ASH CREEK WATER CONTROL DISTRICT

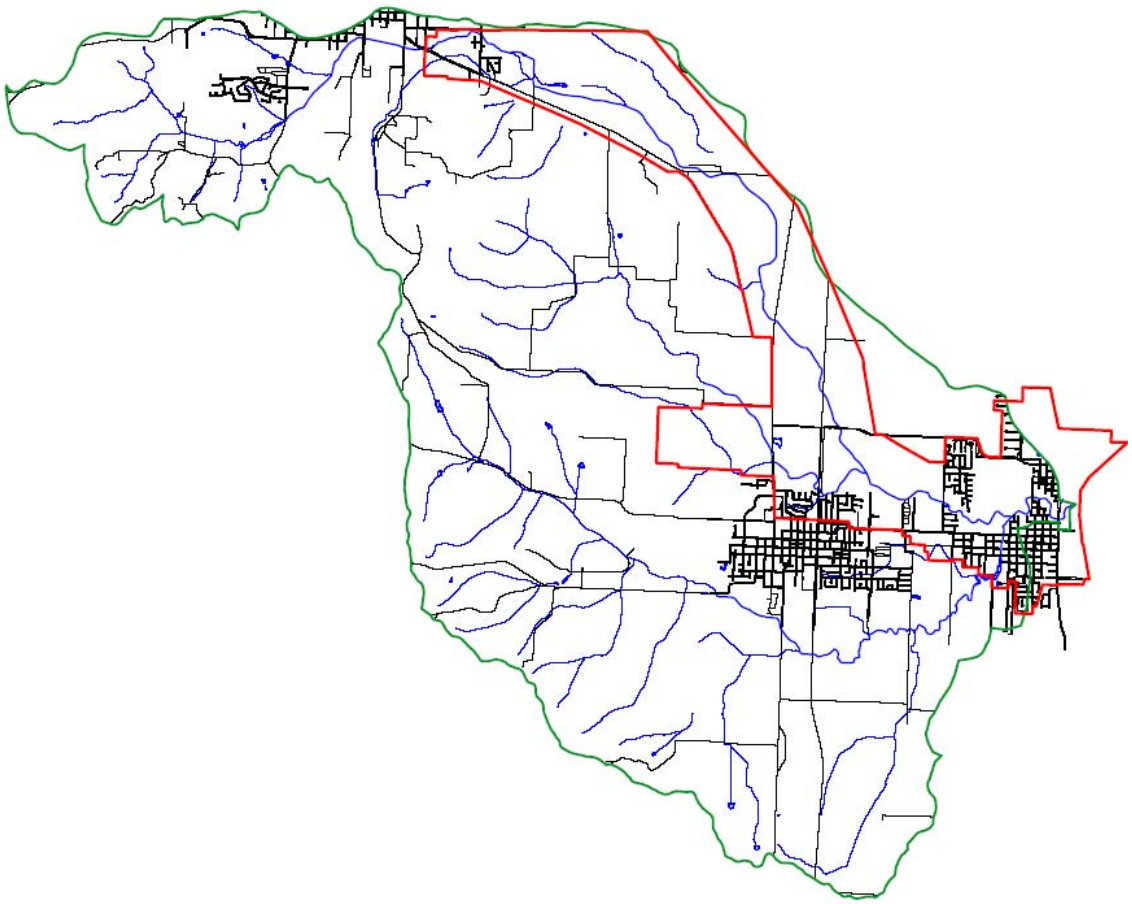
TEN-YEAR PLAN

2016 - 2026

Prepared for

Ash Creek Water Control District

January 2016



WHITAKER ENGINEERING INC.

ASH CREEK WATER CONTROL DISTRICT

TEN YEAR PLAN 2016

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Chapter 1
Purpose & Background

PURPOSE/ORGANIZATION OF THIS REPORT

The purpose of this report is to identify improvements, maintenance needs, policy changes and other activities that are anticipated to be performed by Ash Creek Water Control District over a 10-year period beginning January 2016.

The report is organized as follows:

Chapter 1 – Purpose and Background – This chapter provides an overview of the purpose of the report as well as the history of Ash Creek Water Control District and summary of previously conducted projects and studies.

Chapter 2 – Existing Conditions – This chapter identifies the current District boundaries, physical characteristics of the watershed, existing flood issues, and existing easements.

Chapter 3 – Stream Modeling – This chapter discusses the importance of hydrologic/hydraulic stream modeling, federal flood mapping status, District stream modeling efforts to date and future modeling needs.

Chapter 4 – Permitting – This chapter identifies the need for permitting stream related work and provides references to more comprehensive and up-to-date permitting requirements.

Chapter 5 – Mission, Objectives and Goals – This chapter presents the Ash Creek Water Control District mission, strategic objectives and short-term goals.

Chapter 6 – Implementation Plan – This chapter provides a proposed implementation plan for the short-term goals identified in Chapter 5.

ASH CREEK WATER CONTROL DISTRICT

The Ash Creek Water Control District (District) was formed August 16, 1951 by petition and order. The District boundaries are shown on Figure 1 along with the watershed boundaries recognized by the District and other agencies (see discussion in Chapter 2). The purpose of the District is described in the policy and procedure manual as follows:[i]

"The purpose of the District is drainage, to wit:

a) Improvement of the channel of Ash Creek from the East city limits of the City of Dallas, Polk County, Oregon, to the junction of said Ash Creek with the Willamette River at or near Independence, Oregon, for the purpose of preventing damage to property located near or adjacent to said creek, and to improve the agricultural and other uses of lands now flooded by waters from said creek.

b) The improvement of the channel of Ash Creek from the east city limit of the city of Dallas, Polk County, Oregon, to the southeasterly boundary of the district as above described.

c) The improvement of numerous small creeks, sloughs, and watercourses tributary to Ash Creek for improving the agricultural and other uses of said lands. That the construction or acquisition of

such structures or works and the improvement and maintenance thereof will be conducive to the public health, welfare and safety."

The District was organized under ORS 553, which identifies the purpose and limits for the creation of a water control district as follows:[I]

553.020 Creation of water control districts; purposes; limits.

(1) Water control districts may be created as provided in this chapter for the purpose of acquiring, purchasing, constructing, improving, operating and maintaining drainage, irrigation, and flood and surface water control works in order to prevent damage and destruction of life and property by floods, to improve the agricultural and other uses of lands, and to improve the public health, welfare and safety.

(2) A water control district, organized for one or more of the purposes provided by subsection (1) of this section, may also acquire, purchase, construct, improve, operate and maintain works and facilities for the secondary purposes of domestic, municipal and industrial water, recreation, wildlife, fish life and water quality enhancement. However, a water control district may not be created solely for one or more of the purposes provided by this subsection.

HISTORICAL PROJECTS

Early 1950's – Channel improvements along North Fork Ash Creek between G-Way Ranch (east of Dallas) and Gun Club Road. Channel improvements included improving hydraulic capacity by constructing a wider, deeper and straighter channel.

Early 1980's – Channel improvements along North Fork Ash Creek between Holman Street and G-Way Ranch. Improvements included clearing, enlargement and minor realignment.

Channel relocation and improvements along North Fork Tributary between confluence with North Fork and Holman Street. Improvements included channel clearing, enlargement and major realignment. Tributary channel was redirected at west boundary of Praegitzer Industries to flow north and connect with North Fork. This relocation substantially reduced the flooding problems in the Godsey Road area but was never included in subsequent revisions to Flood Insurance Rate Maps.

Channel improvements along North Fork from Valley-Siletz Railroad in Independence upstream to confluence with the Middle Fork. Improvements included channel realignment, clearing and enlargement.

1985-Present – Minor channel improvements to control erosion or improve hydraulics, annual maintenance for controlling reed canary grass and blackberry, brush clearing, hydrologic/hydraulic modeling and assistance with flood map revisions.

PREVIOUS STUDIES

Several previous studies have been conducted on various portions of Ash Creek and its tributaries that are useful in development of this Plan. These studies, discussed in more detail in Chapter 3, are summarized below:

1. *An Engineering Report on the Ash Creek Watershed, Polk County* [ii]

   This report was produced by the State of Oregon in 1969. The report identified areas where channel improvements should be performed to improve the hydraulic capacity of the stream. The report also recommended construction of a reservoir on the North Fork west of Hwy 223. While much of the recommended channel improvements were performed, the reservoir project was apparently not considered further.

2. *Floodplain Management Study* [iii]

   This report was produced by the USDA Soil Conservation Service in December of 1985, providing the District with predicted flood levels resulting from 10-, 50-, 100- and 500-year storms. The study also recommended general alternatives for floodplain management as well as specific improvements for several stream sections.

3. *Flood Insurance Study - 1995* [iv]

   This report was produced by the Federal Emergency Management Agency in December of 1995. The primary purpose of this study was to identify the predicted flood elevations for the 10-, 50-, 100- and 500-year storm events. No recommendations were made for flood control improvements.

4. *Flood Insurance Study - 2005* [v]

   This report was produced by the Federal Emergency Management Agency in December of 2005. The primary purpose of this study was to identify the predicted flood elevations for the 10-, 50-, 100- and 500-year storm events. No recommendations were made for flood control improvements.

5. *Ash Creek Flood Study and Stream Model* [vi]

   This report was produced by Streamline Engineering in November of 2002 and focused on the development of a computerized hydraulic model of Ash Creek. The hydraulic model can be used to estimate flood elevations associated with various storm events or major changes to the drainage characteristics within the watershed. This is discussed in further detail in Chapter 3.

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[i] Ash Creek Water Control District, *Policy and Procedure Manual*, May 1998

[ii] Wheeler, Chris, State Engineer of Oregon; Watershed Planning Division, *An Engineering Report on the Ash Creek Watershed*, February 1969.

[iii] United Stated Department of Agriculture, Soil Conservation Service, *Floodplain Management Study – Ash Creek, Polk County*, December 1985

[iv] Federal Emergency Management Agency, *Flood Insurance Study*, December 19, 1995

[v] Federal Emergency Management Agency, *Flood Insurance Study*, December 19, 2005

[vi] Streamline Engineering, *Ash Creek Flood Study and Stream Model*, November 2002

Chapter 2
Existing Conditions

STUDY AREA DEFINITION AND BOUNDARIES

Because stream levels are influenced by the characteristics of the entire watershed, this report will consider the entire watershed as the appropriate study area. The boundary of the watershed is shown in Figure 1.

Figure 1 also identifies a second, and larger, watershed boundary that is used by State and County officials to identify that portion of land tributary to the Willamette River between the Rickreall Watershed and the Luckiamute Watershed. While the two boundaries are coterminous throughout much of the actual watershed, it is important to note that the larger boundary contains land that is not tributary to Ash Creek and therefore is not relevant to this study.

EXISTING STREAM CONDITION

Climate

Appendix A includes a Climate of Polk County, Oregon.

Watershed Characteristics

Table 2-1 identifies important physical, hydrological and land use characteristics of the Ash Creek Watershed.

TABLE 2-1

Parameter	Value
Area[i]	36.5 sq. mi.
Mean basin slope[i]	4º (6.9%)
Mean basin elevation[ii]	321 ft
Mean Maximum January Temperature[i]	46.1º F
Mean Minimum January Temperature[i]	32.7º F
6 hr precipitation with 50% probability [ii]	1.5 in
6 hr precipitation with 1% probability [ii]	3.0 in
24 hr precipitation with 50% probability [ii]	3.0 in
24 hr precipitation with 1% probability [ii]	6.0 in
Land Use:	
Urban – Dallas	825 ac (3.5%)
Urban – Monmouth	1,429 ac (6.1%)
Urban – Independence	1,360 ac (7.4%)
Rural/Agricultural	16,710 ac (70%)
Rural/Forestry	3,000 ac (13%)
Total	23,360 (100%)

[i] USGS StreamStats Data
[ii] NOAA Atlas 2, Volume 10

Physical Characteristics of Stream

Throughout much of the watershed, the existing channel is 15-30 feet wide with banks that are typically steep, having slopes ranging from 2H:1V to vertical. While the steep bank slopes contribute to erosion in some areas of the stream, the clay soils that predominate much of the channel reduce erosion tolerable amounts. Nutria likely contribute as much or more towards erosion as stream geometry and bank slope. The channel bottom is clay, clay-gravel, or gravel. Channel width is typically 6-10 feet at the bottom of the channel throughout much of Ash Creek and its tributaries above the confluence with the South Fork. Below this point, the channel bottom becomes wider, stream side slopes begin to flatten out and velocities are lower.

The North Fork stream channel ranges from 4-5 feet deep near Holman Street (Dallas) deepening to 6-8 feet deep from Godsey Road (Dallas) to Hwy 99W. From Hwy 99W to the confluence with the Middle Fork, the channel varies from 8-12 feet deep. Below the Middle Fork, the Ash Creek channel remains in the 8-12 foot depth, gradually increasing to 20 feet at the confluence with the South Fork. Below here, the channel deepens to 20-30 feet and becomes much wider.

The Middle Fork channel depth averages 6-8 feet through much of its course from Riddell Road to the confluence with the North Fork. The South Fork channel varies from 12 feet at F Street (Independence) to over 20 feet at the confluence with Ash Creek.

The water depth in the channel varies greatly between summer and winter. During summer months, the water depth varies from six inches or less in the upper reaches to 6-8 feet near the Willamette River. During winter months, typical water depth ranges from 3-6 feet in the upper reaches to 15-20 feet near the Willamette River.

The existing stream has reasonably good hydraulic carrying capacity with few major flooding problems, due to previous channel improvements. The channel is relatively clear of brush and debris throughout much of the District; however, some areas remain where fallen trees, excessive vegetation and debris may occasionally restrict high flows.

Vegetation along the stream banks is typically a mixture of native and non-native grasses, deciduous brush and deciduous trees. Problem vegetation includes reed canary grass along with Himalayan blackberry and pacific willows.

Drainage

The stream channel generally provides adequate drainage of agricultural and residential lands throughout much of District except in low lying lands with flat topography. Between 1955 and 1970, much of the agricultural land adjacent to the stream was tiled to provide improved drainage for spring planting. This required cleaning and clearing the stream to provide adequate drainage.

Fish/Wildlife Habitat[iii]

During 2004, the District consulted with the Luckiamute Watershed Council Coordinator to develop a Fish and Wildlife Assessment for the watershed. This work, based on the Luckiamute Watershed Assessment as well as discussions with several area biologists and consultants, is presented in Appendix B. Due to hydrologic conditions, much of Ash Creek and its tributaries offers limited habitat for fish between May and November, with some sections being dry at some point in the year. This condition was

[iii] Polk Soil and Water Conservation District, et al, *Ash Creek RC&D Measure Work Plan*, August 1974

likely worsened by the historical drainage of agricultural lands and the hydraulic improvements to the stream.

Low flow and poor water quality of Ash Creek during the summer and fall limit fish resources to small warm-water fish species. During the winter flood flows, some juvenile salmonid species have been found in the stream and are believed to utilize the stream for shelter from high velocity flow in the Willamette. As a result, Ash Creek has been designated by the State of Oregon as essential salmonid habitat along the Main Stem and North Fork between the Willamette River and Hwy 99W north of Hoffman Road. The ability for Ash Creek to provide year-around habitat for salmon or trout is severely restricted by low stream flows. Without flow augmentation, it is unlikely that Ash Creek will ever support more than a small number of cutthroat trout.

Non-riparian areas adjacent to the stream are mostly grazed or devoted to grass seed production. Upland game populations along the stream are limited. Upland game observed in the area includes mourning doves, ring-neck pheasant, and quail. Migratory waterfowl use the stream for resting/feeding and it is likely that wood ducks nest near the channel in areas where adequate tree cover exists. Several song bird species are known to nest along Ash Creek. Beaver activity along the stream is evident mostly in the Dallas area and nutria are abundant throughout the system but are most heavy in the lower portion of the watershed. The only big game animals known to inhabit the area are blacktail deer, although there have been isolated instances where Roosevelt elk visited the stream channel during early fall.

Within the District boundaries, riparian areas exist in the following areas:

Main Stem Ash Creek (Urban) – This section of stream, between the Willamette River and the north urban growth boundary (UGB) of the City of Monmouth at Hoffman Road, is approximately 3.2 miles in length and has adequate riparian cover over nearly 2/3 of the length. The Luckiamute Watershed Council, in cooperation with Central School District, the City of Independence and Ash Creek Water Control District, coordinated a streambank tree planting project on the Main Stem Ash Creek between Gun Club Road and 16th Street in 2014.

South Fork (Urban) – This section of stream, between confluence with Main Stem and the south urban growth boundary of the City of Independence, is approximately 0.7 miles in length and has adequate riparian cover over nearly 2/3 of the length. The portion without riparian cover was formerly a log storage pond for Mountain Fir Lumber Company, which underwent a restoration project in 2007 to re-establish riparian zone. When the re-established riparian zone has matured, this section of stream will have riparian cover along its full length.

Middle Fork (Urban) – This section of stream, between confluence with Ash Creek and the west UGB of Monmouth is approximately 1.7 miles in length and has adequate riparian cover over nearly 3/4 of the length.

North Fork (Rural) – This section of stream in the unincorporated area between Monmouth and Dallas is approximately 5.5 miles in length and has adequate riparian cover over nearly 1/5 of the length.

North Fork (Urban) – This section of stream, from the east UGB of Dallas to the west UGB, is approximately 2.7 miles in length and has adequate riparian cover over nearly 1/4 of the length.

Overall, adequate riparian zone exists on only about 45% of the primary channel length. However, between the Willamette River and the west UGB of Monmouth, the primary channel riparian cover averages 67%.

EXISTING FLOOD AREAS

Independence

Main Stem – Some low lying properties adjacent to the creek have structures with floor levels or basement levels at or below the 100-yr flood elevation. Wherever development has encroached on the flood plain or the stream bank, structures are at risk of damage due to flooding or bank erosion.

Gun Club Road – The existing roadway was constructed at an elevation below the 10-yr flood level. Gun Club Road is commonly inundated with floodwaters on the north side of the bridge during wet weather storms. It is common for Gun Club Road to be impassible to all traffic, including emergency vehicles during significant storm events. On some occasions, the water level overtopped the lowest point in Gun Club Road by nearly 4 feet. The primary cause of flooding at Gun Club Road is the low elevation at which the road was originally constructed. While there is some variability in the predicted water surface elevation between the previous studies, they consistently predict Gun Club Road will be inundated with the 10-year storm event. On average, Gun Club Road is closed due to high water once or twice per year. Typical closure times range from several hours up to 2 days.

The City of Independence has identified this bridge for replacement. That project, when constructed, is expected to include a new profile that will raise the roadway above the 100 yr level.

Monmouth

Gentle Woods Park – This City of Monmouth park east of U.S. Hwy 99W on the Middle Fork is subject to intermittent flooding. Water levels in the park during flooding have been observed as high as three feet above the bank. A wooden footbridge is commonly inundated during high flows. Picnic tables must be secured within the covered enclosure during severe weather to prevent them from being washed away. Some of the flood issues in Gentle Woods Park may be attributed to an inactive concrete ford that crosses the Middle Fork several hundred yards downstream. This ford has two 24-inch concrete culverts through it and likely impedes flow during wet

weather. While there has been no serious flood damage in this area, removing the downstream concrete ford would likely lower flood elevations in Gentle Park.

Riddell Road – Occasionally, stream flows in the Middle Fork exceed capacity of the box culverts under Riddell Road. The resulting floodwater inundates farmland before overtopping Riddell Road. Floodwater crossing Riddell Road causes minor flooding problems at residential driveways on the east side of Riddell Road. Because the roadway is reasonably flat for some distance at this location, the flood depth over the roadway is typically less than 6 inches, although some models suggest it could overtop Riddell Road by as much as two feet. There has been no known significant property damage due to flooding at this location.

South Dallas

Historically, significant flooding has occurred in southeast Dallas along Clow Corner Road from Godsey Road to Uglow Street. The following factors are considered to be contributors to flooding issues in this area:

Godsey Road – The channel downstream of Godsey Road has somewhat limited capacity and causes occasional flooding along each side of Godsey Road near the bridge. In addition, the Godsey Road bridge creates a flow restriction that worsens flooding on the west side of Godsey Road.

"Holman" Tributary west of Godsey Road – The bridge crossing at Monmouth Cutoff Road has insufficient capacity to convey peak flows, causing water to exceed the east bank elevation. As floodwater flows east along the road, it is restricted by driveway culverts that are not sized for this flow, causing floodwater to back up into yards and at-grade structures. Another contributing factor on this tributary is at Holman Road where a private rock "flume" downstream of the crossing lacks capacity to convey peak flows, causing out of bank flow to the east towards the wrecking yard, where it turns north to converge with the previously described floodwater along Monmouth Cutoff Road.

Uglow Street Bridge – This crossing does not have adequate capacity to convey North Fork peak flows. When floodwater backs up at this location, it overtops Uglow Street south of the crossing. However, due to topographic conditions, this floodwater does not drain back to the North Fork channel, instead flowing east, across Holman Street and into the "Holman" tributary, which already has capacity issues (discussed above). This condition was observed on December 3, 2007 and was responsible for significant flood damage to residences and businesses along Monmouth Cutoff Road.

Culverts beneath mill site – The entire flow of the North Fork is conveyed via two 72-inch diameter corrugated metal culverts under the old Weyerhaueser (Willamette) Mill. The total length of piped channel under the mill is 1,500 ft. It is unknown what condition these culverts are in, or if there are any obstructions or sedimentation within the culverts. During a storm on December 3, 2007, the capacity of this piped system was exceeded by North Fork peak flows. The resulting floodwaters flowed through the Weyerhaueser mill, causing unknown damage. Floodwater exited the mill onto Uglow Street at two locations causing additional flooding of Van Well Building Supply and the Forest River Trailer Plant.

Highway 223 – The North Fork bridge at Hwy 223 has insufficient capacity for peak flows and the resulting floodwater causes overtopping of this State Highway and occasional closures. This is a major arterial into the City of Dallas. While road closures at this location are not common, the impact is significant.

CURRENT EASEMENTS

Beginning in the mid-1970's the District began acquiring easements for maintenance of Ash Creek and its tributaries. Currently, the District has easements on 60 of the 150 properties that are adjacent to Ash Creek and/or its tributaries. While this amounts to 40% of all properties adjacent to the creek, most of these easements are on medium to small tracts of land and therefore cover only about 20% (3 miles) of the total length of stream (approx. 15 miles) within the District boundaries. The widths of the easements vary from 40 to 160 feet, centered on the original stream centerline. As the stream has meandered somewhat over the years since the centerline was originally described, the easements are not always centered on the stream. The District maintains files and GIS data for all existing easements within the District Boundaries.

Chapter 3
Flood Modeling

NEED FOR MODELING

One of the objectives of the Ash Creek Water Control District is to assist in the development of flood mapping within the district boundaries. A flood model serves as a valuable planning tool in floodplain management by providing:

- a basis for establishing accurate floodplain boundaries, and
- a tool for local municipalities and landowners for predicting the flood response to anticipated changes in climate, stream geometry, land use and proposed projects affecting stream flow, such as reservoirs, detention basins, wetlands, etc.

WHAT IS A FLOOD MODEL?

A full flood model is comprised of two modeling efforts, a hydrologic model and a hydraulic model. A hydrologic model converts rainfall into flow quantity (runoff) using watershed and drainage area characteristics. A hydraulic model converts flow quantity into water surface elevations within a river or stream.

FEMA FLOOD MODELING AND FLOOD INSURANCE RATE MAPS

The Federal Emergency Management Agency (FEMA) has used various studies and modeling efforts to determine flood elevations for areas throughout Ash Creek watershed. FEMA publishes this data in a Polk County Flood Insurance Study (FIS) which was first produced in 1995 and then updated in 2005. The FIS study reports flood flows and their associated flood elevations and displays this data in tabular form and on stream profile graphs. The entire Ash Creek Watershed is not studied in detail in the FIS. All areas within the city limits of Independence, Monmouth, and Dallas were included with the exception of the section of the South Fork of Ash Creek upstream of F Street. FEMA uses the base flood elevation (100 year flood) determined in the FIS to map the flood inundation area on Flood Insurance Rate (FIRM) maps. These maps are used for insurance, zoning and planning purposes.

ASH CREEK WATER CONTROL DISTRICT MODELING

The Ash Creek Water Control District has developed a HEC-RAS hydraulic model of the Ash Creek Watershed within the district boundaries. The geometric data within the HEC-RAS model includes stream cross sections, distances between cross sections, stream roughness, and bridge and other crossing geometry data. Using any given flows and downstream boundary condition (model inputs), this HEC-RAS model can predict water surface elevations throughout the district. In order to use the model, the user must first determine the flows and downstream boundary condition inputs by either using flows published in the FIS, flows determined from a hydrologic model, or other acceptable means for determining stream flows. The model can be used to compare and contrast flood elevations and boundaries against the FEMA FIRM and FIS, and to predict stream response to changes in stream geometry, land use, and proposed projects. This model has already been used to develop a Letter of Map Revision (LOMR) which extended the FEMA detailed study area on the South Fork of Ash Creek to include all areas within Independence City Limits.

PREVIOUS FLOOD MODELING EFFORTS

As stated in Chapter 1, four engineering studies have been performed for the Ash Creek Water Control District (ACWCD). This chapter provides more in-depth discussion of the previous studies.

An Engineering Report on the Ash Creek Watershed, Polk County

This study was produced by the State of Oregon in 1969 and focused on flood control improvements. The study recommended various improvements to Ash Creek and its tributaries and provided estimated water surface elevations that would occur following the recommended improvements. Most of the recommended improvements were constructed in the early 1980's with the exception of a flood control reservoir on the North Fork approximately one mile upstream of Oregon Highway 223.

Floodplain Management Study (FMS)

The USDA Soil Conservation Service produced this study in December of 1985. It focused on hydrologic and hydraulic analyses of the three forks of Ash Creek and the flood levels corresponding with design storms. Within the study, there are flood hazard maps, water surface profiles and tabular information on cross section geometry, discharge and flood elevations. The portions of stream included in the FMS study are shown in Figure 2.

The FMS recommended the following strategy for effective floodplain management:

- Enrollment in the National Flood Insurance Program
- Critical area treatment to reduce runoff, erosion and sedimentation
- Nonstructural measures including acquisition, relocation, flood proofing (elevating), flood warning, flood insurance and channel maintenance.
- Structural Measures including channel clearing, streambank protection, floodwall construction and channel enlargement.

The FMS recommended the following structural measures:

- Ash Creek in Independence – develop an open channel greenway, dike three selected areas, enlarge the Gun Club Road Bridge and raise the roadway on Gun Club Road.
- North Fork at Monmouth – establish a floodway between the Middle Fork and Hoffman Road.
- Middle Fork at Monmouth – develop a greenway between Riddell Road and the confluence.
- North Fork at Dallas – construct berms between Uglow Street and Clow Corner Road and enlarge the culvert under Uglow Street.

The FEMA FIS later evaluated flood elevations on the same sections of Ash Creek that were studied in the FMS report. The primary difference between the two studies is the lack of flood control recommendations provided in the FIS report.

Ash Creek Water Control District Modeling History

In 2002, Ash Creek Water Control District developed computerized hydrologic and hydraulic models of Ash Creek for estimating flood levels. The models were developed as a tool for predicting trends in flood elevations that would occur following changes to the channel or watershed.

A preliminary conclusion made from this modeling effort is that stormwater detention facilities are realistically limited to the reduction of local flow rates and, when sized to accomplish this, are only economical when located higher in the watershed.

In 2011, Ash Creek Water Control District further developed the hydraulic model and used it to produce a LOMR as discussed previously. The stream sections included in these modeling efforts are identified in Figure 3.

FLOOD AREAS COMMON TO ALL FLOOD MODELS

All previous flood studies predict some flooding in the following areas within the District:

- Ash Creek from 6th Street upstream to 16th Street (Independence)
- Middle Fork Ash Creek at Gentle Woods Park (Monmouth)
- Middle Fork Ash Creek from Hwy 99W upstream to Bursell Road (Polk County)
- North Fork Ash Creek between Hwy 99W and Riddell Road (Polk County)
- North Fork Ash Creek between Riddell Road and Clow Corner Road (Polk County)
- North Fork between G-Way Ranch and Godsey Road (Polk County)
- North Fork between Godsey Road and Uglow Street (Dallas)
- North Fork between Uglow Street and Hwy 223 (Dallas)

VERTICAL DATUM

Historically, most survey information along Ash Creek has been based on the NGVD 29/47 Vertical Datum. At the time of this report, most surveyors continue to use this datum. It is important to recognize, however, that the new FIRMs use a different vertical datum (NAVD 88) and the differences between these two vertical references varies, depending on location. For most of the Ash Creek Watershed, the difference is in the range of 3.34 to 3.40 feet, with the NGVD 29/47 being the lower of the two vertical references.

LIDAR

Recently, Polk County GIS Services purchased topographic information from the Oregon Department of Geology and Mineral Industries. This detailed topographic information was acquired using technology called LiDAR, a remote sensing technology that measures distance by illuminating a target with a laser and analyzing the reflected light. This technology has greatly improved the ability to provide more accurate flood modelling due to the density of elevation readings. This is especially useful in modelling floodplain boundaries. However, LiDAR technology has limitations - it does not accurately define the edge of a stream bank, nor does it penetrate water to identify the bottom elevation of the stream. Therefore, some ground survey is still required to provide a complete model of the terrain.

Chapter 4
Permitting

Periodically, the District performs physical improvements in and around streams and is therefore subject to an array of regulations. Because specific regulations depend on specific site conditions, and because regulations may change within the time period of this document, it is the purpose of this chapter to refer the reader to the proper state website where they can obtain up-to-date and comprehensive information regarding stream related permitting.

The Oregon Department of State Lands (DSL) maintains a website containing comprehensive permitting information. In addition, DSL has developed a document entitled "*State Water-Related Permits User Guide*", which can be accessed at the website listed above. This document provides a comprehensive discussion of jurisdictional agencies and related permit requirements. An introductory portion of this document, including table of contents and permitting matrix, has been included in Appendix C.

It is important to mention that Ash Creek has been designated essential salmon habitat from the Willamette River along Ash Creek and North Fork Ash Creek up to Hwy 99W (See Figure 4). This status presents specific permitting requirements for projects in and along this stretch of stream.

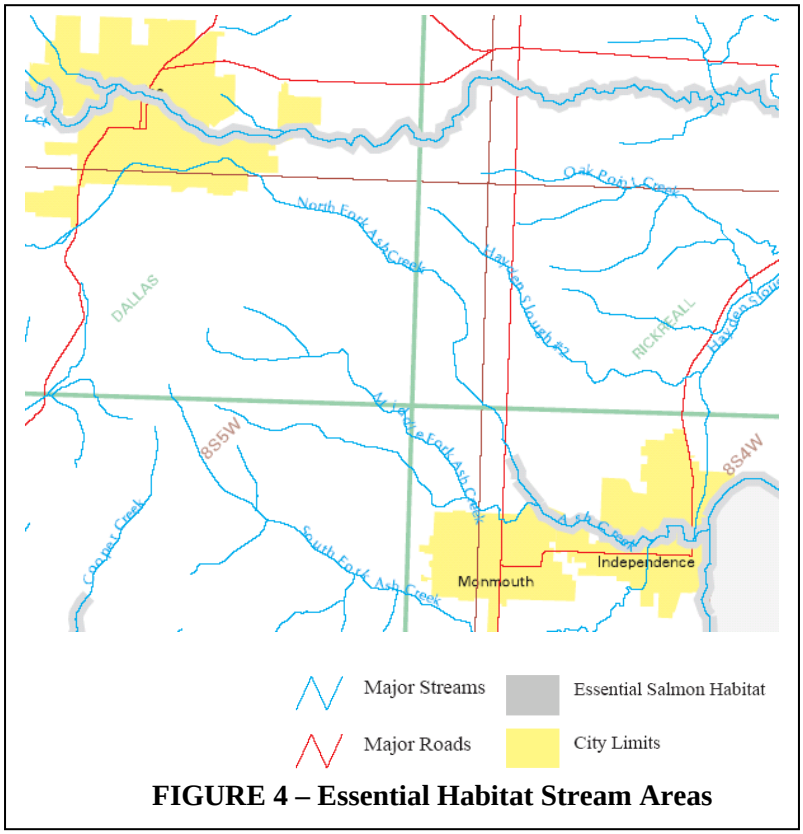


FIGURE 4 – Essential Habitat Stream Areas

Chapter 5
Mission, Objectives and Goals

DISTRICT MISSION, STRATEGIC OBJECTIVES AND GOALS

Mission

The mission of Ash Creek Water Control District is to develop and maintain a *functional stream*; one that provides a reasonable and sustainable balance between effective floodplain management, adequate drainage of agricultural and residential lands and an appropriately supportive environment for fish and wildlife.

Strategic Objectives

The district will fulfill its mission through a three-part approach combining 1) information and education, 2) physical/maintenance activities and 3) policy work within the community. To that end, the District has established the following set of long-term strategic objectives. These strategic objectives provide the general strategy of how the District will fulfill its mission over a long-term period (10-20 yrs).

PART 1. Information and Education:

1A. Develop a comprehensive understanding of the drainage basin characteristics and stream response to significant rain events.

1B. Develop a working knowledge of the natural resource issues along the stream.

1C. Provide public education to increase awareness of flood management and permitting issues.

1D. Provide director training opportunities to maximize board effectiveness.

1E. Maintain accurate records of District boundaries and landowners.

1F. Develop resources regarding best management practices for physical improvements.

PART 2. Physical/Maintenance Activities:

2A. Provide routine maintenance activities to protect, restore, or improve hydraulic capacity.

2B. Perform in-stream work activities where improvements are necessary to protect, restore, or improve flood management objectives.

2C. Perform physical improvements outside the banks of the stream where these improvements will either protect property or lower peak flood levels.

2D. Participate in projects intended to relocate "at-risk" infrastructure or property outside of the 100-yr flood plain.

2E. Participate in cost-sharing projects with individual landowners or other agencies when these projects support District flood management objectives.

PART 3. Policy Work

3A. Acquire easements, when/where appropriate, along critical reaches of the stream to reduce encroachment and provide access for inspection, maintenance and improvements.

3B. Cooperate with regional planning officials and regulatory agencies in the creation or modification of floodplain development policy.

3C. Cooperate with regional planning officials and regulatory agencies in floodplain mapping within the Ash Creek watershed.

3D. Establish productive working relationships with other regional agencies to improve coordination and share information/assistance.

3E. Perform periodic review of District boundaries

Short-Term Goals

The following goals identify both specific projects and general tasks anticipated for implementation during the 10-year period between 2016 and 2026. The ability of the District to complete these tasks depends on a number of factors outside the control of the District, including:

- cooperation of other agencies/landowners,
- regulatory restrictions,
- climatic conditions, and
- availability of funds

PART 1. Information and Education:

1A. Develop a comprehensive understanding of the drainage basin characteristics and stream response to significant rain events.

1.A.1. Revise hydraulic model geometry.

1.A.2. Conduct wet weather inspections during storm events

1.A.3. Conduct dry weather inspections to evaluate channel conditions

1.A.4. Maintain a record of maintenance and/or physical improvements

1B. Develop a working knowledge of the natural resource issues along the stream.

1.B.1. Maintain information on fish/wildlife species known or suspected to inhabit creek along with the needs of each.

1C. Provide public education to increase awareness of flood management and permitting issues.

1.C.1. Develop information regarding flood management issues for distribution to public.

1.C.2. Provide periodic reports on current projects and upcoming work to district taxpayers.

1.C.3. Maintain resources for property owners wishing to perform work in or near the stream

1.C.4. Maintain District website.

1.C.5. Develop an informational pamphlet on District goals

1D. Provide director training opportunities to maximize board effectiveness.

1.D.1. Provide new Director Orientation to include Director roles/responsibilities, District policies and procedures, and 10-year plan.

1.D.2. Provide continuing education opportunities for Directors pertaining to Administrative and/or Technical aspects of District.

1.D.3. Involve Directors periodically in specific work tasks to maintain connection with District activities.

1.D.4. Provide opportunities for Director field visits to enhance understanding of relevant issues or projects.

1E. Maintain accurate records of District boundaries and landowners.

1.E.1. Maintain accurate map of District boundaries.

1.E.2. Maintain list of tax lots and owners within District boundaries.

1.E.3. Maintain list of tax lots and owners adjacent to stream within District boundaries.

1.E.4. Maintain list of tax lots and owners where District holds easements.

1F. Develop resources regarding best management practices (BMPs) for physical improvements.

1.F.1. Coordinate with local and state agencies to develop a list of resources containing best management practices and design guidelines for stream-related work.

1.F.2. Maintain updated list on District website along with links to available documents.

PART 2. Physical/Maintenance Activities:

2A. Provide routine maintenance activities to protect, restore, or improve hydraulic capacity.

2.A.1. Continue on-going control of target vegetation species.

2.A.2. Provide physical removal of trees, brush and other obstructions where required.

2.A.3. Maintain ongoing nutria eradication program to reduce temperature, nutrients, bacteria and erosion.

2B. Perform in-stream work activities where improvements are necessary to protect, restore, or improve flood management objectives.

2.B.1. Provide stream bank armoring/reinforcement in areas of significant erosion.

2.B.2. Modify channel geometry/location where necessary to protect property or improve hydraulic characteristics.

2.B.3. Participate in physical improvements that align with District Mission.

2.B.4. Participate in project(s) intended to mitigate flooding, where appropriate.

2C. Perform physical improvements outside the banks of the stream where these improvements will either protect property or lower peak flood levels.

2.C.1. Participate in developing wetlands, expanding floodplain, or constructing ponds where these projects function as flood attenuation.

2.C.2. Participate in projects to reduce runoff and/or sediment transport to Ash Creek.

2D. Participate in projects intended to relocate "at-risk" infrastructure or property outside of the 100-yr flood plain.

2.D.1. Participate in project to raise elevation of Gun Club Road.

2.D.2. Participate in project to raise elevation of Godsey Road bridge.

2E. Participate in cost-sharing projects with individual landowners or other agencies when these projects support District flood management objectives.

2.E.1. Provide property owner incentive to plant trees in riparian zone according to District guidelines.

2.E.2. Provide cost sharing opportunities for landowners wishing to perform streambank restoration according to BMPs.

2.E.3. Participate in projects that improve access for maintenance and/or inspection.

2.E.4. Provide cost sharing opportunities to landowners or other agencies who are performing work that furthers the goals and objectives of the District.

PART 3. Policy Work

3A. Acquire easements, when/where appropriate, along critical reaches of the stream to reduce encroachment and provide access for inspection, maintenance and improvements.

3.A.1. Identify critical reaches of stream

3.A.2. Acquire new easements or access license in critical areas.

3B. Cooperate with regional planning officials and regulatory agencies in the creation or modification of floodplain development policy.

3.B.1. City of Dallas – Flood map revisions, storm water retention policy, floodplain development ordinance.

3.B.2. City of Monmouth – Storm water retention policy, floodplain development ordinance.

3.B.3. City of Independence – Storm water retention policy, floodplain development ordinance.

3.B.4. Polk County – Storm water retention policy, floodplain development ordinance.

3C. Cooperate with regional planning officials and regulatory agencies in floodplain mapping within the Ash Creek watershed.

3.C.1. Provide support for flood map revisions within the Ash Creek watershed.

3D. Establish productive working relationships with other regional agencies to improve coordination and share information/assistance.

3.D.1. Periodically send District representative to other regional agency meetings to discuss flood management issues.

3.D.2. Develop interagency information-sharing agreements and provide technical assistance to local, state or federal agencies conducting stream-related work in the watershed.

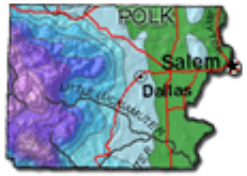
3E. Perform Periodic Review of District Boundaries

3.E.1. Consider adjustments to District boundaries, as appropriate.

Chapter 6
Implementation Plan

Implementation of this Plan will be accomplished through a combination of specific projects with targeted completion dates, together with annual tasks and activities that are completed on an as-needed basis. Appendix D includes the approved implementation plan for Ash Creek Water Control District.

Appendix A
Climate of Polk County, Oregon



Climate of Polk County

prepared by

george taylor, state climatologist
cadee hale & sarah joos, publication assistants

Introduction

Polk County lies along just off the northern part of the Oregon Coast. It is wholly within Climate Division 2 (Willamette Valley) established by the National Climatic Data Center. Below is a description of the climate of Division 2 followed by specific descriptions of Polk County. Climate tables for various parameters, as observed at long-term climate stations in Polk County, are included below.

Climate Division 2 -- Willamette Valley

The Willamette Valley is the most diverse agricultural area in the state of Oregon, and also the home of the majority of the population. Oregon's three largest cities, Portland, Salem, and Eugene, are located in the north, central, and south portions of the Valley, respectively. The urban areas are surrounded by varied and productive ranches, orchards, and farms. Among the crops grown in significant quantities are tree fruits, nuts, berries, mint, grains, and hay. Livestock operations are also common, including the dairy and poultry industries.

The climate of the Valley is relatively mild throughout the year, characterized by cool, wet winters and warm, dry summers. The climatic conditions closely resemble the Mediterranean climates, which occur in California, although Oregon's winters are somewhat wetter and cooler. Growing seasons in the Willamette Valley are long, and moisture is abundant during most of the year (although summer irrigation is common).

Like the remainder of western Oregon, the Valley has a predominant winter rainfall climate. Typical distribution of precipitation includes about 50 percent of the annual total from December through February, lesser amounts in the spring and fall, and very little during summer. Rainfall tends to vary inversely with temperatures -- the cooler months are the wettest, the warm summer months the driest. Figure 1 shows NOAA climate stations in Zone 2, which were in operation during the 1961-1990 period. Figure 2 shows the Polk County region from the Oregon annual precipitation map

There is considerable variation in precipitation in the Valley, ranging from annual totals below 40 inches in the Portland area to upwards of 80 inches in the Cascade and Coast Range foothills. Elevation is the single most important determinant of precipitation totals. Table 1 shows a plot of monthly & annual average precipitation versus elevation for stations in the Valley, and indicates a strong correlation between the two. Even in the lower sections of the Valley the effects of elevation are pronounced. Portland, for example, at 21 feet above sea level, receives an average of 37.4 inches (30-year normal), while Salem (196 feet) receives 40.4 inches and Eugene (359 feet) receives 46.0 inches. Thus, a change of only 338 feet of elevation produces an increase of 23 percent above Portland's total. Table 2 list the average number of days with precipitation amounts exceeding certain thresholds.

Table 3 lists normal monthly temperature at stations in the area. Extreme temperatures in the Valley are rare. Days with maximum temperature above 90 deg F occur only 5-15 times per year on average, and below zero temperatures occur only about once every 25 years. Mean high temperatures range from the low 80's in the summer to about 40 deg F in the coldest months, while average lows are generally in the low 50's in summer and low 30's in winter. The mean growing season (days between 32 deg F temperatures) is 150-180 days in the lower portions of the Valley, and 110-130 days in the foothills (above about 800 feet). Table 6 lists the mean growing season for Zone 2.

Although snow falls nearly every year, amounts are generally quite low. Valley floor locations average 5-10 inches per year, mostly during December through February, although higher totals are observed at greater elevations in the foothills. Table 4 lists average monthly and annual snowfall totals for various stations.

Table 5 lists the median frost dates for Zone 2. Severe storms are rare in the Valley. Ice storms occasionally occur in the northern portions of the Valley, resulting from cold air flowing westward through the Columbia Gorge. High winds occur several times per year in association with major weather systems.

Relative humidity is highest during early morning hours, and is generally 80-100 percent throughout the year. Humidity is generally lowest during the afternoon, ranging from 70-80 percent during January to 30-50 percent during summer. Annual pan evaporation is about 40 inches, mostly occurring during the period April - October.

Winters are likely to be cloudy. Average cloud cover during the coldest months exceeds 80 percent, with an average of about 26 cloudy days in January (in addition to 3 partly cloudy and 2 clear days). During summer, however, sunshine is much more abundant, with average cloud cover less than 40 percent; more than half of the days in July are clear.

Tables 7 and 8 list average monthly and annual heating and growing degree days, respectively.

County Description

Established: Dec. 22, 1845
Population: 63,600
Area: 745 sq. mi.
Economy: Agriculture, forest products, manufacturing, electronics and education.
County Seat: Dallas

Polk County was created from the original Yamhill district in 1845, by the Provisional Legislature. It was named for then President James Knox Polk. The first county seat was at Cynthia Ann. City officials later changed its name to Dallas, after Vice-President George M. Dallas, and moved the community about a mile to improve its water supply. The first courthouse was at Cynthia Ann. A second courthouse burned in 1898 and was replaced with the present building, built with sandstone quarried three miles west of Dallas. A three-story office annex was completed in 1966. Polk County Human Services was consolidated in the newly acquired Academy Building in 1989. Traveling back roads in Polk County will reveal many attractions, from covered bridges and pleasant parks to vineyards, wineries, and bed and breakfast lodgings spotting the surrounding hills. Many roads meander through beautiful fertile valleys from the Willamette River to the timbered foothills of the Coast Range. Polk County was the primary destination of early wagon trains which took the southern route to Oregon. Cities located in Polk County include Dallas, Independence, Monmouth, Falls City and portions of Salem and Willamina.

(County information obtained from Oregon Blue Book)

Climate Tables (Polk County, Oregon)

Table 1. **Precipitation, Monthly and Annual Averages (1971-2000)** (back to top)

Name	Number	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Dallas 2 NE	2112	7.82	6.66	5.33	3.24	2.21	1.41	0.50	0.67	1.44	3.28	7.79	8.78	49.13
Falls City 2	2805	10.88	9.58	7.69	4.48	2.53	1.43	0.51	0.74	1.73	4.25	10.93	12.51	67.26

Table 2. **Average number of Days with Selected Precipitation Amounts, Dallas 2 NE, 1971-2000** **(back to top)**

Threshold	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
.01"or more	17.6	16.2	17.0	13.1	10.5	7.3	3.3	3.5	6.5	10.5	17.9	17.8	143.1
.10"or more	12.0	11.2	11.4	7.6	6.1	4.0	1.3	1.8	3.7	6.3	13.3	12.8	92.5
.50"or more	5.3	4.7	3.4	1.9	1.2	0.7	0.2	0.4	1.0	2.3	5.3	6.5	32.1
1.00"or more	2.0	1.5	0.9	0.3	0.3	0.1	0.1	0	0	0.6	1.8	2.5	9.1

Table 3. **Monthly and Annual Average Temperatures (deg F), Dallas 2 NE (1862), 1971-2000** (back to top)

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean max	45.3	49.7	55.2	60.4	66.9	73.0	80.9	81.5	76.7	64.7	50.7	44.2	62.4
Mean min	33.1	34.8	36.9	39.4	43.7	47.8	50.4	49.8	47.0	41.2	37.2	33.2	41.2
Mean temp	39.2	42.3	46.1	49.9	55.3	60.4	65.7	65.7	61.9	53.0	44.0	38.7	51.9
Extreme max	65	67	76	85	98	102	103	105	103	91	72	65	105
Extreme min	7	7	10	26	30	31	38	34	30	22	12	-2	-2
Mean number of days													
Max 90 or more	0	0	0	0	0.4	1.7	6.0	6.3	3.0	0.1	0	0	17.3
Min 32 or less	13.3	9.8	7.5	4.0	0.6	0	0	0	0.1	2.1	7.0	13.1	55.2
Max 32 or less	0.8	0.3	0	0	0	0	0	0	0	0	0.1	1.1	2.4
Min 0 or less	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1

Table 4**. Snowfall, Monthly and Annual Averages (1971-2000)** (back to top)

Name	Number	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Dallas 2 NE	2112	0.6	1.8	0.1	0	0	0	0	0	0	0	0.3	1.9	4.6
Falls City 2	2805	2.7	2.8	0.6	0.2	0	0	0	0	0	0	0.4	2.9	9.7

Table 5**. Median Spring and Fall Frost Dates, Dallas 2 NE, 1971-2000** (back to top)

Percentile	Last Date in Spring of Low Temperatures (deg F)				First Date in Fall of Low Temperatures (deg F)			
	24	28	32	36	24	28	32	36
10	1-Jan	7-Feb	8-Apr	29-Apr	8-Nov	29-Oct	1-Oct	9-Sep
20	19-Jan	19-Feb	11-Apr	3-May	13-Nov	2-Nov	8-Oct	18-Sep
50	4-Feb	14-Mar	26-Apr	21-May	13-Dec	12-Nov	18-Oct	28-Sep
80	19-Feb	8-Apr	9-May	30-May	29-Dec	5-Dec	3-Nov	13-Oct
90	2-Mar	19-Apr	20-May	4-Jun	31-Dec	12-Dec	11-Nov	16-Oct

Table 6. **Average Growing Season, Dallas 2 NE, 1971-2000** (back to top)

Percentile	Length of Time (Days) Between Occurrence of Temperatures (deg F)			
	24	28	32	36
10	265	199	143	112
20	290	219	151	113
50	316	246	181	136
80	325	276	204	148
90	350	291	208	163

Table 7. **Monthly and Annual Average Heating Degree Days (base 65°F), 1971-2000** (back to top)

Name	Number	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Dallas 2 NE	2112	777	623	571	440	291	151	48	43	116	353	612	792	4800
Falls City 2	2805	799	645	605	477	337	185	70	56	138	377	620	798	5127

Table 8. **Monthly and Annual Average Growing Degree Days (base 50°F), 1971-2000** (back to top)

Name	Number	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Dallas 2 NE	2112	4	8	22	72	194	327	500	505	374	144	18	3	2171
Falls City 2	2805	2	6	17	56	157	287	465	484	346	124	15	3	1962

Appendix B
Ash Creek Fish and Wildlife Assessment

APPENDIX B – ASH CREEK FISH AND WILDLIFE ASSESSMENT

Fish Species:	Age Class:	Native/ Non-Native:	Presence:	Range:	Seasonal Use:	Critical Habitat:	Limiting Factors:	Regulatory Requirements:	Listing Status:	Reference:	Comments:
Winter Steelhead	juvenile	non-native	confirmed	Lower N.Fork, mainstream	winter, spring	ideal temp (12.8° C), deep pools, off-channel habitat for refugia and feeding	warm water, cattle grazing, low water levels, irrigation diversion low dissolved oxygen, high turbidity	depends on land use plan	federal: threatened state: sensitive	#'s 1, 6	
Spring Chinook	juvenile	non-native	confirmed	Lower N.Fork, mainstream	spring	ideal temp (12.8° C), deep pools, off-channel habitat for refugia and feeding		depends on land use plan		#'s 1, 6	
Pacific Lamprey	all	?	suspected	?							
Cutthroat Trout	?	?	suspected	?							

Wildlife Species:	Native/ Non-Native:	Presence: (suspect/confirmed)	Use:	Listing Status:	Regulation:	Critical Habitat:	Reference:	Comments:
Band- Tailed Pigeon	native	confirmed	use the mineral pond to develop the young, accelerates development, significant number of birds use this habitat	sensitive	land use planning is considered in sensitive site	mineral spring located at T8S, R5W Section 11 SW corner of SE corner (Whiteaker Road)	#3	migratory species, migratory bird tree act (federal)
Ringneck Pheasant	non-native, introduced 1880	suspected	shrubs as nesting cover, protection from predators (domestic felines)	game bird protected			#3	eats grains and seeds
Valley Quail	native	confirmed	Shrub and riparian brush fields, oak savannahs				#3	
Morning Dove	native	confirmed	nesting, rear young	game bird protected				
Western Red-legged frog (Rana Aurora)	native	confirmed		sensitive		ponded areas with submerged vegetation	#3	
Western Pond Turtle	native	confirmed	wetlands and small ponds	state: threatened		small ponds, wetlands free of bullfrogs and bass, slow moving water, submerged aquatic vegetation, unfarmed nesting habitat	#'s 3,5	

NOTE:
Little of the Ash Creek basin has been surveyed by wildlife biologists due to access issues to private land, and a lack of funds.
Therefore, most information available on the Ash Creek basin is based on assumptions, sightings, and habitat suitability models.

	Organization:	Title:	Name/Author:	Phone #:	Email:
#1	ODFW	Fishiers Biologist	Steve Mamoyac	541-757-4186 x246	steven.r.mamoyac@state.or.us
#2	ODFW	Wildlife Biologist	Nancy Taylor	541-757-4186x226	
#3	ODFW	Wildlife Biologist	Will Hugh	503-378-6925x6925	
#4	Consultant	Wildlife Biologist	Paul Adamus	541-745-7092	adamus7@comcast.net
#5	Pacific Wildlife Research Institute	Wildlife Biologist	Dave Vesely	541-745-0240	dvesely@pwri.com
#6	Earth Design Consultants	Ecologist	Ralph Garono	541-757-7896	rgarono@earthdesign.com
#7	Adopt-A-Stream: Field Guide to the Pacific Salmon		Robert Steelquist		

COMPLETED 08/25/04

Appendix C
Permit Guidance

STATE WATER-RELATED PERMITS USER GUIDE

An Introduction to Water-Related Permits and Reviews Issued by Oregon State Agencies

Developed by the Water-Related Permit Process Improvement Team:

- Department of State Lands
- Department of Fish and Wildlife
- Department of Environmental Quality
- Water Resources Department
- Parks and Recreation Department
- Department of Geology and Mineral Industries
- Department of Land Conservation and Development
- Department of Consumer and Business Services

Comments on this guide should be directed to:

Kirk Jarvie, Oregon Department of State Lands
775 Summer St. NE, Suite 100, Salem, OR 97301-1279
(503) 986-5320 • kirk.jarvie@state.or.us
www.oregonstatelands.us

August 2012

State Water Related Permits User Guide

An Introduction to Water-Related Permits and Reviews Issued by Oregon State Agencies

Revision #1: February 2008

Revision #2: August 2012

Special Thanks to the Oregon Water Resources Department and Josh Spansail for coordinating and editing the August 2012 Guide

Comments on this User Guide can be directed to:

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Salem, OR 97301
(503) 986-5320
kirk.jarvie@state.or.us

Table of Contents

Section 1

Introduction

Section 1.1 Guidebook Overview and Organization

The purpose of the State Water-Related Permits User Guide is to provide a comprehensive, yet simple reference for the regulatory and nonregulatory programs that influence the permitting of projects in wetlands and waterways in Oregon. The information contained in this guide is designed to assist applicants in planning their water-related project to avoid last-minute surprises that may result in construction delays. This guide will help applicants identify:

- Which permits may be required for an activity
- The general application requirements and timelines for those permits
- How the requirements of related state agencies may influence a specific permit or project design

The guide is meant to be the first stop in planning a waterway project. It begins with an introduction that includes a description of the importance of wetland and waterway protection, an overview of the regulations involved at the local, state, and federal levels, and an illustration of how the various state regulatory authorities are inter-related. Section 2 describes the state agencies typically involved in water-related permitting in Oregon and presents information about each agency's permit and/or review programs. Section 3 provides examples of the most common water-related project types, design considerations, best management practices, and links to important resources.

Section 1.2 Why Are Activities in Wetlands and Waterways Regulated?

The protection, conservation, and best use of the water resources of Oregon are matters of utmost public importance. Waterways such as streams, rivers, lakes, bays, and estuaries not only provide water for agricultural, domestic, and industrial use, but also provide habitats for aquatic life, avenues for transportation and commerce, and sites for many forms of public recreation. Wetlands provide water storage for flood protection, filtering of pollutants, and habitats for many plant, fish, and wildlife species. Waterways and wetlands are vital to the economy and well being of Oregonians.

For this reason, we all depend on the health of our wetlands and waterways. To provide for the best possible use of water resources in this state, we must strike a balance between water resource protection and human use. This is the central purpose of Oregon's regulations that govern activities in waterways, wetlands, and their riparian areas.

Section 1.3 An Overview of Wetland and Waterway Regulation in Oregon

1.3.1 Local Regulation

When planning a project in wetlands or waterways, you should check first with the applicable local planning department to determine what, if any, city or county regulations apply. Some cities have developed maps that show many of the wetlands and waterways within their community and have developed local ordinances regulating activities in or near those features. Local planning departments may also be able to help you understand the range of state and/or federal permits required for your water-related project.

1.3.2 State Regulation

In Oregon, protecting our natural resources and the benefits they provide us means a variety of permits and reviews from several state agencies may be required for residential, commercial, industrial, or public works projects in wetlands and waterways. The primary goal of these requirements is to avoid and minimize impact to Oregon's waters where possible and compensate (or mitigate) where impacts cannot be avoided. At first glance, the process of identifying and obtaining your state permitting needs for water-related projects looks complicated and difficult to understand. That is why this *State Water-Related Permits User Guide* was written – to help you understand the state permits needed for your water-related project.

In Oregon, the removal-fill permit, administered by the Department of State Lands, is the most common state requirement for projects in wetlands or waterways. It often serves as the venue for coordinating your project's other state water-related permitting and review requirements. You may want to begin your reading here as the foundation to understanding the state permitting requirements for your water-related project.

1.3.3 Federal Regulation

In many cases, proposed activities in wetlands or waterways in Oregon will additionally require a permit from the federal government under the Clean Water Act (called the "Section 404 permit") or the Rivers and Harbors Act (called the "Section 10 Permit"). The federal permitting program is administered by the U.S. Army Corps of Engineers. Currently, the Oregon Department of State Lands (for the state removal-fill permit) and the U.S. Army Corps of Engineers (for the "Section 404" or "Section 10" permit) use a joint permit application form so that applicants need to fill out just one application to obtain both permits. **However, projects require separate authorizations from both agencies before proceeding,** and each agency may require additional information through their respective application processing periods. For more information on the federal permit program for activities in wetlands and waterways, go to the U.S. Army Corps of Engineers, Portland District Regulatory Program Web site: Regulatory Program - Portland District - U.S. Army Corps of Engineers.

Quick Reference: State Permits and Reviews for Common in-Water Activities

The following matrix is a quick guide to state agency permits or reviews that are, or may be, required for some common in-water activities. This matrix is a preliminary tool for assessing state permit/review needs and should not be used as a definitive assessment of permit requirements for your project. If your in-water project does not match one of the common activities listed below, please contact the Department of State Lands resource coordinator serving your county for further guidance.

Yes = typically required for most projects in waterways or wetlands.

Maybe = sometimes required depending on whether the activity is located in an area regulated by the particular program.

Agency	Program	Common In-water Activities							
		Streambank stabilization	Small-scale recreational placer mining	Wetland fills & excavations	Bridges and culverts	Piling projects	Navigational maintenance dredging	Wetland restoration stream restoration	Dams & impoundments
DSL	Removal-Fill Permit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Proprietary approval	Maybe			Maybe	Maybe	Maybe	Maybe	Maybe
DEQ	Stormwater Permit			Maybe	Maybe			Maybe	
	Water Quality Certification	Yes		Yes	Yes	Yes	Yes	Yes	Yes
ODFW	Fish passage requirements				Yes			Maybe	Yes
	In-water timing guidelines	Yes	Yes		Yes	Yes	Yes	Maybe	Yes
	Habitat mitigation recommendations	Yes		Yes	Yes	Yes	Yes		Yes
	Scientific Take Permit	Maybe			Maybe			Maybe	Maybe
	In-water Blasting Permit				Maybe		Maybe	Maybe	Maybe
	Fish screening requirements						Maybe		Maybe
OPRD	Ocean Shore Permit	Maybe			Maybe	Maybe	Maybe	Maybe	Maybe
	Scenic Waterway Notification	Maybe	Not Allowed	Maybe	Maybe	Maybe	Maybe	Maybe	Maybe
	Archeological review	Yes		Yes	Yes	Yes	Yes	Yes	Yes
WRD	Water Use Permit							Maybe	Yes
DLCD	Coastal Zone Certification	Maybe		Maybe	Maybe	Maybe	Maybe	Maybe	Maybe

State Agency acronyms:

DEQ	Oregon Department of Environmental Quality	**ODF**	Oregon Department of Forestry
DLCD	Oregon Department of Land Conservation and Development	**ODFW**	Oregon Department of Fish and Wildlife
DOGAMI	Oregon Department of Geology and Mineral Industries	**OPRD**	Oregon Parks and Recreation Department
DSL	Oregon Department of State Lands	**SHPO**	State Historic Preservation Office
ODA	Oregon Department of Agriculture	**WRD**	Oregon Water Resources Department

Appendix D
Plan Implementation

ASH CREEK WATER CONTROL DISTRICT - WORK PLANNING SESSION - JANUARY 2016

Task Number/Description	Timeline	Comments
Part 1 - Information and Education		
1A - Develop a comprehensive understanding of the drainage basin characteristics and stream response to significant rain events		
1.A.1. Revise hydraulic model geometry.	As Needed	
1.A.2. Conduct wet weather inspections during storm events	Annually	
1.A.3. Conduct dry weather inspections to evaluate channel conditions	Annually	
1.A.4. Maintain a record of maintenance and/or physical improvements	Update Annually	
1B - Develop a working knowledge of the natural resource issues along the stream.		
1.B.1. Maintain information on fish/wildlife species known to inhabit creek along with the needs of each	As Needed	
1C - Provide public education to increase awareness of flood management and permitting issues.		
1.C.1. Develop information regarding flood management issues for distribution to public	As Needed	Web
1.C.2. Provide periodic reports on current projects and upcoming work to district taxpayers	As Needed	Web
1.C.3. Maintain resources for property owners wishing to perform work in or near the stream	As Available	Web
1.C.4. Maintain District website	As Needed	
1.C.5. Develop informational pamphlet on District goals.	2016	
1D - Provide director training opportunities to maximize board effectiveness.		
1.D.1. Provide new Director Orientation to include Director roles/responsibilities, District policies and procedures, and 10-year plan	1x per term	
1.D.2. Provide continuing education opportunities for Directors pertaining to Administrative and/or Technical aspects of District	As Needed	
1.D.3. Involve Directors periodically in specific work tasks to maintain connection with District activities	As Available	
1.D.4. Provide opportunities for Director field visits to enhance understanding of relevant issues or projects	As Available	
1E - Maintain accurate records of District boundaries and landowners.		
1.E.1. Maintain accurate map of District boundaries	As Needed	
1.E.2. Maintain list of tax lots and owners within District boundaries	As Needed	
1.E.3. Maintain list of tax lots and owners adjacent to stream within District boundaries	As Needed	
1.E.4. Maintain list of tax lots and owners where District holds easements	As Needed	
1F - Develop resources regarding best management practices for physical improvements.		
1.F.1. Develop/maintain a list of resources containing best management practices and design guidelines for stream-related work	Annually	
1.F.2. Maintain updated list on District website along with links to available documents	Annually	

Task Number/Description	Timeline	Comments
PART 2 - Physical/Maintenance Activities:		
2A - Provide routine maintenance activities to protect, restore, or improve hydraulic capacity.		
2.A.1. Continue on-going control of target vegetation species	Annually	
2.A.2. Provide physical removal of trees, brush, and other obstructions where required	As Needed	
2.A.3. Maintain ongoing nutria control program to reduce temperature, bacteria, mercury and erosion.	As Needed	
2B - Perform in-stream work activities where improvements are necessary to protect, restore, or improve flood management objectives.		
2.B.1. Provide stream bank armoring/reinforcement in areas of significant erosion	As Required/Available	
2.B.2. Modify channel geometry/location where necessary to protect property or improve hydraulic characteristics	As Required/Available	
2.B.3. Participate in physical improvements that align with District Mission	As Required/Available	
2.B.4. Participate in project(s) intended to mitigate flooding where appropriate.	As Required/Available	
2C - Perform physical improvements outside the banks of the stream where these improvements will either protect property or lower peak flood levels.		
2.C.1. Participate in developing wetlands, expanding floodplain, or constructing ponds where these projects function as flood attenuation	As Required/Available	
2.C.2. Participate in projects to reduce runoff and/or sediment transport to Ash Creek.	As Required/Available	
2D - Participate in projects intended to relocate "at-risk" infrastructure or property outside of the 100-yr flood plain.		
2.D.1. Participate in project to raise elevation of Gun Club Road.	As Required/Available	
2.D.2. Participate in project to raise elevation of Godsey Road Bridge.	As Required/Available	
2E - Participate in cost-sharing projects with individual landowners or other agencies when these projects support District flood management objectives.		
2.E.1. Provide property owner incentive to plant trees in riparian zone according to District guidelines	As Required/Available	
2.E.2. Provide cost sharing opportunities for landowners wishing to perform stream bank restoration according to BMPs	As Required/Available	
2.E.3. Participate in projects that improve access for maintenance and/or inspection	As Required/Available	
2.E.4. Provide cost sharing opportunities to landowners or other agencies who are performing work that furthers the goals and objectives of the District.	As Required/Available	

Task Number/Description	Timeline	Comments
PART 3 - Policy Work		
3A - Acquire easements, when/where appropriate, along critical reaches of the stream to reduce encroachment and provide access for inspection, maintenance and improvements.		
3.A.1. Maintain list of critical reaches of the stream.	As Required/Available	
3.A.2. Acquire new easements or access licenses in critical areas	As Required/Available	
3B - Cooperate with regional planning officials and regulatory agencies in the creation or modification of floodplain development policy.		
3.B.1. City of Dallas – Flood map revisions, storm water retention policy, floodplain development ordinance, stormwater master plan	As Required/Available	
3.B.2. City of Monmouth – Storm water retention policy, floodplain development ordinance, stormwater master plan	As Required/Available	
3.B.3. City of Independence – Storm water retention policy, floodplain development ordinance, stormwater master plan	As Required/Available	
3.B.4. Polk County – Stormwater retention policy, floodplain development ordinance	As Required/Available	
3C - Cooperate with regional planning officials and regulatory agencies in floodplain mapping within the Ash Creek watershed.		
3.C.1. Provide support for flood map revisions within the Ash Creek watershed	As Required/Available	
3D - Establish productive working relationships with other regional agencies to improve coordination and share information/assistance.		
3.D.1. Periodically send District representative to other regional agency meetings to discuss flood management issues	As Required/Available	
3.D.2. Develop interagency information-sharing agreements and provide technical assistance to local, state or federal agencies conducting stream-related work in the watershed.	As Required/Available	
3E - Perform periodic review of District Boundaries		
3.E.1. Consider adjustments to District Boundaries, as appropriate.	As Required/Available	