is within the traditional territory of the Upper Chehalis, who spoke the Upper Chehalis language (Marr et al. 1980; Spier 1936). The *?ilawiqs,* a subgroup of the Upper Chehalis, occupied the land near Chehalis (Hajda 1990). A village, *téŵtń*, was located approximately 1 mile above (upriver) from the mouth of the Skookumchuck River, near today's Chehalis-Centralia Airport (Ostrander

et al. 2018). Open prairies provided plant resources such as camas. Fishing was conducted seasonally using weirs, hooks, spears, and traps along rivers and smaller streams as well as hunting for deer, elk, and other small game and birds.

2.2.3.3 Chehalis Basin

The Chehalis River, known as *nsúlpaš* in Salish, has been connected to Native Americans from precontact-era through historic-era to the present day. The river is included in many traditional stories, including the "Origin of the Fresh-Water Clams" (Shannon et al. 2019). Traditional economy along the river and throughout the watershed was tied to seasonal hunting, fishing, and resource gathering. The river was used as a travel corridor to connect to neighboring tribes in the region. The salmon runs have been a significant source of food for Native Americans in the area (Shannon et al. 2019). In some portions of the river, the salmon was cut in specific ways and the first salmon caught was part of the First Salmon Ceremony (Shannon et al. 2019). Salmon is a vital resource to Native Americans throughout our region. Along with providing a subsistence and economic source through fishing, salmon are part of oral tradition stories, spiritual worldview, and cultural practices, as well as salmon fisheries being co-managed by tribes and local, regional, and international governing bodies. The Chehalis River continues to be used as a traditional resource in the region.

Rainbow Falls, known as *slōsĭid* in Salish, is a culturally significant location that has been documented in ethnographic studies and oral traditional stories. The area is associated with several meanings and uses, including use as a setting for a traditional story, a Salish place name, a residential site, and is connected to the harvest of lamprey and traditional economy (Shannon et al. 2019). Mythic stories relating to coyote include this area. The Chehalis fished for and distinguish two types of eel, day and night (*?aqWs*), at the falls; some considered the eel a "power" animal (Shannon et al. 2019). The significance of the lamprey caught at Rainbow Falls in the Tsamosan (a sub-group of today's Upper Chehalis) diet is as important as salmon (Shannon et al. 2019). Rainbow Falls is still used as a traditional fishing location (Shannon et al. 2019).

2.2.4 Historic Setting

2.2.4.1 Flood Retention Expandable Facility

Farmers established the town of Pe Ell in the 1850s. The local industry soon switched to logging, and in the 1880s several small logging towns were established along nearby Rock and McCormick creeks (Kirk and Alexander 2001:440). In 1900, the Weyerhaeuser Company purchased a reported 900,000 acres of land from the Northern Pacific Railway (Holstine 2002).

Historical maps show the locations of trails, a road, bridge crossings, and quarries within and near the FRE facility (Metsker Map Company 1948, 1960, 1962; USGS 1941, 1953a, 1953b). The Weyerhaeuser Company owned most of the land in the area, with smaller portions owned by the State Forest Board and the 160-acre privately owned Panesko property (Ostrander et al. 2018).

Within the FRE facility area, a trail existed along the Chehalis River in 1891 (U.S. Surveyor General 1891); the trail continued upstream to Fisk Falls, passing the mouths of Browns Creek and crossing the Chehalis River upstream to pass Big, Smith, Alder, Thrash, and Rogers creeks. In the early 1900s, a small number of homesteads existed at the mouths of the creeks along this trail (Ostrander et al. 2018).

2.2.4.2 Chehalis-Centralia Airport Levee Site

The earliest survey map encompassing the Chehalis-Centralia Airport area does not identify any homesteads, trails, or other features (U.S. Surveyor General 1856). The Chehalis-Centralia Airport was established in 1927 on 44 acres of land that had been used as farmland. The airport was expanded and improved twice before 1950, including the construction of the Chehalis-Centralia Airport Levee in 1943 by the Corps (Ostrander et al. 2018). The northwest corner of the levee was built on land that had been the Blaser Dairy farm. Established in 1919 and in operation until at least 1985 the family-run farm contained several associated buildings (Rooke 2009; USGS 1954, 1975, 1985). These buildings were removed by Lewis County in 2005 and 2007 (Ostrander et al. 2018).

2.2.4.3 Chehalis Basin

Rainbow Falls State Park was developed in 1935 by the Civilian Conservation Corps, a public works relief program developed through President Franklin D. Roosevelt's New Deal program. The park includes old-growth trees and several buildings and structures that have been recommended eligible for listing in the NRHP and potentially eligible for contributing to or being located within a historic district. These structures include the North Entry Portal, Kitchen Shelter, Group Kitchen Building 5, Tool House and Garage Building 2, Ranger's/Caretaker's Residence Building 1, Drinking Fountains, Campground Comfort Station Building 6, and Pedestrian Footbridge/Suspension Bridge (DAHP 2019).

2.2.5 Archaeological Resources

Archaeological resources identified within the study area for this report include those resources identified as a result of the 2018 Archaeological and Built Environment Assessment discussed in Section 2.2.1.

There are 162 recorded archaeological sites and isolates within the overall study area; a total of 13 of these resources are within the FRE facility and temporary reservoir area. Table B-4 shows the listing status and type of archaeological site.

There are 149 recorded archaeological sites and isolates within that portion of the study area downstream from the FRE facility. Most of the recorded archaeological sites and isolates—132 of 149, or 88.59%—consist entirely of precontact resources or a mixture of precontact and historic (multi-component) resources. The DAHP Statewide Predictive Model classifies this area largely as being High to Very High Risk for archaeological sites. Because this area is situated along the floodplain of the Chehalis River, and only a tiny portion of the area has been subject to systematic archaeological survey, it is likely that the area contains far more archaeological sites that have yet to be discovered, including

some that may be deeply buried. Recorded, as well as unrecorded, archaeological sites downstream of the FRE facility are considered in this report with respect to various flood effects from the Proposed Action, Local Actions Alternative, and No Action Alternative.

Table B-4

Historic Register Status of Archaeological Resources Within the Study Area

JURISDICTION	RESOURCE TYPE	NRHP	WHR	DETERMINED ELIGIBLE	NOT YET DETERMINED	NOT ELIGIBLE/ ISOLATE
Grays Harbor*	Precontact	-	-	-	16	-
	Historic	-	-	-	5	-
	Multi-Component	-	-	-	2	-
Lewis	Precontact	-	-	6	87	10
	Historic	-	-	-	12	2
	Multi-Component	-	-	1	16	2
Thurston	Precontact	-	-	-	2	-
	Historic	-	-	1	-	-
	Multi-Component	-	-	-	-	-
	Total	-	-	8	140	14

Note:

*One resource is listed as both a precontact archaeological site and a precontact cemetery by DAHP. This resource is accounted for in this table.

WHR: Washington Heritage Register

2.2.5.1 Flood Retention Expandable Facility

There are 13 recorded archaeological resources (45-LE-978 to 45-LE-990) within the FRE facility site (Ostrander et al. 2018). The resources include the following:

- Six precontact archaeological sites (45-LE-978, 45-LE-980, 45-LE-981, 45-LE-986, 45-LE-987, and 45-LE-990)
- Two historic archaeological sites (45-LE-979 and 45-LE-982)
- One multi-component (both historic and precontact) site (45-LE-989)
- Three precontact isolates (45-LE-983, 45-LE-985, and 45-LE-988)
- One historic isolate (45-LE-984)

No determination has been made yet regarding the eligibility of these resources.

The DAHP Statewide Predictive Model classifies the FRE facility as Low to Very High Risk for archaeological sites. Generally, the steep slopes overlooking the Chehalis River and its tributaries, as well as quarry locations, are classified as Low to Moderate Risk, while flat river terraces in proximity to the channels are classified as Moderate to Very High Risk for archaeological sites. It is likely there are additional undiscovered archaeological sites and isolates associated with the FRE facility area.

2.2.5.2 Chehalis-Centralia Airport Levee Site

The airport levee is adjacent to or overlaps eight archaeological sites and two archaeological isolates. The resources include the following:

- Six precontact archaeological sites (45-LE-116, 45-LE-187, 45-LE-290, 45-LE-796, 45-LE-803, and 45-LE-825)
- Two multi-component (both historic and precontact) sites (45-LE-194 and 45-LE-511)
- One precontact isolate (45-LE-789)
- One historic isolate (45-LE-787)

Five sites (45-LE-116, 45-LE-290, 45-LE-511, 45-LE-803, and 45-LE-825) have been determined eligible for listing in the NRHP. Two sites (45-LE-187 and 45-LE-796) have been determined not eligible for listing in the NRHP. One site (45-LE-194) and both isolates (45-LE-787 and 45-LE-789) have not been evaluated for eligibility for listing in the NRHP; however, archaeological isolates are not typically determined eligible for listing in the NRHP.

2.2.6 Built Environment

There are 27 historic structures within the study area that are listed on a historic register. Table B-5 shows the type and listing status of each resource. All 27 historic structures are downstream of the FRE facility site and are considered in this report with respect to changes in downstream flood inundation under the Proposed Action, Local Actions Alternative, and No Action Alternative. Additionally, there are potentially hundreds to thousands of buildings and structures that are older than 50 years and, therefore, meet the age threshold for register inclusion but have not yet been evaluated for eligibility.

Table B-5
Historic Register Status of Historic Structures in the Study Area

JURISDICTION	CITY/TOWN	LISTING	RESOURCE TYPE	RESOURCE NAME
Grays Harbor	Oakville	WHBR	Barn	Fivestar Farm
Lewis	Centralia	WHR	Structure	Fort Borst Block House
	Chehalis	NRHP, WHR	Residence	O.B. McFadden House
	Centralia	WHR	Site	Armistice Day Riot/Centralia Massacre
	Centralia	NRHP, WHR	Residence	Joseph Borst House
	Centralia	NRHP, WHR	Building	Olympic Club Saloon/Olympic Club
	Pe Ell	NRHP, WHR	Church	Holy Cross Polish National Catholic Church
	Curtis	NRHP, WHR	School	Boistfort High School
	Centralia	NRHP, WHR	Residence	George E. Birge House
	Centralia	NRHP, WHR	Building	Centralia Union Depot
	Centralia	NRHP, WHR	Burial	Westley Everest Gravesite
	Centralia	NRHP, WHR	Monument	The Sentinel
	Centralia	NRHP, WHR	Residence	Hubbard Bungalow
	Centralia	NRHP, WHR	Building	Centralia Main Post Office
	Curtis	WHBR	Barn	Boistfort Valley Farm
	Chehalis	WHBR	Barn	Rosecrest Farm/Augusta Rackske Barn
	Chehalis	WHBR	Barn	Gregory Farm/Tramm Barn
	Chehalis	WHBR	Barn	Chehalis River Hatchery/Chehalis River
				Hatchery Barn
	Doty	WHBR	Barn	Willapa Hills Sheep Dairy & Farmstead
				Cheese/The Stannek Farm
	Centralia	NRHP, WHR	District	Centralia Downtown Historic District
	Bucoda	NRHP, WHR	Building (not	Seatco Prison
			standing, no	
			foundation)	
Thurston	Bucoda	WHR	Residence	Shead House
	Rochester	WHR, ICHR	Building	Jamestown Granary/James Family
				Museum
	Rochester	NRHP, WHR	School	Gate School
	Rochester	TCHR	Residence	Jaaska House and Warehouse
	Rochester	NRHP, WHR,	Residence	Jonas and Maria Lovisa Erickson
		WHBR, TCHR		Farmstead
	Centralia	WHBR	Barn	Townsend Family Farm

Notes:

TCHR: Thurston County Historic Register WHBR: Washington Heritage Barn Register WHR: Washington Heritage Register

2.2.6.1 Flood Retention Expandable Facility

There are no register-listed properties within the FRE facility site. A historic property inventory in 2018 did not identify any buildings or structures older than 50 years at the FRE facility site (Ostrander et al. 2018). The Pe Ell Bridge or Tin Bridge, a resource determined eligible for the NRHP and within the FRE facility site, was destroyed by the 2007 flood and no longer exists.

2.2.6.2 Chehalis-Centralia Airport Levee Site

One historic resource—the Chehalis-Centralia Airport Levee and Pumphouse—was determined eligible for listing in the NRHP in 2009. Subsequently, the pumphouse was demolished. In 2019, the airport levee was reevaluated for NRHP eligibility and recommended eligible (Ostrander et al. in review).

2.2.7 Cemeteries

There are 16 recorded cemeteries within the study area (Table B-6). Of these, five are associated with Native American burials and 11 are associated with historic-era uses. Historical period cemeteries are sometimes relocated, but it is also common for portions of burials or entire burials to be left behind. Eight of the cemeteries are still in use. Some of these cemeteries have been relocated or removed from their original location.

Table B-6

Recorded Cemeteries in the Study Area

JURISDICTION	CITY/TOWN	LISTED ON NRHP OR WHR	QUANTITY
	Elma		1
Grays Harbor*	Oakville		4
	Porter		1
	Centralia		5
Lewis	Doty		1
	Pe Ell		3
Thurston	Rochester		1
		Total	16

Notes:

*One resource is listed as both a precontact archaeological site and a precontact cemetery by DAHP. This resource is accounted for in Table B-4. WHR: Washington Heritage Register

2.2.7.1 Flood Retention Expandable Facility

There are no known cemeteries within the FRE facility site.

2.2.7.2 Chehalis-Centralia Airport Levee Site

There are no known cemeteries at the Chehalis-Centralia Airport levee site.

2.2.8 Traditional Cultural Properties

A TCP report (Shannon et al. 2019) provides background information on potentially eligible TCPs within the study area. This report identifies these sites as possible interest to tribes. Consultation with the tribes is ongoing. Additional work is being studied as part of the Section 106 process with the Corps, DAHP, and the Confederated Tribes of the Chehalis Reservation, Nisqually Indian Tribe, Cowlitz Indian Tribe, Quinault Indian Nation, Shoalwater Bay Indian Tribe, and Chinook Indian Nation.

These areas are discussed in this analysis in very broad terms, and include the following:

- City of Chehalis General Area, including airport levee site
- Rainbow Falls General Area
- Pe Ell General Area
- Hiding Place of x^wani
- Chehalis River General Area, including the FRE facility site and temporary reservoir

2.3 Studies and Reports Referenced/Used

Information about cultural resources in the study area was obtained from existing studies, database searches, historical maps, and historical registers. Studies and reports used include the following:

- Chehalis Basin Strategy Programmatic Environmental Impact Statement (Ecology 2017)
- Chehalis River Basin Flood Damage Reduction Project Archaeological Resources and Built Environment Existing Conditions (Ostrander et al. 2018)
- Chehalis River Basin Strategy Traditional Cultural Property Inventory (Shannon et al. 2019)
- Earth Discipline Report (Shannon & Wilson and Watershed GeoDynamics 2020)
- Department of Archaeology and Historic Preservation Washington Information System for Architectural and Archaeological Records Data (DAHP 2019)
- Department of Archaeology and Historic Preservation Statewide Predictive Model (DAHP 2010)
- U.S. Geological Survey Maps
- U.S. General Surveyor Maps
- Historic maps
- Washington Heritage Register
- Thurston County Historic Register
- City of Chehalis Historic Register

2.4 Technical Approach

Information on recorded archaeological sites, historic structures, cemeteries, and TCPs within the study area was identified and compared with information on the EIS alternatives to assess potential cultural resources impacts.

An archaeological survey and built environment assessment was done to identify sites in the FRE facility area (Ostrander et al. 2018). Between June and December 2018, a field assessment was done for surface and subsurface areas, except for very steep slopes. The surface survey was done at intervals of 30 meters or less, based on topography. For areas with slopes over 30%, a focused meander was conducted to get as complete of coverage as possible. This surface survey was used to inform the placement of subsurface survey locations.

The subsurface survey involved excavation of 810 shovel probes. Probes extended to at least 50 centimeters, or until culturally sterile soils were reached with spoils screened through 0.25-inch mesh. Artifacts were photographed and described in the field and returned to the hole as part of the backfill; artifacts were not collected. Locations were identified using a global positioning system (GPS). Probes were excavated on high-probability landforms, as identified during the surface survey and in the predictive model developed for the project. The model used a combination of slope grade and soils mapping to identify areas that are generally or moderately sloped and contain soils capable of burying or preserving cultural resources. Probes were spaced at 30-meter intervals along these higher probability landforms. Probe spacing was occasionally decreased to 20 meters on landforms likely to contain archaeological sites.

When subsurface cultural resources were identified, cardinal direction probes were excavated to identify the site boundaries. Cardinal direction probes were dug at 10-meter intervals from the find. If an initial cardinal delineation probe was positive, then an additional round of 10-meter-spaced cardinal probes were dug. This was repeated until sterile results were produced. If a cardinal direction probe was sterile, then a final delineation probe was excavated 5 meters back toward the last positive probe. This final probe established the boundary in that direction.

Areas of obvious, significant previous disturbance, such as graded laydown yards, mechanically excavated quarries, culvert clean-out stockpiles, and logging roads and turnarounds were extensive; due to the low probability for intact archaeological sites, these areas were generally avoided during subsurface probing. This study identified the 13 archaeological resources (45-LE-978 to 45-LE-990) described in Section 2.2.5.1.

An archaeological survey for the Airport Levee Changes was performed concurrently with the archaeological survey of the FRE facility site (Ostrander et al. 2018). The survey included pedestrian reconnaissance and subsurface testing for a previously proposed bump-out of the northwest corner of the levee that is no longer included in the Proposed Action. The pedestrian reconnaissance consisted of

20-meter transects walked to the north and west of the levee. Ground conditions were recorded, with special attention paid to surface conditions, equipment or construction ruts, push-piles, vegetation, and elevation. Subsurface survey consisted of the excavation of twenty-five 40-centimeter-diameter shovel probes at roughly 30-meter intervals, and two test units measuring 1 meter by 50 centimeters. Shovel probes were excavated in arbitrary 10-centimeter levels and all spoils screened through 0.25-inch mesh.

Subsequently, archaeological testing was completed for eight archaeological sites (45-LE-194, 45-LE-978, 45-LE-981, 45-LE-982, 45-LE-986, 45-LE-987, 45-LE-989, and 45-LE-990) (Ostrander et al. in review). A built environment assessment was conducted for the Chehalis Airport levee.

Databases, historic registers, previously conducted cultural resources assessments, and a TCP inventory were used to identify and characterize existing resources within the study area that may be affected by the Proposed Action. Historic registers reviewed include the Washington Heritage Register (an official listing of historically significant sites and properties 50 years or older throughout Washington) and the City of Centralia Historic Register and Thurston County Historic Register (official listings of historically significant sites within the City of Centralia and Thurston County). As of the date of this report, Lewis County, Pacific County, Grays Harbor County, City of Chehalis, and City of Oakville do not have local ordinances for designating historic properties for listing in a historic register.

A modeled extension of the landscape for the FRE facility and airport levee sites was used for the initial existing conditions cultural resources assessment (Ostrander et al. 2018). The DAHP Statewide Predictive Model shows the study area for the Proposed Action to have a high to very high probability for containing precontact-era archaeological resources (DAHP 2010).

To identify the potential for impacts from flood inundation, a geographic information system (GIS) map of inundation levels under the alternatives and various flood scenarios was reviewed. Additionally, other discipline reports were reviewed to identify impacts on water rights, transportation, and dam safety as they relate to impacts on cultural resources. Impacts are typically identified if construction or operations would result in removal, disturbance, grading, burial, erosion, contamination, or other ground-disturbing effects; changes in setting; and temporary and/or permanent exposure to noise, dust, and vibration.

3 TECHNICAL ANALYSIS AND RESULTS

3.1 Overview

This section describes the probable impacts on cultural resources from the Proposed Action (Section 3.2), Local Actions Alternative (Section 3.3), and No Action Alternative (Section 3.4). The section also evaluates required permit conditions and planning document requirements that could address the impacts identified (Section 3.2.3). When probable significant adverse environmental impacts remain after considering these, the report identifies mitigation measures that could avoid, minimize, or reduce the identified impact below the level of significance (Section 3.2.4).

Adverse impacts, mitigation, and treatment requirements would be resolved through the Section 106 process of the NHPA. This process is separate from the SEPA process. This report discloses potential impacts but does not include a determination of significance while the Section 106 process is ongoing.

Probable impacts on tribal resources, geomorphology, and fish (including eels) have been identified in the *Tribal Resources Discipline Report* (Anchor QEA 2020b), *Earth Discipline Report*, and *Fish Species and Habitats Discipline Report* (Anchor QEA 2020a), respectively.

3.2 Proposed Action

3.2.1 Impacts from Construction

3.2.1.1 Direct

3.2.1.1.1 Flood Retention Expandable Facility

Construction of the FRE facility and temporary reservoir would require removal of trees and other vegetation. The area for the temporary reservoir would extend 6.4 miles over 847 acres along the Chehalis River from RM 108 to RM 114. A new overhead and/or buried power line would be built to construct and operate the power pumps, gates, instruments, and other controls for the FRE facility. The proposed facility would require upgrading existing roads and constructing some temporary roads. In addition, constructing the FRE facility includes developing a quarry site or sites, material storage, and materials processing as well as areas for construction offices and equipment storage near the site. For construction, a concrete production facility would also be located above and northeast of the FRE facility to produce concrete, and concrete aggregate may be mined within the temporary reservoir or nearby.

Archaeological Sites and Isolates

Construction-related activities associated with the FRE facility would directly affect four recorded archaeological sites (45-LE-978 to 45-LE-981), which are within the footprint of the FRE facility, staging, and/or stockpile areas. Because substantial site preparation (including grading, filling, and ground disturbance) would occur, these recorded archaeological sites, as well as any unrecorded archaeological

sites and isolates within these areas, would be expected to be partially or completely affected. The eligibility of these sites to be included in the NRHP is being discussed through a separate Section 106 process. If eligible, these potential impacts will be reviewed, significance determined, and mitigation agreed upon through the Section 106 process.

Built Environment

There are no known historic structures within the FRE facility area.

Human Remains and Cemeteries

There are no known cemeteries within the FRE facility area. An Inadvertent Discovery Plan would be required to address the discovery of any previously unidentified cultural resources during construction of the FRE facility, and if resources are found, this would require additional consultation.

Traditional Cultural Properties

The construction of the FRE structure would permanently remove 0.3 acre of the Chehalis River bed and habitat. Construction-related activities associated with the FRE facility could affect TCPs within the footprint of the proposed FRE facility, staging, and/or stockpile areas. Because substantial site preparation (including grading, filling, and ground disturbance) would occur, these TCPs would be expected to be partially or completely affected. TCPs, as discussed in Section 2.2.8, are being studied as part of the Section 106 process.

3.2.1.2 Airport Levee Changes

Construction at the levee would include the following:

- Removing existing temporary retaining walls and crushed rock from the top of the levee
- Adding 4 to 7 feet to the height of the existing 9,511-foot-long levee with earthen materials or floodwalls
- Raising 810 feet of NW Louisiana Avenue along the southern extent of the airport
- Replacing utility infrastructure
- Widening portions of the existing levee base in locations where there are retaining walls and removing the retaining walls
- Excavating for hydraulic structures such as culverts

Archaeological Sites and Isolates

Depending on specific construction footprints and methods, construction-related activities associated with the Airport Levee Changes could directly affect none, some, or all of the recorded archaeological sites and isolates adjacent to or beneath the levee. Potential impacts to eligible and potentially eligible archaeological resources will be reviewed, determined, and mitigation agreed upon through the Section 106 process.

Built Environment

The Airport Levee was previously determined NRHP eligible in 2008 and has been recommended eligible for listing in the NRHP. Potential impacts will be reviewed, significance determined, and mitigation agreed upon through the Section 106 process.

Human Remains and Cemeteries

There are no known cemeteries at the airport levee. An Inadvertent Discovery Plan would be required to address the discovery of any previously unidentified cultural resources during changes to the levee. If archaeological resources are discovered, construction could be halted in the area until the Corps, in consultation with DAHP and any affected Native American tribes, determines the appropriate course of action.

Traditional Cultural Properties

TCPs, as discussed in Section 2.2.8, are being studied as part of the Section 106 process.

3.2.1.3 Indirect

3.2.1.3.1 Flood Retention Expandable Facility

TCPs, as discussed in Section 2.2.8, are being studied as part of the Section 106 process.

No indirect adverse impacts on archaeological sites and isolates, historic properties, or human remains and cemeteries from the construction of the FRE facility are anticipated.

3.2.1.3.2 Airport Levee Changes

No indirect adverse impacts on archaeological sites and isolates, historic properties, human remains and cemeteries, or TCPs from the construction of the Airport Levee Changes are anticipated.

3.2.2 Impacts from Operation

3.2.2.1 Direct

3.2.2.1.1 Flood Retention Expandable Facility

The FRE facility would be operated during major floods or larger, and the structure would temporarily store up to 65,810 acre-feet of water in a pool that would extend 6.4 miles and inundate 847 acres along the Chehalis River from RM 108 to RM 114. Water would be released back to the river system over a period of time (up to 35 days) and when it is safe to do so.

Archaeological Sites and Isolates

Operation of the temporary reservoir during floods has the potential to affect nine recorded archaeological sites and isolates (45-LE-982 to 45-LE-990). Potential effects on archaeological sites and isolates include inundation, increased erosion, burial beneath reservoir sediments, burial beneath colluvial (landslide/mass movement) sediments, and accelerated destruction of artifacts due to

increased wet-dry cycles. The eligibility of these sites to be included in the NRHP is being discussed through a separate Section 106 process. If eligible, these potential impacts will be reviewed, significance determined, and mitigation agreed upon through the Section 106 process.

Built Environment

There are no known historic structures within the FRE facility area.

Human Remains and Cemeteries

There are no known cemeteries within the FRE facility area. An Inadvertent Discovery Plan would be required to address the discovery of any previously unidentified cultural resources during operation of the FRE facility. If archaeological resources are discovered, construction could be halted in the area until the Corps, in consultation with DAHP and any affected tribes, determines the appropriate course of action.

Traditional Cultural Properties

TCPs, as discussed in Section 2.2.8, are being studied as part of the Section 106 process.

3.2.2.1.2 Airport Levee Changes

No direct adverse impacts on cultural resources from operation of the Airport Levee Changes are anticipated.

3.2.2.2 Indirect

3.2.2.2.1 Flood Retention Expandable Facility

TCPs, as discussed in Section 2.2.8, are being studied as part of the Section 106 process.

No indirect adverse impacts on cultural resources from operation of the FRE facility are anticipated.

3.2.2.2.2 Airport Levee Changes

No indirect adverse impacts on cultural resources from the operation of the Airport Levee Changes are anticipated.

3.2.2.3 Changes in Inundation

Implementation of the Proposed Action would reduce the flood levels downstream of the FRE facility during major and catastrophic floods and, therefore, in general, reduce corresponding flood impacts on cultural resources in the study area. Inundation of archaeological sites during floods can result in erosion, burial, and accelerated destruction of artifacts, all of which are permanent adverse impacts. Inundation of aboveground resources, such as historic buildings and structures, during flooding can result in destruction or damage ranging from permanent and irreparable to temporary and repairable. Implementation of the Proposed Action would reduce these impacts.

All 149 archaeological sites and isolates, 28 historic register properties, and 16 cemeteries downstream of the FRE facility are susceptible to modeled major and/or catastrophic floods. Operation of the Proposed Action would reduce the frequency and magnitudes of major and catastrophic floods, thereby reducing the likelihood of damage or destruction of these resources by flooding.

Geomorphic modeling presented in the *Earth Discipline Report* indicates the combined effects of flow attenuation, reduction in large woody material loading, and sediment accumulation caused by operation of the FRE facility would slightly reduce downstream bank erosion and channel migration between RM 105.9 and RM 104.4, and RM 93.5 to RM 88, and have little to no effect elsewhere downstream of the FRE facility. Reduced bank erosion and channel migration would enhance preservation of any archaeological sites or aboveground resources within areas that would otherwise be subject to bank erosion and channel migration.

Rainbow Falls is a culturally significant location that has been documented in ethnographic studies and oral traditional stories. The area is associated with several meanings and uses, including use as a setting for a traditional story, a Salish place name, and a residential site, and it is connected to the harvest of lamprey and traditional economy (Shannon et al. 2019). Lamprey appear to be broadly distributed in the mainstem Chehalis River and major tributaries as described in the *Fish Species and Habitats Discipline Report*. As described in the report, the Proposed Action would have a significant adverse impact on migratory non-salmon fish, including Pacific lamprey, due to reduced movement to upstream habitat, reduced spawning habitat, lower summer flows, and warmer water temperatures.

TCPs, as discussed in Section 2.2.8, are being studied as part of the Section 106 process.

3.2.3 Required Permits

Concurrent with the SEPA review process, the Corps, as federal lead agency, is conducting a review of the Proposed Action under the NEPA process. Federal permits would be required from the Corps for what the Corps has defined as the Proposed Action. A decision by the Corps on whether to issue or deny a Department of the Army permit would be considered a federal undertaking subject to the requirements of NEPA and Section 106 of the NHPA. The Corps is also consulting under Section 106. If the Corps determines that the Proposed Action would result in adverse effects on historic properties, an MOA or a change to the proposed project would be required to resolve the adverse effects. Based on the outcome of the Section 106 consultation process, the Chehalis River Basin Flood Control Zone District (Applicant) would be required to comply with the provisions of an MOA to resolve adverse effects of the Proposed Action. The MOA would include provisions to mitigate impacts.

An Inadvertent Discovery Plan would be required to address any discovery of previously unidentified archaeological resources during construction or operation. The Applicant would submit the plan to DAHP for review and would not begin construction until approval of the plan. The Inadvertent Discovery Plan would require work to immediately stop in the vicinity of a discovery and would require the Corps, DAHP, and potentially affected Native American tribes to be notified. If archaeological resources are discovered, construction could be halted in the area until the Corps, in consultation with DAHP and the tribes, determines the appropriate course of action.

3.2.4 Proposed Mitigation Measures

No determination of eligibility or adverse effects has been made yet for the potential impacts described above. As part of the Section 106 process, if there are adverse effects to cultural resources, an MOA would be negotiated among the Corps, DAHP, potentially affected Native American tribes, the Applicant, and other Section 106 parties. The MOA would determine mitigation and treatment requirements through the Section 106 process of the NHPA. The Section 106 process is ongoing; therefore, determination of adverse effects and mitigation measures are not discussed in this draft EIS.

3.2.5 Significant and Unavoidable Adverse Environmental Impacts

No determination of eligibility or adverse effects has been made yet for the potential impacts described previously.

3.3 Local Actions Alternative

The Local Actions Alternative represents a local and nonstructural approach to reduce flood damage in the Chehalis-Centralia area. It considers a variety of local-scale actions that approximate the Applicant's purpose through improving floodplain function, land use management actions, buying out at-risk properties or structures, improving flood emergency response actions, and increasing water storage from Pe Ell to Centralia.

3.3.1 Impacts from Construction

3.3.1.1 Direct

Construction activities for local actions, such as floodplain storage improvements or channel migration protection, could occur within recorded and unrecorded archaeological sites. Construction activities for local actions could occur in proximity to historic buildings and structures, or directly alter historic structures, through floodproofing structures or demolition of buy-out structures. Construction activities for local actions could occur within cemeteries. Construction activities for local actions could occur within cemeteries. Construction activities for local actions could occur within cemeteries. Construction activities for local actions could occur within settivities, eligibility, adverse effects, significance, and mitigation would be identified during required federal or state processes for historic and cultural resources.

3.3.1.2 Indirect

The value of historic properties, cemeteries, and TCPs could be temporarily diminished due to change in access as well as noise, vibration, and dust during construction. The value of these resources could be diminished permanently due to changes in access and setting as a result of construction. For any of these activities, eligibility, adverse effects, significance, and mitigation would be identified during required federal or state processes for historic and cultural resources.

3.3.2 Impacts from Operation

This section analyzes the potential impacts from operation and implementation of local actions.

3.3.2.1 Direct

The implementation of local actions could result in some localized protection of historic and cultural resources from flood damage. However, flooding would likely not be significantly reduced through local and nonstructural approaches. Historic and cultural resources throughout the study area would continue to experience **substantial flood risk.**

3.3.2.2 Indirect

No indirect adverse impacts on cultural resources from the operation of the Local Actions Alternative are anticipated.

3.4 No Action Alternative

Under the No Action Alternative, no flood retention facility or Airport Levee Changes would be constructed. Basin-wide large and small scale efforts would continue as part of the Chehalis Basin Strategy work, and local flood damage reduction efforts would continue based on local planning and regulatory actions.

Under the No Action Alternative, flooding would not be significantly reduced. Historic and cultural resources throughout the study area would continue to be vulnerable to damage during both major and catastrophic floods. Potential impacts would not be substantially reduced through implementation of flood damage reduction actions included in the No Action Alternative. Floods would continue to inundate historic and cultural properties and they would continue to experience **substantial flood risk** under the No Action Alternative.

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