



# Skagit Basin

*Comprehensive Irrigation District  
Management Plan  
October 2006*

*Prepared for  
Western Washington Agricultural Association*

**HDR**

# Skagit Basin Comprehensive Irrigation District Management Plan



Prepared for:

**Western Washington Agricultural Association**

Prepared by:

**HDR Engineering, Inc.**

With Support from:

**Marine View Fisheries Consulting, Inc.**

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**HDR**

# Participants

## Western Washington Agricultural Association

Mike Shelby	Executive Director
Mike Rundlett	CIDMP Project Coordinator
Tom Paulus	WWAA Board Member
Brad Smith	District Representative

## Skagit Basin CIDMP Technical Advisory Team

Annette Bryan	United States Environmental Protection Agency
Linda Crerar	Washington State Department of Agriculture
Andy Dunn	Washington State Department of Ecology
Dave Garland	Washington State Department of Ecology
Carolyn Kelly	Skagit Conservation District
Andrea LaTier	United States Fish and Wildlife Service
Sally Lawrence	Washington State Department of Ecology
Randel Perry	United States Army Corps of Engineers
Tim Romanski	United States Fish and Wildlife Service
Tom Sibley	National Marine Fisheries Service
Gary Stoyka	Skagit County Department of Public Works
Alison Studley	Skagit Regional Fisheries Enhancement Group
Brian Williams	Washington State Department of Fish and Wildlife
Greg Wright	Washington State Department of Agriculture

## HDR Engineering, Inc.

Robert Wubbena, P.E.	Project Principal
Robert Powell	Project Manager
Jerry Louthain, P.E.	Project Engineer
Rona Spelleccacy	Project Planner

## Marine View Fisheries Consulting, Inc.

Patty Michak	President, Senior Fisheries Biologist
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## Table of Contents

<b>Participants</b> .....	<b>i</b>
<b>Table of Contents</b> .....	<b>ii</b>
<b>Acronyms and Abbreviations</b> .....	<b>viii</b>
<b>Glossary</b> .....	<b>xi</b>
<b>Executive Summary</b> .....	<b>ES-1</b>
<b>Section 1 – Introduction</b> .....	<b>1-1</b>
1.1 CIDMP Process and Objectives .....	1-1
1.2 CIDMP Planning Area .....	1-3
1.2.1 Physical Setting .....	1-5
1.2.2 Water Resources and Hydrology .....	1-5
1.3 Key Planning Parameters.....	1-13
1.3.1 Assurances Sought From State and Federal Agencies .....	1-13
1.3.2 Covered Activities.....	1-15
1.3.3 Covered Species .....	1-15
1.4 Organization of CIDMP Document .....	1-18
<b>Section 2 – Facilities, Operations, and Needs</b> .....	<b>2-1</b>
2.1 District History and Organization .....	2-1
2.2 Drainage and Irrigation Related Facilities, Operations, and Maintenance.....	2-3
2.2.1 Drainage Facilities and Operation.....	2-3
2.2.2 Irrigation Facilities and Operation .....	2-6
2.2.3 Maintenance of Drainage and Irrigation Facilities .....	2-7
2.2.4 Voluntary Management Practices and Environmental Programs.....	2-10
2.3 Land Use and Land Cover .....	2-12
2.3.1 Skagit County Land Use Designations.....	2-12
2.3.2 Agriculture in Skagit County.....	2-15
2.3.3 Agriculture in the Planning Area.....	2-16
2.4 Irrigation Needs in the Planning Area .....	2-17
2.4.1 Estimated Existing Water Use .....	2-17
2.4.2 Existing Water Rights, Water Right Claims, and Pending Applications .....	2-20
2.4.3 Comparison of Existing Water Rights and Estimated Water Use .....	2-25
2.4.4 Future Irrigation Needs .....	2-26
<b>Section 3 – Baseline Conditions</b> .....	<b>3-1</b>
3.1 Water Quality .....	3-1
3.1.1 Water Quality Regulatory Framework .....	3-1

3.1.2	Washington State Water Quality Assessment.....	3-2
3.1.3	Water Quality Monitoring .....	3-7
3.1.4	Samish Watershed Fecal Coliform TMDL .....	3-10
3.1.5	Pesticides .....	3-10
3.2	Covered Species and Habitat Types .....	3-11
3.2.1	Species Proposed for Coverage .....	3-11
3.2.2	Habitat Types in the Planning Area.....	3-11
3.2.3	Specific Watercourse Conditions within the Planning Area .....	3-20
3.2.4	Summary of Watercourse Conditions within WRIA 3 .....	3-32
3.2.5	Summary of Fish Species Presence and Habitat Use Type within Planning Area Watercourses .....	3-35
3.2.6	Biological Information for Covered Species - Life Histories, Distribution and Critical Habitat .....	3-39
<b>Section 4 – Existing Impacts .....</b>		<b>4-1</b>
4.1	Overview of Impacts.....	4-1
4.2	Impacts Related to Water Diversion and Withdrawal .....	4-1
4.2.1	Impacts on Flow.....	4-1
4.2.2	Impacts on Water Quality .....	4-5
4.2.3	Impacts on Habitat Elements and Covered Species.....	4-5
4.2.4	Data Gaps.....	4-6
4.3	Impacts Related to Drainage Network .....	4-6
4.3.1	Impacts on Flow.....	4-6
4.3.2	Impacts on Water Quality .....	4-6
4.3.3	Impacts on Habitat Elements and Covered Species.....	4-8
4.3.4	Data Gaps.....	4-9
4.4	Impacts Related to Tide Gates .....	4-9
4.4.1	Impacts on Flow.....	4-9
4.4.2	Impacts on Water Quality .....	4-9
4.4.3	Impacts on Habitat Elements and Covered Species.....	4-9
4.4.4	Data Gaps.....	4-10
4.5	Impacts of Drainage Related Facilities .....	4-10
4.5.1	Impacts on Flow.....	4-10
4.5.2	Impacts on Water Quality .....	4-11
4.5.3	Impacts on Habitat Elements and Covered Species.....	4-11
4.5.4	Data Gaps.....	4-13
4.6	Impacts of Maintenance Activities .....	4-13
4.6.1	Impacts on Flow.....	4-14
4.6.2	Impacts on Water Quality .....	4-14
4.6.3	Impacts on Habitat Elements and Covered Species.....	4-14
4.7	Impacts of Irrigation Related Facilities.....	4-15
4.7.1	Impacts on Flow.....	4-15

4.7.2	Impacts on Water Quality .....	4-15
4.7.3	Impacts on Habitat Elements and Covered Species.....	4-15
4.7.4	Data Gaps.....	4-16
4.8	Impacts Related to On-Farm Activities .....	4-16
4.8.1	Impacts on Flow.....	4-16
4.8.2	Impacts on Water Quality .....	4-17
4.8.3	Impacts on Habitat Elements and Covered Species.....	4-18
4.8.4	Data Gaps.....	4-20
<b>Section 5 – Action Plan.....</b>		<b>5-1</b>
5.1	Overview of Potential Actions.....	5-1
5.2	Facility Improvements .....	5-2
5.2.1	Improve Irrigation Efficiency .....	5-2
5.2.2	Water Storage.....	5-4
5.2.3	Install, Repair, or Upgrade Fish Screens.....	5-4
5.2.4	Improve or Provide Fish Passage .....	5-5
5.2.5	Restore Riparian Areas.....	5-5
5.2.6	Minimize Bank Armoring .....	5-6
5.2.7	Reduce Diversions from Small Watercourses .....	5-6
5.3	Operational Changes .....	5-6
5.3.1	Conversion from Surface to Groundwater .....	5-6
5.3.2	Imported Water .....	5-7
5.3.3	Reclaimed Water .....	5-7
5.3.4	Irrigation Scheduling .....	5-8
5.3.5	Agricultural BMPs .....	5-8
5.3.6	Improve Riparian Buffer Quality .....	5-8
5.3.7	Reduce Pesticide Use.....	5-9
5.3.8	Improve Intertidal Habitat.....	5-9
5.4	Policy Changes .....	5-10
5.4.1	Changes to Existing Water Rights.....	5-10
5.4.2	New Water Rights.....	5-10
5.4.3	District Capital Improvement Plan (CIP).....	5-11
5.4.4	Public Education and Outreach Program .....	5-11
5.5	Information Collection and Monitoring Programs.....	5-12
5.5.1	Irrigation Flow Monitoring .....	5-12
5.5.2	Groundwater-Surface Water Connectivity Study .....	5-12
5.5.3	Samish Watershed Fecal Coliform TMDL .....	5-12
5.5.4	Water Quality Monitoring.....	5-13
5.5.5	Drainage Flow Monitoring .....	5-13
5.5.6	Fish Screen and Fish Passage Inventory.....	5-13
<b>Section 6 – Implementation .....</b>		<b>6-1</b>

6.1	Overview.....	6-1
6.2	Organizational Structure.....	6-1
6.2.1	Board of Joint Control Option.....	6-1
6.2.2	Skagit PUD Irrigation Division Option.....	6-4
6.3	Implementing Agreements .....	6-6
6.3.1	Implementing Agreements with Federal Services.....	6-6
6.3.2	Water Quality Coverage Requested from Ecology .....	6-8
6.4	Potential Funding Sources .....	6-8
6.5	Adaptive Management .....	6-9
6.5.1	Monitoring Progress toward CIDMP Implementation.....	6-10
6.5.2	Assessing Effectiveness of CIDMP Implementation .....	6-10

**References..... R-1**

**List of Tables**

Table 1-1.	Monthly Climate Summary near Mount Vernon, WA .....	1-5
Table 1-2.	Watercourses in the Planning Area by Classification.....	1-7
Table 1-3.	Average Monthly Skagit River Streamflows.....	1-10
Table 1-4.	Skagit River Instream Flow Requirements.....	1-11
Table 1-5.	Average Monthly Samish River Streamflows.....	1-12
Table 1-6.	Comparison of Alternative ESA Compliance Pathways.....	1-14
Table 1-7.	Species and Selection Criteria for Endangered Species Act Coverage in the Planning Area.....	1-16
Table 1-8.	Listed Species and Species of Concern for CIDMP Coverage .....	1-17
Table 2-1.	Summary Description of Drainage/Irrigation Districts in the Planning Area.....	2-3
Table 2-2.	Land Use Designations in Skagit County, WA.....	2-13
Table 2-3.	Land Use Designations in the Planning Area .....	2-13
Table 2-4.	Summary of Historical and Current Crop Acreage in Skagit County .....	2-15
Table 2-5.	2005 Harvested and Irrigated Acres by Crop in the Planning Area.....	2-16
Table 2-6.	2005 Irrigated Acres in the Planning Area by Type of Irrigation Equipment ....	2-17
Table 2-7.	Estimated Crop Irrigation Requirements (CIRs) in the Planning Area.....	2-18
Table 2-8.	Estimated 2005 Total Irrigation Requirement (TIR) by Crop in the Planning Area .....	2-20
Table 2-9.	Summary Description of Recorded Water Rights for Irrigation in the Planning Area .....	2-21
Table 2-10.	Summary Description of Potentially Valid Water Right Claims in the Planning Area .....	2-24
Table 2-11.	Summary Description of Pending Water Right Applications for Irrigation in the Planning Area .....	2-24

Table 2-12.	Comparison of Estimated Crop Water Use to Water Rights, Water Right Claims, and Pending Applications.....	2-26
Table 3-1.	Washington State Surface Water Quality Standards.....	3-2
Table 3-2.	Category 5 Water Bodies in the Planning Area.....	3-4
Table 3-3.	Water Quality Monitoring in the Planning Area and Adjoining Marine Waters.....	3-7
Table 3-4.	Covered Species and Species of Concern.....	3-12
Table 3-5.	Summary of Estuarine and Nearshore Conditions in WRIA 3.....	3-33
Table 3-6.	Criteria for Rating Estuarine Habitat Conditions.....	3-33
Table 3-7.	Summary of WRIA 3 Freshwater Limiting Factors Results.....	3-34
Table 3-8.	Criteria for Rating Limiting Factors Conditions - Summary of WRIA 3 Freshwater Limiting Factors Results.....	3-34
Table 3-9.	Water Bodies within the Planning Area and Fish Species Presence.....	3-35
Table 3-10.	Water Bodies within the Planning Area and Fish Habitat Use Type.....	3-37
Table 3-11.	Summary of Species Presence Timing in Relation to Agricultural Activities....	3-67
Table 4-1.	Overview of Potential Impacts.....	4-2
Table 4-2.	Summary of Water Diversion and Withdrawal in the Planning Area.....	4-3
Table 4-3.	Comparison of Irrigation Surface Water Diversions within the Planning Area and Streamflow in the Skagit River.....	4-4
Table 4-4.	Comparison of Irrigation Surface Water Diversions within the Planning Area and Streamflow in the Samish River.....	4-4
Table 4-5.	Summary of Irrigation Surface Water Diversions from Watercourses with Fish Presence.....	4-16
Table 5-1.	Overview of Potential Actions.....	5-2
Table 5-2.	Estimate of Water Savings with Improved Irrigation Efficiency in the Planning Area.....	5-3

### **List of Exhibits**

Exhibit 1-1.	CIDMP Planning Area.....	1-4
Exhibit 1-2.	Watercourses In Planning Area by Classification.....	1-9
Exhibit 2-1.	Legal Boundaries of Districts in Planning Area.....	2-2
Exhibit 2-2.	Drainage Related Facilities in Planning Area.....	2-4
Exhibit 2-3.	Trash Rack on Big Indian Slough.....	2-5
Exhibit 2-4.	Tide Gates and Activated Pump.....	2-5
Exhibit 2-5.	Tide Gates and Bridge on Edison Slough.....	2-6
Exhibit 2-6.	Specialized Mower Bucket.....	2-8
Exhibit 2-7.	Ditch Cleaning with Mower Bucket.....	2-8
Exhibit 2-8.	Land Use Designations in Planning Area.....	2-14
Exhibit 2-9.	Recorded Water Right Certificates and Permits in Planning Area.....	2-22



Exhibit 3-1.	2004 Washington State Water Quality Assessment .....	3-6
Exhibit 3-2.	Wetlands in Planning Area .....	3-15
Exhibit 3-3.	Presence and Status of Eelgrass Beds in WRIA 3 .....	3-16
Exhibit 3-4.	Shoreline Modifications in WRIA 3 .....	3-17
Exhibit 3-5.	Shoreline Modifications in Skagit Bay .....	3-18
Exhibit 3-6.	Shoreline Riparian Conditions in WRIA 3 .....	3-19
Exhibit 3-7.	A Bald Eagle Observed During a Site Tour of the Planning Area .....	3-40
Exhibit 3-8.	Dolly Varden/Bull Trout Distribution in Planning Area.....	3-44
Exhibit 3-9.	Designated Critical Habitat for Puget Sound Bull Trout in Planning Area .....	3-45
Exhibit 3-10.	Chinook Salmon Distribution in Planning Area .....	3-47
Exhibit 3-11.	Critical Habitat for Puget Sound Chinook Salmon ESU – Lower Skagit Sub-basin in Planning Area.....	3-50
Exhibit 3-12.	Identified Primary Constituent Elements Habitat for the Puget Sound Chinook Salmon ESU .....	3-51
Exhibit 3-13.	Steelhead Trout Distribution in Planning Area .....	3-53
Exhibit 3-14.	Coho Salmon Distribution in Planning Area.....	3-54
Exhibit 3-15.	Pink Salmon Distribution in Planning Area .....	3-56
Exhibit 3-16.	Chum Salmon Distribution in Planning Area.....	3-57
Exhibit 3-17.	Sockeye Salmon Distribution in Planning Area .....	3-59
Exhibit 3-18.	Cutthroat Trout Distribution in Planning Area .....	3-61
Exhibit 3-19.	Primary Area of Occurrence of Southern Resident Killer Whales .....	3-65

## Acronyms and Abbreviations

AFW	Agriculture, Fish, and Water
afy	acre-feet per year
BJC	Board of Joint Control
BMP	Best Management Practice
CAO	Critical Areas Ordinance
cfs	cubic feet per second
cfu	coliform unit
CIDMP	Comprehensive Irrigation District Management Plan
CIR	Crop Irrigation Requirement
Corps	United States Army Corps of Engineers
CWA	Clean Water Act
DMA	Drainage Maintenance Agreement
DMP	Drainage Maintenance Plan
DOH	Department of Health (Washington State)
E	irrigation efficiency
Ecology	Washington State Department of Ecology
EES	Economic and Engineering Services, Inc.
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESHB	Engrossed Substitute House Bill
ESSHB	Engrossed Second Substitute House Bill
ESU	evolutionarily significant unit
FC	Federal Candidate
FE	Federally Endangered
FRIMA	Fisheries Restoration and Irrigation Mitigation Act
FT	Federally Threatened
GMI	Growth Management Indicators
gpm	gallons per minute
HCP	Habitat Conservation Plan
HDR	HDR Engineering, Inc.
HPA	Hydraulic Project Approval
HSC	Hydrologic Services Company
LLID	Longitude Latitude Identifier

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mL	milliliter
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NF	North Fork (Skagit River)
NOAA Fisheries	National Oceanic and Atmospheric Agency Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
POD	Point of Diversion
POW	Point of Withdrawal
PT	Proposed Threatened
PUD	Public Utility District #1 of Skagit County
Qa	quantity – annual amount (afy)
Qi	quantity – instantaneous rate (cfs)
RCW	Revised Code of Washington
RM	river mile
SEPA	State Environmental Policy Act
SF	South Fork (Skagit River)
SFEG	Skagit Fisheries Enhancement Group
SoC	Species of Concern
SRSC	Skagit River System Cooperative
SRT	self-regulating tide gate
TAT	Technical Advisory Team
TIR	Total Irrigation Requirement
TMDL	Total Maximum Daily Load
U.S.C	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WAC	Washington Administrative Code
WCC	Washington State Conservation Commission
WDFW	Washington Department of Fish and Wildlife
WRCC	Washington Regional Climate Center
WRIA	Water Resource Inventory Area
WRTS	Water Right Tracking System

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WSDA	Washington State Department of Agriculture
WSUCE	Washington State University Cooperative Extension
WWAA	Western Washington Agricultural Association
WWTIT	Western Washington Treaty Indian Tribes

## Glossary

acre-foot	The volume of water necessary to cover 1 acre of surface area to a depth of 1 foot (equal to 43,560 cubic feet or about 325,850 gallons).
adfluvial	Life history strategy of fish in which spawning by adults and rearing of juveniles occurs in streams, but sub-adults and adults live in lakes or reservoirs.
ammocoetes	The wormlike larval form of the lamprey that is without eyes or teeth.
anadromous fish	Fish that hatch in fresh water, migrate to the ocean to grow and mature, then return to fresh water to reproduce and spawn.
Annual Quantity (Qa)	The amount of water associated with a water right on a yearly basis.
anthropogenic	Effects or processes that are derived from human activities, as opposed to effects or processes that occur in the natural environment without human influences.
bankfull elevation	The level at which water begins to leave the channel and move into the floodplain; it is reached at a discharge that generally has a recurrence interval of 1 to 2 years.
bank hardening	The process of installing riprap or other hard materials to stabilize a stream channel.
Best Management Practices	Policies, practices, procedures, or structures implemented to minimize or prevent the adverse environmental effects on surface water quality. BMPs are generally directed at non-point pollution and are often voluntary. Typical agricultural BMPs include strip cropping, terracing, contour stripping, grass waterways, animal waste structures, ponds, minimum tillage, grass and naturally vegetated filter strips, and proper nutrient application measures.
cetacean	The order of mammals that includes whales, dolphins, and porpoises.
covered species	A species covered under the CIDMP.
demersal fish	Fish that live near the bottom of a body of water.

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dissolved oxygen	The amount of air that is entrained in water. When the organic load in water is high (due to sewage, detritus stirred up by dredging, etc.), nearly all the dissolved oxygen can be used up by bacteria, leading to anaerobic conditions that may be detrimental to aquatic species.
escapement	Fish that have survived natural and fishing mortality to constitute the spawning population; a term applied to salmon and searun trout that survive their freshwater and saltwater life stages and return to spawn to complete a life cycle.
estuary	Part of a river or stream that has an unimpaired connection with salt water; e.g., salt marshes, bays, harbors, and intertidal areas.
eutrophication	The enrichment of an ecosystem with chemical nutrients, typically compounds containing nitrogen or phosphorus. Eutrophication is considered a form of pollution because it promotes plant growth, favoring certain species over others and forcing a change in species composition. In aquatic environments, enhanced growth of choking aquatic vegetation disrupts normal functioning of the ecosystem.
evolutionarily significant unit	A population or group of populations inhabiting a defined geographical area that comprises a unique segment of the species; a distinct population, reproductively isolated from other populations and important to the evolutionary legacy of the species.
fecal coliform	Bacteria that are considered indicators of fecal contamination.
filter strip	An area seeded with close-growing or sod-forming grass in an area where runoff leaves a field. Filter strips are designed to filter out the sediment, organic material, nutrients, and chemicals carried in runoff water to protect watercourses, streams, ponds, and lakes.
fishway	Structures placed on or around man-made barriers (such as dams and weirs) to assist the natural migration of fish.
fluvial fish	Fish in which spawning by adults and rearing of juveniles occurs in tributaries, but the sub-adults and adults occupy habitats in larger streams or main stem rivers.
forage fish	Small fish which breed prolifically and serve as food for predatory fish.
fry	Young salmonids that have absorbed their yolk sac, up to the time they are about 2 inches long.
hydraulic continuity	The interconnection between groundwater and surface water sources.
impervious surface	A surface that water cannot penetrate.

Instantaneous Rate (Qi)	The diversion or withdrawal rate associated with a water right, measured in cubic feet per second (cfs) for surface water and gallons per minute (gpm) for groundwater.
instream flow	The amount of water flowing in a stream, typically measured in cubic feet per second, at a specific location for a defined time, and influenced by many factors such as rainfall, temperature, season, groundwater levels, and vegetative cover. Instream flow rules define the streamflows needed to protect and preserve fish, wildlife, and recreation.
listed species	An animal or plant species that has been placed on the federal list of endangered and threatened wildlife and plants.
macrophyte	A rooted aquatic plant.
macrophthalmia	The juvenile phase of lampreys.
mean lower low-water (MLLW)	The average of all the lower low-water heights of the two daily tidal levels.
natal	Refers to the location where a fish was hatched and reared.
nutrient loading	The concentration of nutrients (nitrogen and phosphorus) entering an ecosystem. Nutrient loading can occur when runoff enters a watercourse, affecting water quality and aquatic life.
organochlorines	A diverse group of chemicals manufactured for industrial and agricultural purposes, such as PCBs and DDT, as well as unintentional byproducts of industrial and combustion processes, such as the dioxins (PCDDs) and furans (PCDFs).
overstory	The uppermost layer of foliage that forms a forest canopy.
palustrine wetlands	Freshwater wetlands that are supported through groundwater interactions or by surface waters, including inland marshes and swamps as well as bogs, fens, and floodplains.
Planning Area	Approximately 70,000 acres of fertile farmland, commonly referred to as the Skagit and Samish Deltas, located in the western portion of Skagit County, Washington, and bounded by the towns of Sedro-Woolley, Burlington, and Mount Vernon on the east, and Samish and Padilla Bays and the Swinomish Channel on the west.
prey base	The prey species that support a predator; for example, minnows are part of the prey base of predatory fishes.

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primary constituent elements (PCEs)	Those habitat components that are essential for the primary biological needs of foraging, reproducing, rearing of young, dispersal, genetic exchange, or sheltering.
reach	A portion of a stream's length.
receiving water	A water body such as a stream, river, lake, or ocean that receives runoff.
riparian	Of or relating to the banks of a watercourse.
riprap	Rock material used to stabilize slopes and/or stream channels.
salinization	The buildup of salts in the soil, which can lead to levels that are toxic for plants.
salmonids	Members of the fish family <i>Salmonidae</i> , including salmon, trout, and chars.
the Services	NOAA Fisheries and USFWS.
smolt	A sub-adult salmonid that is migrating from fresh water to salt water.
smoltification	The physiological adaptation of a salmonid from living in fresh water to living in salt water.
species of concern	An informal term, not defined in the federal Endangered Species Act. The term commonly refers to species that are declining or appear to be in need of concentrated conservation actions, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act (ESA).
sub-irrigation	A method of raising the water table to allow the soil to be moistened from below the plants' root zone.
substrate	The surface beneath. In the case of a stream, the streambed material.
take	A technical term from the federal Endangered Species Act defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."



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Total Maximum Daily Load (TMDL)	A calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the State has designated. The calculation must also account for seasonal variation in water quality.
turbidity	A condition in water caused by the presence of suspended matter, which may impart a visible haze or cloudiness to the water. Turbidity is typically determined through measurements of light scattering.
V-ditch	A seasonal ditch that is typically used in subtidal areas to drain ponded surface water. The use of V-ditches has the potential to affect water quality by increasing sediment runoff and turbidity levels.
watercourse	A natural or artificial channel for flowing water.

## Executive Summary

This document presents the results of the work completed to date for the Skagit Basin Comprehensive Irrigation District Management Plan (CIDMP), an innovative planning process involving the agricultural community in the lower Skagit River delta area of Skagit County, Washington. The agricultural community is driving this process under the leadership of the Western Washington Agricultural Association (WWAA). Input was provided by a Technical Advisory Team comprised of representatives of local, state, federal, and non-governmental organizations.

The CIDMP is a voluntary, incentive-based process that, in conjunction with actions by other local stakeholders, can lead to:

- Improvements in the availability and management of water resources for instream flows and beneficial uses.
- Solutions for avoiding or minimizing impacts to improve prospects for recovery of listed species.
- Improvements in water quality.
- Assurances for the agricultural community that their actions are in compliance with the Clean Water Act, the Endangered Species Act, the Rivers and Harbors Act, and Washington State water right laws.



Skagit Basin Agricultural Drainage System

The purpose of this CIDMP is to maintain the economic viability of agriculture within the Skagit Basin, while protecting the natural resources of the region. As a result of the CIDMP process, the drainage/irrigation districts and agricultural water users intend to pursue innovative compliance pathways with the United States Fish and Wildlife Service, the National Oceanic and Atmospheric Agency Fisheries, U.S. Army Corps of Engineers and the Washington State Department of Ecology.

The first two phases of the CIDMP process (Steps 1 through 8) have been completed; the results of this effort are summarized in this CIDMP document. Section 1 provides background information on the purpose and intent of the CIDMP process and describes the CIDMP Planning Area and other key planning parameters. Section 2 describes the infrastructure and activities related to agriculture in the Skagit Basin, including drainage- and irrigation-related facilities, operations and maintenance practices, crop patterns and land use practices, and irrigation water use. Section 3 presents available data and information on the existing conditions of water quality and habitat for covered species in the Planning Area. Section 4 provides an analysis of the potential impacts from agricultural infrastructure and activities on water quantity, water quality, and covered species and habitat. Section 5 presents recommendations for minimizing potential impacts of agricultural infrastructure and

activities. Finally, Section 6 outlines strategies for the third phase (Steps 9 through 10) of the CIDMP process.

In the third phase, the agricultural community intends to build on the wealth of information collected thus far, and to pursue development of the actions and implementation strategies identified in this CIDMP document. The actions and strategies developed as part of this CIDMP process are designed to assist in the recovery and protection of endangered species and their habitat, protect water quality, preserve instream flows and address agricultural irrigation water needs, while helping farmers to work toward permit compliance and reduce legal risks.

As a result of the activities described in this CIDMP document, the Washington State Legislature has appropriated additional funding for the next steps in the Skagit Basin CIDMP project. This process will begin with the development of the organizational structure needed to ensure continuation of these CIDMP efforts.



Chinook Salmon

Primary tasks will be focused in three key areas:

- Development of an Agricultural Water Management Agreement pilot program.
- Development of a Habitat Restoration / Endangered Species Act compliance pathway.
- Development of a water quality permitting pathway and monitoring program.

Each task will include public involvement elements, the selection of compliance pathways, the initiation of performance-based actions, the development of appropriate legal assurance agreements with the regulatory agencies, and acquisition of any necessary permits and preparation of related environmental documents.

The State's support for the Skagit Basin CIDMP process demonstrates the importance of finding creative, locally driven solutions to address the complex issues of water resource management, habitat protection and species recovery, and water quality protection in Washington State. Preserving the agricultural character of the Skagit Basin will minimize environmental impacts, preserve open space, and promote water quality protection and salmon recovery. The Skagit Basin CIDMP is a significant step toward achieving these goals, which are shared by the agricultural community; the federal, state, and local resource agencies; Tribal and non-governmental organizations; and the community at large.

## Section 1

# Introduction

### 1.1 CIDMP Process and Objectives

This document presents the results of the work completed to date for the Skagit Basin Comprehensive Irrigation District Management Plan (CIDMP), an innovative planning process involving the agricultural community in a portion of Skagit County, Washington. The agricultural community is driving this process under the leadership of the Western Washington Agricultural Association (WWAA). Input was provided by representatives of local, state, federal, and non-governmental organizations.

The CIDMP is a voluntary, incentive-based process that provides a means for irrigation districts, represented in this CIDMP by WWAA, to satisfy requirements of the Clean Water Act (CWA) (33 U.S.C. ss/1251 et seq.) and the Endangered Species Act (ESA) (7 U.S.C. 136; 16 U.S.C. 460 et seq.), and continue supplying water to meet local irrigation needs. Resolution of water right issues was added to the scope of this CIDMP since streamflow requirements and water availability are among the most pressing water resource management issues in the region.

The CIDMP process, in conjunction with actions by other local stakeholders, can lead to:

- Improvements in the availability and management of water resources for instream flows and beneficial uses.
- Solutions for avoiding or minimizing impacts to improve prospects for recovery of listed species.
- Improvements in water quality.

In return for this effort, the agricultural community intends to request that federal and state agencies provide assurance that:

- The actions of landowners and irrigation districts participating in this CIDMP are in compliance with the ESA, the CWA, the Rivers and Harbors Act of 1899, and Washington State water right laws; that is, the impacts of agricultural activities and infrastructure on water quantity, water quality, and covered species are minimized and meet legal requirements.
- The agencies will not take regulatory enforcement actions against the landowners or districts participating in this CIDMP, including landowners or districts that are currently in compliance and those that are actively working to achieve compliance.
- The agencies will provide assistance in preparing a defense for the landowners or districts participating in this CIDMP against lawsuits by third parties.

The purpose of this CIDMP is to maintain the economic viability of agriculture within the Lower Skagit and Samish Watersheds while protecting the natural resources of the region. The Lower Skagit and Samish Watersheds are hereafter collectively referred to as the

“Skagit Basin.” The Lower Skagit and Samish Watersheds are located within Water Resource Inventory Area (WRIA) 3, but do not constitute the entirety of WRIA 3.

As a result of the CIDMP process, the irrigation districts intend to enter into formal agreements with the United States Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Agency Fisheries (NOAA Fisheries), and the Washington State Department of Ecology (Ecology).

Protecting a viable agricultural community is consistent with Skagit County’s Comprehensive Plan. Preserving the agricultural character of the Skagit Basin will minimize environmental impacts that could result from new or intensified development. Minimizing environmental impacts is a goal shared by the agricultural community and all participants assisting in the development of this CIDMP.

The CIDMP process was developed at the statewide level by a working group of Washington State’s Agriculture, Fish, and Water (AFW) process. The purposes and process for developing a CIDMP are described in *Guidelines for Preparation of Comprehensive Irrigation District Management Plans*, produced by the Washington State Conservation Commission (WCC) in May 2001 (WCC, 2001).

The CIDMP process includes the following phases and steps:

- **Phase One: Establish a Framework for Planning**
  1. Define objectives, assess options, and determine the need for a CIDMP.
  2. Establish a Technical Advisory Team (TAT).
  3. Define key planning parameters.
  4. Inventory district facilities, operations, and needs.
- **Phase Two: Gather Information, Identify Actions, and Assess Impacts**
  5. Assess district impacts on water quality and fish habitat and determine needs.
  6. Develop a comprehensive Action Plan for meeting needs.
  7. Define an Implementation Plan.
  8. Produce the CIDMP document.
- **Phase Three: Implementation**
  9. Complete a State Environmental Policy Act/National Environmental Policy Act (SEPA/NEPA) review and develop a financing strategy.
  10. Select compliance pathways and develop agreements with regulatory agencies.

Phases One and Two have been completed; the results of this effort are summarized in this CIDMP document. Phase Three will involve a collaborative, ongoing process that is scheduled to begin in 2007.

As mentioned above, the CIDMP process calls for establishing a Technical Advisory Team (TAT) to provide input and guidance on technical and policy issues during development of the plan. The TAT is comprised of representatives from federal, state, and local

governments and agencies, non-governmental organizations, and other stakeholders. The continued involvement of the TAT is critical to the success of the CIDMP process, and the technical assistance and comments on draft materials provided to the TAT were an integral part of developing this CIDMP document. The members of the TAT are listed on the Participants page at the beginning of this document.

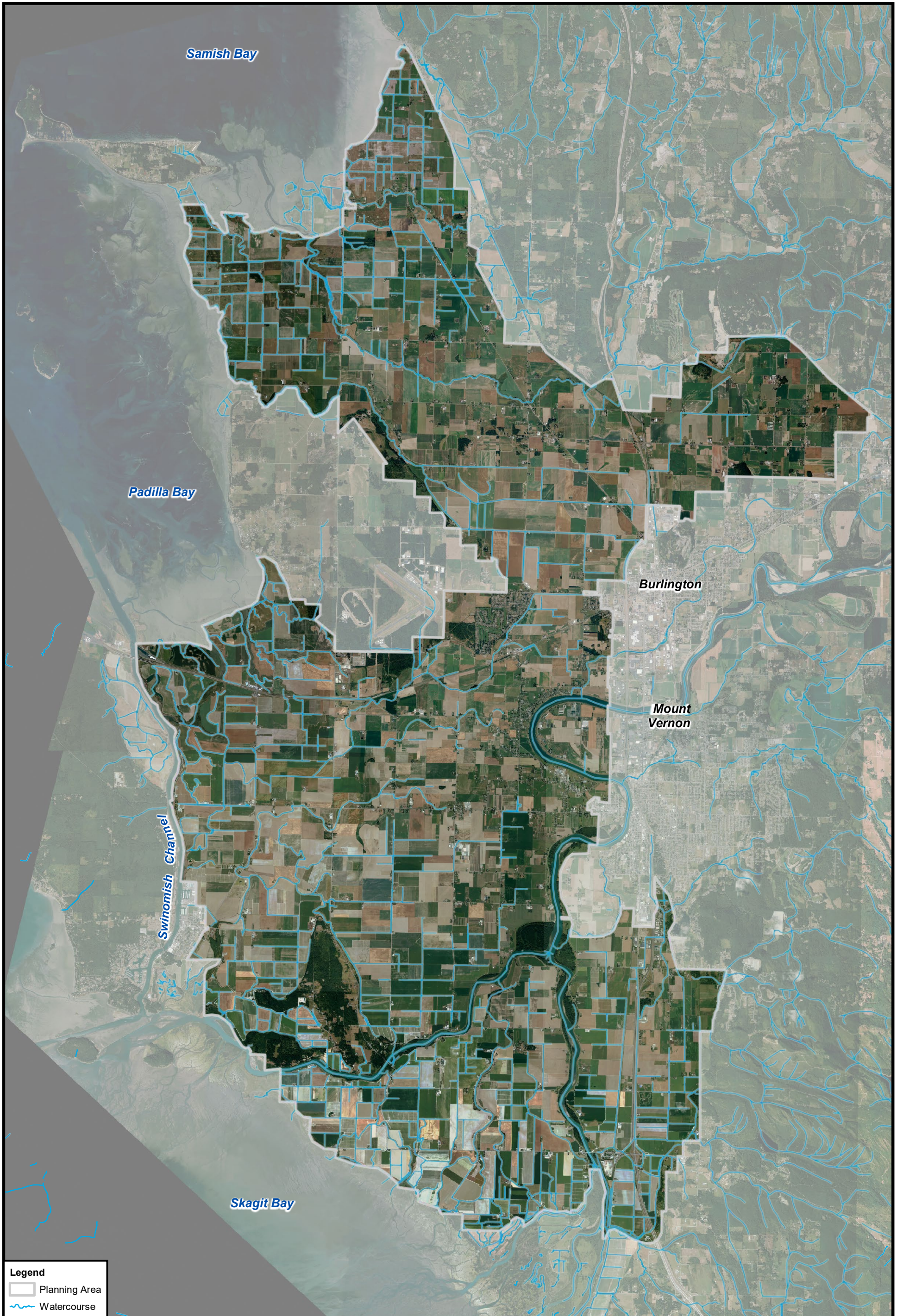
This CIDMP document was prepared by a private contractor, HDR Engineering, Inc. (HDR) under contract to WWAA. Funding for the work completed to date for this CIDMP was provided by grants from Ecology and the Washington State Department of Agriculture (WSDA).

## 1.2 CIDMP Planning Area

The Planning Area for this CIDMP is comprised of approximately 70,000 acres of fertile farmland, commonly referred to as the Skagit and Samish Deltas, located in the western portion of Skagit County, Washington (see Exhibit 1-1). The Planning Area is bounded by the towns of Sedro-Woolley, Burlington, and Mount Vernon on the east, and Samish and Padilla Bays and the Swinomish Channel on the west. Incorporated Areas and Urban Growth Areas were excluded from the Planning Area. The Planning Area encompasses a significant portion of the Skagit Basin.

The Planning Area includes the large majority of the County's agricultural land, and is based on the boundaries of 11 drainage districts, which have recently been reorganized into drainage and irrigation districts. During this phase of the CIDMP process, the districts are represented by WWAA. The districts intend to form a Board of Joint Control that will implement the actions developed in the CIDMP process and enter into collective agreements with state and federal agencies. The organization of the districts and the Board of Joint Control are described in detail in Sections 2 and 6, respectively, of this CIDMP document.

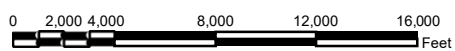
The Planning Area described above represents the area in which CIDMP coverage is sought for the agricultural activities described in this CIDMP document. These activities are described briefly in Section 1.3 and in greater detail in Section 2 of this document.



**Legend**  
 □ Planning Area  
 ~~~~~ Watercourse

Printing Date: October 10, 2006 | File: exhibit\_1-1.mxd

October 2006



**Exhibit 1-1  
 CIDMP Planning Area**

Skagit Basin CIDMP  
 Western Washington Agricultural Association

### 1.2.1 Physical Setting

The Planning Area includes the majority of the Skagit and Samish River deltas, but not the majority of the basins. The Skagit Watershed originates in Canada, encompasses a portion of the northern Cascade Mountains including Mount Baker, and extends down to the lowland broad outwash plain from Sedro-Woolley west. Downstream of Mount Vernon, the Skagit River main stem splits into the North and South Forks, which encompass Fir Island and empty into Skagit Bay. The Samish Watershed lies in northwest Skagit County and southwest Whatcom County, and extends from the headwaters near the community of Wickersham and Lake Samish to the tidelands of Samish Bay.

Elevations in the Planning Area range from slightly below sea level in some areas to approximately 50 feet. Flood flows from the Skagit River historically covered the Skagit and Samish River Deltas. Soils in the deltas are predominantly of the Skagit-Sumas-Field series, which are very deep and poorly drained. As discussed in Section 2, significant portions of the Skagit and Samish Basins have been constrained by dikes and drained for agricultural use. Diking and drainage of the low-elevation outwash plain has transformed the landscape from wetlands and estuaries into productive agricultural areas.

The climate in the Planning Area is temperate, with average monthly temperatures ranging from 41°F in winter to 59°F in summer (WRCC, 2005). Precipitation varies widely, both geographically and seasonally. Annual snowfall in the Planning Area is minimal; however, snowfall upstream of the Planning Area is significant and snow and glacial melt constitute a large portion of the Skagit River streamflow in the spring and summer/early fall. Table 1-1 provides a summary of data collected at the climate station located in Mount Vernon, WA.

**Table 1-1. Monthly Climate Summary near Mount Vernon, WA**

|                                   | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sept | Oct  | Nov  | Dec  | Annual |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| Average Maximum Temperature (°F)  | 45.5 | 49.2 | 52.8 | 57.7 | 63.9 | 68.6 | 73.2 | 73.8 | 68.6 | 59.4 | 50.7 | 45.9 | 59.1   |
| Average Minimum Temperature (°F)  | 33.6 | 35.1 | 37.1 | 39.9 | 44.7 | 48.8 | 50.6 | 50.9 | 47.0 | 41.9 | 37.8 | 34.6 | 41.8   |
| Average Total Precipitation (in.) | 4.04 | 2.84 | 2.73 | 2.43 | 2.21 | 1.83 | 1.16 | 1.49 | 1.84 | 2.23 | 4.43 | 4.08 | 32.32  |

Period of Record: 1/1/1956 – 12/31/2004

Source: WRCC, 2005

### 1.2.2 Water Resources and Hydrology

The Planning Area is rich in water resources. Table 1-2 provides a list of watercourses being considered for coverage under this CIDMP. These water bodies are shown graphically in Exhibit 1-2. Water bodies in the Planning Area, as well as marine water bodies adjacent to the Planning Area, are listed in Table 1-2 and are referred to throughout this CIDMP document.

For the purpose of this CIDMP, the water bodies in the Planning Area are classified using a system designed by the Washington Department of Fish and Wildlife (WDFW), the Skagit River System Cooperative, and WWAA for use in the Skagit Drainage and Fish Initiative.



This effort is described in detail in Section 2. This watercourse classification system is used here for consistency, to avoid confusion, and to facilitate cooperation and compatibility with other plans.

The following categories are used to classify water bodies in the Planning Area:

- **Natural Watercourse:** Watercourses with headwaters that follow and/or replace a historic natural watercourse that has been altered, channelized, relocated, and/or constrained by dikes and that do not have flow control structures (tide gates, pump stations) at their confluence with marine waters.
- **Managed Watercourse with Headwaters:** Watercourses with headwaters that follow and/or replace a historic natural watercourse that has been significantly channelized, relocated, and/or constrained by dikes and that have flow control structures (tide gates, pump stations) at their confluence with marine waters (otherwise referenced as “altered watercourses” in Chapter 77.55 RCW).
- **Managed Watercourse without Headwaters:** Watercourses without headwaters that follow and/or replace a historic natural watercourse that has been significantly channelized, relocated, and/or constrained by dikes and that have flow control structures (tide gates, pump stations) at their confluence with marine waters (otherwise referenced as “altered watercourses” in Chapter 77.55 RCW).
- **Artificial Watercourse:** Watercourses without headwaters that are wholly built by humans and that do not follow or replace a historic natural watercourse, and are designed to convey water from local surface areas or subsurface drains for the purpose of removing excess water in order to improve conditions for agriculture.

Table 1-2 includes watercourses designated as natural, managed with headwaters, and managed without headwaters. Artificial watercourses were not included in the table because they are not named and do not have any distinctive property that serves as a reference. Artificial watercourses are described in more detail in Section 2. Marine waters are not included in the watercourse classification system developed by the Skagit Drainage and Fish Initiative, but are included in Table 1-2 for reference purposes.

Many of the watercourses in the Planning Area are small streams and tributaries; in most cases, little or no data are available to characterize the existing conditions, function, and values of these water bodies. However, these water bodies collectively comprise an integral part of the Skagit and Samish River systems. Significant effort was made to identify available information and to describe these watercourses in this CIDMP document. The available data pertaining to major water resources in the Skagit Basin is summarized below.

Table 1-2. Watercourses in the Planning Area by Classification<sup>1</sup>

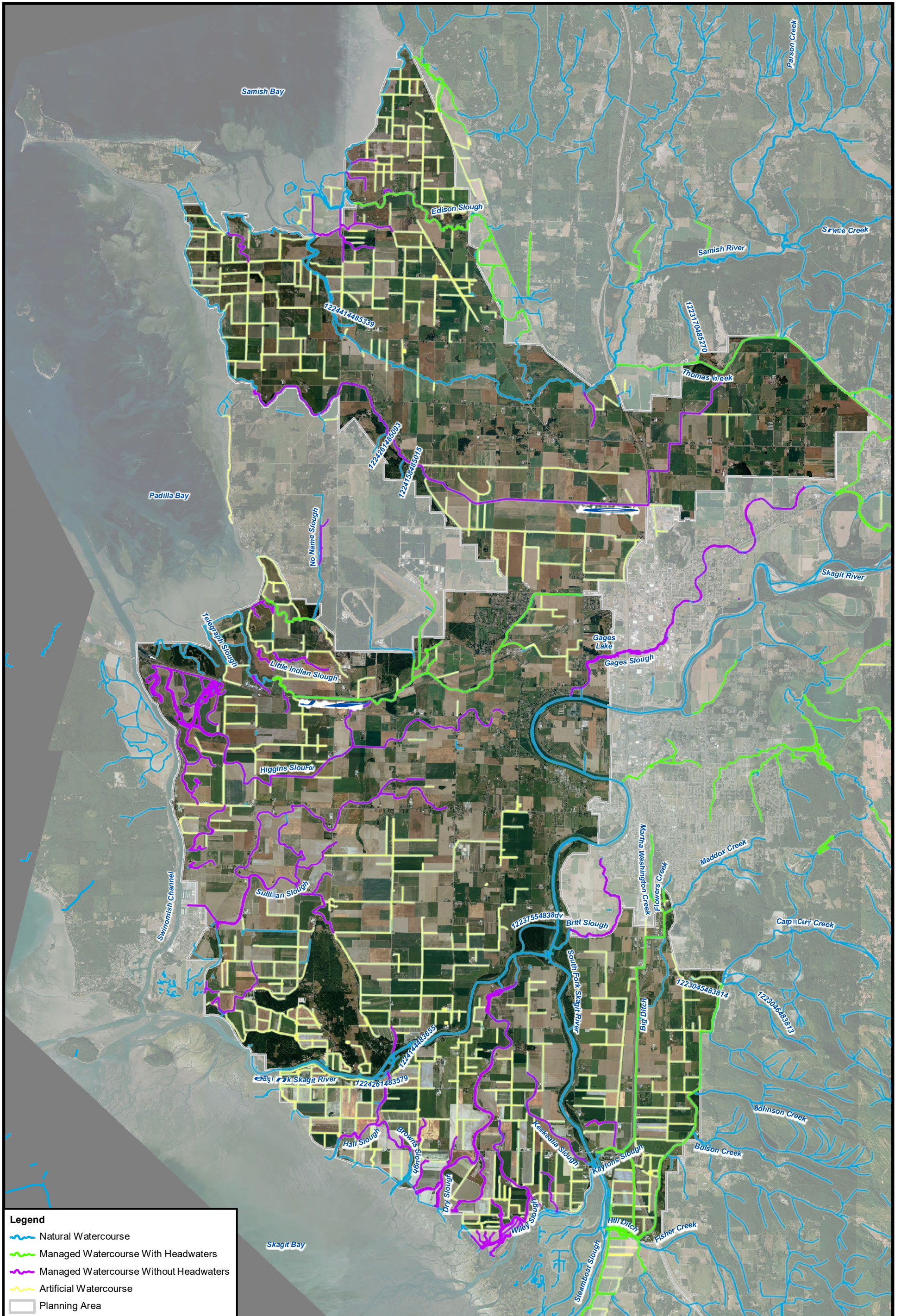
| Watercourse Name <sup>2</sup> | Natural | Managed with Headwaters | Managed without Headwaters | Marine Waters |
|-------------------------------|---------|-------------------------|----------------------------|---------------|
| Skagit River                  | X       |                         |                            |               |
| Unnamed trib. 1223755483878   | X       |                         |                            |               |
| South Fork Skagit River       | X       |                         |                            |               |
| North Fork Skagit River       | X       |                         |                            |               |
| Unnamed trib. 1224144483655   | X       |                         |                            |               |
| Unnamed trib. 1224261483579   | X       |                         |                            |               |
| Samish River                  | X       |                         |                            |               |
| Unnamed trib. 1224414485339   | X       |                         |                            |               |
| Johnson Creek                 | X       |                         |                            |               |
| Bulson Creek                  | X       |                         |                            |               |
| Swede Creek                   | X       |                         |                            |               |
| Parson Creek                  | X       |                         |                            |               |
| Carpenter Creek               |         | X                       |                            |               |
| Unnamed trib. 1223046483813   |         | X                       |                            |               |
| Unnamed trib. 1223045483814   |         | X                       |                            |               |
| Fisher Creek                  |         | X                       |                            |               |
| Maddox Creek                  |         | X                       |                            |               |
| Flowers Creek                 |         | X                       |                            |               |
| Martha Washington Creek       |         | X                       |                            |               |
| Thomas Creek                  |         | X                       |                            |               |
| Fornsby Creek                 |         | X                       |                            |               |
| Telegraph Slough              | X       |                         |                            |               |
| Steamboat Slough              | X       |                         |                            |               |
| Edison Slough                 |         | X                       | X                          |               |
| Joe Leary Slough              |         |                         | X                          |               |
| Unnamed trib. 1224158485015   | X       |                         |                            |               |
| Unnamed trib. 1224261485093   | X       |                         |                            |               |
| No Name Slough                |         | X                       |                            |               |
| Higgins Slough                |         | X                       |                            |               |
| Gages Slough                  |         | X                       |                            |               |
| Big Indian Slough             |         | X                       |                            |               |
| Big Ditch                     |         | X                       |                            |               |
| Hill Ditch                    |         | X                       |                            |               |
| Unnamed stream 1224929484398  |         | X                       |                            |               |
| Unnamed stream 1223170485270  |         | X                       |                            |               |

| Watercourse Name <sup>2</sup> | Natural | Managed with Headwaters | Managed without Headwaters | Marine Waters |
|-------------------------------|---------|-------------------------|----------------------------|---------------|
| Dry Slough                    |         |                         | X                          |               |
| Browns Slough                 |         |                         | X                          |               |
| Sullivan Slough               |         |                         | X                          |               |
| Keekealia Slough              |         |                         | X                          |               |
| Wiley Slough                  |         |                         | X                          |               |
| Hall Slough                   |         |                         | X                          |               |
| Little Indian Slough          |         |                         | X                          |               |
| Davies Slough                 |         |                         | X                          |               |
| Teal Slough                   |         |                         | X                          |               |
| Dodge Slough                  |         |                         | X                          |               |
| Britt Slough                  |         |                         | X                          |               |
| Kayton's Slough               |         |                         | X                          |               |
| Swinomish Channel             |         |                         |                            | X             |
| Padilla Bay                   |         |                         |                            | X             |
| Skagit Bay                    |         |                         |                            | X             |
| Samish Bay                    |         |                         |                            | X             |

Source: WDFW, 2005a

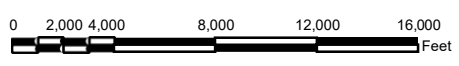
<sup>1</sup> The classification system used in this CIDMP document was developed by the Skagit Drainage and Fish Initiative.

<sup>2</sup> Unnamed tributaries are identified by the Longitude Latitude Identifier (LLID).



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October 2006



## Watercourses In Planning Area By Classification

Skagit Basin CIDMP  
Western Washington Agricultural Association

## Skagit River

The Skagit River is approximately 160 miles long and contributes over 20 percent of the fresh water discharged to Puget Sound (Ecology, 2005a). The Skagit River and its tributaries provide drinking water for 96 percent of the population of Skagit County, and habitat to approximately 30 percent of the anadromous fish entering Puget Sound. Streamflow in the Skagit River is influenced by snowmelt, resulting in a peak in average flows in the summer months. Table 1-3 shows average streamflows calculated from stream gage data collected in Mount Vernon, WA.

**Table 1-3. Average Monthly Skagit River Streamflows**

| Month     | Skagit River near Mount Vernon, WA<br>(USGS gage 12-2005-00 – 62 years of record)<br>(cfs) <sup>1</sup> |
|-----------|---------------------------------------------------------------------------------------------------------|
| January   | 17,650                                                                                                  |
| February  | 16,720                                                                                                  |
| March     | 14,320                                                                                                  |
| April     | 15,070                                                                                                  |
| May       | 20,360                                                                                                  |
| June      | 24,570                                                                                                  |
| July      | 20,130                                                                                                  |
| August    | 11,730                                                                                                  |
| September | 9,469                                                                                                   |
| October   | 12,420                                                                                                  |
| November  | 18,100                                                                                                  |
| December  | 18,610                                                                                                  |

<sup>1</sup>cubic feet per second  
Source: USGS, 2005

Seasonal flooding occurs in the Skagit River Basin as a result of heavy rainfall in the winter months. The Skagit River is regulated by two hydroelectric utilities operating releases from a total of five reservoirs. The infrastructure involved in hydroelectric power generation has also served to temper flood events in recent years. Since installation of dams upstream, flood events have generated peak flows measured at the Mount Vernon stream gage as high as 153,000 cubic feet per second (cfs), while historic floods have caused much higher flows (EES, 2004).

Ecology established instream flow requirements for the Skagit River by adopting Chapter 173-503 WAC (Instream Resources Protection Program – Lower and Upper Skagit Water Resources Inventory, WRIAs 3 and 4) in April 2001. In essence, Chapter 173-503 WAC created a water right for instream flows, as measured at control stations identified in the rule. The instream flow requirements have an effective date, which serves as the priority date of the instream flow water right, of April 14, 2001. Table 1-4 summarizes the instream flow requirements from Chapter 173-503 WAC, as measured at the Mount Vernon stream gage at River Mile 15.7.

**Table 1-4. Skagit River Instream Flow Requirements**

| Time Period                  | Skagit River near Mount Vernon,<br>WA<br>(USGS gage 12-2005-00)<br>(cfs) |
|------------------------------|--------------------------------------------------------------------------|
| January                      | 10,000                                                                   |
| February                     | 10,000                                                                   |
| March                        | 10,000                                                                   |
| April                        | 12,000                                                                   |
| May                          | 12,000                                                                   |
| June                         | 12,000                                                                   |
| July                         | 10,000                                                                   |
| August                       | 10,000                                                                   |
| September                    | 10,000                                                                   |
| October                      | 13,000                                                                   |
| November 1 – 15              | 13,000                                                                   |
| November 16 – 31             | 11,000                                                                   |
| December 1 – 15              | 11,000                                                                   |
| December 16 – December<br>31 | 10,000                                                                   |

Source: Chapter 173-503-040 WAC

Ecology amended Chapter 173-503 WAC on June 15, 2006. The amendment includes several water reservations, or water set aside for specific future beneficial uses, which are not subject to the instream flow requirements. An agricultural irrigation water reservation of 3,564 acre-feet per year was established, as well as a stock watering reservation of 324,000 gallons per day. While water rights linked to the water reservations will carry a priority date that is junior to the instream flow water right, they will not be subject to instream flow requirements. Water use under these reservations shall be metered and reported to Ecology. Once these water reservations are fully allocated, subsequent water rights may be issued, up to a total of 200 cfs determined to be available from WRIA 3 and 4; these rights would have junior priority dates and would be subject to the instream flow requirements.

### Samish River

Streamflow in the Samish River is significantly influenced by rainfall events, which result in a peak in streamflow in the winter months. Groundwater discharge in late summer and early fall generally sustains flows in the Samish River and its tributaries. Table 1-5 shows average streamflows calculated from stream gage data collected near Burlington, WA.

In 1998, the Washington State Legislature passed the Watershed Management Act (Engrossed Substitute House Bill (ESHB) 2514, codified as Chapter 90.82 RCW), which provided a framework and funding for local governments and citizens to develop watershed management plans and manage water supplies for the future. Under ESHB 2514, the designated Initiating Governments within WRIAs 3 and 4 applied for funding, formed a Steering Committee and Watershed Planning Unit, and began the watershed management planning process for the Samish River Basin. Technical reports and analyses of instream

flow, groundwater, and water rights and a draft Watershed Management Plan were completed during 2001 through 2003.

**Table 1-5. Average Monthly Samish River Streamflows**

| Month     | Samish River near Burlington, WA<br>(USGS gage 12201500 – 47 years of record)<br>(cfs) |
|-----------|----------------------------------------------------------------------------------------|
| January   | 506                                                                                    |
| February  | 458                                                                                    |
| March     | 355                                                                                    |
| April     | 283                                                                                    |
| May       | 177                                                                                    |
| June      | 108                                                                                    |
| July      | 58.5                                                                                   |
| August    | 39.1                                                                                   |
| September | 47.5                                                                                   |
| October   | 146                                                                                    |
| November  | 319                                                                                    |
| December  | 452                                                                                    |

Source: USGS, 2005

In late 2003, the Skagit Watershed Planning Unit was unable to reach consensus on a recommendation to Ecology for establishing instream flow requirements; as a result, the watershed planning process halted, the Samish Basin Watershed Management Plan was not finalized or adopted, and Ecology was tasked with establishing and adopting instream flow requirements for the Samish River.

## Groundwater

The primary groundwater aquifer in the Planning Area is a regionally extensive, unconfined to semi-confined aquifer composed of glacial outwash and alluvial deposits (EES, 2003). The water table throughout the Planning Area is shallow. Groundwater tends to flow from the north and east to the southwest and west, eventually discharging into Samish Bay, Padilla Bay, Swinomish Channel, and Skagit Bay.

Groundwater withdrawals may indirectly impact streamflows, depending on the degree of hydraulic connection between the portion of the aquifer being pumped and the surface water body. Generally, the degree of hydraulic connection with a water body will decrease with increased distance from the water body and depth of the well.

An analysis of the groundwater/surface water interaction in the Samish River Basin was completed by GeoEngineers and Hydrologic Services Company in 2001 as part of the *Draft Samish River Watershed Basin Plan* (EES, 2003). The study included hydrologic modeling to assess: (a) the relative contribution of groundwater to streamflow in the Samish River, and (b) the potential reduction in streamflow that may occur from groundwater use. Under a scenario of full consumptive use of existing water rights, the model predicted a total maximum monthly potential streamflow depletion of 3.3 cfs in the Lower Samish River.

Groundwater surface water modeling has not been conducted in the Skagit Basin. Skagit County, Ecology, and the U.S. Geological Survey (USGS) are in the process of planning a study of groundwater connectivity and associated streamflow impacts in the Skagit Basin.

## **Tidal Influence**

Tidal fluctuations influence both surface water and groundwater levels in the Skagit and Samish Deltas. The Skagit River is subject to tidal influence extending approximately 15 miles upstream to Mount Vernon. At times, streamflow is reversed in the North and South Forks of the river (City of Mount Vernon, 2006; People for Puget Sound, 2000). Tidal influence extends up the Samish River approximately 4 miles. The full extent of tidal influence on groundwater is not known.

## **1.3 Key Planning Parameters**

### **1.3.1 Assurances Sought From State and Federal Agencies**

The agricultural community participating in this CIDMP is comprised of 11 drainage districts, represented by WWAA. These districts have recently adopted irrigation statutes and have been established as irrigation districts. This new jurisdiction provides an opportunity for the districts to form a Board of Joint Control which will act as the implementing entity for this CIDMP. The Joint Board of Control will coordinate with state and federal agencies to negotiate the assurances sought as part of the CIDMP process, as described in this section.

There are generally four pathways to ensure compliance with the ESA:

1. Section 4(d) Special Rules
2. Section 7 Interagency Consultation
3. Section 10 Habitat Conservation Plan
4. Avoiding take altogether

Since it is presumed that some level of take occurs, the agricultural community will need to pursue one of the first three pathways. The characteristics of those three pathways are shown in Table 1-6.

In the case of this CIDMP, it may be possible to pursue the second pathway (Section 7 Consultation) through the United States Army Corps of Engineers (Corps) permitting process. The Corps has recently begun to assert jurisdiction over portions of the drainage system in the Skagit Basin, asserting that certain waters within the basin were historically navigable and are thus subject to Corps regulation. The boundaries of Corps jurisdiction in the region are not as yet clearly defined. However, Corps jurisdiction could require the districts to secure one of several Corps permitting options for maintenance or improvements to drainage infrastructure. This Corps permit requirement could provide a federal nexus through which the districts could obtain Section 7 ESA consultation. This option for ESA compliance is discussed further in Section 6 of this CIDMP document, and will be investigated further as part of Step 10 of the CIDMP process.



**Table 1-6. Comparison of Alternative ESA Compliance Pathways**

| Evaluation Criteria                        | Section 4(d) Special Rules                                                                                             | Section 7 Interagency Consultation                                 | Section 10 Habitat Conservation Plan                                                                                                                                                                           |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Availability & Suitable Users:             | Can be applicable to many applicants; excellent for local governments with comprehensive local regulatory jurisdiction | Federal nexus required                                             | Non-federal entities                                                                                                                                                                                           |
| Species Covered:                           | Threatened species only                                                                                                | All listed species                                                 | Applicant decides based on needs; listed and unlisted species can be covered                                                                                                                                   |
| Development Timeline:                      | Moderate                                                                                                               | Likely shortest                                                    | Typically long; highly dependent on scope of project and level of controversy                                                                                                                                  |
| Applicant Flexibility:                     | Moderate                                                                                                               | Moderate, but potentially very low                                 | Highest; applicant requests the species covered, length of permit term, develops Habitat Conservation Plan (HCP) with federal services technical assistance                                                    |
| Certainty & Level of Regulatory Assurance: | Provide definition of "take" by federal rulemaking; moderate certainty                                                 | Provides exemption for authorized incidental take; low certainty   | Authorizes a permitted amount of take incidental to carrying out an otherwise lawful activity; for plans meeting certain regulatory requirements, provides highest level of assurance                          |
| Assurance Duration:                        | Variable                                                                                                               | Shortest                                                           | Applicant decides; can be longest of the three pathways                                                                                                                                                        |
| NEPA/SEPA Requirements:                    | Yes, extent unknown                                                                                                    | Yes, as underlying federal action usually requires NEPA compliance | Yes; extent depends on project scope (size of project, level of controversy, potential extent of environmental effects). 60-day minimum public review of Proposed HCP and Environmental Impact Statement (EIS) |

Source: WCC, 2001

In regard to the CWA, there are no existing formal processes for the districts to obtain assurances from Ecology that agricultural practices are meeting CWA requirements. However, as part of its participation in creating the CIDMP process, Ecology has committed to work with districts participating in the CIDMP process to assess whether assurance can be provided.

Ecology has developed initial guidance indicating how CIDMPs may fit into the framework of Total Maximum Daily Loads (TMDLs) and associated cleanup plans (HDR/EES, 2005). According to this guidance, the CIDMP may be considered equivalent to a TMDL or pollution control plan if: (a) it covers all waters affected by the district and every parameter in violation of water quality standards, and (b) it includes an implementation plan with a schedule to meet water quality standards and a framework for adjusting activities if progress is not occurring as expected. This would require a public involvement process equivalent to the one used for TMDLs produced by Ecology.

This scenario is unlikely to be achieved in the Skagit Basin, because waters within the CIDMP Planning Area are subject to impacts from numerous other land uses in addition to agriculture. In such cases, the guidance indicates that other options may be available; for example, the CIDMP might be considered part of the implementation plan of an existing or subsequent TMDL. The CIDMP would still need to address the same water quality parameters as those addressed by the TMDL. Ecology guidance will be helpful in developing formal assurances specific to this CIDMP.

One potential pathway for CWA compliance has been identified. Ecology is responsible for administration of the National Pollutant Discharge Elimination System (NPDES) permitting program in Washington. The NPDES Stormwater Phase II program includes “secondary permittees,” or permittees who may be held responsible for indirectly discharging stormwater from an upstream source. The districts may be eligible for inclusion in this program as secondary permittees, which would require that the districts develop a stormwater management plan. Ecology would verify the plan, oversee its implementation, and issue a NPDES permit for the district, which would assure compliance with the CWA. This and other options for CWA compliance will be investigated further in Step 10 of the CIDMP process.

Regarding water rights, the goals are to ensure legal water rights sufficient to provide water for current and future irrigation needs within the boundaries of the Planning Area, and to ensure that all water rights within the Planning Area are associated with the appropriate quantities and Place of Use. This would preclude the need for engaging in non-permitted water use and would bring all farmers within the Planning Area into compliance with state water right laws.

### 1.3.2 Covered Activities

The goal of this CIDMP is to obtain coverage for the following activities, as they occur within the Planning Area, and the associated impacts on water quantity, water quality, and listed species:

1. Use of state waters for irrigation purposes.
2. Diversion practices for surface water and groundwater withdrawals.
3. Operation and maintenance of existing drainage infrastructure created to drain water off the land, prevent flooding and salinization, and make the land arable.

These activities are described in detail in Section 2 of this CIDMP document.

### 1.3.3 Covered Species

Table 1-7 presents all federally listed species that were considered for coverage under this CIDMP. The federal agencies responsible for implementing species protection under the ESA of 1973, as amended, have identified 16 threatened, endangered, proposed, and candidate species in Skagit County, each of which was considered for coverage. Four “species of concern,” as defined by NOAA Fisheries, were also considered. These species are considered by NOAA Fisheries to be “potentially at risk”, but have not been elevated to candidate status because they are not currently considered by the Secretary of the Department of Commerce for listing as an endangered or threatened species by the preparation of a proposed rule. Due to the potential of covered activities to affect the aquatic

environment, three fish species designated by the USFWS as species of concern were also included for consideration.

**Table 1-7. Species and Selection Criteria for Endangered Species Act Coverage in the Planning Area**

| Common Name                                                 | Scientific Name                       | Federal Status                                          | Selection Criteria Met |
|-------------------------------------------------------------|---------------------------------------|---------------------------------------------------------|------------------------|
| <b>Birds</b>                                                |                                       |                                                         |                        |
| Bald eagle                                                  | <i>Haliaeetus leucocephalus</i>       | FT                                                      | 1                      |
| Marbled murrelet (designated Critical Habitat)              | <i>Brachyramphus marmoratus</i>       | FT                                                      | 1                      |
| Northern spotted owl (designated Critical Habitat)          | <i>Strix occidentalis caurina</i>     | FT                                                      | 0                      |
| <b>Fishes</b>                                               |                                       |                                                         |                        |
| Bull trout (proposed Critical Habitat)                      | <i>Salvelinus confluentus</i>         | FT                                                      | 1                      |
| Chinook salmon (Puget Sound ESU; proposed Critical Habitat) | <i>Oncorhynchus tshawytscha</i>       | FT                                                      | 1                      |
| Steelhead trout                                             | <i>Oncorhynchus mykiss</i>            | PT;<br>Listing under review                             | 1                      |
| Coho salmon                                                 | <i>Oncorhynchus kisutch</i>           | SoC                                                     | 1                      |
| Coastal cutthroat trout                                     | <i>Oncorhynchus clarki clarki</i>     | SoC                                                     | 1                      |
| River lamprey                                               | <i>Lampetra ayresi</i>                | SoC                                                     | 1                      |
| Pacific lamprey                                             | <i>Lampetra tridentata</i>            | SoC                                                     | 1                      |
| <b>Mammals</b>                                              |                                       |                                                         |                        |
| Canada lynx                                                 | <i>Lynx canadensis</i>                | FT                                                      | 0                      |
| Gray wolf                                                   | <i>Canis lupus</i>                    | FT                                                      | 0                      |
| Grizzly bear                                                | <i>Ursus arctos = U.a. horribilis</i> | FT                                                      | 0                      |
| Fisher                                                      | <i>Martes pennanti</i>                | FC                                                      | 0                      |
| Humpback whale                                              | <i>Megaptera novaeangliae</i>         | FE                                                      | 1<br>(marine area)     |
| Steller sea lion                                            | <i>Eumetopias jubatus</i>             | FT                                                      | 1<br>(marine area)     |
| Southern resident killer whale                              | <i>Orcinus orca</i>                   | FE<br>Depleted (under the Marine Mammal Protection Act) | 1<br>(marine area)     |
| <b>Marine Turtles</b>                                       |                                       |                                                         |                        |
| Leatherback sea turtle                                      | <i>Dermochelys coriacea</i>           | FE                                                      | 0<br>(marine area)     |
| <b>Amphibians</b>                                           |                                       |                                                         |                        |
| Oregon spotted frog                                         | <i>Rana pretiosa</i>                  | FC                                                      | 0                      |
| <b>Plants</b>                                               |                                       |                                                         |                        |
| Golden paintbrush                                           | <i>Castilleja levisecta</i>           | FT                                                      | 0                      |

FT = Federally Threatened; FC = Federal Candidate; FE = Federally Endangered; PT = Proposed Threatened; SoC = Species of Concern; ESU = evolutionarily significant unit

To determine if any species should be excluded from coverage, review criteria were developed. Species considered for coverage were examined based on the following criteria:

0. Species not known to occur within the Planning Area, nor anticipated to be affected by direct or indirect impacts.
1. Species known to occur or believed to have a high likelihood to occur within the Planning Area, or anticipated to be directly or indirectly impacted by covered activities.

Species considered for coverage include birds, fish, mammals, marine turtles, amphibians, and plants. Using the criteria listed above, it was determined that several of the species listed in Table 1-7 will not be affected by agricultural activities, or are not known to occur within the described Planning Area or adjoining lands.

The revised list of species to be considered in this CIDMP is presented in Table 1-8. Of the protected species, bald eagles, bull trout, and Chinook salmon are known to occur within, or directly associated with, the waterways of the Planning Area and are most likely to be impacted by the effects associated with water withdrawal and agricultural practices. Other salmonid species including coho, pink, chum, and sockeye salmon; steelhead trout; and coastal cutthroat trout share similar habitats in the Planning Area and would also be impacted by these activities. These species are included for discussion within the CIDMP. Lamprey species (Pacific and River) are included due to their potential presence within the Planning Area.

**Table 1-8. Listed Species and Species of Concern for CIDMP Coverage**

| Common Name                                                   | Scientific Name                   | Federal Status              |
|---------------------------------------------------------------|-----------------------------------|-----------------------------|
| <b>Birds</b>                                                  |                                   |                             |
| Bald eagle                                                    | <i>Haliaeetus leucocephalus</i>   | FT                          |
| Marbled murrelet (designated Critical Habitat)                | <i>Brachyramphus marmoratus</i>   | FT                          |
| <b>Fishes</b>                                                 |                                   |                             |
| Bull trout (proposed Critical Habitat)                        | <i>Salvelinus confluentus</i>     | FT                          |
| Chinook salmon (Puget Sound ESU; designated Critical Habitat) | <i>Oncorhynchus tshawytscha</i>   | FT                          |
| Steelhead trout                                               | <i>Oncorhynchus mykiss</i>        | PT;<br>Listing under review |
| Coho salmon                                                   | <i>Oncorhynchus kisutch</i>       | SoC                         |
| Coastal cutthroat trout                                       | <i>Oncorhynchus clarki clarki</i> | SoC                         |
| Pink salmon                                                   | <i>Oncorhynchus gorbuscha</i>     | none                        |
| Chum salmon                                                   | <i>Oncorhynchus keta</i>          | none                        |
| Sockeye salmon                                                | <i>Oncorhynchus nerka</i>         | none                        |
| River lamprey                                                 | <i>Lampetra ayresi</i>            | SoC                         |
| Pacific lamprey                                               | <i>Lampetra tridentata</i>        | SoC                         |

| Common Name                     | Scientific Name               | Federal Status                                          |
|---------------------------------|-------------------------------|---------------------------------------------------------|
| <b>Mammals</b>                  |                               |                                                         |
| Humpback whales                 | <i>Megaptera novaeangliae</i> | FE                                                      |
| Steller sea lion                | <i>Eumetopias jubatus</i>     | FT                                                      |
| Southern resident killer whales | <i>Orcinus orca</i>           | FE<br>Depleted (under the Marine Mammal Protection Act) |

FT = Federally Threatened; FE = Federally Endangered; PT = Proposed Threatened; SoC = Species of Concern; ESU = evolutionarily significant unit

## 1.4 Organization of CIDMP Document

This CIDMP document is organized as follows:

### Section 1: Introduction

This section provides background information on the purpose and intent of the CIDMP process; it describes the CIDMP Planning Area and other key planning parameters.

### Section 2: Facilities, Operations, and Needs

This section describes the infrastructure and activities related to agriculture in the Skagit Basin, including drainage- and irrigation-related facilities, operations and maintenance practices, crop patterns and land use practices, and irrigation water use.

### Section 3: Baseline Conditions

This section presents available data and information on the existing conditions of water quality and habitat for covered species in the Planning Area.

### Section 4: Existing Impacts

This section provides an analysis of impacts from agricultural infrastructure and activities on water quantity, water quality, and covered species and habitat.

### Section 5: Action Plan

This section presents recommendations for minimizing potential impacts of agricultural infrastructure and activities.

### Section 6: Implementation

This section outlines strategies for the completion of Steps 9 and 10 of the CIDMP process.