AGENDA

Clallam County Planning Commission

Planning Commission Meeting of Wednesday, April 1, 2026, 6:00 p.m.

The Planning Commission will conduct a regularly scheduled meeting in Room 160 of the Clallam County Courthouse, 223 East Fourth Street, Port Angeles, WA 98362 and by Zoom, meeting number 857 7304 5582 with passcode 12345. Materials regarding past and upcoming meetings are available at: https://clallamcountywa.gov/meetings

A. CALL TO ORDER

B. PLEDGE OF ALLEGIANCE

C. ROLL CALL

D. WELCOME

E. APPROVAL OF MINUTES: March 18, 2026

F. ANNOUNCEMENTS:

G. PUBLIC COMMENT on AGENDA ITEMS – Please Limit Comments to Three Minutes

H. UNFINISHED BUSINESS: None

I. PUBLIC HEARING/COMMISSION ACTION: Continued Public Hearing of the Comprehensive Plan Update

J. WORK SESSION ITEMS: Continued work on the changes to the Comprehensive Plan Update

K. PUBLIC COMMENT – Please Limit Comments to Three Minutes

L. DISCUSSION OF PUBLIC COMMENTS

M. GOOD OF THE ORDER

N. ADJOURNMENT

Members:
Chair, Steve Gale & Vice-Chair, Katina Hester
Warren Billups; Thomas Butler;
Jane Hielman; Ron Long; Kenneth Reandeau; Janice Wilson; Vacancy
Department of Community Development Staff:
Tim Havel, Deputy Director; Bruce Emery, DCD Director

CLALLAM COUNTY PLANNING COMMISSION
MEETING MINUTES

Wednesday, March 18, 2026, 6:00 p.m.
Room 160, Clallam County Courthouse, 223 East Fourth Street, Port Angeles, WA 98362
Zoom Meeting No. 857 7304 5582 | Passcode: 12345

A. CALL TO ORDER

Chair Steve Gale called the meeting to order.

B. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was recited.

C. ROLL CALL

A quorum of five commissioners was established. Four members of the public were present.

Members Present:

Chair Steve Gale (presiding)
Vice-Chair Katina Hester
Commissioner Thomas Butler
Commissioner Kenneth Reandeau
Commissioner Janice Wilson

Members Absent:

Commissioner Warren Billups
Commissioner Jane Hielman
Commissioner Ron Long

Staff Present:

Bruce Emery, DCD Director
Tim Havel, Chief Deputy Director

D. WELCOME

Chair Gale provided the welcome.

E. APPROVAL OF MINUTES — March 4, 2026

Vice-Chair Hester moved to approve the minutes of March 4, 2026. Commissioner Reandeau seconded the motion. The minutes were approved with one abstention (Chair Gale).

F. ANNOUNCEMENTS

Vice-Chair Hester requested that the meeting conclude by 8:00 p.m. Director Emery noted for the record that Heather Cantua had been granted 10 minutes to present per the agenda. There were no other announcements.

G. PUBLIC COMMENT ON AGENDA ITEMS

Four members of the public provided comment.

Chad Wilkins addressed the Commission, highlighting deficiencies in the CPU process as they relate to the Grouse Glen Conditional Use Permit (CUP). His comments included:

- The proposed development involves 32 mirrored cabins and a 10,000-square-foot event center located in a Western Regional Rural Low (RW5) zone.
- It seemed unreasonable to place this type of development in a residential area, yet the CUP process appears to allow nearly anything.
- The West Region should have limited uses. Commercial setbacks are 75 feet, but the CUP applied for only a 50-foot setback.

Judy Larson addressed the Commission as a rural landowner with a shallow well. Written testimony was submitted. Her comments included:

- She attended a previous outreach meeting in Sequim and signed up for email updates, which the website did not generate as expected.
- She participated in previous GMA update processes and feels that outreach for this process is deficient.
- Not having publications available at libraries is a deficiency. Agency comments tend to be addressed, but individual comments have largely been dismissed.
- She reached out to Sequim — outreach is still fluid. Findings have been forwarded to the BOCC for review even though the process is incomplete.

Virginia Shogren: Fully joined in support of other comments regarding the lack of updates from the County. She is unaware of any provisions to address Critical Aquifer Recharge Areas (CARAs) as they relate to piping irrigation districts. Sequim informed her that the lead entity is the County, even when on City property. She stated that government is dysfunctional — the GMA requires early and frequent updates and the County has failed to meet its statutory responsibility. Written comments were submitted.

Heather Cantua (10 minutes): Ms. Cantua noted she has been attending meetings virtually for several weeks and appreciates the depth and concern the Planning Commission takes to address this process. She will send an email in the morning with written comments. She requested that West Region residents have more opportunity to engage with the CUP process.. Her packet represents research on this topic. Her presentation covered the following:

West Region Topics of Concern:

- Permitted development types
- Density concerns and standards
- Notice requirements — 600-foot notice radius is inadequate; the definition of "Affected Neighbors" based on this radius is insufficient.
- What is a Master Planned Resort (MPR)? Described as an "all-inclusive resort."
- The Hearing Examiner dismissed this concern.
- West Region defined as the area west of Crescent Lake to La Push.
- The State recognizes that MPRs use excessive resources — the CUP process circumvents this.
- The progression from CUPs to MPRs to LAMIRDs (Limited Areas of More Intensive Rural Development).

Summary of Findings:

- Facts of similar cases closely match the facts of this update.

Ms. Cantua noted that Director Emery had communicated to her that ex parte communication with the Planning Commission is prohibited. She disagrees with this position.

Commission Discussion of Public Comments:

Chair Gale: Acknowledged the many submissions received over many months. Recognized that this group may not have been aware of the process, but that does not mean the process has fallen short.

Director Emery: There is good testimony here that will take some time to address. The County followed Commerce Guidance for notification and will always have circumstances where people do not get notified. Picked up on the no density caps concern. Recommended not considering development standards in the CPU, but consider changes to the County Zoning Code after the CPU is complete. Consider policy language that will provide a framework for future development standards.

Commissioner Butler: Grouse Glen is unique and unanticipated — its details should be examined

H. UNFINISHED BUSINESS

There was no unfinished business.

I. PUBLIC HEARING / COMMISSION ACTION: Continued Public Hearing — Comprehensive Plan Update

Director Emery opened the public hearing by noting that new information had recently been received and that analysis would be provided at the next meeting. He reported the following follow-up items from the March 4 meeting:

A review of the history of the West Region Planning Commission.

Water region limits per parcel.

A report on the CPU public engagement and outreach will be provided for next meeting. On Tuesday, the North Olympic Library System (NOLS) received delivery of 4 copies of the current draft of the CPU.

Director Emery recommended keeping the County record and public hearing open until April 15, 2026.

Commission Discussion — Public Hearing:

Chair Gale: Dungeness Water Exchange payments are substantial. How are these funds dispersed?

Director Emery: Staff resources and critical aquifer recharge efforts.

Commissioner Wilson: Noted the temporal nature of the WRPC — what would be required to reconvene it?

Commissioner Wilson: This is not a one-and-done situation and should be considered over time.

Director Emery: Can be discussed with the BOCC.

Public Testimony

Heather Cantua: Ms. Cantua noted the interesting history of the Committee and stated that she attends the Western Business Meeting. Bruce Paul, owner of the local Thriftway, recalls the history of the WPC differently than presented in Director Emery's memo. He has retained files from the 1990s indicating the work was intended to continue beyond the plan's adoption.

Public Testimony — Judy Larson: Asked why advisory committees such as the WRPC cannot be reconstituted, noting they could assist the good work of this Planning Commission.

Commissioner Reandeau moved to continue the public hearing to April 1, 2026. Commissioner Butler seconded the motion. Motion carried.

J. WORK SESSION: Comprehensive Plan Update — Table 3.1 and Draft Changes to CCC 31.06

Policy 8(e) — New Development and Water (CCC 31.06.100(5)):

Commissioner Butler: What defines "New Development"? What happens when a new development causes an existing well to run dry?

Director Emery indicated he would craft amendment to CCC 31.06.100(5) For discussion at next meeting.

Vice-Chair Hester: Should language referring to lighting be included in the Regional Plan?

Director Emery indicated he would craft language for the Commission's consideration.

The Commission considered the new policy incentivizing the use of local materials and labor under 31.06.100(13).

Vice-Chair Hester expressed preference for incentive language but is uncertain on the will of the PC.

Chair Gale expressed that "Incentivize" could be ripe for abuse — better if the yellow section were removed. "Promotion" of local goods seemed preferable. Staff was instructed to make the change.

Item (7) — Parks and Recreation Language:

The Commission considered the proposed changes to 31.06.070(7), and concurred with the changes.

Chair Gale suggested the policies concerning agriculture be considered at the next meeting.

Director Emery: Recommend keeping the County record and public hearing open until April 1 and the following meeting on April 15. On Tuesday, NOLS received delivery of 4 copies of the current draft of the CPU, which includes instructions. A report on periodic updates and outreach has been started.

Commissioner Reandeau moved to continue the public hearing. Commissioner Butler seconded the motion. Chair Gale: So moved.

K. PUBLIC COMMENT

Judy Larson: Glad to hear there will be hard copies available. Finding new ways of providing notification — perhaps using tax documents to publish information. Suggested radio announcements regarding the CPU, especially at local libraries.

Heather Cantua: Enjoyed the discussion. Noted that Grouse Glen is entirely on private wells. Regarding local labor and materials — the Grouse Glen entire business plan is to import everything and export all profits. She expressed that there should be a requirement to come to the region to discuss local projects. It is economic, but more importantly it is about local knowledge. She expressed appreciation for the Dark Sky queries.

Chad Wilkins: The Grouse Glen CUP was breezed past the Comprehensive Plan. Even Rural Character was not prohibitive of the mirrored finish. If Grouse Glen goes through, it would be the largest resort on the West End.

L. DISCUSSION OF PUBLIC COMMENTS

Chair Gale suggested it was worth considering improvements to the CUP notification process to improve outcomes.

Director Emery: Changing the notice component of the CUP can be considered and should be used as an opportunity to improve the process. MPRs are on a larger scale than even the Luminary project.

M. GOOD OF THE ORDER

There was nothing under Good of the Order.

N. ADJOURNMENT

The meeting was adjourned at 8:01 p.m.

(32)

Emery, Bruce

From: Havel, Tim
Sent: Monday, March 16, 2026 8:59 AM
To: Emery, Bruce
Subject: FW: Miller State Park

FYI,
I've acknowledged receipt but not addressed her comment

Take care,
Tim

From: Anne L <atlcritters@gmail.com>
Sent: Sunday, March 15, 2026 8:37 PM
To: Havel, Tim <Tim.Havel@clallamcountywa.gov>
Subject: Miller State Park

You don't often get email from atlcritters@gmail.com. Learn why this is important

Dear Tim,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As someone who lives across the street from the park,, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you

Anne Leighton

(33)

Emery, Bruce

From: Web_DCDAdmin
Sent: Monday, March 16, 2026 2:45 PM
To: Emery, Bruce; Havel, Tim
Subject: FW: Online Form Submission #9408 for Contact the Planning Commission

From: noreply@civicplus.com <noreply@civicplus.com>
Sent: Monday, March 16, 2026 2:14 PM
To: Web_DCDAdmin <web_dcdadmin@clallamcountywa.gov>
Subject: Online Form Submission #9408 for Contact the Planning Commission

Contact the Planning Commission

First Name	Debi
Last Name	Maloney
Email	12deanmassey@gmail.com
Phone Number	064514321
Subject	CC Comprehensive plan
Comments/Questions	I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan: 31.03.195 (d) Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access. Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement? As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland

ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP. Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.
I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.
Thank you

Please Note

This form is not for emergencies. If you have an emergency, please phone 911.

Email not displaying correctly? View it in your browser.

(34)

Emery, Bruce

From: Johnson, Randy
Sent: Tuesday, March 17, 2026 9:30 AM
To: Penny Burdick
Cc: Emery, Bruce
Subject: RE: CC comprehensive Plan statement of support for MPSP

First, thank you for reaching out. Several other constituents have stated the same concerns as you. Please contact the DCD Director, Bruce Emery, and relay your concerns. This county has the only elected DCD Director in the U.S., and it is his department that is currently working on the comp plan.
Randy

From: Penny Burdick <drpennysequim@gmail.com>
Sent: Monday, March 16, 2026 6:02 PM
To: Johnson, Randy <randy.johnson@clallamcountywa.gov>
Subject: CC comprehensive Plan statement of support for MPSP

You don't often get email from drpennysequim@gmail.com. Learn why this is important

Dear Mr. Johnson,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,

Penny Burdick, MD
74 Wilders Lane
Sequim, WA 98382
(360) 461-4538

(35)

Emery, Bruce

From: Ellen Massey <ellenammassey@gmail.com>
Sent: Tuesday, March 17, 2026 9:51 AM
To: Ellenammmassey@gmail.com
Subject: Concern regarding Comp Plan item

You don't often get email from ellenammassey@gmail.com. Learn why this is important

Hello,

I am writing to **object** the inclusion of the following statement in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan, thus this item should no longer be included in the Clallam County Comp Plan.

My concern with the above statement being included in the Comprehensive plan is the ambiguity. What specifically are you supporting with this statement and what will be the steps taken to re-evaluate the development plans and not simply adopting any plan because it is in the Comp plan?

As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,

Ellen Massey

(36)

SIERRA CLUB
FOUNDED 1892

TO: Clallam County Planning Commissioners
FR: Sierra Club North Olympic Group northolympicgroupsc@gmail.com
DATE: March 17, 2026
RE: Comments on Draft County Comprehensive Plan

I have lived in Clallam County for 40 years and have seen and experienced major growth and issues that seem to come along with growth. I have read the proposed plan and have a number of initial comments I hope you will take the time to read and consider when finalizing your recommendations to the Clallam County Commissioners.

A big thank you to staff that did an excellent job of bringing a plan forward that recognizes today's issues, and a big thank you to you, Planning, Commissioners, for your time and work on the Comprehensive Plan.

Overall, there are many needed upgrades in this draft, but there are also a number of conflicting statements with the following paragraphs, which doesn't include sea level rise (SLR). SLR is thought to be 8"–1ft higher a long coastal areas than earlier thought. https://www.nature.com/articles/s41586-026-10196-1
Wave action of current high tides are visible along our coast in undercutting and destabilizing bluffs and we do experience overflows on to roads and properties.

P. 116 2.3310 Natural, historical, and cultural resource issues.
In putting forth growth management legislation, Washington State recognized that the environment, open space and recreation, historical and archaeological resources, and citizen

Chapter 31.02 CCC, County-Wide Comprehensive Plan Page 116 of 283
Quality of life elements – clean air and water, open space, public access to recreational opportunities, historic and cultural sites – draw new residents, businesses, and tourists to Clallam County. This quality of life can be used to attract employment and business to the area which meet the needs of local and regional residents, enhance the local economic base, yet do not degrade the environment. A healthy environment is a valuable economic asset worth protecting and building upon, as well as an aesthetic amenity for residents and tourists. Clallam County recognizes that our wetlands, streams, and aquifers are essential elements of infrastructure much as roads, culverts, and other structural facilities are essential to the developed environment. Loss of function and value due to degradation, contamination, or outright destruction has the potential to affect not only the well-being of individual landowners, but the community as a whole. Uncontrolled and untreated stormwater carried through our waterways damages the entire system, with large cumulative effects downstream. Loss of water storage capacity must be replaced using public funds and at a high cost. Fish, shellfish, and wildlife have economic benefits for tourism as well as commercial and recreational harvest, but more importantly, indicate the overall health of our watersheds. Shellfish, whether harvested or not, perform a valuable function in filtering contaminants from water. Flood damage can devastate community resources, with human health and safety impacts, economic losses, and loss of infrastructure and habitat. Aquifers are rechargeable, but

remediation of a contaminated drinking water supply is costly and sometimes impossible. While we enjoy clean air in Clallam County, airborne contaminants can be transported to our land and water resources during precipitation

One of the best ways to protect the environment is through the simple retention and protection of open space. Left alone, reserve lands act as buffers between developed areas and sensitive habitat, provide wildlife corridors, and protect and enhance the aesthetic values associated with water resources. Fragmented habitat leaves native plants and animals vulnerable to predation and invasion by non-native species. By providing open space, connecting open space corridors, and maintaining open space as buffers between land uses, the plant and animal communities unique to the Olympic Peninsula can be protected.
P. 117; As land develops, we marginally lose aesthetic values which contribute to the quality of life
P.119: Wetlands. ([Policy No. 129)] Clallam County shall work to achieve no net loss of regulated wetlands' functions and values through restoration and enhancement at the watershed scale, while allowing a reasonable use of property with no net loss, at a minimum

P. 120 C. Policy No. 152.] To protect quality and quantity of essential aquifers for current and future needs, Clallam County should encourage water conservation measures for all land uses; support water conservation measures and educate residents on methods to conserve water; and promote the application and implementation of water-conserving landscaping plans. Clallam County should undertake further studies of the groundwater regime of the County so that the factors influencing the quantity, quality and flow patterns of groundwater are more precisely known.

GROWTH

A major concern on "growth" is of course water. As weather warms and fires increase, growth needs to be tempered. And to "reduce sprawl," can UDAs contine to be built? These consume land, reduce soil acreage and increase for penetrating rain water, increase runoff, and reduce wildlife habitat. This brings up the issue of water, but also traffic and air quality.

Continued growth should be stemmed. Minimizing growth can still support economic growth. We already experience this through our arts, parades, outdoor offerings, races, etc. Continued growth can dampen enthusiasm of tourists.

"NET LOSS" HOW FAR BACK IN TIME is being compared with?
WE ARE LOOKING FOR NET GAINS.

MILLER PENINSULA

Early on, I want to address 31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

It is understandable why the county staff needed to address this "just in case" the park is developed. However, this section should be deleted for a number of reasons, replaced with the language below in **bold.** Based on the following:

- Both the Clallam County Commissioners and our elected state legislators oppose the development of Miller Peninsula State Park.
- Citizens from around WA State and elsewhere stand with preserving Miller Peninsula State Park in its current form.
- Miller Peninsula State Park exemplifies conservation, open space, wildlife protection and healthy outdoor activity. A quiet experience in nature
- This sensitive area is built on unique soils that hosts over 200 plant species, provides habitat for the smallest (e.g. toads, salamanders, slugs) to the largest (e.g. bear, cougar) area animals, and bird populations reliant on the multiple wetlands, unique forestry and plant life.
- Carving up and into and massively developing this parkland would change its overall structural system and would impact the character of the surrounding communities, ensure area traffic snarls, create sewage and trash issues, increase fire danger, pollute the air and drain off water already a short supply in the Miller Peninsula area.
- It meets the county's intent to conserve the rural character of rural communities.
- This is the link to the USGS Report, published in 1999.that trends East-West from Miller Peninsula to Sequim showing the truncation of the shallow aquifer by the bay. The report graphics show the linkages of area wells to one another across this area. Draw down one, draws down the others. In the 20 years prior to the USGS Report, numerous wells were drawn-down as much as 10 or 12 feet. The water level in these wells is much lower almost 30 years later.
- https://pubs.usgs.gov/wri/1999/4048/report.pdf

Include this language in the Comp Plan. ***Miller Peninsula State Park should remain Natural, day use for hikers, non motorized biking and horseback riding. This will preserve the rural character of Miller Peninsula, its existing communities, and its natural resources and clean ambient.***

https://www.clallamcountywa.gov/DocumentCenter/View/25020/Draft-Amendments-to-the-Clallam-County-Zoning-Code-Title-33-CCC
77) "Organic materials management facility" means a location and related improvements where organic waste, such as food scraps, yard trimmings or other organic materials that do not contain pesticides, pests, or other forms of chemical or biological contamination, is processed into new products like compost or energy, through composting, anaerobic digestion, vermiculture, black soldier fly, or similar technologies.
Strike "anaerobic digestion".

The Sierra Club largely opposes the expansion of industrial-scale anaerobic digesters, particularly for CAFO manure, arguing they prop up factory farming, perpetuate pollution and delay the transition to true renewable energy. While acknowledging the potential to capture methane, the organization contends these systems create toxic air emissions, do not eliminate pathogens, and often require taxpayer subsidies.
Key points of the Sierra Club's position include:

- **Factory Farm Support:** Digesters incentivize the expansion of concentrated animal feeding operations (CAFOs), which are major sources of pollution and environmental injustice.
- **Environmental and Health Risks:** Digesters are not emission-free, releasing nitrogen oxides, sulfur dioxide, and hydrogen sulfide, which cause local air quality issues. Furthermore, they can concentrate nutrients in waste, increasing the risk of water contamination from runoff.

- **Not a Solution to Waste:** The Sierra Club argues that digesters do not effectively reduce the volume of waste or pathogens, merely changing the form of the waste rather than eliminating the root problem.
- **False Solution:** The organization considers this "greenwashing" that delays the necessary shift away from fossil fuels by investing in expensive, long-term pipeline infrastructure.
- Instead, the Sierra Club favors reducing waste at the source and using methods that restore soil health, such as pasture-based farming, rather than relying on industrial waste-to-energy systems.

Further, According to the World Resources Institute, "they aren't all that effective at actually tackling the methane emissions themselves." https://sentientmedia.org/biodigesters-fall-short-as-a-climate-fix/ & https://www.wri.org/technical-perspectives/us-manure-methane-mitigation-solutions

MASTER PLANNED RESORTS (MPR)

P. 72-74 31.02.56 *A master planned resort, with a primary focus on destination resort facilities consisting of short-term visitor accommodations and indoor or outdoor recreational facilities could be proposed within Clallam County. Due to the potential long-term economic benefit of a master planned resort to the County's economy, consideration to siting these resorts* in forested or rural areas should be made.
a) no less than 240 acres ***These are cities!*** *Given the need*
(b) Existing State or County roads are adequate, or need minimal improvements, to serve the development.
(c) Capital facilities, utilities, and services, including those related to sewer, water, storm water, security, fire suppression, and emergency medical, provided on-site shall be limited to meeting the needs of the master planned resort.
P. 74 j) The primary focus of the resort is on short-term visitor accommodations and indoor and/or outdoor recreational facilities. Development approval of the resort must provide mechanisms to ensure that the resort does not become a residential subdivision, such as establishing a minimum ratio of short-term to long-term accommodations

MPRs are a developer's dream and a community's nightmare. We've seen this in the 1990s when developers, including from another country, tried to denude Miller Peninsula and turn it into a MPR, but combined with residential living and all amenities. Staff remembers and writes: *that the resort does not become a residential subdivision.* However, note that there is no limit to the number of acres. *no less than 240 acres*

Staff mentions a "primary focus". What are the secondary , tertiary and other foci?
We have learned that these developments are "phased". They are trialed in the early stage but also continually looking for funding, which may never materialize, but having upended parcels of land in the initial stages.

no less than 240 acres : 240 acres and upwards is a large area. The verbiage allows it to reach thousands of acres. This is so open ended and inconsiderate of county resources.
And where would they be sited?
What is the proof that a MPR is a "long-term economic benefit"?
Over time, these can certainly become LAMIRDs or other with residential.
The land and the forests and the area natural resources are much more valuable to supporting quality of life than risking these for the few that would seek financial benefits.

If the population on the west end continues to grow, their needs would be more important and financially beneficial to the county.
MPRs should not be allowed. Delete this section.

OTHER
P. 93 It says that there is **available land for building**. Where is the map that shows these parcels? What will be the impact on loss of pervious soil, water, etc.?

P. 100 Policy 12. *Clallam County should coordinate the* ***monitoring of short-term rentals*** *to determine the extent of the number of units operating within the County, and to what extent these units are impacting the price and availability of housing and rental stock.*
Definitely agree.

(6) Density. Outside of designated Urban Growth Areas, There shall be no more than one accessory housing unit allowed per lot. In designated Urban Growth Areas, there shall be no more than two accessory housing units allowed per lot as set forth in RCW 36.70A.681.
This is definitely growth and growth hard to manage; feeling more like sprawl.

P. 126 f) [Policy No. 4439.] ***Motorized transportation and recreation trails*** *are an appropriate use of public open space, provided that motorized vehicle use can be managed to prevent pollution impacts from erosion, fuels, exhaust and noise. Motorized activities should be compatible with existing recreational uses of the site and surrounding area but not negatively impact recognized significant plant and animal communities*
Spell out where motorbike areas are allowed so users and the public know. It should not be voluntary or a request, but a mandate.

ccc. 31.02,263 (b) Policy 14
Commercial land uses shall be strongly discouraged along US 101 and within a half mile of roads intersecting US 101 as these would tend to encourage strip development of the highway and diminish the current rural character of the area.
(c) Policy 15. Commercial development at the intersection of Diamond Point Road and US 101 or at any point along US 101 between the eastern Clallam County line and the Blyn rural center will be discouraged as sufficient areas for commercial development have been provided within the Diamond Point/Sunshine Acres and Blyn rural centers. Should the Jamestown S'Klallam Tribe put its ownership in the vicinity of the intersection of Diamond Point Road and US 101 into tribal trust status in order to allow commercial development of this site contrary to the direction provided by local residents as expressed in the Sequim-Dungeness Regional Plan, then such development shall not provide any justification for adjacent commercial development of lands under Clallam County jurisdiction.
Concur

ACCESSORY DWELLING UNITS (ADU)
Chapter 31.02 CCC, County-Wide Comprehensive Plan P.100 Accessory Dwelling Units (ADU)

- These are positive positions, but not sufficient. Fragmentation is a specific and grave side effect that could result from increasing the number of DADU permits due to the State's new requirement for allowing condoization of detached ADUs. This threatens to chip away at the rural character we aim to preserve.

- *ADHUs shall be clearly incidental and subordinate to the primary*
- *land use and subject to size and structure type limitations, water and wastewater disposal*
- *standards, certificates of occupancy, design standards, and recorded title notices.*
-
- BUT:
- **The proposals risk our rural character.**
- How many will be allotted in an area?
- How should the number be controlled, factoring in the ADUs the cities are allowing?

Darlene Schanfald, Chair

Submitted on behalf of

North Olympic Group Sierra Club

(37)

Emery, Bruce

From: Ozias, Mark
Sent: Tuesday, March 17, 2026 5:03 PM
To: Emery, Bruce
Subject: Fw: Clallam Co. 20 Year Comp. Plan & Miller Peninsula State Park

Hi Bruce,

I'm not sure if you have been cc'd on any of them, but fyi we have been receiving a fair amount of similar emails over the past couple of days. Do you know if this language is a carry-over from the previous plan, or if it has been updated for this draft?

Thanks,

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Donald Mazzola <dmazz1952@gmail.com>
Sent: Tuesday, March 17, 2026 1:29 PM
To: French, Mike <Mike.French@clallamcountywa.gov>; Johnson, Randy <randy.johnson@clallamcountywa.gov>; Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Clallam Co. 20 Year Comp. Plan & Miller Peninsula State Park

You don't often get email from dmazz1952@gmail.com. Learn why this is important

Greetings Clallam County Commissioners,
I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:
31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*
Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). Are you aware that our State Representatives have refused to fund it?
What specifically are you supporting with this statement? Are you aware of the many concerns that have been raised by visitors that currently visit the Property? Is your support largely driven by the possibility of increased tourist dollars?
Though I am a resident of Jefferson County, I would hope that the County Commissioners would remember that the Miller Peninsula State Park Property is currently visited and enjoyed as one of the few (and perhaps the largest) lowland areas remaining on the Olympic Peninsula that has seen little development and that

supports a myriad of ecological and recreational benefits for all Washington State citizens, not just the residents of Clallam County.
I suggest that Planning Department and the County Commissioners would consider addressing areas of concern on the peninsula during the next 20 years before giving a blanket approval to any large-scale development at MPSP. Clallam County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.
I respectfully ask that you remove the statement(s) of support for development at MPSP from the comprehensive plan. Conversely, a I strongly urge you to include a statement endorsing the protection of the many recreational and ecological benefits & values that *currently exist;* benefits and values that are in the best interest of residents of Clallam County, the Olympic Peninsular and Washington State.
Show us that you can be on the side of this issue that takes into account not just what is *truly* valuable today, but for generations to come.
Thank you

(38)

Emery, Bruce

From: Sears, Tricia (DNR) <Tricia.Sears@dnr.wa.gov>
Sent: Wednesday, March 11, 2026 3:23 PM
To: Emery, Bruce
Cc: Sears, Tricia (DNR); Holman, Carol (COM)
Subject: Clallam County's Comprehensive Plan Amendments (2026-S-11517): WGS comments

Hello Bruce,

In keeping with the interagency correspondence principles, I am providing you with comments on Clallam County's Comprehensive Plan Amendments (2026-S-11517).

For this proposal submitted via Planview, I looked at the proposal and focused on areas related to WGS work. Of note, but not limited to, I look for language around the geologically hazardous areas, mineral resource lands, mining, climate change, and natural hazards mitigation plans. Please note that I sat on the Vancouver Critical Areas Ordinance focus group committee and provided comments during that time.

Specifically in this proposal, for critical areas I reviewed the Comp_DNS, Appendix N Critical Areas Gap Analysis, Appendix O Critical Areas Analysis BAS Report, Clallam Comp Plan Checklist, Zoning Code Update Draft 021026, and Comp Plan PDF.

Kudos to you for making changes to the critical areas ordinance.

Comp DNS
Looks fine.

Clallam Comp Plan Checklist
Thank you for providing the checklist. I am noting several specific items of interest to WGS.

"The County-Wide CP has been organized by Articles. Article II is the Land Use Article, and includes general; agriculture, commercial forest and mineral resource lands, urban growth areas, master planned resorts, and commercial & industrial land use Specifically addressed under 31.02.340(14)(c)."

"BAS is now defined under new section 31.02.050(7). Also, see edits to 31.02.340(1)(a) & (c)."

"New section 31.02.820 includes policies for implementing resiliency across 13 key sectors for all Clallam County."

"Zoning Code and CP were updated in November 2020 with latest requirements applicable to mineral resource lands designations and development regulations. Review under this CPU shows no inconsistencies or deficiencies that need to be addressed."

Zoning Code Update Draft 021026

Great to see 33.40.100 Notice of Proximity to Resource Zone being added and includes Mineral Resource Land Overlay. There are no references to geology, climate resilience, or other WGS topics of focus. No further comments.

Comprehensive Plan
Due to time constraints, the review of this document is somewhat limited. Notably, Clallam County has done extensive work with the Climate Resilience Element; it is well written and integrated into the Comprehensive Plan. The

information about mineral resource lands is also nicely woven into the Comprehensive Plan. In a word search, the word geologically occurs seventeen times. It may be useful to clearly state in the Comprehensive Plan, what are the geologically hazardous areas hazards in Clallam County. It could also be useful to include a map or two of those areas.

Appendix N Critical Areas Gap Analysis

Pages 15-16 according to the table of contents, but page 19-20 in the PDF, re: Geologically Hazardous Areas. The Gap Analysis states, "As mentioned above the classification and designation should be expanded to include mining and mineral hazards." This is very interesting. With that suggestion, the hazard areas would be landslide, erosion, seismic, and mining and mineral hazards. Concur that referring to the DNR Washington Geologic Information Portal is useful and recommended.

Appendix O Critical Areas Analysis BAS Report

Pages 18-24 according to the table of contents, is Geologically Hazardous Areas. It includes Climate Change Impacts and Mitigation. The BAS Report states, "Clallam County regulates volcanic, landslide, seismic, mine, and erosion hazard areas in CCC Chapter 27 Part 4 (CCC 27.12.400)." In the Gap Analysis, it says the code does not include mining and mineral hazards, but it recommends that it include it. The provisions for seismic hazard refer to the DNR Washington Geologic Information Portal but the landslide provisions do not. Suggest including the reference to the Portal for all the geologically hazardous area hazards that Clallam County identifies and designates. In the Hazard Characterization section, there is essentially a recommendation for additional hazards that exist, to be designated in the Clallam County code. WGS supports that recommendation. WGS suggests that all identified hazards be evaluated and considered for designation. Please feel free to reach out to us with hazard questions.

Below, I include our usual language for this and future endeavors.

Recognizing the limitations of the current proposals, I want to mention that it would be great for you to consider these in current or future work, be it in your comprehensive plan, development code, and SMP updates, and in your work in general:

- Consider adding a reference to the definition of geologically hazardous areas, WAC 365-190-120, in other areas besides the CAO. In addition, consider adding a reference to WAC 365-196-480 for natural resource lands.
- Consider adding in other areas besides the CAO. If you have not checked our interactive database, the Washington Geologic Information Portal, lately, you may wish to do so. Geologic Information Portal | WA - DNR
- If you have not checked out our Geologic Planning page, you may wish to do so. Geologic Planning | WA - DNR

Thank you for considering our comments. If you have any questions or need additional information, please contact me. For your convenience, if there are no concerns or follow-up discussion, you may consider these comments to be final as of the 60-day comment deadline of 4/14/26.

Have a great day!
Tricia

Tricia R. Sears (she/her/hers)
Geologic Planning Liaison
Washington Geological Survey (WGS)
Washington Department of Natural Resources (DNR)
Cell: 360-628-2867 | Email: tricia.sears@dnr.wa.gov

(39)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:28 AM
To: Emery, Bruce
Subject: Fw: CC 20 year Comprehensive Plan

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Sue Gilman <gilfish02@gmail.com>
Sent: Saturday, March 14, 2026 8:02 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: CC 20 year Comprehensive Plan

Dear Commissioner Ozias,
I am writing to object to the inclusion of the following statement which is included in the CC 20 yr Comprehensive Plan:
31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*
This statement is overly broad and nonspecific as to what development plan you support
Furthermore,

- There currently is not a plan put forth by State Parks on how they want to develop MPSP
- The previous planning included 3 differing plans, which plan do you support?
- To date there have been no environmental impact studies completed by state parks
- What if their plans are in opposition to the environmental goals set forth elsewhere in the CC 20 year plan?
- As a resident of Clallam County, I would hope the county commissioner would consider carefully aquifer deletion, sewage concerns, wildfires, high bank cliffs, forest ecosystem, wetland ecosystems, species declines and the excessive costs associated with developing MPSP before considering any blanket approval for development approval of such magnitude

In the past 4 years, members of this commission have expressed disapproval of the plans state parks have put forward. What has changed your position?
Will this nonspecific declaration of support be binding to future CC Commissioners during the next 20 years?

Creating an unspecified county declaration for a plan that has not been proposed and that will last for 20 years seems irresponsible.
I ask that you please remove this statement from the comprehensive plan.

Thank you,
Cordially,
Sue Gilman
Sequim citizen & voter.

(4C)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:28 AM
To: Emery, Bruce
Subject: Fw: Miller Peninsula State Park

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Paula Simms <paulasimms5@gmail.com>
Sent: Saturday, March 14, 2026 4:51 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Miller Peninsula State Park

You don't often get email from paulasimms5@gmail.com. Learn why this is important

Dear Mr. Ozias,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,
Paula Simms

(41)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:28 AM
To: Emery, Bruce
Subject: Fw: Please preserve MPSP

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Bob Smith <fatcatmarine@gmail.com>
Sent: Sunday, March 15, 2026 8:29 AM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Please preserve MPSP

You don't often get email from fatcatmarine@gmail.com. Learn why this is important

Dear Mark,
I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:
31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*
Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan.
What specifically are you supporting with this statement?
As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.
Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.
I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you

Regards,

Captain Robert Smith
206-498-5665
Fatcatmarine@gmail.com

(42)

Thomas P. Schlosser

Attorney at Law

371 Beach Drive, Sequim, WA 98382

Via E-mail

Mark Ozias, Clallam County Commissioner
223 E. 4th Street, Suite 4
Port Angeles, WA

Dear Commissioner Ozias,

I am a 20-year county resident and voter writing to object to part of the draft Clallam County 20-year Comprehensive Plan:

> 31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities...*

Currently, WA State Parks has not put forward a detailed development plan, but their staff proposals should not be supported. I ask the County Commissioners to consider our deep concern before giving general approval to large-scale development at MPSP. County interests, including vehicle traffic, aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, wildfires, high bank cliff erosion, forest and wetland ecosystems, and high costs, will be intertwined with further developing MPSP.

Committing the county's approval to a large development plan that has not even been created, (let alone subject to SEPA review) and which will undoubtedly conflict with other county goals seems irresponsible. MPSP should be left alone.

I ask that you please reject support for development at MPSP in the comprehensive plan.

Sincerely,

Tom Schlosser

t.schlosser@msaj.com

(43)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:27 AM
To: Emery, Bruce
Subject: Fw: MPSP DEVELOPMENT

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Sue Spier <spierfarm@yahoo.com>
Sent: Sunday, March 15, 2026 5:01 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: MPSP DEVELOPMENT

You don't often get email from spierfarm@yahoo.com. Learn why this is important

Dear Commissioner,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As a resident of Clallam County and property owner on the south border of proposed state park, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,

Susan Spier

(44)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:27 AM
To: Emery, Bruce
Subject: Fw: Miller Park

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Sharman/Glen <gsrich@aol.com>
Sent: Monday, March 16, 2026 1:39 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Miller Park

You don't often get email from gsrich@aol.com. Learn why this is important

Dear Mark Ozias, Mike French and Randy Johnson,

My husband and I have lived in Diamond Point for 23 years. We have appreciated Miller State Park for its many trails and the unusual simplicity of parking, walking and riding in the Park. While we understand the desire of the State to develop this park, we are asking you to join many who hope for a more considered approach to what development may entail.

We are definitely personally concerned, as members of this large community, about any development that would impact our water supply, concerns if a fire developed in the park, the impact of vehicles on an already busy road leading to our homes. Being locked in by the Park, envision if people in an emergency could not leave Diamond Point or services could not get to us.

As we read about communities that are most healthful for their constituents, green space is always included. Hiking in the Park many days of the week, we have met people from all over our state and United States. They are surprised and appreciate the natural surroundings devoid of campers; especially RV's, cabins, random toilets; the typical developments. This jewel of a large

green space may be underappreciated by many in our and surrounding counties, but we believe its integrity should be maintained.

We would appreciate your support as you are considering long range plans for our county; as well as communications with the State.

Thank you,
Sharman Richardson
360-681-2357
491 Lupine Dr.
Sequim

CLALLAM COUNTY
Department of Community Development
County Courthouse
223 E. 4th St., Suite 5
Port Angeles, WA 98362-3015
Phone: (360) 417-2323
Fax: (360) 417-2443
bruce.emery@clallamcountywa.gov

Memorandum

Date:	**March 25, 2026**
To:	**Clallam County Planning Commission**
From:	**Bruce Emery, Director of Community Development**
Re:	**Planning Commission CPU Continued Public Hearing, 04/01/2026**

Hello, Planning Commission Members. The public hearing for the CPU will continue on April 1, 2026.

Packet Items. Your packet includes the following:

- Draft Public Engagement Report, with attachments, dated March 25, 2026.
- Excerpt Table 3.2 with written testimony summaries and staff recommendations (Testimony #32 through 50).
- Letters of Testimony, #32 through 50.

Public Engagement Report. Enclosed is the Draft Public Engagement Report with attachments. Note that Table 3 is not included as this Table continues to be adjusted with new testimony. It will be included with the final version of the Report. The Report provides a summary of all the steps the County took, beginning in the summer of 2024, to engage and inform the public of the CPU process.

Public Testimony and Response (Table 3.2). New written testimony has been received since the last packet (3/11/26) to the Planning Commission. To concisely summarize comments and staff's recommendation for a policy response, a Table "3.2" has been included in your packet. Please note that Testimony #50 is large, with four attachments. Given my absence earlier in the week, I have not been able to provide an analysis of the comments received but hope to have something for you by the April 1st meeting.

Draft Policy Edits. The following includes policy responses from prior discussions.

- ***Draft language for new policy 31.06.100(5)(f), regarding night sky.*** As discussed, we are proposing the following to address protections for night sky in the Western Region Comprehensive Plan: (f) To reflect the unique and valuable resource of the night sky present in the majority of the Western Region, carefully consider and mitigate the impacts of exterior lighting and other light-emitting attributes of new

development in addition to the guidance provided under Policy 33, section 31.02.340(11)(b), CCC.

- **Agricultural accessory uses.** The following was included in the February 24, 2026, Memo to the Planning Commission and was instructed by the Vice Chair to be considered at the March 18, 2026, Planning Commission meeting:

  Concerning agricultural accessory uses, was there any text stricken that may be of value? The last paragraph under 31.02.115(6), could be retained in addition to the new language under 31.02.115(3)(c). This language reads as follows and would logically fit under 31.02.115(1), as the last paragraph in that section:

  > The need to redefine and broaden what we mean by the term "farm," and in so doing develop policies and programs that support this new vision of agriculture, exists in many places, not just in Clallam County. The Washington State Legislature passed legislation in 2004, which was amended in 2006, that essentially redefined what agriculture is; including references to "agriculturally related experiences, or the production, marketing, and distribution of value-added agricultural products, including support services that facilitate these activities" (RCW 36.70A.177). The State of Washington now recognizes that the needs of many farmers are much broader than in the past, and that small, innovative, entrepreneurial farmers require the ability to sell everything from high-dollar, value-added products to farm experiences on agritourism-oriented farms.

  Concerning Harvest-Host, the reservation of one RV use site on a farm would not conflict with the existing or proposed RV Use Ordinance as these are temporary and do not meet the threshold for *RV parks.* The problem would be if Harvest-Host includes more than one RV site, constituting an RV park. RV parks are prohibited in the AR zone (and most other rural zones). Even if RV parks were allowed, they would require a binding site plan pursuant to RCW 58.17.035 to establish the site and address services, parking, and operational impacts. Water system requirements alone would be a substantial controlling factor. Our suggestion is to consider the allowance of one RV site as accessory to the agricultural operation but recognize that more than one would conflict with existing zoning.

  Concerning wineries, cideries, breweries and distilleries (WCB&Ds), we examined the State Supreme Court's decision in King County v. Friends of Sammamish Valley earlier on in our CPU review. The case history sets a specific and high bar for analysis, referencing impacts to viable agricultural land, transportation impacts, and impacts to rural character to name a few. In the decision, the State Supreme Court found that King County erred in allowing wineries, breweries and distilleries outright in agricultural designations, without clear ag protection standards, and that the county failed to provide adequate analysis in their SEPA review for the change. Although our SEPA Threshold Determination could be amended, Clallam County lacks the resources to provide an environmental analysis of the scope of potential development that could be experienced if such uses were allowed outright. Further,

without clear and objective standards, the proliferation of such uses could result in significant impacts to the transportation network, rural character, and the County's effort to protect agricultural land.

The potential scope of these uses suggest that analysis on a case-by-case basis would be the best approach to ensure the scope is truly subordinate to the agricultural operation, and the impacts are addressed through SEPA review. For these reasons, the following language is suggested as new policy under 31.02.115(3)(h):

> (h) Clallam County should support the promotion of agritourism as a means for expanding farm operations and diversifying the local agricultural business model. In addition to the policy articulated under CCC 31.02.115(3)(c), agriculturally related businesses, such as wineries, cideries, distilleries and breweries, along with tasting rooms, restaurants, or other retail components, could be considered in certain settings if appropriately scaled and designed to fit a supporting role in the broader agricultural operation. Such developments would likely require the conditional use permitting process to ensure impacts from traffic, noise, scope of development, protection of agricultural land and rural character, and other operational characteristics were addressed.

Other Items. Other items discussed at the February 18th meeting, and since, include:

- Draft Findings: Conclusion 4 addresses only compliance with GMA but does not incorporate visioning, which is also part of the CPU process. Since GMA compliance is addressed in Conclusions #2 & 3, and visioning under Conclusion #5, my recommendation is we simply eliminate Conclusion #4.
- Notice to title for known archaeological sites. I discussed the matter with Legal Counsel. They advised that, because notice through SEPA only applies to development of a specific size and scope (Commercial development > 4,000 SF, subdivisions greater than four units, etc.), the policy could not be applied uniformly in all situations. A person could apply for a SEPA-exempt building permit to place a home on a parcel, and no archaeological review would occur. That same person could apply for a subdivision of the property, and SEPA review would include notice to the Department of Archaeological and Historic Preservation and area tribes. That process could indicate a high probably of artifacts, leading to the need for an archaeological survey. If artifacts are found, presumably, that's when notice to title would be required. Because of this difference, significant liability exists on part of the County. He recommends not pursuing notice to title for the presence of artifacts.
- Amended AR Zone section (33.07.010(1)), ending in same note about suspension as in other locations referencing the TDR Program:

> [NOTE: in accordance with policy 31.02.283(3)(i), the Transfer of Development Rights (TDR) program is currently suspended, pending the monitoring and

emergence of economic conditions that are conducive to its success. The provisions of this subsection related to the TDR program are also hereby suspended.]

- What happens if one development causes another's well to go dry? This question posed at the last Planning Commission work session does not appear to have a clear answer. The regulations are established to provide assurance that new wells will not adversely impact existing wells. Unless the new well is constructed illegally, the County would likely not be involved. The remedies would involve the Department of Ecology and possibly civil court. Please note, this issue is not within the purview of the DCD.

Thank you all again for your dedication and hard work. If you have any questions regarding this information, please contact me at 360-417-2323 or at bruce.emery@clallamcountywa.gov.

Sincerely,

Bruce Emery, Director
Clallam County DCD

Clallam County Comprehensive Plan Periodic Update
Public Engagement Report
March 25, 2023

Clallam County has been undertaking a public review and update of its Comprehensive Plan and development regulations as periodically required under the Washington State Growth Management Act (GMA), RCW 36.70A. As part of that effort, the County developed a Comprehensive Plan Periodic Update Public Engagement Plan, December 2024 (Appendix P). The Public Engagement Plan was developed to ensure the County's update process substantially met the requirements articulated under RCW 36.70A.035 and .140, as applicable. This report documents the efforts taken by Clallam County to date.

There were 10 different mechanisms included in the Public Engagement Plan that were identified for establishing and maintaining public engagement during the Comprehensive Plan Update (CPU). These included:

1. Web presence
2. Noticing
3. Open house events
4. Community survey
5. Planning Commission and Board of County Commissioner workshops
6. Tribal engagement
7. Community events
8. Public comment periods and hearings
9. News media, and
10. Ongoing public comment

Comprehensive Plan Update Webpage. Clallam County established a web page (https://www.clallamcountywa.gov/1842/Comprehensive-Plan-Update) dedicated to providing information concerning the Periodic Update. Originating on September 25, 2024, the page provided information on policy considerations, changes under the GMA, County events and efforts related to the development of proposed changes. The page was updated on June 24, 2025, with the public review drafts of the County-wide Comprehensive Plan and four regional sub-area plans. Generalized and Future Land Use Map amendments and Zoning amendments were included on October 15, 2025. The documents have been updated periodically since then to reflect the latest versions as considered and instructed by the Planning Commission. Public-facing documents include updated drafts showing changes in strike and underscore format, Appendices (A through P), supporting documents and studies, and prior drafts. The web page also includes a link to participate in an email list for notifications, and a portal for providing comment.

CPU Policy Survey. To gauge public opinion and scope the range of issues of greatest interest to the public, Clallam County initiated a Comprehensive Plan Policy Public Survey. The online survey ran from December 20, 2024, through March 15, 2025. In that time, there were a total of 464 individual responses. The survey consisted of a series of questions related to housing, environment, climate change and resilience, public facilities, transportation, parks and recreation, economic development, and other factors impacting quality of life for County residents. The

survey sought information on the County's strengths and weaknesses concerning the areas of consideration. The responses were significantly useful in shaping initial policy considerations under the CPU. Written comments received were generalized by subject and position, and included in the CPU Policy Response Table 1 (attached).

Tribal engagement. In accordance with RCW 36.70A.040(8), Clallam County initiated outreach to each of the five designated Indian tribes with reservation or ceded lands within Clallam County. Outreach efforts began on August 14, 2024, with an invitation for agency-to-agency meetings concerning the Multi-jurisdictional Hazard Mitigation Plan and Climate Element. In addition to all three jurisdictional cities, the Hoh Indian Tribe, Quileute Indian Tribe, Makah Indian Tribe, and Lower Elwha Klallam Tribe were included in the notice and invite. Additional outreaches were conducted between November 2024 and March 2025 regarding the Comprehensive Plan Update. Notice of the kickoff of the CPU process was sent to tribal entities on July 2, 2025. Specific notice was provided to each tribal entity on October 31, 2025, at the outset of the public hearing before the Planning Commission, which was initiated on November 5, 2025.

A Policy Response Summary was provided to the Hoh Indian Tribe and the Quileute Indian Tribe addressing proposed changes to the Comprehensive Plan in response to testimony provided (see attached). A Policy Response Summary was not provided to the Jamestown S'Klallam Tribe as comments have been ongoing. It is important to note that policy recommendations made pursuant to the testimony received is subject to approval, modification or rejection of the Planning Commission and the Board of County Commissioners as part of their respective reviews under the CPU. Engagement with tribal entities will remain active up to the close of the public hearing before the Board of County Commissioners. To date, Clallam County has received no communications indicating a parallel process pursuant to RCW 36.70A.040(8)(a).

Email signup for CPU notices. An email sign-up sheet was initiated during the Clallam County Fair starting on August 15, 2024. The purpose of the email list was to provide notice to interested constituents of changes and updates in the CPU process. As significant progress began to emerge in the summer and fall of 2025, the CPU web page was configured to issue automatic notices to recipients on the email list whenever updates to the web page, including revised drafts or new documents, were made. On March 4, 2026, the County became aware that the automatic configuration was not functioning as intended. A manual notice was immediately provided to all recipients identifying the problem and the ongoing public hearing before the Planning Commission. To address the deficiency created by the technical issue, the Planning Commission took action to extend the open record hearing at least until April 15, 2026, being a minimum of six weeks from notice of the issue. The County will continue to use the email list to provide manual notice of changes and events related to the CPU up to the point of adoption by the BOCC.

Community open houses. A Hazard Mitigation and Climate Resiliency Workshop was held at the campus of the Jamestown S'Klallam Tribe on August 7, 2024. The purpose of the meeting was to provide public review of the work accomplished and the process heading forward to adopt changes to the Joint Hazard Mitigation Plan and recommendations for the Climate Change and Resilience element required in the CPU. A series of regional community workshops were held

between July 17 and July 30, 2025, These included community level meetings in Clallam Bay (7/17/25), Joyce (7/22/25), Sequim (7/23/25), Forks (7/24/25), and Port Angeles (7/30/25). Public discussion and comments were held during each of the public outreach meetings. Comments received with coinciding staff-recommended policy responses are included in CPU Policy Response Table 1, attached. Notice of the community open houses were published in English and Spanish in the Sequim Gazette, the Peninsula Daily News, and the Forks Forum.

Joint and separate Planning Commission and BOCC Work Sessions. The Board of County Commissioners conducted a duly advertised work session on the proposed Housing and Growth Allocations jointly consented to by the County and three city jurisdictions on November 18, 2026. The BOCC took unanimous action to approve the Housing and Growth Allocations on November 26, 2024 (Res. 101, 2024). On July 16, 2025, the Planning Commission and the BOCC held a duly advertised joint work session regarding the CPU. No actions were taken, but the process and key changes under the GMA were discussed. Beginning on August 20, 2025, the Planning Commission commenced with a series of duly advertised work sessions on the CPU, including 8/20/25, 9/03/25, 9/17/25, 10/1/25, and 11/19/25. Additional work sessions were held by the Planning Commission during public hearing meetings, identified below.

The BOCC conducted a duly advertised work session on June 16, 2025, to review the findings of the Land Capacity Analysis (Appendix B) prepared as part of the CPU. The BOCC also held an additional duly advertised work session on December 1, 2025, to consider adjusting the allocation for emergency housing and emergency shelters within the unincorporated UGA for the City of Sequim. With the concurrence of the City Council, the Board took action on December 9, 2025, to reallocate 27 emergency housing/emergency shelter beds to within the city limits (Res. 94, 2025).

Community events. Starting in February of 2024, County staff engaged in a range of public and civic organization outreach and speaking events on the topic of the CPU. These events included a range of local organizations, such as the Sequim Chamber of Commerce, Port Angels Rotary, League of Women Voters, Clallam Bay/Sekiu Community Council, and various tribal-hosted functions. Engagement included interactions with local radio media, including the Todd Ortloft Show (KONP Radio) and Ritchie's Place with Rich Hendrickson (KSQM Radio). Engagement was also conducted with industry groups and advocates, like the West End Business Association, Port Angeles and Sequim Association of Realtors, North Peninsula Builders Association, and the Clallam Economic Development Council. These interactions will continue up to and beyond the close of the CPU public process.

Press releases. To leverage media coverage and encourage broader engagement, Clallam County issued a special press release on October 23, 2025, supplementing the legal advertisement for the CPU public hearing before the Planning Commission, which began on November 5, 2025. To further encourage public participation, a second press release was issued on December 4, 2025, emphasizing zoning changes within the Sequim UGA and that the public hearing process before the Planning Commission was being continued.

Public hearings. As noted, the duly advertised public hearing before the Planning Commission began on November 5, 2025. Since that meeting, the public hearing has been continued ten

times. Dates of the continued hearings include: 12/03/25, 12/17/25, 1/07/25, 1/21/25, 2/04/25, 2/18/25, 3/04/25, 3/18/25, 4/1/25, and 4/15/25. Comments were received (written and/or oral) at each of the public hearing dates noted. Legal notice of the public hearing before the Planning Commission was published on October 18, 2025, and again on October 25, 2025, in the Peninsula Daily News. The ongoing public hearing was also noticed in a press release on December 4, 2025. All meetings of the Planning Commission, including agendas and packet items, are posted on the Clallam County Agenda Center home page (https://www.clallamcountywa.gov/AgendaCenter).

Other outreach efforts. Based on comments received, a set of four binders containing the then latest draft revisions to the Comprehensive Plan and development regulations, were provided to the North Olympic Library System (NOLS) for placement within the Sequim, Port Angeles, Clallam Bay, and Forks branches of the NOLS. These volumes were provided to NOLS on March 17, 2025. A cover letter was provided with each volume indicating the process, how to provide comments, and where to obtain more information on the CPU.

Public and agency testimony and policy response. In an effort to document comments received, and to track responsive policy considerations, a series of tables were developed to summarize and document comments, provide context, and evaluate whether changes, additions or deletions to policies were in order. These tables are included as attachments hereto and are summarized as follows:

- *CPU Policy Response Table 1, Public Comments (pre-hearing)*. Table 1 includes a summary of comments received prior to the opening of the public hearing. This includes comments received as part of the CPU Policy Survey at the end of 2024 through mid-March of 2025. Comments received during the community open houses were also included as were periodic letters of comment received up to the opening of the public hearing on November 5, 2025.
- *CPU Policy Response Table 2, Planning Commission Issues*. Table 2 includes those issues raised by Planning Commission members during work sessions on the CPU. Although documentation at this level was not required, doing so help distinguish changes promulgated by the Planning Commission and those produced as a result of public testimony.
- *CPU Policy Response Table 3, Public/Agency Testimony*. Table 3 includes a distillation of all issues raised during public and agency testimony under the public hearing before the Planning Commission. Recommended policy amendments have largely been considered by the Planning Commission, some being further modified and others being rejected. The Table tracks this process for a clear accounting of the testimony, proposed policy response, and final policy recommendation as determined by the Planning Commission.
- *CPU Policy Response Table 4, Commerce Checklist*. The Commerce Checklist included the agency's initial review and gap analysis of what the agency considered to be changes needed to the Comprehensive Plan and development regulations in order to meet current requirements of the GMA. County staff, with the assistance of the consulting team, prepared initial draft edits to the plans and regulations prior to the public hearing. However, some issues were technically challenging and required additional research and

careful language development to meet the requirements of the Act, or to challenge the assertion that a change was needed. Because much of this work occurred simultaneous with the public hearing process, it was necessary to document and track such changes so that the public could remain informed.

It is important to note that these tables and the policy amendments reflected therein are still subject to change pending the conclusion of the Planning Commission and the BOCC's CPU review process.

Any questions regarding this information may be directed to me at 360-417-2323, or by email at bruce.emery@clallamcountywa.gov. Thank you for your interest in this important process.

Sincerely,

Bruce Emery, Director
Clallam County DCD

Attachments:

- CPU Policy Response Table 1: Public Comments (pre-hearing)
- CPU Policy Response Table 2: Planning Commission Issues
- CPU Policy Response Table 4: Commerce Checklist
- Policy Response Summary to Hoh Indian Tribe (October 31, 2025)
- Policy Response Summary to Quileute Indian Tribe (October 31, 2025)
- Comprehensive Plan Update Outreach Events Table
- NOTE: CPU Policy Response Table 3: Public/Agency Testimony is not included as this table will continue to be updated as new testimony is received.

CLALLAM COUNTY
Department of Community Development
County Courthouse
223 E. 4th St., Suite 5
Port Angeles, WA 98362-3015
Phone: (360) 417-2323
Fax: (360) 417-2443

bruce.emery@clallamcountywa.gov

October 31, 2025

Greetings Honorable Douglas Woodruff Jr., Chairman,
Quileute Tribal Council

The process for updating the Clallam County Comprehensive Plan is moving along at a quick pace. County staff completed a series of regional outreach meetings in July and August. The Clallam County Planning Commission has been holding regular work sessions on draft changes to the Plan since August 20, 2025.

As part of that review, they have carefully considered comments received from the Quileute Indian Tribe (7/2/2025). Attached is a summary of comments received, and existing or recommended policy amendments intended to address the issues raised by the Tribe. Text shown in red includes changes that have been incorporated into the draft update documents for consideration and adoption.

The Planning Commission will begin their public hearing series, starting on Wednesday, November 5, 2025 in the BOCC Meeting Room at the County Courthouse. It is expected these hearings will continue through Wednesday, December 3rd at the earliest. If additional comments or concerns exist, please feel free to provide them at your earliest convenience and we will include them for consideration. The full range of public hearing documents can be viewed at: https://www.clallamcountywa.gov/1842/Comprehensive-Plan-Update.

As co-managers, we welcome and value your input in this effort and look forward to future collaborations on matters of mutual concern. Thank you for your engagement in this process. If you have any questions or would like to discuss any related issues, please feel free to contact me at 360-417-2323 or at bruce.emery@clallamcountywa.gov.

Sincerely,

Bruce W. Emery

Bruce Emery, Director
Clallam County Department of Community Development

CC. Susannah Spock, Futurewise

Clallam County Comprehensive Plan Update
Comments received from the Quileute Indian Tribe, and Corresponding Recommendations
October 30, 2025

The following summarizes comments received by the Quileute Indian Tribe as part of Clallam County's 2025 Comprehensive Plan Update (CPU). The Planning Commission has considered the comments (summarized herein) during work sessions starting on 8/20/25 and concluding on 10/15/25. The following summary identifies the issues raised and policy recommendations where warranted. Nothing in this document is intended to restrict the Planning Commission or the Board of County Commissioners from considering any and all reasonable alternatives. All comments received have been retained by Clallam County as part of the record for the CPU.

Comment/Issue	Policy/Amendment Response
Conservation. Proximity and access to shoreline and marine amenities should be protected and managed, and cultural and natural resources should not be sacrificed for development, even when considering needed housing growth. Development and other impactful land use practices should be sited well away from riparian areas, prairies, and other sensitive or culturally significant areas and only permitted where ecological conditions are suitable and water resources are sufficient to support new activity without further impacting streamflows, habitat or cultural resources. Restoration alone is an inadequate strategy to address the environmental stressors resulting from population growth and land use. Preventing further environmental harm through conservation is critical and requires engagement with the community to promote education and accountability.	Existing Section CCC 31.02.340, Environment and Open Space Policies; (14) *Open Space and Public Access*, includes six stated policies intended to identify, develop, acquire, expand and protect public access to natural amenities, including shorelines, open space corridors, and other natural amenities. Existing Section CCC 31.02.350, states: "All jurisdictions should work individually and cooperatively to identify, record, study and encourage the preservation, maintenance and use of lands, sites, and structures that have historical and archaeological significance." Subsection (3) recognizes tribal nations and requires notification for development applications to avoid impacting culturally significant areas. New Section CCC 31.02.820(4) states: *Goal 4. Cultural Resources & Practices.* Strengthen the resilience of known and unknown cultural resources and practices, such as historic, archaeological, and sacred sites, traditional foods, and natural resources, to the effects of extreme weather and other natural disasters exacerbated by climate change. New Section CCC 31.02.820(13), *Zoning & Development*, requires utilization of BAS "…to direct development away from current and future high-risk areas and reduce risk in those areas." This, coupled with existing policies and regulations mandating the protection of riparian areas will help provide for their protection. As a principle under the GMA, commercial, industrial and urban-residential uses and densities shall be limited to designated Urban Growth Areas.

	New Section CCC 31.02.820(4)(a), requires the following: (a) *Policy 4.1*: Work towards protecting ecosystem functions to uphold Tribal Treaty Rights and preserve culturally significant resources including but not limited to archaeological and sacred sites, ecosystems, traditional foods, plants, and resources at risk from climate change impacts. This may include incorporating riparian and stream habitat conservation measures into land use and infrastructure plans to protect salmonoid habitats (transportation, water, sewer, electricity) developed by the County in partnership with cities, Tribes, service providers, and state agencies. The existing policies under CCC 31.02.340, Environment and open Space policies, address the prevention of environmental degradation, including regulatory controls, public education and incentives, and coordination with tribal co-managers and state agencies.
Natural cultural resource management. Access to cultural natural resources and spaces is critical for ensuring the perpetuation of Tribal lifeways and the availability of treaty-protected resources requires prioritization in planning and intentional management at the landscape level.	Noted earlier, CCC 31.02.340, addresses the protection and expansion of public access to natural amenities. New Section CCC 31.02.820(4) addresses strengthening the resilience of known and unknown cultural resources and practices to the effects of climate change. Also noted, CCC 31.02.350(3) requires notification of development proposals through the SEPA review process to area Tribes. Although it does not appear that there is a lack of appropriate policy in this area, Clallam County would be open to discussing procedural or regulatory changes if current practices are proving inadequate at addressing these concerns. Also, the following policy is recommended for inclusion under CCC 31.02.340(1)(f): Clallam County shall prioritize culvert replacement and similar issues that presently result in barriers to fish passage as part of the Six-Year Transportation Improvement Plan (TIP) process.
Parks and recreation. While access to open space was considered a strength of the area, specific uses fall short of meeting their goals. Improvements to parks, sports fields, and recreational programming should be prioritized, and ADA access, sustainability strategies, and	In accordance with RCW 36.70A.070(10) and WAC 365-196-440, the Clallam County Parks Master Plan is a document separate from the comprehensive Plan and not adopted under the requirements of the Growth Management Act. It is administered by the Clallam County Parks, Fair & Maintenance Department. All questions relating to the Parks Master Plans should be directed to the Department at 360-417-2291.

maintenance should be considered carefully. Agencies must plan for sustainable maintenance practices that consider all users and address existing problems with issues like overuse and waste management.	
Housing. Considered a significant challenge, housing growth should be accelerated and focused on existing urban centers, such as the City of Forks. A variety of housing types are needed, and affordable housing for seniors, new families, temporary workers, and workforce housing should be prioritized.	The updated housing element includes a range of policies aimed at addressing income needs of extremely low, very low, low, and moderate-income individuals and families. Changes reflected under CCC 31.02.283(3) include: establishing zero-lot-line standards to increase duplex and multi-family housing options with fee-simple ownership; creating incentives and disincentives for second-home vacancies to encourage expanding rental opportunities, the siting of emergency housing and emergency shelters, balancing landlord/tenant rights to help regain rental stock, and establishing a registry for vacation rentals to establish baseline data in understanding the scope and potential impact that STRs may have on the local housing market. New policies under CCC 31.02.820(3) state: *Goal 3.* Promote building retrofits and new construction that is sustainably built to minimize environmental impacts and enhance resilience against extreme weather and other risks exacerbated by climate change. Such policies will help retain existing housing stock and avoid collateral loss due to the effects of climate change.
Economic development. Land is underutilized for commercial purposes, warehousing, and agricultural and forestry practices, as well as for mixed use development. Proper commercial siting is essential to reduce harmful impacts to cultural and natural resources, and strategies for increasing the variety of industries operating and availability of jobs, with a particular focus on small business development, should be the cornerstones of any economic development policy. Existing and future impacts of the tourism industry on the environment and community	Existing policies already require significant commercial and industrial developments to be located within existing Urban Growth Areas (CCC 31.02.230, .240, and .260). Amended policies under CCC 31.02.620, Economic Development Goals and Policies, include substantial changes that will leverage local economic strengths for expanding job opportunities, including prosperity-wage jobs, while protecting natural resources from encroachment or degradation. The Lands Capacity Analysis (Appendix B) demonstrates that the Forks Urban Growth Area has sufficient capacity to accommodate residential, commercial and industrial development to meet the growth needs projected for the 20-year planning horizon (2045). Regarding the risks of human impacts from increased tourism activity, the following new policy is recommended under CCC 31.02.340(14)(g): "Prioritize the citing of

such as human waste and traffic must be addressed now to prevent further harm to treaty protected rights and resources and in planning for expansion of this industry.	sanitary waste facilities and information kiosks at recreational sites, shoreline accesses and other natural amenities that demonstrate a high level of recreational and tourism interest in order to protect resources from degradation and impacts from human waste and improper use."
Community services. While services related to emergencies and safety were considered strengths, specialized services, especially for youth, seniors, and veterans, were weaknesses. Similar to Parks and Recreation, building on general offers to improve specialized services should be prioritized, such as ensuring Internet access is readily available to all who want it.	New policy section under CCC 31.02.820 (9), states: "Goal 9. *Health & Well-being.* Protect community health and well-being from the impacts of climate change and focus on overburdened communities in the County to reduce disproportionate health impacts for the most vulnerable people." Other policies under CCC 31.02.820 include: increasing resilience in energy infrastructure promotion of distributed energy generation (Goal 2); creating greater resiliency in the transportation network to withstand and recover from extreme weather events, including alternative access and evacuation routes (Goal 10); and enhance and create more resilient water systems, including mitigation of saltwater intrusion due to sea level rise (Goal 12). Also relevant, new Section 31.02.720(6) reads: "*Policy 6.* Power and utility service providers should be encouraged to integrate resiliency and redundancy in utility service extension design, where practicable, in order to avoid service outage, disruption, and duration."
Climate resilience. Advocacy should focus on improved critical infrastructure and government leadership that emphasizes community engagement. Climate change will impact the availability of fish and other cultural and treaty-protected resources, and climate mitigation strategies that prevent and address flooding, erosion, and habitat loss should be prioritized. Most critically, funding for Tribal support of climate resilience is an essential component in the success of any strategy, as capacity related to engagement, staffing, expertise and partnership all stem from it.	The issues identified under Section CCC 31.02.810, *Climate Change and Resiliency Issues*, and the goals and policies of CCC 31.02.820, *Climate Change and Resiliency Goals and Policies*, in addition to other changes within the Draft Comprehensive Plan Update, form a comprehensive framework for addressing vulnerabilities, creating resiliency, and accomplishing environmental justice in the face of climate change. These policies will also work in relation to the recently adopted Multi-Jurisdiction Hazard Mitigation Plan that has been jointly implemented by Clallam County and its three incorporated jurisdictions. No net loss of habitat value or function is now a requirement for shoreline or critical area development.

CLALLAM COUNTY
Department of Community Development
County Courthouse
223 E. 4th St., Suite 5
Port Angeles, WA 98362-3015
Phone: (360) 417-2323
Fax: (360) 417-2443

bruce.emery@clallamcountywa.gov

October 31, 2025

Greetings Honorable Darlene Hollum, Chairwoman,
Hoh Tribal Business Committee

The process for updating the Clallam County Comprehensive Plan is moving along at a quick pace. County staff completed a series of regional outreach meetings in July and August. The Clallam County Planning Commission has been holding regular work sessions on draft changes to the Plan since August 20, 2025.

As part of that review, they have carefully considered comments received from the Hoh Indian Tribe (2/30/25 and 6/20/25). Attached is a summary of comments received, and existing or recommended policy amendments intended to address the issues raised by the Tribe. Text shown in red includes changes that have been incorporated into the draft update documents for consideration and adoption.

The Planning Commission will begin their public hearing series, starting on Wednesday, November 5, 2025 in the BOCC Meeting Room at the County Courthouse. It is expected these hearings will continue through Wednesday, December 3rd at the earliest. If additional comments or concerns exist, please feel free to provide them at your earliest convenience and we will include them for consideration. The full range of public hearing documents can be viewed at: https://www.clallamcountywa.gov/1842/Comprehensive-Plan-Update.

As co-managers, we welcome and value your input in this effort and look forward to future collaborations on matters of mutual concern. Thank you for your engagement in this process. If you have any questions or would like to discuss any related issues, please feel free to contact me at 360-417-2323 or at bruce.emery@clallamcountywa.gov.

Sincerely,

Bruce W. Emery

Bruce Emery, Director
Clallam County Department of Community Development

CC. Susannah Spock, Futurewise

Clallam County Comprehensive Plan Update
Tribal Comments received from the Hoh Indian Tribe, and Corresponding Recommendations
October 30, 2025

The following summarizes comments received from the Hoh Indian Tribe as part of Clallam County's 2025 Comprehensive Plan Update (CPU). The Planning Commission has considered the comments (summarized herein) during work sessions starting on 8/20/25 and concluding on 10/15/25. The following summary identifies the issues raised and policy recommendations where warranted. Nothing in this document is intended to restrict the Planning Commission or the Board of County Commissioners from considering any and all reasonable alternatives. All comments received have been retained by Clallam County as part of the record for the CPU.

Comment/Issue	Recommended Policy/Amendment
Tribal Comments received, dated 2/20/25, on the topic of the Clallam County Climate Vulnerability Assessment	
In the Tribal Communities section under *Vulnerable Groups in Clallam County* (p. 20), acknowledge that County resources are the closest despite the reservation being in Jefferson County.	Amended paragraph following *Tribal Communities* (bottom page 20) as follows: Tribal communities, including the Quileute, Makah, Lower Elwha Klallam, and Jamestown S'Klallam Tribes, face unique climate challenges due to their reliance on natural resources and treaty-protected lands. For example, flooding could isolate the Makah Reservation in Neah Bay by cutting off the only road out (Hazard Mitigation & Climate Resilience Planning Workshop, 2024). Although located within Jefferson County, the Hoh Tribal Community is also included in this section due to much of its Usual and Accustomed Area existing within the boundary of Clallam County, and the closest emergency service providers available to the community are located within Clallam County and the City of Forks. Climate change threatens ecosystems and resources central to Tribal health, culture, and livelihoods, intensifying existing social and economic difficulties (Clallam County, 2024).
Under *Critical Infrastructure and Flood Zones* (p. 30), or *Climate Risk* (p. 63), acknowledge that floods on Highway 101 could isolate tribal members from closest emergency services.	Amended paragraph following *Climate Risks* (last paragraph, p. 63) as follows: Clallam County's transportation system is already experiencing the impacts of climate change, as described earlier. For example, Highway 112 has been affected by landslides near Sekiu and Clallam Bay, which have closed the highway, and flooding from the Pysht River (Makah Tribe, 2023). Many times, the Makah Tribe has been cut off from the rest of the Peninsula due to closed roads. Increased risk and severity of flood events impacting Highway 101 south of Forks could isolate Hoh Tribal members from the northern Peninsula and potentially the closest emergency services available to the

	community. Additionally, parts of Highways 112, 110, and 101 will likely be impacted by 4 to 6 feet of sea level rise or coastal flooding in the future (Figure 33).
Under *Wildfire Risk* (p. 31), the Hoh Tribe depends on Forks for wildland fire assistance. Also, many tribal members live in Forks, which has a high wildland-urban interface.	Amended paragraph following *Wildfire Risk* (second paragraph, p. 31) as follows: Wildfire risks affect the cities of Port Angeles, Sequim, and Forks, which have significant wildland- urban interface areas. Port Angeles and Sequim are bordered by wildland areas and Olympic National Park, while Forks is surrounded by commercial forests, making it especially vulnerable. The Hoh Tribe does not currently have their own fire department and depends on emergency services located within the City of Forks for wildland fire assistance. Additionally, many Tribal members live in Forks and are subject to the vulnerabilities identified.
Under *Climate Risk* (p. 75 & 76), the Hoh Reservation receives power from Clallam PUD and is subject to frequent outages due to location at the end of the line.	Amended last paragraph following Climate Risks (bottom of page 76) as follows: The community survey for the MJHMP highlights the urgency of energy concerns, with 72% of the 619 survey respondents reporting that they experience power outages either once or multiple times per year (Clallam County, 2024), underscoring the community's priority for improved electrical grid resilience. The Hoh Tribal Reservation receives its power from PUD #1 of Clallam County, and due to its geographic location, is literally at the end of the line, making the community acutely susceptible to disruption of service. Addressing these vulnerabilities is crucial to ensuring reliable power access for all communities, especially those most dependent on consistent electricity.
The Hoh Tribe should also be added to the Tables in Appendix C that summarize predictions for Tribal lands.	Amended Tables 14 (p. 97) and Table 17 (p. 102) to include data relative to the Hoh Tribal Reservation found at the Climate Impacts Group web site: https://climate.northwestknowledge.net/NWTOOLBOX/tribalProjections.php. Data was obtained 10/29/2025.
Tribal Comments received, dated 6/20/25, on the topic of Comprehensive Plan Outreach	
Protect access to important natural amenities.	Existing Section CCC 31.02.340, Environment and Open Space Policies; (14) *Open Space and Public Access*, includes six stated policies intended to identify, develop,

	acquire, expand and protect public access to natural amenities, including shorelines, open space corridors, and other natural amenities.
Cultural resources should be protected.	Existing Section CCC 31.02.350, states: "All jurisdictions should work individually and cooperatively to identify, record, study and encourage the preservation, maintenance and use of lands, sites, and structures that have historical and archaeological significance." Subsection (3) recognizes tribal nations and requires notification for development applications to avoid impacting culturally-significant areas. New Section CCC 31.02.820(4) states: *Goal 4. Cultural Resources & Practices.* Strengthen the resilience of known and unknown cultural resources and practices, such as historic, archaeological, and sacred sites, traditional foods, and natural resources, to the effects of extreme weather and other natural disasters exacerbated by climate change. The policy includes subsections (a) and (b), which expand on the ecosystem and Tribal Treaty Rights protection, as well as working with Tribes as co-managers for the protection of cultural and resource areas.
New housing should meet the need for varied housing types and affordability levels.	The updated housing element includes a range of policies aimed at addressing income needs of extremely low, very low, low, and moderate-income individuals and families. Changes reflected under CCC 31.02.283(3) include: establishing zero-lot-line standards to increase duplex and multi-family housing options with fee-simple ownership; creating incentives and disincentives for second-home vacancies to encourage expanding rental opportunities, the siting of emergency housing and emergency shelters, balancing landlord/tenant rights to help regain rental stock, and establishing a registry for vacation rentals to establish baseline data in understanding the scope and potential impact that STRs may have on the local housing market. New policies under CCC 31.02.820(3) state: *Goal 3.* Promote building retrofits and new construction that is sustainably built to minimize environmental impacts and enhance resilience against extreme weather and other risks exacerbated by climate change. Such policies will help retain existing housing stock and avid collateral loss due to the effects of climate change.

More housing types and affordability levels, and job opportunities, should be focused and expanded within the Urban Growth Area of the City of Forks.	Existing policies already require significant commercial and industrial developments to be located within existing Urban Growth Areas (CCC 31.02.230, .240, and .260). Amended policies under CCC 31.02.620, Economic Development Goals and Policies, include substantial changes that will leverage local economic strengths for expanding job opportunities, including prosperity-wage jobs, while protecting natural resources from encroachment or degradation. The Lands Capacity Analysis (Appendix B) demonstrates that the Forks Urban Growth Area has sufficient capacity to accommodate residential, commercial and industrial development to meet the growth needs projected for the 20-year planning horizon (2045). As noted earlier, changes to housing policies will help expand housing types and affordability levels.
Access to public services (utilities, health care, transportation) and job opportunities will need to increase along with growth projections. These services are already identified as vulnerable to the effects of climate change.	Proposed Policy CCC 31.02.720, Utility policies; "(6) *Policy 6.* Power and utility service providers should be encouraged to integrate resiliency and redundancy in utility service extension design, where practicable, in order to avoid service outage, disruption, and duration." Proposed policies under CCC 31.02.820, Climate Change and Resiliency Goals and Policies, include: increasing resilience in energy infrastructure promotion of distributed energy generation (Goal 2); focusing on the health and well-being of overburdened communities, including Tribal communities, from the impacts of climate change (Goal 9); creating greater resiliency in the transportation network to withstand and recover from extreme weather events, including alternative access and evacuation routes (Goal 10), and; enhance and create more resilient water systems, including mitigation of salt water intrusion due to sea level rise (Goal 12).
Protection from climate change and other environmental stressors are a tribal priority.	The issues identified under Section CCC 31.02.810, *Climate Change and Resiliency Issues*, and the goals and policies of CCC 31.02.820, *Climate Change and Resiliency Goals and Policies*, in addition to other changes within the Draft Comprehensive Plan Update, form a comprehensive framework for addressing vulnerabilities, creating resiliency, and accomplishing environmental justice in the face of climate change. These policies also work in relation to the recently adopted Multi-Jurisdiction Hazard Mitigation Plan that has been jointly implemented by Clallam County and it's three incorporated jurisdictions.

Clallam County Compehensive Plan Update, Outreach Events

Date	Activity	Type	Region	Location	Approx # of Interactions	Open to Public
2/14/2024	Coffee with Colleen	Public Event	County Wide	Online forum hosted by Clallam EDC	28	Yes
6/25/2024	Sequim Chamber of Commerce	Community Organization	Sequim	Sunland Golf Club, 109 Hilltop Drive, Sequim	57	No
8/7/2024	Hazard Mitigation and Climate Resilince Workshop	Public Event	Sequim	Jamestwon Tribal Center, Cedar Hall	32	Yes
3/3/2023	Port Angeles Rotary	Community Organization	Port Angeles	1940 East 1st Street, #160, Port Angeles	16	No
08/15/2024 - 08/18/24	Clallam County Fair	Public Event	Port Angeles	Clallam County Fairgrounds	345	Yes
10/9/2024	League of Women Voters	Community Organization	Port Angeles	Penisula College, Meier Hall, Rm 335	20	No
10/16/2024	Clallam County Planning Commission	County Gov't/Commission	Port Angeles	Clallam County Courthouse, BOCC Boardroom	10	Yes
10/17/2024	Clallam Bay/Sekiu Advisory Council	County Gov't/Commission	Clallam Bay/Sekiu	Sekiu Community Center, 42 Rice St Sekiu	15	No
10/23/2024	Sequim Realtor's Association	Community Organization	Sequim	525 N. 5th Ave, Sequim	30	No
10/24/2024	Todd Ortloff Show	Radio	County Wide	KONP Radio, Port Angeles	Unknown	Yes
10/25/2024	Ritchie's Place with Rich Hendricksen	Radio	County Wide	KSQM Radio, Sequim	Unknown	Yes
10/30/2024	NODC Energy & Climate Resilience Summit	Community Organization	Blyn	7 Cedars, Blyn	100	No
11/1/2024	CC Housing Solutions Committee	County Gov't/Commission	Port Angeles	Clallam County Courthouse, BOCC Boardroom	20	Yes
11/8/2024	Mtg w/ Quileute Tribe & Futurewise	Tribal Outreach	Quileute Tribe	Online	2	No
11/8/2024	Mtg w/ Hoh Tribe & Futurewise	Tribal Outreach	Hoh Tribe	Online	3	No
11/18/2024	Board of County Commissioners Work Session on Housing Allocations	BOCC Meeting	County Wide	Commissioners Meeting Room	Unkown	Yes
11/19/2024	Port Angeles Business Association	Community Organization	Port Angeles	113 S. Del Guzzi Dr., Port Angeles	33	No
12/20/24 - 03/15/2025	Community Survey	Survey	County Wide	Online	464	Yes
1/23/2025	Hoh Tribe Community Dinner	Tribal Outreach	Hoh Tribe	Hoh Tribal Center	50	No
2/12/2025	DRMT	Community Organization	Sequim	Dungeness Nature Center	25	Yes
2/13/2025	Todd Ortloff Show	Radio	County Wide	KONP Radio, Port Angeles		Yes
2/13/2025	Clallam Bay/Sekiu Advisory Council	County Gov't/Commission	Clallam Bay/Sekiu	Sekiu Community Center, 42 Rice St Sekiu	11	No
2/14/2025	Ritchie's Place with Rich Hendricksen	Radio	County Wide	KSQM Radio, Sequim	Unknown	Yes
2/27/2025	Port Angeles Political Discussion Group	Community Organization	Port Angeles	Port Angeles Senior Center	19	No
3/6/2025	Port Angeles Association of Realtors	Community Organization	Port Angeles	Bethany Pentecostal Church, 508 S Francis St, Port Angeles, WA 98362	9	No
4/24/2025	Fire Districts Commissioner Mtg	County Gov't/Commission	Sequim	Fire District #3, Maintenance Facility/Training Grounds, 255 Carlsborg Road, Sequim, WA 98382	11	No
4/28/2025	Joint BOCC/Port of PA mtg	County Gov't/Commission	Port Angeles	338 West 1st Street, Port Angeles	23	Yes
5/8/2025	Clallam County Attainable Workforce Housing Summit	County Gov't/Commission	Port Angeles	Vern Burton Center	50	No
6/16/2025	Board of County Commissioners Work Session on Land Capacity Analysis	BOCC Meeting	County Wide	Commissioners Meeting Room	Unkown	Yes
7/10/2025	Port Angeles Association of Realtors	Community Organization	Port Angeles	Bethany Pentecostal Church, 508 S Francis St, Port Angeles, WA 98362	32	No
7/16/2025	Joint BOCC/PC mtg	County Gov't/Commission	Port Angeles	BOCC mtg room	15	Yes
7/17/2025	Public Outreach Area Meeting	Public Event	Clallam Bay/Sekiu	Clallam Bay Library	6	Yes
7/22/2025	Public Outreach Area Meeting	Public Event	Joyce	Crescent Grange, Joyce	12	Yes
7/23/2025	Public Outreach Area Meeting	Public Event	Sequim	Guy Cole Center, Sequim	11	Yes
7/24/2025	Public Outreach Area Meeting	Public Event	Forks	Forks City Hall	4	Yes
7/30/2025	Public Outreach Area Meeting	Public Event	Port Angeles	Port Angeles Library	10	Yes
8/6/2025	Forks Business Association	Community Organization	Forks	280 Spartan Ave, Forks	16	No
8/14/25 - 8/17/25	Clallam County Fair	Public Event	Port Angeles	Clallam County Fairgrounds	337	Yes
9/10/2025	DRMT	Community Organization	Sequim	Dungeness Nature Center	40	Yes
9/11/2025	Todd Ortloff Show	Radio	County Wide	KONP Radio, Port Angeles	Unknown	Yes
9/12/2025	Ritchie's Place with Rich Hendricksen	Radio	County Wide	KSQM Radio, Sequim	Unknown	Yes
9/30/2025	EDC Real Estate Forum	Community Organization	County Wide	PUD Main Office, 104 Hooker Road, Sequim	32	Yes
10/1/2025	North Olympic Land Trust	Community Organization	Port Angeles	319 S. Peabody St, Port Angeles	17	No
10/16/2025	North Peninsula Builders Association	Community Organization	Port Angeles	113 S. Del Guzzi Dr., Port Angeles	9	No
10/21/2025	Port Angeles City Council Meeting presentation	Public Event	Port Angeles	City Council Chambers, 321 E. 5th Street, Port Angeles	35	Yes
10/22/2025	NODC Energy & Environmental Resilience Conference	Community Organization	Port Angeles	Red Lion Inn, 221 S. Lincoln, Port Angeles	37	No
10/27/2025	Joint Port Commission/County Commissioners Meeting	County Gov't/Commission	Port Angeles	Commissoners Meeting Room, 223 E. 4th Street, Port Angeles	Unknown	Yes
11/17/2025	Marine Resources Committee, Presentation	County Gov't/Commission	Port Angeles	Commissoners Meeting Room, 223 E. 4th Street, Port Angeles	22	Yes
2/4/2026	Coffee with Colleen	Public Event	County Wide	Online forum hosted by Clallam EDC	29	Yes
2/12/2026	Todd Ortloff Show	Radio	County Wide	KONP Radio, Port Angeles	Unknown	Yes
2/13/2026	Ritchie's Place with Rich Hendricksen	Radio	County Wide	KSQM Radio, Sequim	Unknown	Yes
2/25/2026	Presentation to Sequim Realtors Association	Community Organization	Sequim	525 N. 5th Ave, Sequim	8	No

CPU Policy Response Table 1: Public Comments (pre-hearing)

Clallam County Comprehensive Plan Update
Public Comments and Corresponding Recommendations
August 12, 2025, with updates through the November 12, 2025

The following summarizes issues raised during the public engagement and outreach efforts taken by Clallam County as part of its 2025 Comprehensive Plan Update (CPU). Efforts included several private and public community event presentations, an online survey which ran from December 26, 2024, through March 24, 2025, and public engagement meetings held in Clallam Bay (7/17/25), Joyce (7/22/25), Sequim (7/23/25), Forks (7/24/25) and Port Angeles (7/30/25). Public testimony has been invited throughout the CPU process, originating in June 2024. The Planning Commission has considered the enclosed comments during work sessions, starting on 8/20/25 and concluding on 10/15/25. The following summary identifies the issues raised, and if a policy is warranted, a draft policy that is being recommended by the Planning Commission. Nothing in this document is intended to restrict the Planning Commission or the Board of County Commissioners from considering any and all reasonable alternatives. All comments received have been retained by Clallam County as part of the record for the CPU.

Comment/Issue	Recommended Policy/Amendment	Staff Notes
1) Need for maintaining transportation arterial flow throughout Clallam County, including bypass for the City of Port Angeles, Palo Alto intersection, Blyn, and possibly Forks in order to address congestion, for the wellbeing of the community and to facilitate economic development. The Bonneville Power Easement corridor was identified as a possible route.	Existing Policy: CCC 31.02.420(1)(c)(ii). Review need for new or alternative highway alignment to improve circulation and regional mobility in the Port Angeles subregion. Observe and track potential regional congestion points along the SR 101 corridor throughout Clallam County, and plan for new highway corridors and bypass alternatives as needed to address congestion and maintain arterial flow and efficient regional mobility.	Comment at public outreach meeting, 7/17/25. Current policy appears to limit concern regarding regional mobility on SR 101 to the Port Angeles area. The proposed language will expand this concern to all areas that pose a risk of congestion and impacts to regional mobility.
2) Alternative/emergency access routes should be developed for the North Coast (SR 112 to Neah Bay), including the development of an alternative route from Forks to Neah Bay.	Recommend amending existing Policy CCC 31.02.420(1)(c)(iii). Pursue~~Review~~ the development of~~need to have~~ a new highway connection from Neah Bay to Ozette along or near the coast.	Comment at public outreach meeting, 7/17/25.
3) Consideration should be given to relocating the sewer treatment facility for Clallam Bay/Sekiu away from the shoreline as a	Proposed Climate Goal 3: Promote building retrofits and new construction that is sustainably built to minimize environmental impacts and enhance	Comment at public outreach meeting, 7/17/25. Proposed language of Goal 3, Climate Element, addresses the concern of this comment.

CPU Policy Response Table 1: Public Comments (pre-hearing)

resiliency and emergency management measure.	resilience against extreme weather and other risks exacerbated by climate change.	
4) Policy and regulatory approaches to managing commercial forestry should carefully consider the present costs of doing business in forestry (e.g. land, equipment, transportation, labor, etc.).	Recommend a new Subsection 31.02.140(5): Development of policy and regulatory approaches to managing commercial forest lands should carefully consider present and ever-changing costs of conducting commercial forest operations, including land, equipment, labor, regulatory compliance, and transportation. Where feasible, regulations should be crafted to facilitate commercial forestry and avoid presenting a barrier to the same.	Comment at public outreach meeting, 7/17/25.
5) Barging and marine transportation should be strengthened as a means of facilitating industrial business operations in Clallam County as a cost- and logistically-effective alternative to trucking.	Recommend a new subsection CCC 31.02.420(2)(a)(iv): Explore the siting of a new marine barging facility within the Clallam Bay/Sekiu UGA to establish and facilitate industrial marine transport.	Comment at public outreach meeting, 7/17/25.
6) Clallam County should consider incentives and disincentives to address the proliferation of second-home and investment home vacancies, and to restore adequate rental stock.	Recommend a new subsection CCC 31.02.283(3)(h): Consider implementation of incentives and disincentives, such as special tax initiatives, to facilitate second-home and out-of-area owners providing their homes for medium (>30 days to one year) and long-term (one year or more) rental opportunities.	Comment at public outreach meeting, 7/17/25. **Amended language proposed in response to 8/20/2025 Planning Commission work session.**
7) HipCamp (commercial campgrounds) is strongly supported by some residents, who own and operate a facility without issue. Fire concerns were expressed as one issue that might be addressed through controls, such as fire pit density standards and clear zones.	Recommend adding the following to subsection CCC 31.02.620(1)(j)(iv): • Standards should be considered for recreational uses in rural areas, including limited camping facilities along non-motorized trails such as the Olympic Discovery Trail, and commercial outdoor oriented activities:	Comment at public outreach meeting, 7/22/25. Sequim and Port Angeles Regional Plans (CCC 31.03.270(8) and .04.260(6)(c), respectively) call for development of operational standards for private campgrounds, setting a minimum lot size of five acres. Straits and West End CPs do not specifically mention campgrounds but generally support outdoor-oriented recreational uses with reasonable conditions to minimize nuisances and

	○ Standards for buffering and landscaping to ensure compatibility with surrounding rural land uses shall be accomplished. ○ Standards for noise, traffic, light, and glare, and other nuisance characteristics. ○ Such uses shall be located on a minimum parcel size of five acres.	impacts. Recommend standardizing policy under the Countywide Comprehensive Plan to establish broader consistency and direct implementation of standards and thresholds.
8) Community bicycle access to the Discovery Trail is supported as a priority. The commentors noted that with younger people, vehicle ownership is down, especially with the expansion of e-bike use. Safe bicycle access to community and regional trail corridors is important.	Recommend amending existing Policy 31.02.420(5)(c): A system of lateral/feeder routes should connect Highway 101 to the Olympic Discovery Trail. Additional lateral routes should be explored and developed to provide expanded multimodal connectivity between residential areas, community features, and the Olympic Discovery Trail.	Comment at public outreach meeting, 7/22/25.
9) Road design standards should reflect rural character and needs, limiting the width and scope of road dimensions. It was expressed that wider streets promote speeding.	No policy recommendation.	Comment at public outreach meeting, 7/22/25. Clallam County has adopted by Ordinance the City and County Design Standards for the Construction of Urban and Rural Arterial Collectors (1999, per RCW 35.78.030 and RCW 43.32.020). The Standards incorporate AASHTO standards, making the County eligible for State and Federal Funding for road maintenance and safety improvement implementations. Reducing road dimensions below the design criteria would harm the County's ability to maintain this needed funding.
10) Concerning *no net loss*, it was suggested that standards should provide clarity as to what it means and how it is applied.	No policy recommendation.	Comment at public outreach meeting, 7/22/25. Staff agrees that clear communication on the meaning of the term should be provided, however, this is appropriate for consideration under the required updating of the CAO and not necessarily the CPU.

CPU Policy Response Table 1: Public Comments (pre-hearing)

11) The question was raised whether the four subregional planning boundaries within Clallam County should be modified.	No Policy Recommendation.	Comment at public outreach meeting, 7/22/25. Although the boundaries of the four Subregional Planning Areas should be evaluated from time-to-time, the topography, intervening state and federal ownerships, and other community identity factors suggest that the current planning boundaries continue to accurately function to divide the County into convenient sub-regional units appropriately situated for the development of specific land use policies crafted according to local needs specific to each geographic location.
12) It was questioned whether trails should have a separate process from the 6-Year Transportation Improvement Plan (TIP) process, as it places prioritizing trails with road improvements and maintenance.	No policy recommendation.	Comment at public outreach meeting, 7/22/25. Matter was discussed with the Deputy Public Works Director. Although trail facilities are allocated through the 6-Year Transportation Improvement Plan (TIP) along with road projects, the two do not typically compete directly for the same funding sources. Trails are required under the GMA as part of the multi-modal transportation facility requirement, and establishing priority projects through the TIP is an effective way of determining priority projects.
13) It was expressed that no growth should be allowed; the rural character of the County is why people move here.	No policy recommendation.	Comment at public outreach meeting, 7/23/25. The requirements of the GMA mandate that we plan for growth, not preempt it. No policy recommendation is advised. Protection of rural character is achieved under the GMA with rural land use and zoning designations to create a framework that allows for growth while maintaining rural character.
14) With reference to SR 101, it was expressed that one road in/one road out is problematic. The County should explore multiple access points to the Peninsula.	Recommend amending proposed Policy 10.1, Climate Element: Explore options for designing new and expanded roads and multiuse pathways to minimize impacts on shorelines, accommodate sea-level rise, preserve ecological functions, and avoid disrupting water-related uses, public access, and habitat restoration. Identify roads and bridges vulnerable to flooding and landslides and collaborate with the	Comment at public outreach meeting, 7/23/25. Recommended language to specifically address connectivity between Peninsula and rest of Western Washington.

CPU Policy Response Table 1: Public Comments (pre-hearing)

	Washington State Department of Transportation (WSDOT) to improve resilience of assets outside the County's jurisdiction, including identification of alternative access corridors within and outside of Clallam County's jurisdiction to create redundancies for emergency preparedness and to increase connectivity between the Olympic Peninsula and the rest of Western Washington. This will include ~~W~~working with cities and Tribes to map infrastructure and create agreements for alternate transportation routes in parks, private lands, and Forest Service roads to ensure public safety and emergency access.	
15) The Sequim Bypass project was referenced as a good start for regional arterial flow. The emerging choke-points of Palo Alto road and Blyn suggest we should be planning for bypasses to these areas as well.	No policy recommendation.	Comment at public outreach meeting, 7/23/25. Proposed edits to CCC 31.02.420(1)(c)(ii), Comment 1, above, already address the concerns of this comment.
16) It was suggested that disincentives, such as increased taxes, be applied to properties with vacant homes to help stimulate housing stock.	No policy recommendation.	Comment at public outreach meeting, 7/23/25. This issue was already addressed above.
17) Concern was expressed over the acquisition of private lands by area Tribes and then not having to abide by zoning or other land use regulations.	No policy recommendation.	Comment at public outreach meeting, 7/23/25. The acquisition of land by local tribal communities and conversion to tribal trust status is well within the protected and sovereign right of the tribal entities. No policy recommendation is warranted.
18) It was suggested that the County implement protections for manufactured home parks to protect elderly and low-income	No policy recommendation.	Comment at public outreach meeting, 7/23/25. Although concern does exist with respect to existing mobile home parks being converted to another use, establishing a regulatory prohibition on conversion is feared to create a disincentive for the development of

tenants from change of use resulting in evictions.		needed low-income housing through creation of new manufactured home parks or other housing.
19) Concern was expressed that families could no longer simply divide their property to leave equal parts to their children, resulting in younger people leaving the area.	No policy recommendation.	Comment at public outreach meeting, 7/23/25. Fundamental to the GMA is that only rural densities (one home/five acres and less) be allowed in rural areas and only urban densities (at least 4 homes/acre) be allowed in urban areas. Outside of LAMIRDs, anything in between is considered sprawl and is prohibited.
20) It was expressed that the tightlining of irrigation ditches was causing harm to area aquifers and the County should enforce against it under the Critical Areas Ordinance. Petition signatures signed by 73 signatories.	No policy recommendation.	Comment at public outreach meeting, 7/23/25. The Dungeness Valley Irrigation tightlining project was originated within the WRIA 18 Watershed Plan. A Final Environmental Impact Statement was issued for the project in November 2003. The project is sponsored by the Washington Department of Fish & Wildlife, is considered a watershed restoration project in accordance with RCW 89.08.460(2)(c), and possibly a fish enhancement project in accordance with RCW 77.55.181. Local permit authority is preempted by RCW 77.55.181(3)(a) and RCW 89.08.470. Further, since it was originated by the WRIA 18 Watershed Plan, Clallam County does not oppose the project in any way as it addresses the illicit withdrawal of waters of the Dungeness.
21) It was noted that the tourism industry is very important to Clallam County. The commentor noted that Clallam County should allow commercial campgrounds outright in all rural zones, and the conditional use permit process is too onerous and should not be required.	No policy recommendation.	Comment at public outreach meeting, 7/24/25. As noted earlier (Comment 7), draft policies have been proposed to strengthen the possibility of prescriptive standards and thresholds for private commercial campgrounds throughout the County. That policy recommendation addresses the concerns expressed here.
22) It was suggested the County allow a campground to operate for two years and	No policy recommendation.	Comment at public outreach meeting, 7/24/25. See responses to Comments 7 and 21, above.

then require a conditional use permit only if issues arise.		
23) Concern was expressed over the cost and onerous requirements of the CUP process for development a commercial campsite. The commentor identified several benefits HipCamp and similar private campgrounds provide the region, including preservation of the natural environment, open space, and contributing to the tourism industry. Discussions over possible prescriptive standards and thresholds for primitive campgrounds were discussed	No policy recommendation.	Comment at public outreach meeting, 07/30/25. See responses to Comments 7, 21 and 22, above.
24) The use of private cisterns as a means of supplementing fire suppression efforts by rural fire districts was supported.	No policy recommendations	Comment at public outreach meeting, 07/30/25. Use of cisterns for potable water or other purposes (fire flow) are administered by the Environmental Health Division and not the DCD. It is not necessary for a policy regarding their use for fire suppression or otherwise.
25) Concern was expressed whether changes to the Comprehensive Plan could render formerly-issued conditional use permits invalid. Staff provided assurance that once issued and the use maintained, a CUP remains vested for the duration of the use, regardless of changes in zoning.	No policy recommendation.	Comment at public outreach meeting, 07/30/25. Once a Conditional Use Permit is issued, it is vested for the life of the project. No policy changes are warranted.
26) Concern was expressed that, given the breadth of issues covered in the Comprehensive Plan, adequate time for Planning Commission and BOCC review was not provided, and changes should be adopted requiring a minimum Two-year review process	Recommend a new subsection CCC 31.08.380: **Periodic Update of Comprehensive Plan.** In accordance with the requirements of RCW 26.70A.130 as now or hereafter amended, the Comprehensive Plan shall be reviewed every 10 years and updated to ensure compliance with the current requirements of the	Comment at public outreach meeting, 07/30/25. In a perfect world, staff would have completed the LCA and other background research well in advance of forwarding any draft recommendations on the CPU, with ample time for consideration. Unfortunately, it was not understood the degree to which GIS had been neglected for the prior 3.5 years, or the true scope of new elements to the

for a CPU. The commentor noted that metrics were needed and reporting required under CCC 31.08.200(12) had not been provided.	Growth Management Act and in response to community needs and desires. To ensure adequate opportunity for public engagement and involvement and full consideration by the Planning Commission and the Board of Clallam County Commissioners, said review should be initiated 36-months prior to the deadlines established under RCW 36.70A.130(4) and (5), as applicable.	LCA as are now required. These setbacks along with setbacks in procuring consultant assistance could not have been fully anticipated. Simply codifying a desired schedule for the CPU could place the process in jeopardy by setting requirements that may or may not be achievable under any range of circumstances. For this reason, staff does not recommend codifying a review schedule. Concerning the reporting parameters identified in CCC 31.08.200(12), this information was established with the first iteration of the Comprehensive Plan under the GMA (1995). At the time, reporting on the identified parameters seamed reasonable and was thought to assist in future CPUs. There was also a fully-staffed Long Range Planning Division at that time, which no longer exists. To our knowledge, complete reporting under this section has not occurred since, and under current staffing, is not going to in the future. It may be preferable to strike this section altogether to eliminate false expectations. **Draft language proposed in response to 8/20/2025 Planning Commission work session.**
27) Concern was expressed that studies conducted and provided to Clallam County approximately ten years prior indicated multiple properties at risk of sea level rise and wildfire risk. The commentor mentioned that eastern Clallam County ranked fifth in the state concerning risk of catastrophic loss due to wildfire. The commentor noted that with that knowledge, the DCD had an obligation to provide notice to title to alert landowners to the risk, and that the County should map these areas of concern.	No policy recommendation.	Comment at public outreach meeting, 07/30/25. The concept has been discussed with Legal Counsel. Notice-to-Title requires certainty in determining the condition. In the Critical Areas Ordinance, Notice-to-Title is a requirement of permit approval based on an accurate determination of the presence of a critical area. As a policy that would simply apply across a broad spectrum of landowners, the Notice would create substantial liability to the County for clouding of title. It is recommended that public outreach and education be favored over Notice-to-Title.
28) Concern was expressed regarding Canada's use of the Strait of Juan de Fuca for transport of oil sands crude—citing that it is	Recommend amending subsection CCC 31.02.340(15) as follows: The coastline, coastal waters, and upland areas should be protected from the recognized	Comment at public outreach meeting, 07/30/25. The jurisdictional influence of Clallam County over commercial transport by Canada is limited. However, to the extent that such policy could give

CPU Policy Response Table 1: Public Comments (pre-hearing)

heavier than water and could result in catastrophic ecosystem loss should a spill occur.	problems and depreciation which could be brought about by oil ports and development associated with an oil port, oil storage, oil or crude transport, and oil pipeline.	Clallam County a voice in addressing safety concerns of crude and oil transports within the Strait of Juan de Fuca, the policy would have positive impact.
29) It was suggested that the Comprehensive Plan be considered expansive with regard to other jurisdictions and should be integrated with regional and international issues that impact Clallam County.	No policy recommendation.	Comment at public outreach meeting, 07/30/25. RCW 36.70A.100 requires that Comprehensive Plans be coordinated with, and consistent with, neighboring city and county jurisdictions. However, the intent of this provision is to ensure that choices made by one jurisdiction do not adversely impact the choices made by another concerning future growth and development. It does not mean, for example, that the plans should be the same or call for the same remedies for identified issues. And while part of the consideration of future planning may involve infrastructure or resources that cross jurisdictional boundaries, there is still a clear limit, tied to the jurisdictional boundary, on the influence one jurisdiction can have over another. Coordinating and influencing common issues is important for all jurisdictions to do. But there is no authority within the GMA that grants a county or city jurisdictional control over another.
30) Concern was expressed that public funding should be devoted to the extension of urban services (sewer, water, power, etc.).	No policy recommendation.	Comment at public outreach meeting, 07/30/25. Commentor did not recommend policy but merely saw it as a funding obligation of the BOCC. Staff informed the commentor that provision of urban services are typically the responsibility of the adjacent city jurisdiction, not Clallam County.
31) Additional support for HipCamp and private for-profit campgrounds, reiterating concerns that the CUP process is too expensive and onerous.	(same as above)	Comment at public outreach meeting, 07/30/25.

CPU Policy Response Table 1: Public Comments (pre-hearing)

32) Concern was expressed that the final recommendation of the Consultants concerning the Transportation Element should be afforded a public discussion opportunity.	No policy recommendation.	Comment at public outreach meeting, 07/30/25. Suggest holding additional public information meetings once transportation and CFP elements are complete.
33) With regard to expanding industrial land base, the Maritime Program being offered at Peninsula College should be coordinated with that effort as commercial sea transport works in tandem with, and supports, industrial development and growth.	Recommend amending subsection CCC 31.02.620(j)(ii): • Recognize and endorse marine services as an economically significant industry in which Clallam County has unique qualities and competitive advantages; Chapter 31.02 CCC, County-Wide Comprehensive Plan Page 219 of 233 The Clallam County Code is current through Ordinance 1021, passed July 9, 2024. • Support the development and maintenance of essential marine infrastructure within the County, including marinas, industry piers, boat ramps and recreational access facilities. • Clallam County should coordinate industrial land base expansion (zoning) with the Peninsula College Maritime Program, to leverage growth in maritime transport/industry with industrial expansion.	Comment at public outreach meeting, 07/30/25. Incorporating the maritime educational program may be an avenue to further leverage the success of the expansion of industrial land base with the transportation opportunities available at the Port of Port Angeles. This is one solution to the added costs of trucking from the Peninsula.
34) Supports identifying (mapping) private forest lands at risk of conversion. Such forests are priorities for set-aside under Natural Climate Solutions account funding (RCW 70A.65.270) or Trust Land Transfer legislation (RCW 79.17.300).	No policy recommendation.	Comments received 5/28/24. RCW 79.17.300 deals with State Trust Lands, which are not likely to ever convert. These lands are already mapped and identifiable. With respect to RCW 70A.65.270, lands likely to convert include all residential zoning districts and mixed residential/forestry. It's unclear of any benefit would be realized by this requested mapping exercise.
35) Concerns were expressed over issuance of recent shoreline permits/exemptions allowing development of bulkheads and similar shore revetments. The letter requests a strategy that protects property and	No policy recommendation.	Comments received 3/26/25. The permit issues in question are related to the Clallam County Shoreline Master Program (SMP), promulgated under the Shoreline Management Act, not the GMA. Staff has been working on solutions to the permitting issues encountered. A policy change is not needed and is not appropriate

shorelines along Three Crabs Road. The commentors go into great depths the range of environmental and health-related problems that will likely emanate from continued sea level rise and other effects of climate change.		given the legislative source of the regulation; however, this matter will be retained for consideration in the future review and update of the SMP.
36) Recommends including the agricultural accessory use standards under CCC 33.48 be included in the CPU, and that they be extended to farms located within designated UGAs. The commentor cites the requirement for a conditional use permit as unfairly burdensome.	No policy recommendation.	Comments received 5/28/25. The issue of specific agricultural accessory uses is appropriate for review. However, it remains staff recommendation that, due to higher residential densities and the imperative to promote affordable housing, agricultural accessory uses should not be considered a priority within designated urban growth areas. Such uses are still available under a conditional use permit.
37) Supports treating short-term rentals as "cottage industries" to be supported by the Comprehensive Plan.	No policy recommendations.	Comments received 1/22/25. Short-term rentals (STRs) presently provide visitors to the Peninsula opportunity to stay in a range of locations and settings in converted residences and other structures, They provide the landowner opportunity for additional income, and provide the local economy increased spending through tourism. But due to their popularity, they also can be in competition for limited available housing stock. Presently, the Code is neutral on whether they are an asset to be promoted or a detriment to be regulated. When the City of Port Angeles did an analysis of the extent of STRs within city limits, they found that for every STR, there were four vacant homes with out-of-area owners. While staff recommends that the issue be studied further (see recommendations below), we are not in a position to recommend regulatory controls, or to recommend that they be promoted.
38) Supports modifying the Airport Overlay District, Airport Development (Zone 3) to eliminate the restriction of "no human occupation" and support short-term rentals,	Recommend amending subsection 31.03.340(8)(d): The County shall ensure the continued viability of the Sequim Valley Airport, including assurance that adjacent land uses do not cause conflicts with the continued use and maintenance of the airport. This	Comments received 1/7/25. Staff reviewed WSDOT Airports and Compatible Land Use Guidebook (January 2011) and relevant portions of Federal Aviation Regulations Part 77 (FAR). The primary focus of airport planning includes the compatibility of adjacent land uses with the expected noise and operational

AirBNBs, and other lodging and service uses affiliated with the Sequim Valley Airport.	may include exploring the feasibility of expanding allowed uses within the Airport Development (Zone 3) portion of the Airport Land Use Compatibility Overlay to include vacation rentals and other limited lodging services to serve aviation traveling customers.	nuisances associated with airport uses. Secondarily, the Airport Overlay District also concerns itself with the uses and intent of the underlying zone—in the case of Sequim Valley Airport, the Agricultural Retention (AR) Zone. However, the Airport Development (Zone 3) area is limited and already contains airport-related facilities. If restricted to this portion of the site, approval of the amended policy would not further intrude into viable agricultural lands but would improve the economic viability and services provided by the airport. Since the services would be provided by the airport to airport clientele, there would be no non-compatibility issues.
39) The Cities and County should coordinate in planning for the UGAs. Is current zoning appropriate to achieve the city's vision for future annexations? Are the development standards correct?	No policy recommendations.	Comments received 3/10/25. The cities and the County have been in coordination as required under RCW 36.70A.100 and the Countywide Planning Policies. This coordination will continue through the completion of the CPU, development regulations (to be completed within six months of the CPU), and the updating of future service extension and annexation agreements.
40) Supports ordinance enabling low-impact camping on private land. Suggests performance standards for fire safety, noise, sanitation, waste management, and other considerations.	No policy recommendation.	Comments received 7/29/25. See response to Comment 7, above.
41) Supports primitive camping on private property via HipCamp. Includes several resources for communities that have adopted standards and processes for approval.	(Same as above)	Comments received 7/1/25. See response to Comment 7, above.
42) Supports expanded opportunity for "…affordable, transitional, and supportive housing that allows pets and emphasize proximity to health care, transportation, and	No policy recommendation.	Comments received 5/17/25. The increased requirements for housing affordability to all income segments address, in large part, the concerns of this section. Because extremely low, very low and low-income housing (0-80% AMI) are located within cities and

commercial areas." Options should be varied. Economic opportunity should include unskilled labor and job training for skilled positions. Changing climate should foster consideration of homelessness vulnerability.		UGA's, such housing will be located within proximity to health care, transit, and commercial areas. Climate Policies 5.1, 9.1, 9.3 and 9.4 address homeless vulnerabilities with climate change. Recognizing and supporting education and training for a skilled workforce is also supported under CCC 31.02.610(8)(c).
43) Identifies that the S(DRP) zone has only one business owner and the Department of Ecology, unwilling to sell. No jobs will be created for people who live there.	No formal response at this time.	Comments received 7/1/25. We recognize the practical deficiency expressed in this comment and are working with the City to develop practicable solutions. We will provide them to the Planning Commission once complete.
44) Requests expansion of policies and regulations controlling nighttime light pollution and light trespass. The letter identifies five principles, including: allowing only exterior lighting that is necessary, targeting lighting only where it is needed, allowing exterior light only at levels no greater than necessary, using exterior lighting only where it is needed, and using warm-color lights where possible.	Recommend amending subsection CCC 31.02.340(11)(b) as follows: To reduce light pollution while meeting the needs for public safety, ~~encourage~~require the use of reflectors and appropriate aiming on new outdoor lighting to minimize the upward scattering of light. Performance standards for exterior~~commercial~~ lighting should be developed which minimize night glare and hours of operation at the minimum level to protect property and public safety. Considerations for the development of reasonable standards may include the use of light only when and if it is needed, direct light only where it is needed, control light so it is no brighter than is needed and use warm-color lights where practicable.	Comments received 7/31/25. In addition to protecting dark sky and aesthetic benefits, reasonable standards for exterior lighting also reduces energy usage and minimizes environmental impacts as well. These impacts emanate most profoundly from uncontrolled commercial and industrial development but can also be experienced significantly from residential development. **This issue was discussed, but ultimately no change was directed by the Planning Commission (8/20/25).**
45) Expressed concern about moisture loss and water resource use (e.g. pumping of ground water) on lands as outpacing glacial melt as leading cause of freshwater discharge to the world's oceans. The correspondence included a link to a report finding the same.	No policy recommendation.	Comments received 8/3/25. Climate Element policies 12.1 through 12.5 and 13.1 address the concerns expressed.

CPU Policy Response Table 1: Public Comments (pre-hearing)

46) Requests inclusion in the County's Climate Vulnerability Assessment. Recognizes Clallam County's service availability as more appropriate given remoteness of western Jefferson County. Recognizes Tribe's vulnerability regarding risks to SR 101. Recognizes Tribe's risk to wildfires given lack of their own fire department. And dependency on PUD #1 of Clallam County as primary power service provider. Requests inclusion summarizing risks to Tribal lands.	Recommend amending the Clallam County Climate Vulnerability Assessment (CCCVA) to include the Hoh Nation as socially vulnerable community, including common risks affiliated with SR 101, wildfire, power service continuity, and nexus with Clallam emergency response providers. Note that the CCCVA is a plan-document for the updated Hazard Mitigation Plan. Any modification of the CCCVA will be for CPU purposes only, and will not impact the approved Hazard Mitigation Plan.	Tribal comments received from the Hoh Indian Tribe, 2/20/25.
47) Provided response of survey of Tribal citizens. Areas of concern include: need for all types of housing for all income levels, including transitional; reduce barriers to economic development in Forks, improve transportation services to Reservation lands; improve internet (broadband) and power service availability and outage response; improve provision of emergency services such as fire response; management of cultural and natural resources especially on timber lands; expand access to land to practice Treaty-reserved rights, including harvesting and hunting; protect & restore habitat degradation from logging; increase the amount of land devoted to cultural preservation and environmental protection; concerns about the range of potential climate change impacts; and the need to move to higher ground due to tsunami threats. Priorities are articulated to closely align with	Housing affordable to all income segments is addressed in the Housing Element of the Comprehensive Plan (CCC 31.02.290-.293) and will mostly impact housing availability within the Forks UGA. Economic development policies are established under CCC 31.02.720. Recommend amending CCC 31.02.420(3)(h) to read: "The supply of transit service shall be consistent with population and employment densities. More service should be provided to urban growth areas and the interconnection of urban growth areas, tribal centers and other population centers than to rural areas." Support for broadband service extension is provided for under CCC 31.02.720(4). Proposed Amendment to CCC 31.02.720(6), below, addresses concerns regarding power service resilience. Improved fire and emergency response are addressed under Climate Policy 8.1, 8.2, and 8.4. Concerns about protection of cultural and natural resources from climate-related	Tribal comments received from the Hoh Indian Tribe, 6/20/25.

land use, transportation, public utilities, housing, and economic development. Natural environment and cultural resources should be protected.	risks are addressed under Climate Policy 4.1 and 4.2. Concerns regarding protecting and restoring habitat are addressed under CCC 31.02.340, and specifically under Subsection (7).	
48) Requesting holistic approach to low-bank shoreline armoring in eastern Clallam County. Concerns cite impacts of hard—armoring on sensitive beach environments subject to drift cell dynamics, and shifting erosion impacts to neighboring properties.	(see comments on same issue, above).	Tribal comments received from the Jamestown S'Klallam Tribe, 3/21/25.
49) Provided response of survey of Tribal citizens. In addition to identifying areas of concern, the response included a series of recommendations: Culverts resulting in fish barriers need to be addressed; Streamflow trends and climate change threaten salmon; invasive species pose a significant concern; Coastal tribes require finding to meet the challenges of climate change; inter-governmental coordination needs to be expanded; proximity and access to shoreline and marine amenities, cultural and natural resources should be protected; development should be appropriately located to avoid impacts; parks and recreational opportunities should be expanded and protected for all users; housing affordable to all income levels should be accelerated in existing urban centers; expand proper commercial siting to increase job opportunity while protecting natural and cultural amenities; Expand emergency, youth, seniors, and parks and	Recommend new subsection CCC 31.02.340(1)(f): Clallam County shall prioritize culvert replacement and similar issues that presently result in barriers to fish passage as part of the Six-Year Transportation Improvement Plan (TIP) process. The broad list of other concerns expressed are specifically addressed under CCC 31.02.293, .340, .593, and .620 and Draft Climate Policies 4.1, 4,2. 7.1 through 7.5, and 8.1 through 8.5.	Tribal comments received from the Quileute Tribal Council, 7/2/25. The prioritization of culvert and fish-barrier replacement will not only address identified issues impacting the health and survivability of anadromous fish species but also help to protect the County against legal action that could result without a deliberate prioritization of this issue (see United Staes V. Washington, Case No. 70-9213). Concerning other issues raised, several existing and proposed changes to the Comprehensive Plan already address the concerns identified.

recreational services; protect critical infrastructure, expand community engagement, and increase funding for supporting climate resiliency.		
50) Identified a lack of healthcare access in Forks and Sequim, for certain age groups, and concerns about the financial stability of OMC.	Recommend a new subsection CCC 31.02.820(11): Although not identified as a public facility under Table 12, above, given the fiscal challenges and decreasing availability of medical service facilities relative to population, Clallam County should explore opportunities and creative zoning solutions to facilitate the placement of medical service facilities throughout the County to closely align with community needs.	51 Respondents. Medical service facilities are listed as a permitted land use within all commercial zoning districts except Tourist Rural (TR). There exists ample capacity to accommodate existing and future facilities. Facility growth and funding adequate for their continued function is a matter beyond the scope of the Comprehensive Plan or development regulations. **Draft language proposed in response to 8/20/2025 Planning Commission work session.**
51) Need for economic development that supports living wage jobs including ecotourism, agritourism, technology, manufacturing and logging.	Expansion of technology sector policies is provided under Amendment to CCC 31.02.620(1)(j)(v), below. Modifications to the economic development policies of CCC 31.02.620, includes expansion of manufacturing, timber products, maritime and construction—all employment clusters determined by the EDC to include "prosperity-wage jobs." Support for agrotourism already exists under CCC 31.02.115(5)(b).	39 Respondents.
52) Concerns over lack of childcare facilities and family-friendly activities, family wage jobs, all needed to support young families	No policy recommendation.	30 Respondents. Family day care providers (12 or fewer children) are allowed outright in most residential zones. Child daycare centers (unlimited) are allowed with a CUP in rural zones and allowed outright in all urban zones. Proposed economic policies are intended to integrate recommendations of EDC and NODC and are designed to stimulate business growth in sectors that support family-wage jobs.
53) Support for better Code enforcement for derelict houses, RVs, vehicles and garbage.	No policy recommendation.	16 Respondents. Draft RV Ordinance is in process and is intended to provide Code Enforcement broader tools designed to address proliferation of residential use of RVs and related impacts.

CPU Policy Response Table 1: Public Comments (pre-hearing)

54) Support and opposition expressed for addressing homelessness	No policy recommendation.	14 Respondents claim too many resources devoted, 13 Respondents claim not enough. Housing element (CCC 31.02.280 through .283) is intended to stimulate housing growth in all income brackets, including emergency shelters and emergency housing. Increases in housing stock and available no-cost and low-cost options will help address the concerns of this issue, and are mandated under the GMA.
55) Support for expanded and improved public beach access across the County	No policy recommendation.	13 Respondents. CCC 31.02.340(14) already contains very strong language regarding the identification and development of access points to the County's shoreline areas. No further policy is recommended.
56) Concern expressed over Tribal Trust Land removing land base from tax roles	No policy recommendation.	12 Respondents. See comments provided above regarding this issue.
57) Support expressed for Tribal community efforts, such as environmental restoration and community services.	No policy recommendation.	4 Respondents. Tribal partners do play a role in co-managing community resources and the provision of benefits to the broader community for tribal initiatives and community services. No additional policies are necessary for this work and continued collaboration on areas of mutual concern.
58) Concerns expressed over the conversion of farmland, development sprawl, and the need for development to be consolidated within UGAs.	No policy recommendation.	22 Respondents. The concerns expressed in these comments are addressed broadly and specifically under the Land Use, Rural Development and Housing Elements of the Comprehensive Plan. No further policy recommendations are warranted.
59) Support for glass recycling and commercial composting.	No policy recommendation.	10 Respondents. Composting and recycling, although convenient, are not identified under the definition for public services or public facilities (RCW 36.70A.030(32) & (33)). They are typically contracted services with for-profit companies. Currently, glass recycling does not produce a sustainable economic return and is likely not to be reestablished until favorable economic conditions

CPU Policy Response Table 1: Public Comments (pre-hearing)

		reemerge. They are an available option within most commercial and industrial zones.
60) Support for a free community center that fosters arts and culture.	No policy recommendation.	7 Respondents. Planning Commission was concerned that need was not clearly established and did not wish to see the obligation memorialized.
61) Support for decreasing frequency/duration of power outages on the west end.	Recommend including a new subsection CCC 31.02.720(6) to include: Policy 6. Power and utility service providers should be encouraged to integrate resiliency and redundancy in utility service extension design, where practicable, in order to avoid service outage, disruption, and duration.	1 Respondent. Draft language incorporates concern and coincides with recommended Climate Element policies.
62) Increase transit service frequency and locations to include recreational areas.	No policy recommendation.	16 Respondents. Service routes and other provisions of Clallam Transit are established in the Clallam Transit System Comprehensive Transportation Plan. While the Comprehensive Plan incorporates portions of the Transit Plan, it is not appropriate for scheduling or service areas to be determined in the CPU.
63) Support for commercial passenger air service from Fairchild Int'l Airport to SeaTac and other regional airports.	No policy recommendation.	16 Respondents. CCC 31.02.420(4)(e) already articulates support for a passenger airline carrier to and from SeaTac.
64) Increase service times and expansion of Strait Shot commuter service.	No policy recommendation.	14 Respondents. See response to Comment 63, above.
65) Support for completing the Olympic Discovery Trail.	No policy recommendation.	8 Respondents. The Olympic Discovery Trail is already strongly supported in the Comprehensive Plan (CCC 31.02.415(6), .420(5)(b), and .441).
66) Support for Clallam Transit Free Transit Program and encouraging its continuance.	No policy recommendation.	8 Respondents. See response to Comment 63, above.

CPU Policy Response Table 1: Public Comments (pre-hearing)

67) Support for more dedicated bike lanes on certain rural roads with reduced speed limits.	No policy recommendation.	5 Respondents. CCC 31.02.442 describes multiple bicycle routes along existing collector and arterial roads that provide linkage to SR 101 and the Olympic Discovery Trail along with dimensional criteria for improving safe bicycle access. Several of these projects have not yet been completed but remain a priority given their listing. Reducing speed limits involves a dedicated process including approval by the Board of County Commissioners.
68) Support for additional access points off the Peninsula, and support for bypassing choke points such as Port Angeles.	No policy recommendation.	4 Respondents. See response to Comment 14, above.
69) Support for form-based zoning in UGAs that prioritizes transit mobility, pedestrian and non-motorized access.	No policy recommendation.	4 Respondents. Several of the urban commercial zoning districts allow multi-use, integrated residential and commercial uses. In the more established residential neighborhoods, integrating commercial uses is less than ideal from a neighborhood character and identity standpoint.
70) Support for road and street repairs	No policy recommendation.	3 Respondents. Funding procedures for street repairs are already provided for under CCC 31.02.410.
71) Support for train access to I-5 Corridor	No policy recommendation.	3 Respondents. Train access would be desirable from a transportation and economic development standpoint. Unfortunately, former rights-of-way have been reverted back to private ownership and intervening development make re-establishment of train facilities impracticable.
72) Support for expanded sidewalk development.	No policy recommendation.	3 Respondents. Sidewalk implementation as a condition of new development and as a preferred design feature of public roads is already provided under CCC 31.02.420(5)(f) and (k).
73) Concerns regarding inability to use parks without feeling unsafe from proliferation of homeless people.	No policy recommendation	14 Respondents. The challenges of homelessness are addressed, in part, in the Housing Element and further supported under the Economic Development Element of the Comprehensive Plan. The

CPU Policy Response Table 1: Public Comments (pre-hearing)

		HHS Five-Year Homelessness Plan also assists with the effort of getting unhoused people housed. Beyond these efforts, vagrant use of public spaces, such as parks, is a matter of law enforcement and not within the scope of the CPU.
74) Support for keeping County parks primitive and natural (undeveloped).	No policy recommendation.	6 Respondents. Development standards and design criteria for County parks are established within the Clallam County Parks and Recreation Comprehensive Master Plan. Although cited as a mandatory element under RCW 36.70A.070, in accordance with Subsection .070(10), and because state funding for the implementation of the Parks Master Plan has not been provided, parks and recreation is not required as part of the Comprehensive Plan. For that reason, there are no corollary policies regarding County parks in the Comprehensive Plan.
75) Support for more public restrooms.	No policy recommendation.	4 Respondents. Restroom facilities affiliated with recreational sites should be the function of the managing agency. This is not the function of the DCD nor is the Comprehensive Plan the appropriate place for consideration on this issue.
76) Support for turning abandoned mills into open space.	No policy recommendation.	4 Respondents. The creation of open space, while providing public benefits, does need to be balanced with other community needs, including economic development. Abandoned mills within residential or resource zoning districts may be good candidates for conversion to open space, while abandoned mills within the limited industrial land base should arguably be made available for reuse or redevelopment in kind in order to expand potential for prosperity-wage jobs.
77) Support for protecting existing trails and forests from logging.	No policy recommendation.	5 Respondents. The Comprehensive Plan recognizes and manages for the multiple users of commercial forest lands, including timber harvesting and recreation, among others (CCC 31.02.130(3)). Because of its importance to the local economy and for revenues to junior taxing districts, timber harvests will continue

CPU Policy Response Table 1: Public Comments (pre-hearing)

		as valued users of our forest resources. At the same time, the Comprehensive Plan recognizes and supports development of outdoor recreational opportunities "...provided that the recreational activity is compatible with commercial timber harvest (CCC 31.02.140(6))."
78) Support for preservation of shoreline buffers and requiring that structures be moved instead of shore armoring	No policy recommendation.	3 Respondents. Shoreline buffers are managed through the Shoreline Master Program and not the Comprehensive Plan. Current rule making under the Department of Ecology instructs that moving a structure out of harms way is preferable to altering the shoreline environment with bulkheads or other revetments.
79) Support for ADA accessibility and variety in County parks	No policy recommendation.	3 Respondents. As noted earlier, park facility policy is adopted through the Clallam County Parks and Recreation Comprehensive Master Plan and is a focus separate from the CPU.
80) Support for more neighborhood County parks	No policy recommendation.	2 Respondents. As noted earlier, park facility policy is adopted through the Clallam County Parks and Recreation Comprehensive Master Plan and is a focus separate from the CPU.
81) Support for more parking at trailheads.	No policy recommendation.	2 Respondents. As noted earlier, park facility policy is adopted through the Clallam County Parks and Recreation Comprehensive Master Plan and is a focus separate from the CPU. Clallam County has no jurisdiction concerning state and federal parks.
82) Support and opposition to a campground at the proposed Miller Peninsula State Park.	No policy recommendation.	2 Respondents. The likely development of the Miller Peninsula State Park is recognized in the current Comprehensive Plan (CCC 31.03.415(6)(a)). Development of the park should require intersection improvements at Diamond Point Road and SR 101, and along Diamond Point Road (CCC 31.03.415(4)).
83) Demand for County to support skilled trades.	No policy recommendation	8 Respondents. CCC 31.02.610(8) identifies and supports a wide range of business sectors vital to the economic well-being of the County, including building trades, education, finance, forest

CPU Policy Response Table 1: Public Comments (pre-hearing)

		resources, Health services, information technology, marine services and tourism.
84) Support for more regulation of short-term rentals (STRs), with one asking for reduced regulation of STRs.	Recommend Amending CCC 31.02.281(4) to include a new subsection (k), as follows: Clallam County should coordinate the monitoring of short-term rentals to determine the extent of the number of units operating within the County, and to what extent these units are impacting the price and availability of housing and rental stock.	7 Respondents. There are strong opinions on the issue of short-term rentals (STRs). Many feel their presence substantially increases competition (and price) for limited housing and rental stock. Others see economic benefit through tourism dollars. Whether the situation requires a regulatory remedy depends on the extent of exactly how many units are operating in Clallam County (we don't fully know) and what impact, if any, these units are having with respect to limited, affordable housing. The recommended policy would provide guidance on a path forward.
85) Support for expansion of area grocery stores.	No policy recommendation.	4 Respondents. All but two of all commercial zones allow grocery stores outright. The development of grocery stores are not significantly restricted by regulations but are a matter of economics and demand.
86) Support for promoting Clallam County as a center for climate education and research.	Amend Resilience Sub-Element Overview to incorporate the following: Clallam County is uniquely situated to both hedge against climate change impacts and provide real-time data on the impacts of climate change across all priority sectors. The Olympic Mountains, shorelines and riverine systems, extensive forest resource lands, differences in watershed dynamics and functions, and settlement patterns and built environment, make Clallam County an appropriate location for climate education and research. In recognition of the direct benefits to the community for science-based information, Clallam County should be promoted as a center for climate education and research.	3 Respondents. The benefit to the community would be vetted information on not only climate impacts, but potential recommendations to achieve broader resilience. The Climate Element is divided among 11 priority sectors. However, education and research is a cross-cutting function, impacting all sectors. Suggest the recommended policy statement be incorporated at the end of the Resilience Sub-Element Overview.

CPU Policy Response Table 1: Public Comments (pre-hearing)

87) Support for promoting tech industries in Clallam County	Recommend a new policy, CCC 31.02.620(1)(j)(vi): Information and Technology: • Encourage and promote the development of high-tech industries in Clallam County. • Continue to support the extension and completion of broadband service throughout Clallam County. • Encourage and promote industries and businesses that support high-tech industry needs.	2 Respondents. Currently, language supporting high-tech industry development is absent from economic development policies. Increased broadband internet and remote capability holds potential for future tech industry development, which could provide expanded economic opportunity.
88) Opposition to supporting measures towards climate change and climate resiliency.	No policy recommendation.	15 Respondents. The Climate element and corresponding policies are mandated under RCW 36.70A.020(14) and .070(9).
89) Support for prioritizing climate and environment.	No policy recommendation.	7 Respondents. Climate and environmental protection through critical areas policy, regulation, and adoption of the Shoreline Master Program, are already mandated under the GMA and addressed in the Draft CPU.
90) Concerns that climate regulation could make housing construction prohibitively expensive.	No policy recommendation.	5 Respondents. Policy 3.1 of the Climate Element recommends modification to building standards to reduce impacts of climate change. Such a change could increase the cost of construction; however, the cost of failure to keep pace with climate change could result in far greater cost in repairs, insurance premiums, or loss of insurance coverage. Requirements under the Wildlands Urban Interface legislation (RCW 19.27.560) will likely meet or exceed the implied requirements of this policy and will be mandated under state law.
91) Support for prioritizing water availability in development of new homes and parcels, including creation of a water steward position.	No policy recommendation.	5 Respondents. Goal 12 and policies 12.1 through 12.4 of the Draft Climate Element address these concerns. The implementation of a Water Steward position with the County was not included as a ballot measure by the Charter Review Commission.

CPU Policy Response Table 1: Public Comments (pre-hearing)

92) Support for protecting and restoration of ecological resources that aid in climate resilience, including old-growth forests.	No policy recommendation.	3 Respondents. Draft Climate Element policies 4.1, 7.1 and 7.3 through 7.5 address the stated concerns.
93) Focus on natural disaster preparedness such as Cascadia earthquake.	No policy recommendation.	2 Respondents. The Clallam County Hazard Mitigation Plan was recently approved by FEMA and addresses the concerns expressed.
94) Support regulations that prevent development in high risk and environmentally sensitive areas.	No policy recommendations.	2 Respondents. The requirements of the Critical Areas Ordinance and Shoreline Master Program address several issue areas related to this concern. Additionally, Draft Climate policies 13.1 through 13.3 provide an additional framework for considering increased flood, wildfire, and other climate-related risks.
95) Supports County use of electric vehicles	Recommend a new subsection CCC 31.02.820(2)(c): Although Clallam County is not required under House Bill 1181 to reduce greenhouse gas emissions, opportunities to take such measures would nevertheless be in the public interest and could improve resiliency. Therefore, with increased resiliency in energy generation and transmission, the County should explore grant funding and other resources for the transition of the County vehicle fleet from gas/diesel-powered to electric-powered or other renewable energy sources, where feasible and practicable. The same should be pursued concerning gas-powered maintenance equipment.	2 Respondents. More detailed language was derived by Planning Commission that amends includes a new Subsection CCC 31.02.820(2)(c)(see Planning Commission Recommended Policy #8).
96) More affordable housing including high-density housing and housing that targets seniors, youths, students, and the disabled.	No policy recommendation.	58 Respondents. The new housing element, predicated on the land capacity analysis completed for the CPU, addresses the concerns expressed within the capabilities of the Department.
97) Supports shift from extraction-based economy to a tourism-based economy.	No policy recommendation.	5 Respondents. Consistent with the EDC's Five-Year Economic Plan, economic development policies being recommended under

CPU Policy Response Table 1: Public Comments (pre-hearing)

		the CPU, among others, recommends and supports focus on four "prosperity clusters" for promoting economic development: maritime, manufacturing, timber products, and construction. Tourism, while good for the business owner, does not typically provide prosperity-wage jobs. Policies that would diminish prosperity wage jobs would be counter-productive with this focus and is not recommended.
98) Support for expanded multi (mixed)-use buildings.	No policy recommendation.	3 Respondents. Mixed-use buildings, including a range of commercial and urban-density residential, are already allowed under most urban-commercial zoning districts. Policy support is already established under CCC 31.02.281(4)(b) & (g).
99) Support for improved internet access.	No policy recommendation.	2 Respondents. See response to Comment 88, above.
100) Support for a moratorium on large housing developments.	No policy recommendation.	2 Respondents. In order to meet our housing objectives and improve the stark housing shortage that currently exists, new housing must be created.
101) Support for a more circular, local economy.	No policy recommendation.	1 Respondent. Policies promoting agricultural products development and economic policies focusing on prosperity-wage employment clusters will help to increase economic growth, promote local products, and generate economic relationships that strengthen the local economy. Further policies are not recommended.
102) Support for residential occupancy of RVs.	No policy recommendation.	1 Respondent. The RV Use Ordinance, currently in process, addresses the concerns related to this matter. No further policy is recommended.
103) Support for reducing permitting time and costs.	No policy recommendation.	1 Respondent. Clallam County updated its Fee Schedule Ordinance in 2024. Building and Planning fees were brought into a range comparable with the aggregate of six comparable county jurisdictions. As a percentage of over-all project costs, County

CPU Policy Response Table 1: Public Comments (pre-hearing)

		permitting fees remain affordable and do not presently represent a significant deterrent to development.
104) Assist the subdivision of property with grants to pay for water and sewer.	No policy recommendation.	1 Respondent. The provision of sewer and water services are important to future growth and development, especially in presently unserved, unincorporated UGAs. However, such projects have to be approached from a regional perspective. Obtaining grants, if possible, for individual projects, would constitute use of public funds for personal gain, which is not allowed.
105) Create neighborhood centers that do not require access to SR 101.	No policy recommended.	1 Respondent. Historic development patterns typically coincide with the highway corridors of SR 101 and SR 112. Under the GMA, "neighborhood centers" fall under one of two categories: UGAs or Local Areas of More Intense Rural Development (LAMIRDS). The designation of both are dependent, in part, on the historic development patterns that existed with the passage of the GMA (1990). The Transportation Element does include policies intended to reduce reliance on direct highway access, but in large part, that is where our urban and rural centers are located as a historic reality.
106) Limit growth on the east side of the County to within City limits only.	No policy recommendation.	1 Respondent. There is no reasonable mechanism for achieving this desired outcome.
107) Improve bike access and network of bike rentals.	No policy recommendation.	1 Respondent. The Bicycle Plan establishes routes designated for bicycle corridors (CCC 31.02.442, and subregional plans). Several of these routes coincide with urban and rural centers that provide opportunity for bicycle rentals. The expansion of rental opportunities are more a function of economic demand than lack of policy.
108) Tax home vacancies.	No policy recommendation.	1 Respondent. See response to Comment 6, above.

CPU Policy Response Table 1: Public Comments (pre-hearing)

109) Improve day care availability.	No policy recommendation.	1 Respondent. As noted above, family day care providers (12 or fewer children) are allowed outright in most residential zones. Child daycare centers (unlimited) are allowed with a CUP in rural zones and allowed outright in all urban zones. The development of new daycare facilities are more a function of economic demand than lack of policy.

The above suggested policies have been included as a means of addressing comments received within the framework and requirements mandated by the Growth Management Act and that are internally consistent with other requirements of the Comprehensive Plan. They are not intended as the only alternatives available.

If you have any questions regarding this information, please contact me at 360-417-2323 or at bruce.emery@clallamcountywa.gov.

Sincerely,

Bruce Emery, Director
Clallam County DCD

CPU Policy Response Table 2: Planning Commission Issues

Clallam County Comprehensive Plan Update
Planning Commission Discussion and Corresponding Recommendations
Planning Commission, through December 26, 2025.

The following recommends policy amendments and new policy language addressing concerns expressed by individual Planning Commissioners, taking into consideration the discussions that took place during the prior work sessions.

Concern/Issue Discussed	Recommended Policy/Amendment
1) Suggested policies to support the development of uniform development standards within UGAs, including sidewalks (surface materials), street lighting and landscaping, Setbacks, signage, commercial advertising (canopies, sign angles), shielding trash cans, etc. Think "theme of development." **Staff Comment:** Suggest incorporation of abutting City standards for uniformity upon annexation; development of "theme" standards for UGAs without abutting city. **Approved by PC, 10/1/25**	Policies for UGAs affiliated with Cities are addressed in subregional plans and primarily require the County to coordinate with and implement the design standards of the neighboring city for consistent communities upon annexation. The Carlsborg UGA section of the Sequim-Dungeness Regional Plan includes instruction for development standards. To address standards for unaffiliated UGA's, we suggest new language under subsection CCC 31.02.240(1)(c) as follows: Where an urban growth area is not affiliated with an incorporated city, the county shall work to implement uniform development standards that are commensurate to the scale, character and identity of the community. Features to consider may include but not be limited to sidewalks and surface materials, street lighting and landscaping, setbacks, signage, commercial advertising (canopies, sign angles), shielding trash cans, etc. The overall goal of this policy is to achieve a common theme of development that is reflective of the character and desire of the community. Development of the actual standards will be set forth in the Zoning Code Update.
2) Look at text of Comp Plan and suggest edits to implement an Ag Commission to advocate for agricultural interests. **New edits proposed 11/05/25.**	Recommend a new subsection CCC 31.02.120(8):- Clallam County will fully appoint and work closely with the Clallam County Agricultural Commission to monitor emerging issues and challenges faced by area farmers, assist with regulatory support and innovative solutions to identified challenges, and to remain adaptive to new opportunities~~for~~

CPU Policy Response Table 2: Planning Commission Issues

	~~agricultural accessory uses~~ that help to diversify and strengthen agricultural operations.
3) Define "rural character" to incorporate social and cultural aspects and to be community-oriented. **Approved by PC, 10/01/25**	Recommend new subsection CCC 31.02.050(32)(j), "Rural character." (j) Areas that foster and reflect a strong sense of community ties, local identity, and shared rural values through land use patterns that support gathering spaces, civic institutions, and integrational continuity. These areas promote social cohesion by maintaining development scales and zoning that reinforce community interaction, volunteerism, and locally rooted traditions.
4) Consider language that promotes intermediaries to negotiate on behalf of, and represent the interests of, landlords in order to create more balance between tenants and landlords. **Approved by PC, 10/15/25**	Recommend new subsection CCC 31.02.283(3)(k): Advocate in the interest of reestablishing a functional balance between the landlord and renter communities with respect to local and state regulatory frameworks.
5) Address the proliferation of vacation rentals and their impact on the housing market. **Approved by PC, 10/01/25**	Recommend a new subsection CCC 31.02.283(3)(l): Establish a registry or similar mechanism to monitor and track the number of short-term rental units operating in Clallam County. Said registry could include key data points concerning short-term rentals and a requirement for life-safety inspections to ensure that designated short-term rental units meet minimum habitation requirements and are approved for the use indicated. Information obtained from the registry could be used to evaluate the impact of short-term rentals on the local housing market in balance with their contribution to the tourism industry.
6) Consider alternative design standards for rural roads, such as road width and alignment, in order to influence and address	Consider new subsection CCC 31.02.420(1)(vi): Where there exists a clear public benefit and local circumstances support, traffic calming techniques, such as raised crosswalks, variation in horizonal alignments, and other design features, should be utilized consistent with

CPU Policy Response Table 2: Planning Commission Issues

traffic speed and to be more reflective of rural character. **Approved by PC, 10/1/25**	adopted ASHTO Guidelines for the implementation of such features; provided, said design standards do not conflict with locally-adopted design standards.
7) Establish a two-year deadline for the completion of the market analysis concerning indicators that would support the success of the Transfer of Development Rights (TDR) Program. **Rejected by PC, 10/15/25**	Consider amending proposed language under subsection CCC 31.02.283(3)(h): "Temporarily suspend the Transfer of Development Rights (TDR) program identified under Subsection 31.02.115(2)(d), CCC, and monitor until such time as economic conditions emerge that are conducive to its success. To facilitate the program's reestablishment, seek grant funding or other resources to conduct a market analysis within two (2) years of this amendment to determine the appropriate market conditions and economic indicators that would provide for the program's utilization and success."
8) Include additional policy language under County-Wide CP Climate Element that: 1) encourages the transition of the County vehicle fleet to EVs, and 2) transitions gas-powered maintenance equipment to electrical. **Approved by PC, 10/15/25**	Consider new subsection CCC 31.02.820(2)(c): Although Clallam County is not required under House Bill 1181 to reduce greenhouse gas emissions, opportunities to take such measures would nevertheless be in the public interest and could improve resiliency. Therefore, with increased resiliency in energy generation and transmission, the County should explore grant funding and other resources for the transition of the County vehicle fleet from gas/diesel-powered to electric-powered or other renewable energy sources, where feasible and practicable. The same should be pursued concerning gas-powered maintenance equipment.
9) Public comments that request County commitment involving financial obligations for special-interest services/facility projects should be ignored. **Rejected by PC, 10/15/25**	Most comments of this nature were not provided with a policy update recommendation. The only one that comes close is Public Comment #60, that requests support for free community cultural centers. The policy language recommended does include an economic development objective: (under CCC 31.02.620(1)(j)(iv)) "Support the development of cultural centers and facilities for the public sharing of the arts and

CPU Policy Response Table 2: Planning Commission Issues

	culture, and community events." This language can be removed if desired by the Planning Commission.
10) Incorporating statement about incentivizing smaller home construction, promotion of solar power, and active and passive geothermal power. Raised 11/19/25 by Commissioners Reandeau and Butler.	Propose Amending existing Policy 3.2 (CCC 31.02.820(3)(b)): Align with the County's Climate Action Plan to collaborate with partners to incentivize building improvements and retrofits for residential and commercial buildings in the County to improve energy efficiency, resilience, and justice. Innovative energy efficiency alternatives, such as incorporation of passive solar heating systems and geothermal heating and cooling systems should be explored. Suggest adding a new Policy 3.3 (CCC 31.02.820(3)(c)): Smaller buildings are generally easier to heat and cool than large ones and use less energy. Create incentive structures that promote the creation of smaller residential dwellings to reduce energy reliance, increase resilience, and provide broader housing opportunities consistent with other Plan objectives.
11) Incorporating statement under CFP discussion on Telecommunications that recognize satellite communication technologies as a viable alternative to fiber optic broadband service.	Suggest inclusion of the following at the end of the Telecommunication section of the CFP, on Page 27: **Alternative Telecommunication Technologies** While expansion of broadband service remains fundamental to economic opportunity and communication needs of the County, emerging technologies in the area of wireless satellite internet and communication services are improving at increasing rates and may hold solutions for those more remote locations for which fiber optic broadband service remains infeasible or impracticable. Notwithstanding limitations regarding topography and forest vegetation, wireless satellite service also provides a viable alternative in terms of resiliency of service during and following natural disasters, such as earthquakes, landslides,

CPU Policy Response Table 2: Planning Commission Issues

	or widespread fire events that could potentially disrupt broadband service.
12) Provide a policy addressing the siting of Essential Public Facilities (EPFs) that protects existing neighborhoods, favors larger parcels, includes a checklist of concerns, and explores periodic performance review (from 12/17/2025 meeting).	Recommend amending section 31.02.300(8): *Essential Public Facilities. (Policy 17)* Essential public facilities are public capital facilities of a County-wide or State-wide nature which are typically difficult to site. Essential public facilities may be located in designated commercial forest or rural lands provided the County finds that such facilities cannot otherwise be located in urban areas, are largely self-contained or served by urban governmental services in a manner that adjacent rural or urban development is not promoted, and the facility does not cause nuisances (noise, dust, light, etc.) on adjacent properties that cannot be adequately mitigated. ~~The siting of essential public facilities in resource lands should not interfere with resource management on adjacent resource lands.~~A process for determining and siting of essential public facilities should be developed that addresses the following: (a) The conditional use permit process will be utilized to ensure adequate consideration of operational characteristics and site conditions that, if left unaddressed, could introduce significant impacts to neighboring properties, services and facilities. (b) The siting of essential public facilities in resource lands should not interfere with resource management on adjacent resource lands. (c) Avoid to the degree practicable existing rural and urban neighborhoods where the potential for impacts could be greater. (d) Favor larger parcels where adequate room exists for addressing potential impacts from operational characteristics. (e) Consider alternatives for site selection that will substantially meet facility objectives but with reduced potential for impacts no neighboring properties or facilities.

CPU Policy Response Table 2: Planning Commission Issues

	(f) Consider the adequacy of transportation facilities and other facilities and services needed to adequately provide for the new facility. (g) Consider the periodic performance review of essential public facilities to ensure adequate measures are maintained to reduce or mitigate potential impacts from operational characteristics.

CPU Policy Response Table 4: Commerce Checklist

Clallam County Comprehensive Plan Update
Commerce Checklist, Items still requiring policy revisions (Draft 03/05/2026)

The following items are included in the Commerce Checklist prepared for Clallam County's Comprehensive Plan Update. The Checklist identifies specific requirements of the GMA and whether those requirements are, or have been, included in the CPU. The items below represent those items that still require changes.

Requirement	Policy for Amendment/New Policy
1) Land Use Element, p. 8, l), Compliance with RCW 36.70A.177(3), allowance of ag accessory uses while ensuring they do not. Policies limiting ag accessory uses.	NOTE: Ch. 33.48 already implements standards per 36.70A.177(3). Recommend new policy Section 31.02.115(3)(c): "*Agricultural Accessory Uses.* Clallam County supports the inclusion of agricultural accessory uses that assist local farms to maintain profitability and sustainability. Uses that assist with storage, distribution and marketing of locally produced agricultural products, including support services that facilitate these activities, will be allowed within agricultural operations. Non-agricultural accessory uses and activities that are related to and consistent with the size, scale and intensity of the existing agricultural use, that also support the economic viability of the agricultural operation, including new buildings, parking, and supportive uses, will be allowed within the intensively developed portion of the agricultural property and shall not otherwise convert more than one acre of agricultural land to nonagricultural uses, and shall be focused on the least agriculturally productive portion of the property."
2) Land Use Element, p. 10, p), inclusion of "Best Available Science" for the protection of critical areas.	Recommend amendment to 31.02.340(1)(a): "Best ~~conventional technology~~ available science (BAS) shall be used to prevent or treat the environmental impacts of ~~conventional~~ pollutants." Recommend amendment to second sentence 31.02.340(1)(c): "The ordinances shall be amended as necessary to implement watershed or

CPU Policy Response Table 4: Commerce Checklist

	special area studies, maintain consistency with best available science (BAS), and to maintain consistency with the Comprehensive Plan."
3) Land Use Element, p. 11, s). Per RCW 36.70A.142, allow for the siting of organic materials management facilities (composting) within industrial zones.	Recommend amending 33.17.010(1) and .020(1) to allow *organic materials management facilities*, outright. Recommend new definition 33.03.010(8177): "'Organic materials management facility' means a location and related improvements where organic waste, such as food scraps, yard trimmings or other organic materials that do not contain pesticides, pests, or other forms of chemical or biological contamination, is processed into new products like compost or energy, through composting, anaerobic digestion, vermiculture, black soldier fly, or similar technologies."
4) Land Use Element, p. 12, u). The land use element must reduce and mitigate the risk to lives and property posed by wildfires by using land use planning tools and through wildfire preparedness and fire adaptation measures. RCW 36.70A.070(1) amended in 2023. See also: International Wildland-Urban Interface Code updated in 2021 and WAC 51-55 amended in 2023	Recommend new section 31.02.820(8)(f): "*Policy 8.6*: The 2025 Clallam County Hazard Mitigation Plan (HMP), is hereby adopted by this reference (Exhibit M). This policy is also considered part of the Land Use Element of this Comprehensive Plan. Recommend new section 31.02.820(13)(c): "*Policy 13.3*: Chapter 6 of the 2021 Washington State Wildland-Urban Interface Code, is hereby adopted by this reference. This policy is also considered part of the Land Use Element of the Comprehensive Plan.
5) Housing Element, p. 13, a). Strengthen language that reflects requirements of RCW 36.70A.070(2)(b), regarding duplex, triplex and townhomes, and housing in proximity to employment locations. Also, additional language to incorporate requirements of .070(2)(d) regarding adequate provisions for affordable housing.	Recommend amending 31.02.281(1): *Policy 1*. "Urban growth areas shall be adequately sized to guard against negative market fluctuations attributed to artificially tight land supply and shall promote a variety of housing types, including multifamily, single-family, duplexes, triplexes, townhomes, mixed uses, affordable housing, emergency housing, emergency shelters, permanent supportive housing, and accessory living units. Consideration should also be given to locating housing in proximity to employment centers."

CPU Policy Response Table 4: Commerce Checklist

	Recommend new section 31.02.281(2): "*Policy 2.* Development regulations within urban growth areas should focus on adequate provisions for affordable housing opportunities, especially for moderate, low, very low, and extremely low-income segments. In addition to the efforts of the Homelessness Task Force (CCC 31.02.280(3)(c)) and the adjustments to land use designed to accommodate income segment growth targets (CCC 31.02.280(3)(a)), measures should be developed to avoid displacement of existing low, very low, and extremely low-income households as local communities develop and improve, resulting in a commensurate increase in property values. Assistance programs and continued monitoring should be established to evaluate and respond to avoid active displacement."
6) Housing Element, p. 16, g). Identification of areas that may be at higher risk of displacement from market forces that occur with changes to zoning development regulations and capital investments. RCW 36.70A.070(2)(g) new in 2021 Establish anti-displacement policies, with consideration given to the preservation of historical and cultural communities as well as investments in low, very low, extremely low, and moderate-income housing; equitable development initiatives; inclusionary zoning; community planning requirements; tenant protections; land disposition policies; and consideration of land that may be used for affordable housing. RCW 36.70A.070(2)(h) new in 2021. See also: Support Materials for Racially Disparate Impacts, Exclusion and Displacement Work	Recommend the following new policy under CCC 31.02.280(3)(f): "The Department of Commerce provided a *Draft Displacement Risk Map* and supporting data in 2023 to assist jurisdictions in determining areas potentially at risk of displacement with increased community development. The Map identified two key areas within Clallam County that may meet the high-risk threshold for displacement potential. These areas include 1) core areas of Port Angeles and the unincorporated UGA from Tumwater canyon to the west, Lauridson Blvd/UGA boundary to the south, and Ennis Creek to the east; and 2) Forks and vicinity including Highway 110 and the Calawah River to the north and west, Bogachiel River and Mill Creek to the south, and Olympic National Forest to the east. Standards, techniques and resources should be developed that address the risk of housing displacement as these and other areas within Clallam County develop." Regarding Item (h), see amended sections 31.02.280(3)(c), 31.02.281(1) & (2), 31.02.283(3)(b) & (k), 31.02.320(3), and 31.02.820(3), (4), & (9).

CPU Policy Response Table 4: Commerce Checklist

7) Capital Facilities Plan Element, p. 17, e). Address the potential for displacement impacts resulting from growth following infrastructure investments.	Recommend new policy 31.02.320(3): "Infrastructure investments and service extensions should be planned equitably and measures to address potential displacement impacts should be implemented concurrently or upon economic signals of displacement potential."
8) Capital Facilities Plan Element, p. 18, g). A policy establishing the requirement to reassess the land use element if probable funding falls short of meeting existing needs and to ensure that the land use element, capital facilities plan element, and financing plan within the capital facilities plan element are coordinated and consistent.	Recommend amending 31.02.320(65): "*Policy 65.* Prepare a six (6) year financial plan for any public facilities which need to be developed as a result of LOS requirements and projected changes in population. Should funds fall short of meeting existing needs, the land use element should be reassessed to ensure the Capital Facilities Plan, finance plan and land use element are coordinated and consistent. The six (6) year financial plan should be based on cost estimates for capital improvements which are identified in the plan. See Capital Facilities Plan (Appendix I) for detailed financing plan."
9) Utilities Element, p. 18, b). Identify City of Port Angeles as electric purveyor withing City limits.	Recommend amending first sentence at top of p. 21, CFP: "Clallam County's Public Utility District (PUD) provides all electrical service to the county, with the exception of a portion of the City of Port Angeles, which is administered by City of Port Angeles Light Operations."
10) Transportation Element, p. 19, a). The transportation element must identify the transportation facilities, and public facilities and services needed to serve the UGA and the funding to provide the transportation facilities and public facilities and services. RCW 36.70A.130	RCW 36.70A.130(3)(c)(v) does not apply to Clallam County. There are no adjustments being made to the current UGA boundaries which would trigger this requirement.
11) Transportation Element, p. 21, e). Forecast multimodal transportation for a minimum of 10 years, including land use	Clallam County is exempt from this requirement pursuant to RCW 36.70A.095(2) and WAC 365-196-443, Table 1.

CPU Policy Response Table 4: Commerce Checklist

assumptions used in estimating travel (RCW 36.70A.070(6)(a)(iii)(E)).	
12) Transportation Element, p. 21, f). A projection of state and local system needs to equitably meet current and future demand and equitably implement the multimodal network. (RCW 36.70A.070(6)(a)(iii)(F)).	Recommend new paragraph 3, 31.02.425: "A forecast study of current and future (20-year) multimodal transportation demand was conducted for key arterial intersections within the Sequim Urban Growth Area in 2025, by Kimley-Horn Engineering Consultants. The locations were selected to anticipate future growth and related transportation because of land use changes contemplated within the Housing Element and Comprehensive Plan Land Use Map within the unincorporated Sequim Urban Growth Area. The study was also coordinated with growth projected from land use choices being considered by the City of Sequim. The study concluded that, with projected growth and related traffic and non-motorized transportation demand, the intersections demonstrated adequate levels of service (LOS) over the projected 20-year planning horizon (see Exhibit L). Additional analysis was not completed elsewhere as the City of Sequim UGA is the only location within Clallam County that proposed density changes and any significant expectation of corresponding changes in development patterns.
13) Transportation Element, p. 22, g). A transition plan for transportation as required in Title II of ADA. Perform self-evaluations of current facilities and develop a program access plan to address deficiencies and achieve the identification of physical obstacles, establish methods, perform modifications and identify leadership roles. RCW 36.70A.070(6)(a)(iii)(G) new in 2023	Recommend new section 31.02.420(1)(e)(vii): "In accordance with RCW 36.70A.070(6)(a)(iii)(G), the County has performed an inventory and self-evaluation of current facilities relative to accessibility requirements of the Americans with Disabilities Act of 1990 (ADA). Based on that information, the County is in the process of developing a Transition Plan to address identified deficiencies, including identification of physical obstacles that limit the accessibility of facilities to individuals with disabilities, describe the methods to be used to make the facilities accessible, provide a schedule for making the access modifications, and identify the public officials responsible for implementation of the Transition Plan." An initial draft of the plan was approved by the WSDOT in May 2025. It is expected the final plan will be adopted in April 2026.

CPU Policy Response Table 4: Commerce Checklist

14) Transportation Element, p. 22, h). An active transportation component to include collaborative efforts to identify and designate planned improvements for active transportation facilities and corridors that address and encourage enhanced community access and promote healthy lifestyles. RCW 36.70A.070(6)(a)(vii) amended in 2023, WAC 365-196-430(2)(j).	Clallam County is exempt from this requirement pursuant to RCW 36.70A.095(2) and WAC 365-196-443, Table 1.
15) Transportation Element, p. 22, j). An analysis of future funding capability to judge needs against probable funding resources. RCW 36.70A.070(6)(a)(iv)(A), WAC 365.196-430(2)(k)(iv)	Clallam County is exempt from this requirement pursuant to RCW 36.70A.095(2) and WAC 365-196-443, Table 1.
16) Transportation Element, p. 23, l). If probable funding falls short of meeting identified needs of the transportation system, including state transportation facilities, a discussion of how additional funds will be raised, or how land use assumptions will be reassessed to ensure that LOS standards will be met. RCW 36.70A.070(6)(a)(iv)(C) amended in 2023, WAC 365-196-430(2)(l)(iii).	Recommend amending 31.02.420(6)(e): "Coordinate federal, State, and private funding. The Six-Year Transportation Improvement Plan (TIP) and the County's Capital Improvement Plan (CIP) will be utilized to coordinate these funding sources and prioritize capital expenditures according the adopted levels of service and community priorities. Where probable funding sources identified fall short of meeting the identified needs of the transportation system, including state transportation facilities, the Board of County Commissioners will consider alternative funding sources and mechanisms, including but not limited to grant opportunities, local road improvement districts (RIDs), and General Fund allocation. In the event that adequate funding sources are not available, consideration should be given to reassessing the land use assumptions and making appropriate changes to ensure that LOS standards will be met in accordance with RCW 36.70A.070(6)(a)(iv)(C)."

CPU Policy Response Table 4: Commerce Checklist

17) Essential Public Facilities, p. 27, a). Need to incorporate "reentry and rehabilitation facilities" as part of EPFs, per RCW 36.70A.200.	Recommend amending 31.02.050(197): "'Essential public facilities'" means facilities that are typically difficult to site, such as airports, State education facilities, and State or regional transportation facilities as defined in RCW 47.06.140, State and local correctional facilities, solid waste handling facilities, reentry and rehabilitation facilities, opioid treatment programs including both mobile and fixed-site medication units, recovery residences, harm reduction programs excluding safe injection sites, and in-patient facilities including substance abuse facilities, mental health facilities, group homes, and secure community transition facilities as defined in RCW 71.09.020."
18) Economic Development, p. 31. Need to update population data under Economic Development Issues. [NOTE: all time-sensitive data under 31.02.610 has been updated with current information and past ten-year trends.]	Recommend amending 31.02.610(1): "*Population.* As of 202505, the Forecasting Division of the Washington State Office of Financial Management (OFM) estimated Clallam County's population (including incorporated areas) at 78,65066,800, which is approximately a 1.8four percent increase (0.45one percent annualized rate) from the Census population of 77,15564,179 in 20200 and approximately 2218 percent increase (1.20.9 percent annualized rate) from the Census population of 64,17956,464 in 20001990. According to the OFM, the majority of population increase has been due to in-migration. In 2002, OFMUtilizing the Department of Commerce's medium projection modelling, projections estimated that Clallam County's resident population is likely towould increase to as much as 72,38386,700 by 20451O and 81,894 by 2020."
19) GMA Consistency, General, p. 33, a). All plan elements must be consistent with relevant county-wide planning policies (CWPPs) and, where applicable, multi-county planning policies (MPPs) and the GMA. RCW 36.70A.100 and 210, WAC 365-196-305; 400(2)(c); 510 and 520.	Recommend amending 31.02.100(1): "Clallam County shall work with local jurisdictions within the county to ensure relevant county-wide planning policies are integrated into the local planning process, and ensure local goals and policies are consistent. (a) The Clallam Countywide Planning Policies (CCPP) were amended on December 2, 2018. (b) As part of the Comprehensive Plan Update review, the CCPP were reviewed for compliance with RCW 36.70A.210 and found to be in substantial compliance with the requirements of the Act.

CPU Policy Response Table 4: Commerce Checklist

	(c) Representatives from the County and its municipal jurisdictions met on several occasions as part of the Comprehensive Plan update to discuss growth allocations, land use, and other elements as required throughout the CCPP. (d) The CCPP should be reviewed every five years to reflect local market conditions concerning urban growth area designations, urban services, capital facilities, transportation, housing market needs, economic development, tribal and cultural resources, and continued adequacy for creating a framework for coordination on growth management.
20) GMA Consistency, General, p. 33, b). All plan elements must be consistent with each other. RCW 36.70A.070 (preamble) and WAC 365- 197-040.	The Plans have been reviewed for internal consistency pursuant to RCW 36.70A.070. With minor adjustments, no substantive inconsistencies are known to exist.
21) GMA Consistency, General, p. 33, c). The plan must be coordinated with the plans of adjacent jurisdictions. RCW 36.70A.100 and WAC 365-196-520.	Upon completion of Commerce 60-day review draft, notice will be provided to Jefferson County. The Climate Vulnerability Assessment was modified to incorporate the Hoh Indian Tribe (Jefferson County) as Clallam County and the City of Forks represent the closest emergency responders available. An analysis of land use designations along the eastern and southern boundaries of Clallam County neighboring Jefferson County revealed rural and commercial forest resource designations that are consistent between jurisdictions. No conflicts have occurred or are anticipated to occur as a result of this CPU.
22) Zoning Code, p. 37, c). Per RCW 36.70A.450, the County is barred from prohibiting family daycare facilities (12 kids or less) from operating from an individual's home within residential or commercial zones. The use is allowed outright, but is conditional in	Recommend amending Sections 33.15.035, .060, .067, .070, and .080, to list *Family Daycare Provider* as permitted outright.

CPU Policy Response Table 4: Commerce Checklist

the DPA zone, and prohibited in the RLC, TR, UNC and URC Zones.	
23) Zoning Code, p. 39, f). Per RCW 36.70A.410, the County is barred from treating a residential structure occupied by individuals with handicaps any differently than a similar structure occupied by a family or other unrelated individuals.	Recommend amending Table 33.19.040(A) and Table 33.20.040(A) by removing reference to "Group homes…" which will remove treating such units differently from other residential units.
24) Zoning Code, p. 39, h). Limitations on regulating: outdoor encampments, safe parking efforts, indoor overnight shelters and temporary small houses on property owned or controlled by a religious organization. RCW 36.01.290 amended in 2020, RCW 35.21.915 amended in 2020.	Recommend new section 31.02.283(3)(m): "In accordance with RCW 36.01.290, Clallam County will not prohibit temporary housing, safe parking, or other temporary overnight accommodations on land owned by a religious organization. Clallam County may consider reasonable provisions for life-safety, sanitation, or other critical standards, provided said standards do not conflict with RCW 36.01.290 or RCW 35.21.915."
25) Resource Lands, p. 44, b). Pursuant to RCW 36.70A.060(1)(a), Counties are required to provide notice to permittees for activities within 500 feet of designated resource lands (Forest, agriculture, and mineral lands). CCC 29.20.300(26) requires plat notes for any subdivision within 600 feet of designated resource zoning. No notice is currently required for building or other development permits.	Recommend new section 33.40.110: "Notice of Proximity to Resource Zone. All building permits or other development permits issued by the Department of Community Development for activities occurring within 500 feet of lands designated as Agricultural Retention (AR), Commercial Forest (CF), Commercial Forest/Mixed Use 20 (CFM20), Commercial Forest/Mixed Use 5 (CFM5), or Mineral Resource Land Overlay, shall be provided a written notice on or accompanying the final permit that contains the following language: This development activity is within five hundred (500) feet of property zoned for forestry, agricultural purposes or as a designated mining site. You may be subject to inconveniences or discomforts arising from such

CPU Policy Response Table 4: Commerce Checklist

	operations, INCLUDING BUT NOT LIMITED TO NOISE, TREE REMOVAL, ODORS, INSECTS, FUMES, DUST, SMOKE, THE OPERATION OF MACHINERY OF ANY KIND DURING ANY 24 HOUR PERIOD (INCLUDING AIRCRAFT), THE STORAGE AND DISPOSAL OF MANURE, AND THE APPLICATION BY SPRAYING OR OTHERWISE OF CHEMICAL FERTILIZERS, SOIL AMENDMENTS, HERBICIDES AND PESTICIDES. Clallam County has determined that the use of real property for forestry, mining or agricultural operations is a high priority and favored use to the County and those inconveniences or discomforts arising from these operations, if such operations are consistent with commonly accepted best management practices and comply with local, State and Federal laws. However, those activities which are not related to normal forestry, mining, or agricultural operations, or which do not follow accepted best management practices, are not protected under these provisions and will be considered a nuisance."
26) Concurrency and Transportation Demand Management, p. 51, a). Language to prohibit development when LOS cannot be met, as required under RCW 36.70A.070(6)(b).	Recommend amending 31.02.420(7): "*Mitigation. (Policy 31)* Clallam County should require new development to mitigate impacts on transportation facilities which are insufficient to safely handle transportation demands. The County should develop strategies to require new development to rectify and/or compensate for impacts to transportation facilities not meeting minimum safety standards, or prohibit development when currently adopted levels of service (LOS) are diminished below acceptable levels~~when reasonable and capable of being accomplished~~. These strategies may include active transportation facility improvements, increased or enhanced public transportation service, ride-sharing programs, demand management, and other transportation systems management strategies funded by the development."
27) Concurrency and Transportation Demand Management, p. 52, d). requirements are	Clallam County is exempt from this requirement pursuant to RCW 36.70A.095(2) and WAC 365-196-443, Table 1.

CPU Policy Response Table 4: Commerce Checklist

consistent with the comprehensive plan. RCW 36.70A.070(6)(a)(vi) Examples may include requiring new development to be oriented towards transit streets, pedestrian-oriented site and building design, and requiring bicycle and pedestrian connections to street and trail networks. WAC 365-196-840(4) recommends adopting methodologies that analyze the transportation system from a comprehensive, multimodal perspective.	
28) Plan and Regulation Amendments, p. 55, d). Regulations define *emergency* for an emergency plan amendment. RCW 36.70A.130(2)(b) and WAC 365-196-640(4)	Recommend amending 31.08.300, Paragraph 1: "The purpose of this section is to establish procedures and timelines for amending the Comprehensive Plan, including text and maps, through the annual Comprehensive Plan review process, as an emergency amendment, or as a minor amendment. The Growth Management Act (Chapter 36.70A RCW) generally allows amendments to comprehensive plans, comprehensive plan maps and associated development regulations only once per year, except in emergencies as set forth under RCW 36.70A.130(2)(b), in order to allow communities to consider the cumulative impacts of the proposed revisions…"
29) Plan and Regulation Amendments, p. 56, g). Pursuant to RCW 36.70A.290(2)(b), the effective date of an amended Comprehensive Plan or development regulation must be 60-days following adoption.	Recommend amending 31.08.430: "Effective Date. This Plan is necessary for the preservation of the public health, safety and general welfare of the people of Clallam County, and shall take effect ~~1~~60 days following adoption and publication of notice of adoption by the Clallam County Board of Commissioners."

Clallam County Comprehensive Plan Update
Summary of Public Testimony and Corresponding Recommendations
as of March 25, 2026, Table Version 3.2

The following provides a summary and recommended response to testimony received during the public hearing process. To avoid duplication and per the planning Commission's instruction, this table is being provided as a supplement to CPU Policy Response Table 3.

Summary of Testimony	Recommended Policy/Response
32) Emailed testimony from Anne Leighton, dated March 16, 2026. Comments expressed objection to policy articulated under 31.03.195(1)(d), supporting the development of the Miller Peninsula State Park. Concerns included a current lack of a clear plan for the park, impacts to groundwater resources, sewage and solid waste, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species decline, and economic loss.	Section 31.03.195(3) describes the need for identifying and increasing recreational and public access opportunities in the region. However, that section also requires that such improvements occur "…where appropriate and complimentary to the natural and cultural characteristics of the area. The Miller Peninsula is an area where water resources are limited, fire risk is noted, and transportation services are challenged by the width of Diamond Point Road and the intersection with SR 101. To balance these factors, suggest amending 31.03.195(1)(d) as follows: "Support development of the Miller Peninsula State Park~~,~~ only upon a demonstration that implementation will not adversely impact potable groundwater resources in the area, increase fire risk, exacerbate erosion or other environmental impacts, and transportation improvements are implemented to ensure no adverse impacts to area residents or the greater community. As a general principle, primitive facility designs are preferable to more intensive designs. Park plans should also consider and facilitate ~~balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities,~~ developing connecting links to the Olympic Discovery Trail for non-motorized access." Alternatively, 31.03.195(1)(d) could be removed if desired by the Planning Commission. A third alternative is addressed in Testimony 36 (c), below.

33) Emailed testimony from Debi Maloney, dated March 16, 2026. Comments are same as #32, above.	See response to #32, above.
34) Emailed testimony from Penny Burdick, dated March 16, 2026. Comments are same as #32, above.	See response to #32, above.
35) Emailed testimony from Ellen Massey, dated March 17, 2026. Comments are same as #32, above.	See response to #32, above.
36) Emailed letter of testimony from Darlene Schanfald, Chair, North Olympic Group Sierra Club, dated March 17, 2026. Testimony includes: a) broader integration of risks/impacts from sea level rise under 31.02.330 and 31.02.340(3) and (4)(c). b) Measures should be taken to "stem" growth in light of climate change, such as reduction in allowing ADUs. c) recommends replacing 31.03.195(d), with the following: Miller Peninsula State Park should remain Natural, day use for hikers, non-motorized biking and horseback riding. This will preserve the rural character of Miller Peninsula, its existing communities, and its natural resources and clean ambient.	a) Recommend amending the 7th sentence of the 3rd paragraph, 31.02.330 as follows: Impacts from climate change, such as increased frequency and severity of storm events, sea level rise, and ~~F~~flood damage can devastate community resources, with human health and safety impacts, economic losses, and loss of infrastructure and habitat. b) Climate change is a crisis and so is housing and housing affordability. ADU development is one avenue to help address housing needs. No policy change is recommended. c) The recommendation in this section represents a third viable option for addressing concerns with 31.03.195(d). If selected, would recommend ending sentence with "…and pristine environment." d) It is mandated by RCW 36.70A.142 to allow *organic materials management facilities*, which are defined under RCW 70A.205.015(17) to include: "…management of organic materials through composting,

d) Recommends striking "*anaerobic digestion*" from the definition of "*organic materials management facility* (33.03.010(77))." e) Strongly expressed that master planned resorts should not be allowed (31.02.250). f) Requests amendment to 31.02.340(14)(f), to "spell out where motorbike areas are allowed so users and the public know. It should not be voluntary or a request, but a mandate." g) concerns were also expressed regarding where land availability existed (per LCA), and allowance of ADU development tending towards sprawl.	anaerobic digestion, vermiculture, black soldier fly, or similar technologies. No amendment is recommended. e) In accordance with RCW 36.70A.360(1), the County is not obligated to have provisions for the siting of MPRs. The Planning Commission could consider whether to retain 31.02.250 in its entirety. f) The Zoning Code regulates *racetracks* as a recognized land use—typically allowed only in industrial and some commercial areas. Shared use of public spaces is less a land use function and more a peace and morals function, requiring the input of Parks, the Trails Coalition, and ultimately the Clallam County Sheriff's Office for administration of such regulations. It is outside of the scope of the CPU. g) The LCA was based on an analysis of data. Mapped information was not produced. ADU development was addressed in 36.b, above. No policy change is recommended.
37) Emailed testimony from Donald Mazzola, dated March 17, 2026. Comments are similar to #32, above. Questions whether the motive for supporting the park facility is driven by economic benefit. Recommends removal of the policy and including policies that protect natural attributes of the region.	The remainder of 31.03.195, and all of 31.02.340, address the protection of environmental attributes referenced in the comments. The same response to #32, above is recommended.
38) Emailed testimony from Tricia Sears, Department of Natural Resources, dated March 11, 2026. Comments included three primary recommendations:	a) Recommend amending 31.02.340(10), as follows: *Geologically Hazardous Areas. (Policy 31)* The public should be protected from personal injury, loss of life, or property damage from ~~environmental~~geologic hazards. Land use practices in geologically hazardous areas should not cause or exacerbate natural processes which endanger the lives, property and resources of residents. Undevelopable geologically hazardous areas should be utilized as open

a) Consider referencing DNR Washington Geologic Information Portal for more information. b) Consider adding a reference to the definition of geologically hazardous areas, WAC 365-190-120, in other areas besides the CAO. c) Consider adding a reference to WAC 365-196-480 for natural resource lands.	space whenever possible. More information concerning geologically hazardous areas and updated recommendations for safety can be viewed at the Department of Natural Resource's Washington Geologic Information Portal, at https://dnr.wa.gov/washington-geological-survey/publications-and-data/geologic-information-portal. b) Recommend amending 31.02.050, Definitions, as follows: (21) "Geologic hazardous areas" means those areas susceptible to erosion, sliding, earthquake, or other geological events, as further defined under WAC 365-190-120, as now or hereafter amended. c) Recommend amending the 2nd sentence of 31.02.110, *Resource Land Issues*, as follows: The Act requires local governments to classify and designate agricultural, forest and mineral resource lands and to adopt interim development regulations to assure their conservation, in accordance with RCW 36.70A.050 and WAC 365-196-480, as now or hereafter amended. Other recommendations will be integrated in the Critical Areas Ordinance and Shorelines Master Program updates, as applicable.
39) Emailed testimony from Sue Gilman, dated March 14, 2026. Comments are similar to #32, above.	The same response to #32, above is recommended. Based on comments, it appears the commentor considers 31.03.195(1)(d) a new policy proposal. It has been in the Sequim-Dungeness Regional Plan since its first adopted in 1995.
40) Emailed testimony from Paula Simms, dated March 14, 2026. Comments are same as #32, above.	See response to #32, above.
41) Emailed testimony from Bob Smith, dated March 15, 2026. Comments are same as #32, above.	See response to #32, above.

42) Emailed testimony from Thomas P. Schlosser, dated March 15, 2026. Comments are similar to #32, above.	See response to #32, above.
43) Emailed testimony from Sue Spier, dated March 15, 2026. Comments are same as #32, above.	See response to #32, above.
44) Emailed testimony from Sharman Richardson, dated March 16, 2026. Comments express concern in regard to the Miller Peninsula State Park.	See response to #32, above.
45) Hand-delivered written testimony from Heather Cantua, received March 18, 2026. Comments included a request for there to be a public meeting in the Western Region to address the following: a) The types of uses that should be allowed through the conditional use permit (CUP) process. b) Density standards for uses allowed through the CUP process. c) Notice requirements for the CUP process. d) How master planned resorts fit within the "RW5 CUP process?"	The issues identified are directly correlated to the regulatory structures present in the Zoning Code. Although referenced, Master Planned Resorts (MPR) deal with large-scale, fully contained resort communities 240 acres and greater (CCC 33.25). The Luminary Project, which is the basis of the comments, was not within the scope of a MPR, but was processed as a CUP as an unclassified use. Pursuant to 33.05.010, "[u]nclassified uses may be allowed through the issuance of a conditional use permit." Resort facilities are not a listed use under the RW5 zone. With several of these issues being regulatory in nature, it is staff's recommendation that they be docketed as amendments to the Zoning Code and Permit Process Code and to consider hosting a Planning Commission meeting in the Western Region to hear testimony on these matters. Given the current ambiguity and concern regarding destination resort facilities and lack of reasonable considerations, Staff suggests the following new policy to 31.06.100, as follows: (5) Given the increase in permit activity and interest in the development of new destination resort

	facilities, carefully consider development standards to ensure the protection of rural character, natural resources and other community attributes, including: a) Clearly define and identify the destination resort facilities within the Zoning Code and include as permitted, conditional or prohibited within each zone's use tables. b) Develop overnight accommodation density standards and facility coverage standards to ensure the scope and intensity of such uses remains commensurate with rural and natural settings. c) Consider expanded notification requirements, especially where such uses rely on existing private drives with shared access.
46) Hand-delivered testimony received from Judy Larson, received March 18, 2026. Comments included: a) Concern that comments offered during the 7/23/25 Public Engagement Meeting (Guy Cole Center) was not present in Table 3. b) Concern that reconciliation has not yet occurred between the City and County's CPUs. c) That the BOCC has received findings supporting the Planning Commission's recommendation to approve the CPU.	a) The comments received from Ms. Larson during the 7/23/25 Public Engagement Meeting was memorialized in Comment #20, Table 1, first submitted to the Planning Commission in their September 3, 2025, Packet. It remains in the current edition of Table 1. b) "Reconciliation" is not required under the GMA. RCW 36.70A.100, merely requires that CPUs are "coordinated and consistent," which the City and County has done through frequent and ongoing discussions. c) The BOCC has not been provided a copy of the Draft Findings. They have only been provided to the Planning Commission for their consideration and will only be forwarded to the BOCC upon concurrence of the Planning Commission.
47) Hand-delivered testimony received from Virginia Shogren, received March 18, 2026. Comments included:	a) The issue of the Conservation District's irrigation tightlining project were articulated in response to Comment #20, Table 1, which includes: *The Dungeness Valley Irrigation tightlining project was originated within the WRIA 18 Watershed Plan. A Final Environmental Impact Statement*

a) Concerns expressed regarding the tightlining of irrigation ditches in the Sequim-Dungeness Valley. b) Concerns regarding adequate notice of the CPU, requesting "proper legal notice, and further extend the public process..."	*was issued for the project in November 2003. The project is sponsored by the Washington Department of Fish & Wildlife, is considered a watershed restoration project in accordance with RCW 89.08.460(2)(c), and possibly a fish enhancement project in accordance with RCW 77.55.181. Local permit authority is preempted by RCW 77.55.181(3)(a) and RCW 89.08.470. Further, since it was originated by the WRIA 18 Watershed Plan, Clallam County does not oppose the project in any way as it addresses the illicit withdrawal of waters of the Dungeness.* b) Staff has prepared a Public Engagement Report detailing the efforts made to generate public engagement in the CPU process. Staff already acknowledged the deficiency with the email notices that were to be generated whenever the CPU web page was updated (discovered 3/4/36) but has utilized the email list for notice purposes since. Legal notice was provided at the onset of the public hearings before the Planning Commission on October 18 and 25, 2025 in the Peninsula Daily News. The Planning Commission took action to extend the public hearing through April 15, 2026, in order to provide ample opportunity for public review.
48) Emailed testimony from Diane Raven, dated March 19, 2026. Comments are similar to #32, above.	See response to #32, above.
49) Email from Heather Cantua, dated March 21, 2026. Comments referred to a real estate listing with an exceptional asking price, indicating that the ability to do a range of land uses under the CUP process in the RW5 zone was the reason for high asking price.	Testimony provide supporting information related to prior concerns about the permissiveness of uses allowed under the conditional use permit process within the RW5 Zoning District.

50) Email from Virginia Shogren, dated March 23, 2026. Comments included four attachments.	[Staff analysis to follow.]

(32)

Emery, Bruce

From: Havel, Tim
Sent: Monday, March 16, 2026 8:59 AM
To: Emery, Bruce
Subject: FW: Miller State Park

FYI,
I've acknowledged receipt but not addressed her comment

Take care,
Tim

From: Anne L <atlcritters@gmail.com>
Sent: Sunday, March 15, 2026 8:37 PM
To: Havel, Tim <Tim.Havel@clallamcountywa.gov>
Subject: Miller State Park

You don't often get email from atlcritters@gmail.com. Learn why this is important

Dear Tim,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As someone who lives across the street from the park,, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you

Anne Leighton

(33)

Emery, Bruce

From: Web_DCDAdmin
Sent: Monday, March 16, 2026 2:45 PM
To: Emery, Bruce; Havel, Tim
Subject: FW: Online Form Submission #9408 for Contact the Planning Commission

From: noreply@civicplus.com <noreply@civicplus.com>
Sent: Monday, March 16, 2026 2:14 PM
To: Web_DCDAdmin <web_dcdadmin@clallamcountywa.gov>
Subject: Online Form Submission #9408 for Contact the Planning Commission

Contact the Planning Commission

First Name	Debi
Last Name	Maloney
Email	12deanmassey@gmail.com
Phone Number	064514321
Subject	CC Comprehensive plan
Comments/Questions	I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan: 31.03.195 (d) Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access. Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement? As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland

ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP. Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.
I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.
Thank you

Please Note

This form is not for emergencies. If you have an emergency, please phone 911.

Email not displaying correctly? View it in your browser.

(34)

Emery, Bruce

From: Johnson, Randy
Sent: Tuesday, March 17, 2026 9:30 AM
To: Penny Burdick
Cc: Emery, Bruce
Subject: RE: CC comprehensive Plan statement of support for MPSP

First, thank you for reaching out. Several other constituents have stated the same concerns as you. Please contact the DCD Director, Bruce Emery, and relay your concerns. This county has the only elected DCD Director in the U.S., and it is his department that is currently working on the comp plan.
Randy

From: Penny Burdick <drpennysequim@gmail.com>
Sent: Monday, March 16, 2026 6:02 PM
To: Johnson, Randy <randy.johnson@clallamcountywa.gov>
Subject: CC comprehensive Plan statement of support for MPSP

You don't often get email from drpennysequim@gmail.com. Learn why this is important

Dear Mr. Johnson,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,

Penny Burdick, MD
74 Wilders Lane
Sequim, WA 98382
(360) 461-4538

(35)

Emery, Bruce

From: Ellen Massey <ellenammassey@gmail.com>
Sent: Tuesday, March 17, 2026 9:51 AM
To: Ellenammmassey@gmail.com
Subject: Concern regarding Comp Plan item

You don't often get email from ellenammassey@gmail.com. Learn why this is important

Hello,

I am writing to **object** the inclusion of the following statement in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan, thus this item should no longer be included in the Clallam County Comp Plan.

My concern with the above statement being included in the Comprehensive plan is the ambiguity. What specifically are you supporting with this statement and what will be the steps taken to re-evaluate the development plans and not simply adopting any plan because it is in the Comp plan?

As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,

Ellen Massey

(36)

SIERRA CLUB
FOUNDED 1892

TO: Clallam County Planning Commissioners
FR: Sierra Club North Olympic Group northolympicgroupsc@gmail.com
DATE: March 17, 2026
RE: Comments on Draft County Comprehensive Plan

I have lived in Clallam County for 40 years and have seen and experienced major growth and issues that seem to come along with growth. I have read the proposed plan and have a number of initial comments I hope you will take the time to read and consider when finalizing your recommendations to the Clallam County Commissioners.

A big thank you to staff that did an excellent job of bringing a plan forward that recognizes today's issues, and a big thank you to you, Planning, Commissioners, for your time and work on the Comprehensive Plan.

Overall, there are many needed upgrades in this draft, but there are also a number of conflicting statements with the following paragraphs, which doesn't include sea level rise (SLR). SLR is thought to be 8"–1ft higher a long coastal areas than earlier thought. https://www.nature.com/articles/s41586-026-10196-1
Wave action of current high tides are visible along our coast in undercutting and destabilizing bluffs and we do experience overflows on to roads and properties.

P. 116 2.3310 Natural, historical, and cultural resource issues.
In putting forth growth management legislation, Washington State recognized that the environment, open space and recreation, historical and archaeological resources, and citizen

Chapter 31.02 CCC, County-Wide Comprehensive Plan Page 116 of 283
Quality of life elements – clean air and water, open space, public access to recreational opportunities, historic and cultural sites – draw new residents, businesses, and tourists to Clallam County. This quality of life can be used to attract employment and business to the area which meet the needs of local and regional residents, enhance the local economic base, yet do not degrade the environment. A healthy environment is a valuable economic asset worth protecting and building upon, as well as an aesthetic amenity for residents and tourists. Clallam County recognizes that our wetlands, streams, and aquifers are essential elements of infrastructure much as roads, culverts, and other structural facilities are essential to the developed environment. Loss of function and value due to degradation, contamination, or outright destruction has the potential to affect not only the well-being of individual landowners, but the community as a whole. Uncontrolled and untreated stormwater carried through our waterways damages the entire system, with large cumulative effects downstream. Loss of water storage capacity must be replaced using public funds and at a high cost. Fish, shellfish, and wildlife have economic benefits for tourism as well as commercial and recreational harvest, but more importantly, indicate the overall health of our watersheds. Shellfish, whether harvested or not, perform a valuable function in filtering contaminants from water. Flood damage can devastate community resources, with human health and safety impacts, economic losses, and loss of infrastructure and habitat. Aquifers are rechargeable, but

remediation of a contaminated drinking water supply is costly and sometimes impossible. While we enjoy clean air in Clallam County, airborne contaminants can be transported to our land and water resources during precipitation

One of the best ways to protect the environment is through the simple retention and protection of open space. Left alone, reserve lands act as buffers between developed areas and sensitive habitat, provide wildlife corridors, and protect and enhance the aesthetic values associated with water resources. Fragmented habitat leaves native plants and animals vulnerable to predation and invasion by non-native species. By providing open space, connecting open space corridors, and maintaining open space as buffers between land uses, the plant and animal communities unique to the Olympic Peninsula can be protected.
P. 117; As land develops, we marginally lose aesthetic values which contribute to the quality of life
P.119: Wetlands. ([Policy No. 129)] Clallam County shall work to achieve no net loss of regulated wetlands' functions and values through restoration and enhancement at the watershed scale, while allowing a reasonable use of property with no net loss, at a minimum

P. 120 C. Policy No. 152.] To protect quality and quantity of essential aquifers for current and future needs, Clallam County should encourage water conservation measures for all land uses; support water conservation measures and educate residents on methods to conserve water; and promote the application and implementation of water-conserving landscaping plans. Clallam County should undertake further studies of the groundwater regime of the County so that the factors influencing the quantity, quality and flow patterns of groundwater are more precisely known.

GROWTH

A major concern on "growth" is of course water. As weather warms and fires increase, growth needs to be tempered. And to "reduce sprawl," can UDAs contine to be built? These consume land, reduce soil acreage and increase for penetrating rain water, increase runoff, and reduce wildlife habitat. This brings up the issue of water, but also traffic and air quality.

Continued growth should be stemmed. Minimizing growth can still support economic growth. We already experience this through our arts, parades, outdoor offerings, races, etc. Continued growth can dampen enthusiasm of tourists.

"NET LOSS" HOW FAR BACK IN TIME is being compared with?
WE ARE LOOKING FOR NET GAINS.

MILLER PENINSULA

Early on, I want to address 31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

It is understandable why the county staff needed to address this "just in case" the park is developed. However, this section should be deleted for a number of reasons, replaced with the language below in **bold.** Based on the following:

- Both the Clallam County Commissioners and our elected state legislators oppose the development of Miller Peninsula State Park.
- Citizens from around WA State and elsewhere stand with preserving Miller Peninsula State Park in its current form.
- Miller Peninsula State Park exemplifies conservation, open space, wildlife protection and healthy outdoor activity. A quiet experience in nature
- This sensitive area is built on unique soils that hosts over 200 plant species, provides habitat for the smallest (e.g. toads, salamanders, slugs) to the largest (e.g. bear, cougar) area animals, and bird populations reliant on the multiple wetlands, unique forestry and plant life.
- Carving up and into and massively developing this parkland would change its overall structural system and would impact the character of the surrounding communities, ensure area traffic snarls, create sewage and trash issues, increase fire danger, pollute the air and drain off water already a short supply in the Miller Peninsula area.
- It meets the county's intent to conserve the rural character of rural communities.
- This is the link to the USGS Report, published in 1999.that trends East-West from Miller Peninsula to Sequim showing the truncation of the shallow aquifer by the bay. The report graphics show the linkages of area wells to one another across this area. Draw down one, draws down the others. In the 20 years prior to the USGS Report, numerous wells were drawn-down as much as 10 or 12 feet. The water level in these wells is much lower almost 30 years later.
- https://pubs.usgs.gov/wri/1999/4048/report.pdf

Include this language in the Comp Plan. ***Miller Peninsula State Park should remain Natural, day use for hikers, non motorized biking and horseback riding. This will preserve the rural character of Miller Peninsula, its existing communities, and its natural resources and clean ambient.***

https://www.clallamcountywa.gov/DocumentCenter/View/25020/Draft-Amendments-to-the-Clallam-County-Zoning-Code-Title-33-CCC
77) "Organic materials management facility" means a location and related improvements where organic waste, such as food scraps, yard trimmings or other organic materials that do not contain pesticides, pests, or other forms of chemical or biological contamination, is processed into new products like compost or energy, through composting, anaerobic digestion, vermiculture, black soldier fly, or similar technologies.
Strike "anaerobic digestion".

The Sierra Club largely opposes the expansion of industrial-scale anaerobic digesters, particularly for CAFO manure, arguing they prop up factory farming, perpetuate pollution and delay the transition to true renewable energy. While acknowledging the potential to capture methane, the organization contends these systems create toxic air emissions, do not eliminate pathogens, and often require taxpayer subsidies.
Key points of the Sierra Club's position include:

- **Factory Farm Support:** Digesters incentivize the expansion of concentrated animal feeding operations (CAFOs), which are major sources of pollution and environmental injustice.
- **Environmental and Health Risks:** Digesters are not emission-free, releasing nitrogen oxides, sulfur dioxide, and hydrogen sulfide, which cause local air quality issues. Furthermore, they can concentrate nutrients in waste, increasing the risk of water contamination from runoff.

- **Not a Solution to Waste:** The Sierra Club argues that digesters do not effectively reduce the volume of waste or pathogens, merely changing the form of the waste rather than eliminating the root problem.
- **False Solution:** The organization considers this "greenwashing" that delays the necessary shift away from fossil fuels by investing in expensive, long-term pipeline infrastructure.
- Instead, the Sierra Club favors reducing waste at the source and using methods that restore soil health, such as pasture-based farming, rather than relying on industrial waste-to-energy systems.

Further, According to the World Resources Institute, "they aren't all that effective at actually tackling the methane emissions themselves." https://sentientmedia.org/biodigesters-fall-short-as-a-climate-fix/ & https://www.wri.org/technical-perspectives/us-manure-methane-mitigation-solutions

MASTER PLANNED RESORTS (MPR)

P. 72-74 31.02.56 *A master planned resort, with a primary focus on destination resort facilities consisting of short-term visitor accommodations and indoor or outdoor recreational facilities could be proposed within Clallam County. Due to the potential long-term economic benefit of a master planned resort to the County's economy, consideration to siting these resorts* in forested or rural areas should be made.
a) no less than 240 acres ***These are cities!*** *Given the need*
(b) Existing State or County roads are adequate, or need minimal improvements, to serve the development.
(c) Capital facilities, utilities, and services, including those related to sewer, water, storm water, security, fire suppression, and emergency medical, provided on-site shall be limited to meeting the needs of the master planned resort.
P. 74 j) The primary focus of the resort is on short-term visitor accommodations and indoor and/or outdoor recreational facilities. Development approval of the resort must provide mechanisms to ensure that the resort does not become a residential subdivision, such as establishing a minimum ratio of short-term to long-term accommodations

MPRs are a developer's dream and a community's nightmare. We've seen this in the 1990s when developers, including from another country, tried to denude Miller Peninsula and turn it into a MPR, but combined with residential living and all amenities. Staff remembers and writes: *that the resort does not become a residential subdivision.* However, note that there is no limit to the number of acres. *no less than 240 acres*

Staff mentions a "primary focus". What are the secondary , tertiary and other foci?
We have learned that these developments are "phased". They are trialed in the early stage but also continually looking for funding, which may never materialize, but having upended parcels of land in the initial stages.

no less than 240 acres : 240 acres and upwards is a large area. The verbiage allows it to reach thousands of acres. This is so open ended and inconsiderate of county resources.
And where would they be sited?
What is the proof that a MPR is a "long-term economic benefit"?
Over time, these can certainly become LAMIRDs or other with residential.
The land and the forests and the area natural resources are much more valuable to supporting quality of life than risking these for the few that would seek financial benefits.

If the population on the west end continues to grow, their needs would be more important and financially beneficial to the county.
MPRs should not be allowed. Delete this section.

OTHER
P. 93 It says that there is **available land for building**. Where is the map that shows these parcels? What will be the impact on loss of pervious soil, water, etc.?

P. 100 Policy 12. *Clallam County should coordinate the* ***monitoring of short-term rentals*** *to determine the extent of the number of units operating within the County, and to what extent these units are impacting the price and availability of housing and rental stock.*
Definitely agree.

(6) Density. Outside of designated Urban Growth Areas, There shall be no more than one accessory housing unit allowed per lot. In designated Urban Growth Areas, there shall be no more than two accessory housing units allowed per lot as set forth in RCW 36.70A.681.
This is definitely growth and growth hard to manage; feeling more like sprawl.

P. 126 f) [Policy No. 4439.] ***Motorized transportation and recreation trails*** *are an appropriate use of public open space, provided that motorized vehicle use can be managed to prevent pollution impacts from erosion, fuels, exhaust and noise. Motorized activities should be compatible with existing recreational uses of the site and surrounding area but not negatively impact recognized significant plant and animal communities*
Spell out where motorbike areas are allowed so users and the public know. It should not be voluntary or a request, but a mandate.

ccc. 31.02,263 (b) Policy 14
Commercial land uses shall be strongly discouraged along US 101 and within a half mile of roads intersecting US 101 as these would tend to encourage strip development of the highway and diminish the current rural character of the area.
(c) Policy 15. Commercial development at the intersection of Diamond Point Road and US 101 or at any point along US 101 between the eastern Clallam County line and the Blyn rural center will be discouraged as sufficient areas for commercial development have been provided within the Diamond Point/Sunshine Acres and Blyn rural centers. Should the Jamestown S'Klallam Tribe put its ownership in the vicinity of the intersection of Diamond Point Road and US 101 into tribal trust status in order to allow commercial development of this site contrary to the direction provided by local residents as expressed in the Sequim-Dungeness Regional Plan, then such development shall not provide any justification for adjacent commercial development of lands under Clallam County jurisdiction.
Concur

ACCESSORY DWELLING UNITS (ADU)
Chapter 31.02 CCC, County-Wide Comprehensive Plan P.100 Accessory Dwelling Units (ADU)

- These are positive positions, but not sufficient. Fragmentation is a specific and grave side effect that could result from increasing the number of DADU permits due to the State's new requirement for allowing condoization of detached ADUs. This threatens to chip away at the rural character we aim to preserve.

- *ADHUs shall be clearly incidental and subordinate to the primary*
- *land use and subject to size and structure type limitations, water and wastewater disposal*
- *standards, certificates of occupancy, design standards, and recorded title notices.*
-
- BUT:
- **The proposals risk our rural character.**
- How many will be allotted in an area?
- How should the number be controlled, factoring in the ADUs the cities are allowing?

Darlene Schanfald, Chair

Submitted on behalf of

North Olympic Group Sierra Club

37

Emery, Bruce

From: Ozias, Mark
Sent: Tuesday, March 17, 2026 5:03 PM
To: Emery, Bruce
Subject: Fw: Clallam Co. 20 Year Comp. Plan & Miller Peninsula State Park

Hi Bruce,

I'm not sure if you have been cc'd on any of them, but fyi we have been receiving a fair amount of similar emails over the past couple of days. Do you know if this language is a carry-over from the previous plan, or if it has been updated for this draft?

Thanks,

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Donald Mazzola <dmazz1952@gmail.com>
Sent: Tuesday, March 17, 2026 1:29 PM
To: French, Mike <Mike.French@clallamcountywa.gov>; Johnson, Randy <randy.johnson@clallamcountywa.gov>; Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Clallam Co. 20 Year Comp. Plan & Miller Peninsula State Park

You don't often get email from dmazz1952@gmail.com. Learn why this is important

Greetings Clallam County Commissioners,
I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:
31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*
Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). Are you aware that our State Representatives have refused to fund it?
What specifically are you supporting with this statement? Are you aware of the many concerns that have been raised by visitors that currently visit the Property? Is your support largely driven by the possibility of increased tourist dollars?
Though I am a resident of Jefferson County, I would hope that the County Commissioners would remember that the Miller Peninsula State Park Property is currently visited and enjoyed as one of the few (and perhaps the largest) lowland areas remaining on the Olympic Peninsula that has seen little development and that

supports a myriad of ecological and recreational benefits for all Washington State citizens, not just the residents of Clallam County.
I suggest that Planning Department and the County Commissioners would consider addressing areas of concern on the peninsula during the next 20 years before giving a blanket approval to any large-scale development at MPSP. Clallam County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.
I respectfully ask that you remove the statement(s) of support for development at MPSP from the comprehensive plan. Conversely, a I strongly urge you to include a statement endorsing the protection of the many recreational and ecological benefits & values that *currently exist;* benefits and values that are in the best interest of residents of Clallam County, the Olympic Peninsular and Washington State.
Show us that you can be on the side of this issue that takes into account not just what is *truly* valuable today, but for generations to come.
Thank you

(38)

Emery, Bruce

From: Sears, Tricia (DNR) <Tricia.Sears@dnr.wa.gov>
Sent: Wednesday, March 11, 2026 3:23 PM
To: Emery, Bruce
Cc: Sears, Tricia (DNR); Holman, Carol (COM)
Subject: Clallam County's Comprehensive Plan Amendments (2026-S-11517): WGS comments

Hello Bruce,

In keeping with the interagency correspondence principles, I am providing you with comments on Clallam County's Comprehensive Plan Amendments (2026-S-11517).

For this proposal submitted via Planview, I looked at the proposal and focused on areas related to WGS work. Of note, but not limited to, I look for language around the geologically hazardous areas, mineral resource lands, mining, climate change, and natural hazards mitigation plans. Please note that I sat on the Vancouver Critical Areas Ordinance focus group committee and provided comments during that time.

Specifically in this proposal, for critical areas I reviewed the Comp_DNS, Appendix N Critical Areas Gap Analysis, Appendix O Critical Areas Analysis BAS Report, Clallam Comp Plan Checklist, Zoning Code Update Draft 021026, and Comp Plan PDF.

Kudos to you for making changes to the critical areas ordinance.

Comp DNS
Looks fine.

Clallam Comp Plan Checklist
Thank you for providing the checklist. I am noting several specific items of interest to WGS.

"The County-Wide CP has been organized by Articles. Article II is the Land Use Article, and includes general; agriculture, commercial forest and mineral resource lands, urban growth areas, master planned resorts, and commercial & industrial land use Specifically addressed under 31.02.340(14)(c)."

"BAS is now defined under new section 31.02.050(7). Also, see edits to 31.02.340(1)(a) & (c)."

"New section 31.02.820 includes policies for implementing resiliency across 13 key sectors for all Clallam County."

"Zoning Code and CP were updated in November 2020 with latest requirements applicable to mineral resource lands designations and development regulations. Review under this CPU shows no inconsistencies or deficiencies that need to be addressed."

Zoning Code Update Draft 021026

Great to see 33.40.100 Notice of Proximity to Resource Zone being added and includes Mineral Resource Land Overlay. There are no references to geology, climate resilience, or other WGS topics of focus. No further comments.

Comprehensive Plan
Due to time constraints, the review of this document is somewhat limited. Notably, Clallam County has done extensive work with the Climate Resilience Element; it is well written and integrated into the Comprehensive Plan. The

information about mineral resource lands is also nicely woven into the Comprehensive Plan. In a word search, the word geologically occurs seventeen times. It may be useful to clearly state in the Comprehensive Plan, what are the geologically hazardous areas hazards in Clallam County. It could also be useful to include a map or two of those areas.

Appendix N Critical Areas Gap Analysis

Pages 15-16 according to the table of contents, but page 19-20 in the PDF, re: Geologically Hazardous Areas. The Gap Analysis states, "As mentioned above the classification and designation should be expanded to include mining and mineral hazards." This is very interesting. With that suggestion, the hazard areas would be landslide, erosion, seismic, and mining and mineral hazards. Concur that referring to the DNR Washington Geologic Information Portal is useful and recommended.

Appendix O Critical Areas Analysis BAS Report

Pages 18-24 according to the table of contents, is Geologically Hazardous Areas. It includes Climate Change Impacts and Mitigation. The BAS Report states, "Clallam County regulates volcanic, landslide, seismic, mine, and erosion hazard areas in CCC Chapter 27 Part 4 (CCC 27.12.400)." In the Gap Analysis, it says the code does not include mining and mineral hazards, but it recommends that it include it. The provisions for seismic hazard refer to the DNR Washington Geologic Information Portal but the landslide provisions do not. Suggest including the reference to the Portal for all the geologically hazardous area hazards that Clallam County identifies and designates. In the Hazard Characterization section, there is essentially a recommendation for additional hazards that exist, to be designated in the Clallam County code. WGS supports that recommendation. WGS suggests that all identified hazards be evaluated and considered for designation. Please feel free to reach out to us with hazard questions.

Below, I include our usual language for this and future endeavors.

Recognizing the limitations of the current proposals, I want to mention that it would be great for you to consider these in current or future work, be it in your comprehensive plan, development code, and SMP updates, and in your work in general:

- Consider adding a reference to the definition of geologically hazardous areas, WAC 365-190-120, in other areas besides the CAO. In addition, consider adding a reference to WAC 365-196-480 for natural resource lands.
- Consider adding in other areas besides the CAO. If you have not checked our interactive database, the Washington Geologic Information Portal, lately, you may wish to do so. Geologic Information Portal | WA - DNR
- If you have not checked out our Geologic Planning page, you may wish to do so. Geologic Planning | WA - DNR

Thank you for considering our comments. If you have any questions or need additional information, please contact me. For your convenience, if there are no concerns or follow-up discussion, you may consider these comments to be final as of the 60-day comment deadline of 4/14/26.

Have a great day!
Tricia

Tricia R. Sears (she/her/hers)
Geologic Planning Liaison
Washington Geological Survey (WGS)
Washington Department of Natural Resources (DNR)
Cell: 360-628-2867 | Email: tricia.sears@dnr.wa.gov

(39)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:28 AM
To: Emery, Bruce
Subject: Fw: CC 20 year Comprehensive Plan

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Sue Gilman <gilfish02@gmail.com>
Sent: Saturday, March 14, 2026 8:02 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: CC 20 year Comprehensive Plan

Dear Commissioner Ozias,
I am writing to object to the inclusion of the following statement which is included in the CC 20 yr Comprehensive Plan:
31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*
This statement is overly broad and nonspecific as to what development plan you support
Furthermore,

- There currently is not a plan put forth by State Parks on how they want to develop MPSP
- The previous planning included 3 differing plans, which plan do you support?
- To date there have been no environmental impact studies completed by state parks
- What if their plans are in opposition to the environmental goals set forth elsewhere in the CC 20 year plan?
- As a resident of Clallam County, I would hope the county commissioner would consider carefully aquifer deletion, sewage concerns, wildfires, high bank cliffs, forest ecosystem, wetland ecosystems, species declines and the excessive costs associated with developing MPSP before considering any blanket approval for development approval of such magnitude

In the past 4 years, members of this commission have expressed disapproval of the plans state parks have put forward. What has changed your position?
Will this nonspecific declaration of support be binding to future CC Commissioners during the next 20 years?

Creating an unspecified county declaration for a plan that has not been proposed and that will last for 20 years seems irresponsible.
I ask that you please remove this statement from the comprehensive plan.

Thank you,
Cordially,
Sue Gilman
Sequim citizen & voter.

(4C)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:28 AM
To: Emery, Bruce
Subject: Fw: Miller Peninsula State Park

Mark Ozias

Clallam County Commissioner

* *Please note my new email address: mark.ozias@clallamcountywa.gov*

* *This correspondence may be subject to disclosure under the Public Records Act.*

From: Paula Simms <paulasimms5@gmail.com>
Sent: Saturday, March 14, 2026 4:51 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Miller Peninsula State Park

You don't often get email from paulasimms5@gmail.com. Learn why this is important

Dear Mr. Ozias,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,
Paula Simms

(41)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:28 AM
To: Emery, Bruce
Subject: Fw: Please preserve MPSP

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Bob Smith <fatcatmarine@gmail.com>
Sent: Sunday, March 15, 2026 8:29 AM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Please preserve MPSP

You don't often get email from fatcatmarine@gmail.com. Learn why this is important

Dear Mark,
I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:
31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*
Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan.
What specifically are you supporting with this statement?
As a resident of Clallam County, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.
Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.
I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you

Regards,

Captain Robert Smith
206-498-5665
Fatcatmarine@gmail.com

(42)

Thomas P. Schlosser

Attorney at Law

371 Beach Drive, Sequim, WA 98382

Via E-mail

Mark Ozias, Clallam County Commissioner
223 E. 4th Street, Suite 4
Port Angeles, WA

Dear Commissioner Ozias,

I am a 20-year county resident and voter writing to object to part of the draft Clallam County 20-year Comprehensive Plan:

> 31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities...*

Currently, WA State Parks has not put forward a detailed development plan, but their staff proposals should not be supported. I ask the County Commissioners to consider our deep concern before giving general approval to large-scale development at MPSP. County interests, including vehicle traffic, aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, wildfires, high bank cliff erosion, forest and wetland ecosystems, and high costs, will be intertwined with further developing MPSP.

Committing the county's approval to a large development plan that has not even been created, (let alone subject to SEPA review) and which will undoubtedly conflict with other county goals seems irresponsible. MPSP should be left alone.

I ask that you please reject support for development at MPSP in the comprehensive plan.

Sincerely,

Tom Schlosser

t.schlosser@msaj.com

(43)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:27 AM
To: Emery, Bruce
Subject: Fw: MPSP DEVELOPMENT

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Sue Spier <spierfarm@yahoo.com>
Sent: Sunday, March 15, 2026 5:01 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: MPSP DEVELOPMENT

You don't often get email from spierfarm@yahoo.com. Learn why this is important
Dear Commissioner,

I am writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with this statement?

As a resident of Clallam County and property owner on the south border of proposed state park, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of looming concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues including aquifer depletion (MP aquifer has not been assessed since 1979), sewage and solid waste concerns, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP.

Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals and which will apply for 20 years seems irresponsible.

I ask that you please remove the statement(s) of support for development at MPSP from the comprehensive plan.

Thank you,

Susan Spier

(44)

Emery, Bruce

From: Ozias, Mark
Sent: Wednesday, March 18, 2026 11:27 AM
To: Emery, Bruce
Subject: Fw: Miller Park

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Sharman/Glen <gsrich@aol.com>
Sent: Monday, March 16, 2026 1:39 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Miller Park

You don't often get email from gsrich@aol.com. Learn why this is important

Dear Mark Ozias, Mike French and Randy Johnson,

My husband and I have lived in Diamond Point for 23 years. We have appreciated Miller State Park for its many trails and the unusual simplicity of parking, walking and riding in the Park. While we understand the desire of the State to develop this park, we are asking you to join many who hope for a more considered approach to what development may entail.

We are definitely personally concerned, as members of this large community, about any development that would impact our water supply, concerns if a fire developed in the park, the impact of vehicles on an already busy road leading to our homes. Being locked in by the Park, envision if people in an emergency could not leave Diamond Point or services could not get to us.

As we read about communities that are most healthful for their constituents, green space is always included. Hiking in the Park many days of the week, we have met people from all over our state and United States. They are surprised and appreciate the natural surroundings devoid of campers; especially RV's, cabins, random toilets; the typical developments. This jewel of a large

green space may be underappreciated by many in our and surrounding counties, but we believe its integrity should be maintained.

We would appreciate your support as you are considering long range plans for our county; as well as communications with the State.

Thank you,
Sharman Richardson
360-681-2357
491 Lupine Dr.
Sequim

Public Comment — Clallam County Planning Commission

Western Region RW5 Conditional Use Permit Process

Submitted by: Heather Cantua | March 18, 2026

THE ASK

Request the Planning Commission to authorize a public meeting in the Western Region to gather community input on the Conditional Use Permit (CUP) process for the RW5 zone.

TOPICS FOR PUBLIC INPUT

The public meeting should address the following questions:

- **Permitted development types.** What kinds of development should be allowed through the CUP process?
- **Density standards.** What density of development is allowed through CUP Process?
- **Notice requirements.** What notice to neighbors and the public should be required before a CUP is granted?
- **Master planned resort definition.** How does the definition of a master planned resort (MPR) fit within the RW5 CUP process?

WHY A WESTERN REGION MEETING IS NEEDED

- RW5 covers the majority of Clallam County's western rural landscape.
- The CUP process permits 30+ categories of intensive commercial and industrial uses in the RW5 zone.
- State law and cases demonstrate that CUP process must be limited to ensure consistency with rural character and prohibits a CUP process to authorize a master planned resort.
- Affected residents in the Western Region deserve a direct forum before Comprehensive Plan is finalized.

KEY CODE AND STATUTORY CONCERNS

WAC 365-196-425 — Rural Element (GMA Implementing Regulation)

- Rural development must allow the natural landscape to predominate over the built environment.
- Small-scale tourist/recreational CUPs (Type 2 LAMIRDs) require all seven conditions: isolated from urban areas and other similar uses; small scale; consistent with rural character; reliant on rural or natural setting; no new residential development; no services beyond what the rural area provides; compatible with resource-based industries.
- **Critical prohibition:** The rural element CUP process cannot be used to authorize a master planned resort. MPRs must comply separately with RCW 36.70A.360–.368.

RCW 36.70A.360 — Master Planned Resorts (State Statute)

- **Definition:** "A self-contained, fully integrated planned unit development,, in a setting of significant natural amenities, with primary focus on destination resort facilities consisting of short-term visitor accommodations associated with a range of developed on-site indoor and outdoor recreational facilities."
- Authorization requires all five findings: (a) comp plan policies; (b) restrictions precluding new urban uses in the vicinity; (c) land better suited for resort than timber/ag; (d) critical areas regulations met; (e) all on-site and off-site infrastructure impacts mitigated.
- All infrastructure costs — including service extensions and capacity increases — must be fully borne by the resort.

CCC 33.10.025 — Western Region Rural Low (RW5)

- Over 30 land uses permitted by CUP, including airports, industrial uses, mobile home parks, and multiple-family dwellings.
- No prohibited land uses listed in current code.
- Base density: 1 dwelling per 4.8 acres. Minimum lot size: 2.4 acres.

CCC Chapter 33.22 — LAMIRD Standards

- Governs commercial/industrial in-fill and redevelopment within LAMIRDs.
- Requires buffer and screening between intensive uses and adjacent rural or residential lands.

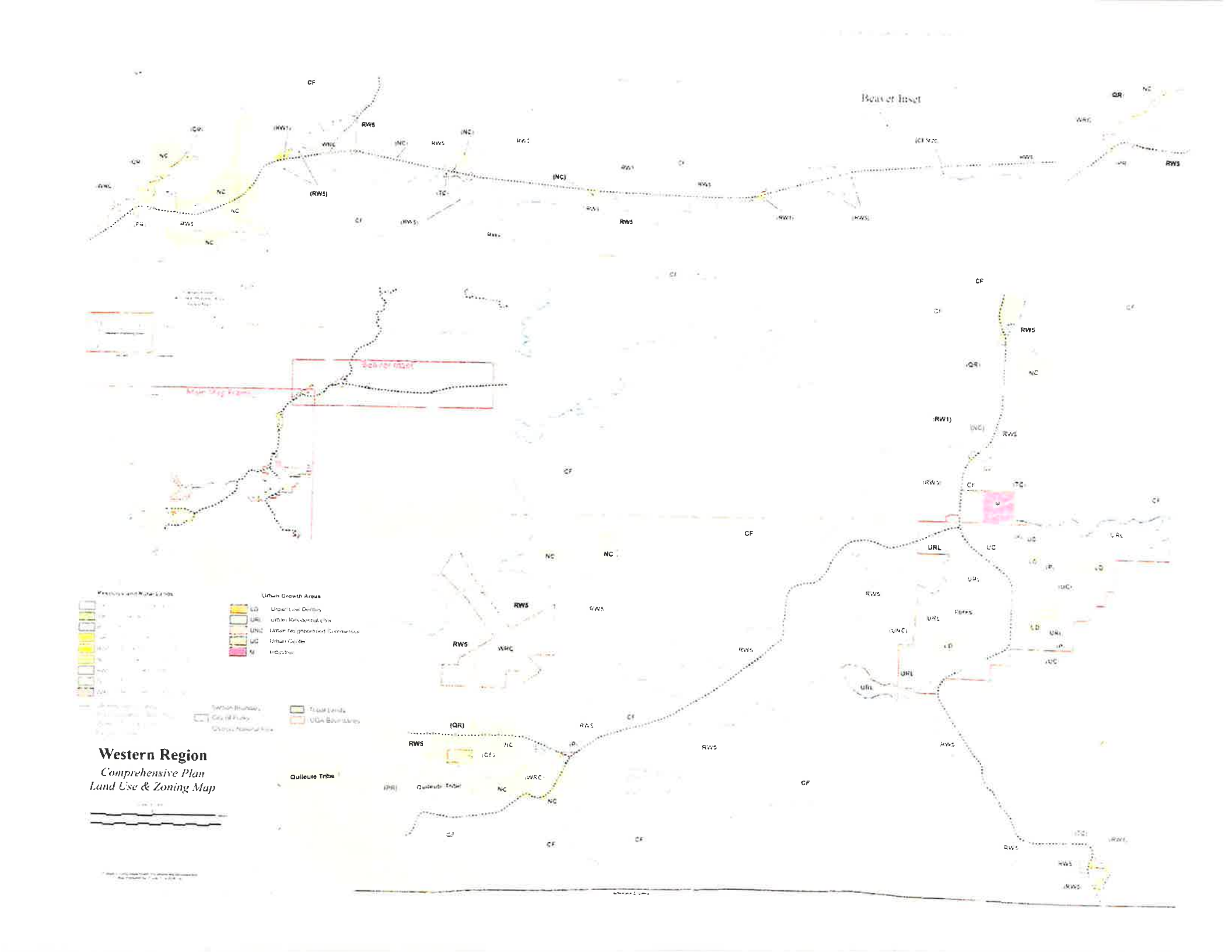
CCC Chapter 33.25 — Master Planned Resorts

- Minimum site size: 240 contiguous acres. Must be located outside urban growth areas. Minimum 40% open space required.
- BOCC approval required; public hearing required — but density and use standards are preset by code.

Index of Submitted Documents

Public Comment — Clallam County Planning Commission | March 18, 2026

#	Document	Source	Description
Submitted Documents — Written Comments			
1	CCC 33.10.025	Clallam County Code	Western Region Rural Low (RW5): allowed uses, conditional uses, density (1 du/4.8 ac), minimum lot size, and setback requirements.
2	Chapter 33.22 CCC	Clallam County Code	LAMIRD Standards: commercial and industrial in-fill/redevelopment standards, buffer and screening requirements, and parking performance standards.
3	Chapter 33.25 CCC	Clallam County Code	Master Planned Resorts: permitted uses, minimum standards (240 ac; 2 units/gross acre max; 40% open space), overlay supersedes underlying RW5 zone, and BOCC approval process.
4	RCW 36.70A.360	Revised Code of Washington	State law: definition of master planned resort, five-part county authorization requirements, infrastructure cost allocation, and limitation that residential uses must support the resort's recreational nature.
5	Zoning_Western.pdf	Clallam County Dept. of Community Development	Western Region Comprehensive Plan Land Use & Zoning Map (1:24,000). Shows distribution of RW5, RW1, NC, TC, WRC, CF, and other designations across the Western Planning Area, including Beaver Inset and City of Forks UGA.
Submitted Documents — Summary Pages			
6	WAC 365-196-425 Summary		One-page reference on the GMA rural element regulation: rural character definition, seven-condition framework for Type 2 LAMIRD tourist/recreational CUPs, and prohibition on using the rural CUP process to authorize a master planned resort.
7	Dry Creek Coalition v. Clallam County Summary		Board found Clallam County's LAMIRD zoning and CUP Process non-compliant with GMA; CUP Process must be refined to further define allowable developments.
8	Neighbors for Responsible Development v. City of Yakima Summary	Heather Cantua Sol Duc Valley Resident	Board found inadequate public notice for comprehensive plan amendment — single mailing to nearby owners without notice to community groups found insufficient.
9	Panesko v. Lewis County Summary		Board found LAMIRD Type (d)(ii) tourist/recreational uses must be genuinely small-scale, rural-reliant, contain no new residential development, and not require services beyond the LAMIRD.
10	Puget Sound Surfacers v. Clallam County Summary		Board found County's 20-year failure to publicly review Mineral Resource Land designations found non-compliant; internal staff process without public notice does not satisfy GMA periodic review requirements.
11	Wilma v. Stevens County Summary		Found to undermine meaningful public participation under GMA.


Beaver Inset
Urban Growth Areas
Quileute Tribe
Western Region
Comprehensive Plan
Land Use & Zoning Map

FACTS

GMA Background. The Growth Management Act requires counties to designate Limited Areas of More Intensive Rural Development (LAMIRDs) that recognize existing patterns of more intensive development outside Urban Growth Areas (UGAs). Under RCW 36.70A.070(5)(d)(i)(C), development or redevelopment in a LAMIRD must be consistent with the character of the existing areas in terms of building size, scale, use, and intensity — as those characteristics existed on July 1, 1990. In 2007, Dry Creek Coalition and Futurewise petitioned the Western Washington Growth Management Hearings Board challenging Clallam County's LAMIRD zoning provisions and rural density zones as non-compliant.

LAMIRD Zoning — No Adequate Intensity Controls. Clallam County's Rural Limited Commercial (RLC) and Rural Neighborhood Commercial (RNC) zones governed development in its LAMIRDs. The County's conditional use provisions allowed a potentially broader range of uses than those existing in 1990, without size, scale, or intensity limitations sufficient to ensure consistency with 1990 character. Building square footage caps applied only to certain enumerated uses — grocery stores, retail, professional offices — and were silent as to other commercial and industrial uses. In Laird's LAMIRD East and West, the largest commercial building existing in 1990 was a one-story grocery store of 1,762 square feet.

Rural Density Zones at Urban Levels. Outside UGAs, Clallam County's rural residential zones permitted densities the Board found inconsistent with the county's actual rural character. The R2 and RW2 zones allowed one dwelling unit per 2.4 acres; R1 and RW1 allowed one unit per acre. The Board found that Clallam County's existing rural land use pattern — average parcel size of 4.81 acres, average farm size of 25 acres — supported a rural density standard of no more than one dwelling unit per five acres.

ISSUES DECIDED

1. Whether Clallam County's LAMIRD code provisions (RLC and RNC zones) complied with RCW 36.70A.070(5)(d)(i)(C)'s requirement that development and redevelopment in LAMIRDs be consistent with the character of the existing areas in terms of building size, scale, use, and intensity as of July 1, 1990.
2. Whether Clallam County's rural residential zones (R2, RW2, R1, RW1) complied with GMA requirements for genuinely rural densities under RCW 36.70A.070(5) and RCW 36.70A.020(1) and (2).

CONCLUSIONS

The Board found Clallam County's LAMIRD code provisions non-compliant with the GMA's character consistency requirement. Because the County's conditional use provisions allowed a potentially broader range of uses than existed in 1990, and because the County lacked adequate measures to ensure development size, scale, and intensity remained consistent with 1990 conditions, the code failed to meet the standard set by RCW 36.70A.070(5)(d)(i)(C):

> *Any development or redevelopment in terms of building size, scale, use, or intensity shall be consistent with the character of the existing areas. Development and redevelopment may include changes in use from vacant land or a previously existing use so long as the new use conforms to the requirements of this subsection (5);*

The Board held that permitted uses "must be similar to the use, scale, size, or intensity as the uses that existed as of July 1, 1990," and that the County "must have measures in place to ensure that the size of allowed uses in terms of size, scale, use or intensity is consistent with the character of the area in 1990." Permitting a 10,000-square-foot structure in an area historically characterized by single-story commercial buildings of 1,000 to 2,000 square feet "does not result in consistency." The Board emphasized: a LAMIRD "is not supposed to become a mini UGA or an economic development node. [Its] purpose is to recognize existing more intense rural growth and contain it."

On rural densities, the Board found the R2, RW2, R1, and RW1 zones non-compliant with RCW 36.70A.070(5) and RCW 36.70A.020(1) and (2), finding they permitted urban — not rural — densities. With average parcel sizes of 4.81 acres and farms averaging 25 acres, the Board found rural character in Clallam County corresponds to a density of one dwelling unit per five acres. Zones permitting one unit per acre or one unit per 2.4 acres failed this standard.

What Compliance Required. Clallam County was required by October 23, 2008, to amend its comprehensive plan and development code to: (1) adopt size, scale, and intensity limitations for all LAMIRD development — across all use types, not only enumerated categories — ensuring consistency with each LAMIRD's character as it existed on July 1, 1990; and (2) revise rural residential zones to reflect a genuinely rural density standard. The Board retained jurisdiction through a compliance hearing process. The case was dismissed following a finding of compliance on June 1, 2012.

FACTS

Background. On April 30, 2001, Congdon Orchards, Inc. filed an application with the City of Yakima to redesignate three parcels—totaling 197 acres within the Urban Growth Area—from commercial, residential, and industrial uses to industrial and arterial commercial. The City accepted the application and processed it through its annual comprehensive plan amendment cycle.

Notice Limited to a Single Mailing. The City's sole public notice was a mailing sent on June 29, 2001, to property owners within 500 feet of the Congdon property boundary, setting a public hearing before the Regional Planning Commission for July 24, 2001. The City did not post the property, publish notice in a newspaper of general circulation, notify affected agencies (including state agencies CTED or WSDOT), or circulate the proposal to community groups or other interested parties. The City had no adopted GMA public participation plan. The public sparsely attended the hearing regarding Congdon Orchards.

Adoption. On October 16, 2001, the Yakima City Council adopted Ordinance No. 2001-56, amending the Future Land Use Map to expand arterial commercial and industrial designations on the Congdon property. On August 20, 2002, the City rezoned the property implementing the amendment (Ordinance No. 2002-45).

ISSUES DECIDED

1. Whether the City violated GMA public participation requirements (RCW 36.70A.140 and RCW 36.70A.035) by failing to establish and implement procedures for early and continuous public participation and by limiting notice solely to a mailing to adjacent property owners within 500 feet, without broader outreach to agencies, community groups, or the general public.
2. Whether notice that is not "reasonably calculated to provide notice to property owners and other affected and interested individuals, tribes, government agencies, businesses, school districts, and organizations" satisfies the GMA's public participation requirements, even if some mailed notice was provided.

CONCLUSIONS

The Board found the City's process "fatally flawed" and declared Ordinance No. 2001-56 invalid. The Board held that "effective notice" is "a necessary and essential ingredient in the public participation process," and that in its absence "the entire process fails to meet legislative mandates for public participation and citizen-based determinations with respect to land use planning." RCW 36.70A.140 requires local jurisdictions to establish procedures providing for early and continuous public participation, including:

> *broad dissemination of proposals and alternatives, opportunity for written comments, public meetings after effective notice, open discussion, consideration of and response to public comments, and inclusion of a process for early and continuous public participation in the development of the comprehensive plan* .

The City used none of the reasonable notice procedures set forth in RCW 36.70A.035(1)(a)–(e)—no property posting, no newspaper publication, no agency notification, no circulation to community groups. The Board reaffirmed that local government "does have a duty to be clear and consistent in informing the public about the authority, scope and purpose of proposed planning enactments," and that "the onus is not placed on the public to decipher ambiguous or misleading notices."

Mailing to Adjacent Property Owners Is Not Enough. The Board specifically held—citing *WRECO v. City of Dupont*, 1999 WL 33100212 (1999)—that mailing notice only to adjacent property owners does not satisfy RCW 36.70A.035(1): "There are no provisions for notifying nonadjacent property owners. There are no provisions for notifying other affected or interested individuals. There are no provisions for notifying tribes. There are no provisions for notifying government agencies. There are no provisions for notifying businesses or organizations. Unless these individuals, groups or entities owned property adjacent to a proposed amendment area, they would not have any notice of the proposal." The same deficiency was present here, and the Board found the City had simply "failed to provide reasonable notice or encourage public participation in the plan amendment process."

What Compliance Required. The Board ordered invalidity and directed the City to come into compliance within 180 days. The City was required to restart the amendment process from the beginning with an adopted public participation program and notice reasonably calculated to reach property owners, affected agencies, and interested parties—before any comprehensive plan amendment for the Congdon property could be re-adopted.

FACTS

LAMIRD Framework for Tourist and Recreational Uses. RCW 36.70A.070(5)(d)(ii) is the only LAMIRD type that may authorize tourist or recreational uses in the rural area. The Board held that (d)(ii) uses must: (1) be genuinely small-scale; (2) rely on a rural location and setting; (3) not include new residential development; and (4) limit public services and facilities to those necessary to serve only the LAMIRD, provided in a manner that does not permit low-density sprawl. All (d)(ii) designations remain subject to the rural character definition in RCW 36.70A.030(14): open space and natural landscape must predominate over the built environment, land use must be compatible with wildlife and fish habitat, inappropriate conversion of undeveloped land into sprawling development must be reduced, and extension of urban governmental services is generally prohibited.

Master Planned Resort Exception. When Lewis County attempted to authorize major industrial development at the Curtis site through LAMIRD provisions, the Board applied the explicit exception in RCW 36.70A.070(5)(e) and found noncompliance. The Board noted that a proposal meeting the definition of "major industrial development" under RCW 36.70A.365—or of a "master planned resort" under RCW 36.70A.360—cannot be permitted in the rural area through the LAMIRD provisions. It requires the separately authorized statutory process.

LAMIRD Boundaries Must Correspond to the 1993 Built Environment. LAMIRD logical outer boundaries (LOBs) must be "delineated predominately by the built environment" as it existed on July 1, 1993 (Lewis County's GMA baseline date). The Board invalidated every LAMIRD designation that included undeveloped acreage, vacant lots, or areas with no pre-existing intense rural development. The County's stated rationale—that undeveloped areas were included to provide "opportunity for expansion and growth"—was held "directly contrary to the requirements and the intent of a LAMIRD."

Public Participation. The County adopted Ordinance #1170A as an "emergency" without any public participation. After public hearings, the County made substantial and significant changes to maps without resubmitting them for public review, violating RCW 36.70A.035(2)(a). The County's defense—that engaged petitioners attended all scheduled meetings—was rejected: a "don't tell, won't attend" policy fails because of the unknown citizens who would have participated with proper notice. *Moore-Clark v. La Conner*, 94-2-0021 (5-11-95).

ISSUES DECIDED

1. Whether tourist or recreational development in the rural area may be authorized through LAMIRD provisions under RCW 36.70A.070(5)(d)(ii), and what substantive and service-level limitations apply.
2. Whether a "master planned resort" in the rural area must use the separately authorized process under RCW 36.70A.360 and may not be permitted as a LAMIRD under RCW 36.70A.070(5)(d).
3. Whether LAMIRD boundaries may include undeveloped land that had no built environment on the GMA baseline date.
4. Whether emergency ordinance adoption without public participation, and post-hearing changes without resubmission for review, comply with RCW 36.70A.035 and .140.

CONCLUSIONS

On tourist and recreational LAMIRDs, the Board confirmed that (d)(ii) authorizes only genuinely small-scale uses that depend on a rural character and setting, do not generate residential development, and do not create demand for urban-level public services. Importantly, the LAMIRD provisions of RCW 36.70A.070(5) are expressly limited by subsection (e):

> *"This subsection shall not be interpreted to permit in the rural area a major industrial development or a master planned resort unless otherwise specifically permitted under RCW 36.70A.360 and 36.70A.365."*

A proposal that meets the definition of a master planned resort under RCW 36.70A.360 cannot enter the rural area through the LAMIRD door or through general rural development regulations—it requires the MPR process that statute specifically provides. On LAMIRD boundaries, the Board was categorical: "The legislative purpose is clear. Existing built areas on July 1, 1993, that involve 'intense' rural development can be established, but must be minimized and contained." On public participation, the Board held that making significant changes after the close of public comment, without resubmission, violates RCW 36.70A.035(2)(a), and that inadequate notice fails the Act regardless of whether existing petitioners manage to participate.

What Compliance Required. The Board ordered Lewis County to: (1) comply with public participation requirements of RCW 36.70A.035, .140, and .020(11), including resubmission for review when significant post-hearing changes are made; (2) reduce all LAMIRD areas to correspond with the built environment existing on the GMA baseline date, excluding undeveloped or resource lands; (3) reduce allowable LAMIRD uses to those in existence on that date; (4) assure visual compatibility and rural character throughout rural areas consistent with RCW 36.70A.030(14); and (5) adopt development regulations ensuring rural development operates at rural—not urban—levels of facilities and services.

FACTS

Background. GMA requires counties to conduct a periodic review of their comprehensive plans every eight years (RCW 36.70A.130) and, as part of that, to review Mineral Resource Lands (MRL) designations and regulations (RCW 36.70A.131). Clallam County first designated MRLs in 1995. The County had conducted no public process to review those designations in the more than two decades since adoption. In 2007, the County indicated they would conduct a re-delineation of mineral lands on the comprehensive plan map but failed to follow through.

Internal Process, No Public Notice. In advance of the 2018 review, County staff made presentations to the Planning Commission on the update process, and the BOCC held a work session on mineral resource lands and applicable regulations. The Board found no indication in the record of any prior public notice that the update process was underway, nor any opportunity for public comment on the MRL review during those proceedings.

Adoption of Resolution No. 82. The County's only public notice was published July 27, 2018, announcing a BOCC hearing for August 7, 2018 — eleven days later — to consider a resolution "affirming the County's completion of the state mandated periodic review." No formal public participation program was adopted. The Board found the resolution appeared to be a *fait accompli* at the time the public was notified. At the adoption hearing, the Planning Manager described the County's public participation:

> *"... Our public process is essentially this hearing, and then whatever we've heard or what the Board's heard during your normal public comment periods."*

At the subsequent Hearing on the Merits, when asked whether landowners or interested parties had been notified of the update process, County counsel stated: *"I don't think there was, no."*

ISSUES DECIDED

1. Whether the County's 2018 periodic review complied with the public participation requirements of RCW 36.70A.140 — requiring broad dissemination of proposals and alternatives, opportunity for written comments, public meetings after effective notice, open discussion, and consideration of and response to public comments.
2. Whether the County was guided by RCW 36.70A.020(11)'s GMA planning goal of meaningful citizen involvement.

CONCLUSIONS

The Board found that the process Clallam County employed in conducting its review violated the GMA's requirements for early and continuous public participation and notice and was not guided by the GMA's citizen involvement planning goal. A failure of public participation required a finding of noncompliance and remand; the Board did not address substantive plan issues.

RCW 36.70A.140 requires local governments to adopt and implement a public participation program providing:

> *"broad dissemination of proposals and alternatives, opportunity for written comments, public meetings after effective notice, open discussion, communication programs, information services, and consideration of and response to public comments."*

The Board cited established precedent that "[i]t is axiomatic that without effective notice, the public does not have a reasonable opportunity to participate." Internal Planning Commission presentations and a single legal notice eleven days before the final hearing — with no direct outreach to affected landowners or interested parties — did not satisfy this standard.

What Compliance Required. To achieve compliance after remand, the County was required to adopt a formal seven-step Public Participation Plan; conduct four regional workshops with direct mail notice to over 1,000 landowners; hold thirteen Planning Commission meetings over thirteen months with public participation at each; hold multiple BOCC public hearings; and respond individually to public comments. Compliance was confirmed March 8, 2021. (*WWGMHB Case No. 18-2-0006c, Order on Compliance* (Mar. 8, 2021).)

FACTS

Background. Stevens County opted into GMA planning began in November 1995, the County participated in Small Cities Consortium (SCC) meetings to develop Interim Urban Growth Area (IUGA) designations required by RCW 36.70A.110. Those SCC meetings were held during regular commissioner meetings and were never advertised in the official county newspaper.

One Public Hearing, Misleading Notice. The County's only published notice of IUGA adoption appeared in the official county newspaper on January 25 and February 1, 1996. The notice stated that "The adoption of the Interim Urban Growth Area will not have an immediate regulatory effect, but will serve as a guide.. " A single public hearing was held on February 5, 1996. The Board found this language failed to adequately inform the public of the regulatory significance of the impending adoption.

Resolution Adopted Without Further Public Process. On February 4, 1997 — 365 days after the only public hearing — the County adopted Resolution 16-1997 establishing the IUGAs. No additional public notice was issued and no additional hearing was held. At the January 14, 1997 commissioner meeting, Commissioners were asked to set a public hearing, but no notice was put out and the resolution was adopted the following month.

No Public Participation Program. Stevens County had not established or broadly disseminated a public participation program identifying procedures for early and continuous public participation, as required by RCW 36.70A.140. Citizens had no knowledge that a resolution had even been passed. Petitioners stated they only learned of its adoption when one petitioner sued another for annexing outside the IUGA.

ISSUES DECIDED

1. Whether the County's public participation process for adopting Interim Urban Growth Area designations satisfied GMA requirements for early and continuous participation and adequate notice under RCW 36.70A.020(11), RCW 36.70A.035, and RCW 36.70A.110(1), (2), and (5).
2. Whether the County's failure to establish and broadly disseminate a public participation program violated RCW 36.70A.140.

CONCLUSIONS

The Board found Stevens County in noncompliance with the GMA's requirements for early and continuous public participation and notice. The Board stated: *"public participation was the very core of the Growth Management Act. Without it the legislative body can not possibly know what its jurisdiction's needs are."* The County's single notice used language that downplayed the regulatory effect of the adoption; planning meetings were unadvertised; and the resolution was adopted more than a year after the only public hearing — with no intervening notice to the public.

RCW 36.70A.140 requires each county choosing to plan under the GMA to:

> *"[E]stablish and broadly disseminate to the public, a public participation program identifying procedures providing for early and continuous public participation in the development and amendment of comprehensive land use plans and development regulations implementing such plans."*

RCW 36.70A.035 requires that notice procedures be "reasonably calculated to provide notice to property owners and others affected." The Board found neither the spirit nor the letter of these requirements was met.

What Compliance Required. The Board remanded both Resolutions 16-1997 and 149-1997 with direction to: (1) establish a public participation program with procedures for early and continuous participation; (2) meaningfully involve the public in the planning process; and (3) amend land use regulations to prohibit development inconsistent with the IUGAs. The County was required to propose a compliance timeline within 14 days.

If the Board rejects the Hearing Examiner recommendation, it may remand the matter back to the Hearing Examiner for further consideration or it may overturn the recommendation and approve, approve with conditions, or deny the application. The Board shall adopt findings of fact and conclusions of law based on the hearing record before the Hearing Examiner which support its decision.

33.25.070 Approved master planned resort.

(1) The approved master planned resort binds the project proponents and their successors to the proposed project as approved, applicable development standards of this chapter, and conditions of approval, if any. Approval of the master planned resort confirms that the proposal is consistent with the purpose of and provisions for master planned resorts and the comprehensive plan and provides the basis upon which subsequent permits, including building permits, may be reviewed and issued.

(2) The master planned resort approval shall remain valid for fifteen (15) years; provided, the first phase of development has been approved and construction begun within five (5) years of the master planned resort approval.

33.25.080 Development pursuant to an approved master planned resort.

Following approval of the master planned resort, subsequent development requests shall be reviewed for consistency with the approved master planned resort prior to issuance. Applications which are not consistent with the approved master planned resort shall not be issued.

The Clallam County Code is current through Ordinance 1034, passed December 16, 2025.

Disclaimer: The Commissioner's Office has the official version of the Clallam County Code. Users should contact the Commissioner's Office for ordinances passed subsequent to the ordinance cited above.

County Website: www.clallam.net

Hosted by General Code.

If the Board rejects the Hearing Examiner recommendation, it may remand the matter back to the Hearing Examiner for further consideration or it may overturn the recommendation and approve, approve with conditions, or deny the application. The Board shall adopt findings of fact and conclusions of law based on the hearing record before the Hearing Examiner which support its decision.

33.25.070 Approved master planned resort.

(1) The approved master planned resort binds the project proponents and their successors to the proposed project as approved, applicable development standards of this chapter, and conditions of approval, if any. Approval of the master planned resort confirms that the proposal is consistent with the purpose of and provisions for master planned resorts and the comprehensive plan and provides the basis upon which subsequent permits, including building permits, may be reviewed and issued.

(2) The master planned resort approval shall remain valid for fifteen (15) years; provided, the first phase of development has been approved and construction begun within five (5) years of the master planned resort approval.

33.25.080 Development pursuant to an approved master planned resort.

Following approval of the master planned resort, subsequent development requests shall be reviewed for consistency with the approved master planned resort prior to issuance. Applications which are not consistent with the approved master planned resort shall not be issued.

The Clallam County Code is current through Ordinance 1034, passed December 16, 2025.

Disclaimer: The Commissioner's Office has the official version of the Clallam County Code. Users should contact the Commissioner's Office for ordinances passed subsequent to the ordinance cited above.

County Website: www.clallam.net

Hosted by General Code.

If the Board rejects the Hearing Examiner recommendation, it may remand the matter back to the Hearing Examiner for further consideration or it may overturn the recommendation and approve, approve with conditions, or deny the application. The Board shall adopt findings of fact and conclusions of law based on the hearing record before the Hearing Examiner which support its decision.

33.25.070 Approved master planned resort.

(1) The approved master planned resort binds the project proponents and their successors to the proposed project as approved, applicable development standards of this chapter, and conditions of approval, if any. Approval of the master planned resort confirms that the proposal is consistent with the purpose of and provisions for master planned resorts and the comprehensive plan and provides the basis upon which subsequent permits, including building permits, may be reviewed and issued.

(2) The master planned resort approval shall remain valid for fifteen (15) years; provided, the first phase of development has been approved and construction begun within five (5) years of the master planned resort approval.

33.25.080 Development pursuant to an approved master planned resort.

Following approval of the master planned resort, subsequent development requests shall be reviewed for consistency with the approved master planned resort prior to issuance. Applications which are not consistent with the approved master planned resort shall not be issued.

The Clallam County Code is current through Ordinance 1034, passed December 16, 2025.

Disclaimer: The Commissioner's Office has the official version of the Clallam County Code. Users should contact the Commissioner's Office for ordinances passed subsequent to the ordinance cited above.

County Website: www.clallam.net

Hosted by General Code.

(1) A master planned resort, when approved in accordance with this chapter, is established as an overlay zone and as such, does not alter the existing underlying zoning designation. Development standards of this chapter shall, as applied to an approved master planned resort, supersede those of the underlying zone.

(2) Master planned resorts must be located outside urban growth areas.

(3) The resort, including buffers and open space under the control of the development, is sited on a parcel or parcels of land no less than 240 contiguous acres.

(4) Existing state or county roads are adequate, or need minimal improvements, to serve the development.

(5) Capital facilities, utilities, and services, including those related to sewer, water, storm water, security, fire suppression, and emergency medical, provided on-site shall be limited to meeting the needs of the master planned resort. Such facilities, utilities, and services may be provided to a master planned resort by outside service providers, including municipalities and special purpose districts; provided, that all costs associated with service extensions and capacity increases directly attributable to the master planned resort are fully borne by the resort. A master planned resort and service providers may enter into agreements for shared capital facilities and utilities; provided, that such facilities and utilities serve only the master planned resort or urban growth areas.

(6) At least forty (40) percent of the total of the acreage for all approved master planned resorts, shall be dedicated to a mixture of permanent open space, natural areas, and/or active recreational areas, excluding streets and parking areas.

(7) Active recreational uses such as golf courses, pools, tennis courts and playing fields shall be provided to adequately meet the needs of the residents and guests of the master planned resort.

(8) The maximum density for residential dwellings including hotel and motel units shall not exceed two (2) units per gross acre of the overall master planned resort. Residential dwellings for long-term occupancy shall be limited to no more than ten (10) percent of the total number of residential units.

(9) Parking shall be provided for in accordance with a transportation management plan as submitted with the application and approved for the project.

(10) The minimum lot area, width, frontage and yard requirements, setback standards, street standards, and building heights otherwise applying to development in the underlying zone(s) may be modified consistent with the master planned resort, as approved in conformance with this chapter.

(11) The tract or tracts of land included in a proposed master planned resort must be in one ownership or control or the subject of a joint application by the owners of all the property included.

(12) All uses within the master planned resort shall be harmonious with each other through the use of special design, placement, or screening.

(13) Unless otherwise approved in accordance with applicable sign regulations, on-premises signs and off-premises signs shall be designed and erected in conformance with design guidelines as submitted and approved with the project and off-premises signs shall be limited to those necessary for directional purposes.

(14) Commercial services provided as part of the master planned resort shall be contained within the development and shall be oriented to serve the master planned resort. The protection of public views shall be considered in orienting such commercial services.

33.25.040 Public hearing is required.

The Hearing Examiner shall hold a public hearing before taking action on any master planned resort, and notice of such hearing shall be given as provided in CCC 32.37.010.

33.25.050 Hearing examiner action.

(1) Following the public hearing, the Hearing Examiner shall consider all submitted information, recommendations, and testimony and shall review the proposed master planned resort's consistency with the standards of this chapter.

(2) The Hearing Examiner shall recommend approval of the application if the Hearing Examiner finds that:

(a) The proposed master planned resort is consistent with the spirit and intent of the Clallam County Comprehensive Plan.

(b) The proposed master planned resort is consistent with this title, including the standards of this chapter.

(c) The proposed master planned resort will have no unreasonable adverse impact on the general public, health, safety and welfare.

(3) In making recommendation to the Board of Clallam County Commissioners, the Hearing Examiner may recommend conditions of approval as may be necessary to assure that the proposed master planned resort will comply with the criteria for approval.

(4) If the Hearing Examiner finds that the proposed master planned resort does not substantially comply with the criteria for approval, the Hearing Examiner may recommend denial of the proposal.

33.25.060 Board of Commissioners review and decision.

The Board shall review the recommendation of the Hearing Examiner at a public meeting and, after consideration of the recommendation, the application, public testimony, and other relevant evidence presented to it, shall determine if the application is consistent with the criteria for approval.

The Board may accept the Hearing Examiner recommendation to approve, approve with conditions, or deny the application along with the findings of fact and conclusions of law adopted by the Hearing Examiner.

Chapter 33.25
MASTER PLANNED RESORTS

Sections:

33.25.010 Purpose.
33.25.020 Permitted uses.
33.25.030 Minimum standards.
33.25.040 Public hearing is required.
33.25.050 Hearing examiner action.
33.25.060 Board of Commissioners review and decision.
33.25.070 Approved master planned resort.
33.25.080 Development pursuant to an approved master planned resort.

SOURCE:	ADOPTED:
Ord. 631	12/19/95
AMENDED SOURCE:	ADOPTED:
Ord. 785	12/13/05

33.25.010 Purpose.

The purpose of a master planned resort is to enhance and diversify the recreational and economic opportunities in Clallam County through the development of master planned resorts that complement the natural and cultural attractiveness of the area without significant adverse affect on environmental and natural features, cultural or historic resources and their settings, existing residential developments, and other significant resources. The master planned resort chapter allows for the development of planned destination resorts which provide a designed mixture of visitor oriented accommodations, including a variety of residential, recreational, and commercial facilities, consistent with the comprehensive plan.

It is the intent of this section to establish procedures and standards for developing large scale recreational communities while ensuring that all applicable land use requirements are achieved and available resources are used productively and efficiently. The aim of this code section is to encourage imaginative design and layout of recreational and residential facilities in a manner that:

(1) Reflects sensitivity to the natural environment;

(2) Preserves open space and wildlife habitat;

(3) Promotes compatibility among land uses within the development;

(4) Utilizes the highest quality architectural design and a harmonious use of materials; and

(5) Results in a positive and aesthetic contribution to the community.

33.25.020 Permitted uses.

The following uses are permitted provided the uses are part of an approved master planned resort pursuant to this chapter:

(1) Visitor-oriented accommodations such as lodges, hotels, motels, bed and breakfast facilities, rental homes and cabins, rental condominiums, rental townhouses, time-share units, similar transient lodging facilities, convention and conference facilities, and appropriate support facilities;

(2) Residential dwellings such as single family dwellings, multifamily dwellings, condominiums, townhouses, time-share units, and other residential dwellings compatible with the purposes of this section;

(3) Developed recreational facilities such as golf courses, clubhouses, pro shops, and sports and spa facilities, and undeveloped recreational areas;

(4) Boat docks and marinas compatible with the purposes of this section and the Clallam County Shoreline Master Program;

(5) Commercial facilities and services such as restaurants, barber shops, beauty salons, specialty shops, real estate and other professional offices, grocery stores, pet boarding and care facilities, and other such services which provide for the needs of the community's residents and visitors and which are compatible with the purposes of this section;

(6) Open space areas such as lakes, wetlands, golf courses, green belts, buffers, and wildlife preserves;

(7) Facilities necessary for public safety such as fire and security stations, waste disposal, and utilities within the master planned resort or the County, notwithstanding any limiting provision of this chapter to the contrary;

(8) Transportation related facilities, emergency medical facilities, and storage structures and areas, provided those uses are ancillary to the master planned resort;

(9) Cultural community and entertainment facilities such as theaters, amphitheaters, galleries, arts and craft centers, and interpretive centers which are compatible with the purposes of this section.

33.25.030 Minimum standards.

The following minimum standards apply to all master planned resorts:

(2) No structure shall be located closer than 70 feet from the boundary with a less intensive rural residential zoning district. When a road or highway is on the boundary between a LAMIRD and a less intensive rural residential zoning district, the 70 foot setback shall be measured from the more intensive parcel boundary at the edge of the road or highway.

33.22.300 Minimizing impacts of commercial, industrial, mixed use, duplex, and multifamily in-fill and redevelopment within LAMIRDs.

In addition to meeting all applicable laws and regulations regarding noise and air emission, commercial, industrial, mixed use, duplex, and multifamily in fill and redevelopment within LAMIRDs that abut a less intensive rural residential zoning district are subject to the following additional requirements, which are designed to further reduce the impacts of noise, odor, glare, and traffic:

(1) The following activities shall be located at least 70 feet from the boundary with a less intensive rural residential zoning district with the 70-foot setback measured consistent with subsection (3) of this section:

(a) The rear elevation of commercial and industrial buildings.

(b) Outdoor storage areas.

(c) Truck and/or trailer parking.

(d) Trash collection and/or compaction.

(e) Recycling areas.

(f) Cargo containers.

(g) Loading docks.

(h) Major machinery or areas housing a manufacturing process.

(i) Major on-site traffic circulation areas.

(j) HVAC equipment.

(k) Utility meters.

(l) Other sources of glare, noise, or other environmental effects.

(2) In addition, a buffer and screening plan shall be submitted that describes how natural topography, fencing, walls, berms, existing vegetation, and/or landscaping will be utilized so that the activities listed in the above subsection are adequately minimized and/or mitigated. As much as possible, these activities should be incorporated into the overall design of the buildings and/or oriented away from the boundary with lower density rural residential zoning districts so that the visual and acoustic impacts of these functions are contained and out of

view from such zoning districts. If otherwise visible from the boundary with a less intensive rural residential zoning district, these activities shall be buffered and screened.

(3) Buffer and screening required under this section should take advantage of natural topography or existing vegetation wherever possible. Where natural topography or existing vegetation is not available or insufficient, an opaque barrier of at least 10 feet high shall be installed no closer than one-half the width of the required setback as follows:

(a) A hedge-like screen or a random or informal screen of evergreen or approved deciduous plant material of at least 15 feet wide, capable of providing a substantially opaque barrier year-round and attaining a minimum height of 10 feet within two years of planting.

(b) A landscaped earth berm with a maximum slope of three to one, rising no less than 10 feet above the existing grade of the lot line separating the zoning districts.

(c) Any combination of these methods, which may also include a solid wood and/or masonry fence or wall that achieves a cumulative opaque barrier of at least 10 feet high. When a fence or wall is used, it must be landscaped on the outside so that there will be a substantially opaque vegetative barrier year around within two years of planting that masks at least 50 percent of the fence or wall.

(d) Native and/or drought tolerant landscape materials shall be utilized whenever possible.

(e) The barrier shall not adversely affect surface water drainage.

(f) To ensure continued compliance with the landscaping requirements, a notice on title shall be filed and recorded with the Clallam County Auditor, and shall "run with the land." The notice shall state the particular landscaping requirements and a landowner shall submit proof that such a notice has been recorded for future development approvals on the property.

(4) Parking for commercial, industrial, mixed use, duplex, and multifamily developments shall comply with Chapter 33.60 CCC, Parking Standards. The parking plan shall also demonstrate compliance with the following performance standards:

(a) Parking areas shall be located behind or under buildings where practical; except that attached garages shall be allowed for duplexes.

(b) When abutting a less intensive rural residential zoning district, parking areas shall include fencing, berming, and/or landscaping as specified in this section.

(c) Parking lighting shall not create off-site glare, and shall utilize "cut-off" type fixtures that ensure glare will be downward facing and/or shielded and directed away from neighboring properties.

- Wood manufacturing
- Wrecking yards

(3) *Prohibited Land Uses.* The following land uses should be prohibited in the Western Region Rural Low zoning district: None.

(4) *Maximum Residential Density.* One dwelling unit per 4.8 acres or 1/128th of a standard section subdivision.

(5) *Minimum Lot Size.* 2.4 acres.

(6) *Minimum Lot Width.* Seventy-five (75) feet.

(7) *Maximum Width to Depth Ratio.* 1:5 (0.20).

(8) *Setbacks.*

(a) Front yard – forty-five (45) feet from a local access street, fifty (50) feet from an arterial street, sixty (60) feet from a highway.

(b) Side yard – ten (10) feet (forty (40) feet from the centerline of the right-of-way of a side street).

(c) Rear yard – fifteen (15) feet (forty (40) feet from the centerline of the right-of-way of a rear street).

The Clallam County Code is current through Ordinance 1034, passed December 16, 2025.

Disclaimer: The Commissioner's Office has the official version of the Clallam County Code. Users should contact the Commissioner's Office for ordinances passed subsequent to the ordinance cited above.

Chapter 33.22
LAMIRD STANDARDS

Sections:

33.22.100 Applicability, purpose, and inconsistencies.
33.22.200 Commercial, industrial, mixed use, duplex, and multifamily in-fill and redevelopment within LAMIRDs.
33.22.300 Minimizing impacts of commercial, industrial, mixed use, duplex, and multifamily in-fill and redevelopment within LAMIRDs.

SOURCE:	ADOPTED:
Ord. [illegible]	11/17/09

33.22.100 Applicability, purpose, and inconsistencies.

(1) This chapter applies to any commercial, industrial, mixed use, duplex, and multifamily in-fill or redevelopment within areas zoned on the Official Comprehensive Land Use and Zoning Map of Clallam County with a land use and zoning designation identified in Table 31.02.263(A) of the County wide Comprehensive Plan as a LAMIRD Land Use and Zoning Designation, and not to home businesses or home enterprises, which are subject to the standards of Chapter 33.42 CCC, Home Enterprise and Home-Based Industry Standards.

(2) The purpose of this chapter is to minimize impacts on the rural character of neighboring less intensive rural residential zoning districts as a result of commercial, industrial, mixed use, duplex, and multifamily in-fill and redevelopment within LAMIRDs.

(3) To the extent that this chapter calls for a different standard than that of the underlying zoning district, the more restrictive standard shall apply.

33.22.200 Commercial, industrial, mixed use, duplex, and multifamily in-fill and redevelopment within LAMIRDs.

To maintain a more "open" or "rural" atmosphere, commercial, industrial, mixed use, duplex, and multifamily in-fill and redevelopment within LAMIRDs shall comply with the following provisions:

(1) Total impervious surface is limited to 35 percent.

(2) Total lot coverage is limited to 20 percent.

33.10.025 Western Region Rural Low (RW5).

The purpose of the Western Region Rural Low zone is to provide home sites in rural forestry areas with limited encroachment of commercial and industrial activities in the western region of Clallam County.

(1) *Allowed Land Uses.* The following land uses should be allowed outright in the Western Region Rural Low zoning district:

- Agricultural activities
- Bed and breakfast inns
- Cemeteries
- Duplexes
- Family daycare providers
- Home-based industries
- Home enterprises
- Single-family dwellings
- Timber harvesting

(2) *Conditional Land Uses.* The following land uses should be permitted in the Western Region Rural Low zoning district through a special permitting process with public input and a determination that the proposed use is consistent with applicable land use regulations and the character of the neighborhood:

- Airports
- Asphalt plants
- Business parks
- Child daycare center
- Churches
- Commercial greenhouses
- Commercial horse facility
- Commercial storage
- Gas stations

- Grocery stores
- Industrial uses
- Lodges
- Medical service facilities
- Mineral extraction
- Mobile home parks
- Motels
- Multiple-family dwellings
- Outdoor-oriented recreational activity
- Planned unit developments
- Primitive campgrounds
- Private schools with less than fifty (50) students
- Professional offices
- Race tracks
- Research facilities
- Restaurants
- Retail stores
- RV parks
- Schools
- Shooting ranges
- Taverns
- Timber labor camps
- Tourist shops
- Vehicular repair
- Veterinarian clinics/kennels

WAC 365-196-425 – Rural Element

CONTEXT

GMA Framework. Growth Management Act at WAC 365-196-425 governs lands that fall outside urban growth areas, agricultural, forest, and mineral resource designations.

Scope. The regulation requires counties to define rural character, establish rural densities consistent with that definition, maintain adequate rural governmental services, and determine when more intensive uses — including small-scale tourist and recreational uses — may be permitted by conditional use. A separate provision expressly prohibits counties from using the rural CUP process to authorize a master planned resort.

TEXT

[redacted]

KEY REQUIREMENTS

Rural character — what development must protect. Land use and development in rural areas must allow the natural landscape to predominate over the built environment, remain compatible with wildlife and fish habitat, provide visual character consistent with rural tradition, avoid reliance on urban governmental services, protect surface and groundwater, and prevent stream. Counties must define rural character and apply it in development regulations.

Small-scale recreational uses (Type 2 LAMIRDs) — seven conditions, all required. A conditional use permit for a small-scale tourist or recreational use is valid only if the use satisfies all seven criteria in 365-196-425(5)(b): isolated from urban areas and from other similar uses, small in scale, consistent with rural character, reliant on a rural or natural setting, no new residential development, no dependency on services beyond what the rural area provides, and operationally compatible with resource-based industries. The provision does not permit waiver of individual criteria.

Master planned resort — CUP process not available. A project meeting the GMA definition of a master planned resort — a self-contained, fully integrated resort development with primary focus on destination resort facilities, potentially including accommodations, residential units, recreational facilities, and supporting commercial uses (RCW 36.70A.360(1)) — cannot be authorized through the rural element or LAMIRD conditional use process. It must comply with the separate and more stringent requirements of RCW 36.70A.360 through 36.70A.362, regardless of how the project is labeled in its application.

RCW 36.70A.360

Master planned resorts.

(1) Counties that are required or choose to plan under RCW 36.70A.040 may permit master planned resorts which may constitute urban growth outside of urban growth areas as limited by this section. A master planned resort means a self-contained and fully integrated planned unit development, in a setting of significant natural amenities, with primary focus on destination resort facilities consisting of short-term visitor accommodations associated with a range of developed on-site indoor or outdoor recreational facilities.

(2) Capital facilities, utilities, and services, including those related to sewer, water, stormwater, security, fire suppression, and emergency medical, provided on-site shall be limited to meeting the needs of the master planned resort. Such facilities, utilities, and services may be provided to a master planned resort by outside service providers, including municipalities and special purpose districts, provided that all costs associated with service extensions and capacity increases directly attributable to the master planned resort are fully borne by the resort. A master planned resort and service providers may enter into agreements for shared capital facilities and utilities, provided that such facilities and utilities serve only the master planned resort or urban growth areas.

Nothing in this subsection may be construed as: Establishing an order of priority for processing applications for water right permits, for granting such permits, or for issuing certificates of water right; altering or authorizing in any manner the alteration of the place of use for a water right; or affecting or impairing in any manner whatsoever an existing water right.

All waters or the use of waters shall be regulated and controlled as provided in chapters 90.03 and 90.44 RCW and not otherwise.

(3) A master planned resort may include other residential uses within its boundaries, but only if the residential uses are integrated into and support the on-site recreational nature of the resort.

(4) A master planned resort may be authorized by a county only if:

(a) The comprehensive plan specifically identifies policies to guide the development of master planned resorts;

(b) The comprehensive plan and development regulations include restrictions that preclude new urban or suburban land uses in the vicinity of the master planned resort, except in areas otherwise designated for urban growth under RCW 36.70A.110;

(c) The county includes a finding as a part of the approval process that the land is better suited, and has more long-term importance, for the master planned resort than for the commercial harvesting of timber or agricultural production, if located on land that otherwise would be designated as forestland or agricultural land under RCW 36.70A.170;

(d) The county ensures that the resort plan is consistent with the development regulations established for critical areas; and

(e) On-site and off-site infrastructure and service impacts are fully considered and mitigated.

[1998 c 112 s 2; 1991 sp.s. c 32 s 17.]

NOTES:

Intent -- 1998 c 112: "The primary intent of this act is to give effect to recommendations by the 1994 department of community, trade, and economic development's master planned resort task force by clarifying that master planned resorts may make use of capital facilities, utilities, and services provided by outside service providers, and may enter into agreements for shared facilities with such providers, when all costs directly attributable to the resort, including capacity increases, are fully borne by the resort." [1998 c 112 s 1.]

(46)

FOR THE CC CP-UPDATE RECORD
and for the special consideration of our CC-PC on 3-18-26

Good Evening Commissioners,

I'm Judy Larson, one of your past email "public commenters."

As a rural landowner with a shallow exempt well (who has lived at 1070 W Palo Verde Loop, Sequim since 1993), I attended the Sequim Public Meeting in July 2025, and verbally expressed concerns about critical area protections, plus I signed up for future notices about CC CP-Update efforts. I note that your minutes of 3-4-26 show that 4 attendees also indicated they never received notifications about meetings/updates. Indeed, the DCD Director stated the "...County website was not auto-generating update emails as expected..."

I have participated in past CP processes for both our County and for Sequim and it is my opinion, that this time around, the County has been deficient in providing important materials and communications relevant to having the public engagement GMA requires.

In both my January and February emailed public comments, I listed the many materials I have reviewed to make useful inputs. I noted how past CP-Update materials had been made available in print at our various Library branches and how having to rely on only electronic/online information constituted an impediment to public accessibility and involvement.

For the CC record for our CC-CP Update, I did look at "Table 3," which reveals responses to various inputs - with most changes being accepted for those submitted by jurisdiction/agencies and those given by residents being essentially dismissed. I do not understand how/why a DCD staff member would not review, for example, my noting how S-V CP materials needed correction/updating to show current status -e.g. DRNC upgrade IS completed, and new info on OCR project & now RR Bridge/ODT concerns. The County's S-V CP materials should at least be reviewed by Sequim DCED staff.

Regarding my emailed concerns about CC's Sequim UGA map (for Priest Rd/Brackett-Spruce Ct area) I contacted Sequim DCED staff and learned reconciliation is not yet reached, despite our DCD Director's comment.

Indeed, Sequim's CP-Update timetable, which also began 2024 (~June), is still very fluid, with plans for much more opportunity for public review and input. (This raises questions regarding coordination as Sequim's last meetings with County were circa summer 2025!)

In trying to close my comments tonight, I express my serious concerns that BOCC already received on 3-10-26 materials from DCD Director asking BOCC to sign off on 50 findings with #49: PC advertised PH...on 11-5-25....concluding on 2-4-26, following which the PC forwarded their recommendations to the BOCC, citing 49 findings in support of their recommendations."

Furthermore, the DCD Director notes past CPs adopted 6-16-95 FEIS and FSEIS 8-8-2000, with no challenges to these documents, so using a SEPA of 9/2023, B.E. signed off 12-30-25, but has final note that appeals to issuing a DNS for this CP-Update is 3-26-26 (yet BOCC PH was continued to 3-24-26!)

So in getting back to our future now, I say thank you for all your donated time, but please recognize how important it is that you do not feel compelled to agree to the current listing of your presumed recommendations.

More important than having this process completed is having it done RIGHT and having an acceptable plan for developing our future here in Clallam County.

Thank you.

Judy Larson

P.S. I did NOT find in Table 3 my January comments (but the pain from reading the horizontal table online may have interfered with my abilities.)

(47)

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382
360-461-5551

March 18, 2026

Meeting of the Clallam County Planning Commission
223 East Fourth Street, Room 160
Port Angeles, WA 98362

Public Comment Re: Comprehensive Plan Periodic Update – Public Participation Deficiencies

Dear Planning Commission Members,

I am a property owner of Clallam County. I fully join in and support the public comments already offered by other members of our community regarding the County's failure to provide adequate notice for the 2025 Comprehensive Plan update process.

Last summer, I attended an in-person meeting at the Guy Cole Center and signed up for updates so that I could stay informed. As I recall, at that meeting, Judy Larson spoke about the importance of water issues and the need to protect our aquifers and CARAs for those of us on exempt wells. We were led to believe that our input would be taken into consideration and incorporated into the comp plan updates. Yet we heard nothing further.

I am unaware of any provisions in the proposed update that would address our failing aquifers, particularly the harm caused by the extensive un-permitted pipeline development and the critical need to protect our ditch system which recharges the aquifers in our rain-shadow region.

The City recently allowed yet another water pipeline project to be completed with no permits required, no CARA analysis, and no environmental impact analysis. After the project was completed, the City advised me that the lead agency for purposes of SEPA compliance was actually the County, even though the pipeline was installed on City property. After the project was completed, the City also directed me to the Conservation District. I am providing a sample public comment to the Conservation District from last year that establishes the existence of private

agreements that are being entered into wholly outside of the requirements of the comp plan, County ordinances, and state environmental laws.

You have us chasing our tails to get information about the comp plan update, while the DCED and the DCD turn a blind eye to private developers doing massive construction projects that are severely impacting aquifer recharge. We are watching the devastation happening around us.

We have come to a point where our own government appears to be fundamentally dysfunctional and is causing more harm than good for our community. This failed comp plan update process is but one example.

The Growth Management Act requires that counties provide early and continuous public participation in the development and amendment of comprehensive plans. This is not a game of hide and seek. It is not a game in which you can deluge a website with digital information, hide the key elements like needles in a haystack, ignore the actual public input, and call it good.

The County has failed to meet its statutory obligations under RCW 36.70A.140 and 36.70A.035.

I respectfully request that this Commission take the actions recommended by other commenters: acknowledge the deficiency, provide proper legal notice, and further extend the public process without reliance on decisions already made outside of the scope of public input.

Sincerely,

Virginia Shogren

Encl. Public Comment to Conservation District dated May 13, 2025

Clallam Conservation District
228 W. First Street, Suite H
Port Angeles, WA 98362

May 9, 2025
Via email to:
kim.williams@clallamcd.org
info@clallamcd.org
swoolson@csdlaw.com

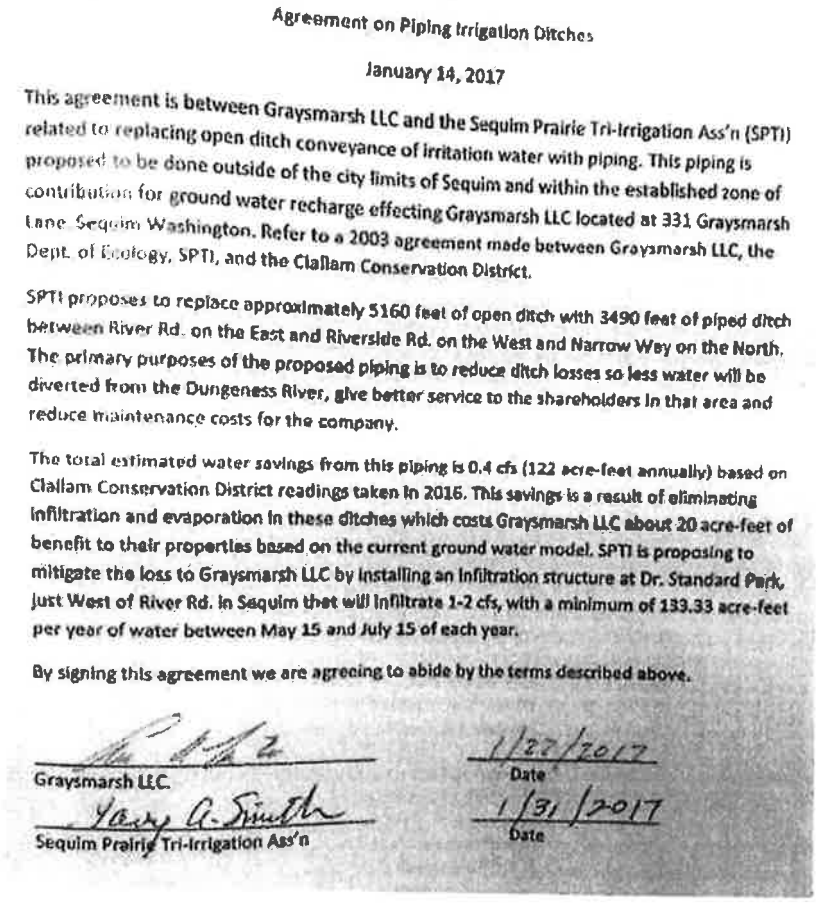
PUBLIC COMMENT FOR CCD BOARD MEETING MAY 13, 2025

Dear Clallam Conservation District,

Please accept this letter as public comment for the CCD Board Meeting scheduled for May 13, 2025 and please include this letter with the minutes for the meeting on May 13, 2025.

2017 Mitigation Agreement for Groundwater Recharge Due to Pipeline Development

Below is a photograph taken of an "Agreement on Piping Irrigation Ditches" dated January 14, 2017 ("Mitigation Agreement"). The document was obtained from CCD files through a public records review:



Agreement on Piping Irrigation Ditches

January 14, 2017

This agreement is between Graysmarsh LLC and the Sequim Prairie Tri-Irrigation Ass'n (SPTI) related to replacing open ditch conveyance of irritation water with piping. This piping is proposed to be done outside of the city limits of Sequim and within the established zone of contribution for ground water recharge effecting Graysmarsh LLC located at 331 Graysmarsh Lane, Sequim Washington. Refer to a 2003 agreement made between Graysmarsh LLC, the Dept. of Ecology, SPTI, and the Clallam Conservation District.

SPTI proposes to replace approximately 5160 feet of open ditch with 3490 feet of piped ditch between River Rd. on the East and Riverside Rd. on the West and Narrow Wey on the North. The primary purposes of the proposed piping is to reduce ditch losses so less water will be diverted from the Dungeness River, give better service to the shareholders in that area and reduce maintenance costs for the company.

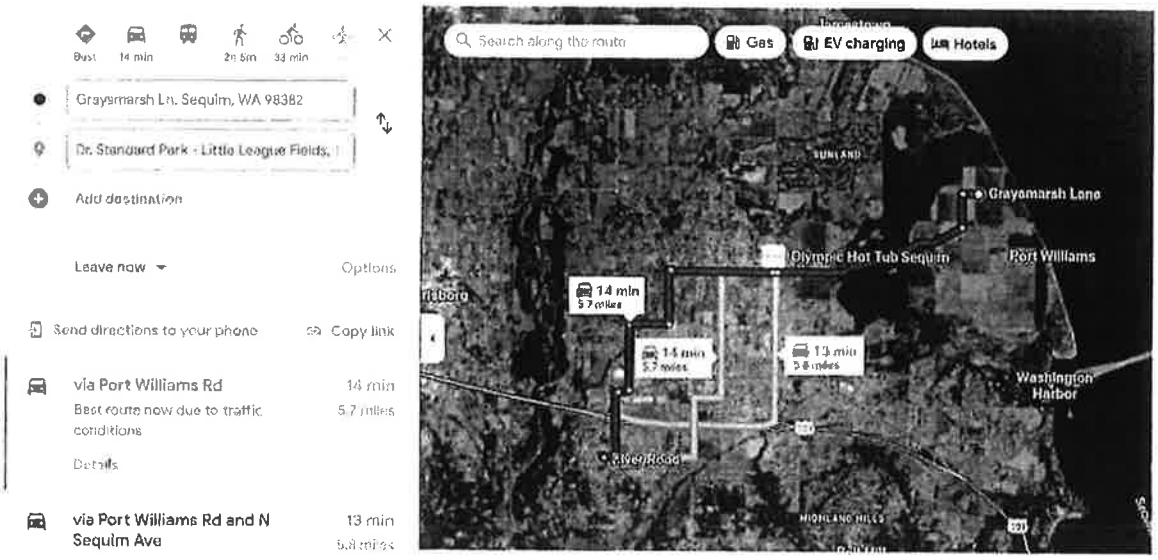
The total estimated water savings from this piping is 0.4 cfs (122 acre-feet annually) based on Clallam Conservation District readings taken in 2016. This savings is a result of eliminating infiltration and evaporation in these ditches which costs Graysmarsh LLC about 20 acre-feet of benefit to their properties based on the current ground water model. SPTI is proposing to mitigate the loss to Graysmarsh LLC by installing an infiltration structure at Dr. Standard Park, just West of River Rd. in Sequim that will infiltrate 1-2 cfs, with a minimum of 133.33 acre-feet per year of water between May 15 and July 15 of each year.

By signing this agreement we are agreeing to abide by the terms described above.

Graysmarsh LLC — Date 1/27/2017

Sequim Prairie Tri-Irrigation Ass'n — Date 1/31/2017

Per the Mitigation Agreement, a proposed irrigation water pipeline located in the vicinity of Dr. Standard Park (west Sequim) would impair ground water recharge for Graysmarsh Farm, located in east Sequim. Dr. Standard Park is 5.7 miles driving distance from Graysmarsh Farm, located at 331 Graysmarsh Lane:



Source: Google directions driving map.

The Mitigation Agreement cites to an estimated water savings of 122 acre-feet annually "based on Clallam Conservation District readings taken in 2016". This suggests that CCD, at least as of 2016, was actively involved in monitoring lost ground water recharge due to pipeline development.

The Mitigation Agreement acknowledges that the pipeline will result in the elimination of infiltration "cost[ing] Graysmarsh LLC about 20 acre-feet of benefit to [its] properties based on the current ground water model."

Accordingly, SPTI proposed "to mitigate the loss to Graysmarsh LLC by installing an infiltration structure at Dr. Standard Park, just West of River Rd. in Sequim that will infiltrate 1-2 cfs, with a minimum of 133.33 acre-feet per year of water between May 15 and July 15 of each year."

The Mitigation Agreement confirms: 1) that the CCD has had actual knowledge of significant impairment of groundwater (aquifer) recharge resulting from its pipeline development at least since 2016; 2) that CCD has actual knowledge that pipeline development in west Sequim impairs downstream aquifer users, such as Graysmarsh Farm, located in east Sequim; 3) that pipeline development in west Sequim (River Road region) is "within the [agreed upon] established zone of contribution for ground water recharge effecting Graysmarsh LLC located at 331 Graysmarsh Lane"; and, 4) special interests, such as Graysmarsh LLC, are being provided infiltration systems

at the expense of other property owners utilizing exempt wells in the region adversely impacted by CCD's pipeline development.

The Mitigation Agreement is signed by Gary Smith, father of CCD Board Supervisor Ben Smith. I have raised the conflicts of interest in previous oral and written public comment, none of which has been mentioned or included in the CCD's Board meeting minutes.

The CCD has publicly taken the position that the pipelines do not impact the region's aquifers, and if they do, the public is on the hook. This approach to public service is unacceptable, particularly where the CCD has been privy to private agreements to mitigate the damage done.

CCD On-going Censorship of Public Comment

At the CCD's Board meeting on April 8, 2025, I requested that the CCD -- as is routinely done by other government agencies, board and committees -- record its hybrid meetings, held over Zoom, so that the public may have continued access to the information and discussions held during those public meetings. CCD's Chair quickly responded that CCD will not record its meetings.

As previously noted, the CCD also has declined since July of 2023 to include written public comment with its meeting minutes, or to even acknowledge, within its minutes, that written public comment has been provided.

It was reported by the *Clallam County Watchdog* this past week that a prior Thurston County Conservation District board member, Paul Pickett, is now serving as an elected Clallam Charter Review Commissioner. According to articles posted by *We the Governed*, during Mr. Pickett's time with the Thurston County Conservation District, Mr. Pickett allegedly concealed internal corruption and mismanagement at that district. The articles claim that Mr. Pickett's role involved suppressing scrutiny over the misuse of public funds and maintaining the flow of government grants without proper oversight. He was portrayed as a "rubber stamp" supervisor who, alongside others, facilitated the falsification of public records, such as meeting minutes, to obscure staff misconduct and protect the interests of those benefiting from the grant system:

From *We the Governed* during Pickett's time in Thurston

Sources: *https://www.ccwatchdog.com/p/a-solution-in-search-of-a-problem* (May 3, 2025)

https://www.wethegoverned.com/paul-picketts-charge-cover-up-corruption-at-thurston-county-conservation-district/ (July 19, 2018)

The lack of transparency noted in these articles is eerily reminiscent of the CCD's approach to public comment, which in my view, has been actively censored by the CCD in order to protect the elected and appointed officials involved who support the grant funding for pipelines.

Sincerely,

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382

cc: Jean Fike (SCC)
Jon Culp (SCC)
Mark Ozias (CCBOC)
Mike French (CCBOC)
Randy Johnson (CCBOC)
Kelly Opatz (USBR)
Avra Morgan (USBR)

(48)

Emery, Bruce

From: Ozias, Mark
Sent: Friday, March 20, 2026 11:18 AM
To: Emery, Bruce
Subject: Fw: Proposed development of Miller Peninsula state park

Mark Ozias

Clallam County Commissioner

** Please note my new email address: mark.ozias@clallamcountywa.gov*

** This correspondence may be subject to disclosure under the Public Records Act.*

From: Diane Raven <dicarav@gmail.com>
Sent: Thursday, March 19, 2026 7:50 PM
To: Ozias, Mark <mark.ozias@clallamcountywa.gov>
Subject: Proposed development of Miller Peninsula state park

You don't often get email from dicarav@gmail.com. Learn why this is important

Dear Mr. Ozias,

Let me begin by saying I VOTED FOR YOU! That is why I am writing, and I'm hoping that you will pay attention. I live in Diamond Point, and like nearly everyone else who owns property out here I am absolutely NOT for the proposed development of the park. If you attended the huge meeting held a few years ago at the Blyn casino in October, you are likely aware of the overwhelming rejection of this project by those of us who live in the area and use the park on a regular basis for hiking, biking and horse riding. I hike there several times a week year round and ride the trails once they are dry in the summer and early fall. I wonder if you or any of the other commissioners have used the park during the winter, or at all? If you have, you will be aware of the many areas of standing water (many square meters in some cases) on the logging roads and some of the trails where it simply doesn't percolate into the ground during our rainy season. Any plans to mitigate this?

I am specifically writing to object to the inclusion of the following statement which is included in the Clallam County 20 year Comprehensive Plan:

31.03.195 (d) *Support development of the Miller Peninsula State Park, balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities, developing connecting links to the Olympic Discovery Trail for non-motorized access.*

Currently, WA State Parks is not proceeding with planning development at Miller Peninsula State Park (MPSP). They have not put forward a detailed development plan. What specifically are you supporting with the above statement?

As someone who lives a short walk away from these woods, I would hope the Planning Department and the County Commissioners would be clear eyed in addressing areas of concern on our peninsula during the next 20 years before giving a blanket approval to large-scale development at MPSP. County issues, including aquifer depletion (MP aquifer have not been assessed since 1979), sewage and solid waste concerns, sea

level rise, wildfires, high bank cliff erosion (BAD--take a walk on the beach!), forest ecosystems, wetland ecosystems, species declines and excessive economic costs/losses will be intertwined with developing MPSP. People are ***already*** using this park for hiking, biking and birdwatching. There is a colony of otters living by the lagoon on the north beach area across from Protection Island.
Committing the county's approval to a large development plan that has not been created, which will likely be in conflict with other stated county climate goals, and which will apply for 20 years seems irresponsible.
I ask that you **please remove** the statement(s) of support for development at MPSP from the comprehensive plan.
Thank you
Diane Raven
503 Sunshine Ave., Sequim, WA

(49)

Emery, Bruce

From: Heather Cantua <hacantua@gmail.com>
Sent: Saturday, March 21, 2026 12:13 PM
To: Emery, Bruce
Subject: Additional Comment on CUP: 2619 Mora Road Zillow Listing

Hi Bruce,

I'd like the Planning Commission to be aware of a current Zillow listing of a property zoned WR5.

Specifically, 2619 Mora Rd, Forks, WA is currently listed on Zillow for a shocking $4,200,000 for 30 acres of undeveloped forest zoned RW5 (source). This is the last plot before you enter the National Park, and has a lot of frontage along Mora Rd for high tourist visibility. It also has 1,000 feet of Quillayute river frontage. The justification for the price is that this is zoned RW5, with the ability to use the CUP process to convert this plot into a resort.

The recorded owner of the property is "QUILLRIVER LLC" (source) which is owned by individuals named James Reeves and Lauran Hine (source), who have a Kenmore, Washington address. It appears they purchased it as a part of a larger lot on 5/18/2006 for $495,000. In 2019 they subdivided it into four lots, the application states a purpose that one lot be "preserve" and the three remaining were intended for "residential use" (source). Then, in 2024 they did a water analysis (source). Now, this property is listed at a 900% price increase for what it was purchased for twenty years ago.

I believe this is another example we can look at in discussing the impact of the CUP process and master planned resorts.

Regards,

Heather Cantua

50

Emery, Bruce

From: Virginia Shogren <vshogren@gmail.com>
Sent: Monday, March 23, 2026 12:14 PM
To: Emery, Bruce; Havel, Tim
Subject: Proposed Policies and Regulation: 2026 Comp Plan Update for April 1 2026 Clallam County Planning Commission Meeting
Attachments: [1] Comp Plan Update Public Comment FAE 7-23-25.pdf; [2] CCD Letter Re Unauthorized Pipeline Activity FAE 10-17-25 (without enclosures).pdf; [3] Public Comment CCD Board Meeting 1-14-25 FAE 1-10-25.pdf; [4] Public Comment CCD Board Meeting 3-12-24 FAE 3-11-24.pdf

Good afternoon,

Attached please find public comment in support of policies and related regulation for the 2026 Comp Plan Update for consideration at the 4-1-26 meeting of the Clallam County Planning Commission.

Attachment [1] is written public comment submitted on July 23, 2025 for the 2026 Comp Plan Update. The comment requested a moratorium on irrigation water pipeline development and protection of the remaining ditch system. To date, I have received no response.

Attachment [2] is notification of unauthorized pipeline development in Sequim submitted on October 17, 2025 (without enclosures). The City of Sequim has informed me that the County was the lead agency for purposes of SEPA review. No SEPA review was conducted despite a federal requirement for a FONSI determination.

Attachment [3] is public comment to the Clallam Conservation District dated January 10, 2025 enclosing a City of Sequim study that established a steep decline in aquifer levels post-pipeline development.

Attachment [4] is public comment to the Clallam Conservation District dated March 11, 2024 enclosing the Drost Study that confirms that the ditch system is the most important source of ground-water recharge in our rain-shadow region and that removal will likely lead to well failures, increasing pumping costs, seawater intrusion and water-quality degradation.

I request (again) that the County incorporate into the 2026 Comp Plan Update two policies and associated regulatory ordinances, namely: a moratorium on additional irrigation water pipeline development and active historical designation/preservation of the remaining ditch system.

Thank you,

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382
360-461-5551

50-a

Bruce Emery
Director, Dep't of Community Development
223 E 4th Street, #5
Port Angeles, WA 98362

July 23, 2025
Via email to:
bruce.emery@clallamcountywa.gov
tim.havel@clallamcountywa.gov

PUBLIC COMMENT FOR COMPREHENSIVE PLAN UPDATE
SEQUIM PUBLIC OUTREACH MEETING JULY 23, 2025

Dear Mr. Emery,

Please accept this letter and enclosures as public comment for the Comprehensive Plan Update meeting in Sequim scheduled for July 23, 2025.

As you are likely aware, there has been extensive controversy over the 66 miles of irrigation water pipelines installed in the County *without County permitting or oversight*. The pipelines carrying irrigation water have been installed by the Clallam Conservation District and others (including ditch walkers) purportedly pursuant to an EIS that was successfully challenged by Graysmarsh in court. That litigation led to private agreements involving the protection of what Graysmarsh perceives to be its groundwater (aquifer) water sources. The pipelines have severely impaired aquifer recharge throughout the Sequim and Agnew regions leading to multiple well failures. The City of Sequim studied the impact of the pipelines on aquifer recharge in 2008. That study confirmed a steep decline in aquifer recharge post pipeline construction.

According to the Department of Ecology, there are 5,555 exempt wells in the Dungeness area. The City of Sequim recently installed a deep and large well at Silberhorn – very near the same area that Graysmarsh is protecting for its groundwater needs miles away.

The County has seemingly sat by and watched as aquifer recharge areas were piped in. The County did nothing in response to public comment about these issues made in January of 2024. Instead, the County Commissioners appear to be spearheading *more* pipeline development in connection with the proposed Off Channel Reservoir. That project would require extensive pipelines for water flowing through the Highland Irrigation District.

The Department of Community Development now has an opportunity to begin the process of healing the damage done. For starters, the DCD should impose an irrigation water pipeline moratorium as part of the next Comprehensive Plan Update. This would help stop the hemorrhaging.

In connection with a moratorium on additional pipelines, the DCD should prepare a Comprehensive Plan Update that protects our remaining ditch systems. As more and more farms are developed and the historic barns are succumbing to the ravages of time, the ditches will be all that we have left of our rural pioneer history. They need to be preserved. The Clallam County Heritage Advisory Board could assist with that effort.

Developers do not like surface water on property. Surface water impedes easy development. We have witnessed extensive wetlands being dried up south of Sequim to usher in development. We do not consent to the loss of tree canopy, the loss of wildlife habitat and the impairment of aquifer recharge in the name of corporate profit.

Enclosed please find a petition signed by Sequim residents who share a love for our pioneer history and who want to preserve the historic ditches that make Sequim a unique and special place to live. Also enclosed is public comment provided to other agencies. The comment addresses the cultural importance of our ditch systems and the wildlife protection created for the historic ditch corridors.

Sincerely,

Virginia P. Shogren

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382

Encls.

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

URGENT: The Clallam Conservation District in coordination with the Sequim Prairie Tri-Irrigation Association is seeking to fill in the historic **Sequim Irrigation Ditch** with buried pipes, destroying the original ditch and the 100 plus year old associated wildlife corridor (green belt) running through Sequim.

The Clallam Conservation District plans to destroy the original Sequim prairie ditch (dating back 128 years) through a project using public taxpayer's funding to provide infrastructure to private commercial farming interests downstream of the original ditch. **The ditch forms the basis for Sequim's Irrigation Festival, Washington State's oldest and longest-running celebration.** It is a key component to tourism and our shared pioneer farming history that makes Sequim **unique** and forms the basis for Sequim's timeless motto: "Where Water Is Wealth."

Please sign this petition to show your support for **maintaining the historic irrigation ditch for future generations**! Please also contact the Conservation District at **360-775-3747** to express your desire to **maintain Sequim's historic ditch** and attend a Conservation District meeting held on the second Tuesday of each month at 3:00 p.m. at the Armory Square in Port Angeles.

Thank you for helping to preserve an essential part of Sequim's Pioneer History!

Name (printed)	Address	Signature
SKIP KRATZER	150 JENNIES BLVD	
SHARON Kratzer	150 JENNICS BLVD	
Carmelinda Wiley	150 E. Lobelia Dr	
DWAYNE NORMAN	171 E. LOBELIA DR	
Christina Miller	90 E Lobelia Dr	
Jana Danseareau	466 Vehicle Rd	
Bernie Gilstad	76 E Lobelia Dr	
Claire Gilstad	76 E Lobelia Dr	

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

Name (printed)	Address	Signature
Susan Deny	540 N Priest Rd. Sequim WA 98382	
Aimee Cimmiero	358 Priest Lane Sequim WA 98382	Aimee Cimmiero
Barbara Johnson	1021 W Oak Ct, Sequim WA 98382	Barbara Perry Johnson
Brandon Johnson	1021 W Oak Ct, Sequim Wa 98382	Brandon Johnson
Kerry Hamilton	653 La Redonda Ln, Sequim 98382	Kerry Hamilton
Sammy Greenwood	631 N. Normandy Ln, Sequim 98382	
Gary Lockwood	1001 West Oak Ct. Sequim WA 98382	Gary Lockwood
Kathy Lockwood	1001 west oak ct sequim WA 98382	
Ruth Geiger	911 W. Oak Ct Sequim WA 98382	Ruth Geiger
Brenda Tennings	911 W. Oak Ct. Sequim WA 98382	
Gail W. Kelly	441 W Oak Ct Sequim, WA 98382	Gail F. Kelly
Andrew Skoglund	961 W Oak Ct, Sequim WA 98382	

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

URGENT: The Clallam Conservation District in coordination with the Sequim Prairie Tri-Irrigation Association is seeking to fill in the historic **Sequim Irrigation Ditch** with buried pipes, destroying the original ditch and the 100 plus year old associated wildlife corridor (green belt) running through Sequim.

The Clallam Conservation District plans to destroy the original Sequim prairie ditch (dating back 128 years) through a project using public taxpayer's funding to provide infrastructure to private commercial farming interests downstream of the original ditch. **The ditch forms the basis for Sequim's Irrigation Festival, Washington State's oldest and longest-running celebration.** It is a key component to tourism and our shared pioneer farming history that makes Sequim **unique** and forms the basis for Sequim's timeless motto: "Where Water Is Wealth."

Please sign this petition to show your support for **maintaining the historic irrigation ditch for future generations!** Please also contact the Conservation District at **360-775-3747** to express your desire to **maintain Sequim's historic ditch** and attend a Conservation District meeting held on the second Tuesday of each month at 3:00 p.m. at the Armory Square in Port Angeles.

Thank you for helping to preserve an essential part of Sequim's Pioneer History!

Name (printed)	Address	Signature	
CARL ANDERSON	21 Aspen Creek Ct		c/o
Christine Roberts	101 E Pheasant LN		c/o
Kay Cartwright	20 Riverdale Ln		
Martin Baeth	94 Riverdale Ln		c/o
Nancy Schneider	94 Riverdale Lane		c/o
Tom LEWIS	251 Riverside Rd		
Linda K VANDER	251 RIVERSIDE RD		c/o
	313 RIVERSIDE		c/o

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

Name (printed)	Address	Signature
ANN CHILDS	313 RIVERSIDE RD. SEQUIM	
Feuke Najera	21 Timberside lane Sequim	Feuke Najera
Stephanie Najera	21 Timberside Lane Sequim	Stephanie Najera
Melissa Davis	194 Avellana Road Sequim WA 98382	
Gemma Davis	194 Avellana Rd Sequim WA	
AL ALWARD	21 marla Dr Sequim wa	
Ann Alward	21 marla Dr Sequim wa.	
Rose Cole	[illegible]	
Harold Chesser	63 N Lake Dr. Sequim	Harold Chesser
Abby Clark	312 W Silberr Rd Sq WA	312 W Silberr
Steven Holmes	43 W Sequim Bay Rd Sequim	
RONALD J ALDER	45 RONDALE DR SEQUIM WA	
Michael Wallace	103 Rondale Dr. Sequim WA	
JUDY TISSOT	141 Rondale Dr Sequim, WA	
Virginia Shogren	961 W Oak Ct Sequim, WA	

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

URGENT: The Clallam Conservation District in coordination with the Sequim Prairie Tri-Irrigation Association is seeking to fill in the historic **Sequim Irrigation Ditch** with buried pipes, destroying the original ditch and the 100 plus year old associated wildlife corridor (green belt) running through Sequim.

The Clallam Conservation District plans to destroy the original Sequim prairie ditch (dating back 128 years) through a project using public taxpayer's funding to provide infrastructure to private commercial farming interests downstream of the original ditch. **The ditch forms the basis for Sequim's Irrigation Festival, Washington State's oldest and longest-running celebration.** It is a key component to tourism and our shared pioneer farming history that makes Sequim **unique** and forms the basis for Sequim's timeless motto: "Where Water Is Wealth."

Please sign this petition to show your support for **maintaining the historic irrigation ditch for future generations!** Please also contact the Conservation District at **360-775-3747** to express your desire to **maintain Sequim's historic ditch** and attend a Conservation District meeting held on the second Tuesday of each month at 3:00 p.m. at the Armory Square in Port Angeles.

Thank you for helping to preserve an essential part of Sequim's Pioneer History!

Name (printed)	Address	Signature	
Robert White	120 Narrow Way Sequim WA 98382		9/6
Kelle White	120 NARROW WAY, Sequim, WA 98382		9/6
Ryan Taft	45 Kelly Lane		
Bill O'Brien	PO Box 1299 Sq		9/10
NEIL FARMER	140 DAISY LN		9/10
Ken Still	143 Daisy Lane		
ERIC CAREY	11 GILLIS AVE SEQUIM WA 98382		9/10
Jason Dale	31 Gillis Ave Sequim WA		9/10

Cian

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

Name (printed)	Address	Signature	
TAMMY DALE	31 Collis AVE SEQUIM	Tammy Dale	D/D
David W Dale	31 Collis Ave Sequim	David W Dale	D/D
Levi Dale	31 Collis Ave Sequim		D/D
Mar Weaver	81 Dillinham Sequim		D/D
Tom Rothell, PE	111 Gillis Ave Sequim		D/D
Judy Linton	31 Daisy Lane		
Scott Carter	31 Daisy Lane		
Brenda Priest	693 E Silberhorn	Brenda M Priest	D/D
John Curr	105 Mockingbird Ln		D/D
Bob Card	33 Marlborough Lane		
Candice Packer	3414 Falcon Rd		D/D
Vic Cutler	15 West Quail Loop		D/D
Jon Rourke	4/2 on record		
ELMER Hurdlow	53 E Pheasant Ln		
Peter Roberts	101 E Pheasant Lane		D/D

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

URGENT: The Clallam Conservation District in coordination with the Sequim Prairie Tri-Irrigation Association is seeking to fill in the historic **Sequim Irrigation Ditch** with buried pipes, destroying the original ditch and the 100 plus year old associated wildlife corridor (green belt) running through Sequim.

The Clallam Conservation District plans to destroy the original Sequim prairie ditch (dating back 128 years) through a project using public taxpayer's funding to provide infrastructure to private commercial farming interests downstream of the original ditch. **The ditch forms the basis for Sequim's Irrigation Festival, Washington State's oldest and longest-running celebration.** It is a key component to tourism and our shared pioneer farming history that makes Sequim **unique** and forms the basis for Sequim's timeless motto: "Where Water Is Wealth."

Please sign this petition to show your support for **maintaining the historic irrigation ditch for future generations!** Please also contact the Conservation District at **360-775-3747** to express your desire to **maintain Sequim's historic ditch** and attend a Conservation District meeting held on the second Tuesday of each month at 3:00 p.m. at the Armory Square in Port Angeles.

Thank you for helping to preserve an essential part of Sequim's Pioneer History!

Name (printed)	Address	Signature
JUDY M. LARSON	1070 W PALO VERDE LOOP, SEQUIM, WA	Judy M. Larson
Danny Hemp	1111 West Alta Ct " "	
Macy Jones	1140 W. Elder Ct. " "	
Irene Greene	1062 W Palo Verde Loop " "	
Lisa Jorgensen	1051 W. Palo Verde Loop " "	
JEAN LARSON	610 W SPRUCE St #35 " "	
BRUCE DRENKEL	1011 W PALO VERDE LOOP SEQUIM	

PETITION TO SAVE SEQUIM'S HISTORIC IRRIGATION DITCH

Name (printed)	Address	Signature
Gail K. Drenkel	1011 W. Palo Verde Loop, Sequim	Gail K. Drenkel
Dave Read	1010 W. Palo Verde Loop	David E Read
Zoee Kuperus	42 Farm Pl.	Zoee Kuperus
JOANNE O'Neal	610 W Spruce ST #121	Joanne O'Neal
Stephen A. Levine	1150 W. ALDER Ct Sequim	Stephen A. Levine
Michael Warren	1020 Palo verde loop Sequim	Michael Warren
PATRICIA WARREN	1020 Palo Verde loop Sequim	Patricia Warren
Jeanette Gish	1081 W. Spruce Ct, Sequim	Jeanette Gish

Clallam Conservation District
228 W. First Street, Suite H
Port Angeles, WA 98362

January 9, 2024
Via email to:
CCD Supervisors, *via*
kim.williams@clallamcd.org
jholtrop@jeffersoncd.org
info@clallamcd.org

Re: U.S. Department of Interior Assistance Agreement No. R22AP00608-00
CFDA No. 15.507 WaterSMART
Grantee: Clallam Conservation District

LANDOWNER PUBLIC COMMENT FOR CULTURAL RESOURCE SURVEY

Dear Clallam Conservation District Board of Supervisors,

My husband and I reside at 961 W. Oak Court in Sequim, Washington located in Clallam County. This letter is to provide landowner public comment for the Cultural Resource Survey ("Survey") being conducted by the Clallam Conservation District ("CCD") without landowner notice, permission or consent[1] in connection with Bureau of Reclamation Assistance Agreement No. R22AP006080-00 ("Grant") with CCD.

Per the regulatory compliance required by Section 11 of the Bureau of Reclamation Grant and Clallam County Code Regulation 35.25.170(2), this project, if allowed to continue despite non-compliance (noted below), will require a Cultural Resource Management Plan to assess the historic locations of significant events, the cultural sites, and the cultural resources at risk of adverse impact.

Prior Notice of Noncompliance

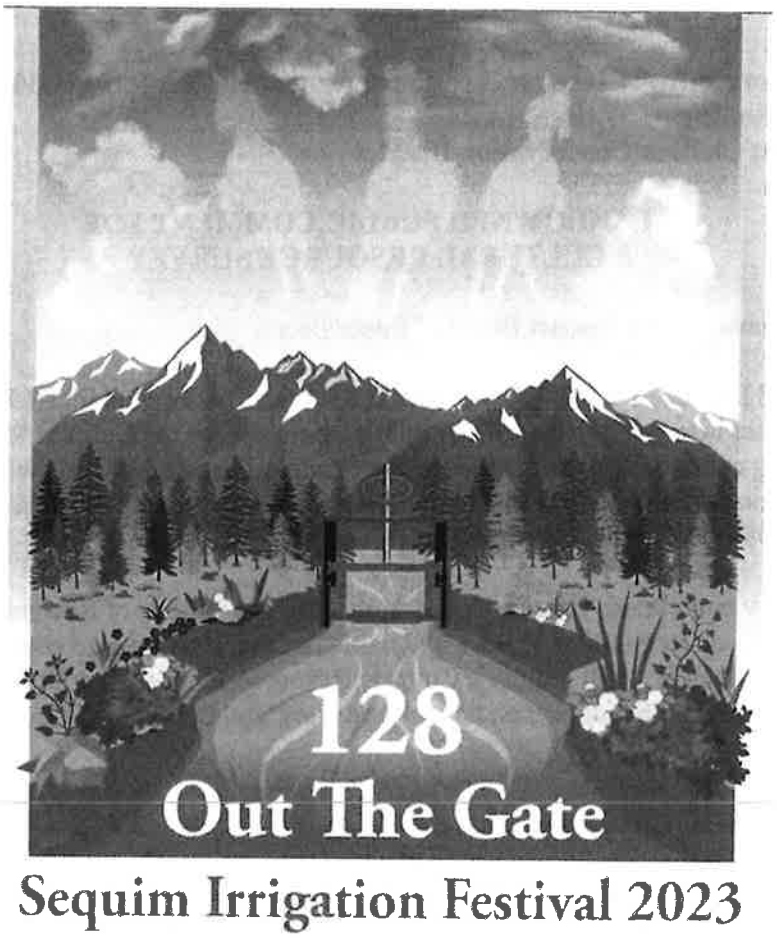
On October 24, 2023, the Bureau of Reclamation was notified in writing regarding the CCD's noncompliance with multiple terms of the Grant, incorporated herein by this reference. The violations fall under Section 6.1.1 (Recipient Responsibilities), Section 7.4 (Allowable Costs), and Section 22 (Conflicts of Interest). ("Notice of Noncompliance").

To date, to our knowledge, neither the Bureau of Reclamation nor the CCD has responded to the Notice of Noncompliance nor taken steps to resolve the identified violations.

[1] On November 28, 2023, CCD personnel, without prior notice, permission or consent of the landowner, were seen walking through the Historic Sequim Prairie Ditch traversing over and under landowners' fences and traipsing through private properties, periodically laughing. On December 12, 2023, we were advised that the CCD trespassed in order to conduct an unauthorized 'cultural resource' survey of un-noticed parameters on our property.

Historic and Cultural Significance of the Sequim Prairie Ditch

The Grant project proposes, *inter alia*, to develop the original Sequim prairie ditch ("Historic Sequim Prairie Ditch") forming the basis for Washington State's oldest and longest-running civic celebration originating over 128 years ago.[2]



Source: https://irrigationfestival.com/site/2023-logo-128-out-the-gate/

The Historic Sequim Prairie Ditch is the site of the founding component of the pioneer farming history that makes Sequim unique and forms the basis for Sequim's timeless motto: "Where Water Is Wealth."[3]

---

[2] *See*, Department of Archaeology and Historic Preservation (State Historic Preservation Office), Arksey, Laura, *Sequim and the Sequim-Dungeness Valley – Thumbnail History*, at p. 4, enclosed.
[3] *See,* https://www.king5.com/article/entertainment/television/programs/evening/irrigation-festival-wins-best-small-town-celebration/281-140339690; http://sequimartwalk.com/aqua-color-themed-may-5-first-friday-art-walk-sequim-celebrates-culture-and-cultivation-during-the-sequim-irrigation-festival/

The Sequim Irrigation Festival begins on the first full weekend in May of each year and extends through the following weekend. As a community festival, most of the events are free to all attendees. *See,* enclosed printouts of festival related website pages, source: https://irrigationfestival.com/site/.

The Sequim Irrigation Festival is the oldest, longest, continuous running festival in Washington State. The festival events are held at various locations throughout the city of Sequim, located in Clallam County.

In addition to the community festival held in May, supporting events occur earlier in the year, including a Royalty Scholarship Pageant and a Kickoff Dinner and Auction to raise money for the festival and parade float construction.

D.R. Callen (aka "Crazy Callen") is the historic figure famous for having the vision of a seemingly impossible gravity-driven ditch that would carry water from the Dungeness River throughout the dry and parched areas of the Sequim valley.[4] The water is essential to the region, as Sequim sits in a rain shadow created by the Olympic mountain range.

"Crazy Callen Weekend" is the first weekend of the civic festival in May and includes a First Friday Art Walk, a Sequim High School Operetta, a Kids Parade, an Innovative Arts and Crafts Fair, a Family Fun Day, a Run Series, a Crazy Daze Breakfast, a Fashion ('Trashion') Show, a Community Concert and Dance, entertainment, and food vendors.

The "Grand Finale Weekend" is the second weekend in May and includes the Past Royalty Luncheon, a Historic Walking Tour, a Golf Tournament, a Classic Cruise and Show, the Sequim Logging Show, and the Grand Parade.

The Grand Parade pays tribute to the descendants of the pioneers who lived within the current boundaries of the Sequim School District prior to 1950. The Honored Pioneers are guests at the annual Pioneer Dinner held at the Sequim Prairie Grange. The individuals selected as Honored Pioneers represent the history that is so important to Sequim and the Irrigation Festival.

On the following page is a photograph from the 2023 Grand Parade showing the royalty standing and waiving to the community from their festival float. The princesses are perched on the float next to a re-enactment of the opening of the Historic Sequim Prairie Ditch through its head gate, an event that occurred 128 years ago and which forever changed Sequim:

[4] *See,* https://www.sequimgazette.com/news/the-curious-case-of-crazy-callen/

Source: https://www.peninsuladailynews.com/news/irrigation-festival-grand-parade-2/

Cultural Significance of the Bald Eagle

Native Americans consider the bald eagle to be sacred. Because eagles are the highest flying birds, they are seen to be nearer to the Creator. *See* https://swartsanddesign.com/the-eagle-in-native-american-culture/.

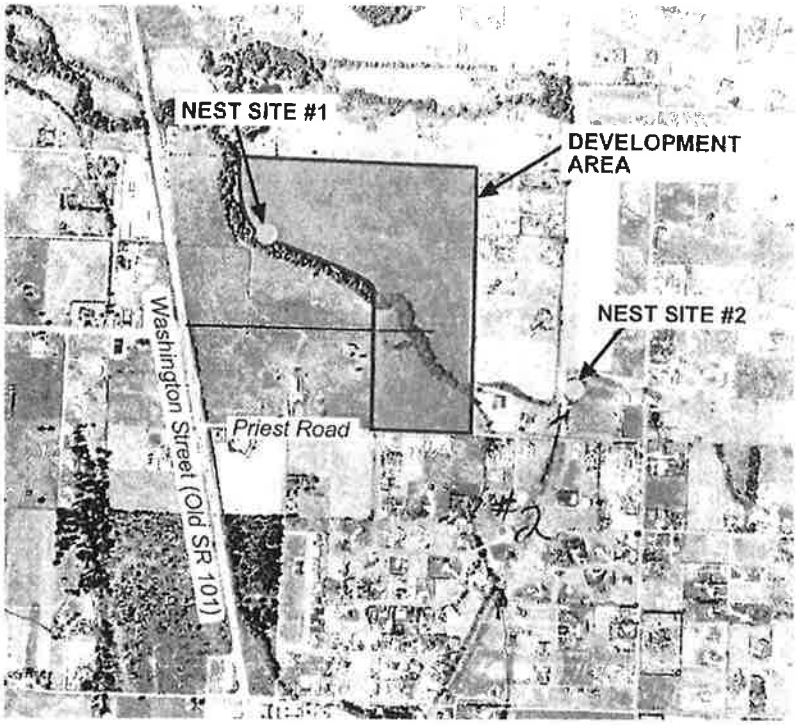
The eagle is the greatest sacred bird among most Native American tribes. *Id.* The eagle symbol signifies courage, wisdom, and strength, which is similar to what the founders of the United States envisioned for their eagle symbol. *Id., see also,* Patent, Dorothy Hinshaw, *The Bald Eagle Returns*, Jamestown S'Klallam Tribal Library; National Audubon Society, *Field Guide to the Bald Eagle (Sasquatch Field Guide Series)*, Jamestown S'Klallam Tribal Library.

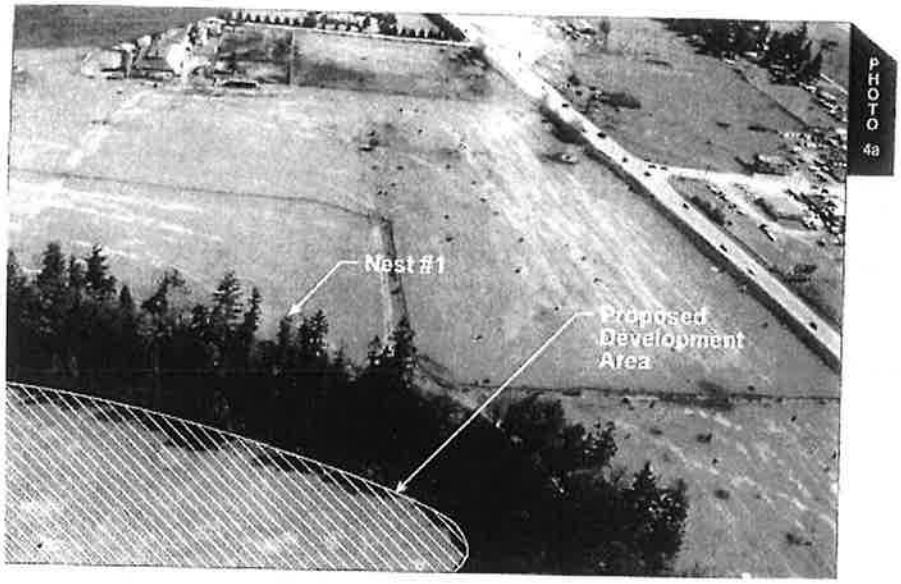
Because eagles are considered such a powerful animal, the hunting or killing of eagles is restricted. Eating eagle meat is forbidden in many tribes. In some legends, a person who eats eagle meat is transformed into a monster. https://swartsanddesign.com/the-eagle-in-native-american-culture/.

The Historic Sequim Prairie Ditch has established an approximately 8,900 foot wildlife corridor green-belt running through rain-shadow dry Sequim. The tree canopy, water, and wildlife habitat support many species including, without limitation, frogs, bats, birds, owls, waterfowl, eagles, birds of prey, foxes, deer, and bobcats:

Source: Google Maps

The proposed development of the Historic Sequim Prairie Ditch would destroy designated open space and a wildlife corridor creating tree canopy and habitat for, *inter alia*, bald eagles:





SUB05-002 Jennie's Meadow Bald Eagle Habitat Report, courtesy City of Sequim

A wildlife corridor has been established contiguous with the Historic Sequim Prairie Ditch to protect, *inter alia*, bald eagle habitat consistent with a Priest Pastures Bald Eagle Nest Territory (#1258) Site Management Plan. *See*, Phase A Jennie's Meadow Development 2006 Plat Map, Sheet 10, Items 3E, 3N ("Plat Map").

Tracts J and K (the "Core Protection Zone & Wildlife Buffer/Open Space") of the Jennie's Meadow development are restricted by CC&R to use "ONLY FOR WILDLIFE HABITAT AND OPEN SPACE". Plat Map, Sheet 11, CC&R 6C.

Per the Plat Map, "NO TREES SHALL BE REMOVED WITHIN THE CORE PROTECTION ZONE, UNLESS A HAZARD TREE HAS BEEN IDENTIFIED":

10. ALL PERCH TREES WITHIN THE CORE PROTECTION ZONE HAVE BEEN IDENTIFIED (SEE FIGURE #2 OF THE PRIEST PASTURES BALD EAGLE NEST TERRITORY (#1258) SITE MANAGEMENT PLAN). NO TREES SHALL BE REMOVED WITHIN THE CORE PROTECTION ZONE, UNLESS A HAZARD TREE HAS BEEN IDENTIFIED. ANY HAZARD TREE REMOVAL REQUIRES THE PRIOR APPROVAL OF THE CITY OF SEQUIM AND A PROFESSIONAL FORESTER OR CERTIFIED ARBORIST WORKING WITHIN COMPLIANCE OF SAID MANAGEMENT PLAN, UNLESS DANGER TO THE SAFETY OF PROPERTY OR INDIVIDUALS IS IMMINENT.

11. IF, IN THE FUTURE, NEW NESTS ARE ESTABLISHED WITHIN THE CORE PROTECTION ZONE, THE JENNIE'S MEADOW HOMEOWNER ASSOCIATION (MASTER ASSOCIATION) SHALL COOPERATE WITH THE WDFW IN REVIEWING AND NEGOTIATING ANY PROPOSED CHANGES TO THE PRIEST PASTURES BALD EAGLE NEST TERRITORY (#1258) SITE MANAGEMENT PLAN.

12. LOT OWNERS SHALL BE AWARE THAT THE CITY OF SEQUIM HAS APPROVED THE HABITAT MANAGEMENT PLAN JENNIE'S MEADOW RESIDENTIAL DEVELOPMENT (DATED 1/24/05).

Plat Map, Sheet 9, Items 10-12.

The development of the Historic Sequim Prairie Ditch will require the removal of countless trees along the approximate 8,900 foot corridor. Any surviving remaining trees would die over time for lack of water. Both CCD staff and CCD Supervisors are acutely aware of the adverse impact of the loss of water on the wildlife habitat caused by past piping projects in the region.

The attention, care, and protective measures put into place for the habitat winding its way through the Jennie's Meadow development demonstrate the community and governmental interest in preserving our local wildlife, including habitat that can support bald eagles.

Development of the Historic Sequim Prairie Ditch will permanently adversely impact the founding site for the longest-standing community festival in the State of Washington as well as community-protected habitat for a sacred contributor to indigenous culture and our nation's symbol, the bald eagle.

This Grant project, which is currently in a status of noncompliance, poses a threat to significant historic, symbolic, and living cultural resources.

Sincerely,

Virginia P. Shogren

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382
360-461-5551
vshogren@gmail.com

Encls.

cc:

Mr. Josh German
Ms. Robin Graber
Ms. Kelly Opatz
U.S. Bureau of Reclamation
Denver Federal Center
Denver, CO 80215-1000
jgerman@usbr.gov
rgraber@usbr.gov
kopatz@usbr.gov

Jean Fike, SCC
Jon Culp, SCC

Sequim and the Sequim-Dungeness Valley — Thumbnail History

By Laura Arksey
Posted 5/01/2008
HistoryLink.org Essay 8555

The thriving town of Sequim, the nearly deserted village of Dungeness, and the valley between them, located in Clallam County, are linked historically, culturally and economically. Sequim's present (2008) population is 5,330, or some 15,000 counting the surrounding valley. Before Sequim became a town, there was Dungeness, about five miles to the north, on the Strait of Juan de Fuca. One of the earliest Puget Sound ports, it made possible the development of inland Sequim. Long before either town existed, however, this narrow stretch of forest and prairie between the Olympic Mountains and the Strait of Juan de Fuca was the domain of the Klallam (S'Klallam) Tribe. Klallam is said to mean "strong people" (Carter, 34). The name Sequim (pronounced Skwim) comes from a rather poor approximation of the Klallam word for "hunting ground," although several published sources mistakenly claim that it is either the Indians' word for "quiet waters" or the traditional name for a local wild onion that supplemented their diet of clams, crabs and salmon. All that remains of the busy little shipping port of Dungeness (originally named New Dungeness) are a few buildings and a line of pilings from its long pier. Most of the dairy farms of the Sequim-Dungeness Valley have given way to the new homes of a massive influx of retirees drawn by the climate and scenery. Local agriculture has reinvented itself as the lavender capital of North America.

Early Days

The area is a fan-shaped alluvial plain created by the Dungeness River, which flows out of the Olympic Mountains. It was repeatedly covered by glaciers and ice sheets, the most recent of which was the Cordilleran, which covered Puget Sound and the Strait of Juan de Fuca south to the foothills of the Olympic Mountains. The retreat of this ice sheet about 14,000 years ago left a fertile, well-drained plain. A combination of climate, soil conditions and strategic burning by Indians maintained the prairie. The rain shadow cast by the Olympic Mountains provides the sunniest climate in Western Washington, with an average of only slightly over 16 inches of rain a year. However, timber was also present in abundance, especially on the slopes of the Olympics and on ridges scattered about the prairie. The tillable land was expanded as early settlers logged off this timber and grubbed out their "stump farms."

The most notable feature of the shoreline is Dungeness Spit, a narrow, curving natural projection of sand, rock, and driftwood extending over five miles into the strait and occasionally submerged during storms. On July 4, 1790, the Spanish mariner Manuel Quimper was the first European to sight this area. He named the bluff behind the spit Puerto de Quimper. On July 8 he claimed the bay protected by the spit for Spain and planted the usual cross. The next European to arrive was British explorer George Vancouver (1757-1798), who, ignoring any Spanish pretensions to ownership, on April 30, 1792, named part of the area sheltered by the sand spit New Dungeness after a similar projection on the Dover Channel on the southeast coast of England. A later town, also called New Dungeness, was actually near Cline's spit, a smaller projection within the shelter of Dungeness Spit.

The Strait of Juan de Fuca was dangerous enough, and Dungeness Spit, dubbed "Shipwreck Spit," was an additional hazard to navigation. Quimper and Vancouver had been lucky. A lighthouse, the second oldest in Washington and the first to operate in the Puget Sound/Strait of Juan de Fuca area, began beaming its rays from the end of the spit on December 14, 1857. Its first fulltime keeper was Henry H. Blake (1837-1871), who kept the light for 10 years. (The name William Henry Blake, which has appeared in print and on the Internet, is an error. The 1860 and 1870 United States Census, the Dungeness Light logs in the National Archives, and other sources confirm the name of Henry H. Blake.) The Dungeness Light has been automated since 1975, and the last keeper was withdrawn in 1994. The U.S. Coastguard maintains the light and foghorns, and volunteers with the New Dungeness Light Station Association keep up the buildings and grounds and provide tours for visitors. The Dungeness Light Station was placed on the National Register of Historic places in 1993.

Settling, Logging, and Farming

In 1850 the first settlers arrived in the Dungeness-Sequim Valley via Cape Horn and the California gold fields. They were a mixed lot -- European immigrants, plus Americans from New England, the South and the Midwest. The actual settlement of New Dungeness dates from 1851, two years before Washington Territory was formed and three years before Clallam County was carved from Jefferson County. Not surprisingly, its first settlers were mostly of an entrepreneurial spirit and profited from the capabilities of their modest port. "They found a forested land rich with trees they could log, haul to the bay and sell to the wood-hungry markets of California" (June Robinson, in Courtney, 2000, 8). In addition, agricultural products -- mainly potatoes, but also wheat, oats, peas, apples, and dressed meat – were shipped from New Dungeness to other Puget Sound ports. Hops grown in the valley supplied Port Townsend breweries.

Some of the earliest farmers employed Chinese laborers, especially to clear land and to help grow potatoes. The Chinese also developed their own small potato farms and some had laundries. Many of them returned to China with their meager earnings. With the series of Chinese Exclusion Acts beginning in 1882, there was also a brisk trade in smuggling Chinese into Dungeness harbor, then on to Seattle. A story passed down by several early settlers is that many Chinese drowned when the crew of a smuggling ship threw them overboard to avoid discovery by an approaching government revenue cutter.

New Dungeness and Dungeness

In 1860, Elliott Henry Cline (b. 1820) was elected representative to the Territorial Legislature. In 1862, Elijah H. McAlmond (b. 1829), who had arrived in 1853, built what was regarded as the finest mansion in the Puget Sound Country. That same year, New Dungeness became the Clallam County seat. However, in 1890 there was a bit of a flurry when the county seat was moved to Port Angeles. Local residents argued that such a move was illegal, since the county owned the property on which the records were housed. A mounted posse from Port Angeles staged a raid on New Dungeness to capture the records. However, the raiders discovered the residents there to be peacefully resigned to the transfer, and the county records were handed over without incident.

In 1890 New Dungeness was relocated a mile east, at the mouth of the Dungeness River, and renamed Dungeness. During 1890-1891, a dock extending almost three-quarters of a mile into deep water was built by Charles Franklin Seal, president of the Groveland Improvement Company and owner of the Farmers Mercantile Company. According to local historian Virginia Keeting, "The town of Dungeness grew with the dock that became for years the main outlet of shipping for the county" (Keeting, 9). In advertising for settlement 1892, Seal touted the Sequim-Dungeness Valley as "the most prosperous place on the Sound, surrounded by the richest farm country" (Keeting, 9). A fire in 1914 destroyed most of the buildings on the west side of Groveland Avenue. In 1925 the Port of Port Angeles bought the dock. Its last use was in 1941, and now all that remains is a long row of decaying pilings.

Settling Sequim Prairie

Slightly south, on the prairie, many settlers had filed donation land claims and begun farming. The Donation Land Claims Act of 1850 gave up to 640 acres in Florida, New Mexico, or the Oregon Country to all white or mixed-blood settlers who arrived before December 1, 1855. Among them was John William Donnell (b. 1822), the first permanent settler on Sequim prairie, who received a claim of 320 acres northwest of Sequim near the river. It was not until the 1860s that surveying of claims started on the Olympic Peninsula, making it possible for these settlers to gain legal claim to their land. On March 6, 1866, Donnell was the first local homesteader to be granted a government patent to his claim, and he raised the first wheat in the valley. Another early settler was John Bell (b. 1828), who arrived from Victoria, B.C., in 1853, with a boatload of colonists from England. His farm stood at what is now the main intersection of Sequim. His daughter Marie Jane, born January 29, 1857, was the first white child born in Clallam County.

Douglas Bruce McInnes, who grew up on a farm in the Sequim-Dungeness Valley, speculates that a number of English settlers who pushed inland rather than remaining in Dungeness were sailors who had jumped ship: "Their choice of Sequim may possibly have been influenced by British gunboats on the prowl for wayward British sailors" (McInnes, 105). Another immigrant settler was a German, George Henry Lotzgesell (b. 1828), who arrived in Sequim in 1859. These pioneers handed down or sold farms to their numerous progeny, and many local roads still bear their names.

Watering the Land

These first farmers soon discovered, however, that the mild, sunny climate resulted in summers that were too dry for successful farming on a large scale, promoter Seal's claim not withstanding. It soon became obvious to local people that the Dungeness River could provide irrigation. On July 20, 1895, the organizational meeting of the Sequim Prairie Ditch Company was held at the home of James William Grant (b. 1852). Walter Grant, one of his descendants, writes:

> "Plans, surveys and state permits were obtained all through the 1895-96 winter, volunteer workers met at the Grant home and, with their teams and tools, worked early and late. It was all done without pay. During April 1896, the irrigation system of open ditches and wooden flumes was finished. A celebration was indeed appropriate, and the community planned a picnic for May Day ... this gala affair [was] the first of what became known as the Sequim Irrigation Festival" (Walter Grant, "James Arthur Grant Family," *Sequim Pioneer Family Histories,* Vol. 1, 117).

Although somewhat curtailed during World War II, this festival has been held to the present time and it is the oldest community festival in Washington State.

This early irrigation system was called flood irrigation, with water carried in wooden flumes to main ditches, then by lateral ditches to individual farms. The system was administered by "ditch companies," the first of which was the Sequim Prairie Ditch Company. By 1930 there were 21 such companies on both sides of the Dungeness River irrigating 12,000 acres. Irrigation made possible the growing of alfalfa and other crops essential to the dairy industry, which soon became the dominant form of agriculture in the valley. After World War II, pipe and sprinkler systems replaced the old method and eventually 25,000 acres were under irrigation. Now with much of the farmland replaced by houses, far less acreage is irrigated.

Dairy Farming

The Sequim-Dungeness Valley was for decades one of the major dairy regions of the state. The first cows were brought from Victoria, British Columbia, in 1860. By 1925 there were 5,200 mature dairy cows in Clallam County. In the 1940s, there were 949 farms with milk cows in the county. In 1959 the Olympic View Farm of Howard and Eunice Cameron was the largest dairy operation on the Olympic Peninsula, with 140 milk cows. More typical farms had between 20 and 60 cows. Some were even smaller operations in which the husband would supplement the family income by logging, milling, or fishing, and the wife kept a few cows for family use and to sell cream to the creamery. Silos and huge, handsome barns dotted a bucolic landscape set between the snowcapped Olympics and the Strait of Juan de Fuca.

The cows, mostly Guernseys and Jerseys, supplied rich milk and cream to the Dungeness and other creameries that shipped butter, cheese, and ice cream throughout Puget Sound from the port of Dungeness. Later, Seattle became the main market for Sequim milk, and the local producers had to meet

Seattle Health Department requirements. Pasteurization and bottling took place in Seattle where the high-butterfat Sequim milk was blended with cheaper, lower-fat milk from Holstein herds. As low-fat milk became more popular, Holsteins replaced the Guernseys and Jerseys almost entirely. Today there are only two commercial dairy farms in the Sequim-Dungeness Valley.

Memoirs of farm lads who grew up during this period reflect not only the idyllic nature of life in the valley, but also the boredom and drudgery of twice-daily milking and other chores. Some Sequim High School graduates of the 1960s and 1970s said they "couldn't leave town fast enough after graduation" to earn a living in other ways (Oppenheimer, 14). Doug McInnes recalled, "My dad milked cows most of his life. His hands were huge, his fingers looked like stuffed sausages. And those fingers had arthritis, too" (McInnes, 56). Roger Petroll remembered: "Not all that many years ago a family could make a living by running a 20-cow dairy herd ... I can remember the quest for more tillable land [that] brought in the bulldozers, tractors, huge burning stump piles and hours of backbreaking work picking up the stray sticks and roots" (Petroll in Fish, *125 Years*, 13) The introduction of electric milking machines, the replacement of workhorses with tractors, and other modernizations lessened the burden somewhat.

Economies of Town and Farm

During the 1930s and 1940s there was a pea industry in the valley. Initially, a few farmers grew their own peas, but soon a large multi-state pea producer began leasing land from farmers. In the late 1940s, the harvest employed about 300 local workers, mostly women and children. Because the planting was staggered, the harvest lasted a month, enabling a worker to earn $200 to $300 during the season. Baskets of peas interspersed with shaved ice were packed into boxcars and shipped to East Coast cities. The record year was 1941, with 65 carloads sent to the Eastern market. An even shorter-lived enterprise that involved farmers was a mini-oil boom from 1955 to 1957. Farmers leased land to Standard Oil for oil and natural gas exploration, but the rigs were dismantled when nothing was found.

There was no clear division between town and farm folks. Sequim prospered in providing the businesses and services necessary to support the dairy farmer. In 1947 the town still had fewer than 800 people. Community life centered around the school, church, grange, county fair, and Irrigation Festival. Local families intermarried. Some of their progeny remained in the area and others left for the cities. During the post-World War II boom in civilian goods, Sequim families bought new farm equipment, cars, and household appliances.

Logging, sawmills and mining were also important to the local economy. Long before the arrival of white settlers, the Indians had discovered the versatility and usefulness of local cedar for dugout canoes, clothing, baskets, drums, masks, medicine, and totem poles. For the settlers, logging provided work but not much income. In 1909 loggers in the area worked 11-hour days for $2.25 to $4 per day and paid 75 cents for board. The now-abandoned Tubal-Cain Mine at the headwaters of the Dungeness River, and other mining claims on "Iron Mountain," extracted low-grade manganese and copper beginning in 1901.

Nor should the famous Dungeness crab be overlooked. This delicacy is harvested from the Aleutians to

San Francisco. Especially during the 1920s and 1930s, there were many commercial crabbers, including Klallam Indians, in the Dungeness area. Crab harvests have declined for many years, and typically they fluctuate in 10-year cycles. This is a problem at times for both commercial and recreational crabbers as well as for tourists who dine at The Three Crabs restaurant, a local landmark since 1958.

Off the Farm

Education was important to the early Sequim-Dungeness community as long as it did not interfere with farm work: The one-room schools dotting the valley were in session only three months of the year. The first was Abernathy School, built of logs at New Dungeness in 1861. The two-story, multi-room Dungeness Schoolhouse, built in 1892 on the main road between Dungeness and Sequim, was the pride of the community. There was a two-story addition in 1921. It closed as a public school in 1955 when the Dungeness School District was consolidated with Sequim. The building now hosts some classes of Peninsula College and serves as a rental facility for community events. It was placed on the National Register of Historic Places in 1988.

Beginning in 1911, Sequim students attended the "Big Box" school, which was demolished in 1952. In 1915, Sequim held its first high school graduation. In 1928, high school student Eunice Robb drove the school bus for her five younger siblings and other students along their route.

Although he was not the first settler in the town of Sequim, if anyone could be called the founding father, it was Joseph L. Keeler, who arrived in 1903. He was a saloonkeeper, sawmill operator, had the first cash grocery, and in 1908 built the Hotel Sinclair, considered the hub of the community. Moving on to bigger things, he founded the Sequim Light and Power Company, later sold to Puget Sound Power & Light, with Keeler as district manager. He also established the Independent Telephone Company.

Sequim was incorporated in October 1913 as a fourth-class city, with Jilson White as the first mayor. In 1922 the town installed a water system, in 1936 a sewer system, and in 1967 a modern sewage treatment plant. A more refined civic improvement was the library. In 1936, the Clyde Rhodefer Library was built with Public Works Administration funds on land donated by the Progressive Club of Sequim. It was the culmination of years of effort by women of the community who first started a circulating collection of 300 books in 1915. A much larger library, built in 1982 and part of the North Olympic Library System, is now bursting at the seams.

War and Cold War

The Sequim area lost young men in both world wars. The home front impact of World War II was unusual. Immediately after Pearl Harbor, troops were detailed to patrol the Strait beaches and install machine gun nests. Some slept in the high school gymnasium. The only casualty was a cow that refused an order to halt. Local civilians served as airplane spotters, and Sequim even had blackouts and air raids wardens.

The early Cold War brought one of the strangest episodes in the history of the Sequim-Dungeness Valley.

In January, 1952 the State Department began proceedings to acquire almost 1,200 acres of farm land as the site for a Voice of America broadcasting station to beam its programming behind the iron curtain. All buildings, pipes, wiring, fences, etc. were removed and the area was leveled in preparation for the installation of antennas and their supporting towers. However, a year later the project was abandoned as expensive and ineffectively located. Disrupted families had a chance to buy back their land, minus its topsoil, but many did not. Part of the area now sprouts houses; another portion is a county park accessed by the Voice of America Road.

Roads and Rails

Transportation was never easy in the early days. Most access through the area was by water, first with canoes, then by ship, including ocean-going sailing vessels and steamers, as well as the venerable Puget Sound mosquito fleet, which called at Dungeness for many years.

Rail service came to Sequim in 1915 with the Seattle, Port Angeles and Western Railroad, a subsidiary of the Chicago, Milwaukee, St. Paul & Pacific. It provided passenger and freight service west to Port Angeles and East to Port Townsend, with freight cars barged between Port Townsend and Seattle. This route underwent several changes of name and ownership, most recently to the Seattle & North Coast Railroad Company, which failed in 1985. The roadbed is now part of the Olympic Discovery Trail system.

The early Indian and pioneer trails and the rural lanes following section lines gave way to rudimentary roads. Soon a "well developed road net [was] a response to the necessity of picking up the milk from the farms for the daily shipment to Seattle" (Carter, 83). A new highway was built in 1920, now called the Old Olympic Highway. Beginning in 1931 State Highway 101 linked towns on the Olympic Peninsula. The opening of the floating bridge across Hood Canal on August 19, 1961, greatly reduced travel time to and from Seattle. For years, Highway 101 was also the main street through downtown Sequim.

A four-mile bypass, opened to traffic on August 18, 1999, now skirts the town, but without the negative impact on business that so often accompanies such bypasses. Unfortunately, it also intercepts a migration route for the Roosevelt elk that wander down from the Olympic Mountains. The leaders of the herds have been equipped with radio collars that emit a signal when they get too near the highway, activating flashing road signs warning drivers to slow down and avoid collisions with these large animals. The private Sequim Valley Airport three miles west of town provides facilities for small planes.

Sequim Today

Today Sequim retains little of its rural character. Most of the barns are gone and each year more farmland is subdivided for houses, many of them the oversized "McMansions" typical of affluent new suburbs. A Wal-Mart now stands on the site of the beautiful Alfred Robb farm. A *Seattle Times* article of January 16, 1962 gets the credit (or blame) for initiating the stampede of retirees and others to Sequim. Thomas Collins wrote a regular column entitled "The Golden Years" in which he asserted that one could not go anywhere in the United States without encountering violent weather at some point. Alexander

Lindsay, a Sequim volunteer weather observer, refuted this claim by extolling the climate, as well as the low cost of living in Sequim. This column was syndicated in 150 newspapers. Letters of inquiry came in to Sequim at a rate of 500 a day, and the Chamber of Commerce had to recruit volunteers to answer them. The migration to Sequim had begun.

Doug McInnes muses:

> "[T]he number of Americans that might like to move to our area is virtually endless ... . today's Sequim typifies the national decline in rural living in America . ... The rapidly rising price of land and housing is a constant shock. Forty years ago our 160-acre family farm, with a half mile of no-bank waterfront, sold for less than a 100 foot waterfront lot sells for now. Our old farm now has about 40 homes on it with several new ones going up every year" (McInnes, 126, 127). ... It is a strange feeling to look at all these homes on our old farm and remember blowing stumps, haying, hunting ducks and herding cows where these houses now stand" (McInnes, 90).

Organizations such as the local Friends of the Fields and the Farmland Trust of the Puget Consumer Co-op in Seattle are working to preserve some of the remaining farmland by means of land purchase and conservation easements. A few residents, at considerable personal expense, are preserving the historic barns still standing on their property.

Lavender

With the decline of dairying, Sequim agriculture has had to reinvent itself. A committee under the umbrella of the Chamber of Commerce, calling itself Sequim 2000, began meeting in early 1995 to consider ways to "spark the economy and create new tourist possibilities for the town" (Oppenheimer, 75). After researching various options, the group realized that the soils and microclimate of the Sequim-Dungeness Valley were ideal for lavender, a purple flowering herb known for its seductive scent and wide variety of uses -- therapeutic, culinary, and cosmetic.

In 1996, "Fields of Flowers," a spin-off from the original committee, enlisted the advice of Curtis Beus, an extension agent from Washington State University. Because he feared no one could make a living simply growing and selling lavender, he introduced them to the concepts of "agritourism" and "value-added products" (Oppenheimer, 81). In May 1996 this group started the Open Aire Market, open every Saturday from May through October. It is still popular with locals and tourists.

July 1996 saw the first harvest of the lavender planted in 1995. By 1997, there were seven farms with a total of 10,000 plants, and the community celebrated its first lavender festival. Today (2008) the festival attracts 35,000 tourists from all over the world during the third week of July for farm tours, a street fair, art and craft shows, musical events, and, of course, the opportunity to buy a wide variety of lavender-related products. According to Betty Oppenheimer, "This is agritourism at its finest. Local farmers augment their livelihood by inviting the public to visit the farms, learn about the crop, and take home

products, knowledge and memories of a wonderful visit" (Oppenheimer, 87).

Sequim lavender has produced "value-added" employment for tourist facilities, marketing firms, printers, web designers, and others. The harvest requires seasonal Mexican labor, and some of these expert agricultural workers are now employed year-round. Today (2008) 30 farmers belong to the Sequim Lavender Growers Association.

This essay made possible by:
The State of Washington
Washington State Department of Archeology and Historic Preservation
Humanities Washington

Sequim, ca. 1924

Courtesy Washington State Historical Society (2007.133.16)

The correct Klallam pronunciation of Sequim

Courtesy Klallam language site, by kind permission.

Sources:
Douglas Broadmore Carter, *The Sequim-Dungeness Lowland: a Natural Dairy Community* (M.A thesis, University of Washington, 1948); Al Courtney, *Sequim Pioneer Family Histories from 1850-WW II* (Sequim: Museum and Arts Center, 2000); Al Courtney, *Sequim Pioneer Family Histories from 1850-1962* (Sequim: Museum and Arts Center, 2001); Timothy Egan, "Elk That Call Ahead to Cross the Highway," *The New York Times,* January 2, 2001, Gale Group website accessed January 13, 2008 (find.galegroup.com/itx/retrieve); Harriet U. Fish, *Fish Tales of Sequim Bay* (Carlsborg, WA: Harriet U. Fish, 1985); Harriet U. Fish, *Irrigation in the Sequim-Dungeness Valley* (Carlsborg, WA: Fish Tales, Inc., 1995); *Dungeness: the Lure of the River ed. by* Virginia Keeting (Port Angeles; Sequim Bicentennial Committee, 1976); Doug McInnes, *Sequim Yesterday: Local History Through the Eyes of Sequim Old-Timers* (Sequim: Doug McInnes, 2005); Vera E. Morgan, *The SR-101 Sequim Bypass Archaeological Project ... Eastern Washington University Reports in Archaeology and History 100-108* (Cheney, WA: Archaeological and Historical Services, February, 1999); Betty Oppenheimer, *Growing Lavender and Community on the Sequim Prairie: A How-to and History* (Sequim: BopArt Publishing, 2002); June Robinson, "Dungeness School Has Colorful Past," *Peninsula Daily News* January 31, 2008, p. C-2; Friends of the Fields website, accessed February 23, 2008 (www.friendsofthefields.org); Olympic Discovery Trail Pathway to the Pacific website, accessed February 22, 2008 (www.peninsulatrailcoalition.com/History_Trail); Seattle & North Coast Railroad Historical & Technical Society website, accessed February 22, 2008 (www.trainweb.org/snch&ts); Sequim Lavender Festival website, accessed February 23, 2008 (www.lavenderfestival.com); "May Day Picnic Celebrates First Irrigation Water Reaching Sequim Prairie on May 1, 1896" (by Kit Oldham) and "New Dungeness Light Station" (by Daryl C. McClary) http://historylink.org (accessed February 27, 2008); Lauren Corder, Librarian, Sequim Branch Library, North Olympic Library System, email to Laura Arksey, March 1, 2008, in possession of Laura Arksey, Spokane, Washington; Emily Pace, WSDOT Communications, email

to Laura Arksey, March 3, 2008, in possession of Laura Arksey; Lori Kennedy, Washington State University Extension Office, Clallam County, email to Laura Arksey, February 29, 2008, in possession of Laura Arksey; Curtis Beus, Washington State University Extension Agent, Clallam County, email to Laura Arksey, March 5, 2008, in possession of Laura Arksey; "Centennial Problem/Issue Statement," City of Sequim website accessed July 10, 2010 (http://www.ci.sequim.wa.us/council/agenda/ 2010/06142010/CentennialLogoCvr.pdf).
Note: This essay was modified on July 10, 2010, to correct the Klallam Indian definition of "Sequim."

Related Topics

AUDIO/VIDEO | CITIES & TOWNS

Licensing: This essay is licensed under a Creative Commons license that encourages reproduction with attribution. Credit should be given to both HistoryLink.org and to the author, and sources must be included with any reproduction. Click the icon for more info. Please note that this Creative Commons license applies to text only, and not to images. For more information regarding individual photos or images, please contact the source noted in the image credit.

CC **Some rights reserved**

Major Support for HistoryLink.org Provided By: The State of Washington | Patsy Bullitt Collins | Paul G. Allen Family Foundation | Museum Of History & Industry | 4Culture (King County Lodging Tax Revenue) | City of Seattle | City of Bellevue | City of Tacoma | King County | The Peach Foundation | Microsoft Corporation, Other Public and Private Sponsors and Visitors Like You

SEQUIM IRRIGATION FESTIVAL

- Home
- EVENTS
- DIGNITARIES
- MAKING OF THE FESTIVAL
- News
- Products
- HISTORY
- Visit Sequim

HISTORY

Home HISTORY

Photo courtesy of Sequim Dungeness Museum and Arts Center.

The Sequim Irrigation Festival celebrates the work that D.R. "Crazy" Callen and his partners did to design and develop the Irrigation Ditches that brought water from the Dungeness River to the parched prairie. The first headgate on the Dungeness River was lifted on May 1, 1895. On May 1, 1896 the first celebration took place at Crazy Callen's farm. This was the start of a tradition that would become the oldest continuing festival in Washington state.

The First Irrigation Festival

Courtesy of Soroptimist International of Sequim

Bringing irrigation from the Dungeness River to the brown and parched prairie began as a dream of four pioneer settlers who were visionaries of their time. D.R. Callen had moved to Sequim from an irrigated area in Colorado and he convinced James R. Grant, H. Hucksford and Captain Thomas Jones that "water was wealth." Together they set out to persuade their neighbors to go along with the idea. The skeptics called them "crazy" and said that water could not be made to run uphill; but there were those who believed. On July 20, 1895, a group of about 20 people held the first meeting of the Prairie Ditch. Incorporation papers were signed November 18, 1895, and the hardy pioneers worked all winter long building the ditch and flume.

Money was scarce and the surveyor was paid partly in potatoes. Everyone gave what they could and the women cooked for the workers. Even the children helped by carrying water, running errands and tromping clay into the gravel. Finally, the following spring it was time for the "big day." On May 1, 1896, the residents of the Dungeness Valley and surrounding communities came by wagon, on horseback and on foot to witness the opening of the headgate for the first time. Edgar B. Wicklander in "The Grants of Sequim Prairie," gives a detailed account of that first celebration: (synopsis)

Historic Photo Gallery

"The day dawned fair and warm for May. The Grants arrived at the picnic grounds while the dew was still on the grass. Other families arrived about the same time, driving their wagons from the nearby Sequim prairie settlement. Those from some close farms walked the dry roads. Later in the morning groups arrived from Port Angeles.

"The Bicycle Club of Port Townsend chartered a tug boat for the trip to Port Williams. They docked at 11 a.m. and some rode their bicycles to Sequim while others loaded their vehicles into wagons. The shining cycles amazed the young people of Sequim, but the dress of the 'city folk' was of interest to everyone. The men dressed in turtle neck sweaters, knickers and caps and the ladies wore 'very daring' short skirts, almost up to their shoe tops. Their outfits were completed with shirtwaists, jackets and perky hats and the Sequim farm kids thought they all looked rather funny. Long wooden tables had been set up and covered with hams, roasts of lamb and pork, salads, breads and chicken cooked every way possible. Each family had brought enough food for themselves and one or two other families, and no one went away hungry.

"At the appointed time a group of men who had built the ditch went up to the upper end to turn the waters of the river into the new flume. As usual things did not go according to plan. When the headgate was raised the water refused to turn. Undaunted, the men located a wagon load of clay and picked up a wagon full of kids. They dumped the clay at the head of the flume in the gravel and told the kids to jump in. The kids got in to the river's edge in their bare feet and tromped the clay into the gravel until the water flowed over it into the flume. It wound its way, the muddy water slowly following the flume, then into the dusty prepared big ditch, and finally

all the way to the furrow, right into the picnic area. The skeptics who had said that water couldn't run uphill were at last convinced."

SEQUIM IRRIGATION FESTIVAL

- Home
- EVENTS
- DIGNITARIES
- MAKING OF THE FESTIVAL
- News
- Products
- HISTORY
- Visit Sequim

Past Festival Royalty

Home HISTORY Past Festival Royalty

Past Festival Queens
Photo Courtesy of Museum & Arts Center
Following are the Irrigation Festival Queens since 1908. Some pictures of past royalty are included within the Photo Gallery. Click on the picture at the right to see the Royalty History Photo Gallery.

1908
Gladys Long (Rice) (Rivett)
1909-1920
Unknown
1921
Beulah Lane
1922
Gladys Howell (Tucker)
1923
Kathryn Owens (Jessop)
1924
Esther Marshall (Hansen)
1925
Rose Sofie (Beham)
1926
Mable Almaden (Russell)
1927
Dorothy Delany (Hendrickson)
1928

Eleanor Ramella
1929
Dorothy Brook (Taylor)
1930
Francis Miller (Fisher)
1931
Unknown
1932
Althea Whitney (Wood)
1933
Joy Robb (Konopaski)
1934
Eileen Olsen (Reposa)
1935
Kate Duncan (Schumacher)
1936
Fern Nelson (Dawley)
1937
Lois Belt (Newman)
1938
Marion Benson (Norman)
1939
Dorothy Bell (Harkleroad)
1940
Elaine Ahivers (Stone)
1941
Genevieve Sprague (Schmuck)

1942
War Year – no event
1943
Zobell Caughron (Mathews)
1944
Doris Heaton (Dryke)
1945
Donna Bell (Robbins)
1946
Gloria Benson
1947
Norma Randall (Allen)
1948
Doreen Brittain (Hamilton)
1949
Bonnie Robb
1950
Joanne Brittain (Campbell)

1951
Doris Eshom (Dunlap)
1952
Kay Bower (Randall)
1953
Barbara Beverage (Andrew)
1954
Phyllis Bower (Hallberg)
1955
Donna Joy (Ballard)
1956
Diane Hudson (Uvila)
1957
Barbara Logsdon (Grove)
1958
Roxy Cays (Huls)
1959
Janice Schmuck (Smith)
1960
Sally Brinks
1961
Paula Cassalery (Nelson)

1962

Marta Livingston (Estes)

1963
Judy Sherk (Bromell)
1964
Bonnie Johnson (Cassidy)
1965
Pamela Ward
1966
Jill McDaniel (Blake)
1967
Sherry Wood
1968
Kathy Curren (Rogers)
1969
Celeste Kardonsky
1970
Kathy Rue (Danniels)
1971
Carla Handley
1972

Christy Blank (Stockman)
1973
Vicki Hunt
1974
Joan Brownlee
1975
Kerri Pearson (Kalbfleisch)
1976
Sheri Holman
1977

Tracie Sofie
1978

Kathi (Good) Callahan
1979
Leslie (Leach) Barstow
1980
Mary (Enges) Maas
1981
Sonja (Frick) Bittner
1982
Robin (Robinson) Hall
1983
Beth McHugh
1984
Lynn (Foster) Hornback
1985
Lyn (Griffith) Sherry
1986
Darcy (Meeks) Lamb
1987
Gia (Snyder) Hemmen
1988
Piper (Donnelly) Sommer
1989
Jeffie Lou (Jackson) Thorn

1990
Kari Cassidy
1991
Alicia (Gardner) Scofield
1992
Julianne Villella
1993
Monica (Hope) Stamper

1994
Molly O'Brien
1995
Cynthia Davis
1996
Brooke Mousakis
1997
Amanda Bacon
1998
Marie Keever (Elias)
1999
Charity Moore
2000
Alison Lloyd
2001
Joelle Price
2002
Jennifer Horton
2003
Leah Stites
2004
Katie Gamell Ball
2005
Jennifer Gold
2006
Kim Miles
2007
Janyae Birkland
2008
Jennifer Lancheros
2009
Holly Hudson
2010

2011
Taylor Willis
2012

2013
Angela Bentley

2014
Katey Tapia

SEQUIM IRRIGATION FESTIVAL

- Home
- EVENTS
- DIGNITARIES
- MAKING OF THE FESTIVAL
- News
- Products
- HISTORY
- Visit Sequim

FESTIVAL EVENT CALENDAR

The Sequim Irrigation Festival begins on the first full weekend in May and extends through the following weekend. As a community festival, most of the events that happen are free to all attendees.

In 2024 the Sequim Irrigation Festival celebrates its 129th year, making it the oldest, longest, continuous running festival in Washington state. The festival events were held at various locations throughout the city of Sequim, located in Clallam county.

The 2024 Sequim Irrigation Festival will be held May 3-12, 2024. Watch this space for more information as the events are scheduled.

In addition to the community festival held in May, supporting events occur earlier in the year.

- Royalty Scholarship Pageant to select royalty for the year, will be held on February 24, 2024.
- Kickoff Dinner and Auction fundraiser for the festival and float construction, was held on March 23, 2024.

The events that occur on each weekend have been grouped for easy reference. Check out each event's page for more details about it. Listed below are the 2024 events. For a full list of the events, click here

Crazy Callen Weekend is the first weekend in May and includes:

- First Friday Art Walk
- SHS Operetta
- Kids Parade
- Innovative Arts and Crafts Fair

- Family Fun Day
- Run Series
- Crazy Daze Breakfast
- Trashion Show
- Community Concert and Dance
- Entertainment
- Food Vendors

Grand Finale Weekend is the 2nd weekend in May and includes:

- Past Royalty Luncheon (Invitation only)
- Historic Walking Tour
- Golf Tournament
- Classic Cruise and Show
- Grand Parade
- SHS Operetta

Other community events may also occur during the festival and will be found in the detailed events listings.

2022 Traveling Float Schedule

PRIEST PASTURES
BALD EAGLE NEST TERRITORY (#1258)

SITE MANAGEMENT PLAN

JENNIE'S MEADOW RESIDENTIAL DEVELOPMENT

Sequim, Washington

Prepared for:
MRP Partners
2 Heron Road
Port Ludlow, Washington 98365

Prepared by:
David Evans and Associates, Inc.
415 – 118th Avenue S.E.
Bellevue, Washington 98005

Project No.: MRPP0000-0001

DAVID EVANS AND ASSOCIATES INC.

June 27, 2005

PRIEST PASTURES
BALD EAGLE NEST TERRITORY (#1258)

SITE MANAGEMENT PLAN

JENNIE'S MEADOW RESIDENTIAL DEVELOPMENT

Sequim, Washington

Prepared by:

Cindy Callahan
Senior Scientist

David Evans and Associates, Inc.
415 – 118th Avenue S.E.
Bellevue, Washington 98005

Project No.: MRPP0000-0001

June 27, 2005

TABLE OF CONTENTS

INTRODUCTION 1

BALD EAGLE STATUS AND REGULATORY AUTHORITY 1

PROPOSED ACTION 1

BALD EAGLE HABITAT REQUIREMENTS 3

NESTING 3

WINTERING 3

EXISTING SITE CONDITIONS 3

PRIEST PASTURES NEST TERRITORY 4

BACKGROUND 4

CURRENT BALD EAGLE ACTIVITY 5

POTENTIAL IMPACTS FROM THE PROPOSED ACTION 7

MANAGEMENT CONDITIONS 9

JUSTIFICATION 11

DURATION OF PROTECTION 12

REVIEW AND AMENDMENT 13

APPEAL PROCEDURE 13

COMPLIANCE 13

WDFW BALD EAGLE SITE MANAGEMENT AGREEMENT 14

REFERENCES 15

List of Figures

FIGURE 1: LAND USE PLAN

FIGURE 2: PERCH TREE LOCATIONS

FIGURE 3: LANDSCAPE PLAN

List of Appendices

APPENDIX A: VICINITY MAP

APPENDIX B: PHOTOS

APPENDIX C: HAZARD TREE ASSESSMENT

INTRODUCTION

MRP Partners proposes to construct a residential development on a currently undeveloped 53-acre parcel of land in the southwest quadrant of Priest Road and Priest Lane in Sequim, Washington (Appendix A). MRP Partners, the project applicant, currently owns the project site. The project area is located within an active bald eagle territory identified as Priest Pastures territory #1258 by the Washington Department of Fish and Wildlife (WDFW). Preparation of this bald eagle site management plan was required because of the proximity of the proposed project to a bald eagle nest site within this territory.

BALD EAGLE STATUS AND REGULATORY AUTHORITY

The bald eagle (*Haliaeetus leucocephalus*) is listed as "threatened" under the Federal Endangered Species Act (USC Title 16, Chapter 35, Section 1538) (ESA). The U.S. Fish and Wildlife Service (USFWS) is responsible for the recovery of bald eagles under the ESA. The bald eagle is protected from harm and harassment under Section 9 of the ESA. The bald eagle is also protected under two other federal laws including the Bald and Golden Eagle Protection Rule (USC Title 16, Chapter 5A, Subchapter II, Section 668) and the Migratory Bird Treaty Act (USC Title 16, Chapter 7, Subchapter II, Section 703).

The bald eagle is classified as a "threatened" species by the WDFW. Physical impacts to bald eagles and their nests and eggs are prohibited under the State law titled "Taking of Protected Wildlife, Destruction of Nests or Eggs" (RCW 77.16.120). In 1984, the state established RCW 77.12.655, which requires the establishment of rules to protect bald eagle nest and roost sites including the habitat associated with these features. In response, the Bald Eagle Protection Rules (WAC 232-12-292) were established in 1986. The purpose of these rules is to protect bald eagle habitat so that its population can recover to the point that this species does not warrant classification as threatened, endangered, or sensitive in Washington. This rule includes the requirement for preparing a bald eagle site management plan. WDFW guidance indicates that a site management plan should be prepared when land development actions are proposed within 800 feet of a bald eagle nest or within 0.5 mile if any development is proposed within 250 feet of a shoreline.

PROPOSED ACTION

The proposed action would include construction of 150 single-family detached residential dwelling units and 51 single-family attached or townhouse style dwelling units. The development would also include access roads, sidewalks, utilities, stormwater treatment facilities, landscaping, and recreation amenities. The single-family detached dwellings would be located on the western approximately three-fourths of the site and the single-family attached dwelling units would be constructed on the remaining eastern portion adjacent to Priest Road, immediately north of the Wal-Mart development. The site is

within the City limits of Sequim and is zoned for 5 units per acre. The proposed development density is 3.7 units per acre. Approximately 32 percent of the property would be open space (Figure 1), far exceeding the City of Sequim requirement of 10 percent open space.

A passive recreational trail system would be established to allow future residents of the site reasonable access to some open space areas within the site and to adjacent properties. These trails would be placed within existing disturbed areas to the maximum extent possible. Constructing this trail network would allow the landowner to control the potential impacts to these areas to some degree. If no access routes were placed for foot traffic connecting various areas of the development and offsite, residents would likely form their own pathways and access routes. No trails would be placed within the vicinity of the abandoned bald eagle nest site (Nest #1) or within the forested slope buffer. However, pedestrian access will be provided within a City of Sequim utility easement which will pass within the Nest #1 250-foot buffer. Should this nest site be determined active in the future, WDFW will be consulted with to evaluate pedestrian use during the nesting season.

The City of Sequim has mandated that the existing dirt road on the southern portion of the site will be used as a utility easement for water and sanitary sewer. As required by the City, in addition to providing the utility route, it will allow for infrequent maintenance access by the City, provide a secondary emergency exit for the lower portion of the development, and will provide pedestrian access to the commercial development on the uphill, adjacent area. Gravel surfacing will be added to this road and trees will not be impacted. Signing and fencing will be provided along the utility easement to educate the public about wildlife conservation and minimize foot traffic within the slope area.

The project would require a road connection between the single-family detached and single-family attached development areas to meet traffic circulation requirements. This would require constructing a road through a predominantly forested slope that crosses the property in a generally north-south direction. To minimize impacts to vegetation, the project was designed to route this road along an existing cut slope where forest vegetation is lacking and some grading has already occurred. Therefore, the project would avoid impacts to forest vegetation and would be entirely sited within non-forested areas that have experienced previous disturbance. The proposed action, including subdivision of the lands and the construction of the homes would take place over a number of years.

BALD EAGLE HABITAT REQUIREMENTS

Nesting

Bald eagles establish breeding territories that include an active nest site, perch sites, feeding area(s), roost trees, and sometimes alternate nest sites (Stalmaster, 1987). Bald eagle nesting parameters in the Pacific Northwest include proximity to water with an adequate food source, large trees with sturdy branching at sufficient height for nesting, and stand heterogeneity both vertically and horizontally (Grubb, 1976). Nest tree structure is more important than tree species, and nest trees are typically among the largest in the stand that provide a sturdy support for their nests with an unobstructed view of an associated water body (USFWS, 1986). Perch sites and roosts are often provided by snags and trees with exposed lateral limbs or dead tops (USFWS, 1986). Territory size, configuration, and location vary depending on factors such as the number of breeding eagles in the vicinity; proximity to water; availability of prey; and availability of suitable nesting, perching, and roosting trees (Gerrard and Bortolotti, 1988; Watson and Pierce, 1998; Stalmaster, 1987). Nesting activities may occur between January 1 and August 31 (USFWS, 1986).

Wintering

Wintering bald eagles concentrate in areas where food is abundant and disturbance is minimal (Rodrick and Milner, 1991). Because eagles often depend on dead or weakened prey, spawned salmon are often an important food source for wintering eagles. Rivers, streams, and large lakes with spawning salmon and/or waterfowl concentrations are primary feeding areas for wintering bald eagles. Eagles typically perch near their food source during the day and prefer the tallest trees, which afford the best views. Deciduous and dead coniferous trees near the feeding area are preferred for diurnal bald eagle perching (Stalmaster and Newman, 1979). Evening roosts are generally established near the feeding area but may occur inland as well (Peterson, 1986). Wintering activities generally occur between mid-November and mid-March (USFWS, 1986).

EXISTING SITE CONDITIONS

The project area covers approximately 53 acres, of which the majority is dominated by relatively flat, fallow pasture (Appendix B). A forested slope traverses the eastern edge of the southern portion of the site and crosses through the northern portion of the site (Appendix B). An irrigation ditch occurs within the forested slope area, specifically at the base of the slope at the southwestern corner of the site and at the top of the slope at the northeastern corner of the site. The flow of water within the ditch is from southwest

to northeast. Priest Lane occurs along the northern property boundary and Priest Road abuts the eastern boundary.

The forested slope is dominated by Douglas fir (*Pseudotsuga menziesii*) and big-leaf maple (*Acer macrophyllum*) that extend up to 40 inches and 72 inches diameter at breast height, respectively (Figure 2). Red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), and western red cedar (*Thuja plicata*) are common trees along this slope.

The majority of the property was formerly used for cattle grazing. The site is currently unoccupied and not supporting any notable form of land use. Surrounding land uses include a mix of commercial, residential, and agriculture. Additional conversion of agriculture to residential is expected in the future per the City of Sequim Comprehensive Plan.

PRIEST PASTURES NEST TERRITORY

Background

The Priest Pastures nest territory (#1258) was established in 1999 when a pair of bald eagles was observed constructing a nest (Nest Site #1) in a grand fir located along the forested slope on the adjacent Wal-Mart property to the south and east of the subject property (Appendix B). The male of this pair was rehabilitated at the Northwest Raptor Center (Boekelheide, pers. comm., 2005).

Later that season, an adult eagle was observed nesting, but the nest was later abandoned and the nesting attempt was unsuccessful. No visual evidence of disturbance to the nest, tree, or surrounding area was apparent during a reconnaissance conducted at the site (WDFW, no date). During the 2000 season, the eagles attempted nesting at Nest Site #1, but no young were successfully fledged (Moore, pers. comm., 2003).

In 2001, the Priest Pastures bald eagle pair established a second nest (Nest Site #2) located over 800 feet north of the subject property near the intersection of Priest Road and Hendrickson Road. The nest was constructed in a lone grand fir tree located within 200 feet of a residence and Priest Road (Appendix B). Without prior coordination with the WDFW, the construction of a new house within 150 feet of Nest Site #2 was underway during the 2001 breeding season (Appendix B). Following intervention by the WDFW, the pair successfully fledged one young from this nest despite the nearby disturbance. The pair utilized Nest Site #2 again in 2002 and was again successful at fledging one young.

No nesting or attempted nesting has been observed at Nest Site #1 since the 2000 season. During the 2002-nesting season, the WDFW documented one adult and one sub-adult eagle perched in this tree, but nesting was conducted at Nest Site #2. No nest structure

exists at Nest Site #1 any longer; only a few remnant sticks were observed at Nest Site #1 during the 2002 season.

Nesting occurred at Nest Site #2 during the 2003 season. The nesting pair was observed utilizing Nest Site #2 during an April 22, 2003 field investigation conducted by David Evans and Associates, Inc. (DEA). One chick was later hatched and successfully fledged from the nest in 2003 (Moore, pers. comm., 2003; Ament, pers. comm., 2003).

In 2004, the eagles established a third Nest Site near the Dungeness River located about one-half mile west of the Jennie's Meadow property. At least one young was fledged from Nest Site #3 during the 2004 season (Ament, pers. comm., 2004). In 2005, the eagles again nested at Nest Site #3. One chick was observed by a DEA biologist during the May 14 and 15, 2005 site visits.

Current Bald Eagle Activity

DEA biologists conducted site visits on April 22, 2003; August 18, 2004; November 22, 2004; April 22, 2005; and May 14 and 15, 2005 to evaluate on- and off-site habitat conditions within the Priest Pastures territory. The April 22, 2005 site visit was also attended by a certified arborist with Eco-Cascadia to assess on-site perch tree health and projected failure potential. DEA determined that no nest materials currently exist at Nest Sites #1 and #2. The Priest Pastures eagle pair established a new nest located off-site to the west (Nest Site #3) in 2004. Although no nesting has taken place at Nest Site #1 since 1999 and Nest Site #2 since 2003, and no nest structures are present at either site, the WDFW still considers these to be active nest sites that could support nesting in future years.

In addition to supporting Nest Site #1, the forested slope provides an eagle travel corridor and perch habitat used regularly by the Priest Pastures bald eagles. An eagle was observed flying along the forested slope and was observed perching in three separate Douglas fir trees on April 22, 2003. One adult eagle was observed perched off site at Nest Site #2 during several of the field investigations, including those conducted in 2005. The forested slope extends from the Dungeness River corridor south of SR 101 nearly to Nest Site #2 (Appendix B). Therefore, it appears to provide a travel corridor between Nest Sites #1 and #2, and the pair's primary feeding area, the Dungeness River corridor. An evaluation of the trees along this slope identified approximately 42 potential perch trees adjacent to the Jennie's Meadow development site (Figures 2 and 3). These potential perch trees are relatively tall and provide sturdy limbs with unobstructed views and flight access.

The 19 perch trees closest to proposed structures were evaluated by a certified arborist in order to maximize long-term protection of their structural integrity (Figure 2). In summary, the hazard tree assessment determined that previous on-site land use practices such as irrigation canal construction, clearing, and fill placement, have resulted in high

tree failure potential as many trees exhibited structural signs of decline (Appendix C). Construction of the irrigation canal has impacted the root zone of several of the perch trees. Soil compaction during historical clearing for pasture creation has further impacted perch tree root zones. Historic tree removals exposed the remaining stand to wind and sun scalding. As a result, several trees were showing signs of stress and were undermined with exposed roots. Seven trees were rated as having moderate-high to high failure potential. All other rated trees were determined to have a moderate risk of failure.

Perch trees were also evaluated in the southern portion of the site as part of the adjacent Wal-Mart and Riverbend Retail Developments. All potential perch trees in this portion of the site were located on the uphill side of the irrigation ditch, over 100 feet from proposed buildings for the Jennie's Meadow development (Figure 3).

The pasture portions of the site do not provide quality bald eagle foraging habitat. The Jennie's Meadow site historically supported livestock (cattle). Eagles reportedly foraged on afterbirth during the calving season (Lear, 1998). Similar forage potential existed in adjacent, off-site pastures. The pair likely now forage primarily along the Dungeness River in pasture areas still supporting livestock and also may fly downstream to the marine shoreline. Eagles are opportunistic feeders and will continue to use other portions of the territory if food sources are present. In recent years, on-site eagle use has been less prevalent with no livestock use and increasing disturbance levels from adjacent commercial and residential development (Boekelheide, pers. comm., 2005). Many portions of the territory are either developed, planned for development, or are currently for sale. However, the existing perch trees can still be utilized for loafing and will also be important habitat should the pair chose to nest at Nest Site #1 in the future.

The pasture currently functions as a buffer between the forested slope, including Nest Site #1, and surrounding residential and commercial development. However, for three consecutive seasons (2001 through 2003), the Priest Pastures eagle pair nested at Nest Site #2 in a lone tree within about 200 feet of two residences and Priest Road, which somewhat surround the nest. This pair's success in fledging young at this exposed nest site is an indication that this pair has a relatively high tolerance to human disturbance (Moore, pers. comm., 2003). Therefore, the function of much of the surrounding pasture as a buffer for the forested slope may not be critical to maintaining the suitability of this habitat as a travel corridor for the Priest Pasture eagles. Existing and proposed adjacent development (Wal-Mart and Riverbend Retail), have or will implement planting vegetation within the forested slope buffer area. Plantings will provide screening between developed areas and Nest Site #1, the eagle travel corridor, and perching habitat. Similar buffer plantings are proposed for the Jennie's Meadow development.

POTENTIAL IMPACTS FROM THE PROPOSED ACTION

Habitat loss is recognized as the most significant long-term threat to bald eagle populations (USFWS, 1986). Human disturbance is also recognized as a threat to bald eagles. Activities that permanently alter bald eagle habitat such as nests, roosts, perches, buffers, and feeding habitat, and activities that disturb nesting eagles to the extent that results in nest failure are the greatest threats to bald eagles populations in Washington State (Watson and Rodrick, 2001). Bald eagle susceptibility to human disturbance varies depending on a number of parameters including age, individual eagle, vegetation screening, distance, disturbance type, and habituation to activity. Flushing distances in response to visual disturbances may range up to 1,000 feet (Stalmaster and Newman, 1978). In a study of the response of nesting bald eagles in Washington to pedestrians, eagles flushed at an average of 357 feet when fully exposed to pedestrians compared to an average of 198 feet when the pedestrians were concealed by vegetation or other screens (Watson and Pierce, 1998). In conclusion, vegetative screening cover reduced eagle responses to human activity (Watson and Pierce, 1998).

The proposed project would not directly impact bald eagle nesting or perching habitat. The trees located along the forested slope would be preserved. The developed portion of the project footprint would be limited to the pasture and disturbed portions of the site where characteristic bald eagle nesting and perching habitat does not exist. With the lack of calving activity on site, the existing pastures do not provide primary bald eagle foraging habitat. Twenty townhouse lots would have a portion of their area within the forested slope corridor or its 50-foot minimum buffer. Lot area sizes are necessary to meet the minimum lot size as required within the City zoning code for a single family residential unit. However, the proposed townhouse units would be constructed entirely outside of the forested slope and 50-foot minimum buffer. The portions of the lots within the 50-foot buffer would be designated as Native Growth Protection Areas (NGPAs) (Figure 1). NGPAs will prohibit property owners from developing within the designated area, but they will allow enhancement plantings. The NGPA designation and associated restrictions will become part of the Conditions, Covenants, and Restrictions (CC and Rs) and will be incorporated into the recorded plat as a declaration in the notice to purchase. This portion of the development is over 800 feet from both Nest Sites #1 and #2. A small NGPA will also be designated within two lots (#121 and #122) in the southwest portion of the site to provide additional buffering to an off-site large Douglas-fir identified as a potential alternate nest site due to its size and structure (Figure 1).

Additionally, convenants would be incorporated restricting any development or modifications within the slope and impacts to the three potential perch trees within the lots. The forested slope would be designated as a wildlife conservation area. The development and associated activities would occur over 800 feet from Nest Site #2, which occurs in a lone tree situated within 200 feet from Priest Road and two occupied residences. This pair has demonstrated their apparent tolerance to human activity by successfully fledging young during three successive breeding seasons (2001, 2002, and 2003) under these exposed conditions (Moore, pers. comm., 2003). Given the distance to

Nest Site #2 and the eagles' apparent tolerance to human activity near their nest, construction and operation of the project would not disturb eagles, should they nest again at Nest Site #2.

As proposed, construction and operation of the project would occur as close as 250 feet from Nest Site #1. The City-mandated utility easement on the existing dirt road will occur within the 250 feet buffer on Nest Site #1. The utility easement is visually screened from Nest Site #1 within the forested slope and will pass between the stormwater ponds and planted buffer area of the Riverbend Retail development. Once the plantings within the buffer area establish, they will provide visual screening between the gravel road at the top of slope and Nest Site #1. Maintenance access is expected to be very infrequent. Foot traffic on the gravel road is not expected to measurably increase disturbance levels at Nest Site #1. Therefore, if a nest were ever reconstructed at this site, the only potential threat to bald eagles from this development would be limited to disturbance, as no suitable bald eagle habitat would be altered by the development. Construction and operation of the project is not anticipated to threaten the survival or nesting success at Nest Site #1 because (1) the Priest Pastures eagles have demonstrated a relatively high tolerance to human disturbance, (2) there is currently no nest structure at Nest Site #1, (3) the project occurs at least 250 feet from Nest Site #1 at the closest point, and (4) the conditions of this management plan will be fully implemented.

A buffer ranging between 50 and 125 feet in width is designated between the forested hillside and the development. Some townhouse lots would encroach into the buffer to meet minimum lot size requirements but restrictions would prevent any structures or modifications within the forested slope or its 50-foot buffer. At several locations along the forested slope the buffer is much larger than 50 feet (Figure 1). For the adjacent Riverbend Retail development, WDFW recommended the protection of the long-term viability of potential perch trees by limiting the placement of structures within 100 feet (or one tree height [approximate]) of those trees. This limitation was to reduce the likelihood of potential future hazard tree removals. There are three potential perch trees (trees #4, #6, and #13) located approximately 50, 80, and 55 feet respectively from proposed townhome sites in the Jennie's Meadow development (Figure 2). These trees were determined to be at high risk for failure during a certified arborist's evaluation (Appendix C). The arborist recommended removing the upper two-thirds of the canopy to reduce the potential for crown failure and provide wildlife structure. Although these trees may become less desirable perches for eagles after topping, there are multiple adjacent perch trees available for eagle use in this portion of the site. The property owners also propose to fence and sign along the forested slope buffer to educate the public about wildlife conservation and minimize foot traffic within the slope area.

Without proper management conditions, construction of portions of the project could compromise the integrity of the forested slope as a bald eagle travel corridor or Nest Site #1 should it be occupied in future seasons. However, the tolerance to human activity in close proximity to the existing Nest Site #2 suggests that disturbance from the project

would likely have less impact on this pair than it would have on eagles that are less habituated to human disturbance.

MANAGEMENT CONDITIONS

The following conditions were developed to minimize disturbance levels in the vicinity of suitable bald eagle habitat and to ensure that no suitable bald eagle habitat is directly impacted by the project. These conditions were developed based on the existing habitat conditions within this territory, the documented level of use by bald eagles within this territory, and the proposed land use action.

1. A Core Protection Zone that includes a 250-foot buffer between Nest Site #1 and the development (new roads, buildings, residential lots, trails) and a 50-foot minimum buffer average between the forested hillside and the nearest building or road will be established by MRP Partners as shown in Figure 1. This Core Protection Zone will be permanently preserved to prevent encroachment on Nest Site #1 and the forested slope.

2. MRP Partners will fence the forested slope buffer and the utility easement with wildlife-permeable fencing (split-rail) and will post wildlife conservation signs to educate the public and minimize foot traffic within the slope area. Should a new nest be constructed and be determined active at Nest Site #1 in the future, the Jennie's Meadow Homeowner's Association will consult with WDFW to evaluate pedestrian use during the nesting season.

3. MRP Partners will improve the fallow pasture portion of the Core Protection Zone by planting native trees (Douglas fir, grand fir, big-leaf maple, and Oregon white oak [*Quercus garryana*]) to enhance its habitat value for bald eagles and other wildlife, and to provide additional buffering of Nest Site #1 and the forested slope (Figure 3). Planting will occur within one year of project construction completion. The Jennie's Meadow Homeowner's Association will monitor the vegetation annually for two years and will replace any dead plants.

4. MRP Partners will plant screening vegetation along the outer edge of the 250-foot buffer for Nest Site #1 (Figure 3). Screening vegetation will consist of Douglas fir and big-leaf maple and Oregon white oak (two-inch caliper, 10 to 15 feet on center). Planting will occur within one year of project construction completion. The Jennie's Meadow Homeowner's Association will monitor vegetation annually for two years and will replace any dead plants.

5. All potential perch trees along the forested slope will be retained, including those prone to wind throw, except where such trees pose threat to public safety (hazard tree). This condition was determined appropriate based on the current site design that identifies all buildings at least 50 feet from the nearest perch tree.

Hazard trees will be identified by a professional forester or certified arborist. A written report from the forester/arborist must be submitted to the WDFW before approval to remove the hazard tree(s) is granted. A tree that presents imminent danger to the safety or property of individuals may be removed without the prior submittal of a report.

6. MRP Parnters will top trees number 4, 6, and 13 as recommended by the certified arborist (Appendix C) leaving the remaining structure for perching habitat and other wildlife uses. These trees would be within 100 feet of proposed townhome structures and currently have a high failure potential.

7. During construction, MRP Partners will establish a Tree Protective Zone as recommended in the Hazard Tree Assessment (Appendix C) to protect the uphill root zone of perch trees closest to development activities, by restricting equipment, fill placement, and foot traffic.

8. MRP Partners shall provide a maximum of $15,000.00 in off-site, but within territory (if possible) mitigation to offset unavoidable impact of increased disturbance levels within the on-site flyway and perching habitat. Within-territory mitigation possibilities include contributing to the WDFW effort to purchase land where Nest Site #3 is located, contributing to the enhancement of eagle habitat on this property, and/or contributing to interpretive signing on this property to educate the public about eagle ecology and conservation. The contribution will be deposited to the Region 6 Bald Eagle Donations Account no later than at the time of final plat.

9. The WDFW **recommends** that no heavy equipment operation, clearing, grading, or outside construction shall occur within 800 feet of an active bald eagle nest from February 1 through August 15. This applies if Nest Site #1 is rebuilt and is active or if a new nest is constructed within 800 feet of the site and is active. This recommendation does not apply to Nest Site #2 and Nest Site #3 as they are located over 800 feet from the subject property.

   Note: The WDFW no longer **requires** timing restrictions but has requested that the landowner work cooperatively to minimize disturbance during the nesting season. The landowner shall contact the WDFW with at least two weeks notice prior to initiating any heavy equipment operation, clearing, grading, or outside construction associated with site development on the property.

10. Bald eagle nest survey(s) will be conducted by a qualified biologist prior to the initiation of construction during the bald eagle nesting season (February 1 through August 15) to determine if an active nest site occurs within 800 feet of the construction area.

11. The landowner will be responsible for having the bald eagle nest surveys performed. Surveys will be performed by a qualified biologist defined as a professional biologist

with a bachelor's degree or higher in biology related discipline and prior experience working with bald eagles. Survey results will be provided to the WDFW.

12. The establishment of new nest(s) may require revision to this bald eagle management plan, and the parties agree to cooperate in reviewing and negotiating any such proposed revisions; provided that no such revision shall require the modification of the physical improvements or the uses proposed for the project.

13. A bald eagle site management plan will be required for any future land use proposed within 800 feet of Priest Pastures Nest Site #1 or other bald eagle nests.

JUSTIFICATION

MRP Partners was granted approval to develop within 400 feet of Nest Site #1 because the nest tree is located at least 250 feet from the development, the eagles have not attempted nesting at this site since 2000, and the nest is no longer present in the tree. Because all development would occur entirely within a fallow upland pasture and previously disturbed areas, bald eagle nesting, perching, and primary foraging habitat would not be directly impacted. The WDFW worked with the MRP Partners to minimize potential disturbance to bald eagles within this territory. MRP Partners would plant trees and shrubs to provide screening and improve the bald eagle perching habitat between the proposed development and the forested slope associated with Nest Site #1. The conditions identified above were modeled after the approved *Priest Pastures Bald Eagle Nest Territory (#1258) Site Management Plan* (DEA, 2003) that was prepared for the adjacent Wal-Mart development and the approved *Priest Pastures Bald Eagle Nest Territory (#1258) Site Management Plan* (DEA, 2005) that was prepared for the adjacent Riverbend Retail development.

The Priest Pastures eagle pair have shown a relatively high tolerance to human disturbance by successfully fledging young at Nest Site #2. Nest Site #2 is located directly adjacent to a paved road and two occupied residences. This past behavior indicates that the management conditions proposed to minimize disturbance at Nest Site #1, and the connecting forested hillside are likely to be adequate in maintaining viable nesting within this territory. Because the Priest Pastures eagle pair has established a third nest site located about one-half mile from the Jennie's Meadow development site and no nest structure remains at Nest Site #1 where nesting last occurred during the 2000 season, the potential for reoccupying Nest Site #1 is considered low.

Recommendations made in a wildlife habitat management plan (Lear, 1998) for buffering the forested slope with a grassland area approximately 1.5 times the existing average tree heights (or 112.5 feet) were specific to preserving foraging habitat for raptors documented on site, including eagles. When the pastures were used for livestock calving, eagles would feed on the afterbirth. This preservation of pasture area is no longer consistent with current eagle management as eagle use and land use within the territory is changing. Buffering the forested slope and planting screening vegetation between the

slope and development is the current management approach to minimize ambient disturbance levels and protect the long-term viability of perch trees with in the forested slope. Additionally, the forested slope buffer area and the utility easement will be signed and fenced as a dual effort to provide public education and minimize foot traffic within the protected area.

Management recommendations proposed by the arborist for trees with a high failure potential within 100 feet of structures should maintain some structure of three on-site perch trees. These trees should be topped in the upper two-thirds of the canopy leaving the remaining structure for perching habitat and nesting opportunities for cavity-nesting birds. Additionally, the establishment of a Tree Protective Zone which will protect the uphill root zone of the vulnerable perch trees by fencing off an 1.5 times the diameter at breast height (dbh) area to exclude equipment, fill placement, and foot traffic.

MRP Partners is pursuing opportunities to mitigate for unavoidable impacts that include increased disturbance levels within the on-site habitat. Off-site but within territory mitigation is proposed and WDFW will determine the most appropriate mitigation project to benefit eagles. Off-site mitigation is preferred due to the present and likely future conversion of pastureland surrounding the project area. The cumulative effect of habitat conversion is resulting in less desirable conditions for the nesting pair within these areas.

WDFW is in the process of purchasing the property where the currently active Nest Site #3 is located. This location has the highest long-term viability and habitat value due to its proximity to the Dungeness River corridor and an existing park (Railroad Bridge Park). In addition to the preservation of this habitat, enhancement opportunities at this site exist. Hay fields adjacent to the nest site could be reforested to provide vegetative screening and future nest tree potential. MRP Partners is currently in discussion with WDFW on where to direct mitigation funding support. In cooperation with WDFW, the property owners will identify a mitigation approach to benefit the Priest Pastures nesting pair.

DURATION OF PROTECTION

This plan applies to MRP Partners, the landowner. If the ownership changes, the new landowner may sign the plan or request a new one to reflect a change in land use.

Since eagles return to the same traditional use areas each year, the conditions of this plan shall apply indefinitely unless a breeding territory has been unoccupied for five consecutive years. If the breeding territory is unoccupied for five consecutive years, then the WDFW biologist and the landowner should evaluate the continued need for protection of the bald eagle habitat.

If an eagle does not show signs of incubating eggs by May 1, the recommended timing restrictions do not apply for that year. Surveys shall be done by a qualified wildlife biologist.

Please contact the WDFW if the eagles change the location of their nest. Do not assume that the conditions of this plan no longer apply should the nest location change.

REVIEW AND AMENDMENT

This plan will be subject to the following review and amendment procedures. The plan may be reviewed periodically by the WDFW to determine whether (1) the plan requires amendment in response to changing eagle and landowner circumstances, (2) the terms of the plan comply with applicable laws and regulations, or (3) the parties to the plan are complying with its terms.

APPEAL PROCEDURE

In addition to the provisions of WAC 232-12-292(7.1)-(7.3), the landowner may request a formal appeal of WDFW actions according to the Administrative Procedures Act, Chapter 34.05 RCW, and the Model Rules of Procedure, Chapter 10.08 WAC. Such a request shall be filed with the WDFW within 20 days of receipt of the contested WDFW decision. The appeal request shall clearly state the relief sought and the grounds for the appeal.

COMPLIANCE

Failure to comply with this plan constitutes a misdemeanor as set forth in RCW 77.15.130. However, compliance with this plan does not ensure compliance with the Endangered Species Act or other federal, state, or local laws.

This plan applies only to the proposed land use listed above. Any other proposals may be subject to a different set of conditions. It is the landowner's responsibility to notify the WDFW of any new proposed land use activities.

WDFW BALD EAGLE SITE MANAGEMENT AGREEMENT

On behalf of the people of the State of Washington, to which its wildlife belongs, the following agreement is hereby enacted for the purpose of protecting bald eagles and their habitats.

The landowner and Washington State Department of Fish and Wildlife agree to the management conditions described in this Bald Eagle Site Management Plan.

Site Name: Priest Pastures #1258

Legal Description: T30N, R4W, Section 24, NE ¼ of SW ¼

The undersigned hereby agree to the terms of this Bald Eagle Site Management Plan.

MRP Partners (Landowner):

Landowner Signature | 7/1/05 Date | GREG McCANNY Landowner Printed Name

2 HERON RD
Street Address

PORT LUDLOW | WA | 98365
City | State | Zip Code

Washington State Department of Fish and Wildlife:

Jack L. Smith | 7/8/05
Regional Program Manager | Date

Shelly Arent | 7/6/05 | 6 | Clallam
Wildlife Biologist | Date | Region | County

2 | |
Priority | Inspected By | Date

REFERENCES

Ament, S. 2003. Personal communication with Bret Forrester (DEA) on July 18, 2003. WDFW, Sequim, Washington.

Ament, S. 2004. Personal communication with Bret Forrester (DEA) on August 18, 2004. WDFW, Sequim, Washington.

Boekelheide, B. 2005. Personal communication with Cindy Callahan (DEA) on May 18, 2005. Dungeness River Audubon Center, Sequim, Washington.

Gerrard, J.M. and G.R. Bortolotti. 1988. *The Bald Eagle, Haunts and Habits of a Wilderness Monarch.* Smithsonian Institution Press, Washington D.C.

Grubb, T.G. 1976. *A Survey and Analysis of Bald Eagle Nesting in Western Washington.* Masters Thesis. University of Washington. Seattle, Washington.

Lear, C. 1998. Your Place Habitat Management Plan. Port Angeles, Washington.

Moore, J. 2003. Personal communication with Bret Forrester (DEA) on May 15, 2003. Northwest Raptor Center, Sequim, Washington.

Peterson, A. 1986. *Habitat Suitability Index Models: Bald Eagle (Breeding Season).* U.S. Fish and Wildlife Service biological report 82 (10.126). Washington D.C.

Rodrick and Milner (technical editors). 1991. *Management Recommendations for Washington's Priority Habitats and Species.* Washington Department of Wildlife. Olympia, Washington.

Stalmaster, M.V. 1987. *The Bald Eagle.* Universe Books, New York, New York.

Stalmaster, M.V. and J.R. Newman. 1978. *Behavioral Response of Wintering Bald Eagles to Human Activity.* Journal of Wildlife Management 42:506-513.

Stalmaster, M.V. and J.R. Newman. 1979. *Perch Site Preferences of Wintering Bald Eagles in Northwest Washington.* Journal of Wildlife Management 43:221-224.

U.S. Fish and Wildlife Service. 1986. *Recovery Plan for the Pacific Bald Eagle.* USFWS, Portland, Oregon.

Washington Department of Fish and Wildlife. No date. *Washington Department of Fish and Wildlife Bald Eagle Site Management Plan RCW 17.12.655 - Eagle Territory: Priest Pastures.* WDFW Region 6, Clallam County, Washington.

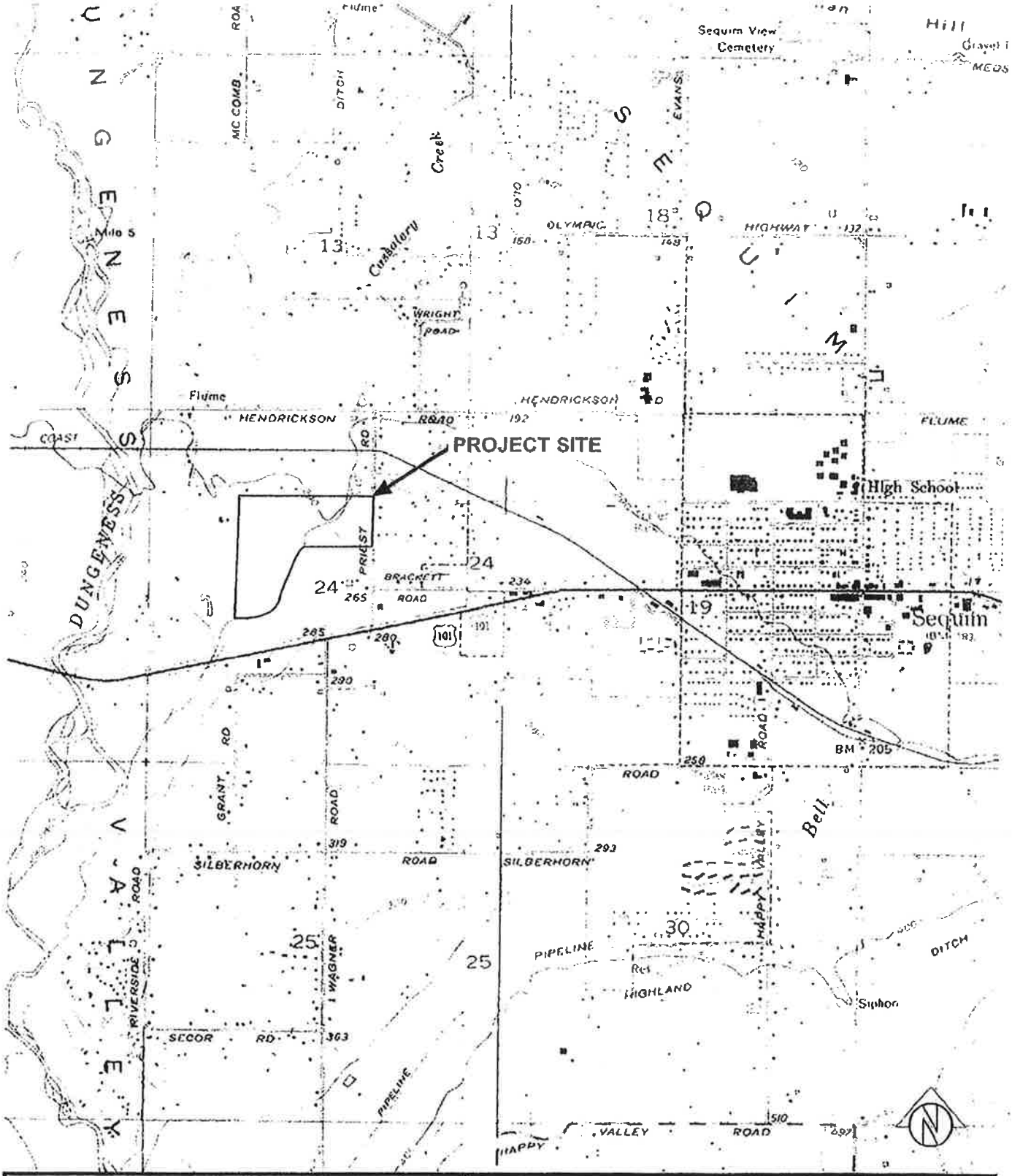
Watson, J.W. and D.J. Pierce. 1998. *Ecology of Bald Eagles in Western Washington with an Emphasis on the Effects of Human Activity.* Final Report. Washington State Department of Fish and Wildlife, Olympia, Washington.

Watson, J.W. and E.A. Rodrick. 2001. *Bald Eagle* (in) *Volume IV: Birds.* WDFW Priority Habitats and Species Program, Olympia, Washington.

APPENDICES

APPENDIX A

VICINITY MAP



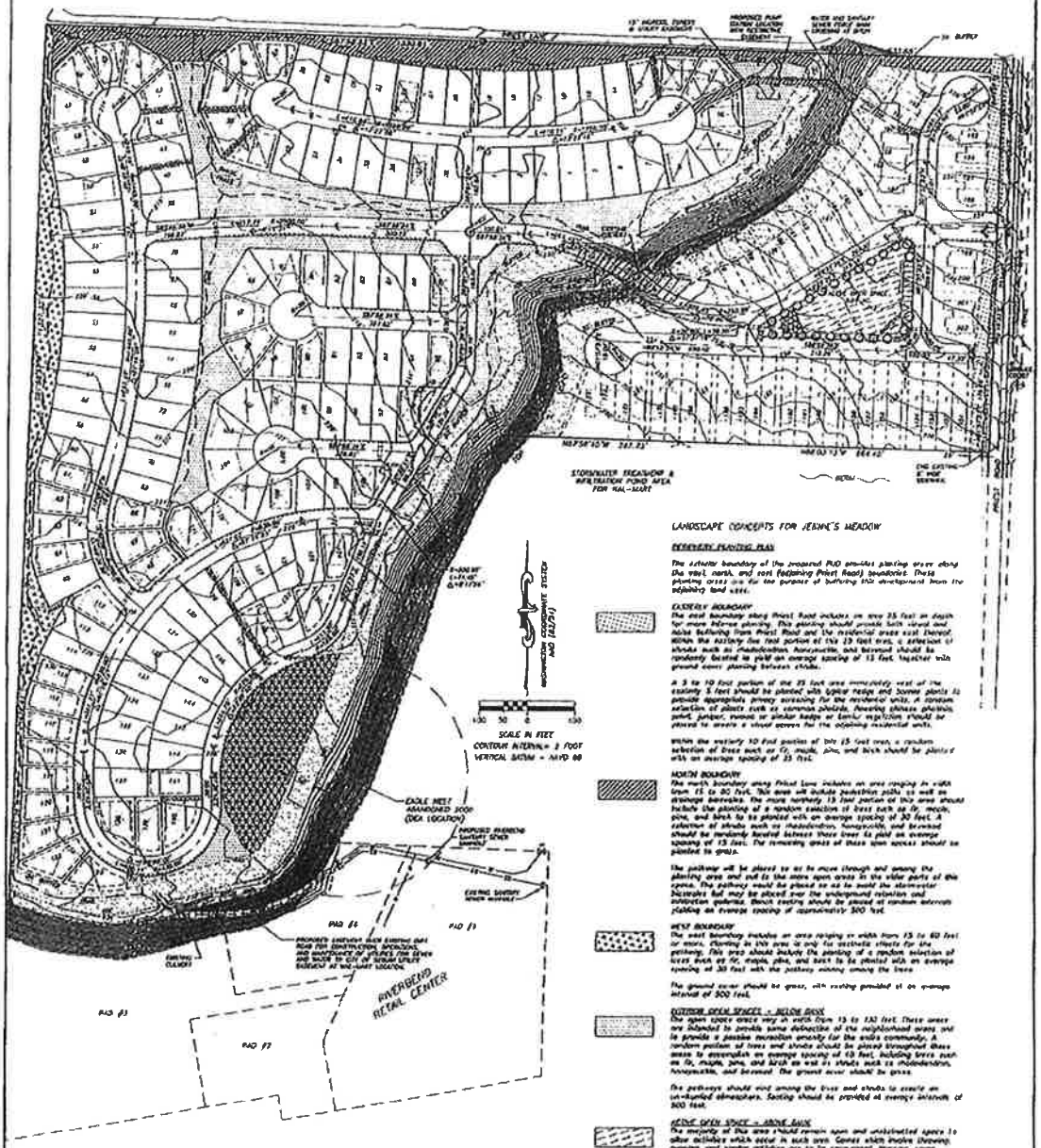
	Jennie's Meadow Vicinity Map	
	Priest Pastures Bald Eagle Nest Territory (#1258) Management Plan	
	MRPP0000-0001	Appendix A
	June 2005	DAVID EVANS AND ASSOCIATES INC.

Gx1039

PRELIMINARY PLAT

JENNIE'S MEADOW PUD

IN SECTION 24, TOWNSHIP 30 NORTH, RANGE 4 WEST, W.M.
CITY OF SEQUIM
CLALLAM COUNTY, WASHINGTON



LANDSCAPE CONCEPTS FOR JENNIE'S MEADOW

PERIMETER PLANTING PLAN

The exterior boundary of the proposed PUD provides planting areas along the west, north, and east (following Priest Road) boundaries. These planting areas are for the purpose of buffering this development from the adjoining land uses.

EASTERLY BOUNDARY

The east boundary along Priest Road includes an area 25 feet in depth for more intense planting. This planting should provide both visual and noise buffering from Priest Road and the residential areas east thereof. Within the easterly five feet portion of this 25 foot area, a selection of shrubs such as rhododendron, honeysuckle, and boxwood should be randomly located to yield an average spacing of 12 feet together with ground cover planting between shrubs.

A 5 to 10 foot portion of the 25 foot area immediately west of the easterly 5 feet should be planted with typical hedge and borrow pits to provide appropriate privacy screening for the residential units. A random selection of plants such as common photinia, flowering chinese photinia, privet, juniper, inkwood, or similar hedge or family application should be planted to create a visual screen for the adjoining residential units.

Within the westerly 10 foot portion of the 25 foot area, a random selection of trees such as fir, maple, pine, and birch should be planted with an average spacing of 25 feet.

NORTH BOUNDARY

The north boundary along Priest Lane includes an area ranging in width from 15 to 30 feet. This area will include pedestrian paths as well as drainage berms/dike. The more northerly 15 foot portion of this area should include the planting of a random selection of trees such as fir, maple, pine, and birch to be planted with an average spacing of 30 feet. A selection of shrubs such as rhododendron, honeysuckle, and boxwood should be randomly located between these trees to yield an average spacing of 12 feet. The remaining areas of these open spaces should be planted to grass.

The pathway will be placed so as to move through and among the planting area and out to the more open areas in the wider parts of the space. The pathway would be placed so as to avoid the stormwater bio-swales but may be placed over the underground retention and detention galleries. Bench seating should be placed at random intervals yielding an average spacing of approximately 300 feet.

WEST BOUNDARY

The west boundary includes an area ranging in width from 15 to 60 feet or more. Planting in this area is only for aesthetic effects for the pathway. This area should include the planting of a random selection of trees such as fir, maple, pine, and birch to be planted with an average spacing of 30 feet with the pathway winding among the trees.

The ground cover should be grass, with seating provided at an average interval of 300 feet.

OUTDOOR OPEN SPACES - BELOW DIKE

The open space areas vary in width from 15 to 130 feet. These areas are intended to provide some distraction of the neighborhood scenery and to provide a passive recreation amenity for the entire community. A random pattern of trees and shrubs should be placed throughout these areas to accomplish an average spacing of 12 feet, including trees such as fir, maple, pine, and birch as well as shrubs such as rhododendron, honeysuckle, and boxwood. The ground cover should be grass.

The pathways should wind among the trees and shrubs to create an undisturbed atmosphere. Seating should be provided at average intervals of 300 feet.

ACTIVE OPEN SPACE - ABOVE DIKE

The majority of this area should remain open and undisturbed space to allow activities which occur in such area. Games which involve throwing, running and similar activities are to be encouraged. However, some landscaping is appropriate.

The areas along the exterior edge of this area should be planted with a row of columnar trees with a spacing of 30 feet to define the area boundaries, define the access corridor, and to give visual separation between the shoulders of Hendrickson Rd. The interior area should have a grass ground cover maintained for active play use.

CORE PROTECTION ZONE AROUND NEST SITE #1

The proposed Bald Eagle Site Management Plan for Jennie's Meadow PUD includes specific management conditions to enhance bird habitat. Management condition #1 provides for planting native trees (Douglas Fir, Grand Fir, Big-leaf Maple and Oregon White Oak) in the below pasture portions of the Core Protection Zone to enhance the habitat value for bald eagles and other wildlife, and to provide additional buffering of nest use #1.

Management condition #1 requires that screening vegetation be planted along the outer edge of the 330-foot buffer for nest site #1. Dual screening vegetation will consist of a mix of Douglas fir and Big-leaf Maple (2-inch caliper, 10 to 15 feet on center) and Leyland Cypress (5 gallon [4-foot tall], 6 to 8 feet on center).

LOT AREAS:

OPEN AREA = 32.6 ACRES

OPEN SPACE AREA = 14.66 ACRES = 33%
LOT AREA = 29.11 ACRES = 61%
RIGHT OF WAY AREA = 3.91 ACRES = 17%

ZONING: R2

SUMMARY: 202 UNITS TOTAL (250' BUFFER)

150 DETACHED SINGLE FAMILY RESIDENCIAL UNITS @ 6,000± SQ. FT. EACH LOT (LOTS 1-150)

ATTACHED SINGLE FAMILY TOWNHOUSE RESIDENTIAL UNITS LOT MINIMUM = 3400 SQ. FT.

44 UNITS TOTAL ATTACHED 4 UNIT TOWNHOUSE (LOTS 151-194)

8 UNITS TOTAL ATTACHED 2 UNIT TOWNHOUSE (LOTS 195-202)

40' RIGHT OF WAY ON PRIVATE INTERIOR STREETS.

60' RIGHT OF WAY AT ENTRANCE.

LEGEND:

- DENOTES 15' UTILITY EASEMENT
- DENOTES 15' UTILITY EASEMENT
- DENOTES IRRIGATION DITCH BUFFER
- DENOTES PROPOSED FIRE HYDRANT
- DENOTES PROPOSED LIGHTING ON TRAFFIC INTERSECTION STANDARDS
- DENOTES BUILDING FOOTPRINT
- DENOTES BUILDING SETBACK LINE
- GRAVEL PEDESTRIAN TRAIL
- PAVED SIDEWALK
- PROPOSED CROSSWALK LOCATION
- PORCH TREE LOCATION
- COLUMNAR TREES TO DEFINE ACTIVE OPEN SPACE
- PLAYGROUND EQUIPMENT

SHEET 3 - LANDSCAPE PLAN
REVISED JANUARY 26, 2005

CLARK LAND OFFICE

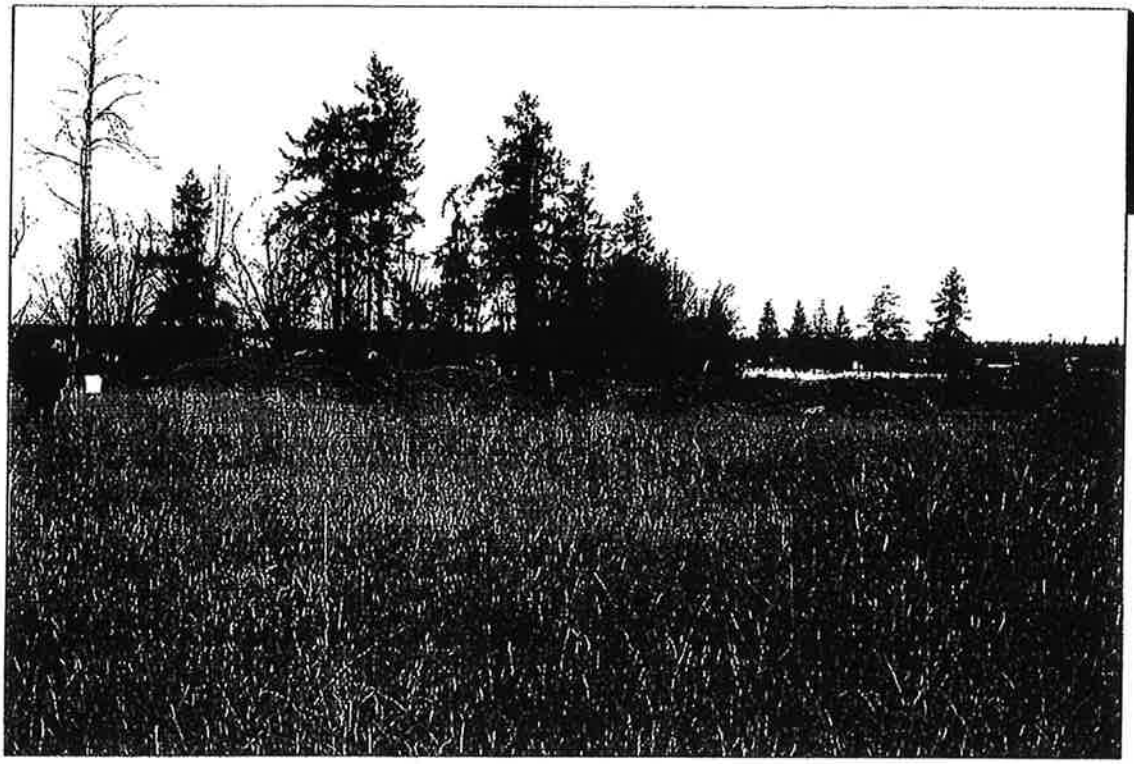
24(309-418)

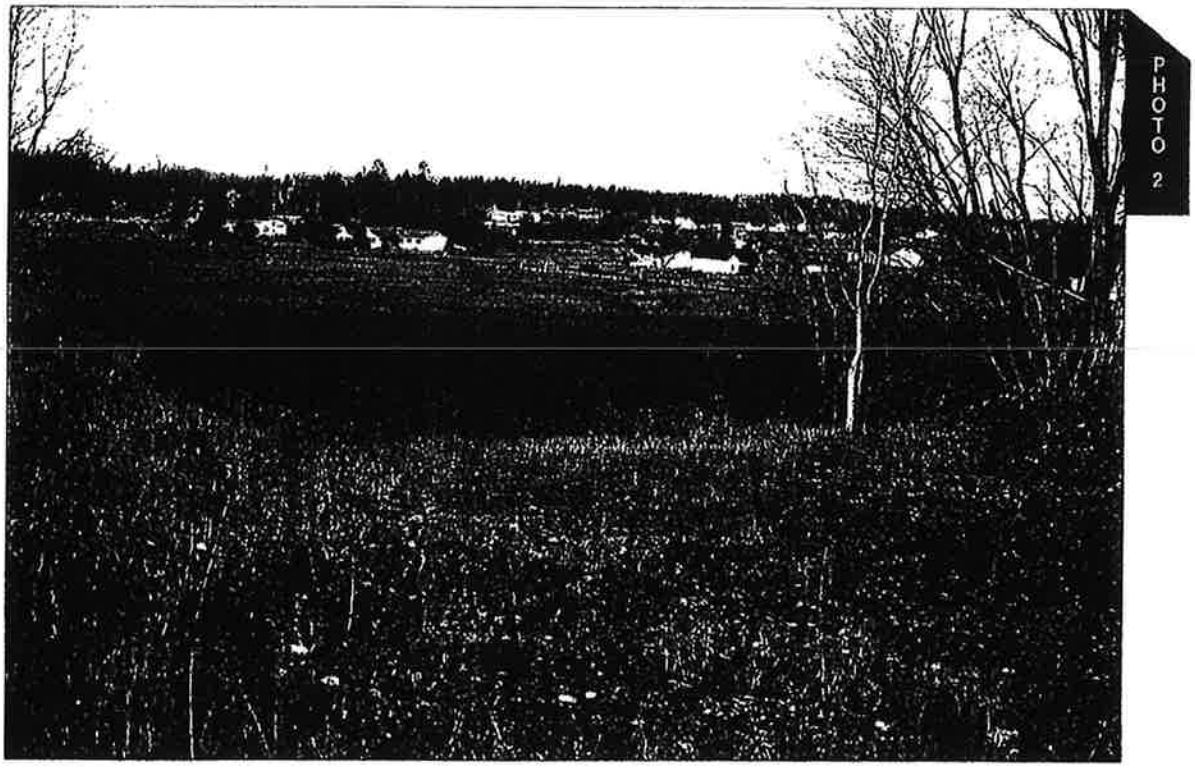
APPENDIX B

PHOTOS

Jennie's Meadow Development	Priest Pastures Territory Vicinity	
	Priest Pastures Bald Eagle Nest Territory (#1258) Management Plan	DAVID EVANS and ASSOCIATES INC.
	MRPP0000-0001	Appendix B
	June 2005	

Gx1039





1 *Northeast portion of project site facing north.*

2 *Project site from proposed access road facing west.*

Jennie's Meadow Development

Priest Pastures Bald Eagle Nest Territory (#1258) Management Plan

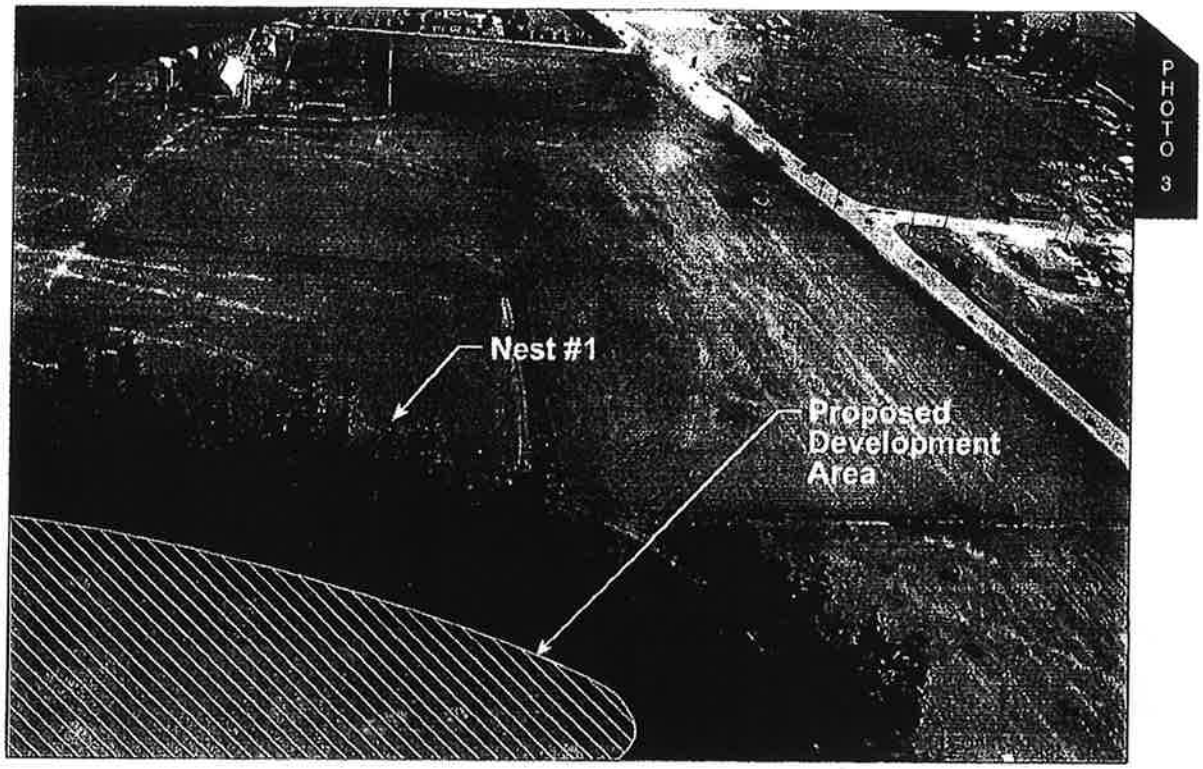
MRPP0000-0001

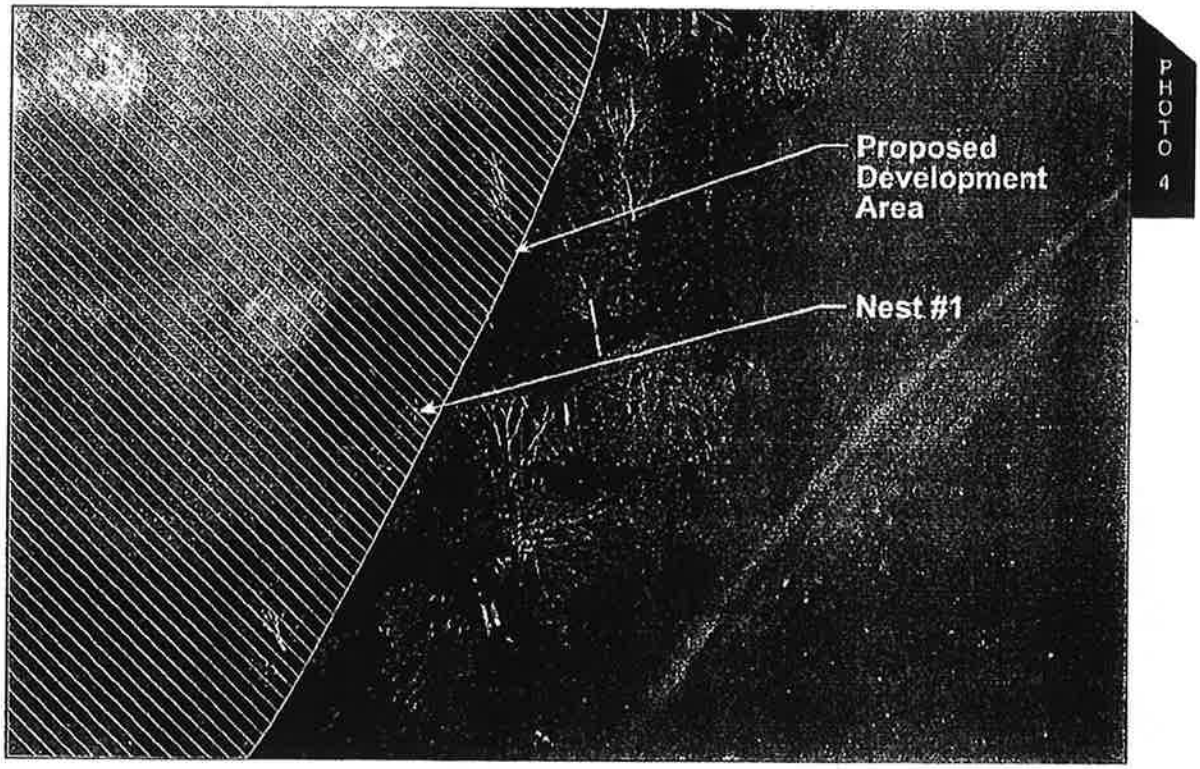
June 2005

Appendix B

DAVID EVANS AND ASSOCIATES INC.

Gx1039





(3) *Nest #1 in April 1999 facing east.*

(4) *Nest #1 in April 1999.*

Jennie's Meadow Development

Priest Pastures Bald Eagle Nest Territory (#1258) Management Plan

MRPP0000-0001

June 2005

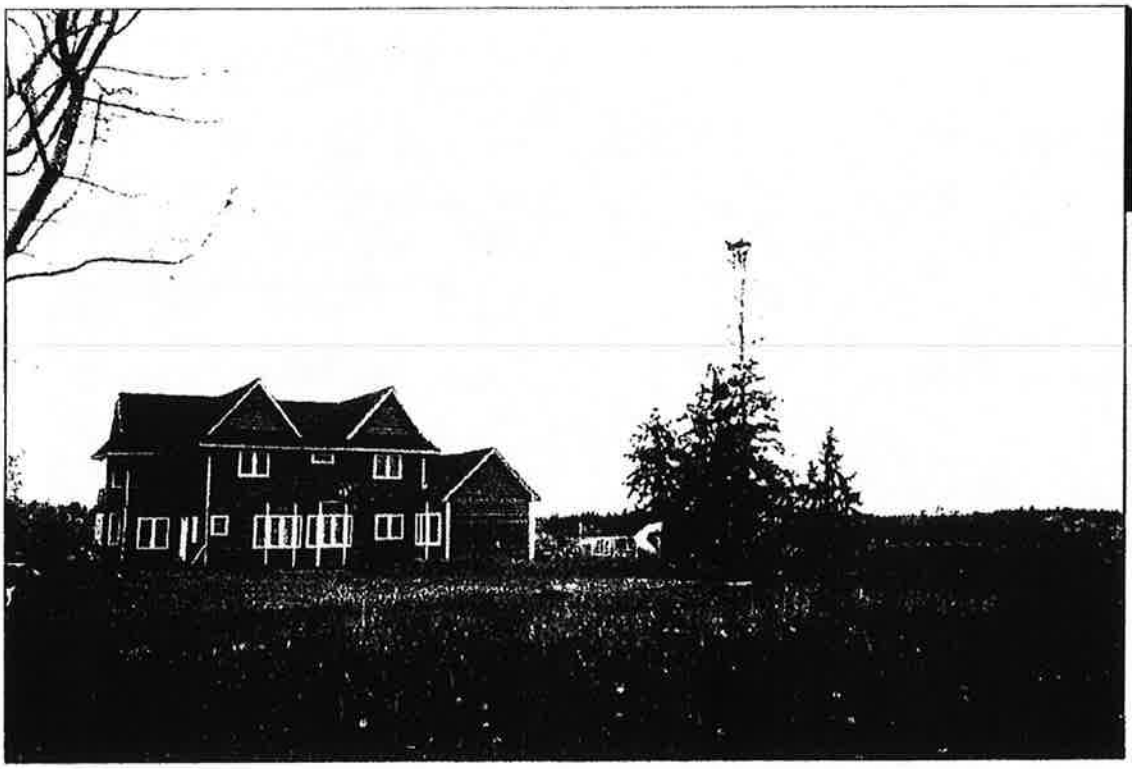
Appendix B

DAVID EVANS AND ASSOCIATES INC.

Gx1039

PHOTO 5

PHOTO 6



5 *Nest #2 facing southwest from Priest Road.*

6 *Nest #2 facing northwest from Priest Road.*

Jennie's Meadow Development

Priest Pastures Bald Eagle Nest Territory (#1258) Management Plan

MRPP0000-0001

June 2005

Appendix B

DAVID EVANS AND ASSOCIATES INC.

Gx1039

APPENDIX C

HAZARD TREE ASSESSMENT

ECO-CASCADIA April 28, 2005

HAZARD TREE ASSESSMENT
MRP PARTNERS PROPERTY (JENNIES MEADOW)

SCOPE AND LIMITS

A hazard tree assessment was conducted on April 22, 2005 to determine current tree health and projected tree failure after proposed development. Observations were limited to bald eagle perch trees identified by David Evans & Associates (DEA).

OVERVIEW OF SITE

This site is a naturally vegetated remnant stand of forest. The buffer-strip of trees runs east and west with large areas of cleared acreage (cattle grazing) to the north and south. Prevailing winds are from the southwest. Dominant native trees consist of Douglas fir *(Pseudotsuga menziesii)*, black cottonwood *(Populas balsamifera)* and big-leaf maple *(Acer macrophyllum)*. Observations of fill material, soil erosion and a created drainage ditch indicate high tree failure potential. A majority of trees assessed exhibited healthy growth yet structurally showed signs of decline. The majority of trees located on slope were undermined with exposed roots. Pre-existing soil compaction from cattle grazing areas coupled with proposed construction within the root zone could lead to decline and failure.

METHODS

Methods used for the hazard tree assessment included: (A) on-site visit accompanied by a biologist from DEA, and (B) The ISA Hazard Tree Evaluation Form protocol.

(A) On-site Visit

An on-site visit was conducted to identify hazard tree potential on (19) identified bald eagle perch trees. General field observations of soil, vegetation, wind exposure, and previous impacts were noted. The inspection focused on the northeast portion of the site, located adjacent to a proposed housing development site. The DEA biologist provided information on proposed structure locations and construction zones.

(B) The Hazard Tree Evaluation Form Protocol

The Hazard Tree Evaluation Form covers 6 areas of concern: Tree characteristics, tree health, site conditions, target, and tree defects. A hazard rating is created from these 6 categories. Because of the number of trees involved in the assessment, the form was used as a reference only and numbered ratings were not given for each tree.

DEFINITION OF A HAZARD TREE

Identifying risks associated with trees is a subjective process. Since the nature of tree failures remains largely unknown, the ability to predict which trees fail and in what fashion is limited.

Tree hazard assessment involves:

1. A tree with the potential to fail
2. An environment that may contribute to the failure
3. A target. By definition, a hazard situation requires the presence of both a defective tree and a target. In this case the target consists of proposed homes.

19526 Skyko Way P.O. Box 106 Index, WA 98256 (360) 793-2522

Member of the International Society of Arboriculture

OBSERVATIONS

- WLF = Wildlife tree by taking upper 2/3 of canopy (leaving remaining structure for habitat)
- DBH = Diameter/Base/Height of tree
- HT = Approximate height of tree

SITE	COMMON NAME	BOTANICAL NAME	DBH/HT	ACTION	REMARKS
1	Douglas fir	*Pseudotsuga menzeisii*	18"+/- Approx. 100'	Monitor for decline / root failure	Located down-slope approx. 50 ft. Possible crown failure in past. Potential crown failure in future. Canal construction impacted root zone. Moderate failure potential.
2	Douglas fir	*Pseudotsuga menzeisii*	15"+/- Approx. 100'	Monitor for decline / root failure	Located down-slope approx. 50 ft. Bow and sparse foliage upper ¼ of trunk. Potential crown failure in future. Canal construction impacted root zone. Moderate failure potential.
3	Douglas fir	*Pseudotsuga menzeisii*	34"+/- Approx. 100'	Monitor for decline / root failure	Located down-slope approx. 50 ft. Possible crown failure in past. Potential crown failure in future. Canal construction impacted root zone. Moderate – high failure potential.
4	Douglas fir	*Pseudotsuga menzeisii*	23.5" Approx. 100'	WLF to reduce crown failure impacts leaving structure to provide habitat. Utilize 'Tree Protection Zone.'	Possible crown failure in past. Potential crown failure in future. Foliage sparse, some tip die-back, wounding. In decline. High failure potential.
5	Douglas fir	*Pseudotsuga menzeisii*	24" Approx. 100'	Monitor for decline / root failure	Located down-slope approx. 50 ft. Healthy foliage with some tip die-back. Possible soil fill @ root crown. Canal construction impacted root zone. Moderate failure potential.
6	Douglas fir	*Pseudotsuga menzeisii*	26" Approx. 75'	WLF to reduce crown failure impacts leaving structure to provide habitat. Utilize 'Tree Protection Zone.'	Scarring @ lower trunk, oozing sap. Crown failure in past. Moderate - high failure potential
7	black cottonwood	*Populas balsamifera*	31" Approx. 125'	Monitor for decline / root failure	Foliage sparse. Bow ¼ up from base. Possible soil fill @ root crown. Canal construction impacted root zone. Moderate failure potential.
8	Douglas fir	*Pseudotsuga menzeisii*	18.5" Approx. 75'	WLF to reduce crown failure impacts leaving structure to provide habitat	Co-dominant tree with one scaffold broken, potential rot @ crotch. Water sprouts weak at attachment. Canal construction impacted root zone.
9	Douglas fir	*Pseudotsuga menzeisii*	21" Approx. 100'	Ok to leave – outside hazard zone. Utilize 'Tree Protection Zone.'	Foliage healthy, some sparseness @ crown. Located on vertical slope with undercutting and erosion. High failure potential.
10	Douglas fir	*Pseudotsuga menzeisii*	13.5" Approx. 75'	Ok to leave – outside hazard zone. Utilize 'Tree Protection Zone.'	Foliage healthy, bow approx. ¼ down from crown. Possible previous crown failure. Located on vertical slope with undercutting and erosion. High failure potential.
11	Douglas fir	*Pseudotsuga menzeisii*	21" Approx. 75'	Ok to leave – outside hazard zone. Utilize 'Tree Protection Zone.'	Upper crown dead; leave for habitat. Co-dominant scaffold broken. High failure potential.

12	Douglas fir	*Pseudotsuga menzelsii*	37" Approx. 100'	Ok to leave – outside hazard zone. Utilize 'Tree Protection Zone.'	Co-dominant tree with one scaffold broken, potential rot @ crotch. Water sprouts weak at attachment. Oozing sap @ lower trunk, pest infestation on lower branches (Cooley spruce gall adelgid), heavy cone set. Tree under stress. Moderate failure potential.
13	Douglas fir	*Pseudotsuga menzelsii*	-	WLF to reduce crown failure impacts leaving structure to provide habitat. Utilize 'Tree Protection Zone.'	Crown broken approx. 1/3 up from base of tree. Water sprouts weak at attachment. Heavy cone set. High limb breakage potential.
14	Douglas fir	*Pseudotsuga menzelsii*	-	Ok to leave – outside hazard zone.	Located down-slope approx. 50 ft. @ edge of cut bank.
15	Douglas fir	*Pseudotsuga menzelsii*	-	Ok to leave – outside hazard zone.	Located down-slope approx. 50 ft. @ edge of cut bank.
16	Douglas fir	*Pseudotsuga menzelsii*	-	Ok to leave – outside hazard zone.	Located down-slope approx. 50 ft. @ edge of cut bank.
17	Douglas fir	*Pseudotsuga menzelsii*	-	Ok to leave – outside hazard zone.	Located down-slope approx. 50 ft. @ edge of cut bank.
18	Douglas fir	*Pseudotsuga menzelsii*	-	Ok to leave – outside hazard zone.	Located down-slope approx. 50 ft. @ edge of cut bank.
19	Douglas fir	*Pseudotsuga menzelsii*	-	Ok to leave – outside hazard zone.	Located down-slope approx. 50 ft. @ edge of cut bank.

Diameter/Base/Height may be approximate for some trees. Height is approximate.

SUMMARY

Hazard tree evaluations showed areas of concern relative to pre-existing site conditions. Historical clearing of the native stand to provide cattle grazing area may have impacted the root zones of several trees by compacting the soil and removing small pore space necessary for tree root survival. This removal additionally exposed the remaining stand to wind and sun scalding. Many of the targeted trees were also impacted by the construction of a drainage way. Tree roots were severed and fill material covered up to ½ of root crown(s). It is not uncommon for trees to decline slowly showing signs of decline over many years. Over-all observations showed crown failure, scaffold branch breakage and trunk wounding all indicators of decline in a tree.

RECOMMENDATIONS

Trees located down-slope potentially within striking distance of the housing development should be monitored for decline. It is recommended that trees with a history of crown failure be reduced in size, leaving some branches for perching. Trees located within proximity to construction should have a root protection zone from the base of tree outward 1.5' x DBH (ex: 1.5 x 24" DBH = 36 ft). This area should be fenced off to exclude equipment, fill material and foot traffic.

If I can answer any questions or be of further assistance concerning this report and field review, please do not hesitate to contact me.

Thank you.

Cate Burnett

Certified Arborist #PN1197

Enclosures:

Sample Hazard Tree Evaluation Form

Reference material

19526 Skyko Way P.O. Box 106 Index, WA 98256 (360) 793-2522

Member of the International Society of Arboriculture

A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas

TREE HAZARD EVALUATION FORM 2nd Edition

Site/Address: _____

Map/Location: _____

Owner: public _____ private _____ unknown _____ other _____

Date: _____ Inspector: _____

Date of last inspection: _____

HAZARD RATING:

_____ + _____ + _____ = _____

Failure Potential + Size of part + Target Rating = Hazard Rating

_____ Immediate action needed

_____ Needs further inspection

_____ Dead tree

TREE CHARACTERISTICS

Tree #: _____ **Species:** _____

DBH: _____ **# of trunks:** _____ **Height:** _____ **Spread:** _____

Form: ☐ generally symmetric ☐ minor asymmetry ☐ major asymmetry ☐ stump sprout ☐ stag-headed

Crown class: ☐ dominant ☐ co-dominant ☐ intermediate ☐ suppressed

Live crown ratio: _____ % **Age class:** ☐ young ☐ semi-mature ☐ mature ☐ over-mature/senescent

Pruning history: ☐ crown cleaned ☐ excessively thinned ☐ topped ☐ crown raised ☐ pollarded ☐ crown reduced ☐ flush cuts ☐ cabled/braced ☐ none ☐ multiple pruning events Approx. dates: _____

Special Value: ☐ specimen ☐ heritage/historic ☐ wildlife ☐ unusual ☐ street tree ☐ screen ☐ shade ☐ indigenous ☐ protected by gov. agency

TREE HEALTH

Foliage color: ☐ normal ☐ chlorotic ☐ necrotic **Epicormics?** Y N

Foliage density: ☐ normal ☐ sparse **Leaf size:** ☐ normal ☐ small

Annual shoot growth: ☐ excellent ☐ average ☐ poor **Twig Dieback?** Y N

Woundwood development: ☐ excellent ☐ average ☐ poor ☐ none

Vigor class: ☐ excellent ☐ average ☐ fair ☐ poor

Major pests/diseases: _____

Growth obstructions:

☐ stakes ☐ wire/ties ☐ signs ☐ cables

☐ curb/pavement ☐ guards

☐ other _____

SITE CONDITIONS

Site Character: ☐ residence ☐ commercial ☐ industrial ☐ park ☐ open space ☐ natural ☐ woodland/forest

Landscape type: ☐ parkway ☐ raised bed ☐ container ☐ mound ☐ lawn ☐ shrub border ☐ wind break

Irrigation: ☐ none ☐ adequate ☐ inadequate ☐ excessive ☐ trunk wetted

Recent site disturbance? Y N ☐ construction ☐ soil disturbance ☐ grade change ☐ line clearing ☐ site clearing

% dripline paved: 0% 10-25% 25-50% 50-75% 75-100% **Pavement lifted?** Y N

% dripline w/ fill soil: 0% 10-25% 25-50% 50-75% 75-100%

% dripline grade lowered: 0% 10-25% 25-50% 50-75% 75-100%

Soil problems: ☐ drainage ☐ shallow ☐ compacted ☐ droughty ☐ saline ☐ alkaline ☐ acidic ☐ small volume ☐ disease center ☐ history of fail ☐ clay ☐ expansive ☐ slope _____° aspect: _____

Obstructions: ☐ lights ☐ signage ☐ line-of-sight ☐ view ☐ overhead lines ☐ underground utilities ☐ traffic ☐ adjacent veg. ☐ _____

Exposure to wind: ☐ single tree ☐ below canopy ☐ above canopy ☐ recently exposed ☐ windward, canopy edge ☐ area prone to windthrow

Prevailing wind direction: _____ Occurrence of snow/ice storms ☐ never ☐ seldom ☐ regularly

TARGET

Use Under Tree: ☐ building ☐ parking ☐ traffic ☐ pedestrian ☐ recreation ☐ landscape ☐ hardscape ☐ small features ☐ utility lines

Can target be moved? Y N **Can use be restricted?** Y N

Occupancy: ☐ occasional use ☐ intermittent use ☐ frequent use ☐ constant use

The International Society of Arboriculture assumes no responsibility for conclusions or recommendations derived from use of this form.

Specimen: TREE HAZARD EVALUATION FORM, Page 1

TREE DEFECTS

ROOT DEFECTS:

Suspect root rot: Y N **Mushroom/conk/bracket present:** Y N **ID:** _____

Exposed roots: ☐ severe ☐ moderate ☐ low **Undermined:** ☐ severe ☐ moderate ☐ low

Root pruned: _____ distance from trunk **Root area affected:** _____ % **Buttress wounded:** Y N **When:** _____

Restricted root area: ☐ severe ☐ moderate ☐ low **Potential for root failure:** ☐ severe ☐ moderate ☐ low

LEAN: _____ deg. from vertical ☐ natural ☐ unnatural ☐ self-corrected **Soil heaving:** Y N

Decay in plane of lean: Y N **Roots broken** Y N **Soil cracking:** Y N

Compounding factors: _____ **Lean severity:** ☐ severe ☐ moderate ☐ low

CROWN DEFECTS: Indicate presence of individual defects and rate their severity (s = severe, m = moderate, l = low)

DEFECT	ROOT CROWN	TRUNK	SCAFFOLDS	BRANCHES
Poor taper				
Bow, sweep				
Codominants/forks				
Multiple attachments				
Included bark				
Excessive end weight				
Cracks/splits				
Hangers				
Girdling				
Wounds/seam				
Decay				
Cavity				
Conks/mushrooms/bracket				
Bleeding/sap flow				
Loose/cracked bark				
Nesting hole/bee hive				
Deadwood/stubs				
Borers/termites/ants				
Cankers/galls/burls				
Previous failure				

HAZARD RATING

Tree part most likely to fail: _____

Inspection period: _____ annual _____ biannual _____ other _____

Failure Potential + Size of Part + Target Rating = Hazard Rating

_____ + _____ + _____ = _____

Failure potential: 1 - low; 2 - medium; 3 - high; 4 - severe

Size of part: 1 - <6" (15 cm); 2 - 6-18" (15-45 cm); 3 - 18-30" (45-75 cm); 4 - >30" (75 cm)

Target rating: 1 - occasional use; 2 intermittent use; 3 - frequent use; 4 - constant use

HAZARD ABATEMENT

Prune: ☐ remove defective part ☐ reduce end weight ☐ crown clean ☐ thin ☐ raise canopy ☐ crown reduce ☐ restructure ☐ shape

Cable/Brace: _____ **Inspect further:** ☐ root crown ☐ decay ☐ aerial ☐ monitor

Remove tree: Y N **Replace?** Y N **Move target:** Y N **Other:** _____

Effect on adjacent trees: ☐ none ☐ evaluate

Notification: ☐ owner ☐ manager ☐ governing agency **Date:** _____

COMMENTS

Specimen: TREE HAZARD EVALUATION FORM, Page 2

REFERENCE MATERIAL

Allen, E., Morrison, D. & Wallis, G. (1996). *Common Tree Diseases of British Columbia,* Natural Resources Canada, Canadian Forest Service, Victoria, B.C.

Byther, R., Foss, C., Antonelli, A., Maleike, R., Bobbitt, V.(1996). *Landscape Plant Problems. A Pictorial Diagnostic Manual.* Washington State University Puyallup & Washington State Department of Ecology.

Matheny, N. & Clark, J. (1998). *Trees and Development. A Technical Guide to Preservation of Trees During Land Development.* International Society of Arboriculture, Savoy, IL

Matheny, N. & Clark, J. (1994). *A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas,* 2nd edition, International Society of Arboriculture, Urbana, USA.

FIGURES

50-b

Clallam Conservation District
228 W. First Street, Suite H
Port Angeles, WA 98362

October 17, 2025
Via email to:
kim.williams@clallamcd.org
info@clallamcd.org
swoolson@csdlaw.com

NOTICE OF UNAUTHORIZED PIPELINE CONSTRUCTION ACTIVITY

Re: **U.S. Department of Interior Assistance Agreement No. R22AP00608-00**
CFDA No. 15.507 WaterSMART
Grantee: Clallam Conservation District

Dear Clallam Conservation District,

On October 14, 2025, I was apprised of a purported "emergency" plan by CCD to install a pipeline in a portion of the original Sequim prairie ditch ("Historic Sequim Prairie Ditch") that is subject to U.S. Department of Interior Assistance Agreement No. R22AP00608-00, CFDA No. 15.507 WaterSMART, Grantee: Clallam Conservation District ("Pipeline Project").

The planned construction was announced at a meeting of the board of the Sequim Prairie Tri-Irrigation Association ("SPTIA"). SPTIA is the project proponent per a Memorandum of Understanding with the CCD executed on December 16, 2021.

As you are aware, the U.S. Bureau of Reclamation has conditioned ground breaking for the Pipeline Project upon the issuance of a FONSI (Finding of No Significant Impact) determination following an updated environmental assessment. No such determination exists to my knowledge.

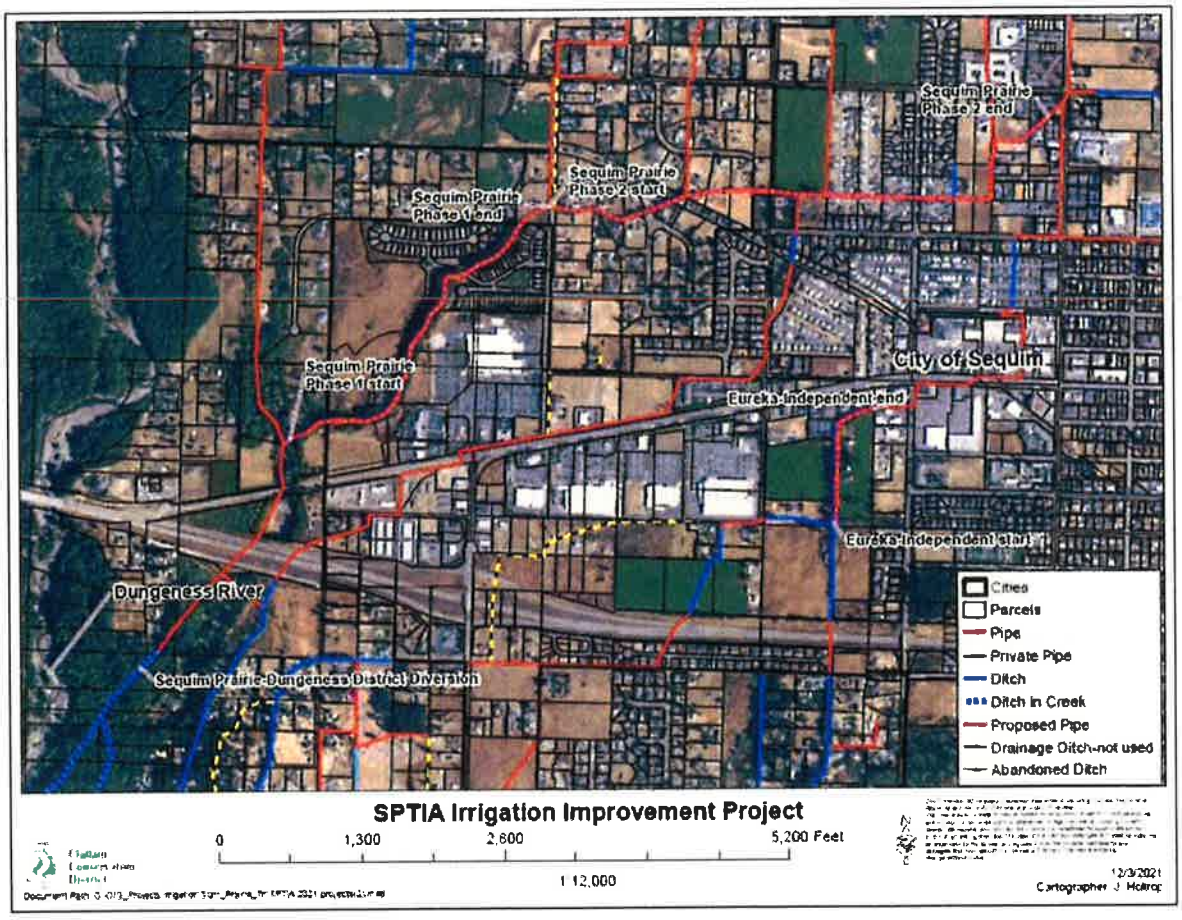
Despite the federal requirement for an updated environmental assessment, the SPTIA board announced that CCD employee Meghan Adamire is currently working on a Pipeline Project for 365 feet of pipeline construction "at the split with DID [Dungeness Irrigation District]."

According to SPTIA, the Pipeline Project is being funded by unidentified third party sources using inexpensive local labor. It was further reported that an anticipated "7 to 8 trees" will be removed for a span of approximately 365 feet of pipeline construction. This seems very unlikely given the heavily forested area at issue.

The location of the Pipeline Project is shown in the following aerial view image:

Source: Google maps

The project map from the Bureau of Reclamation's Notice of Award shows the split at which the DID pipeline runs due north, with the SPTIA ditch flowing easterly, identified with a dashed red line as "Sequim Prairie Phase 1":



Source: BOR Notice of Award for Agreement No. R22AP00608-00, p. 6 of 56.

As shown in both images, the ditch runs through a heavily forested wildlife corridor. Areas of this wildlife corridor are under legal protection as a refuge for bald eagle habitat. *See, Landowner Public Comment for Cultural Resource Survey*, U.S. Department of Interior Assistance Agreement No. R22AP00608-00, CFDA No. 15.507 WaterSMART, Grantee: Clallam Conservation District dated January 9, 2024, enclosed; *see also, https://jennies-meadow.com/history.*

The protections were incorporated into the plat map for the Jennie's Meadow development pursuant to the "Priest Pastures Bald Eagle Nest Territory (#1258) Site Management Plan". *See*, Phase A Jennie's Meadow Development 2006 Plat Map, Sheet 10, Items 3E, 3N ("Plat Map").

Tracts J and K (the "Core Protection Zone & Wildlife Buffer/Open Space") of the Jennie's Meadow development Plat Map are restricted by CC&R to use only for wildlife habitat and open space. Plat Map, Sheet 11, CC&R 6C. Per the Plat Map, no trees shall be removed within the core protection zone unless a hazard tree has been identified.

I have consistently attended CCD's monthly board meetings and have heard no discussion of the "emergency" Pipeline Project. It would appear that the CCD has withheld this information from the public and local agencies.

As a result, by close of business on **October 22, 2025**, please confirm the following, in writing:

1. Whether the CCD has in its possession an issued FONSI determination for the Pipeline Project;

2. Whether the CCD has obtained approval from the U.S. Bureau of Reclamation to break ground on the Pipeline Project;

3. Whether the CCD intends to conduct a Cultural Resource Survey for the Pipeline Project. Enclosed is a copy of prior public comment for the Pipeline Project dated January 9, 2024. To date, I have received no response to this public comment.

4. Whether the CCD intends to seek a permit from the City of Sequim or the Clallam County Department of Community Development for any aspect of the Pipeline Project;

5. Whether the CCD intends to comply with the Growth Management Act, Chapter 36.70a RCW as it pertains to critical areas protection for the Pipeline Project;

6. Whether the CCD intends to retain an arborist to study the anticipated impact of the trenching for the Pipeline Project;

7. Whether the CCD agrees to be held liable for the (likely) damage to and loss of additional trees and associated costs resulting from the trenching activity for the Pipeline Project

(*see, Jefferson Utility Settles Dispute, PUD to pay $62,500 to property owner*, Peninsula Daily News, September 26, 2025, copy enclosed);

8. The intended funding source(s) for the Pipeline Project;

9. The intended engineering firm to be retained for the Pipeline Project;

10. The intended local labor contractor(s) for the Pipeline Project;

11. Whether CCD intends to obtain site owner approval in the form of a recorded pipeline easement executed by the owner of the subject property.

There does not appear to be any purported "emergency" basis for the Pipeline Project. According to the SPTIA board, repairs for a 'blow out' in 2025 in the Jennie's Meadow Development vicinity were completed prior to the end of the 2025 irrigation season.

Our property is located downstream of the Jennie's Meadow development. The ditch was turned back on after the repairs were completed. On October 14, 2025, the SPTIA board authorized a $500.00 payment for the labor for the completed repair work payable to CCD Supervisor Smith's company. By all appearances, there is no "emergency". To the contrary, it appears that CCD is attempting to engage in an unauthorized Pipeline Project as an improper end-run to required permitting and approvals.

I look forward to your prompt response.

Thank you,

Virginia P. Shogren

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382
360-461-5551
vshogren@gmail.com

Encls.

Landowner Public Comment for Cultural Resource Survey, U.S. Department of Interior Assistance Agreement No. R22AP00608-00, CFDA No. 15.507 WaterSMART, Grantee: Clallam Conservation District dated January 9, 2024 (without enclosures)

Jefferson Utility Settles Dispute, PUD to pay $62,500 to property owner, Peninsula Daily News, September 26, 2025

Notice of Award, U.S. Department of Interior Assistance Agreement No. R22AP00608-00 CFDA No. 15.507 WaterSMART, Grantee: Clallam Conservation District, July 12, 2023

cc: Irene Hoiby, U.S. Bureau of Reclammation, ihoiby@usbr.gov
Sean Kimbrel, U.S. Bureau of Reclammation, skimbrel@usbr.gov
Jean Fike, jfike@scc.wa.gov
John Culp, jculp@scc.wa.gov
Bruce Emery, bruce.emery@clallamcountywa.gov
Loni Gores, loni.gores@clallamcountywa.gov
Mark Ozias, mark.ozias@clallamcountywa.gov
Mike French, mike.french@clallamcountywa.gov
Randy Johnson, randy.johnson@clallamcountywa.gov
Dee Boughton, dee.boughton@clallamcountywa.gov
Deborah Nelson-Gross, knelson-gross@sequimwa.gov
Paul Bucich, pbucich@sequimwa.gov
Julie Vig, secretary.spt@gmail.com
Shelly Ament, Shelly.Ament@dfw.wa.gov
Danielle Zitomer, Danielle.Zitomer@dfw.wa.gov
Jon Tyson, Jennies Meadows HOA, dmha@olypen.com
Hansi Hals, hhals@jamestowntribe.org
Shawn Hines, shines@jamestowntribe.org
Alex Scagliotti, ascagliotti@jamestowntribe.org
Neil Harrington, nharrington@jamestowntribe.org

50-C

Clallam Conservation District
228 W. First Street, Suite H
Port Angeles, WA 98362

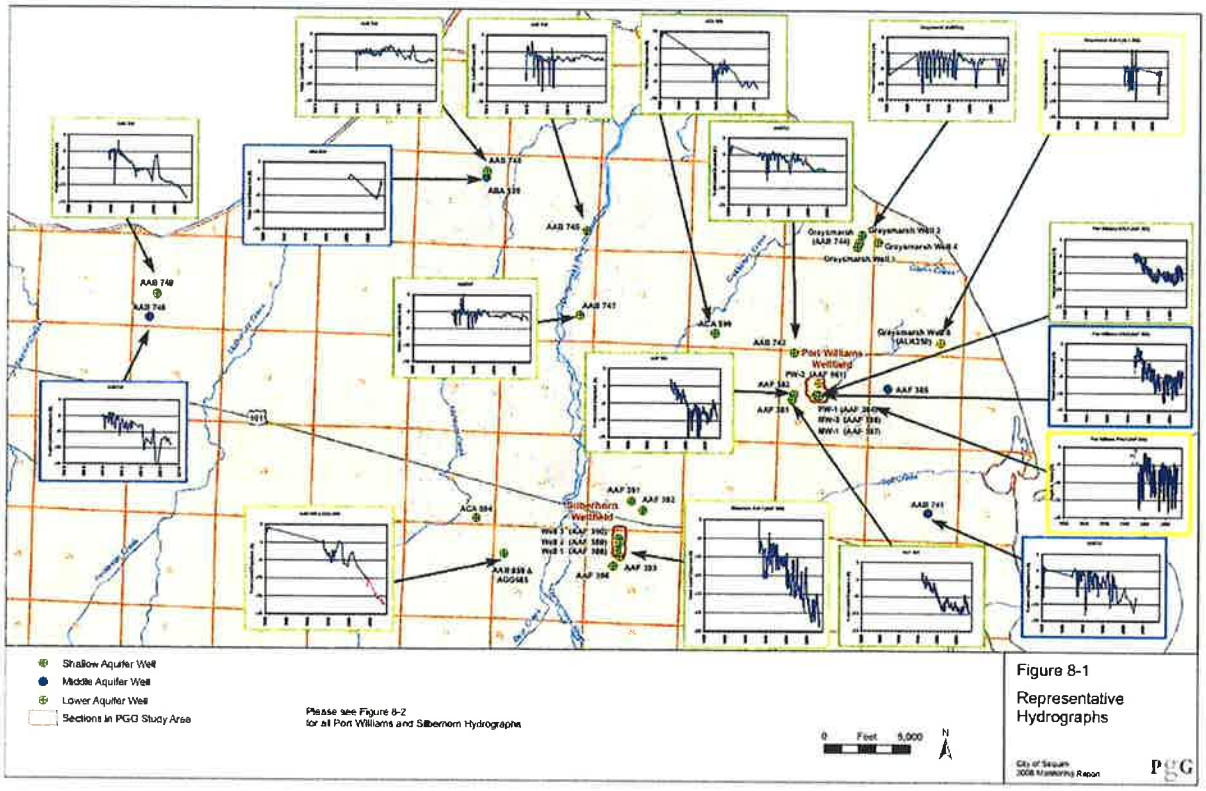
January 10, 2025
Via email to:
kim.williams@clallamcd.org
info@clallamcd.org
swoolson@csdlaw.com

PUBLIC COMMENT FOR CCD BOARD MEETING JANUARY 14, 2025

Dear Clallam Conservation District,

Please accept this letter as public comment for the CCD Board Meeting scheduled for January 14, 2025 and please include this letter and enclosure with the minutes for the meeting on January 14, 2025. This comment follows up on my monthly written and oral comment submitted from July 2023 to and including December 2024 Board meetings relating to our on-going concerns regarding the defunct SPTIA Irrigation Efficiencies and Improvement Project ("CCD/SPTIA Project").

On December 10, 2024, a retired hydrologist for the City of Sequim was a featured speaker at a Water Conservation Forum hosted by the WSU Extension. The hydrologist stated that the ditches impact our aquifer levels by "dozens of feet". As part of her presentation, the hydrologist showed a slide of graphs depicting a fall-off of local aquifer levels over time. The monitoring project followed the commencement of the installation of miles of pipelines that replaced open ditches throughout the Sequim and Agnew regions.



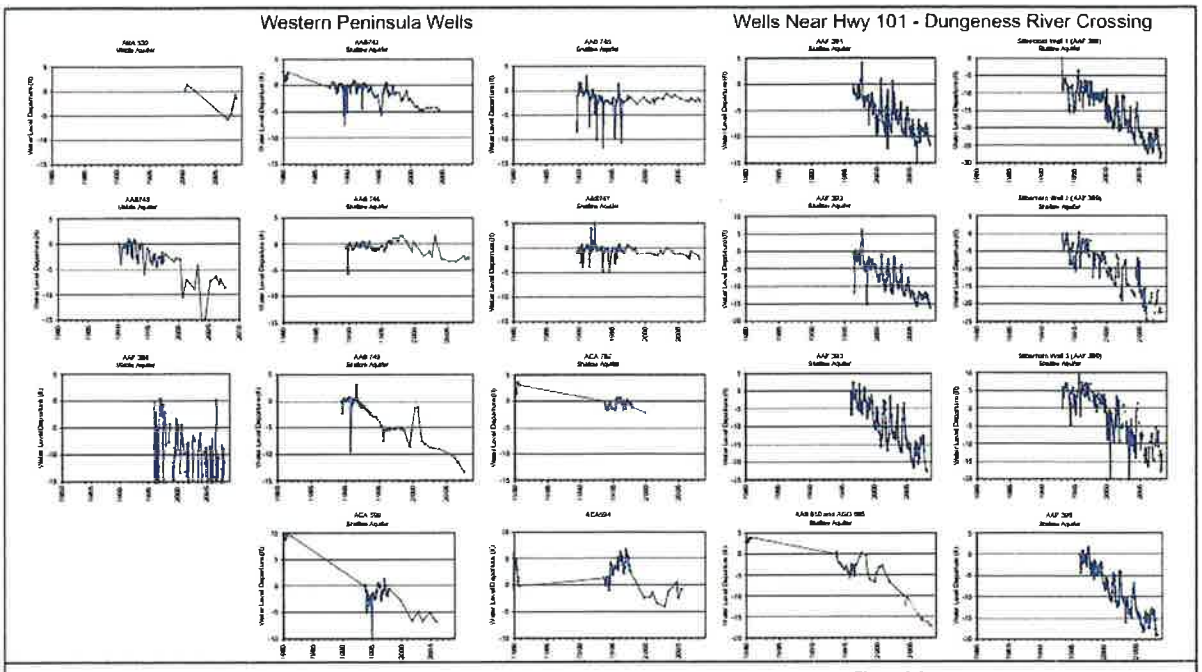


Figure 8-2a
Groundwater Level Trends

City of Sequim
2008 Monitoring Report

The above images of representative hydrographs and groundwater level trends were obtained from the City of Sequim's 2008 Hydrologic Monitoring Report prepared by Pacific Groundwater Group dated December 2009 (enclosed).

The monitoring apparently ended in 2008, as the hydrologist jokingly asked at the December meeting whether anyone would be willing to continue with it. This suggests that no additional monitoring may have been done.

If the ditches have significantly positively impacted aquifer levels over time, it logically follows that the destruction of additional ditches would have a *negative* significant adverse impact on aquifer levels over time. This statement does not take into account the additional *significant* adverse impacts to the upland habitat and dependent wildlife populations caused by pipeline development.

The CCD has been on documented actual notice of the significant adverse impacts of the CCD/SPTIA Project at least as early as July 10, 2023. The enclosed study suggests the CCD's knowledge of the negative impacts of the pipelines as early as 2008. The public (yet again) requests that the CCD formally terminate said project and notify the public accordingly.

Thank you,

Virginia P. Shogren

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382

Encl.

PACIFIC groundwater GROUP

CITY OF SEQUIM
2008 HYDROLOGIC MONITORING REPORT

DECEMBER 2009

CITY OF SEQUIIM
2008 HYDROGEOLOGIC MONITORING REPORT

Prepared for:

City of Sequim
Department of Public Works
152 W. Cedar St.
Sequim, Washington 98382

Prepared by:

Pacific Groundwater Group
2377 Eastlake Avenue East, Suite 200
Seattle, Washington 98102
206.329.0141
www.pgwg.com

December 2009
JZ0803
2008SequimMonitoringStudy-final.doc

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS 2

3.0 HYDROLOGIC SYSTEM 7

3.1 Surface Water Hydrology 7
3.2 Groundwater Hydrology 7

4.0 CLIMATE TRENDS 10

4.1 Data sources 10
4.2 Precipitation 11
4.2.1 Rain 11
4.2.2 Snow 11
4.3 Temperature 12
4.4 Climate Change Predictions 12
4.4.1 Predicted Temperature Increases 12
4.4.2 Predicted Changes in Precipitation and Snowpack 13
4.4.3 Sea Level Rise 13

5.0 STREAMFLOW TRENDS 14

5.1 Data Sources 14
5.2 Dungeness RIVER 14
5.2.1 Dungeness River Flow Regime 14
5.2.2 Changes in Dungeness River Flow 14
5.2.3 Future Dungeness River Flows (Climate Predictions) 15
5.3 Small Streams on the Sequim-Dungeness Peninsula 15

6.0 WATER USE TRENDS 17

6.1 Data Sources 17
6.2 Groundwater Use 17
6.2.1 Public Water Systems 18
6.2.2 Domestic Well Withdrawals 21
6.2.3 Non-Residential Water Uses 22
6.3 Consumptive Water Use 22
6.4 Irrigation Trends 24

7.0 RECHARGE TRENDS 26

7.1 Precipitation Recharge 26
7.2 Irrigation Recharge 28
7.3 Impacts of Climate Change 29

8.0 GROUNDWATER LEVEL TRENDS 30

8.1 Data Sources and Monitoring Practices 30
8.2 Water Level Trends 31
8.2.1 Shallow Aquifer 32
8.2.2 Middle Aquifer 32
8.2.3 Lower Aquifer 33
8.2.4 City of Sequim Wellfields 33
8.3 Interpretation of Water Level Trends 35
8.3.1 Relative Changes in Key Hydrologic Factors 35
8.3.2 Interpretation of Trends by Area 38

8.3.3 Factors Influencing Future Hydrologic Changes 43

9.0 WATER QUALITY **45**

9.1 DATA SOURCES 45
9.2 GROUNDWATER 45
9.2.1 Nitrate 46
9.2.2 Conductivity 46
9.2.3 MCL Exceedances 47
9.3 GROUNDWATER AGE DATING 48
9.4 SURFACE WATER 49
9.4.1 Fecal Coliform 49
9.4.2 Nitrate 50
9.4.3 Temperature 50
9.4.4 Dissolved Oxygen 50
9.4.5 Conductivity 51
9.4.6 Turbidity and Fine Sediment 51

10.0 RECOMMENDATIONS **52**

11.0 REFERENCES **54**

TABLES

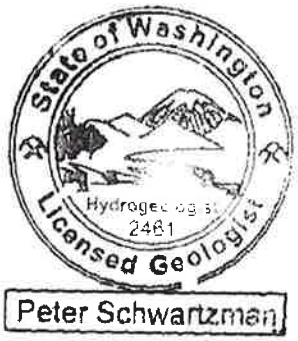
Table 6-1	Estimated Group A Water System Withdrawals
Table 6-2	Water Use Assumptions
Table 8-1	Monitoring Well Summary
Table 9-1	Summary of Surface Water Quality Evaluations

FIGURES

Figure 1-1	Study Area Map
Figure 1-2	History of Irrigation Ditch Piping
Figure 3-1	Conceptual Diagram of Groundwater Flow System
Figure 4-1	Climate Gages and Precipitation Distribution
Figure 4-2	Annual and Monthly Precipitation at Sequim
Figure 4-3	Trends in Sequim Precipitation and Dungeness Watershed Snowpack
Figure 4-4	Sequim Annual Temperature Trends
Figure 5-1	Dungeness River Streamflow Trends and Irrigation Withdrawals
Figure 5-2	Historic Average Irrigation-Season Diversions from Dungeness River
Figure 6-1	City of Sequim Average Annual Pumping
Figure 6-2	Clallam County PUD Annual Pumping
Figure 6-3	Counts of Study-Area Wells Over Time
Figure 6-4	Total Study-Area Wells Per Section By Decade
Figure 6-5	Consumptive Water Use by Section
Figure 7-1	Estimated Annual Precipitation Recharge Over Time
Figure 7-2	Irrigation Recharge and Model Cells Containing Piped Ditches
Figure 7-3	Estimated Monthly Recharge with Increased Temperature from Climate Change
Figure 8-1	Representative Hydrographs
Figure 8-2a,b	Groundwater Level Trends
Figure 8-3	Changes in Water Levels
Figure 8-4	Water Levels and Pumping at the Port Williams Wellfield
Figure 8-5	Water Levels and Pumping at the Silberhorn Wellfield
Figure 8-6	Water Level Trends in Wells Surrounding the Port Williams Wellfield
Figure 8-7	Hydrologic Trends Near the Highway 101 - Dungeness River Crossing
Figure 9-1	Average Nitrate Concentrations 1980, 1996, and 2007

SIGNATURE

This report, and Pacific Groundwater Group's work contributing to this report, were reviewed by the undersigned and approved for release.



Peter Schwartzman
Associate Hydrogeologist
Washington State Hydrogeologist No. 2461

Glen Wallace, Ph.D.
Geologist
Washington State Geologist No. 2664

1.0 INTRODUCTION

The City of Sequim is located on the Sequim-Dungeness Peninsula, which extends off the Olympic Peninsula in Clallam County, Washington (**Figure 1-1**). The City obtains its drinking water from three groundwater sources located east of the Dungeness River and generates Class A reclaimed water from its wastewater treatment plant. Some of the reclaimed water is used for irrigation of City property and augmentation of Bell Creek baseflow, and the City is exploring opportunities for expanding reclaimed water re-use (i.e. "source replacement") and infiltrating portions of the reclaimed water to recharge the groundwater flow system and augment stream baseflows.

The City actively participates in water-resource management on the Sequim-Dungeness Peninsula, and has established a monitoring program designed to document pumping withdrawals, groundwater level trends, and climate trends. Data are shared with interested parties and various governmental agencies. The monitoring program adds to the growing body of hydrologic data and supports evaluation of how observed hydrologic changes relate to changes in groundwater pumping and septic densities (i.e. population-based changes), irrigation practices, and climatic variation. The monitoring is also designed to provide "early warnings" of hydrologic trends of potential concern to water-resource stakeholders.

The scope-of-work for this study was developed to provide a holistic understanding of hydrologic trends and causative factors on the Sequim-Dungeness Peninsula. This report incorporates monitoring data collected by the City and other agencies/organizations over a study area that extends from Siebert Creek (west) to Sequim Bay (east), and from the Olympic Mountain foothills (south) to the Strait of Juan de Fuca (north) (**Figure 1-1**). The City previously sponsored a similar evaluation and produced a report titled, "City of Sequim 2001 Hydrologic Monitoring Report" (PGG, 2002). The report included analysis of groundwater use, climatic trends, irrigation trends, groundwater level trends, and water quality in both City drinking water sources and Bell Creek. At the City's request, this current report updates the understanding of the Sequim hydrologic system with data collected through the end of 2007, and includes a more detailed assessment of changes in recharge due to piping of irrigation ditches along with assessment of trends in snowpack and streamflows, review of water-quality information on local streams and rivers, and the results of preliminary age-dating of groundwater from several of the City's water-supply sources.

Many people at local and regional agencies have provided help in compiling the data for this report. In particular, Anne Soule with Clallam County, John Pearch with the Department of Ecology, Oscar Segura with the Washington Department of Health, and others (e.g. Graysmarsh, City of Sequim) have been instrumental in compiling data for this report.

This work was performed, our findings obtained, and this report prepared, using generally accepted hydrogeologic practices used at this time and in this vicinity, for exclusive application to this study, and for the exclusive use of the City of Sequim. This is in lieu of other warranties, express or implied.

2.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

The following paragraphs summarize the findings of sections 3 through 9 of this report:

1. The surface-water system within the study area includes the Dungeness River and various small, independent streams. Whereas the Dungeness River derives its flow from rainfall and snow-melt in the Olympic Mountains, most small streams derive their flow from groundwater recharge, lowland runoff and (sometimes) irrigation conveyance.

2. The groundwater flow system is regionally comprised of a stratified system of aquifers and aquitards. From top to bottom, these include the: shallow aquifer, upper confining bed, middle aquifer, lower confining bed, lower aquifer, deeper undifferentiated sediments, and bedrock. On a local scale, these broad regional units have variable occurrence, hydraulic properties, and inter-unit relationships.

3. Precipitation trends at the Sequim weather station show no long-term trends over the study period (approximately 1980 through 2007); however, above-average rainfall years occurred between 1996 and 1999 and below-average rainfall years occurred between 1985 and 1989 and between 2000 and 2005. Snowpack at monitoring stations in the upper Dungeness Watershed is estimated to have decreased by 64 to 71 percent between 1960 and 2006 due to warmer temperatures. Temperatures at the Sequim weather gage have increased over time, similar to trends observed throughout the Puget Sound (e.g. 1.6 °F between 1950 and 2000).

4. Climate change in the Pacific Northwest has been estimated with a variety of global climate models (GCM's). The GCM's predict continued increase in average annual temperature of 1.6 to 5.2 °F between present and 2040. Rainfall is predicted to exhibit small changes (±12 percent), and GCM's are inconclusive as to increase or reduction. Snowpack is expected to continue its reduction due to warmer winters. Predicted changes in sea level relative to the land surface (which is rising due to geologic forces) range from a relative decline of 5 inches to a relative rise of 14 inches.

5. The Dungeness River exhibits two annual peaks corresponding to the winter rainy season and the "spring freshet" (melting of snowpack). Due to increased temperatures and reduced snowpack, the freshet has moved earlier in the year and exhibits reduced flows, whereas winter flows have increased over time. These trends are expected to continue under GCM projections of climate change. A review of baseflow trends for the small independent streams showed declines on McDonald Creek, Matriotti Creek, Cassalery Creek and Bell Creek which could be attributed to changes in irrigation practices, streambed modifications, or other land-use changes and climatic variations. Data for some streams were too sparse to assess baseflow trends.

6. PGG evaluated groundwater and surface-water use within the study area. Groundwater is used to supply public water systems (Group A and Group B), domestic wells, and irrigation for agriculture and golf courses. Minor amounts are associated with other uses, such as dairy and industrial. Surface water is predominantly associated with irrigation via diversions from the Dungeness River by the Sequim-Dungeness Valley Agricultural Water Users Association (SDWUA).

7. Group A water systems serving 8,458 reported hookups were estimated to withdraw an annual average of about 2.7 million gallons per day (mgd) of groundwater in 2007, of which 1.7 mgd was estimated to be consumptive use (the non-consumptive remainder was estimated to return to the groundwater flow system via septic recharge or irrigation inefficiencies). For the purpose of comparison with other components of the water budget, these estimates translate to 3,020 and 1,910 acre-feet per

year (af/yr). Groundwater withdrawals by the City of Sequim represent 35 percent of all Group A withdrawals. About 82 percent of the withdrawals occur east of the Dungeness River. About 53 percent of Group A withdrawals are estimated from the shallow aquifer, 14 percent from the middle aquifer, and 31 percent from the lower aquifer. The City's Silberhorn Wellfield and their infiltration gallery draw water from the shallow aquifer, whereas their Port Williams Wellfield draws water from the lower aquifer. Data are unavailable to evaluate how Group A withdrawals have changed over time; however, City of Sequim withdrawals have increased from about 0.4 mgd (450 af/yr) in the late 1970's to nearly 1 mgd (1,120 af/yr) after 2005. Pumping from the Port Williams Wellfield has replaced a significant portion of historic pumping from the infiltration gallery and has accommodated a noteworthy share of new water demand associated with population growth.

8. Group B water systems serving 687 reported hookups withdrew an estimated 0.38 mgd (430 af/yr) in 2007, of which 0.21 mgd (240 af/yr) was estimated to be consumptive use. Data are unavailable to evaluate the change in Group B withdrawals over time.

9. Approximately 5,253 domestic wells withdrew an estimated 2.9 mgd (3,250 af/yr) in 2007, of which 1.5 mgd (1,680 af/yr) was estimated to be consumptive use. The number of domestic wells has double between 1993 and 2007, and has increased by 38 percent since PGG's prior "2001 Monitoring Study". Roughly equal numbers of domestic wells are located east and west of the Dungeness River. About 73 to 82 percent of the domestic wells are believed completed in the shallow aquifer, with most of the remainder completed in the middle aquifer.

10. Relative to Group A withdrawals, domestic wells have a slightly lower ratio of consumptive to total use because the consumptive use ratio for Group A systems is skewed by City of Sequim withdrawals. Most of Sequim's reclaimed water is currently discharged to marine water during winter months. About 12 percent is used for irrigation during summer months and 10 percent is used for Bell Creek streamflow augmentation. In the future, reclaimed water use for irrigation (and other upland uses) may increase, and a portion of the City's reclaimed water may be returned to the groundwater flow system for streamflow augmentation.

11. Irrigation diversions from the Dungeness River predominantly occur between April 15 and September 15. Lining of ditches, changes in cropping patterns, and voluntary reductions in use have resulted in a 50 percent reduction in irrigation diversions between the late 1970s and 1999, with respective irrigation-season averages of 110 cfs (33,600 af/yr) and 55 cfs (16,800 af/yr). About 200 miles of irrigation ditches have been mapped, of which about 60 miles have been piped and 13 miles abandoned.

12. The groundwater flow system is recharged from precipitation, leakage from unlined irrigation ditches, unconsumed irrigation water from field applications, seepage losses from "losing" streams (e.g. Dungeness River), infiltration of septic effluent and treated wastewater, and underground "subflow" from higher-elevation areas to the south. Changes in recharge can have a significant affect on groundwater levels.

13. The USGS estimated that recharge from precipitation incident on the land surface averages about 4.8 in/yr over their primary study area (similar to the study area used in this report), amounting to an annualized rate of 26.2 cfs (19,000 af/yr). Variations in precipitation recharge trend with, and are larger than, variations in precipitation itself. High recharge years occurred between 1995 and 1999 followed by low recharge years between 2000 and 2005. Recharge estimated with Sequim climatic data (precipitation and temperature) over the 28-year study period do not suggest a rising or falling tend; however, year-to-year variability in precipitation may obscure the effects of rising temperature. In consi-

dering projected temperature changes between current conditions and 2040, PGG estimated that recharge could be reduced on the order of about 1 in/yr, largely due to increases in evapotranspiration.

14. Land-use changes (e.g. construction of impervious surfaces and compaction of soils) can affect patterns of precipitation recharge; however, the relationship between land-use changes, soil properties, and runoff management (e.g. infiltration vs. surface routing) affect whether changes result in reductions or increases in local recharge. Analyzing how actual combinations of these factors affect precipitation recharge is complex and beyond the scope of this report. However, given that relatively large portions of the study area are occupied by permeable soils, it should not be assumed that urban development has led to a reduction in recharge quantity.

15. The USGS estimates that groundwater subflow into their primary study area from the Olympic Mountain foothills to the south is on the order of 14.5 cfs (10,500 af/yr). The subflow is conveyed within bedrock and (probably to a larger extent) within glacial drift deposits which overlie the bedrock.

16. The USGS estimates that recharge from leaky irrigation ditches averages 23.7 cfs annually (17,200 af/yr) and recharge from unconsumed field applications averages 2.1 cfs annually (1,500 af/yr). PGG estimates that piping of ditches has led to a 9.5 cfs (6,900 af/yr or roughly 36-percent) reduction in irrigation recharge.

17. Groundwater levels in the shallow aquifer have declined at most locations. The greatest declines occurred over several square miles near where Highway 101 crosses the Dungeness River. In this area, groundwater levels declined about 3 to 9 feet from the late 1970s through the mid 1990s and about 8 to 17 feet from 1997 to 2007. Moderate declines were also noted between upper Gierin and Cassalery creeks (1 to 3 feet from the late 1970s through the mid 1990s and from 4.4 to 9 feet between 1997 and 2007) and in the Agnew vicinity (8 feet of decline between 1997 and 2007). The geographic extent of areas with relatively high and moderate rates of groundwater level decline is difficult to delineate due to sparse monitoring locations. Other monitored wells show smaller declines, typically on the order of several feet over the latter 10-year period.

18. Current groundwater level monitoring in the middle aquifer is limited to only 5 wells. Moderate declines between 1997 and 2007 occurred in two areas: 7.7 to 9.7 feet of decline was noted in three wells near Gierin and Bell Creeks (including at the City's Port Williams Wellfield); and 7 feet of decline is noted in a well near Agnew. The geographic extent of these declines could not be accurately delineated due to the sparsity of monitoring locations. The fifth well, near Matriotti Creek, showed 2.2 feet of decline. A sixth well, located near the Highway 101/ Dungeness River crossing, showed 9 feet of decline between the late 1970s and the mid 1990s; however, some question exists as to whether this well is completed in the middle or shallow aquifer.

19. Groundwater level monitoring data are available for only 2 lower-aquifer wells between 1997 and 2007. The data show 9.8 feet of decline at the Port Williams Wellfield, and only 1.8 feet of decline about 1.8 miles to the east-northeast at Graysmarsh.

20. The City monitors onsite wells and nearby domestic wells at its Port Williams and Silberhorn wellfields. At Port Williams, the City monitors water levels in the shallow, middle and lower aquifers along with daily wellfield withdrawals. At Port Williams, groundwater levels in all aquifers declined from 1996 through about 2001 to 2003, and have since remained relatively stable, actually exhibiting a minor rise through 2008. Declines have averaged about 5.5 feet in the shallow aquifer, 9.7 feet in the middle aquifer, and 9.8 feet in the lower aquifer. The observed declines also exhibited year-to-year variation, so that for any particular year, the dry-season or wet-season decline might be several

feet larger or smaller than the average. Seasonal water-level variations are most prominent in the lower (pumped) aquifer, with similar (but muted) variations in the middle aquifer and negligible variation in the shallow aquifer.

21. At its Silberhorn Wellfield, the City monitors groundwater levels in two production wells, one monitoring well, and several nearby domestic wells. The Silberhorn wells completed in the shallow aquifer below a confining unit of glacial till (hardpan) which appears to occur in domestic wells throughout the immediate area. Groundwater levels in Silberhorn wells were stable from 1993 to 1997, declined from 1998 to 2005, and have exhibited a reduced rate of decline from 2006 to 2008. Total decline over this monitoring period is on the order of 15 to 20 feet. Similar trends are exhibited in wells as much as a mile away and on either side of the Dungeness River, as reported above for shallow-aquifer wells in "the area where Highway 101 crosses the Dungeness River". The observed water-level declines do not correlate with annual or seasonal variations in Silberhorn pumping, and annual high water levels are commonly noted during summer peak pumping. Seasonal water-level variations appear to correlate most closely to irrigation diversions; however, not in all years.

22. Groundwater level declines at the Port Williams Wellfield appear to have stabilized to the current level of pumping, as is expected when groundwater withdrawals do not exceed flow through the groundwater system. While a hydraulic connection exists between the lower and middle aquifers, available data are somewhat contradictory regarding the degree and mechanism of connection. Additional data collection, aquifer testing, and/or hydrogeologic characterization may be needed to better understand this connection. Heterogeneity may also be affecting the distribution of drawdown in the lower aquifer. The shallow aquifer appears to have less hydraulic connection to underlying aquifers, and is likely more influenced by recharge than pumping. Trends in wells more distant from the wellfield suggest that influences on the shallow and middle aquifers extend beyond purely Port Williams pumping.

23. Groundwater level declines near the Highway 101 - Dungeness River crossing are on the order of approximately 25 feet over 30 years, and have not stabilized. The declines do not correlate well with long-term patterns in Silberhorn pumping, although pumping from other entities is of similar magnitude and historic patterns are not fully documented. Seasonal water-level variations show some correlation to the timing of irrigation diversions, and respond opposite than typically expected to seasonal pumping patterns. The observed water-level declines may be associated with both pumping and irrigation trends. Given the complexity of the local hydrogeology, additional hydrogeologic characterization, continued (or additional) monitoring of groundwater levels and pumping, and consideration of temporal and spatial patterns in ditch leakage would need to be interpreted to better understand the cause of declines. At minimum, continued monitoring of water-levels and pumping, and documentation of further ditch lining, is strongly recommended.

24. Most other areas with ongoing monitoring exhibited only small to moderate groundwater level decline, with several exceptions: an isolated 6.3-foot decline occurred in the shallow aquifer just east of Cassalery Creek, an isolated 7.7-foot decline occurred in the middle aquifer just south of Bell Creek, and declines of 8.4 and 7 feet in the shallow and middle aquifers (respectively) occurred in the Agnew area. Monitoring is too sparse to determine whether the declines are localized or an expression of more wide spread declines.

25. Hydrologic factors most likely to affect future water-level declines include: reductions in irrigation recharge due to further ditch piping, increases in groundwater withdrawals, and reductions in precipitation recharge due to warming climate and increased evapotranspiration. Water-level responses to

these factors will depend on the relative magnitude of the change, the spatial distribution of the change, and local hydrogeology.

26. Groundwater quality was evaluated based on data collected from public water systems and from specific studies performed by Clallam County and the USGS. Groundwater quality is generally good, although elevated nitrates are noted in several areas. The highest nitrate concentrations and most prominent increases over time occur downgradient (north) of Sequim and in the vicinities of Agnew and Carlsborg. Review of electrical conductivity data shows low incidence of seawater intrusion, with a single intruded well noted near west Sequim Bay. Along with isolated exceedances of maximum contaminant levels (MCL's) for nitrate and conductivity, exceedances were noted for iron and manganese, which are secondary constituents included for aesthetic rather than health concerns.

27. The City of Sequim had samples from its Port Williams and Silberhorn wellfields analyzed for tritium and carbon-14 in order to estimate the age of groundwater reaching these wells. The data suggest that both sources represent a mixture of "modern" (post WWII) and "older" (several thousand years old) water. Further sampling is recommended to confirm the findings, particularly from the Port Williams Wellfield where the lower aquifer was expected to be more isolated from younger sources of recharge (a single isotope analysis is not considered conclusive). Consideration of potential effects of subsurface chemical reactions and analysis for other indicators of "modern" water may also improve our understanding of groundwater age and the timing and movement of groundwater from areas of recharge to areas of discharge.

28. For study-area surface waters, elevated fecal coliform bacterial concentrations have been primary water-quality issues due to the potential for human health impacts and consequent restrictions on shellfish harvesting. A number of parameters including water temperature, nitrate, and dissolved oxygen impair surface water quality due to their influence on stream ecosystems and aquatic life including salmon. Fine sediment (turbidity) is noted as an issue on a number of streams, although study-area streams are not formally listed as impaired for turbidity by the State.

29. Recommendations, presented in Section 10 of this report, include: "filling in the gaps" in areas of sparse or no groundwater level monitoring, increased monitoring in the middle and lower aquifers, additional monitoring in areas of growing groundwater withdrawals or newly piped irrigation ditches, removal of duplicate monitoring locations from the City's water-level monitoring network, a focused hydrogeologic study near the Highway 101 – Dungeness River crossing area (where persistent water-level declines are largest), additional age dating and supplemental analyses to better understand hydraulic connections between shallow and deeper portions of the groundwater flow system, continued groundwater nitrate monitoring, use of monitoring data to further calibrate an existing groundwater flow model of the Sequim-Dungeness Peninsula, and use of monitoring to evaluate needs, opportunities and the performance of new and innovative water-resource management strategies.

3.0 HYDROLOGIC SYSTEM

3.1 SURFACE WATER HYDROLOGY

The Dungeness River is the largest river on the Sequim-Dungeness Peninsula, and supplies water to a variety of irrigation districts through ditch diversions. The river emanates from the Olympic Mountains south of the peninsula, and has a drainage area of about 200 square miles. Streamflows are highest during late spring and early summer due to snowmelt in the upper watershed, and during winter months due to sporadic rainfall events. The lowest flows occur in September and October. Irrigation diversions occur year-round, but are highest during the growing season from mid-April to mid-September. Conservation efforts have supported significant reduction of irrigation diversions without significant loss of irrigated acreage.

East of the Dungeness River, most of the streams are relatively small. Streams such as Bell Creek, Gierin Creek and Cassalery Creek have lowland headwaters on the Sequim-Dungeness Peninsula. In contrast, west of the Dungeness River, larger streams such as McDonald Creek and Siebert Creek have headwaters in the Olympic Mountains or their foothills. The smaller streams are predominantly supplied by groundwater discharge and irrigation tailwater, and have relatively constant flows throughout the year (Thomas et al., 1999). Flow regimes in the larger streams are dominated by snowmelt and rainfall runoff, with highest flows during winter and spring.

The hydrology of the Sequim-Dungeness Peninsula is significantly affected by the many irrigation canals, laterals and tailwater ditches that convey water diverted from the Dungeness River (shown on **Figure 1-2**). Historically, these conveyances were also used to route stormwater away from areas of higher development density. Local changes in the management of this irrigation system are discussed in Section 6.

3.2 GROUNDWATER HYDROLOGY

The regional hydrogeology of the Sequim-Dungeness Peninsula was recently characterized by the U.S. Geological Survey (Thomas et al., 1999). Much of the discussion in this section is summarized from this USGS study. The study describes a stratified system of geographically extensive aquifers and aquitards consisting of a "shallow aquifer" underlain by a fine-grained "upper confining bed", a confined "middle aquifer", a "lower confining bed", a "lower aquifer", and deeper undifferentiated sediments. Over most of the peninsula, all or some of these six hydrostratigraphic units overlie Tertiary bedrock of sedimentary and volcanic origin. The total thickness of unconsolidated sediments beneath the peninsula ranges from zero feet in the south (where bedrock is exposed on the land surface) to as much as 2,500 feet in the northeast. A conceptual hydrogeologic cross-section is presented on **Figure 3-1**. It should be noted the USGS characterization identified these hydrostratigraphic units from a regional perspective, and local variability and complexities are known to exist.

The shallow aquifer is composed of a variety of geologic materials, including: stream alluvium, glaciomarine drift, glacial outwash, ice contact deposits, and glacial till. The alluvium was deposited by the current Dungeness River along its current floodplain and by the ancestral Dungeness River as a floodplain terrace predominantly east of the existing river channel. The glacial and glaciomarine sediments are associated with the most recent continental glaciation (Vashon stade of the Frasier glaciation), which ended approximately 13,000 years ago. Given the range of geologic materials present, the texture of the shallow aquifer can vary from fine grained to coarse-grained (e.g. from clay and silt to sand and gravel), and can be highly heterogeneous (locally variable) thus potentially supporting multiple water-bearing zones. The thick-

ness of the shallow aquifer generally ranges from 50 to 200 feet, although larger and smaller thicknesses have been observed. The aquifer is generally unconfined but can exhibit local confinement where water-bearing zones occur beneath fine-grained sediments. Groundwater flow directions are generally north, trending to northeast to the east of the Dungeness River (Thomas et al, 1999).

The underlying "upper confining bed" is typically 30 to 110 feet thick, and is mainly composed of pre-Vashon silts and clays with locally discontinuous lenses of water bearing sand and gravel. Beneath the upper confining bed, the "middle aquifer" is typically about 10 to 70 feet thick, and contains pre-Vashon glacial outwash deposits of sand and gravel and coarse-grained interglacial deposits. Although fewer wells are completed in the middle aquifer than the shallow aquifer, wells in the middle aquifer potentially offer higher and more reliable yields due to greater available drawdown in the deeper wells. Larger water systems tend to prefer wells completed in the middle or lower aquifer to wells completed in the shallow aquifer. Groundwater flow directions tend to "fan out" radially beneath the Sequim-Dungeness Peninsula, with northeast flow in the vicinity of Sequim (ibid). Groundwater in the middle aquifer is confined.

The middle aquifer is underlain by the "lower confining bed", composed of till and interbedded clay, silt and fine-grained sand with possible discontinuous lenses of water-bearing sand. Because few wells penetrate this confining unit, the USGS define a broad range for its thickness (10 to 300 feet) with a "typical" thickness of 100 feet. A thickness of about 70 feet is observed at the Port Williams Wellfield. The underlying "lower aquifer" is composed of sand with thin lenses of sand and gravel, silt and clay. Information is limited due to few well completions. The aquifer is present in the northern and eastern portions of the peninsula, and absent in the southern and western portions where bedrock occurs closer to the land surface. It's thickness is believed to range from 10 to 180 feet, with a typical value of about 90 feet. While few wells are completed in this aquifer, it is capable of producing significant amounts of water and serves major water users, including the City of Sequim at its Port Williams Wellfield. Groundwater flow directions in the lower aquifer are believed to be similar to those documented in the middle aquifer. Groundwater in the lower aquifer is confined.

The lower aquifer is underlain by "undifferentiated deposits", which reach thicknesses as great as 1000 feet in the northern peninsula but pinch out against bedrock in southern and southwestern portions of the peninsula. While productive aquifers may exist in the undifferentiated deposits, few well completions occur in this unit. A deep well at the Weyerhauser Seed Orchard (T30N/R4W-9) encountered a fairly transmissive aquifer below 800 feet depth (Robinson & Noble, 1974), although PGG's evaluation of the aquifer test data suggest limited aquifer recharge. In contrast, exploratory drilling at the Port Williams Wellfield to a depth of 852 feet did not encounter significant productive materials beneath the lower aquifer. The underlying bedrock is composed of tertiary sedimentary and volcanic rocks, and is an unreliable source of groundwater because it yields small quantities of water to wells.

The groundwater flow system is recharged at the surface from precipitation, irrigation applications to fields, septic system effluent, and seepage losses from unlined irrigation ditches, the Dungeness River and other streams. Additional recharge occurs via subsurface pathways near the foothills of the Olympic Mountains, where groundwater in glacial drift and underlying bedrock discharge into the unconsolidated aquifers described above. Recharge incident upon the land surface flows downward into the various aquifers and aquitards; and eventually discharges into marine waters, the lower reaches of various streams, portions of the Dungeness River, and to wells. Groundwater flow patterns have both horizontal and vertical components. Typically, flow within aquifers is predominantly horizontal whereas flow between aquifers (through aquitards) is predominantly vertical. Downward flow generally occurs in recharge areas, whereas upward flow occurs along discharge areas (e.g. near the coast and lower stream reaches). Vertical flow rates are relatively slow due to the low permeability aquitards between aquifers. Water levels meas-

ured at the Port Williams Wellfield indicate downward flow between the shallow, middle and lower aquifers.

4.0 CLIMATE TRENDS

Climate is a key factor affecting surface-water flows and groundwater recharge. Dungeness River flows are largely affected by precipitation in the Olympic Mountains, with snowmelt providing high flows during the spring freshet and sustained baseflow during the summer. Climate based variations in groundwater recharge are typically expressed as variations in groundwater levels, and can affect groundwater-dependent surface-water features such as local streams and wetlands. PGG reviewed climatic data over the study period (and during antecedent years) to support our analysis of groundwater level and streamflow trends.

4.1 DATA SOURCES

Climate data were obtained from online data repositories and other sources. Precipitation and temperature data for Sequim were obtained from the Western Regional Climate Center (WRCC, 2008). Snowpack data were obtained from the Natural Resources Conservation Service (NRCS, 2008). In addition, predictions of climate change were based on published reports for the Washington State and Puget Sound.

Long-term climatic monitoring on the Sequim-Dungeness Peninsula has been performed solely by the City of Sequim. Temperature and precipitation data for Sequim are based on a composite of data from two stations. The first Sequim weather station (station number 457538) was operational from June, 1916 through September, 1980. The station was replaced with a station at a nearby location (station number 457544) in October, 1980. Data from the two stations provide a combined 77-year record. However, because the two stations were not co-located there appears to be a slight discrepancy in temperature records before and after 1980, as discussed in Section 5.3. The shift in station location does not appear to have affected precipitation data.

Snowpack data have been measured on a regular basis since 1949 in the Olympic Mountains, and even longer at other stations in Washington State. Snowpack measurements provide baseline information of water storage for water resource planners. Long term snowpack monitoring data are available from two nearby locations in the Olympic Mountains: Hurricane Ridge (Station 23B03) and Deer Park (Station 23B04). These snow survey locations were originally visited at least once a year on April 1, typically the date with the peak snowpack, but are now more commonly visited several times a year. Hourly to daily data are available from the Dungeness Snotel Station (Station 23B16S; 4,010 ft elevation) from 1998 through 2008. Measurements at snow survey and Snotel stations are converted to snow water equivalent (SWE), the amount of water which would have fallen if precipitation had been rain instead of snow.

Several climate change studies have been conducted that are relevant to Washington State, ranging from analysis of geologic and climate observations to predictive global and local climate models (Mote, et al., 2008a; Mote, et al., 2008b; Miles, 2009). The Washington State Legislature commissioned a study of the impacts of climate change in Washington State (HB1303, 2007). This study included examination of climate models specific to Washington State, and potential impacts of climate change on the hydrology, environment and economy of the state. The study has resulted in two principal documents, an interim report (Miles, et al., 2007), and a final report (Miles, et al., 2009).

4.2 PRECIPITATION

4.2.1 Rain

The rain shadow of the Olympic Mountains has a strong influence on the amount and distribution of precipitation on the Sequim-Dungeness Peninsula. **Figure 4-1**, an isohyetal map of the study area, shows how higher precipitation in the southern study area (closer to the Olympic Mountains) transitions to lower precipitation in the northern study area (closer to the coast). This "rain shadow" effect causes the City of Sequim to have a relatively dry climate with only 15.9 inches of precipitation per year on average between 1980 and 2007 (**Figure 4-2**). Precipitation increases rapidly to the south to 50 inches a year in the Olympic Mountains, and also to the west where the Olympic Mountains produce less of a rain shadow (**Figure 4-1**).

Precipitation varies from year-to-year, and has ranged from 11.35 inches (1994) to 20.51 inches (1997) between 1980 and 2007 (**Figure 4-2**). No clear trend of increasing or decreasing precipitation was observed in the Sequim data over this time period, or when PGG considered a longer time period (1938 through 2007). Between 1980 and 2007, the most significant sustained period of above-average precipitation occurred from 1995 to 1999, and the most significant sustained periods of below-average precipitation occurred from 1985 to 1989 and from 2000 to 2005.

Precipitation varies from month to month with the majority of precipitation falling in November (2.7 inches), December (2.1 inches) and January (2.1 inches) (**Figure 4-2**). Summers are generally dry, with less than an inch of rain falling in a typical July, August or September.

4.2.2 Snow

Snowpack, measured as the snow water equivalent (SWE) has been recorded at an automated Snotel station in the upper portion of the Dungeness Watershed (Station 23B16S; 4,010 ft elevation) since 1998, and manually at Hurricane Ridge (23B03) and Deer Park (23BS04) two to three times a year since 1949. SWE is the amount of water stored in the snowpack expressed as inches of water. SWE does not account for losses due to melting and sublimation from the snowpack. Station locations are shown on **Figure 4-1** and long-term snowpack data are presented on **Figure 4-3**.

Records at the Hurricane Ridge and Deer Park snow survey locations show a long-term decline in SWE. April 1 snow pack measurements are estimated to have decreased 64 percent at Deer Park and 71 percent at Hurricane Ridge from 1950 to 2006 (Mote, et al., 2008). Annual precipitation at Sequim has changed little over the same time period, suggesting little change in total precipitation in the upper portions of the watershed, but that less of the precipitation is falling as snow. This trend is consistent with declining snowpack observations throughout Western Washington (Mote, et al, 2008), and affects seasonal streamflow in the Dungeness River (Section 5.3). Regionally declining snowpacks are mostly attributed to slightly warmer winters. Accordingly, the biggest changes in snowpack in Washington State have mostly occurred at lower elevations closer to the snow line.

Climate models indicate that the trend of decreasing snowpack storage is likely to continue with climate change, as discussed in Section 4.4.

4.3 TEMPERATURE

Figure 4-4 shows mean annual maximum, average and minimum temperatures for Sequim, Washington from 1916 through 2007. Sequim has a temperate climate with mild winters and cool summers. Seasonal temperature variations from 1980 to 2008 are summarized below (WRCC, 2008).

- Sequim averages an annual temperature of 57.7 degrees Fahrenheit (°F).
- Winter daily temperatures range between 31.2 °F and 47.1°F *(average low vs. average high)*.
- Spring daily temperatures range between 37.8 °F and 56.6 °F.
- Summer daily temperatures range between 48.9 °F and 68.7 °F.
- Fall daily temperatures range between 38.9 °F and 58.3 °F.

As discussed above, the Sequim station was moved in October 1980 which appears to have caused a change in the recorded temperature where post-1980 minimum- and average-temperatures biased about about 1 °C (1.8 °F) low relative to pre-1980 measurements (**Figure 4-4**). In contrast, a review of measurements from nearby Port Angeles showed no significant temperature shift between pre-1980 and post-1980 records.

Temperature plots show gradually increasing temperatures through the period of record (**Figure 4-4**). Average annual temperature at Sequim has increased by at least 1 °C (1.8 °F) between the start of observations in 1916 and 1980 (**Figure 4-4**). Correcting for the 1980 change in weather station location, the increasing trend appears to continue from 1980 through present.

The observed temperature increases are consistent with temperature changes observed throughout Puget Sound, which has increased approximately 1.3 °C (2.3 °F) between 1900 and 2000, 0.9 °C (1.6 °F) of which occurred after 1950 (Snover, et al, 2005).

4.4 CLIMATE CHANGE PREDICTIONS

Climate change is increasingly recognized as an influence on long term water budgets and water availability in Washington State (Miles, et al., 2009). Climate change includes variations in many factors including: mean annual and seasonal temperatures, total precipitation, amount of the precipitation falling as snow, and rising sea levels. While climate change is a global issue, the specific effects of climate change vary depending on location.

A number of global climate models (GCMs) have been developed to investigate potential climate change scenarios for the Pacific Northwest (Miles, et al., 2007, 2008). While there are some disagreements between the details of the models, long-term trends in precipitation, temperature, and sea level have been identified (Miles, et al., 2009). GCMs uniformly predict increasing temperatures for the coming decades, with a more pronounced effect at higher elevations than the regional average. The regional climate models also show that the effects of climate change will be felt differently throughout the state depending on the location.

4.4.1 Predicted Temperature Increases

GCMs predict warmer temperatures for the Puget Sound region, including the Sequim-Dungeness area. The predicted temperature trends are (Miles, et al, 2007):

- Mean annual temperatures are expected to increase by between 0.9 and 2.9 °C (1.6 and 5.2 °F) by 2040.
- Summer temperatures are expected to increase by between 0.9 and 4.4 °C (1.6 and 7.9 °F) by 2040.
- Winter temperatures are expected to increase by between 0.6 and 2.8 °C (1.1 and 5.0 °F) by 2040.

Both summer and winter temperature increases will influence the hydrology of the Sequim area, mostly by reducing water storage in the seasonal snowpack and increasing evapotranspiration (ET), particularly during the summer irrigation months. Increases in ET would reduce groundwater recharge rates (if precipitation does not also increase) and increase irrigation requirements. Section 7.3 provides calculations which demonstrate how increased temperatures would increase ET and thus reduce groundwater recharge.

4.4.2 Predicted Changes in Precipitation and Snowpack

GCM predictions of change in precipitation vary depending on the model, ranging from a predicted decrease of 11 percent and a predicted increase of 12 percent by 2040 (Miles, et al., 2009). The average GCM prediction is a slight annual increase of about 2 percent by 2040. Given the annual variability in precipitation (**Figure 4-3**), a 2 percent change in precipitation is not likely to be noticeable. However, GCMs consistently predict wetter falls and drier summers (Miles, et al. 2009; Salathe, et al., 2009).

Changes in snowpack are influenced by both changes in temperature and precipitation. GCMs predict decreased snowpack SWE in the Olympic Mountains as a result of the warmer winters. Statewide, the average spring SWE is predicted to decline by between 26- and 71-percent by 2060 (Salathe, et al.,2009). The decrease in snowpack is one of the more robust features of the climate predictions, and appears to be driven primarily by increasing winter temperature. Snowpack has a strong influence on the hydrograph of the Dungeness River, and decreasing snowpack SWE is expected to change the timing of runoff, as discussed in Section 5.3.

4.4.3 Sea Level Rise

Relative sea level (RSL) change in the Sequim area is a balance between rising absolute sea level (sea level compared to a fixed elevation) and the simultaneous rise of the land surface due to uplift of the Sequim-Dungeness Peninsula (Mote, et. al, 2008). Relative sea level estimates for the northwest Olympic Peninsula in 2050 range from a decline of 5 inches to a rise of up to 14 inches (Mote, et al., 2008).

RSL estimates are based on the difference between absolute sea level rise and uplift of the ground surface, both of which have uncertainty. Absolute sea level is rising, and is expected to continue to rise in response to a combination of melting glaciers and ice caps, thermal expansion of the oceans, changes in salinity, and changes in wind and weather patterns). The Sequim-Dungeness Peninsula is rising due to a combination of plate tectonic forcing and isostatic rebound (crustal uplift as recovery from removal of the weight of ice sheets at the end of the last ice age). Estimates of absolute sea level rise for the Pacific Northwest by 2050 range from 8 to 45 cm (3.1 to 17.7 inches). Surface uplift rates in the Sequim area are approximately 1.5 to 2 mm/yr (0.06 to 0.08 in/yr) (Mote, et al., 2008), suggesting a 2.5 to 3.3 inch rise of the land surface by 2050.

5.0 STREAMFLOW TRENDS

The Dungeness River is the primary drainage in the Sequim area with headwaters in the Olympic Mountains and discharge to the Straits of Juan de Fuca near Dungeness Spit.

5.1 DATA SOURCES

Streamflow data for the Dungeness River were downloaded from the USGS water resources webpage for USGS gauging station 12048000, located 4.8 miles southwest of Sequim, at river-mile 11.8 (USGS, 2008). This station was selected for characterization of Dungeness River instream flows because it is upstream of irrigation diversions.

Streamflow data for independent small streams was summarized by PGG in a technical memorandum entitled "*Assessment of Baseflow in Small Streams of the Dungeness Watershed*" (PGG, 2008a). Data referenced in this memorandum were compiled from Clallam County Streamkeepers, the Jamestown S'Klallam Tribe, Graysmarsh, Ecology and the USGS. The data extended through mid 2007. PGG's interpretation of the data was aided by input from members of the Technical Advisory Group (TAG) for Aquifer Recharge in Clallam County (a working group of the Dungeness River Management Team).

5.2 DUNGENESS RIVER

5.2.1 Dungeness River Flow Regime

The Dungeness River has two annual peaks in flow corresponding to the winter rainy season and the spring freshet. The timing and magnitude of seasonal variations in flow are influenced by the timing of large storms, temperature trends, and the amount of snow available to melt. Simonds & Sinclair (2002) present a statistical summary of historic flows between 1924 and 1996. Historic flows during the winter rainy season (e.g. November through February) typically ranged between 200 and 500 cfs (25^{th} and 75^{th} percentile), with median flows on the order of 300 cfs. Historic flows during the spring freshet (e.g. May through July) typically ranged from about 500 to 900 cfs, with median flows on the order of 600 to 700 cfs (ibid). Peak flows during storm events can reach 5,000 to 7,000 cfs (USGS, 2007). During the late summer and fall (September and October), historic low flows typically ranged from about 120 to 180 cfs, with median flows on the order of 140 cfs.

5.2.2 Changes in Dungeness River Flow

Figure 5-1 presents a comparison of average daily streamflows over two periods: 1938 to 1980 and 1980 to 2007. Winter flows have increased from the earlier to the latter period, presumably due to warmer winters, more precipitation falling as rain rather than snow, and more snowmelt during winter months. Similar trends of increased winter flows and decreased summer flows are observed in snow-fed watersheds throughout the Puget Sound region.

The onset and the decline of the spring freshet has moved earlier in the year and associated early-summer flows have decreased over the 70 years of record. Average flows at the peak of the freshet decreased by approximately 100 cfs between the two time periods. The reduction in freshet reflects the reduced snowpack discussed in Section 4.2.2.

Low flows in the Dungeness River have decreased over time. The lowest flows of the season usually occur between September 25 and 30, and are used herein as the measure of baseflow. Flows during this period are also affected by irrigation diversions (discussed in Section 6.4). Late September baseflows have dropped from an average of about 170 cfs (1938 to 1980) to about 140 cfs (1980 to 2007). This 30 to 40 cfs drop represents a 15- to 25-percent decrease located upstream from irrigation diversion points, thus indicating that less water is available for irrigation.

5.2.3 Future Dungeness River Flows (Climate Predictions)

Climate change is expected to continue the trend of reduced flows during the freshet and summer months, and increased winter flows (Mote, et al, 2008). As discussed above, these changes in streamflow patterns and quantities in the Dungeness River are related to changes in snowpack and storm timing in the watershed. As the temperature warms, the snowline is expected to rise, reducing the size of the snowpack, even if the total amount of precipitation is the same. Because more of the precipitation will be falling as rain in the headwaters of rivers, the spring freshet is expected to decline and seasonal streamflow is expected to shift towards higher winter flows. Declines are therefore expected during the early irrigation season (e.g. April 15 to July 15). It is beyond the scope of this report to make quantitative predictions for changes in the Dungeness River flow regime, but the changes will be sensitive to the amount and timing of seasonal snowpack. Similar trends are anticipated in rivers and streams throughout Washington State.

5.3 SMALL STREAMS ON THE SEQUIM-DUNGENESS PENINSULA

PGG analyzed streamflow data (through mid 2007) from independent streams located on the Sequim-Dungeness Peninsula (PGG, 2008a). Streams included in the analysis were Morse Creek, Bagley Creek, Siebert Creek, McDonald Creek, Matriotti Creek, Meadowbrook Creek, Cassalery Creek, Gierin Creek, Bell Creek, and Johnson Creek. Interpretation of trends included input by members of the TAG, as noted in Section 5.1. PGG's analysis focused largely on changes in baseflow. Conclusions from PGG's 2008 memorandum are summarized below:

- Miscellaneous data from Morse Creek date back to 1997; whereas continuous data were collected at river mile (RM) 6.5 (1966-1976 and 2003-present) and RM 0.5 (2000-2007). No trends in baseflow or total flow were noted over the period of record.
- Flow data for Bagley Creek are limited to miscellaneous data starting in 1988. The data are too sparse to perform meaningful analysis of flow trends over time.
- Miscellaneous data from Siebert Creek date back to 1991; whereas continuous data were collected at RM 3.1 (1952-1969) and RM 1.3 (2002-present). The miscellaneous data are too sparse for trend analysis, and no trends in baseflow or total flow were noted over the limited periods of continuous flow data.
- Continuous data have been collected on McDonald Creek from 2003 through present at RM 3.1. Late summer baseflows declined between 2003 and 2006 from 1.7 cfs to 0.4 cfs. The cause of this decline is unknown, and the short time-period does not lend itself to generalization of long-term trends. It should be noted that the Agnew Irrigation District uses portions of McDonald Creek (above their diversion at RM 3.2) for conveyance, and holds a water right to divert creek flows up to 5 cfs.
- Flow data for Matriotti Creek are limited to miscellaneous data starting in 1986 through present. The data suggest that low flows in the lower reach (below RM 0.5) may have decreased between 1991 and 2007, although the "spotty" nature of the miscellaneous data makes it difficult to draw solid conclusions. The lowest miscellaneous flow measurements at RM 0.3 in 1991 were about 15 cfs; whereas

miscellaneous low flows in 2005 through 2007 ranged from about 0.7 to 5 cfs. Members of the TAG identified several possible reasons for the changes, including: lining of nearby irrigation ditches (reduced groundwater recharge) starting in 2000, changes in conveyance and tailwater management starting in 1995, reduction in leakage from the Cline crossing at RM 3.2 in 1998, and possibly the re-routing work done at RM 5.5 between 1987 and 1994.

- Flow data for Cassalery Creek are largely limited to miscellaneous data starting in 1986 through present. Near the mouth (≤RM 0.6), 1988-89 streamflow data show summer low flows typically ranging from 2 to 4 cfs. In contrast, data collected post-1999 show low flows typically ranging from 1 to 2.5 cfs. TAG members identified that the change in flow regime appears to have occurred in 1999, about the same timeframe that a restoration project was performed on the creek.
- The bulk of the flow data for Gierin Creek were collected by Graysmarsh starting in 1997. The data include continuous data at the Graysmarsh tidegate (starting in 1998) and weekly data at several locations upstream of the marsh. The data do not reveal a conclusive trend in baseflow or high flows.
- Flow data for Bell Creek are limited to miscellaneous data starting in 1986 through present. Flow data from the lower reach shows low flows at RM 0-0.2 typically ranging from 2-3 cfs prior to 1993, and then reducing to between 0.5 to 1.5 cfs after 2001. The sparse timing of the miscellaneous flow data does not allow identification of a "transition period" between these two low-flow regimes; however, several data points from 1998-2001 appear to be more similar to the earlier period than the latter period. The overall range of flows at RM 0-0.2 typically extends from about 2 to 7 cfs prior to 1993, compared to about 0.2 to 4 cfs after 2001. Ecology analyzed changes in streamflow at RM 0.1-0.2 between 1987-97 and 1999-2004, and also noted reductions in flow (Caldwell, 2007). The reasons for these declines are unknown, however it is worthwhile to note that Bell Creek is influenced by irrigation conveyance, stormwater runoff and spring discharge (which is noted to have declined somewhat in recent years). Data from the middle and upper reaches of Bell Creek are too sparse to define trends.
- Flow data for Johnson Creek are limited to miscellaneous data starting in 1986 through present. Johnson Creek is used for conveyance of irrigation tailwater (Highland Irrigation District). Low flows near the mouth of Johnson Creek are typically less than 1 cfs. Although the data suggest a minor reduction in baseflow in this location between the late 1980's and 2006-2007, the data are too sparse to be conclusive or to differentiate trends in natural baseflow from trends in irrigation practices.

6.0 WATER USE TRENDS

Water use is a key component of the water budget capable of affecting groundwater levels and stream baseflows. Water use has been increasing the Sequim-Dungeness area as the population grows, public water systems are expanded, and new domestic (exempt) wells are drilled to meet increased demand. Irrigation diversions from the Dungeness River have decreased over time with conservation activities (e.g. ditch piping), although actual irrigated acreage has changed little. This section provides estimates of changes in water use over the study period.

6.1 DATA SOURCES

Water-use trends are examined from a combination of pumping data, counts of domestic wells, reported sources and numbers of hookups for Group A and Group B public water systems, and gauging of irrigation diversions.

The City of Sequim provided pumping records for production wells in the Port Williams and Silberhorn well fields from 1993 through 2008, in addition to maps of sewered areas in the Sequim vicinity. The Clallam County Public Utility District provided pumping data for the Evergreen and Carlsborg water systems. Public water system information (number of hookups, source capacity, system status, and source locations) were provided by the Washington Department of Health (WDOH) through both data requests and from the Sentry online database. Information on private wells was obtained from the well log database maintained by Ecology.

Groundwater withdrawals for irrigation, stock and industrial use were estimated for the mid 1990's by Tetra Tech FW, Inc. (2003).

Irrigation and agricultural withdrawals from the Dungeness River from 2000 through 2007 were obtained from the Department of Ecology (Ecology, 2008a). Ecology provides online access to daily gauging data for withdrawal points from the Dungeness River into irrigation ditches. Earlier diversions were summarized in the Comprehensive Irrigation District Management Plan (CIDMP) (EES, 2003).

6.2 GROUNDWATER USE

Groundwater use is examined as groundwater withdrawals and as consumptive use. Groundwater withdrawals are simply the amount of water removed from aquifers for use. Consumptive use starts with the groundwater withdrawal but also considers how much of the water is returned to groundwater and how much is lost from the system through evapotranspiration or discharge away from the area.

Groundwater withdrawals for residential use range, in order of increasing system size, from individual domestic wells to Group B water systems to Group A water systems. Group B water systems serve fewer than 15 service connections and fewer than 25 people a day less than 60 days per year (WAC 246-290-020). Group A water systems are community and non-community water systems which serve 15 or more year-round service connections, 25 or more year-round residents for 60 or more days a year, or 1,000 or more people for at least 2 consecutive days per year (WAC 246-290-020). Non-community and transient water systems constitute a small fraction of the systems in the area and are not included in this analysis.

Groundwater is also withdrawn for irrigation (including golf courses), stock (primarily dairy operations), and industrial operations. Estimates of total withdrawals and consumptive use are summarized below, with detailed descriptions in the following sections.

- Group A water systems serving 8,458 reported hookups withdrew an estimated 2.7 mgd (3,030 af/yr) in 2007, of which 1.7 mgd (1,910 af/yr) was estimated to be consumptive use.
- Group B water systems serving 687 reported hookups withdrew an estimated 0.38 mgd (430 af/yr) in 2007, of which 0.21 mgd (240 af/yr) was estimated to be consumptive use.
- Approximately 5,253 domestic wells withdrew an estimated 2.9 mgd (3,250 af/yr) in 2007, of which 1.5 mgd (1,680 af/yr) was estimated to be consumptive use.
- Groundwater pumping for irrigated agriculture and golf courses was estimated at about 0.4 mgd (450 af/yr) during the mid 1990's (later estimates are unavailable). PGG did not estimate the portion of consumptive use for irrigation withdrawals.
- Other water uses (dairy and industrial) were estimated to withdraw about 0.1 mgd (110 af/yr) during the mid 1990's. PGG did not estimate the consumptive portion of these uses.

6.2.1 Public Water Systems

6.2.1.1 *Estimating Residential Water Use*

Pumping records of actual groundwater withdrawals and water use were not readily available for most public water systems or domestic wells. For water systems without pumping records, PGG estimated water use based on the number of hookups and expected volumes of residential water use. Total water use at an individual residential hookup was estimated as the sum of household use and residential irrigation with the following formula:

$$U_T = (\text{Household Use}) + (\text{Irrigation Use})$$

$$U_T = (U_H) + (A_I * P / E_I) \qquad \text{(Equation 6-1)}$$

Where: U_T = total use (volume/year)
U_H = household use (volume/time)
A_I = assumed irrigated area per residence or hookup (area)
P = plant irrigation requirement (length/time)
E_I = irrigation efficiency (unitless ratio)

Household use is predominantly indoor, but includes other activities such as watering outdoor potted plants, car washing, washing down paved surfaces, etc. Household use is estimated to be about 170 gpd per ERU (equivalent residential unit) based on systems with little residential landscaping (Montgomery Water Group, 1998). Estimated irrigation use is sensitive to assumptions regarding irrigated acreage per residence, irrigation requirements for landscaping, and irrigation efficiency. Although Ecology allows ½ acre of irrigation for the exempt water rights commonly associated with domestic wells, most residential lots in the area are not large enough to support ½ acre of irrigation. An irrigated area of 1/8 acre was assumed for each Group A residence, and ¼ acre for Group B and domestic well residences. A net irrigation requirement of 15.5 inches/year was assumed for lawns based on estimates of water requirements for pasture and turf (Montgomery Water Group, 1998). Because irrigation applications are typically inefficient, actual pumping for irrigation purposes is expected to exceed plant requirements. An efficiency of 75 percent was assumed representative for sprinkler irrigation. Based on these numbers, the average annual water use per residence was estimated to be 362 gpd for Group A systems and 554 gpd for Group B

systems and domestic wells. Because these estimates represent annual averages, higher rates of use are likely to occur during the growing season and lower rates of use will occur during the remainder of the year. **Table 6-1** lists the values used in water use calculations.

It should be noted that the domestic and irrigation use assumptions presented above represent PGG's best estimates for residential units. Numbers can vary widely with different land use practices and dwelling occupancy rates. A review of water use by various purveyors in the Sequim vicinity (6 "Group A" water systems) shows use per ERU widely ranging from 173 to 495 gpd (Montgomery Water Group, 1998). Actual water use from public water systems and individual domestic wells can only be quantified through metering and associated data reporting.

The distribution of groundwater withdrawals and consumptive use is described in the sections below.

6.2.1.2 *Group A Water System Withdrawals*

City of Sequim

The City's water supply system consists of three sources: the Dungeness River Infiltration Gallery, the Silberhorn Wellfield, and the Port Williams Wellfield (**Figure 1-1**). Prior to construction of the Infiltration Gallery, the City diverted water directly out of the Dungeness River. In 1953 the City was authorized to withdraw water from the infiltration gallery, and in 1954 a second surface-water diversion was authorized to convey water from the river to the infiltration gallery. Groundwater withdrawals from the Silberhorn Wellfield were authorized in 1975, and pumping from the Port Williams wellfield was authorized in 1996. The City holds water rights to withdraw up to 1,850 acre-feet per year from its three sources combined. Maximum instantaneous withdrawals range from 2,500 gpm at the Port Williams Wellfield to 2,100 gpm at the Silberhorn Wellfield and 718 gpm from the Infiltration Gallery.

The Infiltration Gallery is located east of the Dungeness River in the NE ¼ of the NW ¼, Section 12, Township 29N, Range 4W. It consists of a large-diameter collection well located east of the river, from which horizontal interception pipes extend to about 150 feet from the current stream channel. The interception pipes are buried and set in gravel pack. Until the mid 1980's, the City used to supplement Infiltration Gallery yield by diverting surface water from the Dungeness River into the gravel pack surrounding the laterals. Now that this practice is discontinued, discharge from the Infiltration Gallery flows via gravity to the distribution system. The maximum instantaneous capacity of Infiltration Gallery is unknown; however the City's water right provides a maximum instantaneous allocation (Qi) of 718 gpm (1.03 mgd), and average monthly rates of withdrawal have typically ranged from 0.1 to 0.6 mgd (with a maximum monthly withdrawal of 1.0 mgd.

The Silberhorn wellfield is located in Doctor James Standard Memorial Park, 750 feet west of the intersection of Silberhorn and River Roads (NE ¼, NW ¼, Section 25, Township 30N, Range 4W). Three production wells were constructed between 1975 and 1985; however, Well #1 is no longer in production and is currently used for groundwater level monitoring. Well completions range from 132 to 220 feet below land surface (bls), and instantaneous pumping rates range from about 300 to 370 gallons per minute (gpm) on demand. Drilling information and pumping responses indicate that groundwater occurs under confined conditions at the wellfield. The three wells are tentatively identified as completed in a confined portion of the shallow aquifer (PGG, 1996). Occurrence of glacial till above the completion intervals and the confined nature of the aquifer conform to the USGS description of the shallow aquifer summarized above.

The Port Williams Wellfield is located just north of Port Williams Road, about 500 feet west of its intersection with Brown Road (SE ¼, NW ¼, Section 17, Township 30N, Range 3W). Two production wells were installed in 1995 and 1998, and are both completed in the lower aquifer. Well completions range from 284 to 411 feet bls. While maximum well yields range from 635 to 800 gpm, the wells are currently pumped on demand at instantaneous rates between 600 to 670 gpm. A third production well was installed in 2008 (PGG, 2008b); however, this well has not yet been put into service.

The Port Williams wellfield was constructed in order to shift a portion of the City's pumping withdrawals away from the Silberhorn Wellfield and the Dungeness River Infiltration Gallery towards a deeper groundwater source that has less hydraulic connection with the Dungeness River. Reduced withdrawals from the Infiltration Gallery are beneficial in that they leave more flow in the Dungeness River to benefit fish habitat, and were agreed upon between the City and Ecology in 1997 (Ecology, 1997). Reduced withdrawals at the Silberhorn Wellfield serve to reduce pumping stress on an aquifer with a history of local groundwater level decline (see Section 8.2), and is also likely to benefit Dungeness River streamflow.

The City's water supply system is the largest public water system on the Dungeness Peninsula, with an average daily production of over 0.95 million gallons per day (mgd) accounting for 35 percent of the all Group A water system withdrawals (**Table 6-2**). As of 2007, the system was registered with WDOH as having 2,612 connections, and annual pumping averaged 0.95 mgd. Over the 5-year period between 2003 and 2007, withdrawals were distributed as 43% from Port Williams, 30% from Silberhorn, and 27% from the infiltration gallery.

Figure 6-1 illustrates the historic distribution of pumping between 3 source locations (available data prior to 1993 indicate only total pumping, and do not distinguish between sources). When the Port Williams Wellfield came online in 1996, the City shifted a portion of its pumping from Silberhorn to Port Williams in order to help offset groundwater level declines in the Silberhorn vicinity. The figure shows a reduction in Silberhorn pumping starting in 1996 (Port Williams was offline for much of 1997). However, Silberhorn pumping began to increase towards pre-1996 levels after 2006. Port Williams pumping has remained relatively steady from 2003 through present, with above-average pumping in 1999, 2001 and 2002. Withdrawals from the infiltration gallery decreased from 1992 through 1999, and then began a gentle rise through present. Port Williams pumping has effectively replaced a significant portion of historic pumping from the infiltration gallery and has accommodated a noteworthy share of new water demand associated with population growth. Demand trends are represented by total groundwater withdrawals, which increased from 1978 through 1989, remained relatively stable between 1989 and 2000 (with above-average pumping in 1994 and 1995), and increased again from 2001 through 2007 (**Figure 6-1**).

All Group A Water Systems

There are 41 Group A water systems in the study area. After the City of Sequim, the next largest water systems are the Evergreen Water System (operated by Clallam County PUD), Sunland Water District, Estates Incorporated, and Solmar Water Company systems (**Table 6-2**). Pumping records are available for water systems operated by the Clallam PUD, including the Evergreen and Carlsborg LUD systems (**Figure 6-2**). Water use for all other Group A water systems are estimated using Equation 1, the values listed in **Table 6-1,** and multiplying by the number of connections on file with WDOH (**Table 6-2**). Estimated groundwater withdrawals from *all* Group A water systems totals 2.7 mgd (including City of Sequim).

Many Group A water systems have multiple wells (sources) providing water into their distribution systems, some of which may be more than a mile apart. PGG estimated the withdrawal from each Group-A source by prorating the estimated use by the pumping capacity of each of the wells in the system. These

values were then grouped by geographic area. The majority of Group-A pumping in the study area occurs east of the Dungeness River (2.24 mgd), with approximately 18 percent of pumping west of the Dungeness River (0.49 mgd). Significant Group-A pumping occurs near City of Sequim wellfields, with 0.14 mgd of pumping within 1 mile of the Port Williams Wellfield and 0.29 mgd of pumping within 1 mile of the Silberhorn Wellfield. The geographic distribution of Group-A pumping is further discussed with respect to consumptive use in Section 6.3.

PGG reviewed water-use analysis performed by TetraTech FW, Inc. (2003) for the period of 1995 through 1997 to estimate how Group A withdrawals are distributed among aquifers. The TetraTech FW analysis specifies the completion aquifer and estimated annual average withdrawal for all wells with readily available data (estimated pumping from the larger Group A systems was based on 1996 data). PGG reviewed the wells within our study area, and found that Group A pumping in the mid 1990's was roughly distributed as follows: 67 percent from the shallow aquifer, 14 percent from the middle aquifer, and 18 percent from the lower aquifer. Shallow aquifer pumping includes Sequim's Infiltration Gallery and Silberhorn Wellfields. The data considered in TetraTech FW's study did not fully reflect the City's shift in pumping from its shallow aquifer sources to the Port Williams Wellfield, completed in the lower aquifer. Based on a more recent distribution of pumping distribution between the City's sources, adjusted Group A pumping is more likely distributed as follows: about 53 percent from the shallow aquifer, 14 percent from the middle aquifer, and 31 percent from the lower aquifer.

Group B Water Systems

Group B water systems account for a small percentage of the water use in the study area. There are 197 active systems in the study area averaging 3.3 connections per system (687 total hookups). Group B water use per-hookup is expected to be similar to domestic water wells because the smaller Group B systems are less likely to charge for water use, and are more likely to occur in sparsely populated areas where residential parcels are larger. Total withdrawals from Group B systems in the study area are estimated at 0.38 mgd.

6.2.2 Domestic Well Withdrawals

The number of domestic wells in the Sequim-Dungeness Peninsula has increased steadily with population growth in the area. Ecology's online well log database showed 5,253 well logs with completion dates through 2007. As described above, only a small fraction of these wells are Group A or Group B public water systems. For the purpose of this study, PGG assumed that Ecology's well logs are roughly representative of domestic wells within the study area. It should be noted that a portion of *actual* existing domestic wells may not be reported to Ecology; however, a portion of reported wells may no longer be in use.

New wells have increased at a considerable rate within the study area, roughly doubling between 1993 and 2007 (**Figure 6-3**). Since PGG's previous "2001 Monitoring Study", well logs on record increased by 38 percent from 3,853 to 5,253. The USGS estimated that approximately 82 percent of domestic pumping within their primary study area was obtained from the shallow aquifer (Thomas et al, 1999). A review of TetraTech FW data for PGG's study area showed that about 73 percent of domestic wells are believed to be completed in the shallow aquifer and 23 percent in the middle aquifer

New well installations have increased at similar rates both east and west of the Dungeness River (**Figure 6-3**). Between 2001 and 2007, well logs increased by 30 percent (to 2,624) west of the river and by 26 percent (to 2,629) east of the river. **Figure 6-4** compares the geographic distribution of wells over roughly 4 decades since 1980. New wells have been concentrated along the Dungeness River, with greater in-

creases immediately east of the river (including the area surrounding Sequim) than immediately west. New well construction is also apparent in a corridor along Highway 101 west of the Dungeness River and extending into the Agnew area. In the immediate vicinity of the City's wellfields, between 2001 to 2007, well counts have increased by 24 percent (from 228 to 282) within a mile of the Port Williams Wellfield and by 33 percent (376 to 501) within a mile of the Silberhorn Wellfield (**Figure 6-3**).

PGG estimated 2.91 mgd of groundwater withdrawal from domestic wells for 2007 by multiplying the number of wells (5,253) by an assumed average annual pumping of 554 gallons per day (Section 6.2.1.1). This estimate includes 0.81 mgd west of the Dungeness River, 0.84 mgd east of the Dungeness River, 0.10 mgd within a mile of the Port Williams Wellfield, and 0.17 mgd within a mile of the Silberhorn Wellfield.

6.2.3 Non-Residential Water Uses

Groundwater withdrawals for non-residential purposes were estimated by Tetra-Tech Foster Wheeler (2003). The estimate totaled approximately 0.5 mgd, and was developed for a study period between 1995 through 1997. Withdrawals included: agricultural irrigation (0.32 mgd), golf-course irrigation (0.08 mgd), dairy operations (0.09 mgd), and 0.004 mgd for industrial use. More recent estimates of non-residential water use are unavailable; however, growth in these water uses over the past decade is considered unlikely. Commercial water uses are typically supplied by Group A water systems, and are thus included in Section 6.2.1.

Based on the mid-1990's water-use analysis by TetraTech FW (2003), about 75 percent of total irrigation groundwater use is withdrawn from the shallow aquifer and 25 percent is withdrawn from the lower or deep aquifers. Estimated groundwater withdrawals for dairy and industrial operations are entirely withdrawn from the shallow aquifer.

6.3 CONSUMPTIVE WATER USE

PGG estimated consumptive water use associated with sources of residential supply. Water withdrawn by domestic wells and public water systems is either returned to the groundwater flow system through recharge from septic systems and irrigation return flow, or is lost to evapotranspiration or marine discharge (via Sequim's sewer system). Consumptive use includes all uses which do not result in return to groundwater. PGG used data from Group A and Group B water systems, well counts (representing domestic wells), and sewered areas to estimate consumptive residential groundwater use within the study area.

Consumptive use estimates were compiled by square-mile section and mapped on **Figure 6-5**. Consumptive use was estimated for each domestic well or public water system hookup with the following formula:

U_C = (Household Consumptive Use) + (Irrigation Consumptive Use)

$$U_C = (U_H * S) + (A_I * P) \qquad \text{(Equation 6-2)}$$

Where: U_C = consumptive use (volume/time)
U_H = household use (volume/time)
S = Household consumptive use fraction (Sewer connection: yes = 1, no = 0.13)
A_I = assumed irrigated area per residence or hookup (area)
P = plant irrigation requirement (length/time)

Out of the total household use (170 gpd), 13 percent was estimated to be lost to evaporation, leaving 87 percent available to discharge to either septic or sewer systems (Solly et. al., 1993). If a residential unit relies on a septic system or a sewer system that recharges a significant portion of its water through land application or infiltration (e.g. Sunland), PGG estimated consumptive use to be 13 percent of U_H (S = 0.13). If a residential unit is connected to the City's sewer system, the total household use is assumed to be consumptive. The City currently does not currently recharge its Class A reclaimed wastewater; however, it plans to study reclaimed-water infiltration in the near future.

Water use for residential irrigation is largely consumptive; however, a portion of the applied irrigation water infiltrates below the root zone and recharges the underlying groundwater flow system. The consumptive portion of residential irrigation use is equal to the irrigated area (A_I) times the plant irrigation requirement (P). Irrigation applications above the plant requirement predominantly return to the groundwater flow system as irrigation return flow. Irrigation consumptive use is assumed to be the same in sewered and non-sewered areas.

Consumptive water use is higher at residences connected to sewer systems than those with septic systems because septic systems have more return flow to groundwater (**Table 6-1**). Thus, consumptive use estimates presented in **Table 6-1** differentiate between residences connected to sewer and septic systems for both Group A and domestic water systems. Most residences in the Sequim-Dungeness Peninsula are connected to septic systems, with the primary sewer system serving the City of Sequim. PGG estimates that 95 percent of the City of Sequim water-system residences and businesses are connected to sewers based on a comparison of the service areas and parcel maps. An additional 325 connections on Bell Hill served by the Evergreen Group A water system are also connected to the sewer system (Pete Tjemsland, personal communication, 2009). Twenty-two domestic wells located within the Sequim sewered area and are also assumed to be connected to the sewer system (potentially overestimating consumptive water use by a small percentage if they are actually on septic). Local ordinances require residences with available sewer service to connect to the sewer system within 10 years of service availability, or if the septic system fails (Pete Tjemsland, personal communication, 2009). All domestic wells and Group A connections outside the Sequim sewered area are assumed to be on septic systems or on a sewer system that recharges most of its water through land application (e.g. Sunland),.

Most Group A water systems in the study area have multiple well sources which may not be drawn on equally. Consumptive use for each source is estimated by pro-rating the system consumptive use by the capacity of the sources in the system. For example, if a system is served by two sources with capacities of 100 and 200 gpm, the system consumptive use would be split between the sources 33% and 67%. Consumptive use estimates for the Evergreen, Carlsborg, and City of Sequim sources are assigned based on pumping records. For consumptive use calculations for systems with known pumping, the consumptive use is calculated as the recorded pumping at the source times the percent consumptive use per hookup (**Table 6-1**). The Carlsborg system is assumed to consist entirely of Group A hookups to residences connected to septic systems. The consumptive use estimated per square-mile section assumes that all return flow from septic tanks and irrigation occurs within the same section as pumping. This assumption may lead to some errors in the distribution of consumptive use associated with large systems (e.g. City of Sequim) or systems with service areas that straddle section boundaries.

Estimated total consumptive use in the study area is 3.57 mgd, with 1.71 mgd from Group A systems, 0.21 mgd from Group B systems, and 1.65 mgd from domestic wells. **Figure 6-5** shows the distribution of estimated consumptive groundwater use in the study area. Most consumptive use estimated for Group A systems occurs east of the Dungeness River (1.41 mgd), with 18 percent occurring west of the river (0.31 mgd). Consumptive use associated with the City of Sequim withdrawals is estimated at 0.8 mgd, about 47 percent of total estimated Group A consumptive use. Estimated consumptive use within 1 mile

of the Silberhorn Wellfield (0.18 mgd) and Port Williams Wellfield (0.09 mgd) are significant, though considerably smaller than the wellfield withdrawals. Domestic and Group B consumptive use also varies by location with 0.84 mgd east of the Dungeness River, 0.81 mgd west of the Dungeness River, 0.17 mgd within a mile of the Silberhorn Wellfield and 0.1 mgd within a mile of the Port Williams wellfield.

6.4 IRRIGATION TRENDS

Irrigation on the Sequim-Dungeness Peninsula was recently described in the Comprehensive Irrigation District Management Plan (CIDMP) (EES. 2003). The following information is summarized from the CIDMP unless noted otherwise.

The Sequim-Dungeness Valley Agricultural Water Users Association (SDWUA) represents seven public and private irrigation organizations. SDWUA members divert water from five diversions on the Dungeness River and one on McDonald Creek. The Dungeness River diversions are on both the mainstem and side channels, at River Miles 11.2, 10.9, 8.8, 8.0, and 7.2. The McDonald Creek diversion is located at river mile 3.2 near Highway 101.

Most of the water is diverted from April 15 to September 15, which is the irrigation season. Peak SDWUA diversions occur in July and August since the warmest, driest weather occurs during those months. After September 15, the SDWUA diverts flow for stockwater purposes only causing diversions to decrease substantially at that time. Implementation of water conservation measures and improved management allowed the SDWUA to meet the requirement of a Trust Water Rights Memorandum of Understanding with Ecology which limits the quantity of water that can be diverted to 50% of the river flow. The SDWUA uses McDonald and Bell Creeks for conveyance of irrigation water. Matriotti Creek was used in the past for conveyance, but this activity is no longer practiced. The SDWUA discharges tailwater from the SDWUA irrigation system into natural waterways, wetlands and/or saltwater bays.

The SDWUA measures flow of water diverted into their systems. Ecology funded installation of flumes which was completed in 2001; however, the CIDMP publishes average annual diversions as far back as 1979. **Figure 5-2** shows historic average irrigation-season diversions based on a compilation of CIDMP data and more recent data from the Ecology gages. The chart shows that diversion since 1999 has been approximately one-half of diversion in the late 1970s. Diversions after 1999 remain relatively stable, ranging between 50 cfs and 65 cfs. Irrigation season diversion was reduced by about 25 cfs over the 1990's decade, which corresponds to the period-of-time the SDWUA members starting focusing efforts on water conservation and reducing diversions. SCWUA past and continuing efforts include ditch lining, changes in cropping patterns and adherence to the Trust Water Right MOU with Ecology. Full implementation of the Dungeness River Agricultural Water Users Association Comprehensive Water Conservation Plan (MWG, 1999) is designed to improve SDWUA operations and conserve an additional 17.5 cfs during peak irrigation season diversions compared to baseline conditions.

Based on GIS coverage of irrigation ditches obtained from the Clallam Conservation District in 2008, about 200 miles of irrigation ditches have been mapped of which about 60 miles of ditches have been piped and about 13 miles of ditches have been abandoned. **Figure 1-2** shows the network of irrigation ditches and when various ditches were piped. The data are grouped into ditches piped before and after the start of year 2000 (some data sets have more detailed chronology). Most of the ditches mapped as "abandoned" or "not used" do not have dates associated with non-use. The Clallam Conservation District indicates that few of the ditches with known piping dates were piped prior to 1990, except for a separate subdistrict of the Highland irrigation District which piped a number of laterals running between the Highland

main canal and West Sequim Bay Road, thus creating a pressurized system (Holtrop, 2009). The figure shows that:

- Ditches piped by the Agnew District (far west) largely have unknown dates;
- Ditches piped by the Clallam and Cline districts (immediately west of the Dungeness River) were largely piped after the start of 2000;
- Ditches east of the Dungeness River were variably piped before and after 2000; and,
- More of the abandoned ditches occur east of the Dungeness River

A more complete and accurate representation of the timing of ditch piping is currently under preparation by the Jamestown S'Klallam Tribe (with input from the Clallam Conservation District) under a grant with the EPA.

Additional discussion about how abandonment of ditches affects groundwater recharge is presented in Section 7.2.

7.0 RECHARGE TRENDS

The groundwater flow system is recharged from precipitation, leakage from unlined irrigation ditches, unconsumed irrigation water from field applications, and seepage losses from "losing" stream reaches (e.g. reaches of the Dungeness River). Infiltration of septic effluent and wastewater field application (at the Sunland facility) also recharge the groundwater system; although this recharge originates from groundwater withdrawals and does not provide "new" water to the groundwater system. Finally, the groundwater flow system receives subsurface inflow ("subflow") from water recharged to the foothills and mountains south of the Sequim-Dungeness Peninsula. This recharge flows through bedrock and overlying sediments before discharging to the groundwater flow system beneath the peninsula.

Changes in recharge can have a significant effect on groundwater levels. This section discusses trends in groundwater recharge from incident precipitation, irrigation and subflow. With the exception of streams used to convey irrigation water, recharge from stream losses is not expected to change substantially[1] and is not addressed in this section. Recharge from septic effluent is expected to increase with groundwater pumping, but the combined effect of pumping and septic recharge remains a net withdrawal from the groundwater flow system, and is included in discussion of consumptive use (Section 6.3). Changes in land use can also affect recharge from incident precipitation. While a formal analysis of how historic land-use changes have affected precipitation recharge was beyond the scope of this project, qualitative considerations are discussed below.

The effect of changes in recharge on the groundwater flow system is discussed in Section 8.3.

7.1 PRECIPITATION RECHARGE

The USGS estimated long-term precipitation recharge over a study area that included much of the Sequim-Dungeness Peninsula (Thomas et al, 1999). The USGS first employed their "deep percolation model" (DPM) (Bauer & Vaccaro, 1987) to estimate recharge over a 1995-1997 study period. The results of the DPM were then used to develop regression equations that associated recharge to composite soil groups (e.g. glacial till, glacial outwash, alluvium), annual precipitation, and land surface slope. In order to estimate the long-term geographic distribution of recharge, the USGS applied the long-term distribution of precipitation to the regression equations[2]. The USGS estimated a long-term average precipitation recharge of 4.8 in/yr (26.2 cfs) over their primary study area and 5.4 in/yr (46.2 cfs) over their entire study area (see Thomas et al (1999) for delineation of study areas).

PGG used the USGS regression equations to estimate trends in precipitation recharge over the primary study area (a similar area was used to evaluate changes in well withdrawals and to quantify consumptive use in Section 6.3). Annual precipitation data from the Sequim gauge between 1980 and 2007 were used to estimate the percentage of the 1980-2007 annual average as a multiplier for each year in the record. This relative variation in precipitation was then applied to the USGS regression equations for the primary study area. The study area was divided into polygons representing specific combinations of composite soil type and "representative precipitation" (the isohyetal map shown on **Figure 4-1** was divided into "bands" of representative precipitation, such that the area between 15 and 20 in/yr precipitation contours was uniformly assigned a value of 17.5 in/yr). The yearly change in recharge for each unique combina-

[1] However, for losing streams with a direct hydraulic connection to the groundwater system, shallow water-level declines can cause increases in stream seepage loss (i.e. recharge).
[2] Thomas et al (1999) employ a long-term precipitation distribution published by the US Weather Bureau in 1965.

tion of composite soil type and representative precipitation value was calculated with the regression equations, and summed up by area to estimate a total change in recharge[3].

Figure 7-1 presents the results of the estimated variation in precipitation recharge for the USGS primary study area over the 28-year period. Variations in annual recharge are more pronounced than variations in annual precipitation (**Figure 4-2**). This is because evapotranspiration consumes a significant portion of annual precipitation and does not exhibit particularly large year-to-year variation. Variation in the remaining portion of precipitation, (that which percolates through the root zone), is relatively larger than variation in total precipitation. The estimated variation in annual precipitation recharge shows no apparent trend over the 28-year period, although it does show above-average recharge estimates from 1995-1999 and below average estimates from 2000-2005.

The USGS regression equations do not consider changes in temperature for estimating recharge. As discussed in Section 4.3, temperature in the study area has increased by 0.9 C between 1950 and 2000. PGG used a proprietary, in-house version of the USGS DPM, along with 1980-2007 monthly average values of precipitation and temperature from the City of Sequim weather station, to perform an evaluation of annual recharge over time that includes actual temperature data. The in-house model used the Blaney-Criddle method for estimating potential evapotranspiration (PET) with monthly plant factors for grass, and performed a daily water balance in a 24-inch deep root zone using available water capacity values of 0.04 and 0.08. Because annual precipitation varies across the study area, three multipliers were applied to the actual monthly precipitation totals to generate three synthetic monthly precipitation records with long-term annual averages of 15, 20 and 25 in/yr. Modeled temperatures were the same as the Sequim station. **Figure 7-1** presents the results of running 28 years of monthly climatic data through PGG's proprietary DPM. (Note that recharge is presented as in/yr rather than integrated over the primary study area as cfs.) Similar to the analysis described above, there is no apparent trend in recharge over the period of interest. As this method takes into account actual changes in temperature over the 28-year period, the results suggest that the effects of temperature change are not observable beneath the natural variation ("noise") in annual precipitation recharge.

Changes in land use can affect groundwater recharge. Construction of impervious surfaces (e.g. buildings, roads, driveways, parking lots) affects the recharge water budget in a number of ways, largely depending on how runoff from these surfaces is routed. Impervious surfaces typically replace vegetated areas, and therefore cause a reduction in water lost to ET and an increase in overall water availability as runoff. Routing of runoff to ditches or streams, and ultimately to marine discharge, will cause a reduction in groundwater recharge. However, in areas with relatively high soil permeability, runoff can be infiltrated into the subsurface on site. Under this practice, if all the runoff is infiltrated to the ground, groundwater recharge can actually increase because the quantity infiltrated includes most of the quantity previously lost to ET. A significant portion of surficial soil in the study area is classified by the USGS as a composite of outwash and coarse alluvium (Thomas et al, 1999, Figure 27). These soils may be able to accommodate recharge from impervious areas (typically accomplished through infiltration ponds, dry wells, French drains, and other methods of direct infiltration). Other portions of the study area have soils derived from till (hardpan) or fine-grained materials that likely could not accommodate full infiltration of generated runoff. It is beyond the scope of this study to estimate whether the distribution of impervious surfaces, soil types, and runoff disposal practices has let to an increase or decrease in precipitation recharge; however, we note that this determination is complex, area-specific, and a net loss or gain across the study area should not be assumed.

[3] The regression equations are written such that precipitation is not paired with the "slope" term – thus change in recharge does not require consideration of slope.

Neither PGG's analysis nor the USGS recharge analysis addressed changes in recharge in the southern foothills and Olympic Mountains, which provides recharge to the study area as subflow through bedrock and overlying glacial drift. Given the likely permeability contrast between bedrock (typically very low permeability) and glacial drift (low permeability till and possible greater permeability outwash), it seems reasonable to assume that the majority of subflow occurs through the glacial drift that overlies the bedrock. Geologic mapping (WDNR, 2008) shows that most of the glacial drift occurs in areas where elevations are less than 3,000 feet, which is typically below the snowline. While the annual snowpack has reduced over time, the lack of a trend in precipitation (rainfall) recharge in the lower-elevation study area may suggest a negligible change in precipitation recharge to the glacial drift in the foothills south of the study area. If the majority of subflow entering the study area occurs in the glacial drift, no substantial changes in subflow are expected over the study period.

7.2 IRRIGATION RECHARGE

Thomas et al (1999) reported estimates of irrigation recharge resulting from percolation of unconsumed field applications (5 cfs during the irrigation season) and losses from leaky irrigation ditches (30 cfs during the irrigation season, 20 cfs off-season, and 23.7 cfs annual average). Thomas' estimates of ditch recharge were based on analyses by Montgomery Water Group (1993), which pre-date most of the recent conservation activities to pipe the ditches. In 1996 there were about 200 miles of irrigation ditches. Piping of ditches results in reduced seepage losses (and associated recharge), and supports similar reductions in irrigation diversion from the Dungeness River. **Figure 1-2** shows the network of irrigation ditches and when various ditches were piped.

Although about 60 miles of ditches had been piped (and 13 miles abandoned) as of 2008, estimates of reduced ditch leakage are not readily available (pers. comm.. Joe Holtrop, 2009). PGG estimated reductions in irrigation recharge based on the distribution of piped ditches (**Figure 1-2**) and the distribution of irrigation recharge estimated by the USGS. PGG obtained the USGS GIS coverage of estimated average annual precipitation and irrigation recharge, and resolved this recharge distribution to the grid of the "2008 Dungeness Groundwater Model" (PGG, 2009). The annual irrigation recharge distribution totals 26.3 cfs and is presented (as of 1993) on **Figure 7-2** along with model grid cells that include piped ditches. Irrigation recharge associated with model cells containing piped ditches, totals 9.5 cfs; thus suggesting that ditch recharge has decreased by 40 percent since recharge was estimated by Montgomery Water Group in 1993. Field applications are estimated to remain relatively unchanged over the recent ditch lining period (pers. com. Joe Holtrop, 2009).

Some of the ditches have been piped in the vicinities of the Silberhorn and Port Williams wellfields. At Silberhorn, two ditch reaches south of the wellfield were piped after 2000 and the remaining surrounding reaches were likely piped prior to 2000 although they are dated as "unknown" on **Figure 1-2** (pers. comm.., Joe Holtrop, 2009). The total reduction in annual average recharge associated with these five reaches is 0.6 cfs (0.38 mgd) based on the method of estimation outlined above. In the vicinity of Port Williams Wellfield, ditches were generally piped prior to 2000, including the (upgradient) Highline Irrigation Ditches marked as "unknown" (near West Sequim Bay Road). Piped ditches surrounding the Port Williams Wellfield are more geographically dispersed than those surrounding the Silberhorn Wellfield, and the applicable reduction in irrigation recharge is more difficult to estimate.

7.3 IMPACTS OF CLIMATE CHANGE

In order to assess the sensitivity of recharge to changes in temperature associated with projected climate change, PGG ran its version of the DPM using 20 in/yr of precipitation (divided into monthly values proportional to long-term monthly averages) and three sets of monthly temperature values: 1) long-term averages calculated for 1980-2007, 2) long-term averages plus the midpoint value of predicted 2040 increases (ranging from 1.7 °C during the winter to 2.7 °C during the summer), and 3) long-term averages with maximum predicted 2040 temperature increases (ranging from 2.8 °C during winter to 4.4 °C during summer). The mechanism for reduced recharge under higher temperatures is increased evapotranspiration of precipitation from plants, soils, and other surfaces. The predicted change in monthly recharge is shown on **Figure 7-3**. For an annual precipitation of 20 in/yr, recharge estimated under the mid-point 2040 temperature increase (7.5 in/yr) was 0.8 in/yr (10%) less than recharge estimated under the long-term averages (8.3 in/yr). Furthermore, recharge estimated under the maximum 2040 temperature increase (6.9 in/yr) was 1.4 in/yr (17%) less than recharge estimated under the long-term averages.

These estimates were performed with PGG's DPM under specific assumptions (e.g. 20 in/yr precipitation, no runoff, grassy vegetation, 24 inch root zone, no shallow perching layers, available water capacity – 0.04); whereas, actual conditions in the study area vary considerably. Nevertheless, these estimates indicate that groundwater recharge is sensitive to the degree of temperature change predicted for 2040. In areas where annual precipitation is less than 20 in/yr, predicted recharge reductions would likely be less in absolute terms (i.e. less reduction in in/yr) but greater in relative terms (i.e. greater than 10% and 17%). In areas where annual precipitation is greater than 20 in/yr, predicted recharge reductions would likely be greater in absolute terms but less in relative terms. In areas with shallow perched groundwater, recharge reductions would likely be greater in both absolute and relative terms, because perched groundwater remains accessible to the root zone longer into the summer season and is therefore more susceptible to evapotranspiration under higher summer temperatures.

8.0 GROUNDWATER LEVEL TRENDS

Groundwater level trends indicate hydrologic responses to changes imposed on the groundwater flow system. Factors capable of affecting groundwater levels include: changes in pumping stress, changes in recharge, and changes in surface-water bodies with hydraulic connections to groundwater (e.g. streambed scouring or siltation, varying the water level of an impoundment, etc.). When such changes are imposed, the groundwater flow system responds and water levels adjust to reach a new equilibrium with the changed condition(s). While the factors affecting groundwater levels are often not directly monitored, their influence is directly expressed in groundwater level trends.

This section summarizes groundwater level trends in aquifers on the Sequim-Dungeness Peninsula based on available monitoring data. Discussion includes: data sources, observed trends, and interpretation of observed trends. PGG's interpretation considers hydrogeologic conditions as well as trends observed in the hydrologic factors that influence groundwater levels (Sections 4 through 7).

8.1 DATA SOURCES AND MONITORING PRACTICES

Groundwater level monitoring data were obtained from the City of Sequim, Graysmarsh, Department of Ecology, Clallam County, and Clallam County PUD and the United States Geological Survey (USGS). The monitoring practices of each of these organizations are summarized below:

City of Sequim performs automated daily monitoring at two production wells and two dedicated monitoring wells at its Port Williams Wellfield; manual monthly monitoring of production wells and one dedicated monitoring well at its Silberhorn Wellfield; and manual monthly monitoring in a network of 5 private wells adjacent to the two wellfields. Two of these wells (AAF 397 and AAF 398) were used in the USGS monitoring study (Thomas, 1997).

Graysmarsh collects manual water level measurements at 5 production wells on a daily to monthly basis depending on the well, with data available from 1997-1998 through 2007.

Department of Ecology and Clallam County cooperatively collect water-level data at numerous monitoring wells and private domestic wells with some records extending back to 1975. This study uses data from 13 of the monitored locations. Sampling interval varies widely between locations from monthly to yearly. For records extending in to the 1980s and 1970s, data gaps of several years are often present in the early 1980s. Ecology and Clallam County have also collected water levels at numerous other wells within the study area, but with shorter data records or from time intervals not useful for this study.

Clallam County PUD collects manual water level measurements at eight wells 1 to 2 times a month with data from May, 2005 through 2008. PUD water levels were not used in this study due to the short data record.

The USGS have conducted both miscellaneous and focused water-level monitoring in Sequim area wells. Whereas miscellaneous monitoring may include one or two measurements, focused monitoring included multiple measurements over discrete time periods (e.g. 1978-79, 1994-97). Many of the wells monitored by the USGS are now monitored by the Department of Ecology and Clallam County.

Table 8-1 summarizes the well characteristics and periods of record for the 33 wells included in the current study. **Figure 8-1** shows the locations of the monitored wells. The data set includes 25 shallow aqui-

fer wells (78%), 4 middle aquifer wells (13%) and 3 lower aquifer wells (9%). This distribution is similar to the general distribution of wells in the area as a whole where 73 percent of wells are completed in the shallow aquifer, 25 percent are completed in the middle aquifer and less than one percent in are completed in deeper aquifers. Group A production wells are biased to deeper aquifers with 11 percent completed in the Lower aquifer, 10 percent in the middle aquifer and 80 percent are completed in the Shallow aquifer. The few monitored wells in the Middle and Lower introduce some bias to the data in that only small portions of the study area are represented. Most of the deeper wells are located in or around the Silberhorn and Port Williams wellfields, and water-level data in these areas may be over-represented relative to the rest of the study area.

Water level monitoring includes both manual measurements collected with an electronic sounding tape, and automated measurements collected with pressure transducers. Manual water level measurements were collected only when wells were visited by one of the agencies listed above, and intervals between measurements range from daily in some well field measurements to years at wells which are only used for long term monitoring. Water level measurements with pressure transducers are usually collected several times a day, while manual measurements are usually collected on a less-frequent basis, usually days or months.

Maintaining a long-term monitoring network at private wells requires the cooperation of many well owners. Water level data is available from many wells in the study area, but many have records which were too short, or from a time interval with limited utility for the current study. In many cases, excellent water level data was available from earlier measurements in private wells, but monitoring at the well was discontinued at the well owner's request. Water level records with fewer than 5 years of data were not used in this study because the goal was to investigate long-term trends. If the end of the monitoring record was close to 2007, or if the well is in an area with sparse data, or from the middle or lower aquifer, the data were included in this report to help fill data gaps, even if the data was less complete for recent years.

8.2 WATER LEVEL TRENDS

PGG evaluated water-level trends by plotting water levels as "departures" from the first measurement on record for each well. **Figure 8-2a,b** presents departure hydrographs for all of the monitored wells, and **Figure 8-1** presents representative hydrographs on a study-area map. Positive water level departures indicate that water levels have risen since the initial measurement. For plots of manual water-level data PGG removed measurements collected when well pumps were running; however, some of the measurements may by influenced by recovery from pumping or by pumping in nearby wells. For automated water-level data, PGG plotted the minimum depth to water (i.e. closest to static) for each day when multiple measurements were available.

The USGS conducted water-level monitoring in the Sequim area from 1978-1980 and again from 1994-1997, and mapped water-level changes between these two periods. Several of the wells used in the USGS study are now monitored by local agencies. **Figure 8-3** presents the water-level changes from the USGS study and subsequent water level changes (between 1997 and 2007) drawn from the hydrographs shown in **Figures 8-1** and **8-2**. Water-level changes over the most recent decade were estimated by considering trends in both maximum and minimum seasonal water levels.

The following sections discuss water-level trends first grouped by aquifer and then by geographic area. Most water level plots show a combination of seasonal variation and long-term trends. Seasonal trends are influenced by seasonal variations in recharge (from precipitation and irrigation) and pumping, whereas long-term trends are influence by long-term variations in these factors. Water levels in the shallow aquifer

generally show greater seasonal variability than water levels in the middle or lower aquifers. While this study focuses predominantly on long-term trends, seasonal variations are considered where they provide insight into the hydrologic factors affecting groundwater levels at specific sites.

8.2.1 Shallow Aquifer

In the shallow aquifer, water-level changes between the late 1970's and the mid-1990's showed declines at most locations, with several isolated instances of rising trends. Declines in all wells with monitoring data over this approximately 15-year period ranged from 1 to 9 feet (**Figure 8-3**). Between 1997 and 2007, water-level declines ranging from 1 to 17.4 feet occurred at all 24 monitored locations. The following observations describe the geographic distribution of observed water-level declines in the shallow aquifer:

- In the area between upper Gierin and Cassalery creeks (including the Port Williams Wellfield), declines of about 3 feet were observed between the late 1970s and the mid 1990s. Declines increased to about 4 to 9 feet between 1997 and 2007, with the largest declines (8-9 feet) occurring at sites west of the wellfield, and smaller declines occurring at the wellfield and to the northwest (**Figure 8-3**). Recent hydrographs show most of the decline occurring prior to 2002 followed by apparent stabilization (**Figure 8-1**).
- Near where Highway 101 crosses the Dungeness River, significant water-level declines have occurred over both time periods. The area extends over at least 3 square miles where data are available (sections 24, 25 and 26 of T30NR4W) and is surrounded by areas with limited or no water-level monitoring. Water levels declined by 8 to 17 feet from 1997 through 2007, an acceleration from the 3 to 9 feet of decline observed from the late 1970s to the mid 1990s (**Figure 8-3**). Water level variations do not correlate well with seasonal pumping patterns, as annual high water levels are typically observed during summer peak pumping (**Figure 8-2a**).
- In the Graysmarsh area, water-level declines are relatively small, with maximum declines of about 2 feet observed between 1997 and 2007 (**Figure 8-3**). Several trends show stabilization post 2000 (**Figure 8-2b**).
- A single shallow-aquifer well in the Agnew area shows about 8 feet of decline between 1997 and 2007, with relatively stable water levels between the late 1970s and the mid 1990s.
- Little data are available to evaluate trends in the Carlsborg area. Comparison of static water levels at LUD Well #10 at the time of drilling (June 1990, 38 ft bgs) to water levels collected by Clallam County PUD (April, 2007, 40.3 ft bgs) suggest little or no decline near Carlsborg. It is not clear if the same measuring point was used for these measurements, but would likely be within a few feet of each other if different.
- Data are also fairly sparse in other portions of the study area, such as along Bell Creek, along the middle reaches of Matriotti Creek, and in various coastal areas (**Figure 8-3**).

8.2.2 Middle Aquifer

Very little data are available to evaluate water-level declines in the middle aquifer before the 1990s (**Figure 8-3**). Only three wells, located far apart, are shown in the USGS report (Thomas, 1997). Between the late 1970s and the mid 1990s, these wells suggest a slight rise in water levels (about 2 feet) near Agnew and a significant decline (9 feet) about a mile east of where Highway 101 crosses the Dungeness River. The third well is located south of the study area for this report, and showed a rise of 1 foot.

It should be noted that aquifer designations near the Highway 101 – Dungeness River crossing exhibit some degree of uncertainty. The well showing a 9-foot decline in this area is 276 feet deep, and was classified by the USGS as completed in the middle aquifer. At this location, the USGS estimate the thickness of the shallow aquifer as 150 feet. In contrast, about a mile closer to the Dungeness River at the Silberhorn Wellfield, the USGS estimate the shallow aquifer to be 200-250 feet thick. The Silberhorn production wells range from 172 to 220 feet deep, and are therefore interpreted as completed in the shallow aquifer. As noted in Section 3.2, the shallow aquifer can contain multiple water-bearing zones separated by aquitard materials, and the Silberhorn production wells are all completed under confined conditions below a till aquitard. The similarity in groundwater level declines between these shallow- and middle-aquifer wells may indicate parallel trends and significant hydraulic connection between aquifers, but may also suggest that all monitored wells with similar trends in this area are in fact all completed in the *same* aquifer. The till aquitard noted in Silberhorn area wells may have complicated the USGS interpretation of aquifer designations.

Five middle-aquifer wells were monitored between 1997 and 2007, and showed water-level declines ranging from 1 to 8 feet (**Figure 8-3**). Only one of these wells (near Agnew) was also previously monitored by the USGS.

- Near Agnew, water levels declined by about 7 feet near from 1997 to 2007, in contrast to a 2 foot rise from the late 1970s to the mid 1990s (Thomas, 1997).
- In the vicinity of Gierin and Bell Creeks, monitoring in 3 wells showed declines ranging from 7.7 to 9.7 feet. A decline of 9.7 feet at the Port Williams Wellfield shows stabilization after 2001 (**Figure 8-1**). Well AAF386, about a mile east of the wellfield, shows 9.2 feet of decline without apparent stabilization (**Figure 8-2b**). Well AAB741, located south of Bell Creek about 2 miles from the wellfield, shows a 7.7-foot decline. The data record for Well AAB741 only extends through 2003, and the late-time data are two sparse to discern stabilization vs. continued decline (**Figure 8-1**).
- Well ABA539 near Matriotti Creek has a very sparse record. A decline of 2.2 feet is suggested, but is considered highly uncertain (**Figure 8-1**).

It should also be noted that large portions of the study area have no current water-level monitoring in the middle aquifer (**Figure 8-3**).

8.2.3 Lower Aquifer

The USGS did not include monitoring for any lower-aquifer wells in their late 1970s to mid 1990s analysis. Water level monitoring in the lower aquifer between 1997 and 2007 was performed at the Port Williams Wellfield (discussed below) and at Graysmarsh. The USGS interpret both wells as completed in the lower aquifer (Thomas et al, 1999). Whereas 9.8 feet of decline was observed in the lower aquifer at Port Williams, only 0.8 feet of decline was observed about 1.8 miles away at Graysmarsh (**Figure 8-3**). Relatively few wells are completed in the lower aquifer, and water-level monitoring is non-existent in other portions of the study area.

8.2.4 City of Sequim Wellfields

PGG performed a detailed analysis of water-level trends at they City's Port Williams and Silberhorn wellfields. Monitoring at both wellfields is conducted in production wells and dedicated monitoring wells. In order to provide the most up-to-date analysis for the City's wellfields, PGG extended the study period of record through 2008 (rather than 2007). **Figures 8-4** and **8-5** present hydrographs from onsite wells at the two wellfields along with average monthly and annual pumping withdrawals.

Water levels at the Port Williams wellfield declined in all three aquifers between 1996 and 2001-2003, and appear to have remained relatively stable through 2007 (**Figure 8-4**). Pumping withdrawals occur from production wells PW-1 and PW-2 in the lower aquifer (pumping was initiated at the wellfield in 1996)[4]. PGG analyzed static water levels in Well PW-1 for declines over the period of record. At the time of drilling (September 1995), PW-1 had a static water level of 55.2 feet below land surface (bls). Both pumping and groundwater level monitoring were initiated in 1996, so pre-pumping seasonal water-level variations are unknown. However, the wellfield was not pumped during much of 1997, and a water-level variation of about 5 feet was noted during the non-pumping period. Over the period of record, seasonal high groundwater levels declined from about 54 feet bls in 1997 to about 60-62 feet bls (a 6-8 foot decline). Seasonal low groundwater levels declined from about 58 feet bls in 1997 to about 68-72 feet bls (a 10-14 foot decline). Relatively stable water levels are observed from 2001 through 2008, with a slight rising trend noted in the final two years. Over this stable period, the average daily static water level (63.8 feet bls) indicates an average decline of 9.8 feet below the highest noted static water levels in 1997.

Port Williams Monitoring Well MW-3 is completed in the middle aquifer, with a data record that begins after pumping was initiated in 1996 (**Figure 8-4**). Relative to the highest wet-season water levels in 1997 (37.4 feet bls), water-level declines of about 7-9 feet are noted in subsequent wet-season highs. Relative to a late-1997 average seasonal low water-level of 39.7 feet bls, subsequent average seasonal low water levels show declines ranging from about 8-11.5 feet. Relatively stable water levels are observed from 2001 through 2008, with a slight rising trend noted in the final two years. Over this stable period, the average daily static water level (47.1 feet bls) indicates an average decline of 9.7 feet below the average wet-season high static water levels in 1997.

Seasonal water-level variations in middle-aquifer Well MW-3 closely mimic the pattern of variation observed in lower-aquifer Well PW-1 (**Figure 8-4**). While the patterns are similar, the range of variation in Well MW-3 is about one half the range of variation in Well PW-1. The City also monitors middle-aquifer Well AAF386, located about 4700 feet east of the Port Williams Wellfield. As shown on **Figure 8-6**, seasonal water-level variations in Well AAF386 are very similar to those in Well MW-3 with a slightly reduced range of variation. Comparison of hydrographs from these two wells on **Figure 8-6** shows similar trends, although Well MW-3 has a slightly steeper rate of decline during the first years of Port Williams pumping (1996-2001) and definitive stabilization after 2001, whereas Well AAF386 has a gentler rate of decline between 1996-2001 and continues to decline very gradually after 2001.

Port Williams Monitoring Well MW-1 is completed in the shallow aquifer, with a data record that begins after pumping was initiated in 1996 (**Figure 8-4**). Relative to the highest wet-season water level in 1997 (4.6 feet bls), water-level declines of about 4-6 feet are noted in subsequent wet-season highs. Relative to the 1997 seasonal low water-level of 6.8 feet bls, subsequent average seasonal low water levels decline about 5-7 feet. Relatively stable water levels are observed from 2001 through 2005, with a minor rise between 2006 and 2008. The MW-1 data suggest that water-level declines in the shallow aquifer are only about 60 percent of the declines observed in the middle and lower aquifers. In addition, seasonal variation in the shallow aquifer is much less pronounced than in the middle and lower aquifers. The shallow aquifer tends to exhibit seasonal highs in the summer months (coincident with irrigation recharge), whereas the middle and lower aquifers exhibit seasonal lows in the summer months (coincident with periods of high groundwater withdrawals).

Figure 8-6 compares hydrographs from Well MW-1 with shallow-aquifer wells AAF381 and AAF382, located about 1,500 feet west of the Port Williams Wellfield. All 3 wells have similar trends. However, whereas stabilization and a late-record rise is observed in MW-1 after 2001, the other two wells exhibit a

[4] A new production well "PW-3" was installed at the Port Williams Wellfield in 2008, but is not yet in operation.

continued (but very gentle) decline. In addition, MW-1 exhibits more short-term variation than the other wells, including a more pronounced short-term rise in 2006 and 2007.

Water levels at the Silberhorn Wellfield are monitored in two production wells (Well 2 and Well 3) and one monitoring well (Well 1)[5] (**Figure 8-5**). All 3 wells are interpreted to be in the shallow aquifer; however, they are completed beneath till-like materials which are inferred to cause the completion aquifer to function (at least locally) as a confined aquifer (PGG, 1996). Although the data exhibit considerable noise from short-term variations, a fairly stable trend is noted between 1993 and 1997, followed by a declining trend between 1998 and 2005, followed by a trend towards stabilization (or a much more gentle rate of decline) between 2006 and 2008. Water level declines at the wellfield from 1997 to 2007 range from -12 to -17 feet. As shown on **Figure 8-3**, similar declines are noted in monitoring wells as much as a mile away (and on the other side of the Dungeness River), suggesting that water level declines are not localized to the area immediately around the wellfield. **Figure 8-3** also shows that water levels in nearby wells on both sides of the river declined 6 to9 feet between the late 1970s and the mid 1990s.

Water-level variations at the Silberhorn Wellfield show a seasonal pattern that does not correlate well with pumping. Seasonal low water levels from 2000 to 2008 typically occur between December and March, with high water levels often observed during the summer peak pumping season (**Figure 8-7**). Water levels also do not correlate well with flow events in the Dungeness River, but appear to correlate well with seasonal irrigation diversions in most years. (Ditches operated by the Independent Irrigation District are closest to the Silberhorn Wellfield.) However, during some years (e.g. 2000 and 2005), irrigation diversions appear to show poor correlation to groundwater level trends.

8.3 INTERPRETATION OF WATER LEVEL TRENDS

Water levels reflect the cumulative impact of several factors including precipitation recharge, irrigation recharge and pumping from wells. As discussed in the preceding sections, each of these factors has changed over time in the Sequim area. Changes in these factors impose new stresses on the hydrologic system. The influence that new stresses exert on groundwater levels is a function of their magnitude (relative to the overall water-budget for the groundwater flow system), their spatial distribution (whether they are regionally dispersed or locally concentrated), and specific hydrogeologic conditions in the area under change.

8.3.1 Relative Changes in Key Hydrologic Factors

The largest permanent change in key hydrologic factors in the study area is associated with reduction in recharge from leaky irrigation ditches. Consumptive groundwater withdrawals for residential (domestic and municipal) supply is estimated to have increased by about one third the change in irrigation recharge over the period from 1980 to 2007. Estimated variations in precipitation recharge are larger than changes in irrigation recharge, but are not long-lasting and snow no significant long-term trend. Whereas changes in recharge are predominantly imposed on the shallow aquifer (with secondary impacts on underlying aquifers), changes in pumping directly influence the shallow, middle and lower aquifers.

Precipitation Recharge

Precipitation recharge, estimated on an annual basis, has not exhibited a long-term change over the study-period. However, precipitation recharge varies year-to-year due to natural variations in precipitation. Based on USGS regression equations, study-area recharge over time is estimated to vary by around

[5] Well 1 is currently out of service.

±12,000 af/yr around a long-term average of about 19,000 af/yr (**Figure 7-1**). Similar to precipitation trends, above-average precipitation recharge occurred between 1995 and 1999, and below-average precipitation recharge occurred between 2000 and 2005. Total recharge to the study area is estimated to be about 58,000 af/yr, based on 19,000 af/yr of precipitation recharge, 18,700 af/yr of irrigation recharge, 10,500 af/yr of groundwater subflow, and 9,800 af/yr of flow losses from the Dungeness River[6]. Compared to the other factors considered, the range in variation for precipitation recharge reflects the largest stress imposed on the groundwater flow system within the study area; however, it is also relatively geographically dispersed.

The variation in precipitation recharge is neither long-lived nor consistent; however, its magnitude alone (e.g. a change of about 15,000 af/yr from the 5-year period 1996-1999 to the 6-year period 2000-2005) suggests that it should have a significant influence on groundwater levels. Nevertheless, water levels generally do not show a strong response to changes in precipitation recharge. Only three wells in the shallow aquifer (AAB 746, AAB 749, ACA594) had a noticeable positive response to the 1995-1999 high recharge years (**Figures 8-2a,b**). The response observed in these wells may be related to the fact that they are located in areas of lower aquifer permeability, as identified by the USGS (Thomas, 1997). Lower permeability materials tend to show a greater response to changes in recharge than high permeability materials where water is able to more quickly migrate away.

While recharge variations are large relative to pumping and changes in irrigation recharge, they do not exert an influence on groundwater levels that is consistent, and they do not appear to be the primary cause of the observed water level declines.

Irrigation Recharge

Recharge from leaky irrigation ditches has declined by an estimated 6,900 af/yr since 1993. Leakage from the ditches was estimated by Montgomery Water Group (1993), and exhibits significant spatial variation due to variations in soil permeability. Reductions in irrigation leakage due to ditch piping are also variably distributed over the study area. **Figure 7-2** shows how irrigation recharge was applied to the 2008 Groundwater Flow Model (PGG, 2009) and which model cells are associated with lined ditches. The piping has occurred in multiple sectors of the study area; however, the most concentrated reductions in recharge occur along a north-south strip immediately west of the Dungeness River, south of Highway 101 in the Silberhorn Wellfield vicinity, and within the Sequim city limits. One area of particularly high recharge immediately north of Highway 101 has yet to be piped.

Reduced recharge from leaky irrigation ditches (6,900 af/yr) is smaller than the magnitude of variation in precipitation recharge (e.g. 15,000 af/yr). However, once ditches are piped, irrigation recharge is permanently lost from the groundwater flow system. Depending on the time required for groundwater levels to equilibrate to changes in recharge, the timing of variation in precipitation recharge may have less influence than a continued trend of permanent recharge reductions through ditch lining. This is definitely the case over the long-term, as precipitation exhibits no observable long-term trend. In addition, recharge from irrigation ditches is more geographically concentrated than precipitation recharge. Ditch piping is likely to cause more pronounced groundwater declines adjacent to retired ditches, but is also expected to extend regionally as local declines propagate outwards to surrounding areas. Hydrogeologic conditions near a particular ditch may dictate how associated local and regional declines are distributed.

Groundwater Pumping

[6] TTFW reported personal communication with Bill Simonds (USGS) indicating that net losses from the river are on the order of 12 to 15 cfs (TTFW, 2003)

Groundwater pumping on the Sequim-Dungeness Peninsula has generally increased with population throughout the study period. Consumptive groundwater use for residential water supply in 2007 is estimated to total 3,820 af/yr, as summarized on the table below. Data are unavailable to quantify how withdrawals for all three categories of residential use have changed over the study period; however, existing data suggest that total withdrawals in 1980 were about 40 percent of withdrawals in 2007[7]. Assuming a similar ratio for consumptive use suggests that consumptive use may have increased by about 2,300 af/yr between 1980 and 2007.

	Estimated Total Withdrawal	Withdrawal from Shallow Aquifer	Withdrawal from Middle Aquifer	Withdrawal from Lower Aquifer	Estimated Total Consumptive Use
Domestic Wells	3,251 af/yr	~53% (1,723 af/yr)	~14% (455 af/yr)	~31% (1,008 af/yr)	1,681 af/yr
Group B Public Water Supply	426 af/yr	not estimated	not estimated	not estimated	235 af/yr
Group A Public Water Supply	3,027 af/yr	~78% (2,361 af/yr)	~22% (666 af/yr)	not estimated	1,906 af/yr
Total Residential	6,704 af/yr	~61% (4,084 af/yr)	~17% (1,121 af/yr)	~15% (1,008 af/yr)	3,823 af/yr

Whereas changes in recharge are imposed on the shallow aquifer with secondary effects in lower aquifers, changes in pumping are imposed directly on all aquifers. The table above summarizes estimates of residential groundwater withdrawals by aquifer. It should be noted that pumping from the middle and lower aquifers to supply homes with septic systems effectively transfers a portion of the pumped water into the shallow aquifer. While withdrawals from the shallow aquifer are estimated as about 61 percent of total withdrawals, *consumptive use* from the shallow aquifer is considerably less due to transfer of septic discharge associated with wells completed in the middle and lower aquifers[8]. On a per aquifer basis, consumptive use associated with pumping from the middle and lower aquifers is considerably higher than 61 percent, as a much smaller portion of septic recharge is likely to affect the water budget for these deeper aquifers.

The change in total consumptive residential groundwater use is estimated to be about one third of the change in recharge from leaky irrigation ditches, and less than one sixth the scale of observed variation in precipitation recharge. If the shallow aquifer supplies less than 50 percent of the total consumptive use associated with residential groundwater pumping, net consumptive withdrawal from the shallow aquifer represents less than one sixth the water-budget change associated with changes in irrigation recharge. Thus, changes in pumping are likely to have less influence on shallow-aquifer water levels than changes in ditch recharge and variations in precipitation recharge. Conversely, changes in pumping are expected to have more influence on middle-aquifer and lower-aquifer water levels. The extent to which changes in a given aquifer affect changes in adjacent aquifers depends on the degree of hydraulic connection provided by intervening aquitards. Trends in the shallow aquifer can cause trends in the middle aquifer, and vice versa. The extent of interconnection between aquifers is best analyzed through a groundwater flow model, as recently developed by PGG (2009). However, the current "2008 Groundwater Flow Model" has not been rigorously calibrated to datasets that reflect the interconnection between aquifers and related uncertainties remain (ibid).

[7] Domestic well withdrawals in 1980 are estimated to comprise about 40 percent of 2007 domestic withdrawals (Figure 6-3). City of Sequim (which constitutes about 35 percent of the current Group A pumping) also withdrew about 40 percent of current withdrawals in 1980 (Figure 6-1).

[8] For instance, returning just 1/4 of the pumping from the middle and lower aquifers into the shallow aquifer (via septic discharge) reduces the consumptive use from the shallow aquifer from an assumed 61 percent to 47 percent.

It is also important to note that the spatial distribution of pumping withdrawals can vary from diffuse (in areas of low density development) to concentrated (e.g. at municipal wellfields). Diffuse pumping is likely to cause diffuse (i.e. regional) patterns of drawdown, whereas concentrated pumping is expected to cause pronounced drawdown near the pumping center along with some degree of diffuse regional drawdown.

8.3.2 Interpretation of Trends by Area

A few areas within the overall study area have sufficient data to perform a detailed interpretation of groundwater level trends. These are areas near the Port Williams Wellfield and at the Highway 101 – Dungeness River crossing, where the City (and others) have performed intensive monitoring over time and the City has performed aquifer testing at their wellfields. For these areas, PGG evaluated how changes in pumping and recharge have interacted with the local hydrogeology to produce the observed trends. In both cases, this detailed analysis has illustrated that the hydrogeologic framework is complex and that existing characterization does not capture all of its salient features. For other areas, where water-level monitoring is sparser and hydrogeologic conditions are not as well documented, PGG's interpretation is limited to comparing water-level trends with the distribution of pumping and piped irrigation ditches.

Port Williams Vicinity

Groundwater levels are monitored at the Port Williams Wellfield in all three aquifers. As noted previously, pumping was initiated at the wellfield in 1996. Water levels declined between 1996 and 2001/2003, stabilized, and have more recently exhibited a minor rising trend (**Figure 8-4**). This type of response is expected for development of a new groundwater supply. New pumping will draw down water levels until sufficient gradients toward the wellfield are created to satisfy the pumping withdrawal. Groundwater declines will cease once a new equilibrium is reached between wellfield pumping and the overall groundwater flow system. This condition appears to have been achieved. The minor rise observed from 2005 through 2008 may be associated with reduced withdrawals after heavier pumping in 2001 and 2002.

Groundwater withdrawals at Port Williams average 450 af/yr (0.4 mgd); however, the wellfield is a supplemental source permitted to withdraw up to 1,850 af/yr (the combined annual allocation for the City's three sources). Although the City is unlikely to serve their entire demand through Port Williams withdrawals, their current water right provides capacity for future growth, and the City will likely look towards additional pumping at the wellfield to meet future demand. Based on the water-level response to Port Williams pumping thus far, increased future withdrawals will likely lead to additional declines followed by stabilization at a new equilibrium. The decline is a natural response to new pumping, and stabilization indicates that the groundwater flow system is capable of meeting the wellfield withdrawals.

Average declines at the wellfield thus far are approaching a "trigger" established under a water-rights Settlement Agreement signed by the City, Ecology and Graysmarsh. The agreement states that if declines in the middle aquifer exceed 10 feet, the City shall notify Ecology and Ecology shall issue a response[9]. The City has already notified Ecology of this condition, and has requested that Ecology respond after reviewing this monitoring report. At the time that the Settlement Agreement was developed, the 10-foot middle-aquifer trigger was believed to be conservative and unlikely to be reached (similar "triggers" for the lower aquifer were set at 35 to 50 feet, and only 9.8 feet of average decline has been observed thus far). Further discussion of the connection between the lower and middle aquifers follows. However, stabilization of

[9] While the average middle-aquifer decline is estimated at 9.7 feet, this "Tier 2" trigger has been exceeded during some years due to year-to-year variations.

water levels in response to pumping indicates that withdrawals are not "over-drafting" the groundwater flow system. As long as groundwater level declines associated with the City's pumping are not impairing neighboring water users, it appears safe to allow further incremental increases in withdrawals along with continued monitoring and data reporting.

The 9.8 feet of decline observed in the lower aquifer is consistent with aquifer properties estimated from aquifer testing at the wellfield (PGG 1995, 1998, 2008b). The "2008 Groundwater Flow Model (PGG, 2009) represents the lower aquifer with these properties and predicts 12 feet of drawdown after stabilization to 0.4 mgd of pumping. However, thorough review of the available data reveal various details which suggest that the lower aquifer is more complex that previously understood and that the degree of hydraulic connection with the middle aquifer is not yet well defined. Prior characterization of the hydrogeologic framework (e.g. Thomas et al, 1999) was based on limited wells penetrating the lower aquifer. As more data become available, our understanding of the groundwater flow system improves. The following observations reflect the hydrogeologic complexity associated with these deeper portions of the groundwater flow system, and suggest that our understanding would benefit from further data collection and interpretation.

1. Drawdowns associated with Port Williams pumping predicted with the 2008 Groundwater Flow Model are similar to those observed at the wellfield. However, the model predicts that lower-aquifer drawdown would be more widespread than observed under existing monitoring. Graysmarsh Well #8, located about 1.5 miles east-northeast of the wellfield is interpreted as completed in the lower aquifer (pers. comm.., Miller, 2007) and has declined by only 0.8 feet between 1997 and 2007. In contrast, the model predicts stabilized drawdown at Well #8 of about 5 feet. Assuming that hydrogeologic interpretation that Well #8 is completed in the lower aquifer is correct, other factors would be responsible for the lack of observed drawdown in that well. Possible factors include: aquifer heterogeneity (variations in aquifer texture) that "shields" the Well #8 vicinity from drawdown propagation, or leakage from adjacent aquifers that satisfies the Port Williams groundwater withdrawal before drawdown can propagate as far as Well #8.

2. During aquifer testing on Port Williams Well PW-1, water-levels were monitored in two lower-aquifer wells: one on the Graysmarsh property and another about 4000 feet west of the wellfield (PGG, 1995). While drawdown and recovery curves from wells near the wellfield closely matched predicted responses for a non-leaky, infinite, confined aquifer (Theis, 1935), the two distant monitoring wells showed no drawdown even though 1.8 to 4.2 feet was predicted. PGG interpreted this (lack of) response as indication that some combination of aquifer heterogeneity and/or aquitard leakage was influencing the test results.

3. Lower-aquifer water levels monitored at the Port Williams wellfield exhibit a strong (10-foot) seasonal fluctuation that correlates to seasonal variations in pumping. A very similar seasonal variation and long-term decline trend is observed in the middle aquifer at onsite monitoring well MW-3 (**Figure 8-4**). Seasonal variations in the middle aquifer are about half the magnitude of seasonal variations in the deep aquifer. The similarity of these seasonal and long-term trends seems to reflect hydraulic connection between the two aquifers. However, groundwater elevations in the two aquifers differ by about 15 feet. This head difference suggests that the lower confining bed provides significant resistance to flow between the two aquifers. These two conclusions appear to be contradictory. Preliminary experimentation with the 2008 Groundwater Flow Model suggested that an vertical aquitard permeability (Kv) on the order of 0.0008 ft/d was needed to maintain a significant head difference between the two aquifers; however, Kv values of 0.008 to 0.016 ft/d were needed to for long-term drawdown in the middle aquifer to approach about half the drawdown in the lower aquifer. The fact that the model cannot simultaneously simulate a significant head difference between the two aquifers *and* similarity in water-level trends between the two aquifers indicates that the conceptual model that

extends the regional hydrogeology (e.g. Thomas et al, 1999) to the local conditions may need to be revisited.

4. Trends in the shallow aquifer do not show seasonal variations similar to the middle or lower aquifers (**Figure 8-4**). This suggests that the shallow aquifer has less hydraulic connection to the middle aquifer than the connection between middle and lower aquifers. It also suggests that factors influencing groundwater levels in the shallow aquifer may differ from those affecting water levels in the middle and deep aquifers. These differences are illustrated on **Figure 8-6**. The hydrograph for shallow-aquifer well MW-1 (located at the wellfield) shows mid-summer water-level rises that may correspond to irrigation activity. In addition, whereas water-levels in MW-1 stabilize after 2000 and show a minor rise after 2005, water levels in two shallow aquifer wells about ¼-mile away show continued gentle declines. This suggests that other factors besides Port Williams pumping have some affect on shallow aquifer groundwater level trends (e.g. other pumping withdrawals and/or changes in irrigation and other sources of recharge).

5. Trends in the middle aquifer noted at the Port Williams Wellfield tend to closely follow trends in the lower aquifer (**Figure 8-4**). However, trends in the middle aquifer appear to be fairly widespread; whereas pumping drawdowns in the lower aquifer do not appear to affect more distant wells (see points 1 and 2 above). As shown on **Figure 8-3**, middle-aquifer water level declines between 1997 and 2007 cover a large area, with similar declines noted 1 to 2 miles away from the Port Williams Wellfield. A hydrograph of middle-aquifer Well AAF386, located a mile east of the wellfield, shows similar seasonal variation to Port Williams Well MW-3; however, two differences are noted: 1) whereas MW-3 shows a pronounced decline prior to 2001 followed by stabilization, AAF386 shows a more continuous, gradual decline, and 2) whereas MW-3 shows a greater water-level rise following 2005 than AAF386 (**Figure 8-6**). These differences suggest that other factors, besides pumping at the Port Williams Wellfield (e.g. other pumping or changes in the distribution of recharge), may be affecting nearby water levels in the middle aquifer.

6. It is worth noting that while groundwater is withdrawn from the Port Williams Wellfield at an average annual rate of 0.4 mgd (450 af/yr), other Group A systems and domestic wells within a mile of the wellfield are estimated to withdraw about 0.14 mgd (160 af/yr) and 0.1 mgd (110 af/yr), respectively. These two categories of withdrawal comprise 60 percent of total Port Williams pumping, and are expected to influence observed water-level trends. Ditch lining in the wellfield vicinity, predominantly prior to 2000 (**Figure 1-2**), is also expected to affect water-level trends.

7. Preliminary isotope analysis for age dating suggests that the groundwater drawn from the lower aquifer at the Port Williams Wellfield may be a mixture of old and recent water (Section 9.3). If confirmed with additional sampling, this would suggest a higher degree of hydraulic connection between the shallower and deeper portions of the groundwater flow system than implied by the current conceptual model.

In summary, groundwater level declines at the Port Williams Wellfield appear to have stabilized to the current level of pumping, as is expected when groundwater withdrawals do not exceed flow through the groundwater system. While a hydraulic connection exists between the lower and middle aquifers, available data are somewhat contradictory regarding the degree of connection. Additional data collection, aquifer testing, and/or hydrogeologic characterization may be needed to better understand this connection. Heterogeneity may also be affecting the distribution of drawdown in the lower aquifer. The shallow aquifer appears to have less hydraulic connection to underlying aquifers, and is likely more influenced by recharge than pumping. Trends in wells more distant from the wellfield suggest that influences on the shallow and middle aquifers extend beyond purely Port Williams pumping. Indeed, other withdrawals within a mile of the wellfield comprise an additional 60 percent of the wellfield pumping, and changes in irrigation recharge also occur nearby.

Highway 101 – Dungeness River Crossing

Water-level declines near the Highway 101 – Dungeness River crossing appear to extend over an area of several square miles on either side of the Dungeness River. As noted in Section 8.2.1, declines have ranged from 8 to 17 feet between 1997 and 2007, preceded by 3- to 9-foot declines between the late 1970s and the mid 1990s[10]. Wells exhibiting declines are interpreted as completed in the shallow aquifer beneath a glacial till confining unit. Local stresses on the groundwater flow system capable of causing decline include:

- Pumping at the Silberhorn Wellfield
- Pumping from nearby public and domestic water systems; and,
- Changes in recharge from piping of irrigation ditches.

The City of Sequim has used the Silberhorn Wellfield for water supply since 1975. PGG evaluated pumping and water-level declines at the Silberhorn Wellfield in 1996, as declining water levels had forced a number of nearby residents to deepen their domestic supply wells in the early 1990s. To help mitigate declining water levels, the City of Sequim reduced pumping at the wellfield in 1996 as it brought the Port Williams Wellfield into service. Reduced pumping continued through 2005, and has more recently increased back to quantities withdrawn in the early 1990's (**Figure 8-5**). However, water levels in the Silberhorn area continued to decline from 1997 through 2005 despite reduced annual pumping loads. In addition to the fact that long-term water-level declines do not correlate well with changes in pumping, seasonal high groundwater levels tend to occur during maximum (summer) seasonal pumping withdrawals (**Figure 8-7**). Both of these observations suggest that other changes in the hydrologic system may be contributing to the water level declines.

Other pumping in the area is significant relative to Silberhorn withdrawals, as summarized in the table below. Whereas Silberhorn pumping has averaged 0.26 mgd (290 af/yr) from 1993 through 2008 and was 0.35 mgd (390 af/yr) in 2007, other Group A water systems within a 1-mile radius of the wellfield had 2007 withdrawals on the order of 0.29 mgd (330 af/yr). Just over half of this Group A pumping is associated with the Clallam County PUD Evergreen System (**Figure 6-2**). In addition, domestic wells within a 1-mile radius are estimated to withdraw about 0.17 mgd (190 af/yr). Compared to the sum of Group A and domestic *gross* withdrawals (520 af/yr), associated consumptive use is estimated to be 0.35 mgd (390 af/yr) or more[11]. Therefore withdrawals from other Group A systems and domestic wells are expected to have a similar degree of influence on the groundwater flow system as pumping from the Port Williams Wellfield.

Groundwater Use	Gross Withdrawal	Consumptive Use
Silberhorn Pumping (2007)	0.35 mgd (390 af/yr)	0.35 mgd (390 af/yr)
Other Group A Systems and Domestic Withdrawals within 1 mile of Silberhorn Wellfield (2007)	0.46 mgd (520 af/yr)	0.35 mgd (390 af/yr)

[10] An isolated middle-aquifer decline of 9 feet is noted in the area where highway 101 crosses the Dungeness River (Figure 8-3). As noted above, preliminary hydrogeologic interpretation suggests that this well may be completed in the shallow aquifer. Further evaluation would be needed to confirm this or ascertain whether similar declines are noted in the shallow and middle aquifers.

[11] Consumptive use may be more than 350 af/yr locally because the Clallam PUD Evergreen System may supply wells over an extended area.

In comparison with pumping withdrawals, lining of irrigation ditches near the Silberhorn Wellfield is estimated to have reduced local groundwater recharge by about 0.38 mgd (430 af/yr). Ditch lining on the west side of the Dungeness River is also significant (**Figure 1-2**), although PGG did not calculate associated reductions in recharge. As discussed above, seasonal water-level trends at the Silberhorn Wellfield exhibit good correlation to seasonal irrigation diversions during some (but not all) years. In contrast, seasonal pumping patterns generally exhibit an inverse correlation to water-level trends. This suggests that recharge from irrigation ditches may exert a stronger influence on seasonal water-level variations than pumping. Additional study would be needed to better understand these causative factors.

Interpretation of the data collected to date suggest that hydrogeologic conditions in the vicinity of the Highway 101 – Dungeness River crossing are somewhat complex, and the mechanisms for groundwater level decline are not fully understood. Many of the wells in the area are completed beneath a till confining unit, and aquifer testing at the Silberhorn Wellfield showed a confined aquifer response (PGG, 1996). Under confined conditions, drawdown from pumping is expected to propagate relatively far out into the aquifer, and declines on either side of the river are consistent with expected pumping responses from an aquifer that is partially isolated from the river by an overlying confining unit. However, declines on either side of the river could also be explained by reduced irrigation recharge on both sides of the river, and the noted correlation between irrigation diversions and Silberhorn water-levels suggests that irrigation recharge has a greater influence on water-level trends than pumping. If this is the case, a mechanism for changes in irrigation recharge (which reaches the shallow aquifer *above* the confining unit) to exert greater influence on water levels *below* the confining unit is required.

Variations in irrigation recharge could exert a strong influence on groundwater levels below the confining unit if the unit were local in extent, and was absent in more distant areas where ditch recharge is a significant contributing factor to the water budget. However, if changes in irrigation recharge were responsible for most of the observed decline, similar declines would be required in areas where the confining layer was absent. These "source areas" would be functioning under unconfined conditions, would probably be better connected to the Dungeness River, and declines on the order of 20 feet would therefore be less likely. Pumping drawdowns are more capable of creating decline beneath a confining unit, and the combination of both factors may be influencing the observed declines. Although long-term variations in Silberhorn pumping do not correlate well to long-term water-level trends, other local pumping occurs at a similar magnitude and associated changes over time are unknown.

Declines near the Dungeness River crossing are on the order of approximately 25 feet over 30 years, and have not stabilized. If these declines are to be better understood, additional hydrogeologic characterization, continued (or additional) monitoring of groundwater levels and pumping, consideration of temporal and spatial patterns in ditch leakage and associated interpretation is recommended. At minimum, continued monitoring of water-levels and pumping, and documentation of further ditch lining, is strongly recommended.

Other Areas

Water-level declines in other areas are typically small to moderate compared to the declines discussed above. A few exceptions are noted below, and are described qualitatively in terms of documented groundwater withdrawals and ditch piping:

- An isolated 6.3-foot water-level decline in the shallow aquifer just east of Cassalery Creek (**Figure 8-3**) may be associated with similar order declines noted near the Port Williams Wellfield; however, available data are too sparse to assess whether these declines are continuous over intervening areas.

Consumptive groundwater use is not estimated to be particularly high in that square-mile section (**Figure 6-5**). An upgradient reach of irrigation ditch was piped prior to 2000 (**Figure 1-2**); however piping of irrigation ditches is not particularly concentrated in this area.

- An isolated 7.7-foot water-level decline in the middle aquifer just south of Bell Creek (**Figure 8-3**) is of unknown origin. Two Group A water systems withdraw about 0.03 mgd from this square-mile section (**Table 6-2**) and domestic well withdrawals are moderate (**Figure 6-5**). The area includes a relatively high density of piped irrigation ditches (**Figure 1-2**). Because groundwater levels are not monitored in the shallow aquifer, the influence of reduced ditch recharge is difficult to interpret. While similar magnitude middle-aquifer declines are noted at the Port Williams Wellfield (approximately 2 miles to the northwest), it seems less likely that almost 8 feet of drawdown from the Port Williams Wellfield has propagated this far from the pumping center. Available monitoring points are too sparse to characterize the continuity of declines between areas.
- Declines of 8.4 and 7 feet in the shallow and middle aquifers (respectively) are noted in the Agnew area, west of McDonald Creek (**Figure 8-3**). A single Group A system withdraws 0.07 mgd from this square-mile section (**Table 6-2**), and domestic well withdrawals are moderate (**Figure 6-5**). Ditch lining has also occurred in the area of decline (**Figure 1-2**).

8.3.3 Factors Influencing Future Hydrologic Changes

The same factors considered in interpretation of historic water-level changes have the potential to cause future change: precipitation recharge, irrigation recharge and pumping withdrawals. As discussed above, water-level responses to these factors will depend on: 1) the relative magnitude of the change, 2) the spatial distribution of the change, and 3) local hydrogeology. The largest near-term change could be associated with lining of irrigation ditches. About 6,900 af/yr out of 17,200 af/yr of irrigation recharge has been lost due to ditch piping since the early 1990's, leaving as much as 10,300 af/yr of future potential reduction. The other two factors are the same order of magnitude but smaller. Consumptive groundwater use is currently on the order of 3,800 af/yr. City of Sequim doubled its pumping over 30 years from 1978 to 2008 (**Figure 6-1**). A similar growth rate would increase total pumping by about 4,000 af/yr by 2040. Long-term average precipitation recharge is estimated to be 19,000 af/yr over the study area. If climate change (warming) caused a reduction of about 15 percent, precipitation recharge would decline by about 2,900 af/yr. These three factors combined represent about one third of the current total estimated recharge for the study area[12].

Whereas precipitation recharge is distributed over the area, the spacing of un-piped irrigation ditches varies greatly. Water-level declines resulting from piping would be greatest in areas of closely spaced ditches. Groundwater withdrawals can be widely distributed (as with multiple single-residence domestic wells) or concentrated (as with large public water-system wellfields). Drawdown distributions will depend on the intensity and concentration of pumping, along with the aquifer pumped. Hydraulic connection between aquifers dictates that pumping in a given aquifer will cause some degree of (subdued) decline in overlying or underlying aquifers. Groundwater level declines in the shallow aquifer would lead to some baseflow reduction in streams that are hydraulically connected to the groundwater flow system. Whereas gaining streams (e.g. many of the small independent streams in the study area) would gain less water, losing streams (e.g. the Dungeness River) would lose more water to the shallow aquifer, partially offsetting the reduction in recharge. The 2008 Groundwater Flow Model (PGG, 2009) could be used to estimate the affects of these changes, although further calibration of the model is recommended to better

[12] Total recharge, including ditch leakage for 1993, was estimated on the order of 58,000 af/yr (Section 8.3.1). Ditch lining between 1993 and 2008 has reduced total recharge to an estimated 51,100 af/yr.

represent the degree of hydraulic connection between shallow and deeper portions of the groundwater flow system.

9.0 WATER QUALITY

This section summarizes spatial distributions and temporal water-quality trends from readily available groundwater and surface-water quality information. The data reflect sampling of groundwater supply sources and sites along local streams, as reported by involved agencies and organizations. This section does not attempt to summarize water-quality issues associated with local contaminated sites (such as leaking underground storage tanks or landfills), and the reader is referred to Washington Department of Ecology databases for information regarding known and suspected contaminated sites. This section also presents the results of isotopic analysis for groundwater age dating from recent samples collected by the City of Sequim at its two wellfields.

9.1 DATA SOURCES

Groundwater Data

Groundwater data was compiled from the Washington Department of Health (DOH), the USGS, and Clallam County:

- DOH provided a download of analytical data for all Group A water quality systems in the study area including samples from 352 Group A[13] water systems with data from as early as 1975 (DOH, 2008).
- Clallam County provided nitrate data from 125 samples, including some continued monitoring of USGS monitoring wells (Anne Soule, personal communication, 2008).
- Groundwater data from USGS monitoring include results from 510 nitrate and specific conductance analyses from 1979 to 1996 (Thomas et al, 1999).

The discussion below focuses on data from the DOH. USGS and Clallam County data are used to supplement the analysis of nitrate and conductivity of groundwater.

Surface Water Data

Surface-water quality is summarized from existing compilations of water-quality data including: data summaries from the Streamkeepers of Clallam County (Streamkeepers, 2004, 2007); surface-water quality reports from the Department of Ecology (Sargeant, 2002 and 2004); and the WRIA 18 Watershed Plan (EDPU, 2005).

9.2 GROUNDWATER

Water quality in Group A systems is generally good, with only isolated exceedances of maximum contaminant levels (MCLs). The following sections discuss nitrate concentrations, electrical conductivity, and MCL exceedances in the data considered.

[13] Group A water systems have 15 or more service connections or regularly serve 25 or more people 60 or more days per year, and are required to collect water quality samples on a regular basis.

9.2.1 Nitrate

Nitrate is a common constituent in groundwater that can originate from both natural and anthropogenic sources. Nitrogen compounds such as ammonium and nitrate are important nutrients for plant and bacterial growth. Nitrate is generally the dominant form of nitrogen in groundwater with lesser amounts of ammonium and nitrite which convert to nitrate through bacterial processes. High nutrient concentrations in groundwater may indicate contamination by animal waste or sewage, nitrogen-rich fertilizers, or industrial discharges. Nitrate is regulated in groundwater with an MCL of 10 mg/L.

Figure 9-1 summarizes nitrate data in 1980, 1996 and 2005-2007[14]. Nitrate values in the study area ranged from non-detect to 20.1 mg/L and have generally been increasing since 1980. Nitrate values in Group A water systems ranged from non-detect to 16.6 mg/L, with only 2 of 2132 samples exceeding the MCL. Among the Group A water systems, 35 samples exceeded the 4.99 mg/L DOH trigger for nitrate; 2 samples exceeded the MCL (10 mg/L). Six of these exceedances occurred at the Carlsborg Mobile Estates Group A system since 2005, which shows an increasing trend from 3mg/L to over 9 mg/L since 2003.

The highest nitrate concentrations and most prominent increases over time occur downgradient (north-northeast) of Sequim and in the vicinities of Agnew and Carlsborg. Recent data are largely lacking south of Highway 101. Areas with elevated nitrate concentrations in **Figure 9-1** generally occur near high densities of domestic wells (**Figure 6-4).** This similarity could reflect a correlation with increased densities of residential development (and associated septic loading) and/or a bias inherent in sampling density.

Clallam County found that nitrate concentrations in the Agnew and Carlsborg areas tended to occur as locally elevated hot-spots near or above the MCL, surrounded by lower concentrations generally less than 5 mg/L (Soule, 2004). Ecology found a statistically significant increase in nitrate concentrations at 3 of 8 wells from 1980 to 2002 near Agnew and Carlsborg, with one well showing a declining trend (Sinclair, 2003).

The USGS estimated that about 47 percent of nitrogen loading was attributed to fertilizers, manure lagoons and application, and 20 percent of the loading was attributed to septic systems (Thomas et al, 1999). The USGS found that residential areas with higher septic system density had statistically significant increases in nitrate over nitrate concentration in natural grasslands and forests (background). Nitrate concentrations beneath agricultural areas were higher than background, but were not considered statistically significantly higher.

9.2.2 Conductivity

Electrical conductivity, sometimes referred to as specific conductance, is an indicator of total dissolved solids in water and water hardness, and can also provide an indicator of seawater intrusion. Increasing electrical conductivity values indicated increasing concentrations of dissolved minerals producing harder water, or elevated chloride from saltwater interaction. Conductivity data suggest soft to moderately hard water in the Sequim-Dungeness Peninsula, and do not indicate widespread seawater intrusion.

PGG reviewed conductivity data from 153 samples in the DOH database as a screen for saltwater intrusion, and other forms of contamination (DOH, 2008). Conductivity values in the DOH data range from 114 to 860 umhos/cm, with an average of 338 umhos/cm. The highest value, associated with the West Sequim Bay Water System, had *both* elevated conductivity and chloride values, suggesting possible sea-

[14] Data from Clallam County and DOH were extracted into time-slices from 1979-1980, 1995-1996, and 2005-2007 for use in Figure 9-1.

water interaction or presence of connate saline water in the aquifer. The system's chloride concentrations averaged 176 mg/l, which is about 10 times higher than the dataset average of 18 mg/l, but well below the secondary MCL for chloride of 250 mg/l.

The USGS reports an average specific conductance of 312 umho/cm ranging from 167 to 712 umhos/cm from 74 samples collected in 1996 (Thomas et al, 1999). Specific conductance was slightly higher in the Middle Aquifer (404 umhos/cm) than the Shallow Aquifer (294 umhos/cm). These values are similar to conductivity values from the DOH database.

PGG also reviewed a 1993 study that evaluated chloride and conductivity in 49 wells located in 13 coastal areas of eastern Clallam County (Forbes, 1993). Areas sampled within PGG's study area included: Agnew, Washington Harbor, Port Williams, Old Town, near the mouth of McDonald Creek, W. Anderson Road/W. Marine Drive, Fairview and Dungeness. Some (13) of the wells were outside of PGG's study area (e.g. in south Sequim Bay and on the Miller Peninsula). Approximately 20 wells had been previously sampled by the USGS in 1978-79. Within PGG's study area, only one well (on the west side of Sequim Bay) had high chloride and conductivity (260 ppm and 1200 umhos/cm). The study presented the following conclusions:

- Seawater intrusion is not a pervasive problem in Clallam County at the present time, and there appears to have been little if any significant change in chloride content in wells that were last sampled in 1978-79.

- No new areas of potential impact from seawater intrusion were discovered in Clallam County. However, data from previous studies and this work indicate that elevated chlorides in the west and east coast of Sequim Bay, the community of Blyn at the south end of the Bay, and Diamond Point on Miller Peninsula.

- Water wells located along the coastline between Dungeness and the entrance to Sequim Bay appear to be remarkably resistant to intrusion. Based on our knowledge of the hydrogeology, this appears to be due to the fact that groundwater is being produced from confined aquifers with a relatively high hydraulic (sometimes artesian) head.

9.2.3 MCL Exceedances

There were relatively few exceedances of groundwater maximum contaminant levels in the study area between 2002 and 2007. 18 out of 352 systems had exceedances of the MCL, including:

- Fourteen systems (36 samples) had exceedances of the secondary MCL for manganese (0.05 mg/l);
- Seven systems had exceedances of the secondary MCL for iron (0.3 mg/l);
- One system had exceedances of the MCL for specific conductivity (700 umhos/cm); and,
- Two water systems MCL for nitrate (10 mg/L).

Iron and manganese are naturally occurring, and commonly elevated in Washington State soils and groundwater due to the regional geology of the area (San Juan, 1994). Elevated iron and manganese present an aesthetic rather than health concern in most cases.

Several MCL exceedances were noted in the WDOH data for volatile organic compounds (VOC); however these were related to by-products of disinfection by chlorination (e.g. trihalomethane, dibromochloromethane, chloroform, and bromochloromethane) and are likely unrelated to subsurface conditions.

9.3 GROUNDWATER AGE DATING

The City of Sequim had samples from its Port Williams and Silberhorn wellfields analyzed for tritium and carbon-14 in order to estimate the age of groundwater reaching these wells. A positive detect for tritium means that some portion of the water comes from recent (post "H-bomb") water. If there is no detect, then the water is completely older than 1944. The Carbon-14 age represents the "average age" of the groundwater. If the groundwater flowpath involves mixing, this value is an average age of all the various waters that get mixed in the aquifer. The samples were taken in April 2008 and sent to Beta Analytic Laboratories of Miami, FL for Carbon-14 analysis and to Isotech labs of Champagne, IL for tritium analysis. Laboratory results are summarized below:

Source	Apparent C14 Age (Fraction Modern)	C13/C12 Ratio	Tritium (TU)	Tritium Std. Dev. (TU)
S05-Port Williams	1840 +/- 40 BP (Fmdn 0.7949 +/- 0.0040)	-14.2 o/oo	5.21	0.31
S02-Silberhorn	1350 +/- 40 BP (Fmdn 0.8449 +/- 0.0042)	-10.6 o/oo	3.20	0.29

The tritium age dating suggests that there is some component of modern (post world war 2) water at both wellfields. This is indicated by values in excess of 1 tritium unit (TU). Port Williams had a higher tritium measurement than Silberhorn, but that doesn't mean it is more "modern" (i.e. younger). Tritium levels in the atmosphere were highest in the 1960's - so a higher tritium value could mean that the water was recharged during a time of high atmospheric tritium and then went through some radioactive decay underground.

The Carbon-14 age dating provides "apparent" ages. They are called apparent because they can be influenced by mixing with more modern water or they can be affected by chemical reactions in the subsurface. The apparent ages are 1840 years for Port Williams and 1350 years for Silberhorn. If there are no significant chemical reactions in the subsurface, this would signify that the average age between the "modern" water (shown by the tritium values) and the older water is 1840 and 1350 years. This means that some amount of modern water is mixing with water that is older than 1840 and 1350 years. How much older depends on the amount of mixing. For example, if the mixing were 50/50, then the "old" water would be 2x older than the apparent age (i.e. 3,680 and 2,700 years). Further analysis by an isotope geochemist might support better assessment of the mixing ratios based on consideration of the tritium values.

If chemical reactions have occurred in the subsurface, the apparent ages of 1,840 and 1,350 years are *maximum* values (pers. com., Hood, 2008). That is, possible chemical reactions make the apparent ages go older, not younger. If chemical reactions have occurred, the mixed groundwater may have average ages that are younger than the reported values. The most common reactions in the subsurface are carbonate dissolution, methane production ("methanogenesis"), interactions with buried organic carbon and sulfide oxidation (ibid). Because there is no limestone in the area, carbonate dissolution is unlikely to be affecting the accuracy of the dating. Methanogenesis is also highly unlikely because the Carbon-13 numbers are in normal ranges (ibid). The likelihood of interactions with buried carbon and sulfide oxidation is unknown. Groundwater could potentially move through pockets of organic-rich materials (e.g. buried peat deposits) that could cause either reaction. Neither of the water sources produces sulfur smelling water; however, Ann Soule (hydrogeologist for Clallam County) notes that a number of wells on the Sequim-Dungeness Peninsula do exhibit sulfur-smelling water (Soule, pers. com., 2008). Further geochem-

ical analysis would be needed in order to better assess (or rule out) the potential for dating errors due to interactions with buried organic carbon and/or sulfide oxidation

Overall, the age-dating results indicate that both samples appear to be a mixture of "modern" (post WWII) and "older" (>1,840 and >1,350 years), and that these dates represent "average" values for the mixed waters. If interactions with buried organic carbon or sulfide oxidation have significantly affected the samples, the mixed water samples would have a younger affective age than the reported values.

The occurrence of younger water in the lower aquifer at Port Williams is unexpected, given that USGS characterization of the groundwater flow system includes two overlying regional aquitards. In general, more than one age-dating analysis should be performed to characterize groundwater residence times in a given aquifer, especially to rule out the possibility of laboratory error. Confirmation of the presence of younger water in the lower aquifer would suggest that the aquitards that overlie the lower aquifer do not provide a continuous low-permeability restriction to downward groundwater flow, and that areas may exist that provide more rapid communication between shallow groundwater and the lower aquifer. Additional sampling, at minimum for tritium analysis, would be needed to better assess this possibility.

9.4 SURFACE WATER

Surface water quality is monitored in the Dungeness River and smaller streams by Ecology, the Jamestown S'Klallam Tribe and Streamkeepers on a regular basis. The Jamestown S'Klallam Tribe is preparing a report on the current status of surface-water quality in the Sequim area expected available in early spring, 2009 (Hansi Hals, personal communication, 2009). Surface-water quality can impact not only the immediate stream environment, but also on the health of salmon populations, near-stream groundwater and the near shore environment in the Strait of Juan de Fuca, Dungeness Bay and Sequim Bay. Elevated fecal coliform bacterial concentrations have been the primary water quality issues in study-area surface waters due to the potential for human health impacts and consequent restrictions on shellfish harvesting. A number of parameters including water temperature, nitrate, and dissolved oxygen impair surface water quality due to their influence on stream ecosystems and aquatic life including salmon. Fine sediment, while not a water quality parameter, can clog stream beds and increase water turbidity adversely affecting stream ecosystem health. Silted stream bottoms adversely affect salmon spawning habitat, and increased turbidity can reduce available light for aquatic plant and animal life.

A summary of the water quality rating for each of the streams and descriptions of water quality issues from the State of the Waters report (Streamkeepers, 2004), the WRIA 18 Watershed Plan (EDPU, 2005), Streamkeepers water quality summaries (Streamkeepers, 2007), and the Washington State Waster Quality Assessment Report (Ecology, 2008b) are presented in **Table 9-1**. Select water quality parameters are discussed in the following sections.

9.4.1 Fecal Coliform

Fecal coliform exceedances are a primary surface-water quality issue in the study area in monitoring to date (**Table 9-1**). Elevated fecal coliform counts are reported for 8 of 10 of the monitored drainages in the Sequim area. Fecal coliform indicates the presence of feces in contact with water at some point upstream of the sampling point. Detections of fecal coliform can also indicate the presence of viruses and other pathogens present in feces that are not commonly tested for.

Elevated concentrations in the study area are generally considered to result from many non-point source activities in the area including leaky septic systems, animal access to creeks and irrigation ditches, and

other animal waste. Elevated coliform counts in Dungeness Bay resulted in restrictions on shellfish harvesting. Elevated coliform in the Dungeness River and tributaries are considered the primary source for the elevated coliform in Dungeness Bay, and Ecology completed two a total maximum daily load (TMDL) studies to begin addressing the problem (Sargeant, 2002 and 2004). Changes in use and maintenance of septic systems, animal access to waterways, and agricultural practices have reduced coliform levels in the Dungeness River and Matriotti Creek, although levels remain above target levels outlined in the *Clean Water Strategy for Addressing Bacteria Pollution in Dungeness Bay and Watershed* (Streeter, 2004).

9.4.2 Nitrate

Nitrate is a basic nutrient in the fresh and saltwater bodies required for plant growth and ecosystem health. However, excessive nitrate can cause human health effects and adversely effect surface water ecosystems by promoting algal blooms and other changes. Similar to groundwater, elevated nitrate in surface waters can come from residential and agricultural fertilizers, septic systems, animal waste, and certain types of crops which fix nitrogen in soil. The state regulates nitrate in surface waters for human health effects at 10 mg/l. However, concentrations below 10 mg/l have the potential to adversely affect stream ecosystems. PGG did not conduct an exhaustive analysis of nitrate concentrations, but relies on evaluations of stream health provided in the documents listed in Section 9.1 which may list nitrate as impairing water quality based on habitat concerns, even if concentrations are below the MCL for human health. Nitrate is listed as a concern for surface water quality in 4 of 10 streams on the Sequim-Dungeness Peninsula, including Cassalery Creek, Matriotti Creek, McDonald Creek and the Dungeness River (**Table 9-1**) (Streamkeepers, 2007; EDPU, 2005). Nitrate was not measured at all water quality monitoring stations and may be elevated in other areas.

Ecology collected 72 nitrate samples between 2001 and 2007 at station 18A050 near the Dungeness River mouth, which averaged 0.053 mg/l with a maximum of 0.143 mg/l. Nitrogen values at this station vary seasonally with a peak between November and January and lowest values in summer months.

9.4.3 Temperature

Water temperature is an important indicator of stream health because it influences the health and type of biota. Warm temperatures can adversely affect salmon spawning, and promote growth of disease causing organisms and algae. Human activities can affect water temperature through changes in streamside vegetation, and changes to streamflow through diversions and inputs from commercial outfalls and stormwater.

Temperature is listed as degrading stream health at 6 of 10 streams in the study area, including Cassalery Creek, Cooper Creek, Dungeness River, Matriotti Creek, McDonald Creek, and Meadowbrook Creek (Streamkeepers, 2004, 2007). Dungeness River temperature at station 18A050 varies daily and seasonally with a summer high in July and August between 13 and 16.5 degrees C and a low in January and February with temperatures just above freezing (Ecology, 2008b).

9.4.4 Dissolved Oxygen

Dissolved oxygen is the oxygen present in water and available for fish and other aquatic species. Dissolved oxygen concentrations can be reduced by increases in water temperature, presence of decaying organic matter in streams, and types of in-stream biota. Low dissolved oxygen impairs aquatic life in streams (Streamkeepers, 2004). Dissolved oxygen is listed as an impairing water quality at 5 of 10 streams in the study area including Bell Creek, Cassalery Creek, Cooper Creek, Meadowbrook Creek and

Siebert Creek (**Table 9-1**) (Ecology, 2008b). Dissolved oxygen is listed as a concern for water quality at Bagley Creek and Matriotti Creek (Ecology, 2008b).

9.4.5 Conductivity

Electrical conductivity is the ability of water to conduct electricity, and is a measure of the concentration of dissolved ions. Conductivity in the Dungeness River ranges from 81 to 170 umhos/cm with an average of 129 umhos/cm, which is in the expected range for fresh water (Ecology, 2008b). These conductivity values are also generally lower than the range for groundwater discussed in Section 9.2.2, suggesting lower total dissolved solids concentrations in the Dungeness River than in groundwater.

9.4.6 Turbidity and Fine Sediment

Turbidity is a measure of the suspended material in water and an important water quality parameter because of the potential for fine sediment clog stream beds, block sunlight from aquatic vegetation, and otherwise adversely affect stream health. The Streamkeepers note fine sediment as an issue at 7 of 10 streams in the study area based on repeat observations of channel conditions (Streamkeepers, 2004). They cite stormwater runoff, bank erosion, and land use practices as contributing to increased fine sediment and turbidity levels in study area streams, although factors vary by stream. No study area streams are listed as impaired for turbidity in the State Water Quality Assessment Report (Ecology, 2008b).

10.0 RECOMMENDATIONS

The following recommendations are offered to guide future monitoring efforts along with related studies to better understand the structure and function of the groundwater flow system:

1. Existing monitoring efforts have been useful in documenting hydrologic trends on the Sequim-Dungeness Peninsula and should be continued to guide water-resource management decisions. The City's monitoring program includes several nearby monitoring points that appear to provide duplicate data. Specifically, the Sequim Test Well and Well MW-1 are both located at the Port Williams Wellfield in the shallow aquifer, and wells AAF381 and AAF382 are located across the street from one another (**Figure 8-1**), about ¼ mile west of the Port Williams Wellfield. Monitoring of all four wells is specified in the water rights settlement agreement for the Port Williams Wellfield. However, with Ecology's approval, PGG recommends that the Sequim Test Well and Well AAF382 be dropped from the monitoring network.

2. The current monitoring network includes broad areas with no monitoring points, or that were monitored previously by the USGS and are no longer monitored (**Figure 8-3**). Monitoring is extremely limited in the middle and lower aquifers, although groundwater withdrawals are likely shifting to these aquifers. The City's responsibilities are associated with monitoring conditions near their wellfields. However, if the City or other entities have resources for additional monitoring, we recommend that the network could be expanded to include:

   - "Filling in the gaps" in shallow aquifer monitoring, including re-establishing some of the wells historically monitored by the USGS in areas with sparse or no current monitoring;
   - Locations in the shallow aquifer *surrounding* areas of noted declines to establish the geographic extent of the decline. Areas include the Highway 101 – Dungeness River crossing, and the area between the headwaters of Gierin Creek and mid Cassalery Creek;
   - Locations in the shallow aquifer where extensive ditch piping has recently occurred or will be occurring in the future;
   - Areas of increasing groundwater withdrawals (e.g. Carlsborg);
   - Areas in the middle and lower aquifers surrounding areas where declines are noted, and in other areas to establish background trends.

3. Groundwater declines near the Highway 101 – Dungeness River crossing present the greatest concern. If a better understanding of this situation is desired, PGG recommends that further study include: installation of dataloggers in some of the monitoring wells to obtain better time-resolution of groundwater responses, monitoring of additional wells surrounding the area of documented decline, further hydrogeologic characterization of the area (e.g. hydrogeologic cross sections, water-level mapping, assessment of vertical gradients), and monitoring or observation of flow conditions and changes in nearby irrigation ditches.

4. Stabilization of groundwater levels in the vicinity of the Port Williams Wellfield indicates that the groundwater flow system has established equilibrium with current pumping. Future increases in pumping will shift this equilibrium and cause further decline (which is likely to stabilize). Although average declines at the wellfield have not reached the "trigger" established in the water-rights settlement agreement, the trigger has been reached in some years. The City should work with Ecology to

review the conclusions of this report, and continue its commitment to monitoring in the Port Williams area.

5. Understanding the hydraulic connection between the shallow aquifer and deeper aquifers is important for predicting the impacts of future increases in deep pumping, and could be aided by additional age-dating isotopic analysis. Preliminary analysis suggests mixing of old and recent water in the lower aquifer; however, this is based on a single sample from the Port Williams Wellfield. This single analysis should be repeated. Use of tritium or other indicators of recent human influence such as methylene blue active substances (ingredients in detergent), nitrate or PCPP (personal care products and pharmaceuticals) could be useful in mapping areas where recent water has made its way into deeper portions of the groundwater flow system. Additional geochemical and hydrogeologic analysis could be employed to evaluate ratios of mixing between older and recent waters, and further applied to assess hydraulic connections between adjacent aquifers.

6. As groundwater quality data suggest increasing nitrate concentrations over time, the County's efforts to monitor nitrate appear to be useful and warranted. Nitrate data collected from public water system testing, sampling associated with building permits, and focused monitoring in problem areas is encouraged. Hopefully, Clallam County will continue its efforts to track nitrate concentrations over time.

7. Existing and future monitoring data would likely be useful for further calibration of the 2008 Groundwater Flow Model (PGG, 2009). Better calibration of the model to hydraulic connection between shallow and deeper portions of the groundwater flow system is needed to improve predictions of pumping impacts on surface-water features. As the ability to predict such impacts improves, decisions regarding new water rights and associated mitigation requirements will be easier to make.

8. Monitoring can be used to evaluate the need for new and innovative water-resource management strategies, to establish baseline conditions, and to assess the effects of these strategies. Strategies currently under consideration in the area include aquifer recharge with source water from the Dungeness River and with Class A reclaimed water (explored in detail in a recent AR feasibility study by PGG et al, 2009), focusing new water-supply development on deeper aquifers that exert less flow impacts to streams, various mitigation strategies to offset impacts of new water-supply development (currently under discussion in the instream flow and water management rule-making process for the Dungeness watershed), and aquifer storage and recovery (ASR) in deeper aquifers.

11.0 REFERENCES

Bauer H.H. and J.J. Vaccaro. 1987. Documentation of a Model for Estimating Groundwater Recharge. U.S. Geological Survey Open File Report 86-536.

Caldwell, Brad. 2007. Washington State Department of Ecology. . Personal communication with Peter Schwartzman of Pacific Groundwater Group during September of 2007.

Drost, B. W., 1983. *Impact of changes in land use on the ground-water system in the Sequim-Dungeness Peninsula, Clallam County, Washington.* U.S. Geological Survey, Water-Res. Invest. Rep. 83-4094.

Ecology, 2008a. River and Streamflow Monitoring data portal. https://fortress.wa.gov/ecy/wrx/wrx/flows/station.asp?wria=18. Webpage accessed June, 2008.

Ecology, 2008b. *Washington State's Water Quality Assessment [303(d)].* http://www.ecy.wa.gov/programs/wq/303d/index.html .

EES, 2003. *Comprehensive Irrigation District Management Plan Sequim-Dungeness Valley Agricultural Water Users Association -WORKING DRAFT* - August 29, 2003 Prepared by: Economic and Engineering Services, Inc. in association with Montgomery Water Group, Inc. and R2 Resource Consultants, Inc.

Elwha-Dungeness Planning Unit (EDPU). 2005. *Elwha-Dungeness Watershed Plan, Water Resource Inventory Area 18 (WRIA 18) and Sequim Bay in West WRIA 17.* Published by Clallam County. Volume 1: Chapters 1-3 and 15 appendices; Volume 2: Appendix 3-E.

Hals, Hansi. 2009. Jamestown S'Klallam Tribe. Personal communication with Glen Wallace of Pacific Groundwater Group. February 2, 2009.

Holtrop, Joe. 2009. District Manager Clallam Conservation District. Personal communication with Peter Schwartzman of Pacific Groundwater Group in April, 2009.

Hood, Darden. 2008. Chemist at Beta Analytic Inc., Miami Florida. Personal communication with Peter Schwartzman of Pacific Groundwater Group on May 8, 2008.

Forbes, R.. 1993. *Preliminary Assessment of Seawater Intrusion in Coastal Wells in Eastern Clallam and Eastern Jefferson Counties.* CH2MHill, October 12, 1993.

Huppert, D., Moore, A., and Dyson, K., 2009.*Impacts of climate change on the coasts of Washington State.* In: Scientific Forecast of Climate Change Effects in Washington State, University of Washington Climate Impacts Group. February, 2009.

Miles, E., Lettenmaier, D. 2007. *HB 1303 Interim Report: A Comprehensive Assessment of the Impacts of Climate Changes on the State of Washington.* December 15, 2007.

Miles, E., Lettenmaier, D , 2009. *The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate.* The Climate Impacts Group, University of Washington, February, 2009.

Miller, Erick. 2008. Hydrogeologist at Aspects Consultants, Seattle WA. Personal email communication with Peter Schwartzman of Pacific Groundwater Group dated November 7, 2007.

Montgomery Water Group, 1993. *Dungeness-Quilcene Water Resources Planning Pilot Project – Irrigation Ditch Leakage Assessment Project.* Kirkland, WA.

Montgomery Water Group, 1998. *Dungeness River Agricultural Water Users Comprehensive Water Conservation Plan*. Kirkland, WA.

Mote, P., Petersen, A., Reeder, S., Shipman, H., and Binder, L. 2008a. *Sea Level Rise in the Coastal Waters of Washington State.* A report by University of Washington Climate Impacts Group and the Washington Department of Ecology.

Mote, P., Hamlet, A. and Salathe, E. 2008b. *Has spring snowpack declined in the Washington Cascades?* Hydrol. Earth Syst. Sci., v. 12, p. 193–206.

NRCS (Natural Resource Conservation Service), 2008. *Dungeness Snotel.* http://www.or.nrcs.usda.gov/Snow/maps/sitepages/23b16s.html. Webpage accessed May, 2008.

Pacific Groundwater Group, 1995. *Hydrogeologic Evaluation and Well Yield Analysis, City of Sequim Stone Well #1, Clallam County, Washington*. Technical Report prepared for City of Sequim, December 1995.

Pacific Groundwater Group, 1996. *Silberhorn Wellfield: Hydraulic Evaluation and Yield Analysis*. Technical Report prepared for City of Sequim, October 1996.

Pacific Groundwater Group, 1998. *Installation, Testing and Recommended Operation, City of Sequim Port Williams Well #2, Clallam County, Washington.* Technical Report prepared for City of Sequim, December 1998.

Pacific Groundwater Group, 2002. *City of Sequim 2001 Sequim Monitoring Report*. Prepared for City of Sequim Department of Public Works, Clallam County, Washington. May 16, 2002. 67 p.

Pacific Groundwater Group, 2008a. *Assessment of Baseflow in Small Streams of the Dungeness Watershed.* Technical Memorandum to Ann Soule (Clallam County) from Peter Schwartzman (Pacific Groundwater Group) dated January 14, 2008.

Pacific Groundwater Group, 2008b. *Construction, Testing And Recommended Operation Port Williams Well #3* Consultants report submitted to City of Sequim dated March 18, 2008.

Pacific Groundwater Group, 2009. *2008 Dungeness Groundwater Flow Model Design, Construction, Calibration and Results*. Consultants report submitted to Clallam County dated February 19, 2009.

Pacific Groundwater Group, Brown & Caldwell, Anchor QEA, GSI Water Solutions and R2 Resource Consultants, Inc.2009. *Aquifer Recharge Feasibility Study for the Dungeness Peninsula*. Consultants report submitted to Clallam County dated March 31, 2009.

Robinson & Noble, Inc. *Development of a Deep Ground Water Source for the Weyerhauser Seed Orchard at Sequim, Washington*. Consultants report dated April, 1974.

Robinson & Noble, Inc. *Development of a Deep Ground Water Source for the Weyerhauser Seed Orchard at Sequim, Washington*. Consultants report dated April, 1974.

San Juan, C. 1994. *Natural Background Soil Metals Concentrations in Washington State*. Department of Ecology publication 94-115. October, 1994.

Salathe, E., Jri, L., Leung, R. and Zhang, Y., 2009. *Regional climate model projections for the State of Washington*. In: Scientific Forecast of Climate Change Effects in Washington State, University of Washington Climate Impacts Group. February, 2009.

Sargeant, D., 2002. *Dungeness River and Matriotti Creek Fecal Coliform Bacteria Total Maximum Daily Load Study*, Environmental Assessment Program, Washington State Department of Ecology, Olympia, WA.

Sargeant, D., 2004. *Dungeness Bay Fecal Coliform Bacteria Daily Load Study* (Sargeant 2004), Environmental Assessment Program, Washington State Department of Ecology, Olympia, WA.

Simonds, F.W. and K.A. Sinclair. 2002. *Surface Water-Ground Water Interactions Along the Lower Dungeness River and Vertical Hydraulic Conductivity of Streambed Sediments, Clallam County, Washington, September 1999-July 2001.* U.S. Geological Survey Water-Resources Investigations Report 02-4161.

Sinclair, K. 2003. *Groundwater Quality in the Agnew and Carlsborg Area, Clallam County, December 2000-September 2002.* Washington State Department of Ecology Environmental Assessment Program, Olympia, Washington. 30 pgs.

Snover, A.K., L. Whitely Binder, J. Lopez, E. Willmott, J. Kay, D. Howell, and J. Simmonds. 2007. *Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments.* In association with and published by ICLEI – Local Governments for Sustainability, Oakland, CA.

Snover, A. K., P. W. Mote, L. Whitely Binder, A.F. Hamlet, and N. J. Mantua. 2005. *Uncertain Future: Climate Change and its Effects on Puget Sound.* A report for the Puget Sound Action Team by the Climate Impacts Group (Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington, Seattle).

Soule, Ann. 2004. *Groundwater Monitoring for Nitrates in the Agnew-Carlsborg Area, Clallam County, Washington.* Clallam County Environmental Health Services. July, 2004.

Soule, Ann. 2008. Soule, 2008. Hydrogeologist with Clallam County Environmental Health Services. Personal communication with Glen Wallace of Pacific Groundwater Group regarding nitrate in groundwater.

Streamkeepers, 2004. *State of the Waters of Clallam County: 2004. A Report on the Health of Our Streams & Watersheds.* June, 2004.

Streamkeepers, 2007. *Clallam County Water-Quality Index (CCWQI).* October 31, 2007.

Streeter, V. 2002. *Clean Water Strategy for Addressing Bacteria Pollution in Dungness Bay and Watershed.* Clallam County Division of Natural Resources and Washington State Department of Ecology. October, 2004.

Tetra Tech FW, Inc., 2003. *Dungeness Water Users Association Comprehensive Water Conservation Plan, Groundwater Model Report.* June 2003.

Theis, C. V., 1935, *The Relationship Between Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Groundwater Storage.* Trans. Amer. Geophys. Union, Vol. 2, pp-519-524.

Thomas, B., Goodman, L., and Olsen, T. 1999. *Hydrogeologic Assessment of the Sequim-Dungeness Area, Clallam County, Washington.* USGS Water Resources Investigations Report 99-4048.

Tjemsland, Pete. 2009. Utilities Manager with the City of Sequim. Personal communication with Glen Wallace of Pacific Groundwater Group.

USGS, 2007. Water-Data Report 200712048000 Dungeness River Near Sequim, WA. http://wa.water.usgs.gov/data/realtime/adr/2007/12048000.2007.pdf Webpage accessed May, 2008.

USGS, 2008. *USGS gauging station 12048000 Dungeness River Near Sequim, WA.* http://waterdata.usgs.gov/usa/nwis/uv?site_no=12048000. Webpage accessed May, 2008.

WRCC (Western Regional Climate Center), 2008. *Sequim, Washington (457538).* http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?wasequ. Webpage accessed June, 2008.

Table 6-1. Water Use Assumptions

Parameter	Group A on Sewer	Group A on Septic	Domestic or Group B on Sewer	Domestic or Group B on Septic
Domestic Use				
Assumed Return from Domestic Use (%)	0%	87%	0%	87%
Assumed Domestic Consupmtive Use (%)	100%	13%	100%	13%
Domestic Use Per Hookup (gpd)	170	170	170	170
Domestic Consumption Per Hookup or Well (gpd)	**170**	**22**	**170**	**22**
Irrigation Use				
Irrigation Acres (acres)	1/8	1/8	1/4	1/4
Irrigation Consumptive Demand (in/yr)	15.5	15.5	15.5	15.5
Irrigation Consumptive Demand Per Hookup (gpd - annualized)	144	144	288	288
Irrigation Efficiency (%)	75%	75%	75%	75%
Irrigation Application to Meet Efficiency (gpd - annualized)	192	192	384	384
Irrigation Return Flow (gpd - annualized)	48	48	96	96
Summary Totals				
Amount Withdrawn per hookup or well (gpd)	362	362	554	554
Return Flow Per Well or Hookup (gpd)	48	340	96	244
Consumptive Use Per Well or Hookup (gpd)	314	166	458	310
Consumptive Use Per Hookup (%)	87%	46%	83%	56%
Sequim Water System Consumptive Use				
Sewered Consumptive Use per Hookup (%)	87%			
Non-Sewered Consumptive Use per Hookup (%)	46%			
Sewered Connections (%)	95%			
Average Consumptive Use Per Hookup (%)	85%			

Note: Withdrawal amounts for the Sequim Water system in this table are only used to estimate the percent consumptive use. Consumptive use from the Port Williams and Silberhorn well fields in Figure 6-5 is based on City of Sequim pumping records combined with the percent consumptive use from this table.

Table 6-2. Estimated Group A Water System Withdrawals

Source Locations on Map [1]	Water System Name	System ID	Number of Connections	Withdrawals (gpd)	Consumptive Use (gpd)
1	AGNEW MOBILE HOME PARK	518	14	5,068	2,327
2	ALDERWOOD EAST	1265	15	5,430	2,493
3	BUENA VISTA ESTATES	9155	15	5,430	2,493
4	HAPPY VALLEY ESTATES	30975	16	5,792	2,660
5	OLYMPIC VIEW	5151	16	5,792	2,660
6	PALO VERDE	2315	16	5,792	2,660
7	TROWBRIDGE COURT CONDO ASSN	339	16	5,792	2,660
8	RESORT AND MARINA	36421	17	6,154	2,826
9	BRANDT POINT	16190	19	6,878	3,158
10	OLYMPIC VIEW MOBILE PARK	19110	22	7,964	3,657
11	LORA LEE ESTATES	36991	25	9,050	4,156
12	MEADOWBROOK VILLAGE	10774	26	9,412	4,322
13	CEDAR GROVE MOBILE PARK	36836	28	10,136	4,654
14	DEYTONA	19184	28	10,136	4,654
15	MADRONA RIDGE HOMEOWNERS	50085	28	10,136	4,654
16	FOREST RIDGE	25949	30	10,860	4,987
17	JAMESTOWN	6344	41	14,842	7,314
18	DUNGENESS GOLF COURSE AND MT VISTA	20453	45	16,290	8,312
19	WOODLAND HEIGHTS	98182	45	16,290	7,480
20	GREEN ACRES MOBILE HOME PARK	29358	49	17,738	8,145
21	CARLSBORG MOBILE ESTATES	29	51	18,462	8,478
22	BAYWOOD VILLAGE MOBILE HOME PARK	36754	52	18,824	8,644
23	FLAURAS ACRES PROPERTYOWNER	25600	53	19,186	8,810
24	SUNLAND SHORES INC	85257	53	19,186	8,810
25	DUNGENESS BEACH	20350	69	24,978	11,969
26	LEE	46658	71	25,702	11,802
27	WEST SEQUIM BAY INC	54192	76	27,512	12,634
28	VISTAS INC	58144	90	32,580	14,961
29	SUN MEADOWS	4511	115	41,630	19,117
30	DUNGENESS HEIGHTS	20425	129	46,698	21,610
31	CARLSBORG LUD 10 12 13 14	307	156	78,152 *	35,950
32	MAINS FARM PROPERTY OWNERS	50400	156	56,472	25,932
33	DUNGENESS BAY PLAT	20300	161	58,282	26,763
34	MONTERRA	55990	182	65,884	30,254
35	DUNGENESS MEADOWS	20445	184	66,608	30,586
36	PARKWOOD MOBILE HOME COMMUNITY	2699	209	75,658	34,742
37	SOLMAR WATER COMPANY	81315	290	104,980	48,207
38	ESTATES INC	8166	315	114,030	52,363
39	SUNLAND WATER DISTRICT	85260	828	299,736	137,639
40	EVERGREEN CLALLAM COUNTY PUD 1	24181	580	388,632 *	273,117
41	SEQUIM, CITY OF	77620	1,188	951,604 *	805,940
Totals			**5,519**	**2,719,778**	**1,714,603**
Totals (mgd)				**2.72**	**1.71**

* Based on total reported annual 2007 pumping.

Consumptive Use By Area

Area	gpd	mgd
Group A Wells within 1 mile of Silberhorn	**182,433**	**0.18**
Group A Wells within 1 mile of Port Williams	**88,943**	**0.09**
Group A wells East of the Dungeness River	**1,408,029**	**1.41**
Group A wells West of the Dungeness River	**306,696**	**0.31**

[1] Please see number on Figure 6-2 for location of Group A water source.

Table 8-1. Monitoring Well Summary

Well Name and/or Ecology Unique Well ID	Location Source	Aquifer	Well Log	Period of Record	Data Type	Water Level Data Source
AAB 741	County	Middle	Yes	1978-2003	Manual	Ecology (discontinued)
AAB 742	County	Shallow	Yes	1978-2004	Manual	Ecology (discontinued)
AAB 745	County	Shallow	Yes	1989-2008	Manual	County and Ecology
AAB 746	Parcel or Address	Shallow	Yes	1989-2008	Manual	County and Ecology
AAB 747	County	Shallow	Yes	1989-2008	Manual	County and Ecology
AAB 748	County	Middle	Yes	1990-2007	Manual	County and Ecology
AAB 749	County	Shallow	Yes	1989-2007	Manual	County and Ecology
AAB 850	County	Shallow	Yes	1975-2004	Manual	Ecology (discontinued)
AAF 381	Parcel or Address	Shallow	No	1996-2008	Manual	City of Sequim
AAF 382	Parcel or Address	Shallow, Middle	Yes	1996-2008	Manual	City of Sequim
AAF 384	County	Lower	Yes	1995-2008	Manual	City of Sequim
AAF 385	EIM	Shallow	No	1996-2008	Manual	City of Sequim
AAF 386	Parcel or Address	Middle	Yes	1996-2008	Manual	City of Sequim
AAF 391	Parcel or Address	Shallow	No	1996-2008	Manual	City of Sequim
AAF 392	Parcel or Address	Shallow	No	1996-2008	Manual	City of Sequim
AAF 393	Parcel or Address	Shallow	Yes	1996-2008	Manual	City of Sequim
AAF 396	Parcel or Address	Shallow	Yes	1996-2008	Manual	City of Sequim
ABA 539	Parcel or Address	Middle	Yes	2000-2008	Manual	County and Ecology
ACA 594	County	Shallow	No	1978-2005	Manual	County
ACA 599	County	Shallow	No	1978-2005	Manual	County
AGQ 685	County	Shallow	Yes	2004-2008	Manual	County and Ecology
Graysmarsh (AAB 744)	County	Shallow	Yes	1978-2008	Manual	Ecology
Graysmarsh Well 1	County	Shallow	No	1998-2006	Manual	Graysmarsh
Graysmarsh Well 2	County	Shallow	Yes	1997-2007	Manual	Graysmarsh
Graysmarsh Well 4	County	Shallow	Yes	1997-2007	Manual	Graysmarsh
Graysmarsh Well 8 (AAF 387)	County	Lower	Yes	1997-2007	Manual	Graysmarsh / City of Sequim
Sequim Port Williams MW-1 (AAF 397)	County	Shallow	Yes	1996-1999	Manual / Continuous	City of Sequim
Sequim Port Williams MW-3 (AAF 398)	County	Middle	Yes	1996-1999	Manual / Continuous	City of Sequim
Sequim Port Williams PW-2 (AAF 961)	DOH	Lower	Yes	1999-2008	Manual / Continuous	City of Sequim
Silberhorn Well 1 (AAF 388)	PNS	Shallow	Yes	1993-2008	Manual	City of Sequim
Silberhorn Well 2 (AAF 389)	DOH	Shallow	Yes	1993-2008	Manual	City of Sequim
Silberhorn Well 3 (AAF 390)	DOH	Shallow	Yes	1993-2008	Manual	City of Sequim

Table 9-1. Summary of Surface Water Quality Evaluations

Drainage	Streamkeepers Avg. CCWQI Site Rating [1]	State of the Waters (2004) Rating and Issues [2]	WRIA 18 Watershed Plan (2004) Drainage Water Quality Summary	2008 Clean Water Act 303(d) List [3] Category 4 and 5	Category 2
Bagley Creek	4.4	*Compromised:* fecal coliform; sediment	"Bagley Creek is classified as a Class AA water body. It also is listed for aesthetic beneficial use. The creek is on the 303(d) list for fecal coliforms; other nonpoint issues listed by the Dungeness River Area Watershed Management Plan include vegetation removal, animal access, sedimentation, and highway runoff. Ecology states that there are runoff and erosion problems from the bluffs. Nitrates were elevated in 1992. "	Fecal coliform	Dissolved oxygen; fecal coliform; pH
Bell Creek	2.7	*Impaired:* fecal coliform; sediment	"Bell Creek is designated as a Class AA water body. It is listed on the Clean Water Act Section 303(d) list of impaired waterbodies, based on elevated fecal coliform counts. Water quality has been most impacted to date by unrestricted animal access in the watershed; however, there is increasing concern about stormwater as urban/rural development occurs in the watershed. Stormwater runoff due to land development has increased significantly."	Dissolved oxygen; fecal coliform	Fecal coliform; pH; temperature
Cassalery Creek	3.6	*Compromised:* fecal coliform; sediment; temperature; nitrate; low streamflows reduce flushing through the system.	"Cassalery Creek is designated as a Class AA water body. It is listed on the Clean Water Act 303(d) list for fecal coliform contamination. Other nonpoint issues listed by the Dungeness River Area Watershed Management Plan include nutrients, lack of vegetation, and animal access. The PSCRBT (1991) reported that water quality in Cassalery Creek is adversely affected by direct animal waste input due to unrestricted animal access to the channel. Nitrate results are suggestive of increased nutrient loading, but the accuracy is in doubt (Streamkeepers). Temperature sampling indicated a high of 14.9C, a low of 8.0 C, and an average of 11.3C."	Dissolved oxygen; fecal coliform	Dissolved oxygen
Cooper Creek	--	*Compromised:* fecal coliform; sediment; temperature.	"Cooper Creek is classified as a Class A water body."	Dissolved oxygen; fecal coliform	pH
Dungeness River	5	*Healthy to Compromised:* fecal coliform; sediment.	"The State of Washington classifies the Dungeness River and its tributaries from the mouth to its confluence with Canyon Creek as Class A (Excellent) under WAC 173-201 A. All portions of the river above Canyon Creek are classified as Class AA (Extraordinary). Dungeness River water quality problems are affecting critical and depressed salmon stocks in the river, as well as shellfish in the bay. Ecology found numerous problems in the Dungeness River associated with excessive sediments and nutrients, dissolved oxygen and temperature problems in some segments."	Instream flow; fecal coliform	pH; mercury; thallium
Gierin Creek	--	*Impaired:* fecal coliform; data are limited.	"Gierin Creek is designated as a Class AA water bodyNonpoint issues listed by the Dungeness River Area Watershed Management Plan include bacteria and nutrients, animal access, residential development, channelization and lack of a vegetative buffer. Water quality is adversely affected by direct animal waste input due to animal access to the channel, although animal access issues are thought to be generally corrected downstream of Holland Road. Animal access to the stream remains a concern upstream of Holland Road."	--	--
Matriotti Creek	--	*Compromised:* fecal coliform; dissolved oxygen; temperature; sediment.	See Dungeness River, above.	Fecal coliform	Dissolved oxygen; pH
McDonald Creek	--	*Impaired:* dissolved oxygen; sediment; fecal coliform; potential nitrate issues	"McDonald Creek is classified as a Class AA water body. It also is listed for aesthetic beneficial use and irrigation conveyance. Elevated bacteria from the Agnew ditch is also noted. Wilson (1988) indicated elevated coliform bacterial contamination. McDonald Creek serves as conveyance for portions of Agnew Ditch, where past water quality samples have indicated high bacterial levels. In August 1993, six temperature monitors were installed. Water temperature was poor at RM 2.0, 4.3, and 6.5, and fair at RM 0.1 and 8.3. Temperature thresholds were substantially exceeded only at RM 2.0, just downstream of a large residential development."	--	--
Meadowbrook Creek	--	*Impaired to Highly Impaired:* fecal coliform; sediment; temperature; dissolved oxygen.	"Water temperature in Meadowbrook Creek exceeds optimal levels for salmon spawning and rearing (Joel Freudenthal). It is classified as a Class A water body."	Dissolved oxygen; fecal coliform	Dissolved oxygen; fecal coliform; pH
Siebert Creek	4.7	*Healthy:* fecal coliform, west fork water quality compromised, possibly by leachate from old landfill.	"Siebert Creek is classified as a Class AA water body. Nonpoint issues listed by the Dungeness River Area Watershed Management Plan include a major source of sedimentation from a logging road on the East Fork, some vegetation removal, and an old landfill leachate and sedimentation at Emery Creek. Primary land uses are commercial timber, Olympic National Park (the uppermost 20% of the watershed), and private woodlots."	Dissolved oxygen	Fecal coliform; pH

1 Streamkeepers CCWQI data from http://www.clallam.net/streamkeepers/assets/applets/CCWQI_10-25-07.pdf 2/2/2009. Value in table is average site rationg of all sites on stream.

2 State of the Waters Report (2004).

3 Washington State Water Quality Assessment Report, 303(d) impairment list. Categories 4 and 5 are impaired by specific issues or pollutants; Category 2 is waters with concern of impairment.

Clallam County Water Quality Index (CCWQI) site-rating scale: 5 - 4.5 = Healthy; 4.4 - 3.5 = Compromised; 3.4 - 2.5 = Impaired; 2.4 - 1.5 = Highly impaired; <1.5 = Critically impaired.

Healthy: Ecologically intact; no known significant impacts to human health or salmonid populations or lifestages.

Compromised: Showing signs of degradation; slight exceedance of human health-based water quality standards; impacts to one or more salmonid life-stages.

Impaired: Not likely to support self-sustaining salmon populations; exceedance of human health-based water quality standards.

Highly Impaired: Highly adverse to salmon and possibly life-forms; substantial exceedance of human health-based water quality standards.

Critically Impaired: Unable to support a variety of once-native life forms; exceeding any human health-based water quality standard by 100% or more.

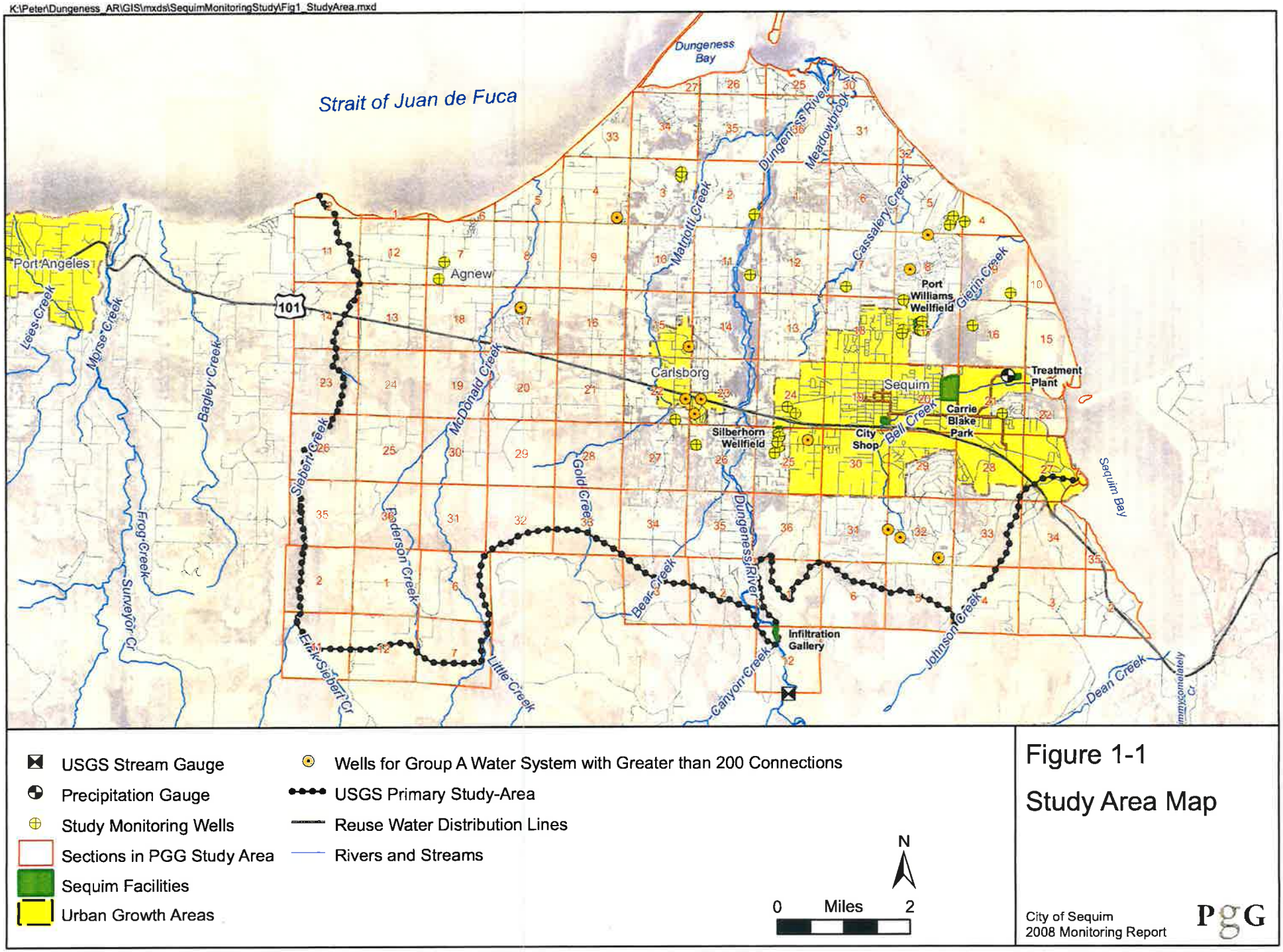


Figure 1-1

Study Area Map

City of Sequim
2008 Monitoring Report

PgG

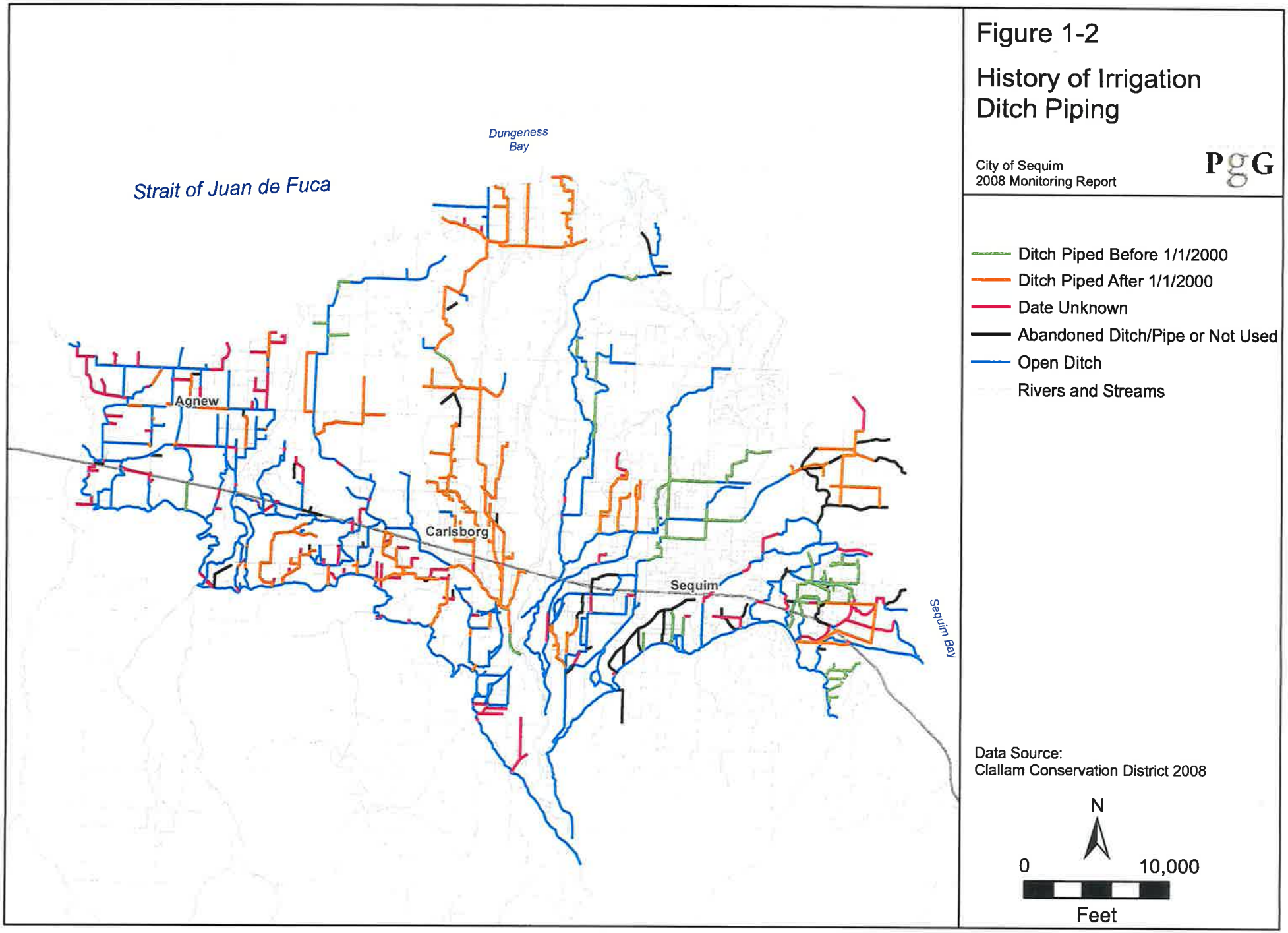


Figure 1-2

History of Irrigation Ditch Piping

City of Sequim
2008 Monitoring Report

PgG

- Ditch Piped Before 1/1/2000
- Ditch Piped After 1/1/2000
- Date Unknown
- Abandoned Ditch/Pipe or Not Used
- Open Ditch
- Rivers and Streams

Data Source:
Clallam Conservation District 2008

N

0 10,000

Feet

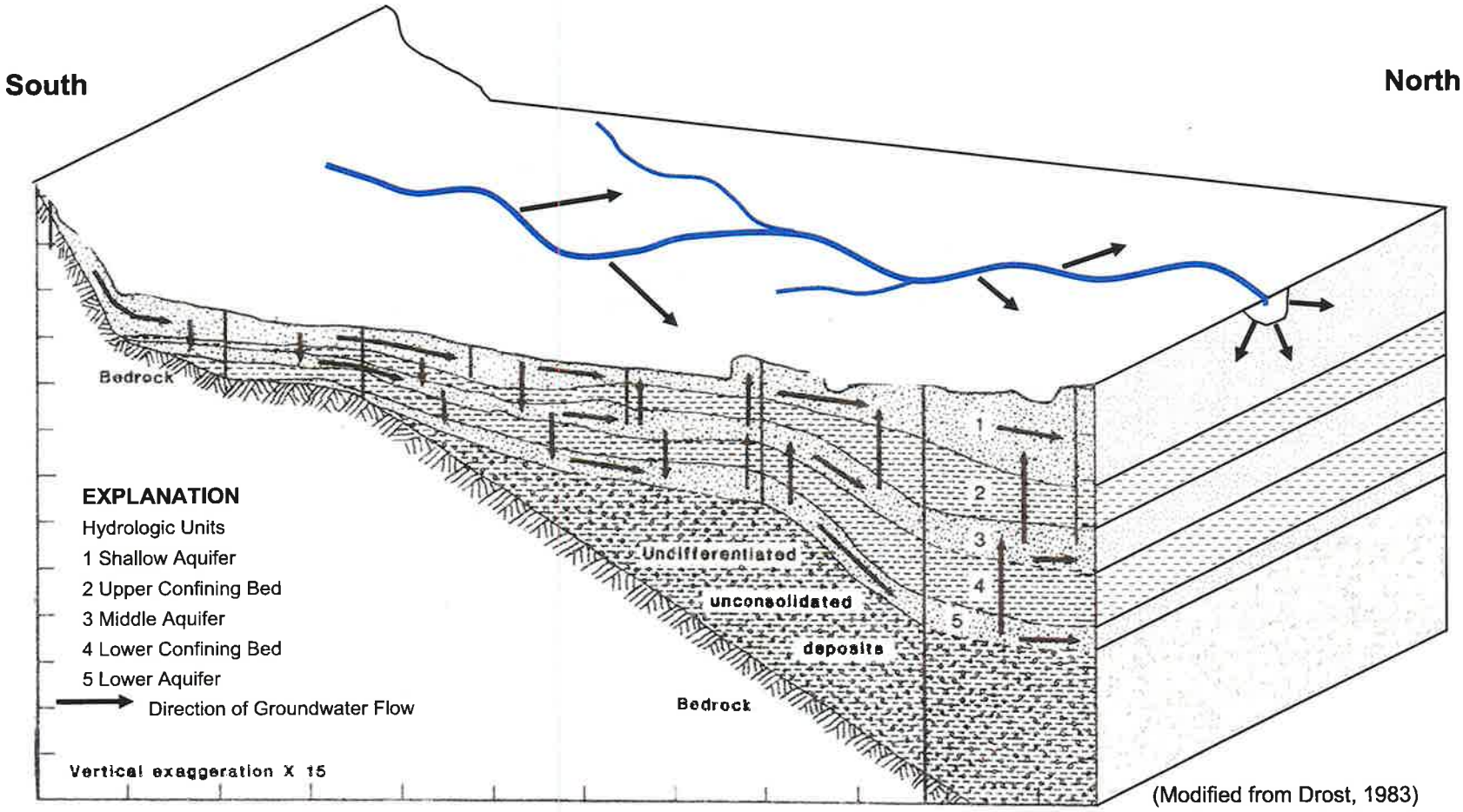
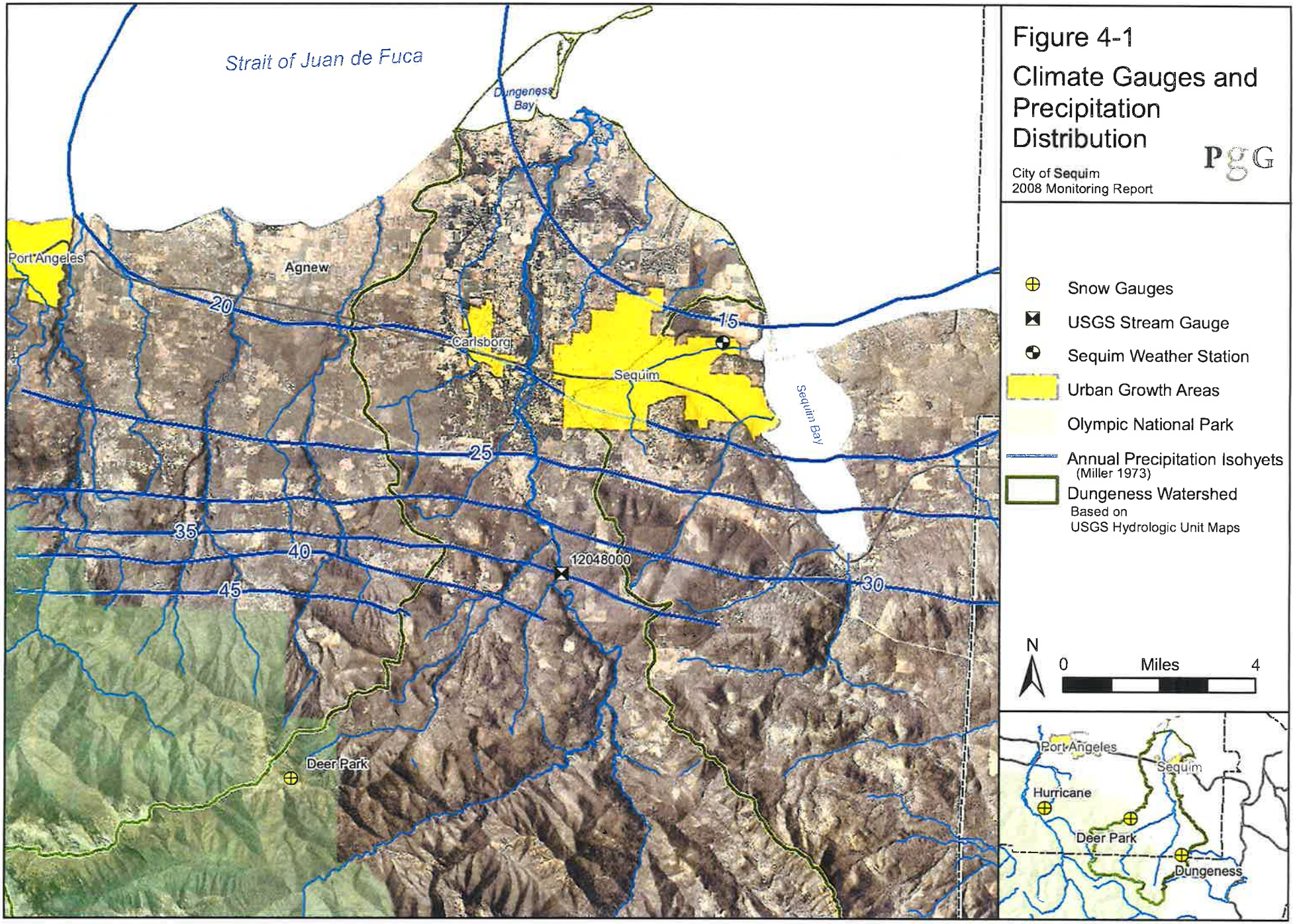


Figure 3-1
Conceptual Diagram of Groundwater Flow System

City of Sequim
2008 Monitoring Report

PgG


Strait of Juan de Fuca
Dungeness Bay
Port Angeles
Agnew
Carlsborg
Sequim
Sequim Bay
Deer Park
12048000
20
15
25
35
40
45
30
Figure 4-1
Climate Gauges and Precipitation Distribution
City of Sequim
2008 Monitoring Report
PGG
Snow Gauges
USGS Stream Gauge
Sequim Weather Station
Urban Growth Areas
Olympic National Park
Annual Precipitation Isohyets (Miller 1973)
Dungeness Watershed
Based on USGS Hydrologic Unit Maps
N
0
Miles
4
Port Angeles
Sequim
Hurricane
Deer Park
Dungeness

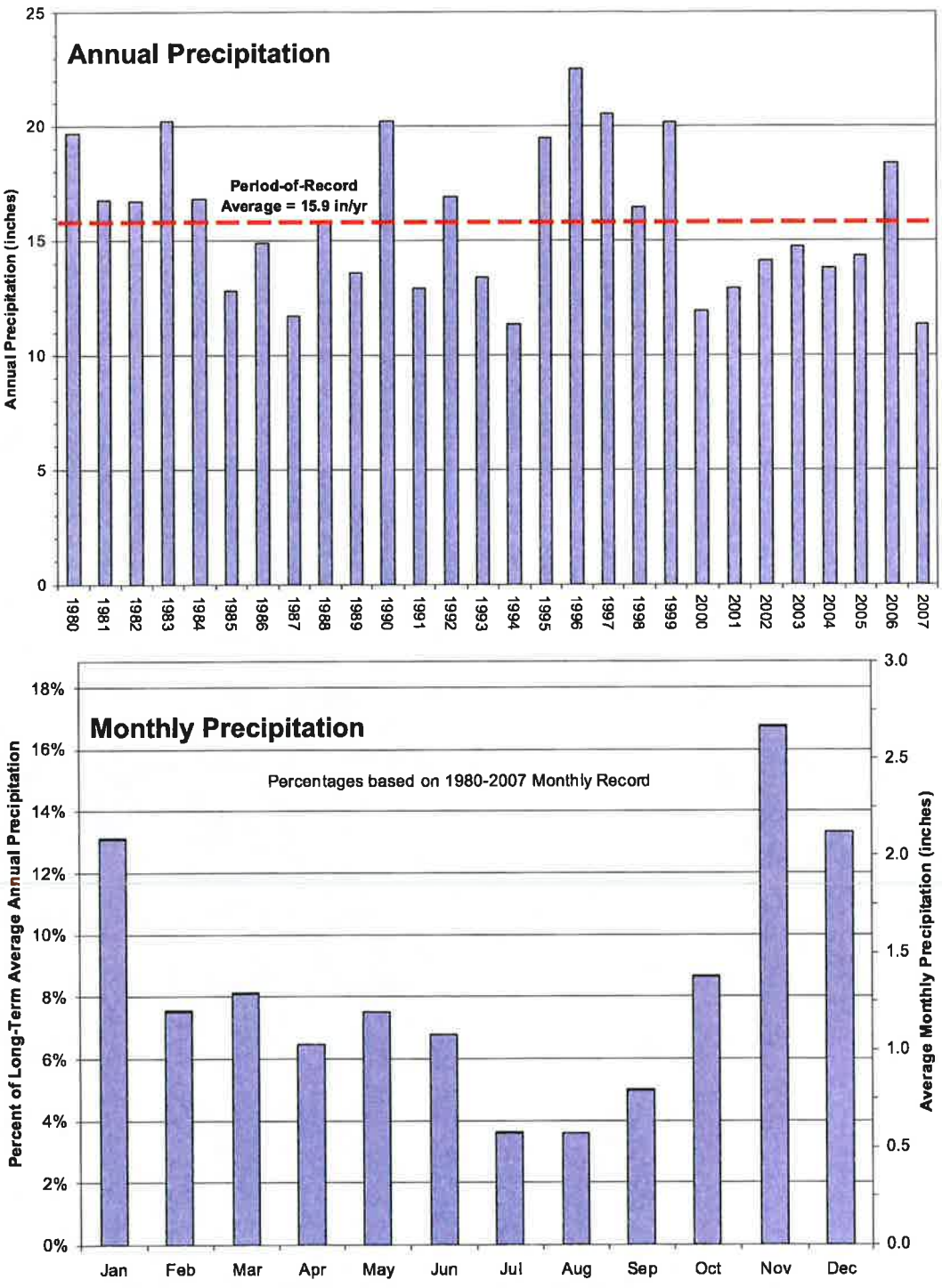


Figure 4-2
Annual and Monthly Precipitation at Sequim

City of Sequim
2008 Monitoring Report

PgG

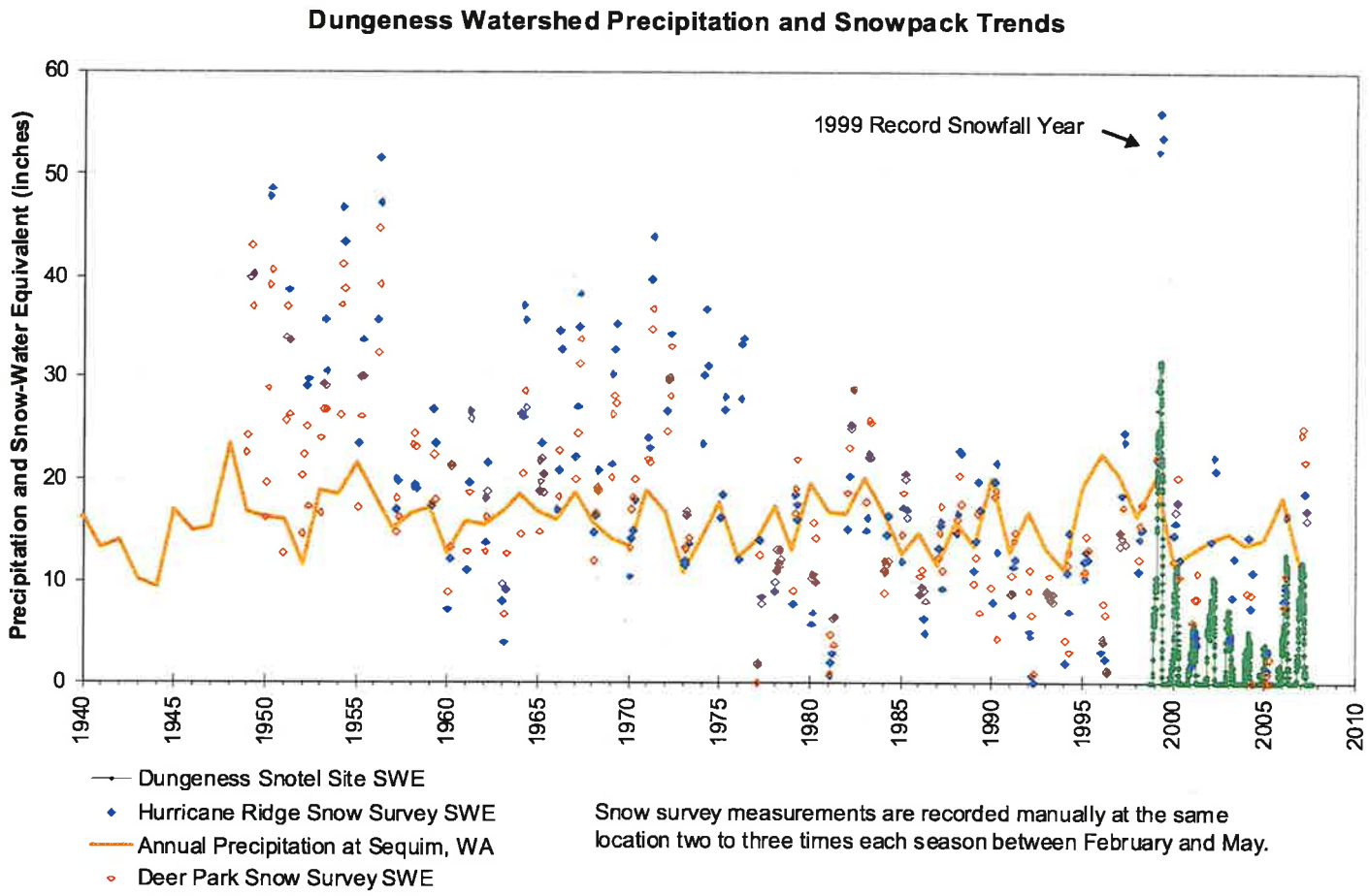


Figure 4-3
Trends in Sequim Precipitation and Dungeness Watershed Snowpack

City of Sequim
2008 Monitoring Report

PgG

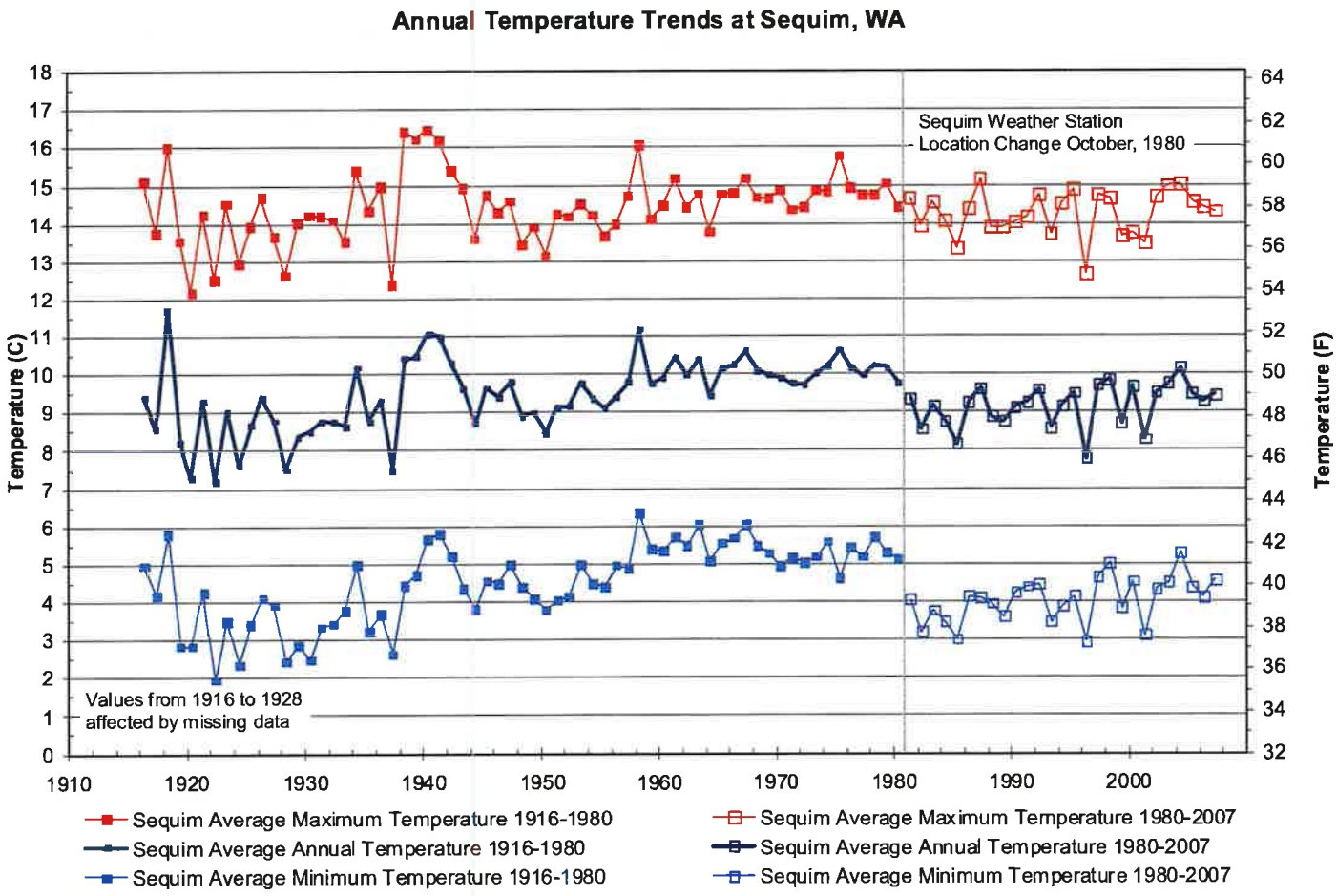
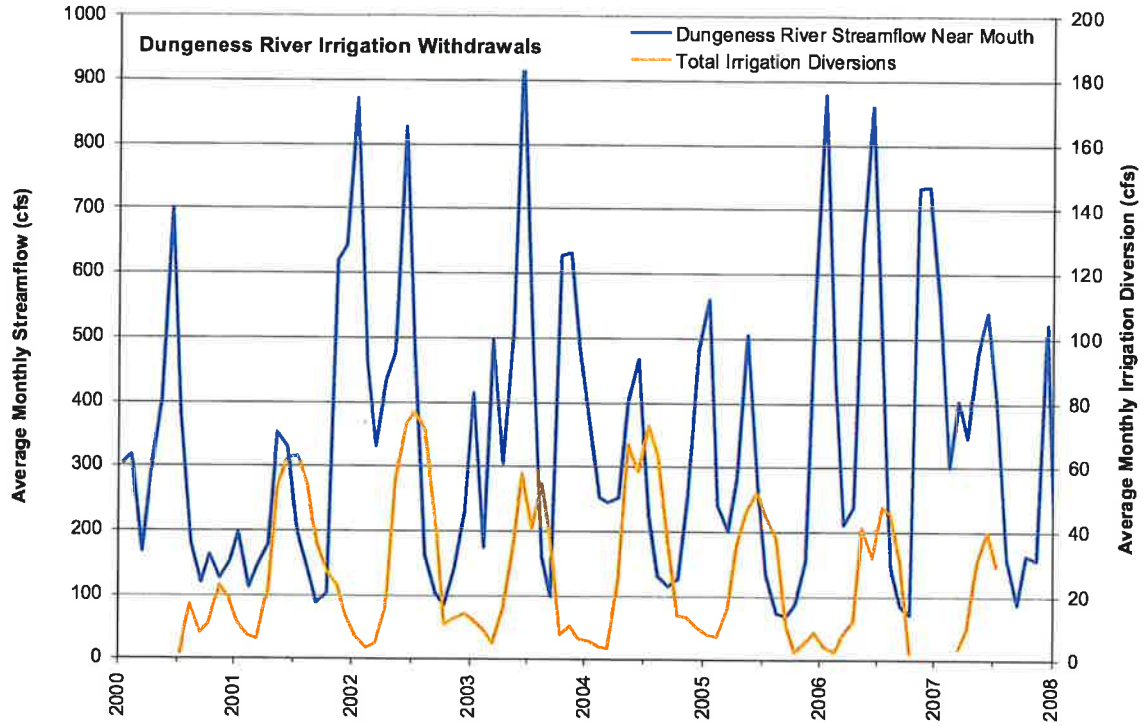


Figure 4-4
Sequim Annual Temperature Trends

City of Sequim
2008 Monitoring Report

PgG



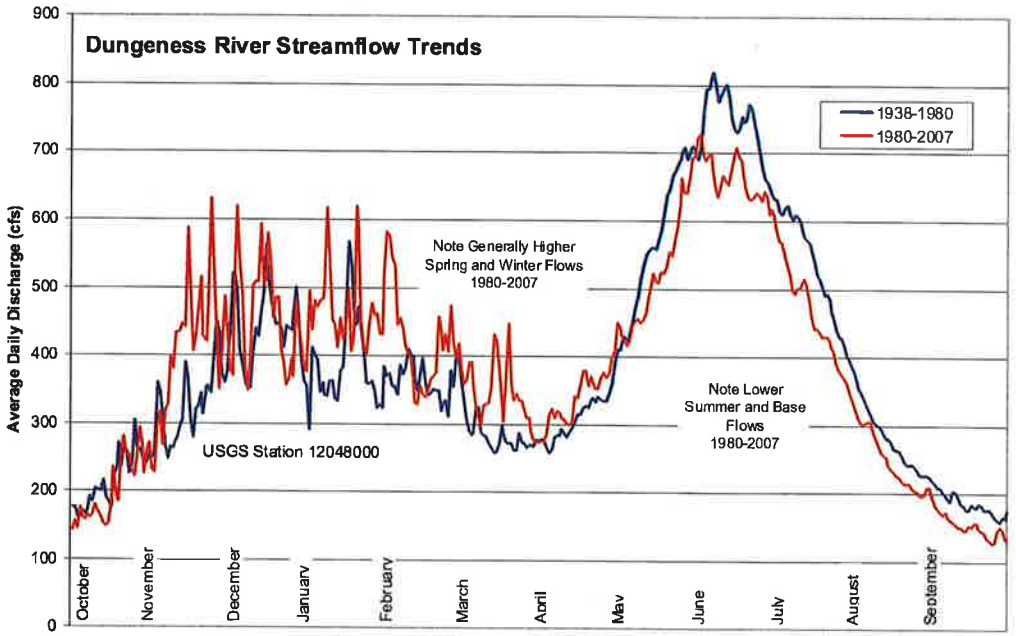


Figure 5-1
Dungeness River Streamflow Trends and Irrigation Withdrawals

City of Sequim
2008 Monitoring Report

PgG

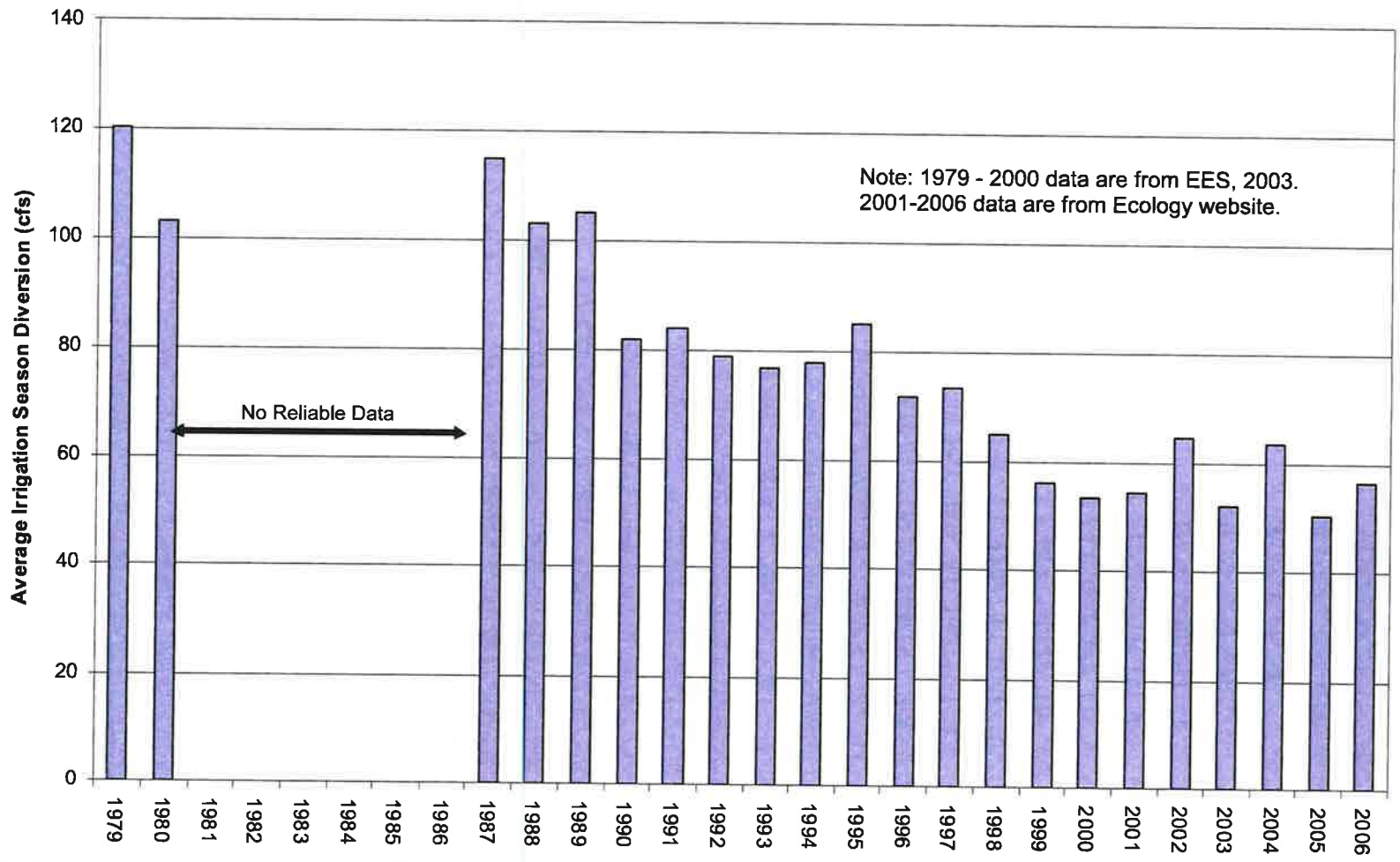


Figure 5-2
Historic Average Irrigation-Season Diversions from Dungeness River

City of Sequim
2008 Monitoring Report

PgG

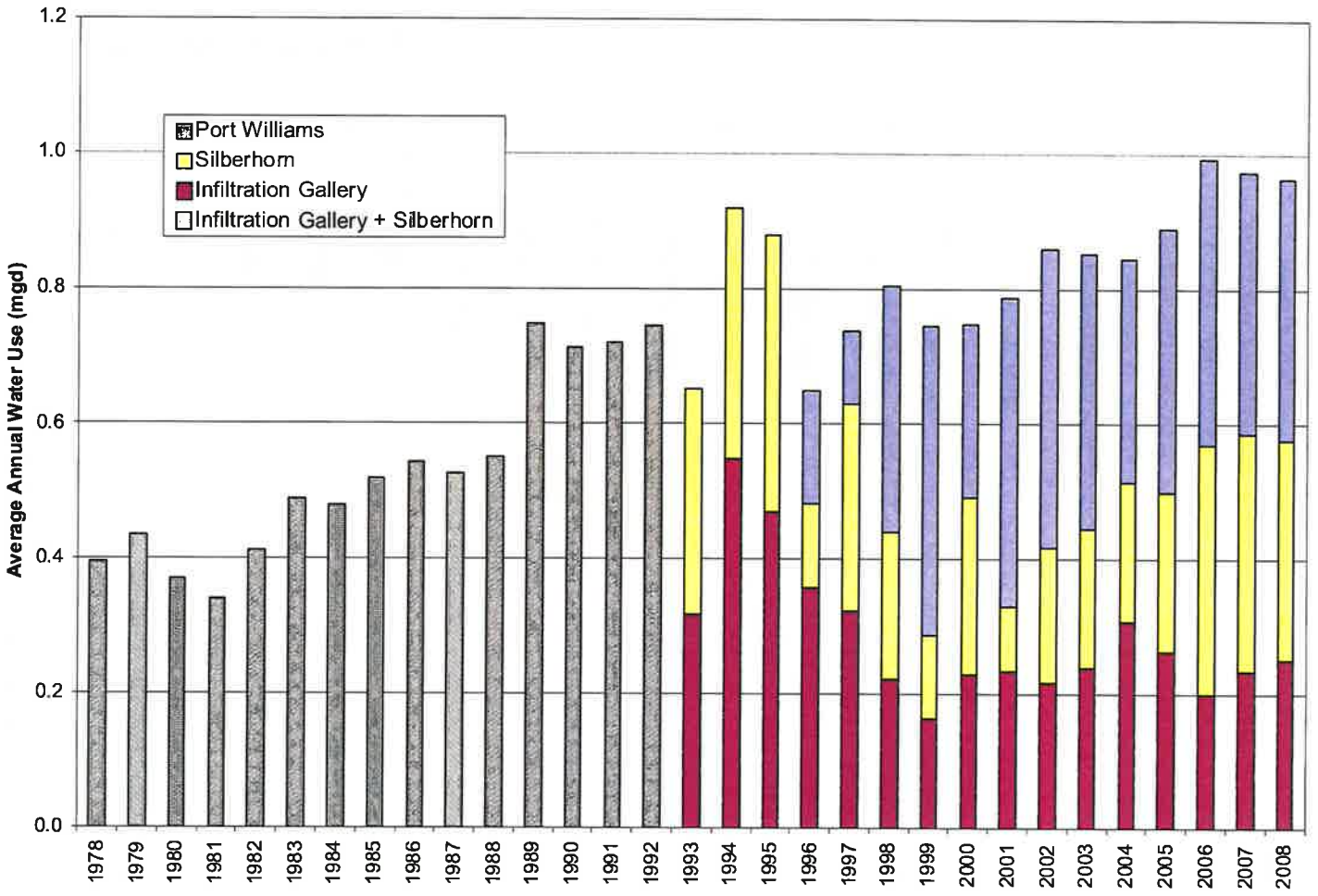


Figure 6-1
City of Sequim Average Annual Pumping

City of Sequim
2008 Monitoring Report

PgG

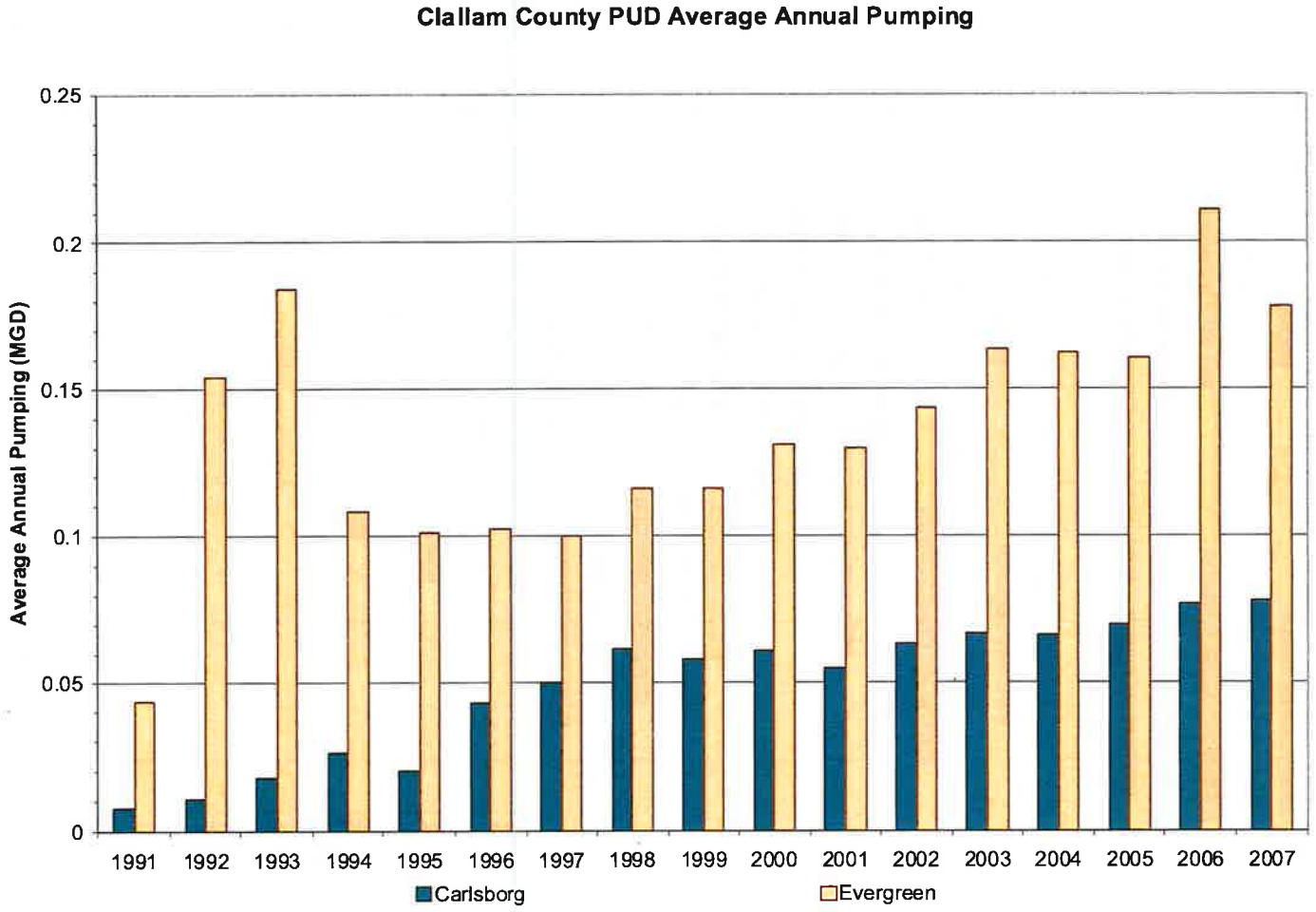
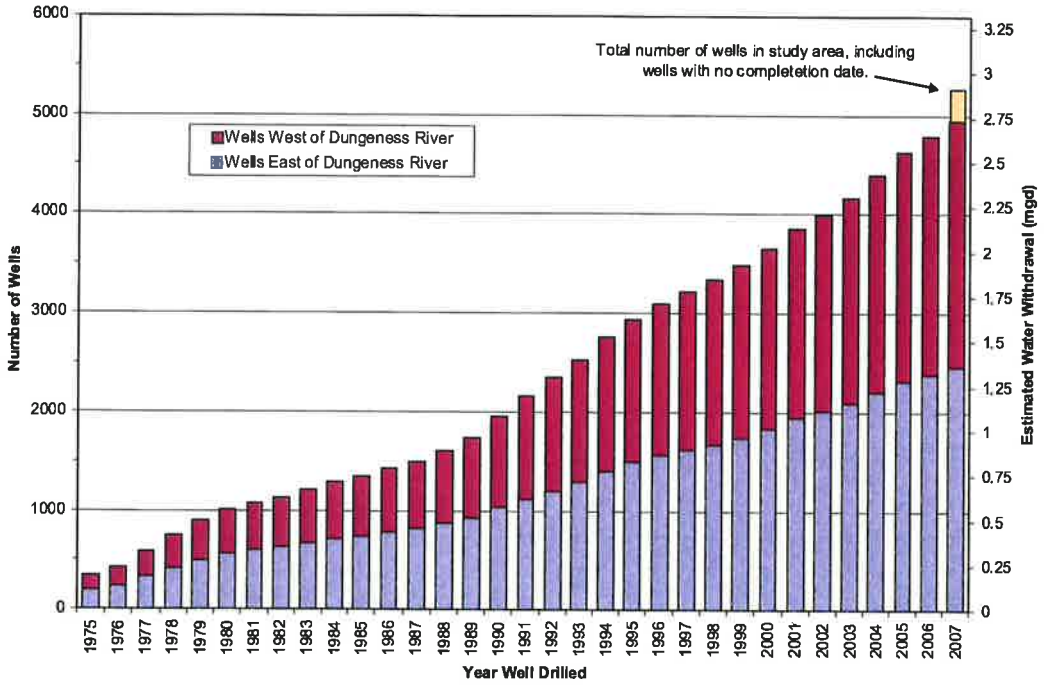


Figure 6-2
Clallam County PUD Annual Pumping

City of Sequim
2008 Monitoring Report

PgG



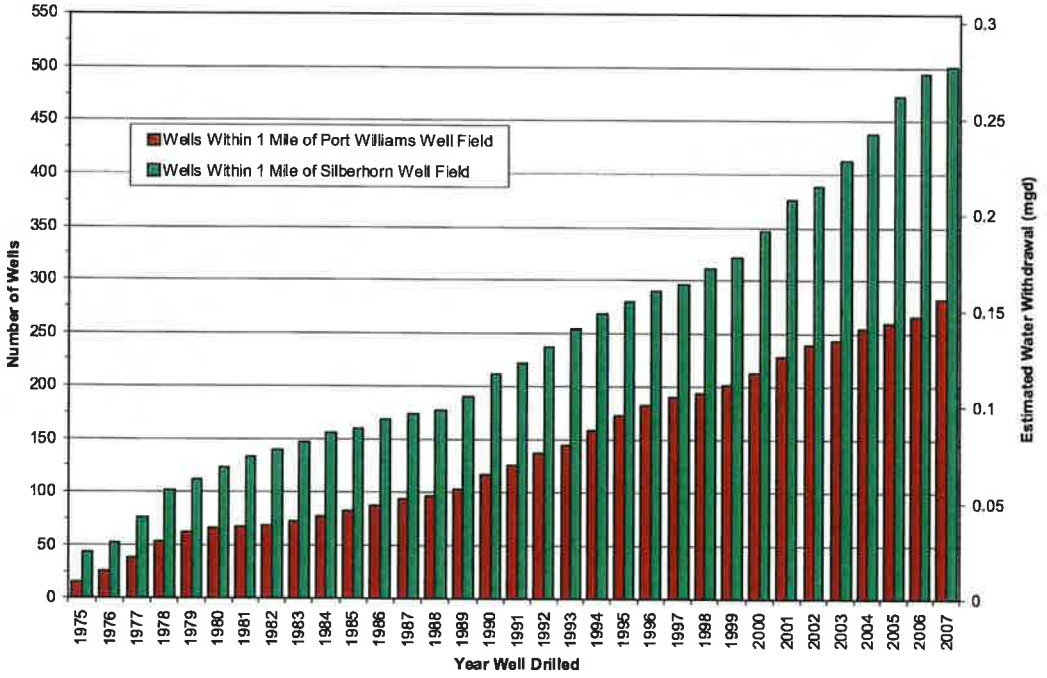
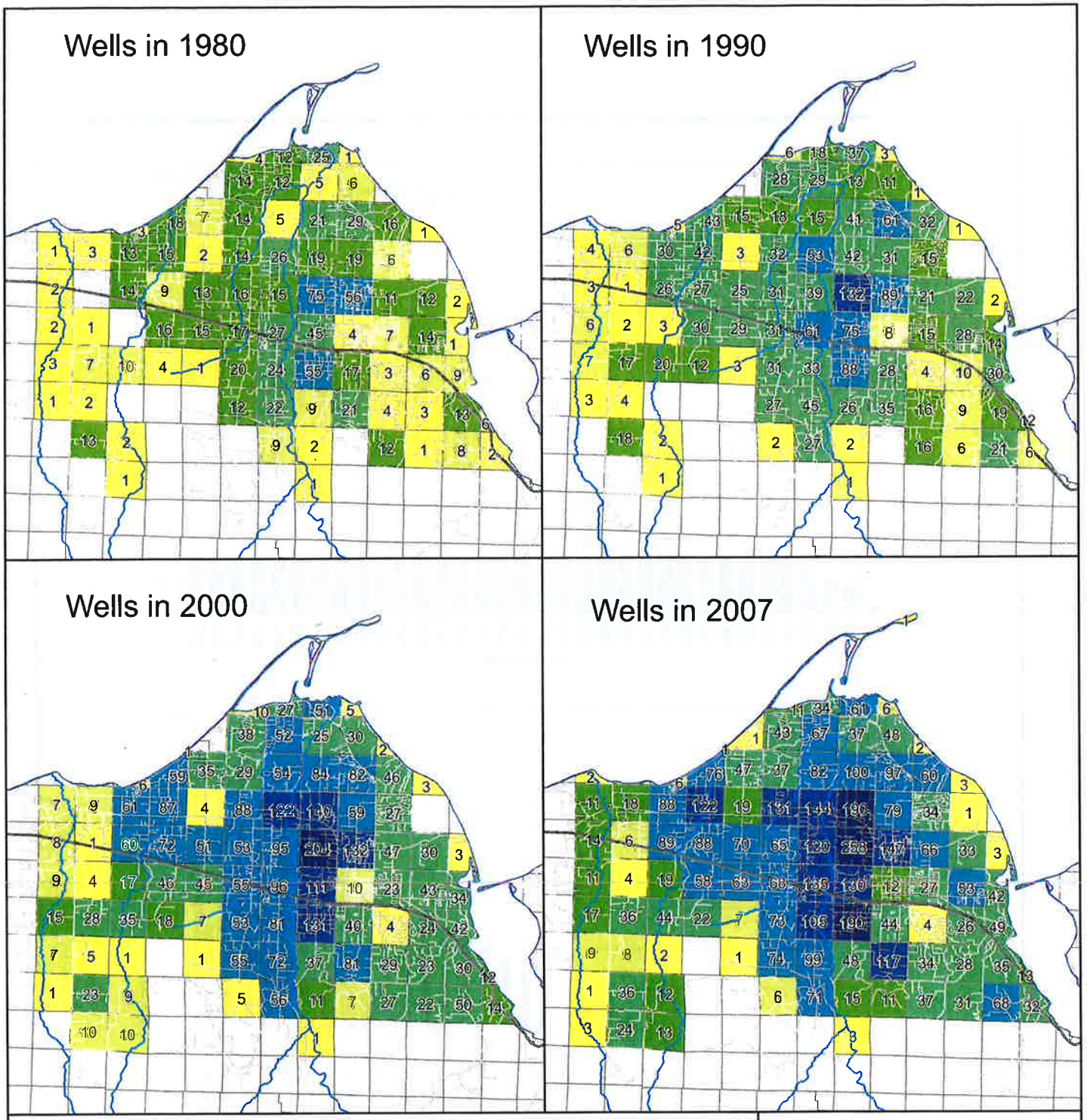


Figure 6-3
Counts of Study-Area Wells Over Time

City of Sequim
2008 Monitoring Report

PgG



Well Logs in Section

- 1 - 5
- 6 - 10
- 11 - 20
- 21 - 50
- 51 - 100
- 101 - 150
- 151 - 267

Number in Section is actual number of wells.

Data from Washington Department of Ecology's well log database.
Well log records in database without date drilled are not included.
Only "W" (Water) wells included, no Resource Protection,
or abandoned wells.

N

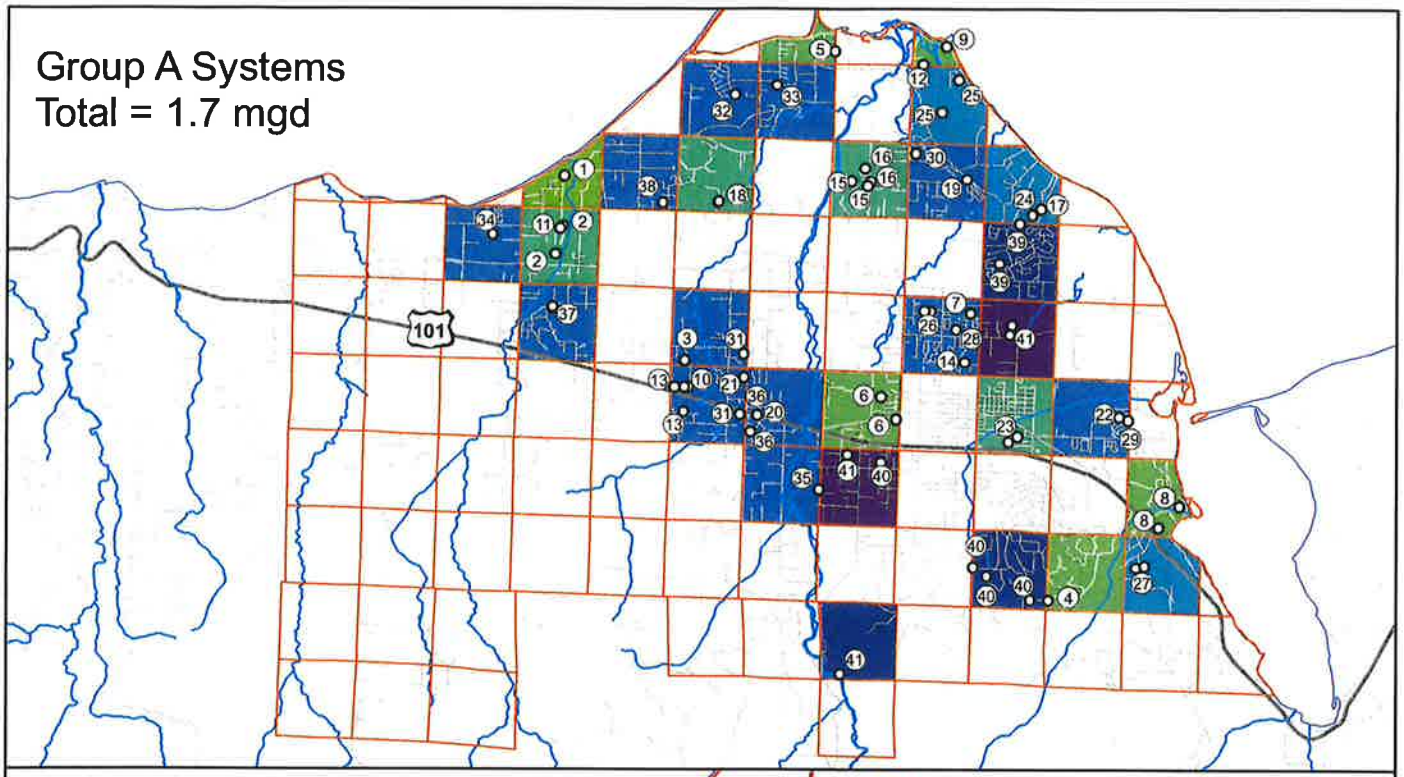
0 Miles 5

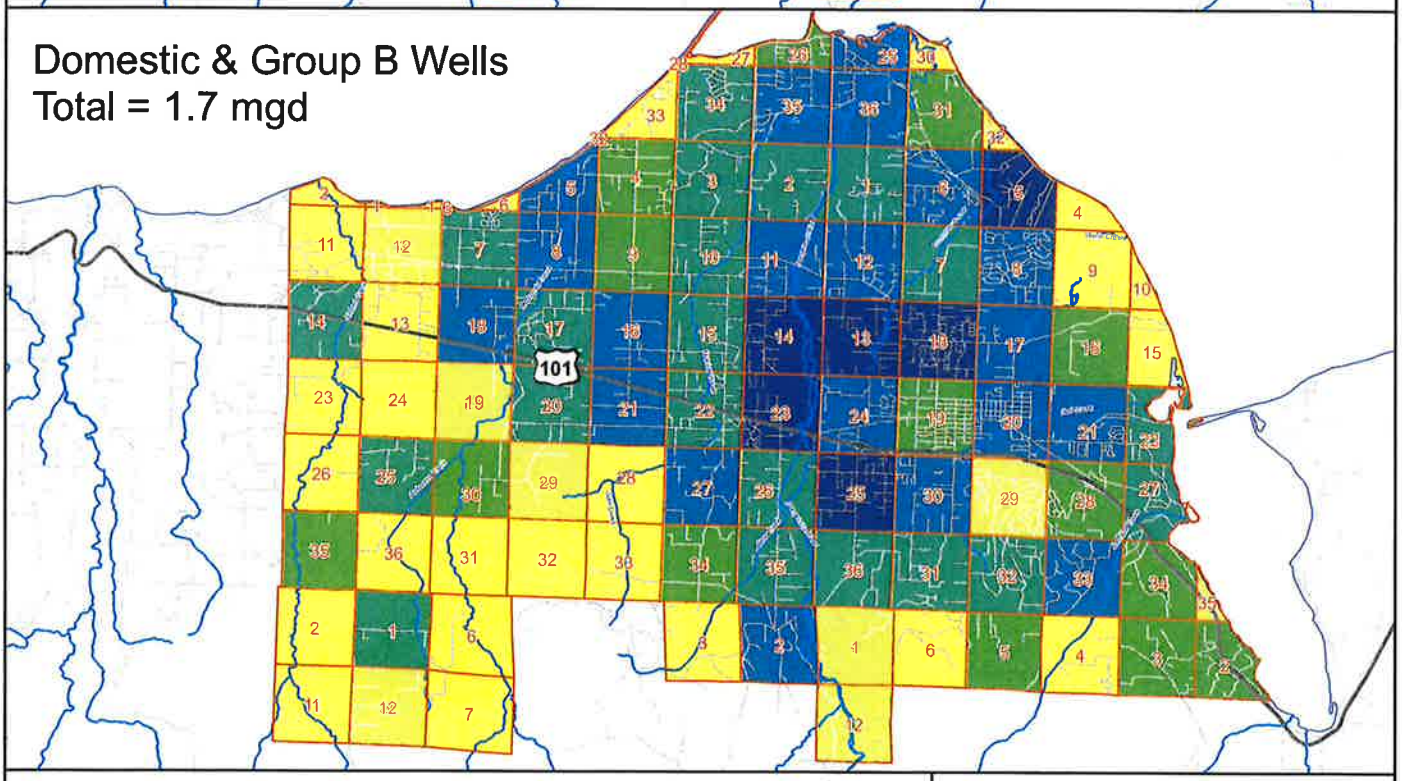
Figure 6-4

Total Study Area Wells Per Section By Decade

City of Sequim
2008 Monitoring Report

PgG





Total Consumption per Section (gpd)

- 0 - 500
- 501 - 1,000
- 1,001 - 1,132
- 1,133 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000
- 10,001 - 20,000
- 20,001 - 100,000
- 100,001 - 250,000
- 250,001 - 500,000

Sections in PGG Study Area

(43) Group A Groundwater Sources

See Table 6-2 for Group A System Map IDs

0 Feet 10,000

N

Figure 6-5

Consumptive Water Use by Section

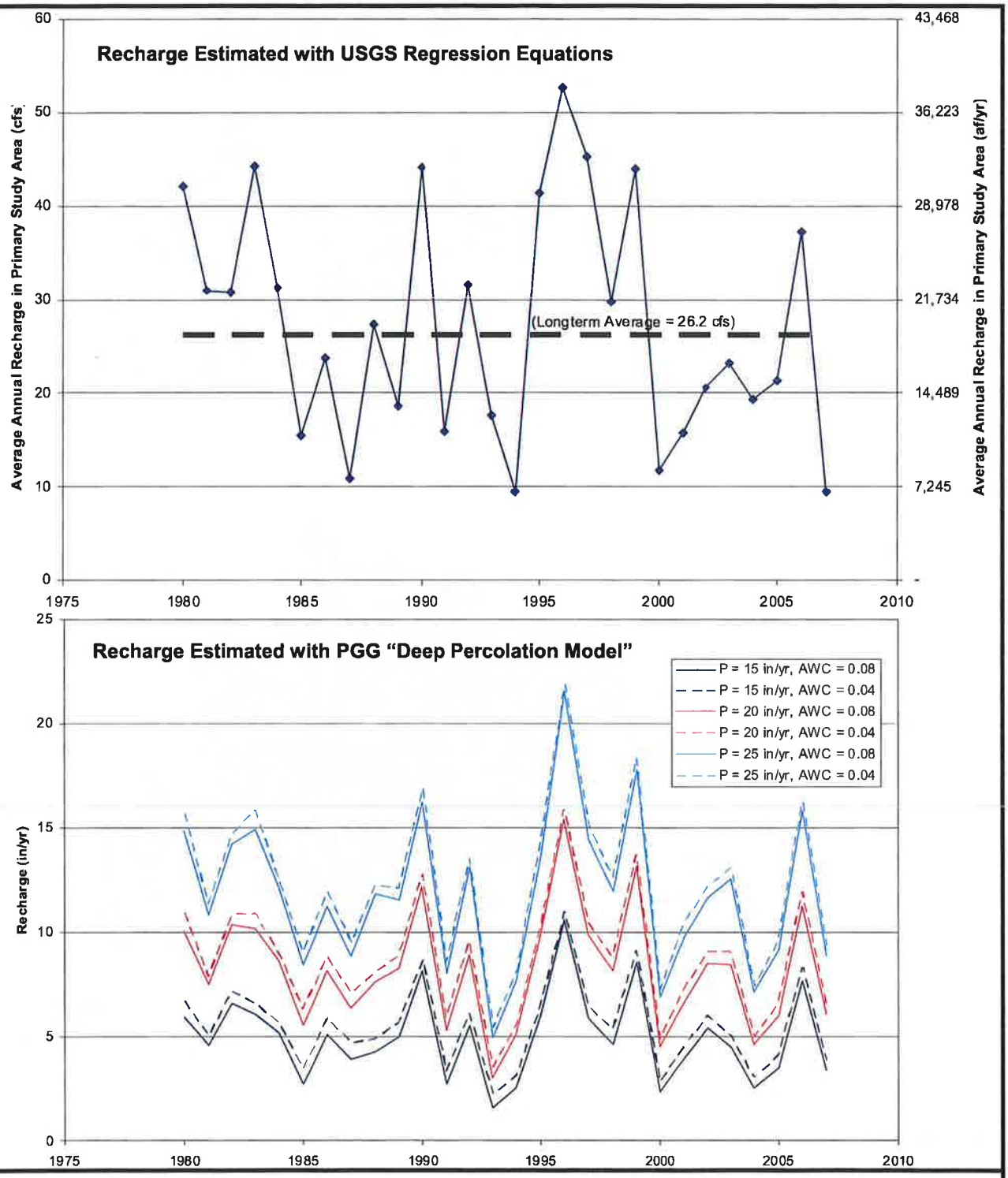


Figure 7-1
Estimated Annual Precipitation Recharge Over Time

City of Sequim
2008 Monitoring Report

PgG

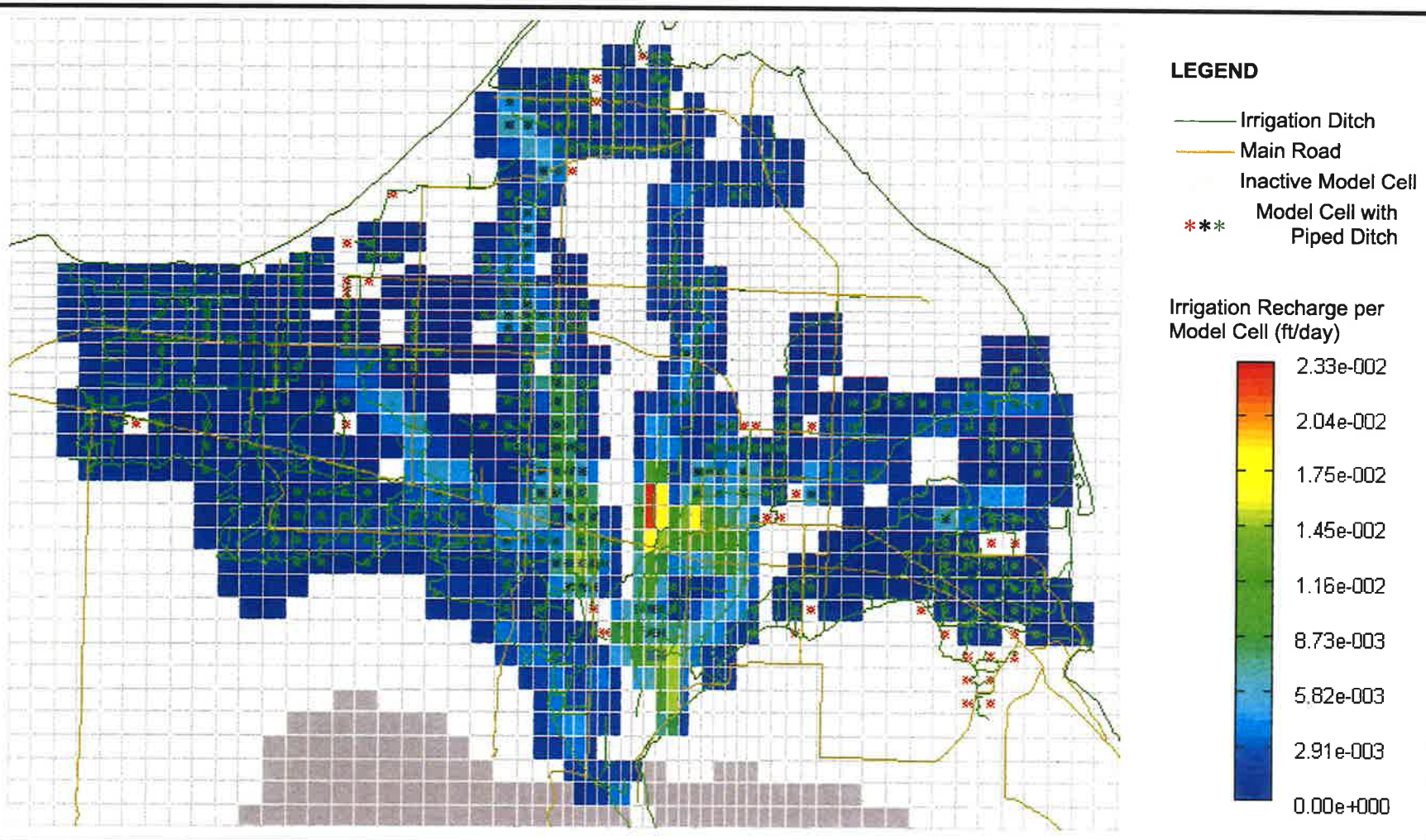


Figure 7-2
Irrigation Recharge and Model Cells Containing Piped Ditches

City of Sequim
2008 Monitoring Report

PgG

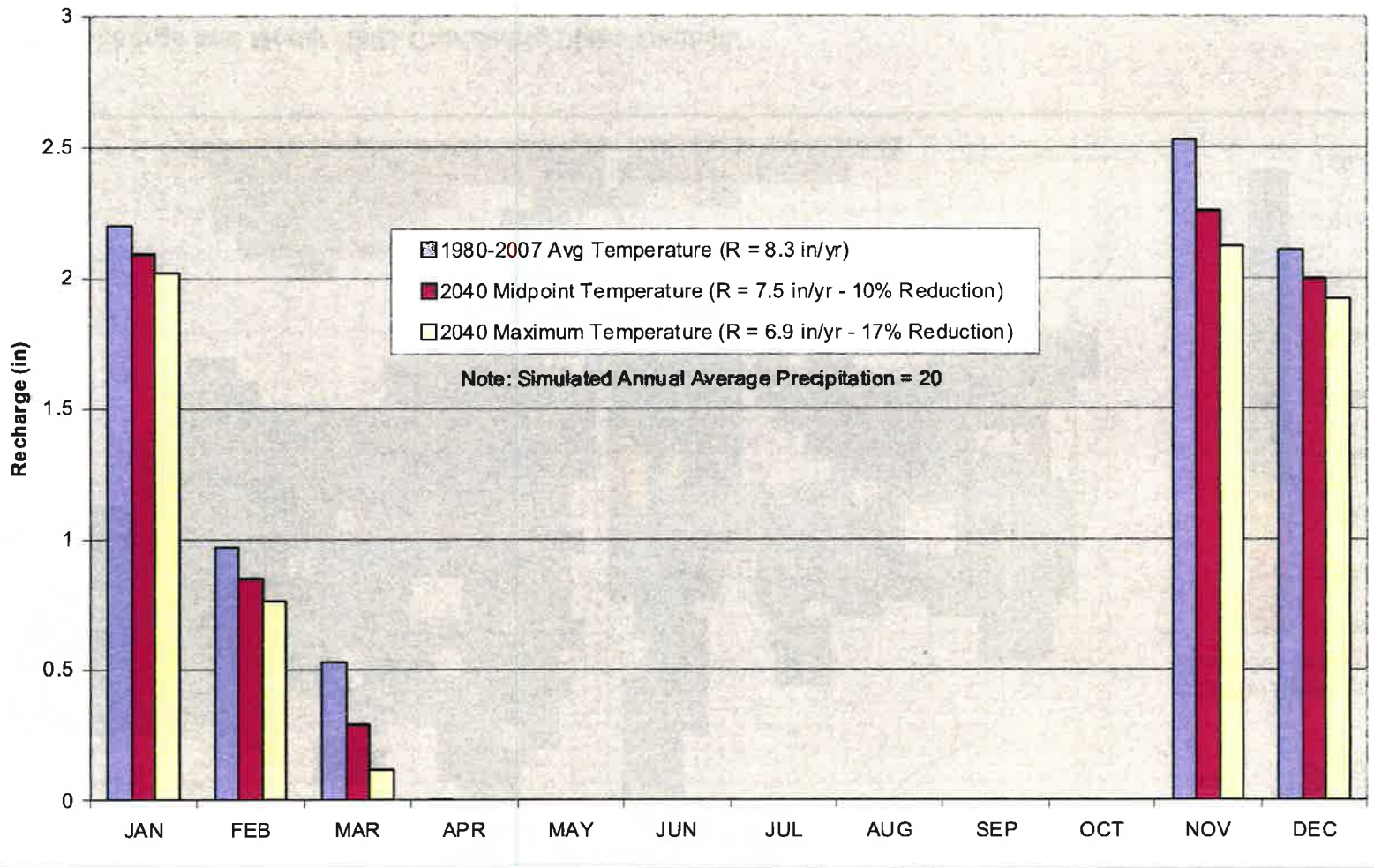


Figure 7-3
Estimated Monthly Recharge with Increased Temperature from Climate Change

City of Sequim
2008 Monitoring Report

PgG

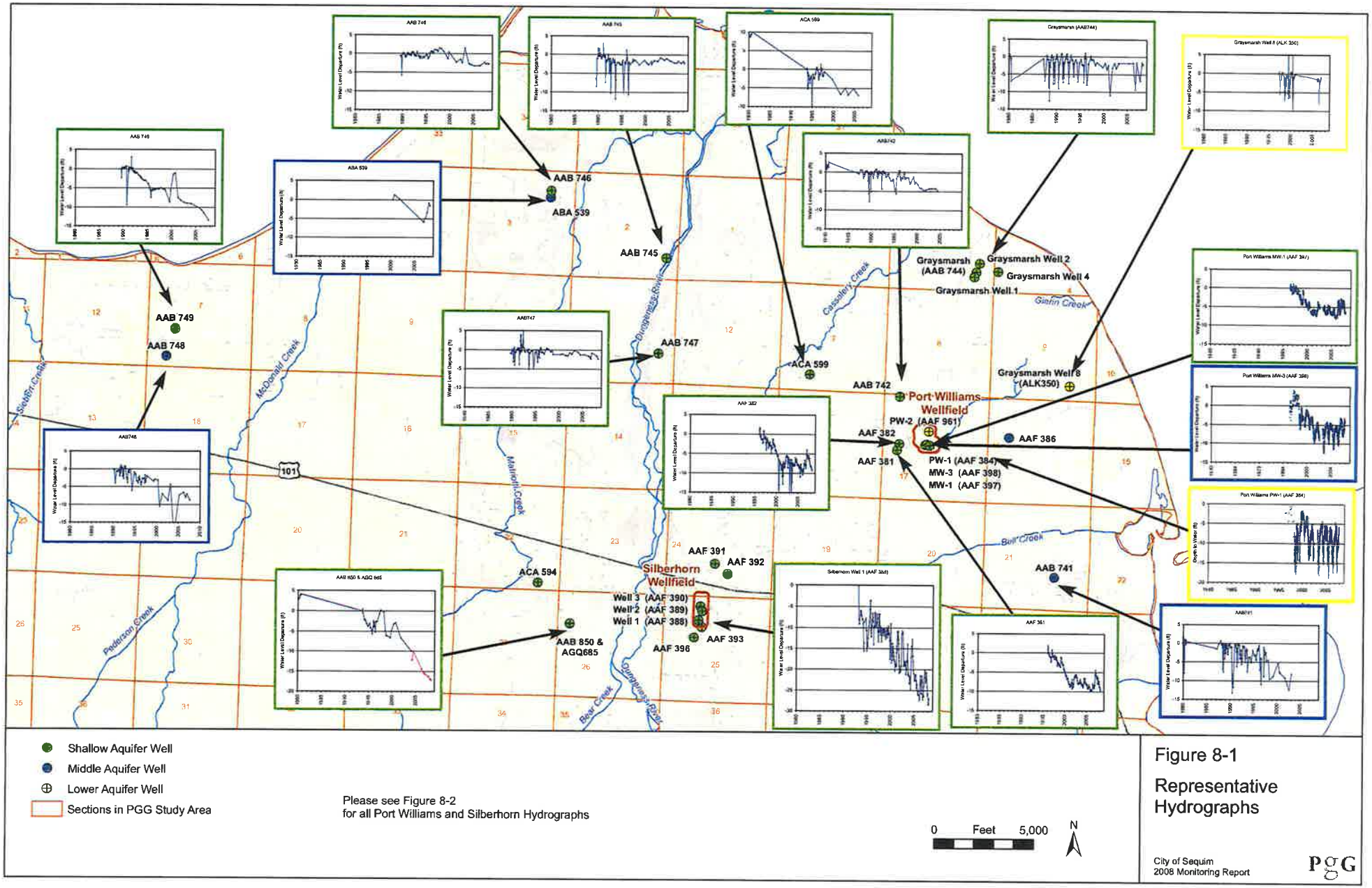


Figure 8-1

Representative Hydrographs

City of Sequim
2008 Monitoring Report

PGG

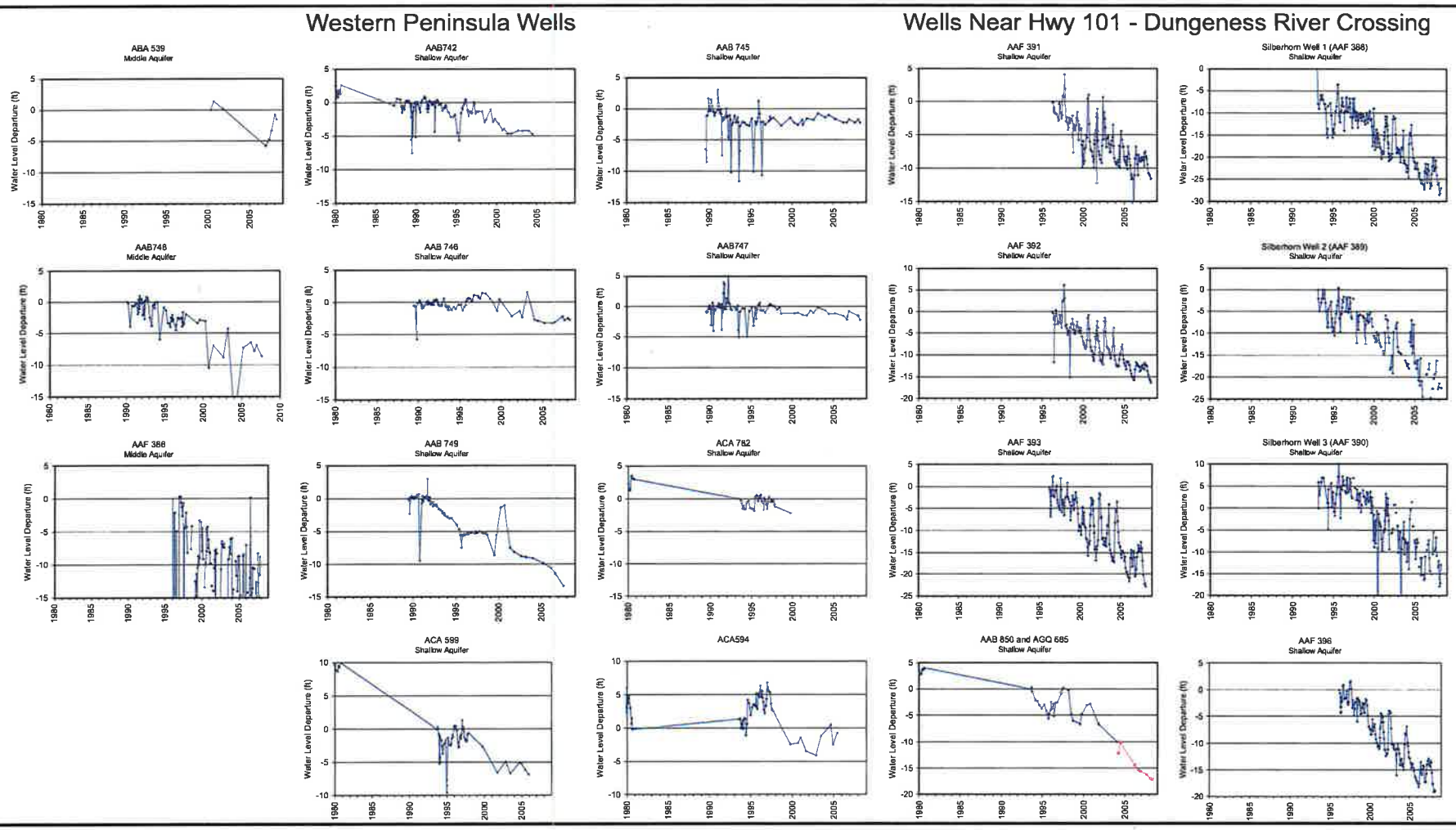


Figure 8-2a
Groundwater Level Trends

City of Sequim
2008 Monitoring Report

Eastern Peninsula Wells

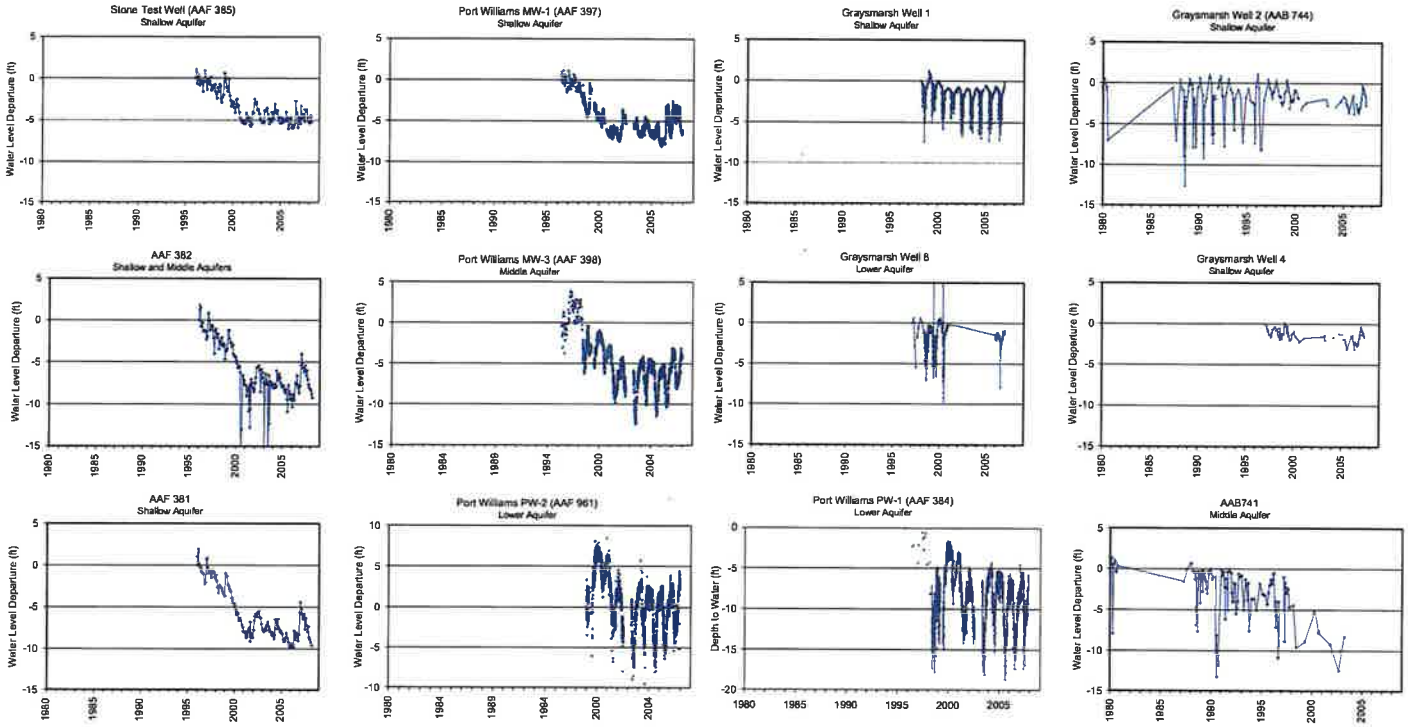


Figure 8-2b
Groundwater Level Trends

City of Sequim
2008 Monitoring Report

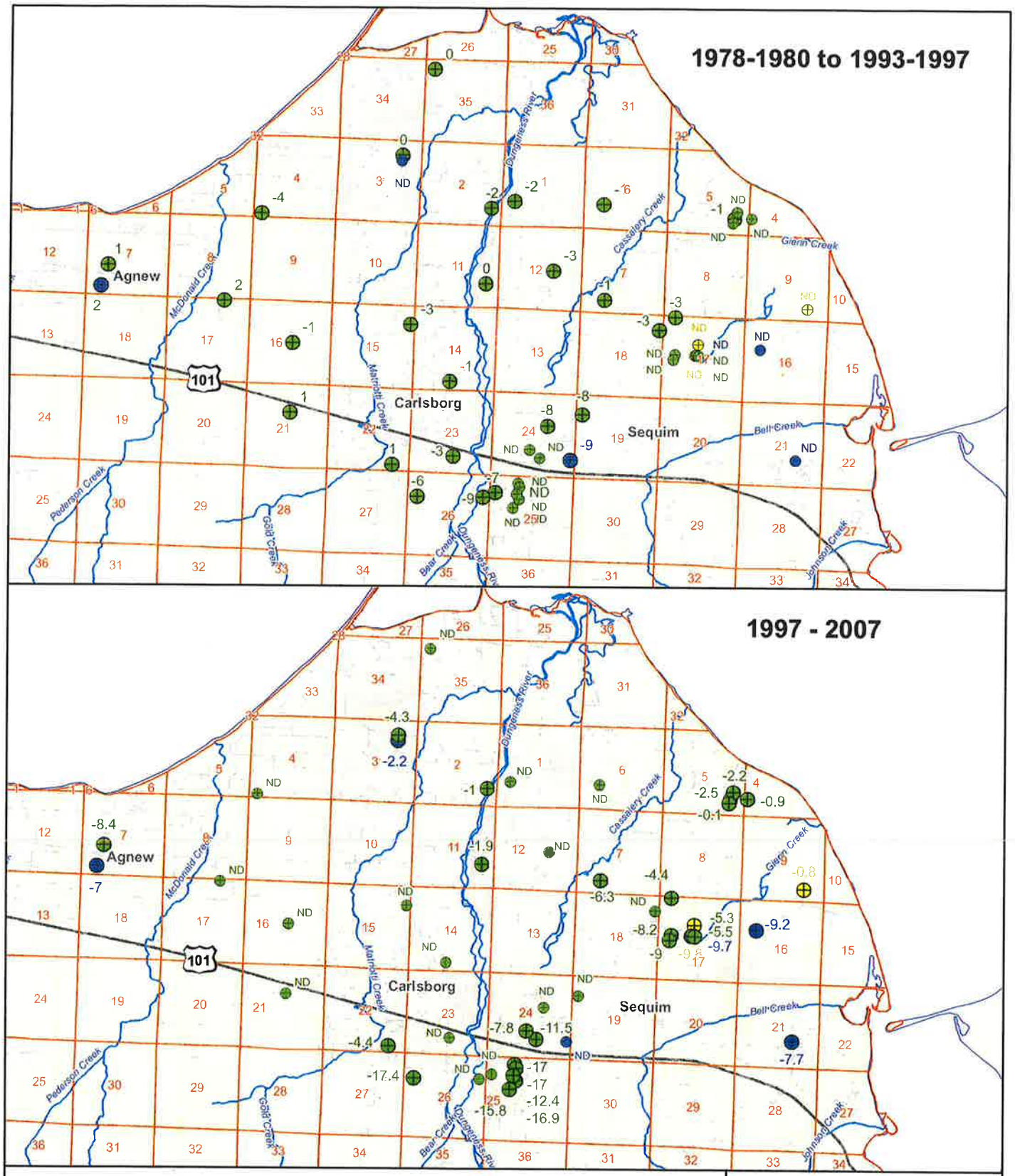


Figure 8-3

Changes in Groundwater Levels

City of Sequim
2008 Monitoring Report

PgG

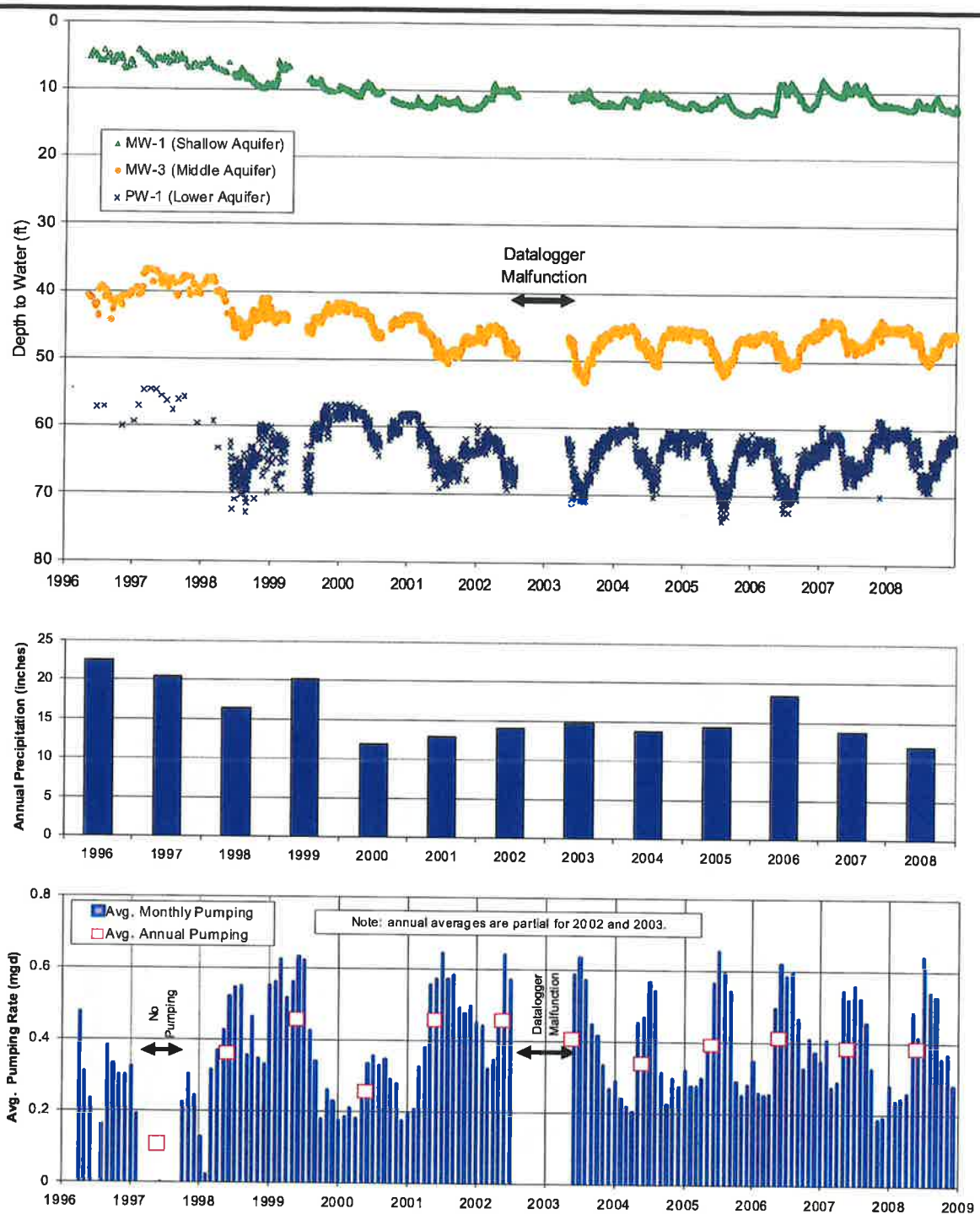


Figure 8-4
Water Levels and Pumping at the Port Williams Wellfield

City of Sequim
2008 Monitoring Report

PgG

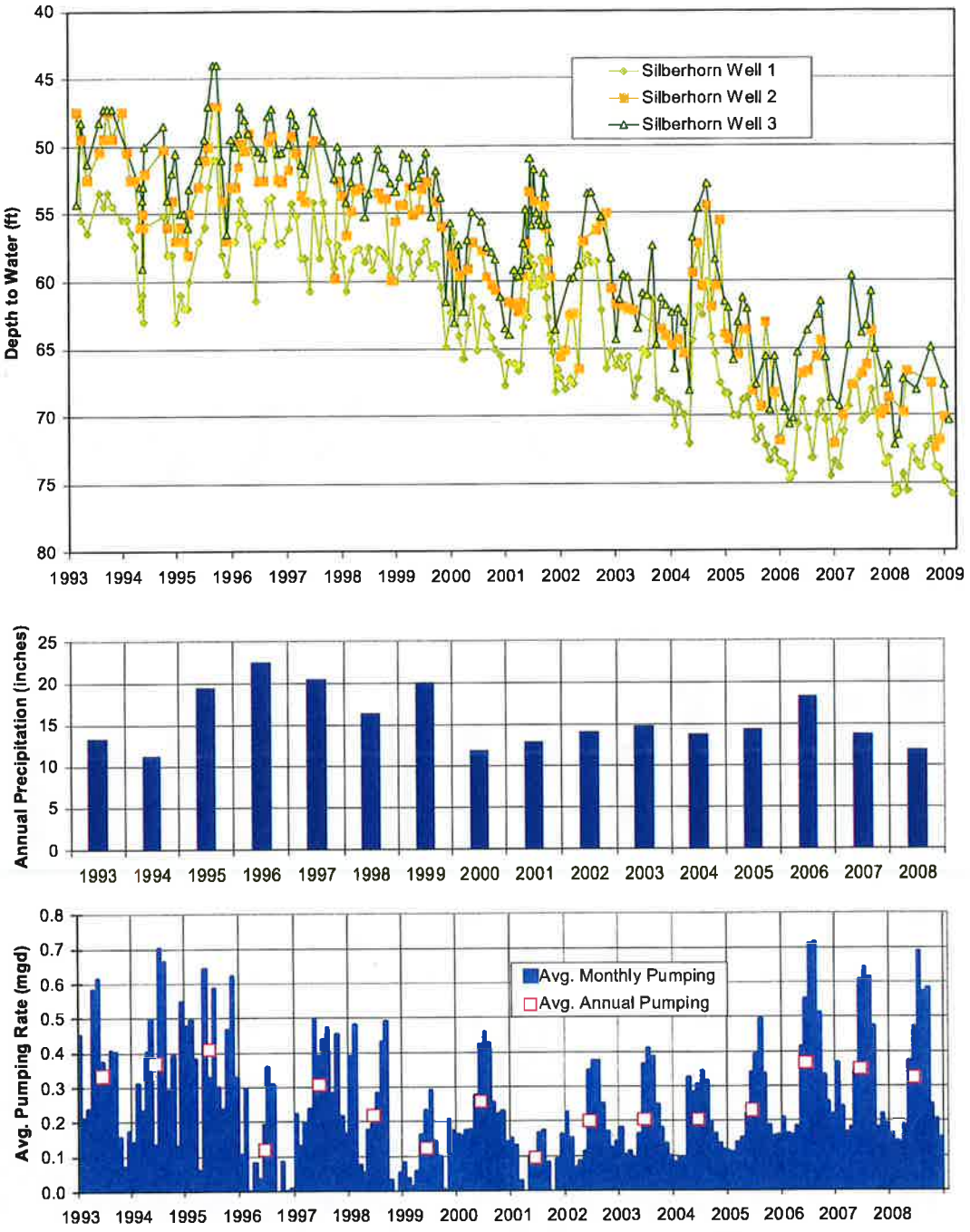


Figure 8-5
Water Levels and Pumping at the Silberhorn Wellfield

City of Sequim
2008 Monitoring Report

PgG

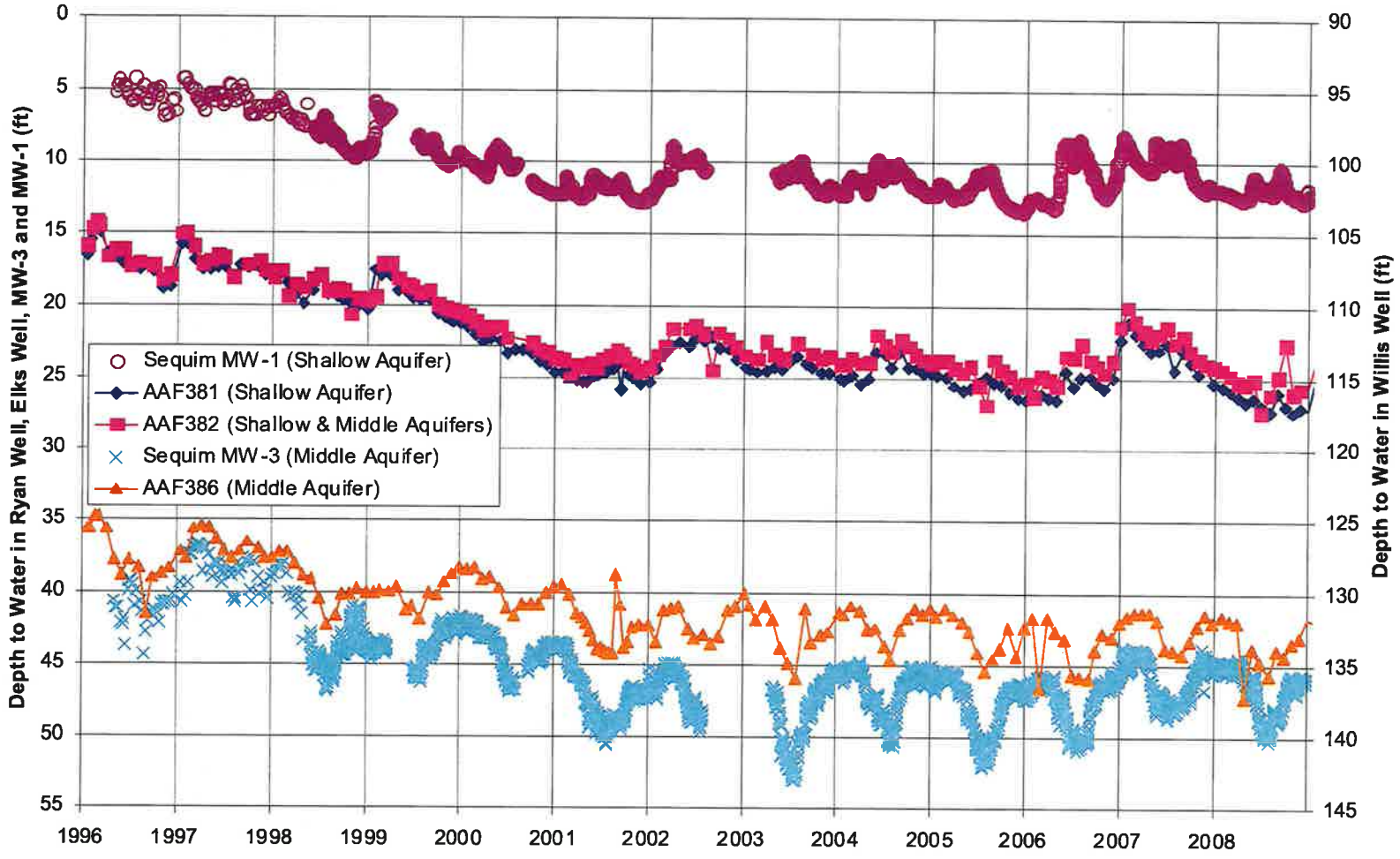


Figure 8-6
Water-Level Trends in Wells Surrounding the Port Williams Wellfield

City of Sequim
2008 Monitoring Report

PgG

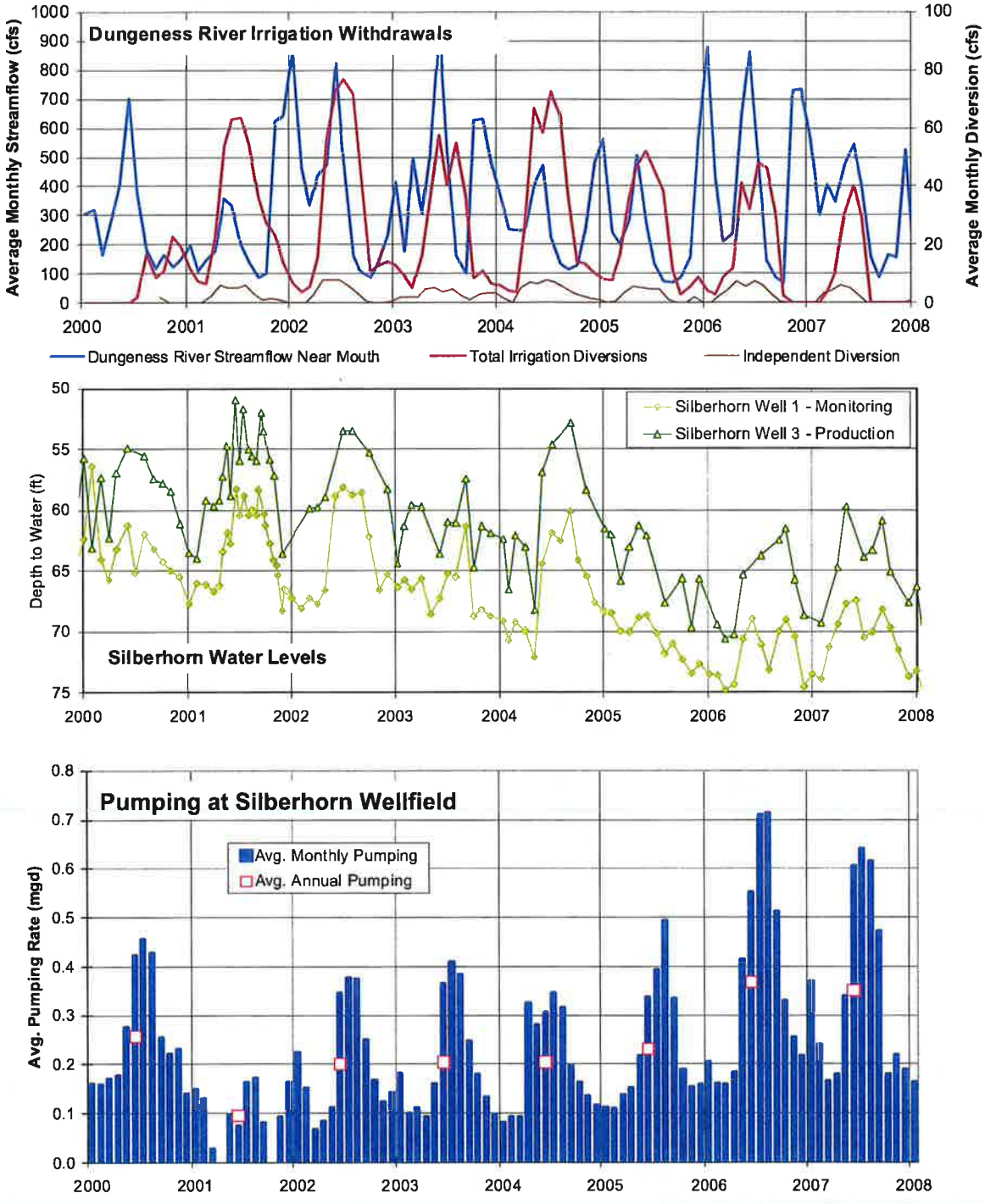


Figure 8-7
Hydrologic Trends Near the Highway 101 - Dungeness River Crossing

City of Sequim
2008 Monitoring Report

PgG

K:\Peter\Dungeness_AR\GIS\mxds\SequimMonitoringStudy\Fig5_Nitrate_1980_1996_2007.mxd

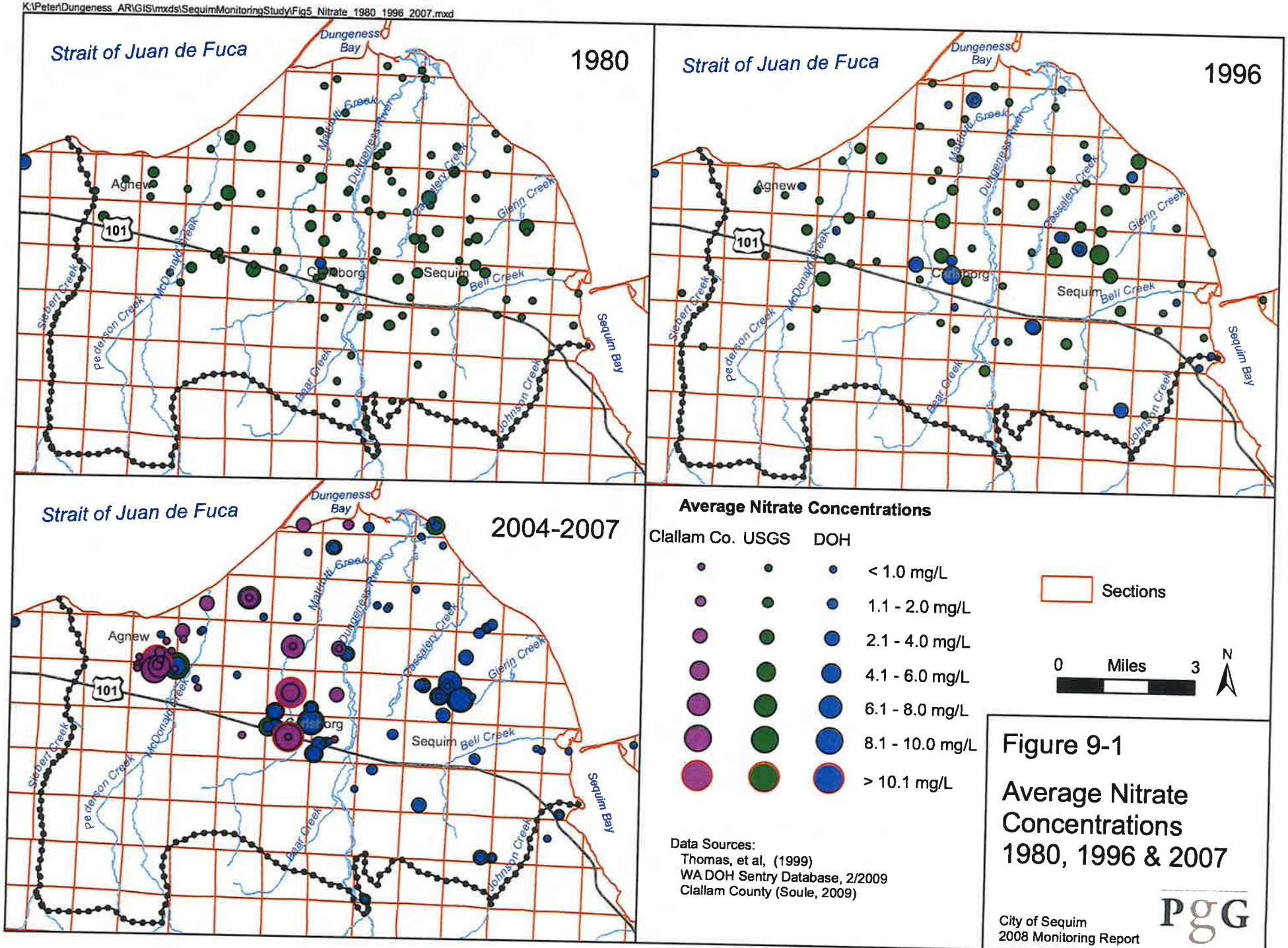


Figure 9-1

Average Nitrate Concentrations 1980, 1996 & 2007

City of Sequim
2008 Monitoring Report

PgG

P 206.329.0141 | F 206.329.6968
2377 Eastlake Avenue East | Seattle, WA 98102

P 206.842.3202 | F 206.842.5041
8150 West Port Madison NE | Bainbridge, WA 98110

P 360.570.8244 | F 360.570.0064
1627 Linwood Avenue SW | Tumwater, WA 98512

www.pgwg.com

PgG

50-d

Clallam Conservation District
228 W. First Street, Suite H
Port Angeles, WA 98362

March 11, 2024
Via email to:
kim.williams@clallamcd.org
info@clallamcd.org

PUBLIC COMMENT FOR CCD BOARD MEETING MARCH 12, 2024

Dear Clallam Conservation District,

Please accept this letter as public comment for the CCD Board Meeting scheduled for March 12, 2024 and please include this letter and enclosures in the minutes for the meeting on March 12, 2024. This comment follows up on my written and oral comment submitted for the July 11, 2023, August 8, 2023, September 12, 2003, October 10, 2023, November 14, 2023, December 12, 2023, January 9, 2024, and February 13, 2024 CCD Board Meetings relating to our on-going concerns regarding the SPTIA Irrigation Efficiencies and Improvement Project ("CCD/SPTIA Project").

Sample Water Pipeline Easement

Enclosed please find a sample water pipeline easement. CCD Supervisors have represented in recent CCD public meetings that CCD *already* had existing pipeline easements in place for the publicly-funded CCD/SPTIA Project. To date, none have been provided. Worse, these statements appear to have been made with the specific intent to continue CCD's access to public grant funding for a project lacking in a lawful basis.

As can be seen from the sample easement enclosed, the terms of a typical pipeline easement address issues such as route location, term of rights, payment, responsibilities of Grantor, right of access, responsibilities of Grantee, restrictions on easement, pipeline burial terms, range improvements, surface restoration, repair and restoration of water systems, water rights, abandonment, taxes, and damages.

CCD has yet to provide any evidence of a pipeline easement for any properties subject to the defunct pipeline provisions of the CCD/SPTIA Project. Conversely, landowners have provided CCD with recorded plat map evidence of the *actual* terms of the easement which is expressly limited to irrigation ditch maintenance.

Impact of Changes in Land Use on Ground-Water System for the Sequim-Dungeness Peninsula

Enclosed please find a study on the impact of pipeline systems on the ground-water systems upon which landowners on the Sequim-Dungeness Peninsula rely. The study was conducted by B.W. Drost. The abstract reads, in part, as follows:

> In the Sequim-Dungeness peninsula, Clallam County, Washington, leakage from irrigation ditches is the most important source of ground-water recharge. Possible future land-use changes could lead to termination of the irrigation system. This would result in lower heads throughout the ground-water system, that could lead to well failures, increased pumping costs, seawater intrusion, and water-quality degradation. A digital-computer model was developed to simulate three-dimensional ground-water flow in aquifers underlying the peninsula in order to assess the impact of termination of the irrigation system. After 10-20 years of no irrigation, the model predicts that the water level in the water-table aquifer would have average declines of about 20 feet, some areas would become completely unsaturated, several hundred wells could go dry or nearly so, and leakage from the Dungeness River would become the major source of ground-water recharge.

Drost Study, Abstract, p. 1.

As the CCD is aware from recent public comment, landowners who have had their ditches piped in have experienced well failures. A CCD Supervisor openly stated that the ground-water levels are dropping as a result of the pipeline projects.

The CCD's pipeline projects are *ultra vires* to its statutory authority and are not supported by pipeline easements.

Thank you,

Virginia P. Shogren

Virginia Shogren
961 W. Oak Court
Sequim, WA 98382
360-461-5551
vshogren@gmail.com

Encls.

AGREEMENT TO GRANT RIGHT OF WAY WATER TRANSMISSION PIPELINE EASEMENT BETWEEN THE CITY OF LARAMIE AND CB PROPERTIES, LLC

1. **Parties**. This Agreement is entered into as of this _____ day of _____, 2017, by and between the **City of Laramie, Wyoming, a municipal corporation** (hereinafter referred to as "Grantee"), whose address is 406 Ivinson Avenue, P.O. Box C, Laramie, Wyoming, 82073, and **CB Properties, LLC** (hereinafter collectively referred to as "Grantors") whose address is P.O. Box 1691, Laramie, Wyoming 82073-1691.

2. **Purpose.** Grantee has requested that Grantor grant to Grantee a right of way easement for the purposes of laying, constructing, operating, inspecting, maintaining, repairing, replacing, substituting, relocating and removing a water transmission pipeline for the transportation of water as described in this Agreement.

3. **Description of Land**. The water transmission pipeline is to be located on a route to be selected by Grantee, on, in, over and through the land described on Exhibit A and Exhibit B attached hereto and made a part hereof in Albany County, State of Wyoming.

4. **Term**. The rights granted in this agreement shall be possessed and enjoyed by Grantee, its successors and assigns, so long as the water pipeline and appurtenances constructed pursuant to this agreement shall be maintained and operated by Grantee, its successors or assigns.

5. **Payment**. Grantee agrees to pay Grantor an amount up to 75% of the Assessed Valuation of the underlying land equal to the sum of $6,992.95 (Six Thousand Nine Hundred Ninety-Two and 95/100 Dollars). This amount shall be paid prior to the start of the construction of the water transmission pipeline.

6. **Responsibilities of Grantors.**

A. **Grant of Right of Way Easement**. Grantors hereby grant to Grantee, to the extent Grantors have the right to do so, right-of-way (hereinafter referred to as "Easement") to locate, re-locate, survey a route, construct, entrench, repair, maintain, replace, protect, inspect and operate a single underground water transmission pipeline with appurtenances including but not limited to valves, metering equipment, erosion control equipment, electrical cable, cathodic equipment, and communication cable (hereinafter referred collectively as "Facilities") under and through the hereinafter described land, along the line shown on Exhibits A and B attached hereto and made a part hereof.

B. **Grant of Temporary Construction Easement**. Grantors hereby grants to Grantee, to the extent Grantors have the right to do so, a temporary construction easement (hereinafter referred to as "Temporary Construction Easement") to survey a route, construct, entrench, repair, maintain, replace, and inspect a single underground water transmission pipeline with Facilities along the line shown on Exhibits A and B, for a time period not to exceed three

(3) years from the execution date of this agreement or until the completion of the construction of the pipeline, whichever shall first occur.

Grantee may extend the boundaries of the pipeline easement by an additional seventy feet along and adjacent to said easement right-of-way, as shown on Exhibits A and B, as may be reasonably necessary in connection with construction, maintenance, repair, removal or replacement of the facilities. However, after the completion of the pipeline construction or at the end of three (3) years from the execution date of this agreement, whichever shall first occur, Grantee shall have no further right to the temporary easement and Grantee's rights shall be limited solely to a permanent right-of-way thirty (30) feet in width and all pipelines constructed pursuant to this instrument shall be confined to the right-of-way.

C. Right of Access. The permanent Easement and Temporary Construction Easement shall carry with it the right of Grantee and its employees and agents at all times to have free and unimpaired ingress, egress, regress and access over, across and through said pipeline right-of-way, using reasonable route as Grantor may designate or approve for the purpose of locating, constructing, operating, inspecting, repairing, protecting and maintaining the facilities and the removal or replacement of same at will, either in whole or in part, and the replacement of said pipeline with either like or different size pipe.

D. Nonexclusivity. Grantee's use of the Easement hereunder shall be nonexclusive and Grantor, his agents, designees, permittees, and assignees shall have the right to use and enjoy the land covered by the Easement at any time during the term of this Agreement for any purpose and the right to grant other easements and rights-of-way across the land covered by the Easement, so long as such use or other easements and rights-of-way do not materially interfere with Grantee's use and enjoyment of the rights granted herein. Grantor shall not build, construct, or permit to be built or constructed, any structure or obstruction, or impound water or any substance, or change the grade on or over the easement, except that with prior notice to Grantee, Grantor shall be permitted to construct fences, roads, water lines and distribution systems, power transmission lines, communication lines and wind generation facilities across the Easement. Grantee shall not interfere with the other activities of the Grantor, his agent's designees, permittees or assignees on the Easement.

7. Responsibilities of Grantee.

A. Restrictions on Easement. Grantee's rights hereunder are expressly subject to the following:

(i.) All reservations, limitations and conditions of any underlying patents covering the Easement or any portion thereof, and the rights of any party pursuant thereto;

(ii.) All grants, conditions, limitations and reservations, if any, of record, or arising by operation of law, and the rights of any party pursuant thereto;

(iii.) All easements or rights-or-way over or across the Easement or any portion thereof;

(iv.) The rights of any party under any oil, gas, mineral or other agreements, or surface owners' agreement or agreements, if any, covering all or any portion of the Easement provided the exercise of those rights do not interfere with the use and enjoyment of the terms of this easement;

(v.) The right of the surface owner to participate in the development of the mineral estate by all means now known or hereafter developed; and

(vi.) The rights of any party under any underlying deed constituting the record chain of title unto Grantor.

B. Assignment. Grantee shall have the right to assign all or any portion of the rights herein granted. However, such assignment shall not relieve Grantee of its obligations hereunder. Grantee and any subsequent assignees shall notify Grantor of any assignments within thirty (30) days of such action.

C. Burial of Water pipeline. Grantee shall bury the water pipeline installed by Grantee to the depth required by federal, state and local regulation.

D. Range improvements. Range improvements, such as fencing, gates, etc., if any, within the Easement, shall not be disturbed and all gates shall be left open or closed, as found. Where disturbance is necessary, Grantee shall restore such improvements to the original or better condition. Where locked gates are present, Grantee shall maintain its own locks and shall restrict access to Grantee's employees and/or agents.

E. Restoration of Surface. Grantee shall affect a minimum of vegetative or soil disturbance, consistent with practical operations, and will smooth and maintain all disturbed areas to conform as nearly as practical to the adjacent terrain, and provide and maintain adequate water drainage to minimize erosion. After the initial construction of the pipeline covered by this Agreement is completed, or upon completion of any subsequent maintenance or replacement of the facilities causing vegetative or soil disturbance, all disturbed areas shall be restored and reseeded by Grantee no later than one growing season after the construction, maintenance or replacement has been completed. Such restoration and reseeding shall be completed by Grantee using Grantor's specifications then in effect. All seed mixes shall be approved by the Grantor. Grantee further shall control any unwanted noxious weed infestations caused by installation or operation of the pipeline on or adjacent to the Easement on a timely basis. Furthermore, PFE Road shall be returned to its current condition, or better, including 6" of road base, a proper crown, and roadside ditches.

F. Repair and Restoration of Water Systems. Grantee agrees to replace or rebuild to the satisfaction of grantor or grantor's representative any and all damaged parts of any drainage or irrigation system that may be damaged by the construction of any pipeline pursuant to this instrument. Grantee shall maintain adequate water breaks on all slopes, if any.

G. **Water Rights**. Grantee shall not have the right to use, and shall not take and use, any water stored on or flowing through the Easement or originating from water wells on the Easement during the entire life of this Agreement without the written consent of Grantor, which may be withheld in his sole and absolute discretion.

H. **Abandonment**. It is expressly made a condition of the Easement that if Grantee, its successors or assigns, shall abandon the Easement or any portion of said Easement for the stated purposes of the Easement, then and in the event, all the rights herein granted shall cease and terminate with respect to the Easement so abandoned, and the title to said Easement shall be freed from the burden of said Easement; and it is further agreed that nonuse of the Easement or any portion thereof for the purposes of said Easement for the period of four (4) consecutive years along with an intent to abandon shall constitute an abandonment unless such nonuse is caused by market conditions or circumstances beyond the reasonable control of Grantee. In the event of an abandonment of the Easement, Grantee shall deliver to Grantor a recordable instrument evidencing that the title to the Easement so abandoned is free and clear of the burden of said Easement and free and clear of liens, encumbrances, clouds upon or defects in the title to said Easement created or permitted to be created by Grantee.

I. **Taxes**. Grantor shall pay all county taxes assessed against the Easement based upon the present valuation thereof. Grantee shall pay all county taxes, if any, assessed against the Easement because of additional value placed thereon for tax assessment purposes by reason of improvements placed upon the Easement by Grantee, and Grantee shall within thirty (30) days after written notice from Grantor, reimburse Grantor for Grantee's share thereof.

J. **Damages**.

(i.) All operations hereunder shall be conducted by Grantee in a fair and reasonable manner, and all necessary precautions shall be taken to avoid damage to gates, bridges, culverts, cattle guards, fences, dikes and other stock watering facilities. All damage to the above-named facilities shall be reported to Grantor within twenty-four (24) hours and shall be repaired by Grantee immediately, to the original condition or better than existing prior to such operations. Any public hazard, such as a damaged bridge or culvert, caused by Grantee's use of the Easement, shall be marked or barricaded and proper steps taken for the repair thereof by Grantee.

(ii.) Grantee shall give Grantor prompt notice of any of the following occurrences arising with regard to the Land or Grantee's activities thereon;

(1.) Any spill, release, or other occurrence that constitute a violation of the provisions of any applicable laws, rules or regulations; and

(2.) Any notices, claims or allegations of environmental violations or contamination received from any federal, state or local governmental agency or authority or the filing or commencement of any judicial or administrative proceeding by any such agency.

8. **General Provisions.**

A. Amendments. Any changes, modifications, revisions or amendments to this Agreement which are mutually agreed upon by the parties to this Agreement shall be incorporated by written instrument, executed and signed by all parties to this Agreement.

B. Applicable Law/Venue. The construction, interpretation and enforcement of this Agreement shall be governed by the laws of the State of Wyoming. The Courts of the State of Wyoming shall have jurisdiction over this Agreement and the parties, and the venue shall be the Second Judicial District, Albany County, Wyoming.

C. Compliance with Law. Grantee shall comply with all present and future federal, state and local laws, rules, regulations, orders and other requirements applicable to Grantee's operations under this Agreement, including without limitation, laws, rules, regulations, orders and other requirements relating to the public or employee heath and safety, pollution or protection of the environment, and any permits, approvals or judicial or administrative orders issued thereunder. The terms of this Easement may be modified from time to time with additional consideration to comply with any future modification to federal, state and local laws, rules, regulations, orders or other requirements;

D. Entirety of Easement. This Agreement represents the entire and integrated Agreement between the parties and supercedes all prior negotiations, representations, and agreements, whether written or oral.

E. Force Majeure. Neither party shall be liable for failure to perform under this Agreement if such failure to perform arises out of causes beyond the control and without the fault or negligence of the nonperforming party. Such causes may include, but are not limited to, acts of God or the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes, and unusually severe weather. This provision shall become effective only if the party failing to perform immediately notifies the other party of the extent and nature of the problem, limits delay in performance to that required by the event, and takes all reasonable steps to minimize delays. This provision shall not be effective unless the failure to perform is beyond the control and without the fault or negligence of the nonperforming party.

F. Termination. Grantee agrees that this Agreement is specifically enforceable, and in the event of Grantee's default with respect to any of the covenants and agreements hereunder on its part to be kept and performed, Grantee shall pay to Grantor all costs and expenses of enforcing this Agreement, or in pursuing any remedy provided hereunder or by the statutes of the State of Wyoming, whether such remedy is pursued by filing suit or otherwise, including reasonable attorney's fees. On the termination of the rights granted in this agreement, grantee shall execute and deliver to grantor, within thirty (30) days after service of a written demand, a good and sufficient quitclaim deed to all rights granted in this agreement. Should Grantee fail or refuse to deliver the deed to Grantor, a written notice by Grantor reciting the failure or refusal of grantee to execute and deliver the deed, and terminating this grant, shall, after sixty (60) days from the date of recording of the notice, be conclusive evidence against Grantee, and all persons claiming under Grantee, of the termination of this grant.

G. **Notices.** Any notice to be given to Grantor or Grantee hereunder shall be in writing and shall be delivered personally, sent by overnight courier, sent by facsimile, or mailed in the United States Mail, certified mail, return receipt requested, to the addresses of the Grantor and Grantee above set forth in the first paragraph of this Agreement.

H. **No Representations or Warranties.** Grantor makes no warranty, express, implied or statutory with respect to the lands described above, the easement or the ownership thereof.

I. **Assumption of Risk/Indemnification.** Each Party to this Agreement shall assume the risk of any liability arising from its own conduct. Neither party agrees to insure, defend, or indemnify the other including but not limited to any personal injury to individual or any damage to property of individuals or City.

J. **Sovereign Immunity.** Grantee does not waive sovereign immunity by entering into this Agreement, and specifically retain immunity and all defenses available to them as sovereigns pursuant to Wyo. Stat. § 1-39-104(a) and all other state law.

K. **Third Party Beneficiary Rights.** The parties do not intend to create in any other individual or entity the status of third party beneficiary, and this Agreement shall not be construed so as to create such status. The rights, duties and obligations contained in this Agreement shall operate only between the parties to this Agreement, and shall inure solely to the benefit of the parties to this Agreement. The provisions of this Agreement are intended only to assist the parities in determining and performing their obligations under this Agreement. The parties to this Agreement intend and expressly agree that only parties signatory to this Agreement shall have any legal or equitable right to seek to enforce this Agreement, to seek any remedy arising out of a party's performance or failure to perform any term or condition of this Agreement, or to bring an action for the breach of this Agreement.

L. **Binding on Successors.** Subject to the requirements of Paragraph 7(B) above, the terms, conditions and provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

M. **Time is of the Essence.** Time is of the essence in all provisions of the Agreement.

N. **Titles Not Controlling.** Titles of paragraphs are for reference only, and shall not be used to construe the language in this Agreement.

O. **Waiver.** The waiver of any breach of any term or condition in this Agreement shall not be deemed a waiver of any prior or subsequent breach.

P. **Recordation.** The City will hold the executed Easement in escrow until such time as a contract for construction of said pipeline has been awarded.

IN WITNESS WHEREOF, the Laramie City Council has caused this Agreement to be signed and executed in its behalf by its Mayor, and duly attested by its City Clerk, and Grantor has signed and executed this Agreement, the day and year first written above.

GRANTEE:

CITY OF LARAMIE, WYOMING:

By: _____
Andrea Summerville, Mayor and President of the
City Council

Attest:_____
Angie Johnson
City Clerk

STATE OF WYOMING)
) ss.
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Andrea Summerville, this ____ day of _____, 2017. Witness my hand and official seal.

_____
Notary Public

My commission expires:

STATE OF WYOMING)
) ss.
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Angie Johnson this ____ day of _____, 2017. Witness my hand and official seal.

_____
Notary Public

My commission expires:

GRANTOR: **GRANTOR:**

_____ _____
David R. Coffey

ACKNOWLEDGEMENTS

STATE OF WYOMING)
) ss.
COUNTY OF ALBANY)

The foregoing instrument was acknowledged before me by Name and Name, Grantors, this ____ day of _____, 2017. Witness my hand and official seal.

_____
Notary Public

My commission expires:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

IMPACT OF CHANGES IN LAND USE ON THE GROUND-WATER SYSTEM IN THE SEQUIM-DUNGENESS PENINSULA, CLALLAM COUNTY, WASHINGTON

By B. W. Drost

U.S. GEOLOGICAL SURVEY

WATER-RESOURCES INVESTIGATIONS
REPORT 83-4094

Prepared in cooperation with the
STATE OF WASHINGTON DEPARTMENT OF
ECOLOGY and the BOARD OF CLALLAM
COUNTY COMMISSIONERS

Tacoma, Washington
1983

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

COVER PHOTOGRAPH BY CLALLAM COUNTY PLANNING DEPARTMENT

For additional information
write to:

District Chief
U.S. Geological Survey
1201 Pacific Avenue - Suite 600
Tacoma, Washington 98402-4384

Copies of this report
can be purchased from:

Open-File Services Section
Western Distribution Branch
U.S. Geological Survey
Box 25425, Federal Center
Lakewood, Colorado 80225
(Telephone: (303) 234-5888)

CONTENTS

Page

Abstract----------
Introduction----------
  Purpose and scope----------
  Description of the study area----------
  Acknowledgments----------
  Numbering system for wells----------
Hydrogeology----------
  Setting----------
  Geometry of the aquifers and confining beds----------
  Ground-water recharge from precipitation----------
  Ground-water recharge from irrigation systems----------
  Ground-water movement----------
  Hydraulic characteristics of the aquifers----------
    Lateral hydraulic conductivity----------
    Transmissivity----------
    Specific yield----------
    Storage coefficient----------
    Stream-aquifer connection----------
  Ground-water quality----------
Model construction, calibration, and utilization----------
  Model boundaries----------
  Model input----------
  Steady-state simulation----------
  Transient simulation----------
Summary and conclusions----------
References----------

ILLUSTRATIONS

Page

FIGURE 1. Map showing location of the study area---------
2. Diagram showing schematic cross section of the ground-water system of the study area-
3-9. Maps showing:
3. Altitude of the bottom of the water-table aquifer----------
4. Altitude of the water table in March 1979-
5. Thickness of the upper confining bed------
6. Thickness of, extent of, and storage coefficient in the upper artesian aquifer----------
7. Thickness of lower confining bed and extent of lower artesian aquifer--------
8. Average annual ground-water recharge from precipitation----------
9. Irrigation districts and major irrigation ditches----------
10-11. Graphs showing:
10. Flow in the Independent Irrigation Ditch and water levels in well 30/3-19D1, September 1978-September 1980----------
11. Estimated irrigation and precipitation recharges and changes in water levels in the water-table aquifer----------
12. Diagram showing schematic cross section of the ground-water system and directions of flow----------
13-17. Maps showing:
13. Hydraulic conductivity in the water-table aquifer----------
14. Transmissivity in the upper artesian aquifer----------
15. Average water-level change in the water-table aquifer from mid-March to mid-July 1979----------
16. Nitrate-plus-nitrite concentrations and septic-system densities in the water-table aquifer, June 16-19, 1980--
17. Grid network, boundary conditions, and river nodes used in the model----------

ILLUSTRATIONS--cont.

Page

FIGURE 18. Graph showing comparison of measured water-table altitudes and Dungeness River leakage to values computed by the model using various river-leakage coefficients-----
19. Map showing comparison of measured and model-calculated water-level altitude in the water-table aquifer, March 1979----------
20. Diagram showing ground-water budget for March 1979, calculated by steady-state model-
21. Graph showing drawdown at node 26,34 in the water-table aquifer, computed by the model assuming no irrigation and river leakage coefficient of 2.0 (ft/d)/ft----------
22-27. Maps showing drawdown after 20 years of no irrigation calculated by the model using river leakage coefficient of 2.0 (ft/d)/ft, and:
22. Constant-head conditions in the water-table aquifer----------
23. Constant-flux conditions in the water-table aquifer----------
24. Constant-head conditions in the upper artesian aquifer----------
25. Constant-flux conditions in the upper artesian aquifer----------
26. Constant-head conditions in the lower artesian aquifer----------
27. Constant-flux conditions in the lower artesian aquifer----------
28-29. Maps showing drawdown in the water-table aquifer calculated by the model:
28. After 20 years of no irrigation, using constant-head conditions and river leakage coefficient of 20 (ft/d)/ft-----
29. After 10 years of no irrigation, using constant-flux conditions and river leakage coefficient of 0.2 (ft/d)/ft----

TABLES

Page

TABLE 1. Irrigation diversions from the Dungeness River, September 1978-August 1980----------
2. Gains and losses in the Dungeness River----------
3. Summary of water quality, June 16-19, 1980--------
4. Correlation of water quality and geologic units in the water-table aquifer, June 16-19, 1980----
5. Ground-water recharge from the irrigation system, March 1979----------
6. Estimated average pumping rates used in model simulations----------
7. Comparison of measured and model-calculated water-level altitudes in the upper artesian aquifer, March 1979----------
8. Comparison of calculated ground-water budgets from steady-state model and transient model after 20 years of no irrigation, with river leakage coefficient of 2.0 (ft/d)/ft----------
9. Comparison of drawdowns and selected ground-water flow rates computed by the model using various river leakage coefficients----------

METRIC CONVERSION FACTORS

Multiply	By	To obtain
inch (in.)	25.4	millimeter (mm)
	2.540	centimeter (cm)
	0.0254	meter (m)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
foot per day per foot [(ft/d)/ft)]	0.3048	meters per day per meter [(m/d)/m]
micromho per centimeter at 25° Celsius (umhos/cm at 25°C)	1.000	microsiemen per centimeter at 25° Celsius (uS/cm at 25°C)

National Geodetic Vertical Datum of 1929 (NGVD of 1929): A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Mean Sea Level." NGVD of 1929 is referred to as sea level in this report.

GLOSSARY

Aquifer - A formation, group of formations, or part of a formation that contains sufficient permeable material to yield significant quantities of water to wells.

Artesian aquifer - An aquifer in which water levels in wells stand above the top of the aquifer.

Confining bed - A body of relatively impermeable material separating two aquifers.

Evapotranspiration - The process by which water is lost from the earth's surface to the atmosphere by evaporation from surface-water bodies and transpiration by plants.

Head - The altitude of a water level in a well tapping an aquifer.

Hydraulic conductivity - The volume of water that will move in unit time under a unit hydraulic gradient through a unit area measured at right angles to the direction of flow.

Hydraulic gradient - The change in water level in wells tapping an aquifer per unit of distance in a given direction.

Specific capacity - The rate of discharge of water from a well divided by the drawdown of water level in the well.

Specific yield - The ratio of (1) the volume of water which an aquifer will yield by gravity to (2) the volume of the aquifer.

Storage coefficient - The volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in water levels in wells tapping the aquifer.

Transmissivity - The rate at which water is transmitted through a unit width of the aquifer under a unit hydraulic gradient.

IMPACT OF CHANGES IN LAND USE ON THE GROUND-WATER SYSTEM IN THE SEQUIM-DUNGENESS PENINSULA, CLALLAM COUNTY, WASHINGTON

By B. W. Drost

ABSTRACT

In the Sequim-Dungeness peninsula, Clallam County, Washington, leakage from irrigation ditches is the most important source of ground-water recharge. Possible future land-use changes could lead to termination of the irrigation system. This would result in lower heads throughout the ground-water system, that could lead to well failures, increased pumping costs, seawater intrusion, and water-quality degradation. A digital-computer model was developed to simulate three-dimensional ground-water flow in aquifers underlying the peninsula in order to assess the impact of termination of the irrigation system. After 10-20 years of no irrigation, the model predicts that the water level in the water-table aquifer would have average declines of about 20 feet, some areas would become completely unsaturated, several hundred wells could go dry or nearly so, and leakage from the Dungeness River would become the major source of ground-water recharge.

As of June 1980, ground-water quality in the study area has apparently not been affected by the use of on-site domestic sewage-disposal systems. The median nitrate-plus-nitrite (as N) concentration in the water-table aquifer was 0.35 milligrams per liter, and the maximum concentration was 2.5 milligrams per liter.

INTRODUCTION

Some of the oldest developed areas in western Washington are in Clallam County, but in recent years the pattern of development has undergone a dramatic change. Much of the land, especially in northeastern Clallam County, that was originally used for irrigated agriculture has been subdivided for residential use. This change in land and water use has caused changes in the stresses on the ground-water and surface-water systems. It has also increased the potential for contamination of the ground-water system by the increased use of on-site domestic sewage-disposal systems.

Purpose and Scope

In 1978, the U.S. Geological Survey, in cooperation with the State of Washington Department of Ecology and the Board of Clallam County Commissioners, began a study that would (1) make a general assessment of the water resources of the developed areas of the county, (2) identify present and potential water-resource problems in these areas, and (3) make in-depth analyses of selected problem areas. The first two items have been completed and documented in a forthcoming report by Drost.

This report deals exclusively with a selected problem area, the Sequim-Dungeness peninsula (fig. 1). In the only previous investigation of the ground-water resources of the study area, a reconnaissance-type study conducted during July-September 1960 (Noble, 1960), Noble concluded that, "An important secondary source of recharge (to the ground-water system) is directly from irrigation." This conclusion caused concern when land-use trends began to indicate a possible future decrease in irrigation. A decrease in recharge would lead to lower heads in the ground-water system, which could result in well failures, increased pumping costs, seawater intrusion, and degradation of water quality. The purpose of this study was to examine the effect of decreased irrigation and increasing use of septic systems on aquifers underlying the Sequim-Dungeness peninsula.

A computer model is used in this report to simulate three-dimensional ground-water flow in the aquifers and to estimate the possible future effects on the ground-water system of possible changes in land use and irrigation practices. The potential effects of these changes on ground-water quality are also discussed.

Most of the data used in constructing the model were collected by the U.S. Geological Survey, the State of Washington Department of Ecology (WDOE), and the Clallam County Departments of Health and Public Works, during the period September 1978 to September 1980. These data include (1) monthly water-level measurements in about 65 wells, (2) daily staff-gage readings at 10 surface-water sites, (3) a continuous record of discharge at one surface-water site, (4) monthly discharge measurements at 20 surface-water sites, (5) surveyed land-surface altitudes at about 75 sites, (6) drillers' records of about 1,400 wells, and (7) chemical analyses of about 170 ground- and surface-water samples collected during the period June 16-19, 1980. Most of these data are contained in a forthcoming report by Drost, and the remainder are available in the files of the U.S. Geological Survey, Tacoma, Washington. Additional data were obtained from a 1981 study by N. P. Dion and S. S. Sumioka (U.S. Geological Survey), Dion and Sumioka (1981), and from Grimstad and Carson (1981), Noble and Balmer (1980), and Walters (1971).

Description of the Study Area

The Sequim-Dungeness peninsula is an area of about 60 square miles in northwestern Washington (fig. 1). The peninsula extends into the Strait of Juan de Fuca to the north and is bounded on the south by the foothills of the Olympic Mountains.

The area has been extensively irrigated since about 1896 with water from the Dungeness River, which originates in the mountains to the south and flows through the middle of the area. Prior to irrigation, the area was sparsely vegetated and was subject to dry and barren summers (Keeting, 1976). As of 1960, the area was used primarily for agriculture, and supported a population of about 5,000 people. In the mid-1960's, land use in the area began shifting from agriculture to residential, resulting in population increases to about 7,000 in 1970 and 12,000 in 1980.

Acknowledgments

The cooperation and assistance provided by Mr. and Mrs. Norman Siebens in daily monitoring of the staff-gage network is gratefully acknowledged. Mr. Valier Stoican of Stoican Drilling Co., Inc., assisted the study by providing drillers' logs and location information on several hundred wells. Many local residents were especially helpful by providing access to their wells for water-level measurements and water-quality sampling.

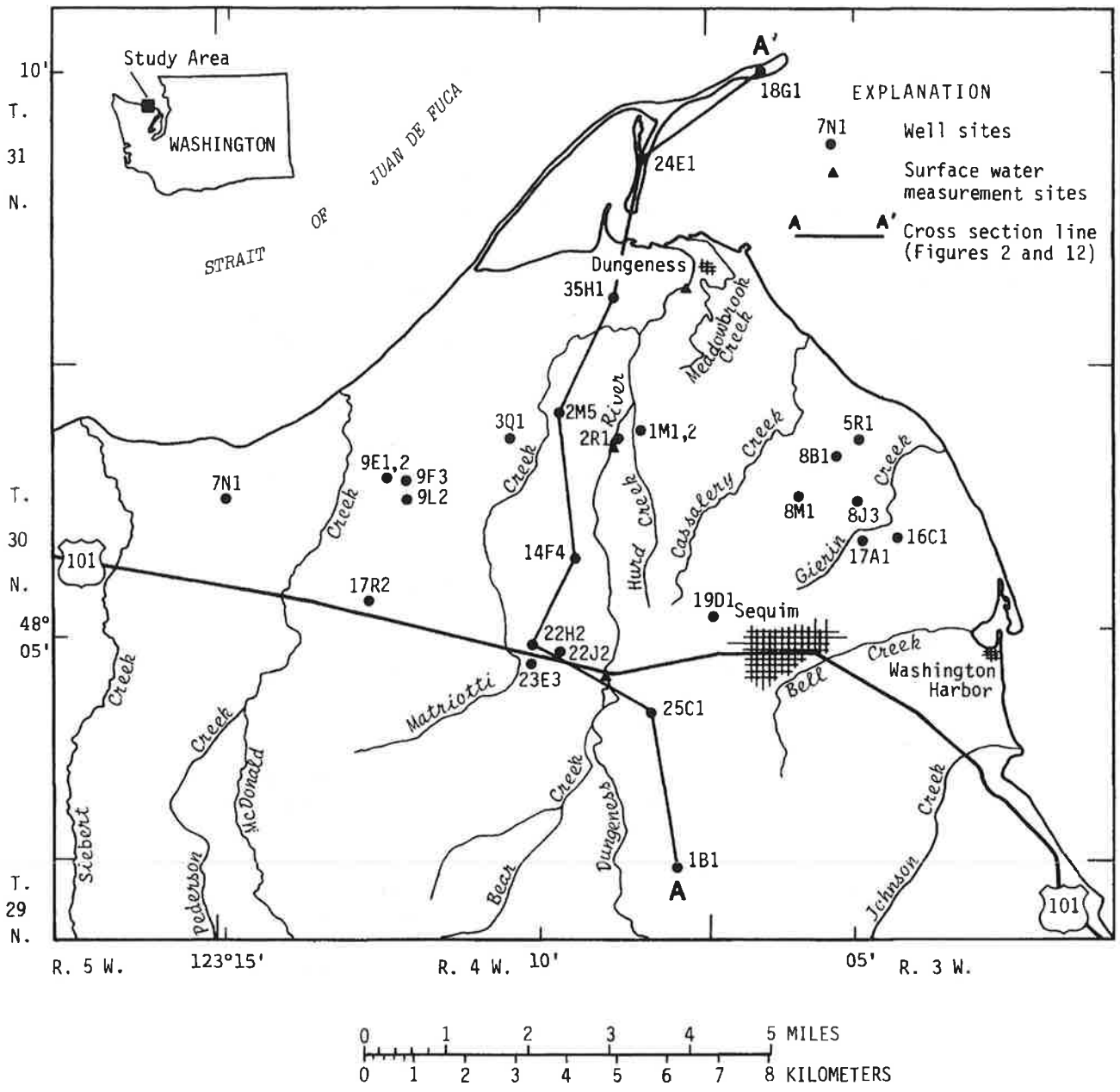
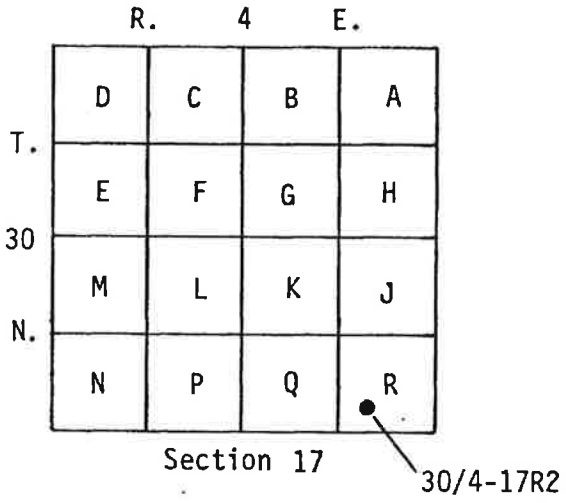


FIGURE 1.--Location of the study area.

Numbering System for Wells

Wells in Washington are assigned numbers that identify their location in a township, range, and section. Well number 30/4-17R2 indicates, successively, the township (T.30 N) and range (R.4 W.) north and west of the Willamette base line and meridian; the letters indicating north and west are omitted. The first number following the hyphen indicates the section (17) within the township, and the letter following the section gives the 40-acre subdivision of the section, as shown below. The number following the letter is the serial number of the well within the 40-acre subdivision.



HYDROGEOLOGY

Setting

The surficial sediments in the study area are mostly unconsolidated glacial, alluvial, and glaciomarine deposits (Othberg and Palmer, 1980a, b, and c). Mudstones, siltstones, and some sandstones are exposed at Bell Hill, just south of the study area (Tabor and Cady, 1978), and probably underlie the unconsolidated deposits beneath most of the study area. The consolidated rocks, when compared (using specific-capacity data) with the unconsolidated deposits, are impermeable and are treated as the base of the ground-water system in parts of the study area.

The unconsolidated deposits were divided into geohydrologic units on the basis of examination of more than 1,100 drillers' logs. Three aquifers and two confining beds were identified and are shown in figure 2. The aquifers are composed of sand and gravel, with some till, silt, and clay. In the upland regions where it directly overlies bedrock, the water-table aquifer is composed largely of till and clay, with minor amounts of sand and gravel.

The water-table aquifer includes at least seven geologic units identified by Othberg and Palmer (1980a, b, and c)—alluvium, older alluvium, Everson glaciomarine drift, Everson sand, Vashon recessional ice-contact and outwash deposits, Vashon till, and Vashon advance outwash, all of Quaternary age. The artesian aquifers apparently are not exposed in the study area, and were not described by Othberg and Palmer (1980a, b, and c).

The confining beds are composed of clay, silt, and till, with minor inclusions of sand in thin, discontinuous beds. The upper confining bed may correspond, at least in part, to the pre-Vashon silts and clays of Othberg and Palmer (1980a, b, and c), but the lower confining bed was not described in their report.

Data on the deeper unconsolidated materials were not sufficient to allow identification of individual units. There is at least one more aquifer within the deeper unconsolidated materials, and there may be several more. The deeper unconsolidated materials are treated as the base of the ground-water system in parts of the study area.

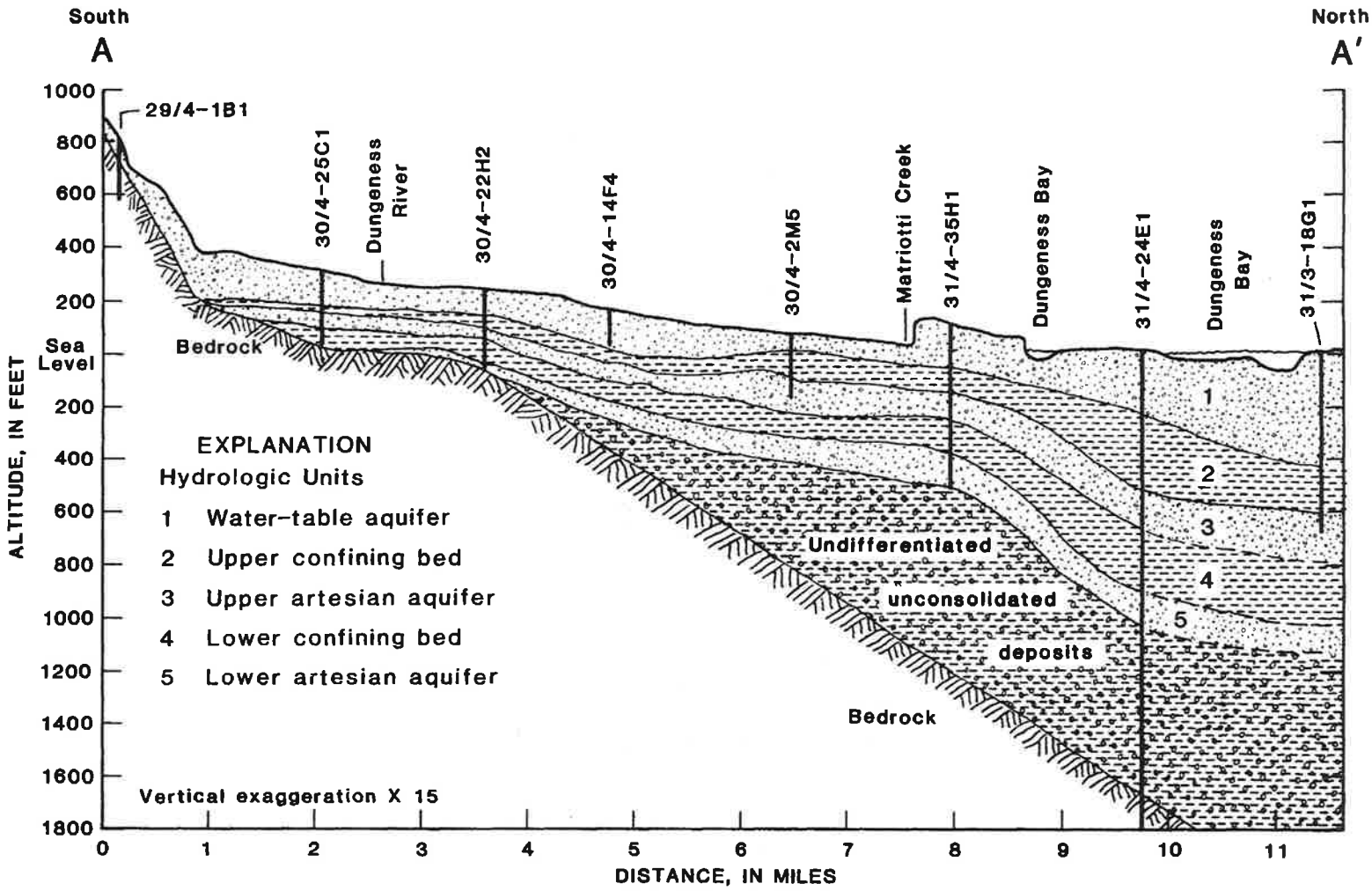


FIGURE 2.--Schematic cross section of the ground-water system of the study area.

Geometry of the Aquifers and Confining Beds

The water-table aquifer extends throughout the study area. The altitude of the bottom of this aquifer was determined from drillers' logs, and is shown in figure 3. The saturated thickness of the aquifer can be calculated by using this figure along with the altitude of the water table for March 1979 (fig. 4).

The upper confining bed underlies the water-table aquifer and overlies the upper artesian unit. The confining bed varies in thickness from about 1 foot to over 200 feet, but is between 25 and 75 feet thick throughout much of the study area (fig. 5).

The upper artesian aquifer is present in only part of the study area (fig. 6). Where present, its thickness ranges from a few feet to more than 100 feet and averages about 75 feet. In the foothill region in the southern part of the study area the upper artesian aquifer is absent and the water-table aquifer directly overlies bedrock or the upper confining bed. Only a few wells penetrate the entire thickness of the upper artesian aquifer; therefore, figure 6 shows only an approximation of the aquifer's actual thickness.

The lower confining bed is located between the upper and lower artesian aquifers. Very few wells penetrate the entire thickess of the confining bed. Figure 7 shows the approximate thickness of the bed.

The lower artesian aquifer covers a slightly smaller area than the upper artesian aquifer. The thickness of the lower artesian aquifer was not mapped because the existing data were insufficient.

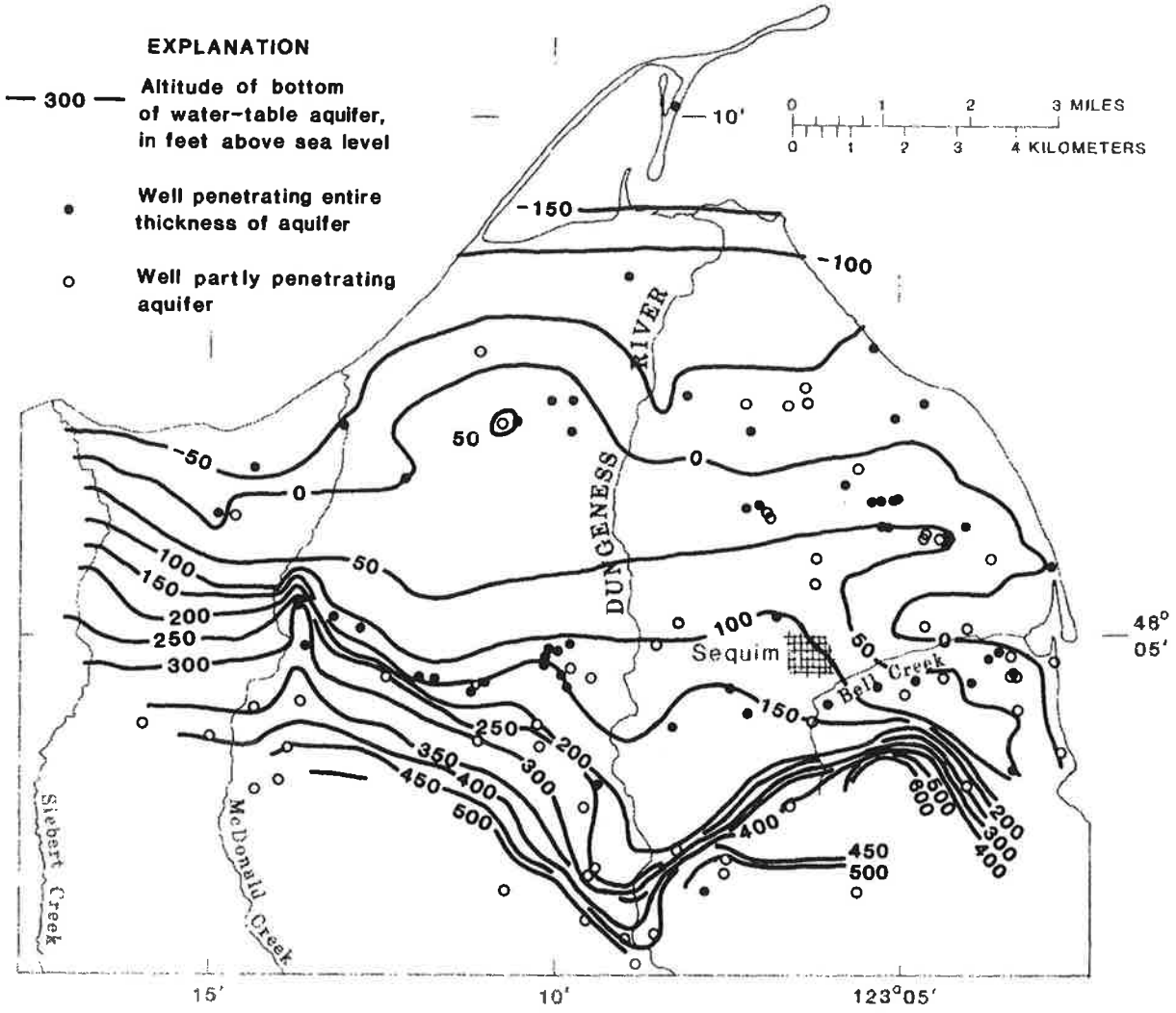


FIGURE 3.--Altitude of the bottom of the water-table aquifer.

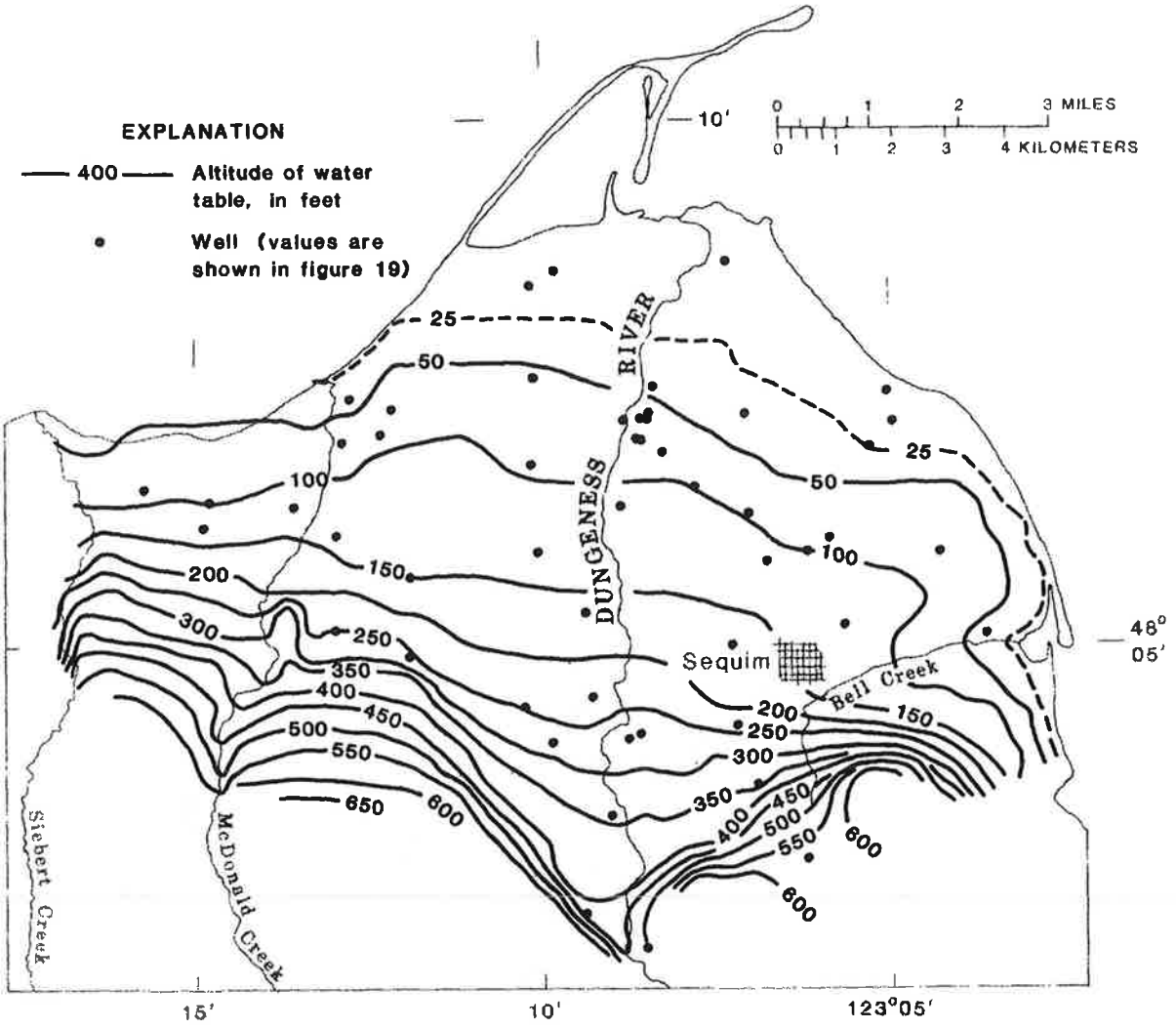


FIGURE 4.--Altitude of the water table in March 1979.

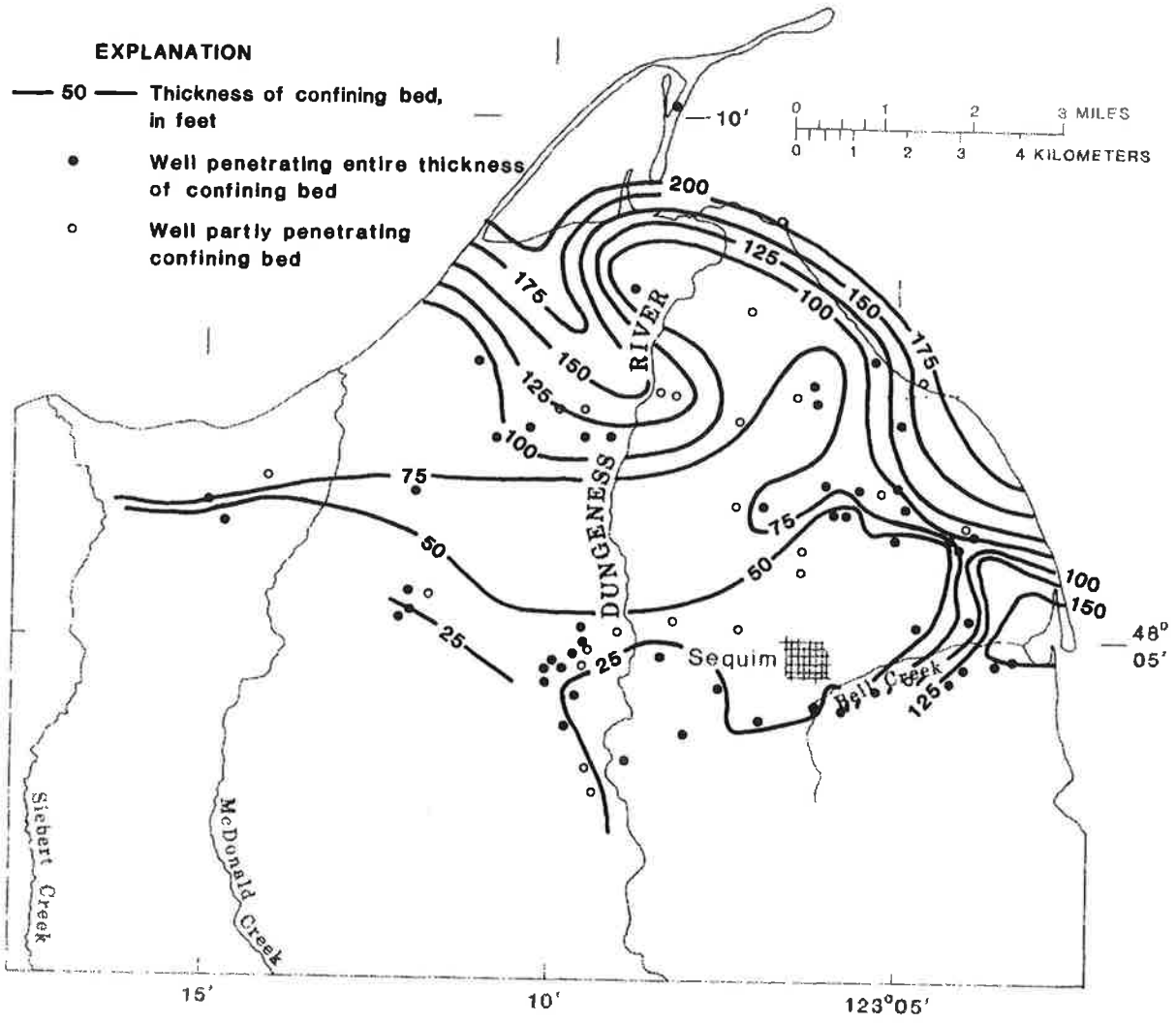


FIGURE 5.--Thickness of the upper confining bed.

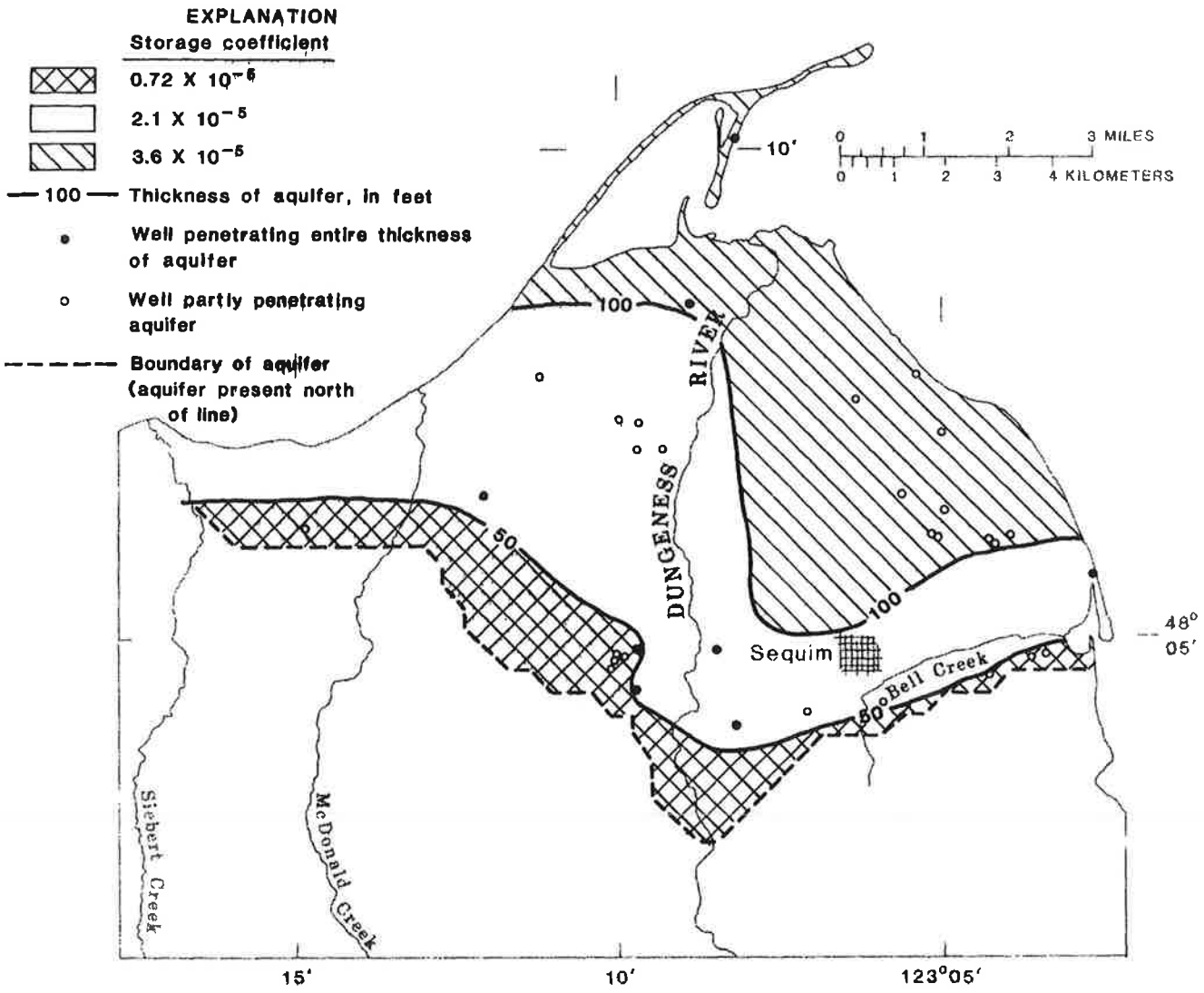


FIGURE 6.--Thickness of, extent of, and storage coefficient in the upper artesian aquifer.

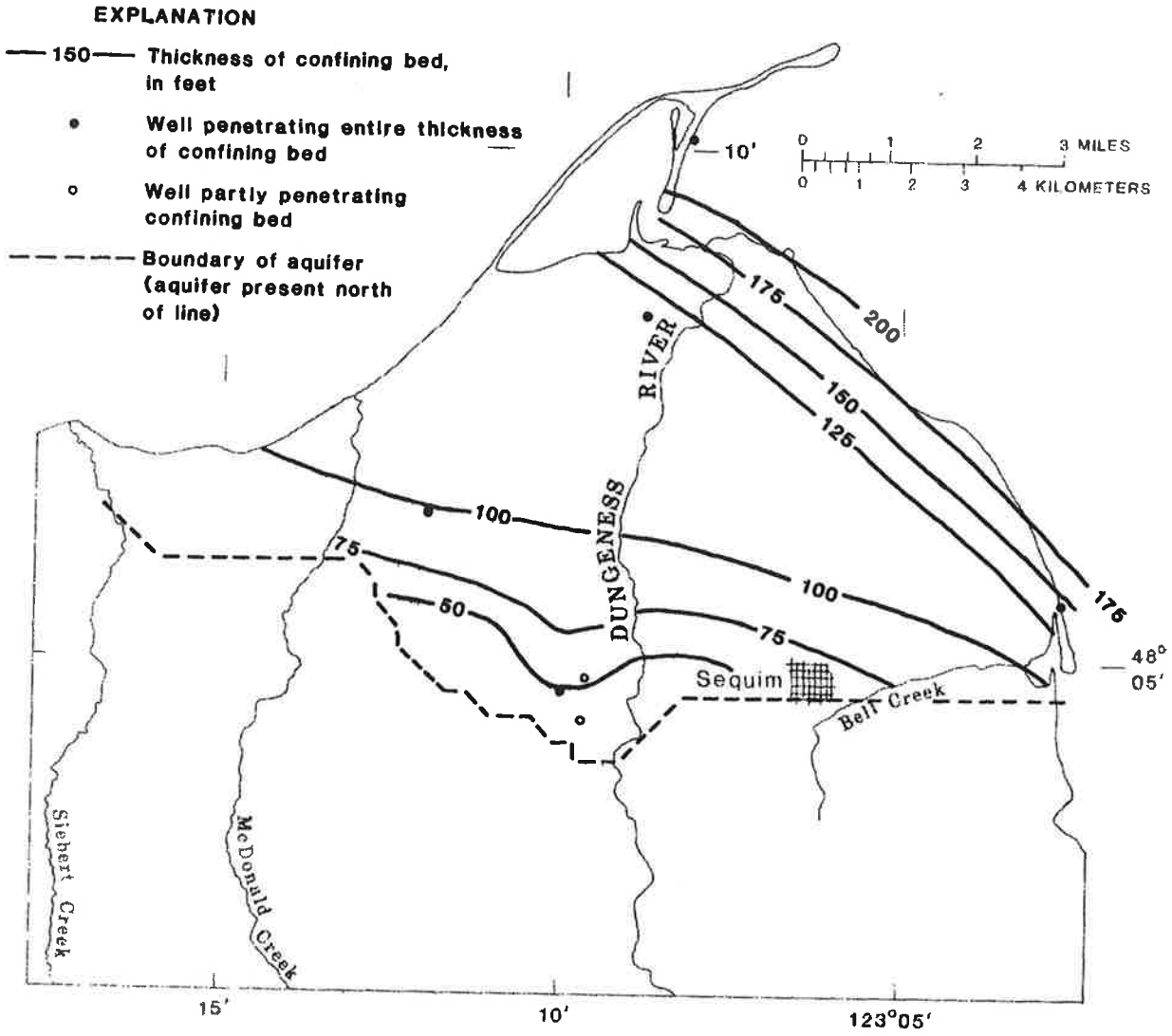


FIGURE 7.--Thickness of lower confining bed and extent of lower artesian aquifer.

Ground-Water Recharge from Precipitation

Average annual precipitation at the Sequim weather station is 16.1 inches (1919-79) and in the study area probably ranges from about 14 inches along the northeastern shoreline to 30 inches along the southern boundary. About 60 percent of the precipitation occurs from October to February in most years.

Potential evapotranspiration, calculated by a modified Blaney-Criddle technique (U.S. Department of Agriculture, 1970), is nearly twice the average precipitation. At the Sequim weather station the average annual potential evapotranspiration (1919-79) is 30.2 inches. This value is probably representative of the entire study area.

Actual evapotranspiration can be estimated by applying an assumed soil-moisture capacity (3 inches of water) to the monthly precipitation and potential evapotranspiration values. At the Sequim weather station, average annual evapotranspiration is 13.8 inches. Throughout the study area, it probably ranges from 12.7 inches (14-inches precipitation zone) to 18.8 inches (30-inches precipitation zone).

When precipitation exeeds potential evapotranspiration and the soil-moisture capacity is exceeded, the excess water is assumed to be ground-water recharge, because direct runoff is believed to be insignificant in the study area. Calculated average annual ground-water recharge ranges from 1.3 inches (14-inch precipitation zone) to about 11.2 inches (30-inch precipitation zone) and is 2.3 inches at the Sequim weather station.

Figure 8 shows the distribution of the calculated average annual ground-water recharge from precipitation. The zones are based on precipitation distribution calculated by the U.S. Weather Bureau (1965). The average recharge rate from precipitation to the study area was calculated to be about 15 ft^3/s.

All weather data used in the above calculations are from U.S. Weather Bureau (1920-65), U.S. Department of Commerce (1965-73), or U.S. National Oceanic and Atmospheric Administration (1974-79).

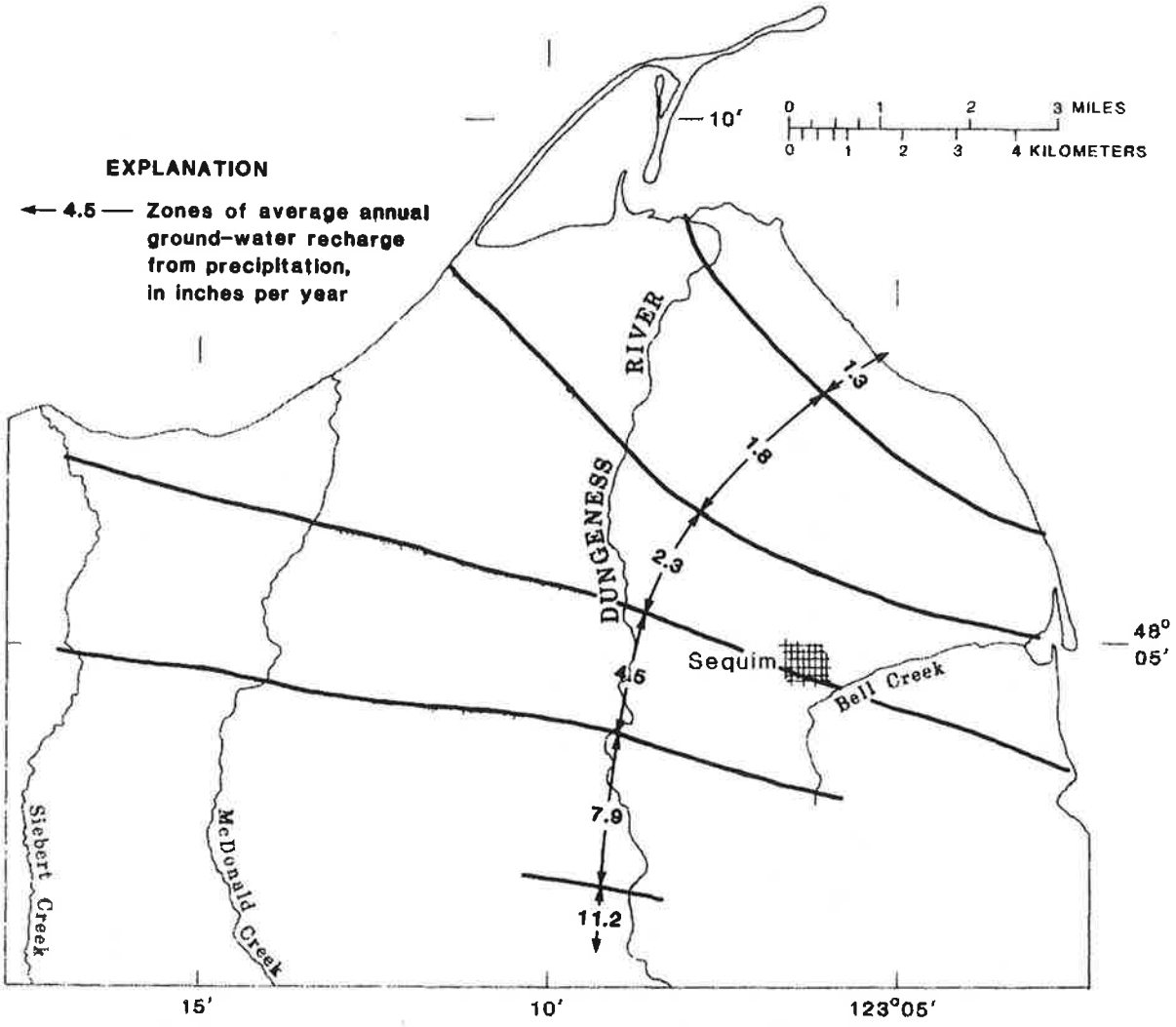


FIGURE 8.--Average annual ground-water recharge from precipitation.

Ground-Water Recharge from Irrigation Systems

Large quantities of water are continuously diverted from the Dungeness River. The water flows through a complex system of irrigation ditches belonging to nine irrigation companies and districts established between 1895 and 1921. The major ditches and their relationship to the area's surface-water system are shown in figure 9. There are also several times as many miles of secondary ditches and laterals that are not shown in figure 9. The water is used primarily for irrigation, but also for stock supply and fire protection in some areas, requiring year-round flow in most of the major ditches.

Water is also diverted from McDonald Creek by the Agnew Irrigation District at rates of about 20 ft^3/s during the irrigation season and about 5 ft^3/s during the nonirrigation season. Prior to this study, systematic discharge measurements had never been taken on the irrigation system. The average irrigation diversion from the Dungeness River during September 1978-August 1980 was about 67 ft^3/s (table 1). Average diversion was 100 ft^3/s during the irrigation season, April-September, and about 33 ft^3/s during the rest of the year.

The effect of ground-water recharge from irrigation systems can be observed in the relationship between flows in the irrigation ditches and water levels in the water-table aquifer. An example is given in figure 10, which shows the flow in the Independent Irrigation Ditch compared with the water level in well 30/3-19D1. (The well is 49 feet deep and within 100 feet of the ditch.)

An estimate of ground-water recharge from irrigation systems was made using the diversion data for the Dungeness River (table 1) and McDonald Creek, estimates of tail waters (water returned from ditches to surface-water bodies), and estimates of evapotranspiration. This resulted in an average rate of ground-water recharge of 70 ft^3/s. Figure 11 shows the relationship between estimated recharge and changes in water levels in the water-table aquifer during September 1978-September 1980. Water levels in the water-table aquifer show a definite response to increases in recharge from irrigation. Wells in the foothills, where irrigation systems have little or no effect, appear to respond primarily to increases in recharge from precipitation.

TABLE 1.--Irrigation diversions from the Dungeness River, September 1978-August 1980

Month	Diversions from the Dungeness River, in cubic feet per second									
	Irrigation district or company								Total irrigation diversion	Dungeness River above diversions[1]
	Dungeness Company	Agnew	Cline	Clallam	Eureka	Independent	Highlands	Sequim Prairie-Dungeness District		
1978										
Sept.	11	13	8.7	9.5	2.3	11	10	10[e]	76	340
Oct.	4.0	9.9	3.4	3.8	0	4.8	8.3	9.8	44	150
Nov.	3.9	6.3	5.7	5.1	0	5.4	8.5	9.1	44	190
Dec.	1.8	5.6	3.2	2.6	0	2.9	6.3	8.6	31	140
1979										
Jan.	2.1	5.2	2.1	2.2	0	10	7[e]	8.4	37	74
Feb.	4.0	1.5	0	3.2	0	6.4	7.3	9.1	32	180
Mar.	3.4	.93	0	2.7	0	4.4	11	7.1	30	350
Apr.	8.3	.08	2.7	6.2	16	7.6	12	8.4	47	220
May	18	6.4	16	15	5.9	15	21	29	130	500
June	20	18	16	16	5.3	16	25	34	150	460
July	17	19	14	13	4.3	15	24	34	140	300
Aug.	8.4	19	6.1	7.9	4.4	15	19	30	110	160
Sept.	8.3	11	7.0	7.0	3.3	9.9	15	15	76	170
Oct.	6.2	10	5.1	4.0	.72	5.9	7.4	12	51	240
Nov.	4.8	8.9	4.8	4.0	.94	2.2	7.5	15	48	170
Dec.	3.7	3.2	3.2	3.8	0	2.5	6.6	10	33	1,000
1980										
Jan.	1.3	1.7	1.5	3.0	0	0	7.2	2.9	18	420
Feb.	1.9	.91	0	1.8	0	1.1	7.4	2.1	15	520
Mar.	2.1	0	0	1.8	0	3.1	6.6	1.6	15	400
Apr.	5.2	5.0	3.0	5.0	1.9	7.8	7.6	22	58	480
May	15	12	13	12	3.4	13	12	29	110	600
June	12	13	7.8	7.8	2.5	9.8	12	17	82	740
July	13	15	10	12	2.5	9.3	14	20	96	550
Aug.	15	19	8.2	12	4.7	13	18	34	120	270
Maximum	20	19	16	16	5.9	16	25	34	150	1,000
Minimum	1.3	0	0	1.8	0	0	6.3	1.6	15	74
Mean	7.9	8.5	5.9	6.7	1.8	8.0	12	16	67	360

[e]Estimated

[1]USGS station number 12048000, Dungeness River near Sequim, Washington, 1.0 mile upstream from Canyon Creek.

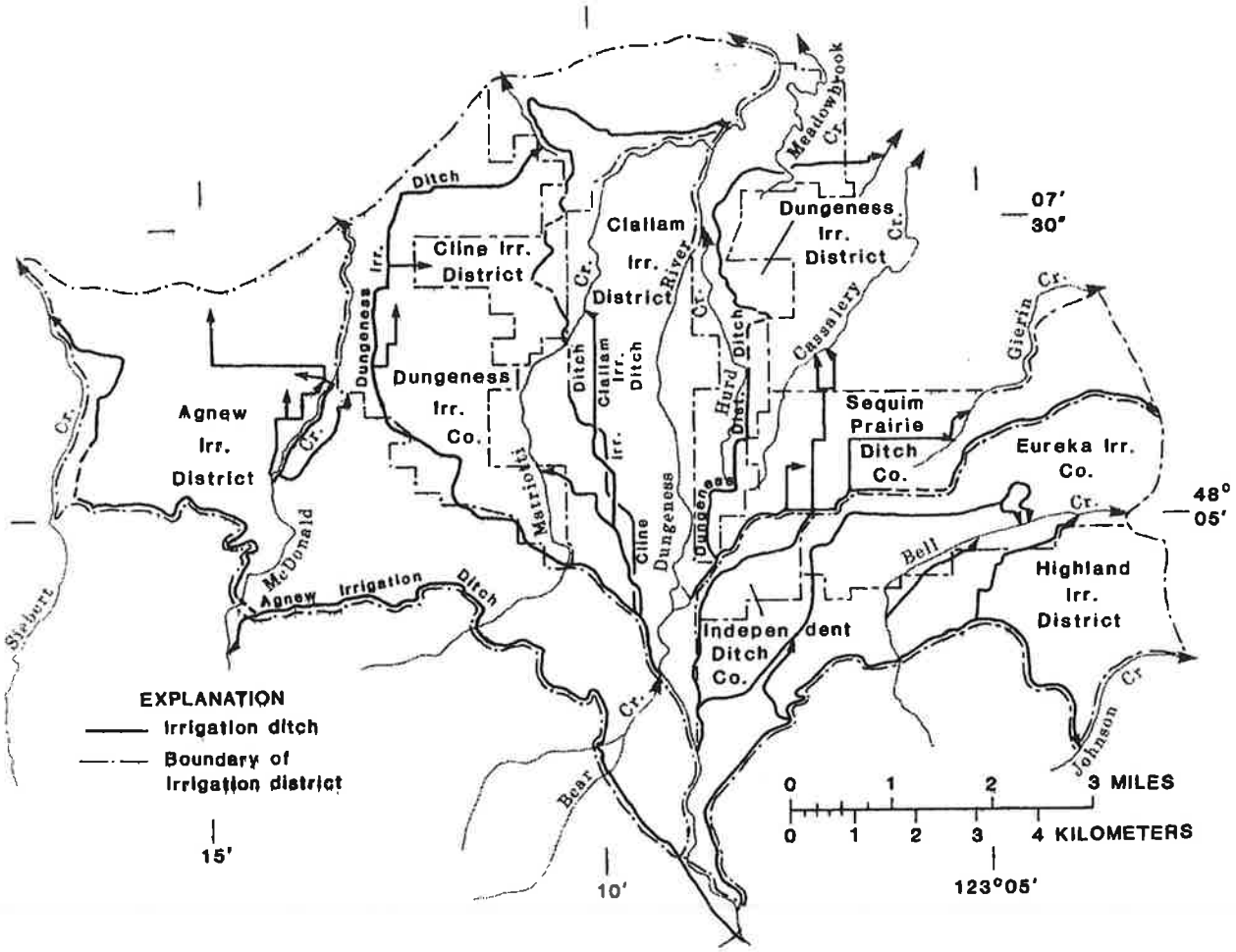


FIGURE 9.--Irrigation districts and major irrigation ditches.

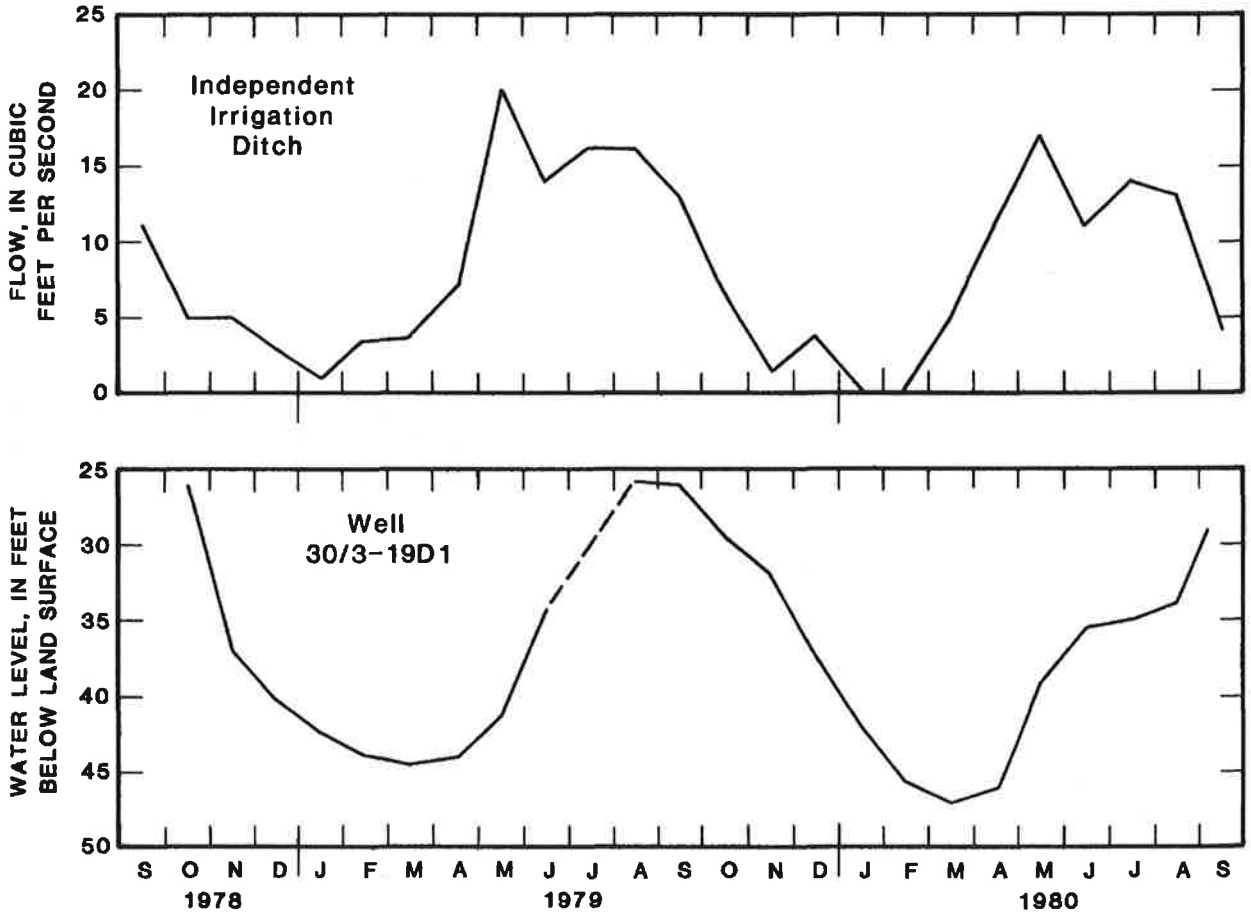


FIGURE 10.--Flow in the Independent Irrigation Ditch and water levels in well 30/3-19D1, September 1978-September 1980.

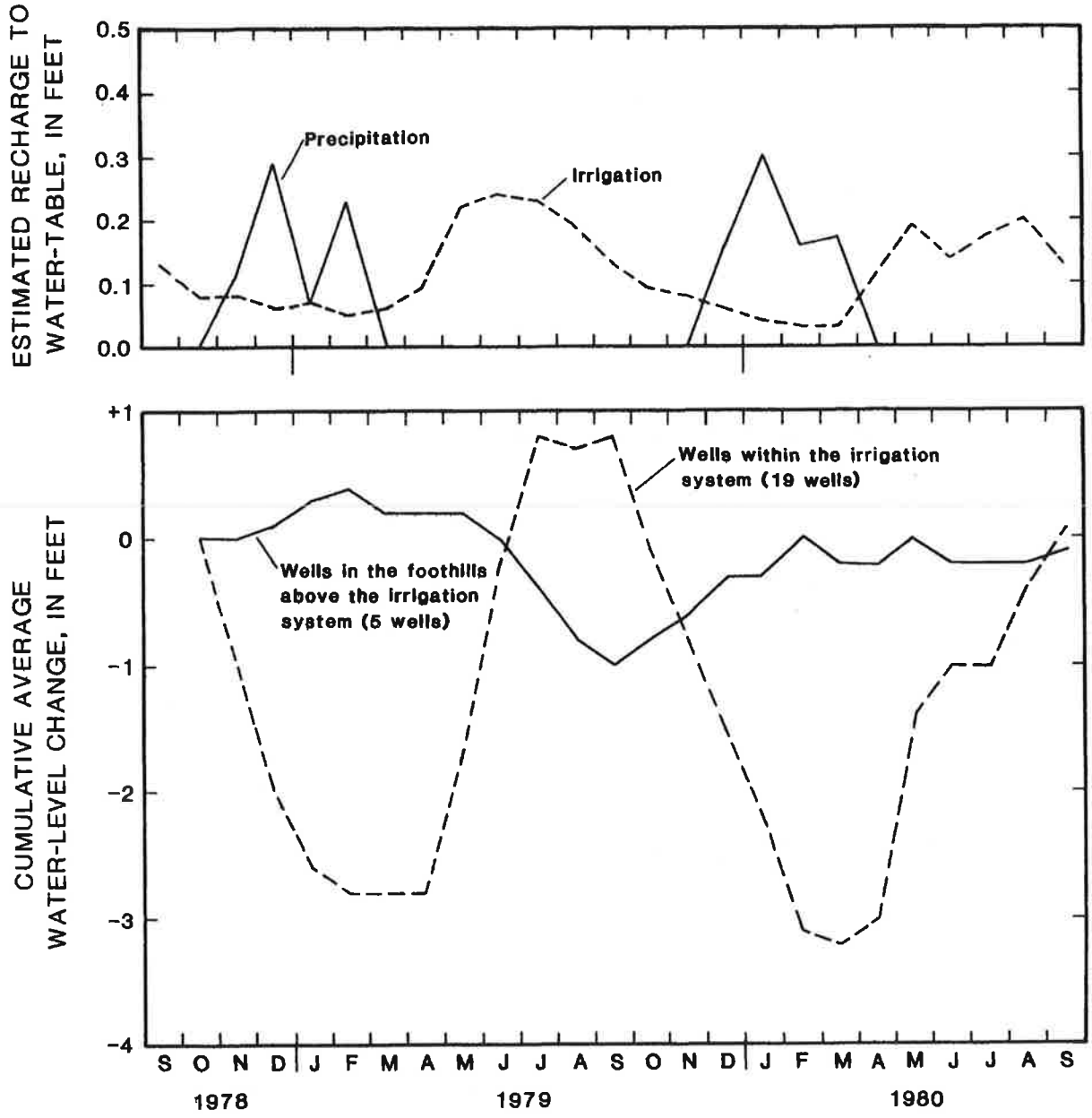


FIGURE 11.--Estimated irrigation and precipitation recharges and changes in water levels in the water-table aquifer.

Ground-Water Movement

General ground-water flow directions can be inferred from figure 4, which shows the configuration of the water table for March 1979. Ground-water movement is perpendicular to the water-table contours shown in figure 4. Although the altitude of the water table changes seasonally, the general pattern of flow remains generally constant.

In addition to lateral flow, there is also vertical flow in the ground-water system. Vertical flow occurs between aquifers through the confining beds. Figure 12 shows the general vertical flow directions in the study area. The diagram assumes that the relatively small amount of flow into and out of the bedrock and the undifferentiated unconsolidated deposits does not significantly affect the flow system.

Hydraulic Characteristics of the Aquifers

Knowledge of the hydraulic characteristics of the aquifers and confining beds is necessary in order to evaluate stresses on the ground-water flow system. These characteristics include hydraulic conductivity, transmissivity, specific yield, storage coefficient, and hydraulic connection between streams and the water-table aquifer.

Lateral Hydraulic Conductivity

Values of lateral hydraulic conductivity (fig. 13) were estimated for the water-table aquifer from specific-capacity data. The data were first adjusted, using the Jacob method (in Bentall, 1963), to account for partial penetration. Then transmissivity values were calculated using the Theis method (in Bentall, 1963). Transmissivity values were divided by saturated thickness to obtain values of lateral hydraulic conductivity.

These values of lateral hydraulic conductivity (calculated for about 500 wells) were plotted on a map of the area, and zones of lateral hydraulic conductivity were outlined. Within each zone, lateral hydraulic conductivity was made equal to the median of all the values in the zone.

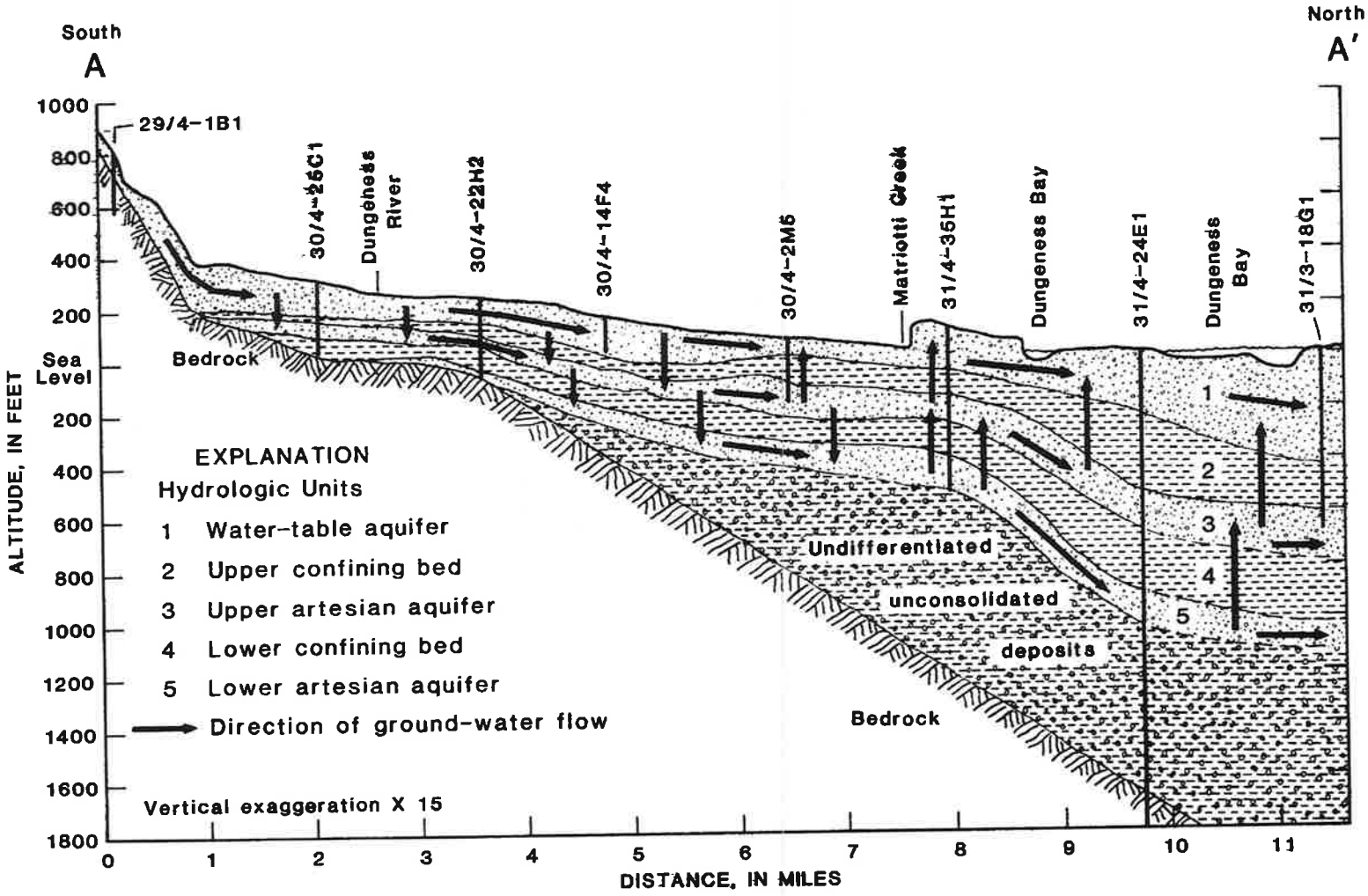


FIGURE 12.--Schematic cross section of the ground-water system and direction of flow.

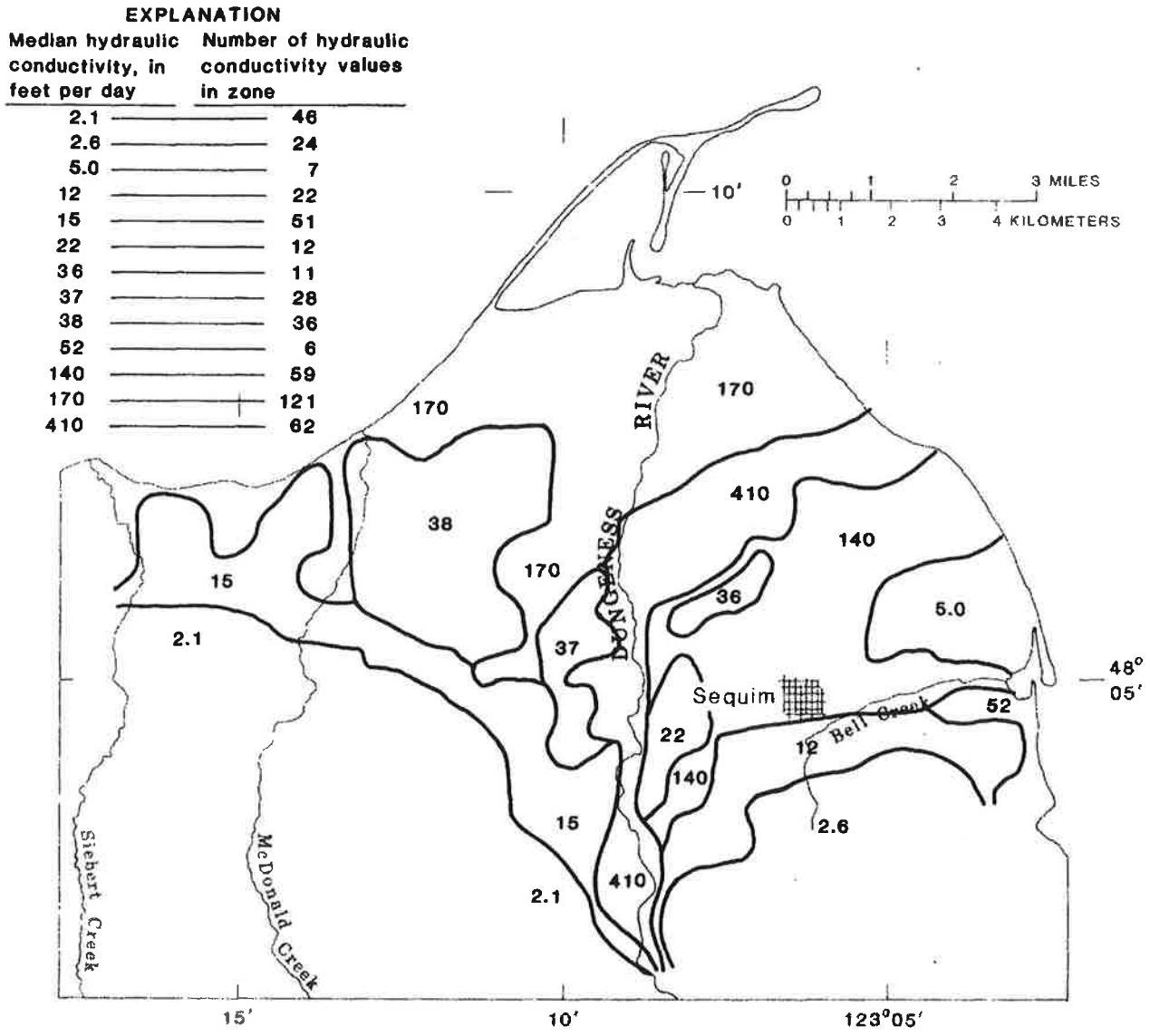


FIGURE 13.--Hydraulic conductivity in the water-table aquifer.

Transmissivity

Values of transmissivity were estimated for the upper artesian aquifer from specific-capacity data, and are shown in figure 14. The data were first adjusted, using the Jacob method (in Bentall, 1963), to account for partial penetration. Then transmissivity values were calculated using the Brown method (in Bentall, 1963).

The values of transmissivity (calculated for 46 sites in the upper artesian aquifer) were plotted on a map of the area, and zones of transmissivity were outlined. Within each zone, transmissivity was made equal to the median of all the values in the zone.

Data were available for only three sites in the lower artesian aquifer. The three transmissivity values were of the same order of magnitude as the respective transmissivity zones outlined in the upper artesian aquifer. Therefore, the transmissivity distribution in the lower artesian aquifer was assumed to be approximately the same as the upper artesian aquifer.

Specific Yield

The specific yield of the water-table aquifer was determined by using measured water-level changes from mid-March to mid-July 1979 (fig. 15). The change in volume of saturated material represented in the figure is an increase of 1,400 million ft^3.

Average inflow to the aquifer was estimated to be 95 ft^3/s from mid-March to mid-July 1979. Estimated outflow for the same period was about 80 ft^3/s. The difference in inflow and outflow resulted in an increase of 170 million ft^3 of water stored in the water-table aquifer.

The change in the volume of water stored, divided by the change in the volume of saturated material, indicated the average specific yield to be 12 percent.

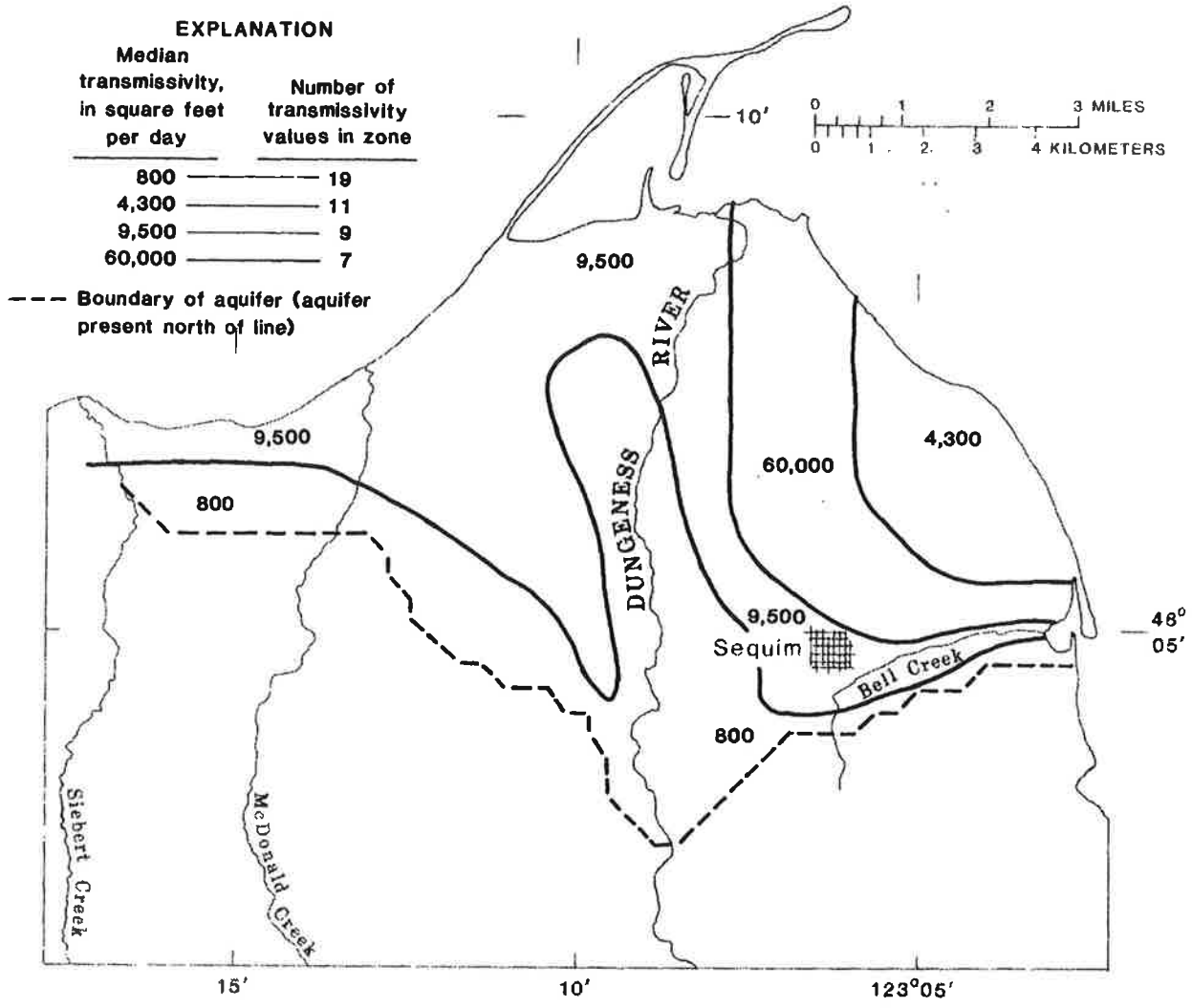


FIGURE 14.--Transmissivity in the upper artesian aquifer.

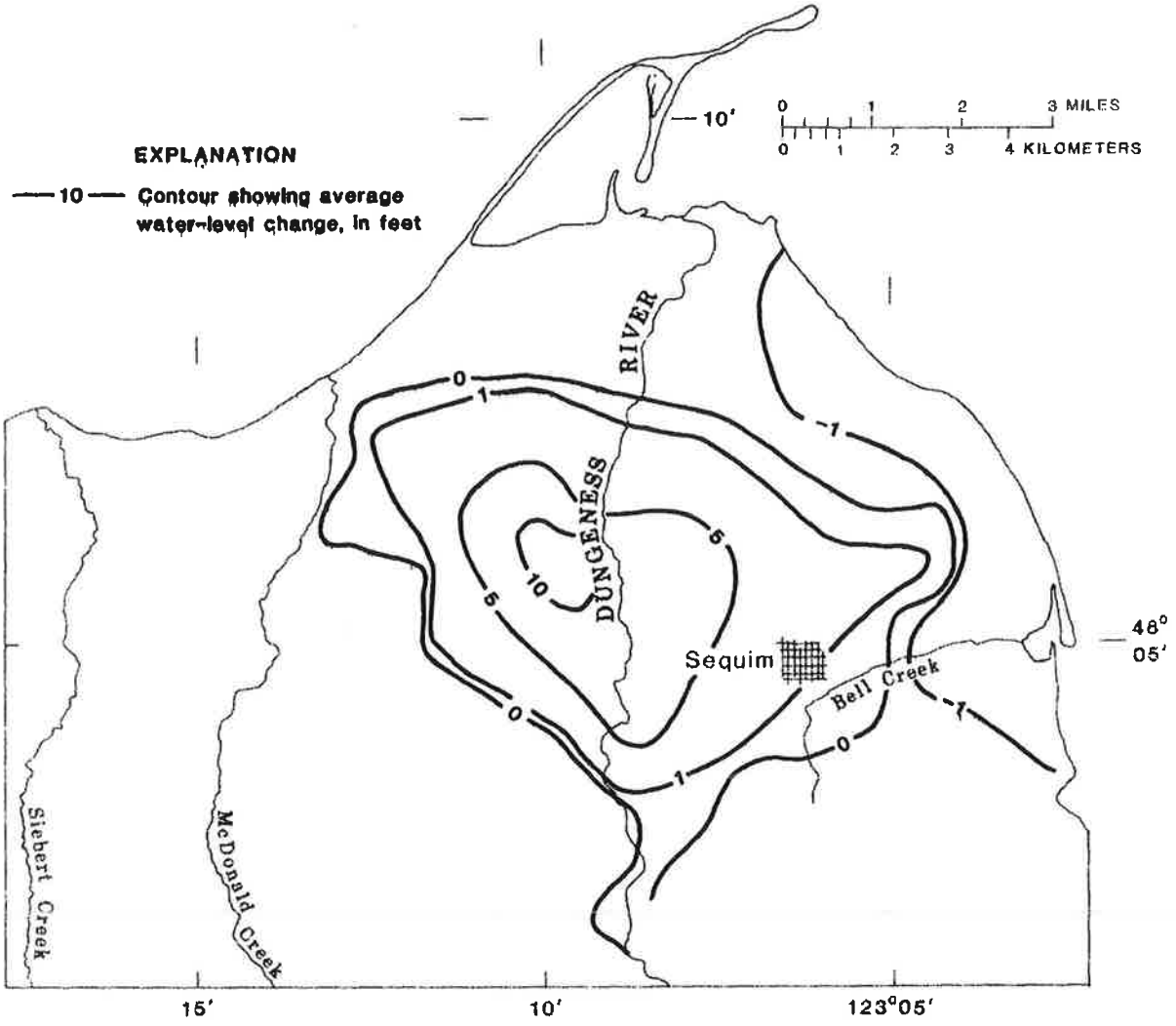


FIGURE 15.--Average water-level change in the water-table aquifer from mid-March to mid-July 1979.

Storage Coefficient

Storage coefficients for the artesian aquifers were estimated by using a calculation for the expansion of water and assuming that there was no compression of the aquifer and release of water from the confining beds. The formula is modified from Jacob (in Lohman, 1979):

$$S = \theta \gamma b \beta \ , \qquad (1)$$

Where S = storage coefficient, θ = porosity, γ = specific weight per unit area (0.434 pound $inch^{-2}ft^{-1}$), b = aquifer thickness (feet), and β = reciprocal of the bulk modulus of elasticity of water ($3.3x10^{-6}inch^2\ b^{-1}$).

Assuming a porosity of 0.2 and using thicknesses of the upper artesian unit from figure 6, three zones of storage coefficient were calculated. Aquifer thicknesses and corresponding storage coefficients are 25 feet and $7.2x10^{-6}$, 75 feet and $2.1x10^{-5}$, and 125 feet and $3.6x10^{-5}$ (fig. 6). The storage-coefficient distribution in the lower artesian aquifer was assumed to be the same as in the upper artesian aquifer.

Stream-Aquifer Connection

The Dungeness River loses water to and gains water from the water-table aquifer. Monthly discharge measurements were made at four sites on the Dungeness River from September 1978 through February 1980. The measured gains and losses were usually less than 10 percent of the total flow in the river. Because the discharge measurements themselves are probably accurate only to $\pm$5 percent, these directly measured gains and losses can be used only as a general indication of the stream-aquifer connection. Table 2 lists the measured gains and losses in the Dungeness River.

Creeks in the study area also lose water to and gain water from the water-table aquifer. Most of these creeks have mean flows of only a few cubic feet per second and probably exchange only small amounts of water with the aquifer.

TABLE 2.--Gains and losses in the Dungeness River

Site/Reach	Discharge, in cubic feet per second												
	1978				1979								
	9/12	10/12[a]	11/13	12/13[a]	1/16	2/15	3/15	4/16[a]	5/15	6/18	7/16	8/14[a]	9/11[a]
Dungeness River gage	445	155	162	153	68	193	358	245	480	325	301	172	203
- Agnew Irrigation Ditch	10	12	5.3	5.1	.0	0	1.4	0	0	18	20	19	12
+ Canyon Creek[a]	3.4	1.8	1.9	12	1.6	22	22	26	9.2	4.3	2.8	1.7	1.8
- Highland Irr. Ditch	7.6	7.6	8.5	8.1	12	9.4	10	12	23	27	26	19	13
-Independent Irr. Ditch[a]	11	5.0	5.0	2.3	5.0[e]	3.0	3.4	7.0	16	13	15	13	11
- Eureka Irr. Ditch	2.3	0	0	0	0	0	0	0	6.7	5.1	4.6	.9	5.0
+ Bear Creek[a]	.7	.2	0	.7	.4	1.3	1.3	.7	.0	.3	.5[e]	.5[e]	.5[e]
- Clallam Irr. Ditch	8.8	5.1	4.7	2.6	3.3	5.1	3.8	7.2	18	15	14	10	7.5
- Cline Irr. Ditch	7.2	4.3	4.6	4.1	2.2	0	0	0	25	16	14	8.5	8.5
- Dungeness Co. Irr. Ditch	9.8	5.9	4.4	1.4	2.8	7.0	5.9	13	23	20	19	11	11
- Sequim Prairie-Dungeness Dist. Irr. Ditch	16[e]	9.4	9.2	4.6	7.6	10	7.8	8.0	26	33	34	31	7.8
Dungeness River at Highway 101 Calculated	376	108	122	138	37	182	349	224	352	182	158	62	130
Dungeness River at Highway 101 Measured	461	104	126	129	73	203	345	209	342	186	150	52	140
Gain (+) or loss (-) from gage to Hwy 101	+85	-4	+4	-9	+36	+21	-4	-15	-10	+4	-8	-10	+10
Dungeness River at Woodcock Bridge	440	98	120	120	64	203	377	216	333	193	164	49	141
Gain (+) or loss (-) from Hwy 101 to Woodcock Bridge	-21	-6	-6	-9	-9	0	+32	+7	-9	+7	+14	-3	+1
+ Hurd Creek [a]	7.9	5.7	6.0	5.2	5.3	6.1	6.7	5.5	6.2	6.4	8.4	7.2	6.7
+ Matriotti Creek	11	11	11	15	12	16	13	12	17	19	20	11	15
Dungeness River at Dungeness Calculated	459	115	137	140	81	225	397	234	356	218	192	67	163
Dungeness River at Dungeness Measured	452	114	130	148	74	210	396	250	366	220	191	71	156
Gain (+) or loss (-) from Woodcock Bridge to Dungeness	-7	-1	-7	+8	-7	-15	-1	+16	+10	+2	-1	+4	-7
Net gain (+) or loss (-) from gage to Dungeness	+57	-11	-9	-10	+20	+6	+27	+8	-9	+13	+5	-9	+4

[a]Measurement dates on Canyon, Bear, and Hurd Creeks; 10/13/78, 12/14/78, 4/17/79, 8/17/79, and 9/17/79.
[e]Estimated

Ground-Water Quality

The Board of Clallam County Commissioners and the State of Washington Department of Ecology are concerned that the increased use of on-site domestic sewage-disposal systems (septic systems) in the study area may have caused pollution or may lead to future pollution of the ground water. Water-quality data existing prior to this study were not sufficient to allow a comparison with present water-quality data. Therefore, during this study, only a general assessment of the possible effects could be made.

During June 16-19, 1980, water samples were collected at 24 sites in irrigation systems, at 13 river and creek sites, and from 138 wells. These samples were analyzed for specific conductance and pH and for the following dissolved constituents: chloride, nitrate plus nitrite, and ammonia. Table 3 is a summary of the results of the analyses.

Some general observations can be made from table 3. Concentrations of chloride and ammonia, and values of specific conductance and pH all appear to increase with depth in the ground-water system. Nitrate-plus-nitrite concentrations apparently decrease with depth in the ground-water system. In terms of the constituents measured, water quality in the irrigation system shows little change from point of diversion from the Dungeness River to the end of the system.

The areal distribution of nitrate plus nitrite in the water-table aquifer is shown in figure 16. The distribution shows a possible correlation with density of septic systems, also shown in figure 16. However, other correlations with nitrate plus nitrite exist. For example, the greatest median concentration of nitrate plus nitrite is observed in the "older alluvium" of Othberg and Palmer (1980a, b, and c).

Other correlations between water quality and geologic units can be observed in the water-table aquifer in the June 1980 data (table 4). Median chloride and ammonia concentrations and specific conductance are significantly greater in the Everson glaciomarine drift than in any other geologic unit. The lowest median values for chloride, specific conductance, and pH are in the "alluvium."

An estimate of the amount of nitrogen added to the ground-water system by septic systems may prove useful for a gross qualitative look at the effects of septic systems on ground-water quality. The following calculation includes many assumptions and estimates and is intended only as an indication of the general magnitude of the rate at which nitrogen is added to ground water by septic systems:

9,000 People on septic systems (estimated from Clallam County Health Department records)
x 44 Gallons of water per day per person (Porter, 1980)

0.6 ft^3/s Total sewage into septic system

52 mg/L nitrogen in effluent from septic tanks to drain fields (Porter, 1980)
x 50 Pct reduction in nitrogen within drainfield (Porter, 1980)

26 mg/L nitrogen in seepage into ground-water system

Assuming complete mixing in ground-water system and average ground-water flow of 80 ft^3/s, average concentration of nitrogen in ground water from septic systems equals:

$$\frac{(0.6\ ft^3/s)\ (26\ mg/L)}{80\ ft^3/s} = 0.20\ mg/L$$

The median value of nitrate plus nitrite plus ammonia (probably the only significant forms of nitrogen present) in the samples collected from the water-table aquifer in June 1980 was 0.42 mg/L. It is likely that some nitrogen in the ground water comes from sources other than septic systems, including fertilizers (domestic and agricultural), dairy farms, and domestic animals.

The June 1980 data indicate that no obvious water-quality problem presently exists and the above estimate of the effect of septic systems shows no obvious danger from the present density of septic systems. However, the greatest value of the June 1980 data is as a baseline against which future measurements of water quality can be compared.

TABLE 3.--Summary of water quality, June 16-19, 1980

	Number of wells or sites	Median values, in milligrams per liter: Dissolved chloride (Cl)	Dissolved nitrate plus nitrite (N)	Dissolved Ammonia (N)	Specific conductance (micromhos)	pH
Ground water						
Water-table aquifer	125	3.9	0.35	0.01	261	7.6
Upper artesian aquifer	12	4.6	.24	.04	322	7.8
Lower artesian aquifer	1	5.3	.04	.31	353	8.0
Surface water						
Dungeness River	4	0.4	0.04	0.00	88	7.8
Inflowing creeks[1]	3	3.1	.15	.01	132	7.7
Outflowing creeks[2]	6	2.4	.47	.04	189	7.9
Irrigation system:						
All sites	24	.8	.02	.01	103	7.7
Inflow[3]	6	.6	.03	.00	90	7.6
Outflow[4]	9	.7	.02	.01	160	7.6

[1]Creeks with major source of discharge from the foothills south of the study area.

[2]Creeks with major source of discharge from the water-table aquifer. These creeks may also receive significant flow from the irrigation system.

[3]Measured near point of diversion from Dungeness River.

[4]Measured near end of system.

TABLE 4.--Correlation of water quality and geologic units in the water-table aquifer, June 16-19, 1980

Geologic unit (Othberg and Palmer, 1980a, b, and c)	Number of wells	Median values, in milligrams per liter: Dissolved chloride (Cl)	Dissolved nitrate plus nitrite (N)	Dissolved ammonia (N)	Specific conductance (micromhos)	pH
Alluvium	31	2.2	0.30	0.01	184	7.3
Older alluvium	29	2.7	.98	.01	256	7.7
Everson glaciomarine drift	10	12.	.15	.31	410	7.6
Everson sand	7	4.7	.19	.01	275	7.5
Vashon recessional ice-contact stratified gravels and fine-grained marine sediments	5	5.7	.47	.04	288	7.5

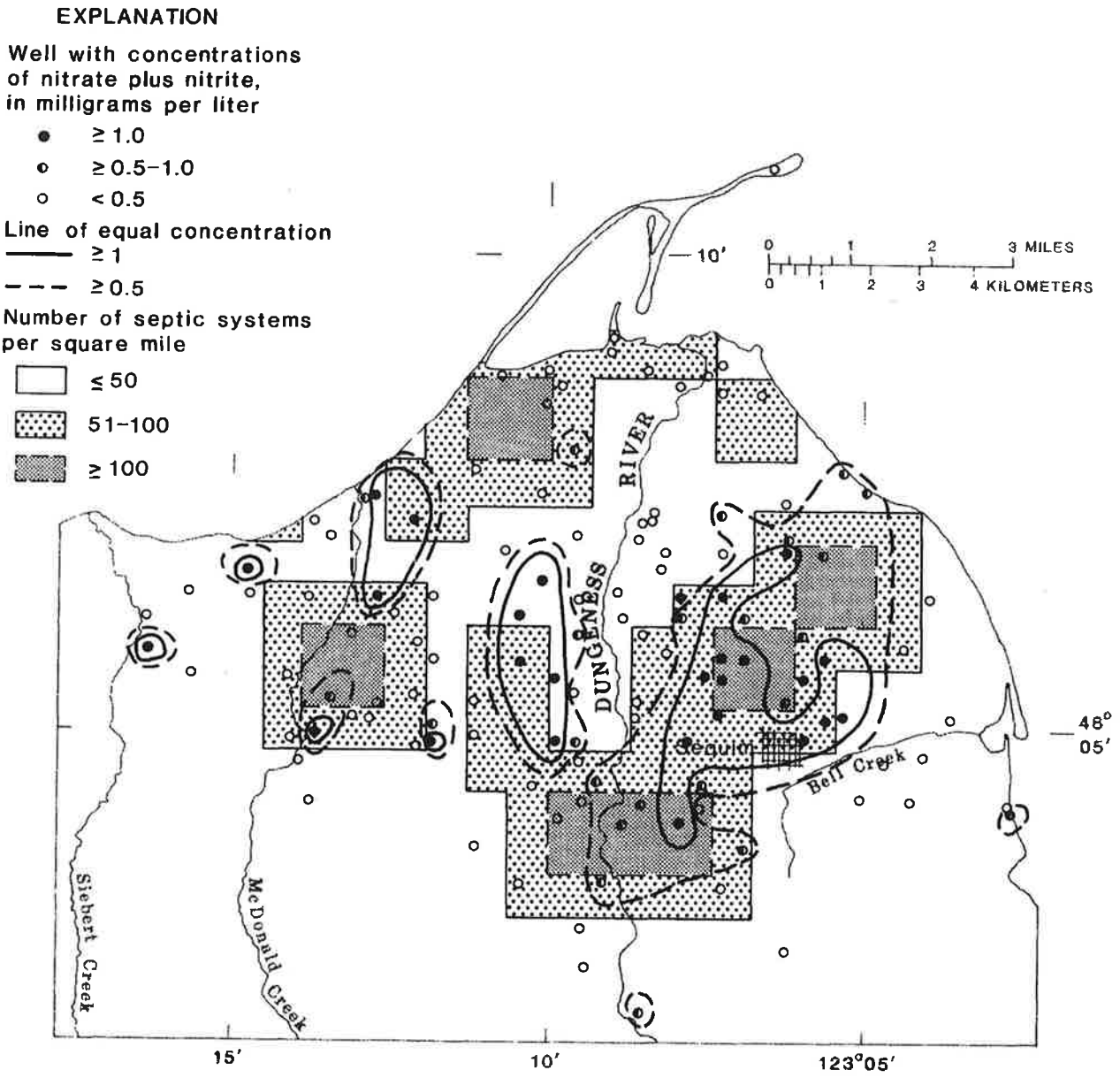


FIGURE 16.--Nitrate-plus-nitrite concentrations and septic-system densities in the water-table aquifer, June 16-19, 1980.

MODEL CONSTRUCTION, CALIBRATION, AND UTILIZATION

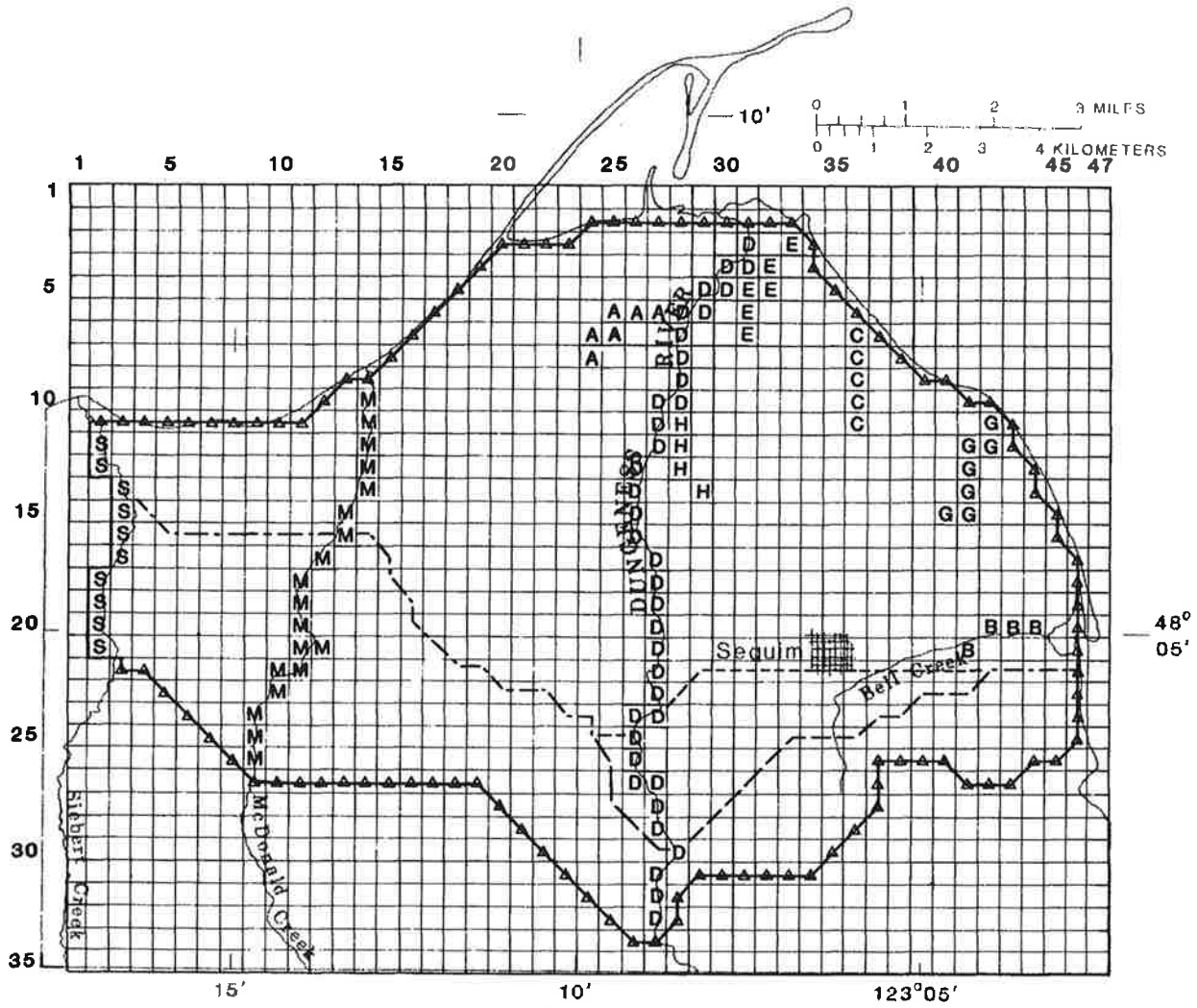
A three-dimensional digital ground-water-flow model was used to simulate the movement of ground water in three layers—the water-table, the upper artesian aquifer, and the lower artesian aquifer. The model simulates ground-water flow by solving a set of simultaneous-difference equations using the strongly implicit procedure (Trescott, 1975). Storage and horizontal components of flow in the confining beds were assumed to be insignificant, allowing vertical leakage through the confining beds to be incorporated into the vertical component of the anisotropic hydraulic conductivity of adjacent aquifers. Vertical flow within the aquifers is considered to be insignificant. All vertical flow in the model is through the confining beds. The hydraulic connection between streams and the water-table aquifer was simulated using additions to the Trescott model from S. P. Larson (written commun., 1976).

Model Boundaries

The boundaries of the model are shown in figure 17. The northern and eastern boundaries approximate the shoreline, where, during steady-state simulations, each node was assigned a specified head value (constant head) that was based on measured water levels. During some transient simulations these nodes were changed to constant flux (continuous rate of flow) nodes, based on flows calculated by steady-state simulations. The freshwater-saltwater interface is probably well offshore. The most seaward well, 31/3-18G1 (fig. 1), extends 657 feet below sea level and taps fresh water. No attempt was made to model the freshwater-saltwater interface.

The western boundary is along Siebert Creek, where each node is a river node in which the river level is held constant but the water level in the aquifer can change.

The southern boundary roughly approximates the 600-foot topographic contour. The water-table aquifer extends southward beyond the model boundary. The use of constant head nodes along the southern boundary that are based on measured water levels allows the model to calculate the ground-water inflow from the portion of the water-table aquifer outside of the model. The 600-foot level was selected as the farthest position southward where data were sufficient to accurately simulate the water-table aquifer. The base of the model is the bottom of the lower artesian aquifer or bedrock where the lower artesian aquifer is not present (fig. 2).



EXPLANATION

River nodes:

A-Matriotti Creek	E-Meadowbrook Creek
B-Bell Creek	G-Gierin Creek
C-Cassalery Creek	H-Hurd Creek
D-Dungeness River	M-McDonald Creek
	S-Siebert Creek

———— Boundary of upper artesian aquifer

-------- Boundary of lower artesian aquifer

—·—·— Common boundary of upper and lower artesian aquifers

△ Constant head or constant flux node

FIGURE 17.--Grid network, boundary conditions, and river nodes used in the model.

Model Input

Mean annual recharge from precipitation applied at a continuous average rate of 15.2 ft^3/s (see calculation, p. 14) is used for both steady-state and transient simulations. The majority of recharge from precipitation occurs in the southern foothills of the modeled area. In the foothills, the low permeability of the materials above the water table (mostly till) slows infiltration of recharge from precipitation to the water-table aquifer. This results in recharge that is generally continuous, even though the periods of excess precipitation are restricted to several months each winter (fig. 11). Applying mean annual precipitation recharge at a constant rate in the steady-state simulations probably introduces slightly more recharge in the lowlands and slightly less recharge in the foothills than actually took place at the time simulated, March 1979.

The average rate of recharge during March 1979 from the irrigation system (32.3 ft^3/s) is calculated by subtracting estimated tail waters (2.4 ft^3/s) from measured diversions (34.7 ft^3/s). Evapotranspiration and consumptive uses are assumed to be insignificant. The areal distribution of the recharge is determined by calculating leakages along each main ditch and assigning the calculated rate of leakage to each grid block through which the main ditch passes. Any excess recharge in each irrigation district is assumed to be leakage from the numerous secondary ditches and laterals and was applied evenly over the entire district. The method of calculating leakage from the main ditches is as follows:

$$Q_L = \frac{k_D\ (h_D - h_A)\ A}{m} \qquad (2)$$

where Q_L = rate of leakage from irrigation ditch to water-table aquifer, L^3/T; K_D = vertical hydraulic conductivity of the bed of the ditch, L/T; m = thickness of the bed of the ditch, L; h_D = elevation of water surface in ditch, L; h_A = elevation of head in aquifer, L, or if h_A is below the bottom of the bed of the ditch, then the elevation of the bottom of the bed of the ditch is used; A = area of bed of ditch (wetted perimeter), L^2.

The ratio K_D/m is called the leakage coefficient. This parameter probably varies from ditch to ditch and within each ditch. However, a single value for the leakage coefficient, 1 (ft/day)/ft, is assumed for all locations, and produces values of leakage that fit the leakage rates calculated from the diversion measurements and estimates of tail waters (table 5).

As seen in table 5, the majority of leakage fom the irrigation system occurs from the ditch system and not from water actually spread on the fields. During the height of the irrigation season, a greater proportion of the recharge probably occurs as leakage from excess water applied to fields, but it probably still represents a small portion of the total leakage.

The leakage between the water-table aquifer and the Dungeness River and eight creeks is calculated by the model using equation 2 (p. 36) substituting parameters for the river or creeks in place of the ditch parameters. The altitude of the river bed of the Dungeness was obtained from a flood study by the U.S. Department of Housing and Urban Development (1980). The river-bed elevations of the creeks were obtained from 1:24,000-scale U.S. Geological Survey topographic maps. The area of the bed and the depth of water for each river node were obtained from the data collected during March 1979 at the measurement site nearest each node along the river and creeks.

The leakage coefficient for the river nodes was initially assumed to be 1 (ft/day)/ft. During calibration of the steady-state model various leakage coefficients from 0.1 to 100 (ft/day)/ft were tried. The results of these trial runs were compared to measured values of water-table elevation and estimated leakage from the Dungeness River (fig. 18). The value of leakage coefficient that gave the best agreement with measured heads and estimated leakage was 2.0 (ft/day)/ft. This value is used for all steady-state and transient simulations.

All parts of the Dungeness River and Siebert and McDonald Creeks which pass through the modeled area are represented by river nodes. The six other creeks are represented by river nodes only along their lowermost 1-1 1/2 miles. These creeks receive almost all of their flow from ground water and the irrigation system along the portions represented in the model.

The constant heads used in the model were estimated from water levels measured in March 1979. For the water-table aquifer, the large number of available measured heads (fig. 4) results in constant head values that are quite accurate. For the artesian aquifers, relatively few values of head are available along the coastline. Constant-head boundaries in the artesian aquifers were assigned on the basis of the few available measured heads, and were adjusted during model calibration.

Figure 3, showing the altitude of the bottom of the water-table aquifer, was constructed using driller's logs. These data were entered into the model. An average value was used for the area enclosed by each grid block.

Values of hydraulic conductivity, transmissivity, specific yield, and storage coefficients that were used in the model were calculated by methods discussed on pages 21-27, and are shown in figures 6 and 13-15. The distribution of transmissivity and storage co-efficient were assumed to be the same for both artesian aquifers.

Vertical leakage through the confining beds was simulated by estimating a vertical leakage coefficient that was based on the vertical hydraulic conductivity and the length of the flow path (confining bed thickness). Vertical leakage is computed as the product of the head difference between adjacent layers and the vertical leakage coefficient. Thicknesses of the confining beds were determined from drillers' log and are shown in figures 5 and 7. The vertical hydraulic conductivity of the confining beds used in the model is 5×10^{-3} ft/day. This value was determined during model calibration as the one yielding the best simulation of heads in all three aquifers. The value fits the range given by Johnson (1963) for laboratory samples of clay to silt size (1×10^{-5} to 1 ft/day).

In March 1979, pumpage from the ground-water system was insignificant. Total pumpage, essentially all for domestic use, was estimated to be about 2 ft^3/s. Most of this water was pumped from individual domestic wells and small public-supply systems (20 homes or less). Public supply for Sequim was obtained from a modified infiltration gallery along the Dungeness River upstream of the model's southern boundary. The only significant pumpage for March (≥ 0.05 ft^3/s within a single grid block) was for the Sunland Development (estimated at 0.13 ft^3/s), and was obtained from one well tapping the upper artesian aquifer. This is the only well represented in the steady-state simulations. For the transient simulations, pumping (annual average rate) is greater, but is still insignificant when compared with the average rate of flow in the ground-water system. Total pumpage in the transient simulations was 1.6 ft^3/s (table 6).

TABLE 5.--Ground-water recharge from the irrigation system, March 1979

[All values in cubic feet per second]

Irrigator	Mean diversion from Dungeness (March 1979)	Tail waters (estimate)	Ground-water recharge			
			Total leakage	Main ditch leakage[e/] Upstream half of ditch	Main ditch leakage[e/] Downstream half of ditch	Secondary leakage (from smaller ditches and fields)
Dungeness Irrigation Company	3.4	0.1	3.3	2.2,	1.1	0
Agnew Irrigation District	1.4[a] 5.2[b]	0 0	1.4 5.2	0.9,	0.5 5.2[f]	0 0
Cline Irrigation District	0	0	0	0		0
Clallam Irrigation District	2.7	.1	2.6	1.1,	.6	0.9
Eureka Irrigation Company	0	0	0	0		0
Independent Ditch Company	1.9[c]	0	1.9	.9,	.5	0.5
Highland Irrigation District	10.5	1.6	8.9	6.0,	2.9	0
Sequim Prairie Ditch Company	7.8[d]	.5	7.3	2.6,	1.3 .7[g]	2.7
Dungeness Irrigation District	1.8[d]	.1	1.7	1.1,	.6	0
Totals	34.7	2.4	32.3	28.2		4.1

[a]Includes 0.5 ft^3/s estimated inflow to main ditch from surface-water.

[b]Estimated diversion from McDonald Creek.

[c]Actual diversion equals 4.4 ft^3/s; approximtely 2.5 ft^3/s is dumped into Sequim Prairie Ditch

[d]Sequim Prairie and Dungeness District share a common diversion equal to 7.1 ft^3/s; assume one-fourth to Dungess District (1.8 ft^3/s) and three-fourths to Sequim Prairie (5.3 ft^3/s); Sequim Prairie also receives 2.5 ft^3/s from Independent Ditch.

[e]Leakages were calculated in two parts: upstream half of ditch calculated using full wetted perimeter at point of diversion, downstream half of ditch calculated using one-half wetted perimeter.

[f]Leakage from McDonald Creek diversion applied equally over part of Agnew ditch system carrying the diversion.

[g]Value calculated for 1 1/2 miles of ditch upstream of inflow from Sequim Prairie Ditch. Remaining values for remainder of ditch.

TABLE 6.--Estimated average pumping rates used in model simulations

Well location	Aquifer tapped	Use of water	Estimated average pumping rate (ft^3/s)	Method of estimating pumping rate
30/3-5R	Upper artesian	Irrigation	0.08	Assume 5 inches per year applied to irrigated area.
-8B	Water-table	--do.--	.07	--Do.--
-8J	Upper artesian	--do.--	.02	--Do.--
-8M	--Do.--	Public supply	.13	Assume 250 homes times 2.5 people per home times 130 gallons per day per person
30/4-1M	Water-table	Aquiculture	1.00	Assume half of maximum rate allowed by water-right permit and half of pumped water leaks back to water-table aquifer through holding ponds.
-2R	--Do.--	Irrigation	.08	Assume 5 inches per year applied to irrigated area.
-3Q	Upper artesian	--do.--	.07	--Do.--
-9L	Lower artesian	--do.--	.05	--Do.--
-9E	Water-table	--do.--	.05	--Do.--
-9F	--Do.--	--do.--	.05	--Do.--

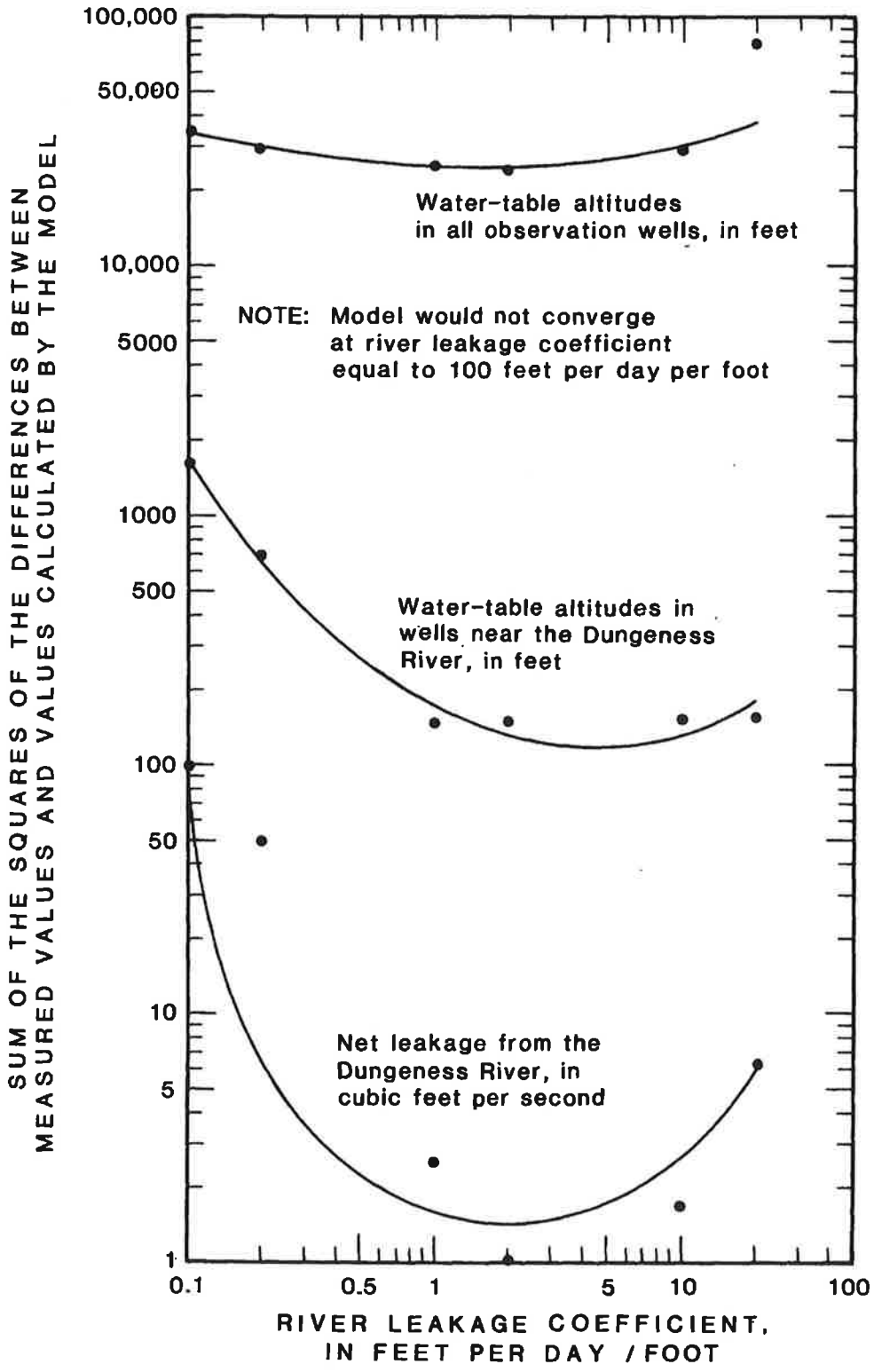


FIGURE 18.--Comparison of measured water-table altitudes and Dungeness River leakage to values computed by the model using various river-leakage coefficients.

Steady-State Simulation

Average conditions existing during March 20-31, 1979, were used for steady-state calibration of the model. This period was selected for calibration because (1) water levels were generally stable (fig. 11); (2) flow in the Dungeness River was generally constant; (3) precipitation was insignificant (0.12 inch); (4) evapotranspiration was minimal; and (5) essentially all irrigation water was restricted to the major ditch systems (no field irrigation).

Calibration was accomplished by holding all model input constant except hydraulic conductivity of the water-table aquifer, transmissivity, vertical leakage coefficients, and river leakage coefficients. Hydraulic conductivity in the water-table aquifer and transmissivity in the artesian aquifers were adjusted only by changing the boundaries of the zones of conductivity and transmissivity, resulting in the final distributions as shown in figures 13 and 14. In all cases, the value assigned to a zone of hydraulic conductivity or transmissivity is the median value derived from all specific-capacity tests in that zone and was not modified during calibration. The model proved to be insensitive to the value of vertical leakage coefficient, showing significant head changes only when the tested value differed by two orders of magnitude or more (from the final value used, 5×10^{-3} ft/day). The river-leakage-coefficient value was adjusted during calibration (fig. 18) to obtain the best reproduction of heads in the water-table aquifer and measured leakage in the Dungeness River.

The reliability of the calibration can be checked by comparing measured heads and river leakages with heads and leakages calculated by the model. Comparisons of measured and calculated heads are shown in figure 19 (water-table aquifer) and table 7 (upper artesian aquifer). No measured water levels were available for the lower artesian aquifer. Well 30/4-9L2, open to the undifferentiated deposits beneath the lower artesian aquifer, had a water-level altitude of 54.1 feet in March 1979, which was probably slightly less than the water-level altitude in the upper artesian aquifer at the same site. The model-calculated water-level altitude was 58.1 feet.

Average measured river leakage from the Dungeness River gage to Dungeness (near the mouth of the river) for March 20-31, 1979, was 20 ft^3/s. Leakage calculated by the model was 19 ft^3/s. The measured leakage includes approximately 1 1/4 miles of river not simulated in the model but believed to be insignificant in regard to the total leakage.

Meadowbrook Creek (the only outflowing creek not significantly affected by irrigation tail waters) had a measured discharge of 5.2 ft^3/s on March 16, 1979. Basically all flow in Meadowbrook Creek is from leakage from the water-table aquifer. Leakage from the aquifer to the creek was calculated to be 5.0 ft^3/s by the model.

The water budget of the ground-water system for the modeled area, as calculated in the steady-state calibration, is shown in figure 20. Total calculated flow through the ground-water system is 82 ft^3/s, including 32.2 ft^3/s, or about 40 percent of the total flow, from irrigation leakage. During the prime irrigation season (April-September) irrigation leakage probably represents an even greater percentage of the total flow (see fig. 11).

TABLE 7.--Comparison of measured and model-calculated water-level altitudes in the upper artesian aquifer, March 1979

Well No.	March 1979 water-level altitude, in feet (1) Measured	(2) Calculated by model	Percent difference $\frac{(2)-(1)}{(1)} \times 100$
30/3-8J3	42.1	43.0	+2
-8M1	42.2	48.8	+16
-16C1	37.4	41.8	+12
-17A1	44.7	49.0	+10
30/4-3Q1	100.4	67.3	-33
-7N1	68.7	62.8	-9
-22J2	152.1	145.4	-4
-23E3	118.1	138.8	+18
-25C1	271.4	269.1	-1

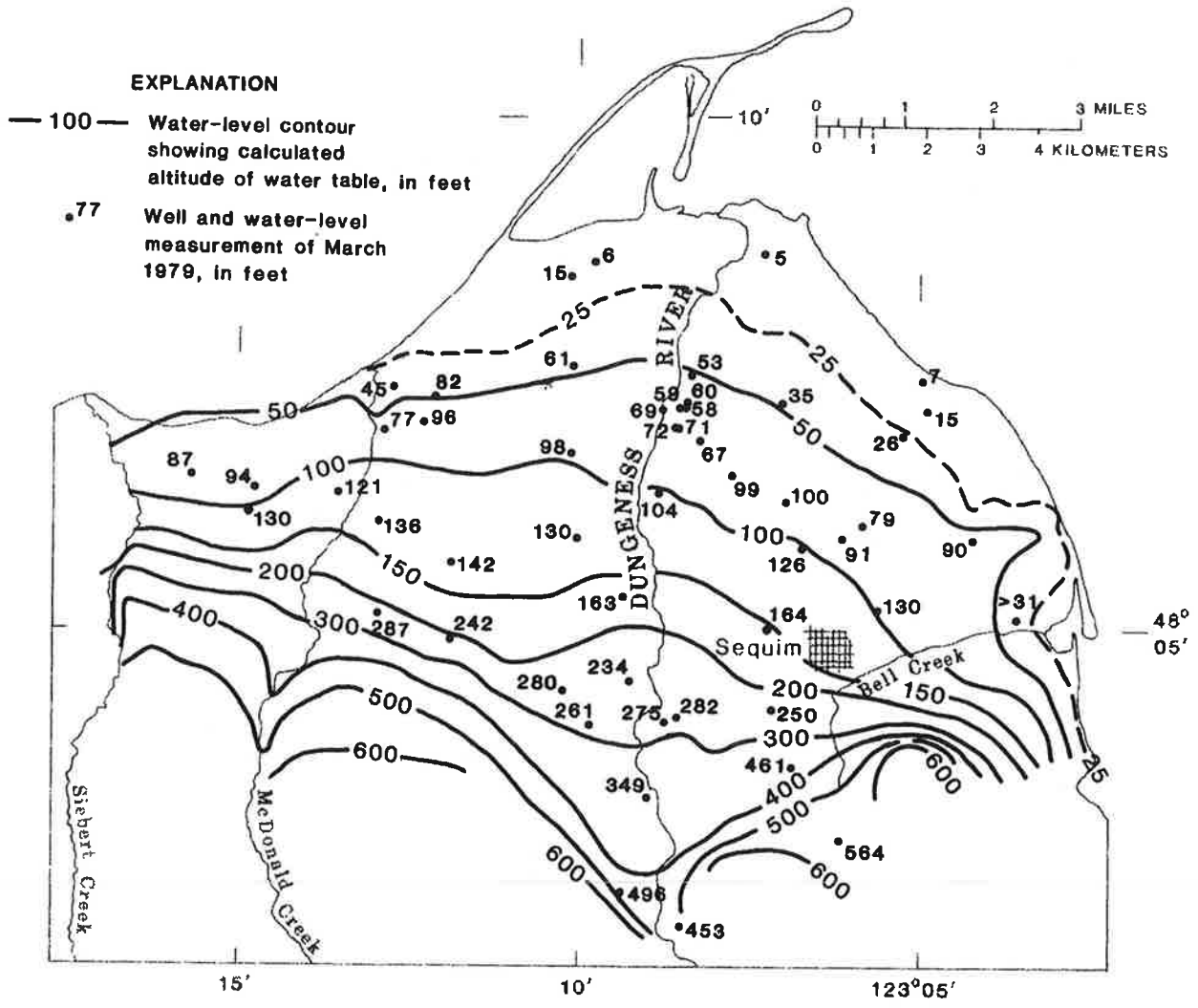


FIGURE 19.--Comparison of measured and model-calculated water-level altitude in the water-table aquifer, March 1979.

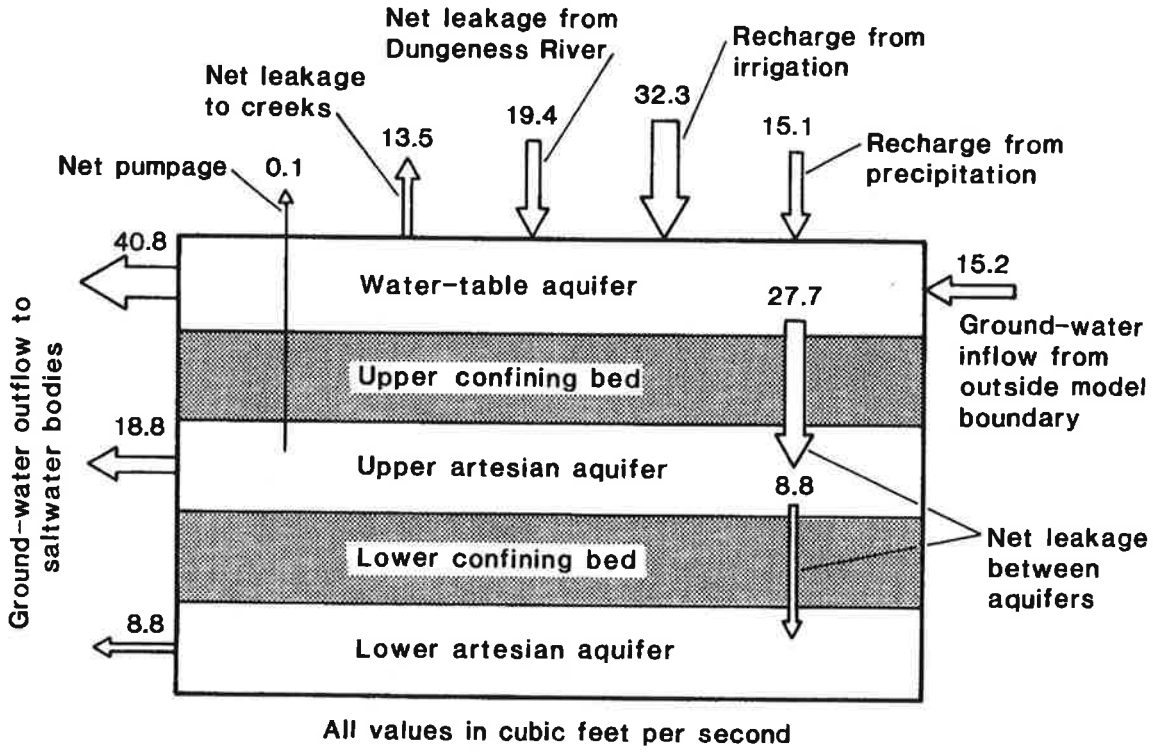


FIGURE 20.--Ground-water budget for March 1979, calculated by steady-state model.

Transient Simulation

The present trend in land use in the study area may lead to eventual abandonment of the irrigation system. This would cause ground-water conditions to return gradually to conditions similar to those existing before construction of the irrigation system. Because data are not available for the period prior to irrigation, a transient model was constructed to show the potential effects of no recharge from irrigation.

Seasonal fluctuations of the ground-water system were considered to be of secondary interest and importance. It was assumed that the gross changes caused by termination of the irrigation system would be at least several times greater than the seasonal fluctuation of water levels (presently about 4 feet, fig. 11).

The transient model uses basically the same input as the steady-state model, except that no recharge from irrigation systems is included in the transient model, and the storage coefficient is added. Starting heads and flow rates in the transient model are the heads and flow rates calculated by the steady-state model.

The transient model was run using two different sets of boundary conditions. One set (constant-head condition) uses exactly the same boundaries as in the steady-state model. In the other set (constant-flux condition) the constant-head boundary along the coastline was changed to a constant rate of outflow as calculated by the steady-state model. The constant-head condition leads to simulations in which calculated drawdowns are generally somewhat less than what would probably occur, while the constant-flux condition produces calculated drawdowns that are generally somewhat greater than what would probably occur.

According to the model, an abrupt termination of the irrigation system would cause water levels to decline significantly, reaching a new equilibrium in 10 to 20 years (fig. 21).

Figure 21 represents the decline in water level (drawdown) at a point in the water-table aquifer where the calculated drawdowns are greatest. All transient simulations were run for 20-year periods to be certain that the effects caused by no recharge from irrigation would stabilize.

Calculated drawdowns caused by termination of the irrigation system are shown for each aquifer in figures 22-27 for various combinations of boundary conditions and river leakage. For each aquifer, the calculated drawdowns are more severe for the constant-flux condition than for the constant-head condition. Actual drawdown would lie somewhere between the two extremes. The greatest impact is in the water-table aquifer where drawdowns would probably average about 20 feet, indicating that some parts of the aquifer could be completely unsaturated and several hundred wells could be dry or nearly so. The artesian aquifers would be less severely impacted with probable average drawdown of about 10 feet. The artesian aquifers would be completely saturated, but the lowered heads would result in greater pumping costs.

Some potential for seawater intrusion could result from termination of the irrigation system. In two small coastal areas (fig. 23) and in a much larger coastal area (fig. 29), calculated heads in the water-table aquifer, using constant-flux conditions, are below sea level. Actual heads in these areas would probably be slightly above sea level. Any significant pumping could then lead to further inland movement of seawater.

Calculated changes that could occur in the ground-water budget due to termination of the irrigation system are shown in table 8. Total flow through the ground-water system could be reduced by 15-30 percent. Net leakage from the Dungeness River could increase by 40-80 percent. The creeks, which have a net inflow from the ground-water system in the steady-state model, could have a net loss to the ground-water system. This could mean that most of the small creeks would be dry or nearly dry most of the time.

The calculated drawdowns in the water-table (figs. 22 and 23) and the calculated changes in the ground-water budget (table 8) indicate that the Dungeness River would be an important factor if the irrigation system were terminated. The calculated drawdowns are very small near the Dungeness River, showing that the increased leakage from the river would serve to replace some of the lost irrigation recharge. Accurate simulation of leakage from the Dungeness River is obviously a prerequisite for accurate simulation of the ground-water system. Because the river-leakage coefficient was not determined independent of the model, the model was run using leakage coefficients one order of magnitude greater than and less than the "ideal" coefficient of 2.0 (ft/day)/ft (fig. 18).

The effects of changing the river-leakage coefficent can be seen in table 9 and figures 28 and 29. Increasing the coefficient by a factor of 10 does not significantly change the computed drawdowns. However, decreasing the coefficient by a factor of ten drastically increases drawdown. The high and "ideal" values of river leakage coefficient (which assume ratios of vertical hydraulic conductivity of the river bed to the horizontal hydraulic conductivity of the underlying aquifer that are about 1/20 and 1/200) are reasonable values to expect in nature. The low value (which assumes a ratio of about 1/2,000) is probably not likely to occur naturally.

TABLE 8.--Comparison of calculated ground-water budgets from steady-state model and transient model after 20 years of no irrigation, with river leakage coefficient of 2.0 cubic feet per day per foot

Ground-water flow	Calculated flow rate, in cubic feet per second		
		Transient model	
	Steady-state model	Constant-head condition	Constant-flux condition
Inflow (all to water-table aquifer)			
Ground water (from uplands)	15.2	16.2	15.7
Precipitation recharge[1]	15.1	15.0	14.7
Irrigation recharge	32.3	--	--
Dungeness River net leakage	19.4	27.1	34.2
Net leakage from creeks	--	1.1	5.1
Total	82.0	59.4	69.7
Net flow between aquifers			
Water-table to upper artesian	27.7	21.9	27.9
Upper artesian to lower artesian	8.8	7.7	8.8
Outflow			
Net leakage to creeks	13.5	--	--
Net pumpage			
Water-table aquifer	--	1.2	1.2
Upper artesian aquifer	0.1	0.3	0.3
Lower artesian aquifer[2]	--	.0	.0
Ground water (all at shorelines)			
Water-table aquifer	40.8	36.4	40.8
Upper artesian aquifer	18.8	13.9	18.8
Lower artesian aquifer	8.8	7.7	8.8
Total	82.0	59.5	69.9
Change in storage (inflow-outflow)	--	-0.1	-0.2

[1]Precipitation recharge in all three cases is input as 15.1 cubic feet per second. In transient model, when a node goes dry the precipitaion recharge at that site is changed to zero.

[2]Pumping rate input to the transient model is actually 0.05 cubic feet per second; the 0.0 results from rounding off.

TABLE 9.--Comparison of drawdowns and selected ground-water flow rates computed by the model using various river leakage coefficients.

River leakage Coefficient[1]	Shoreline boundary condition	Drawdown, in feet, after 20 years of no irrigation, computed by model[4] (ft)										Calculated flow rate, in cubic feet per second		
		Water table aquifer[2] Node				Upper artesian aquifer[3] Node			Lower Artesian aquifer[3] Node			Net leakage from Dungeness River	Net leakage from creeks	Net ground-water flow
		3,25	13,27	19,32	26,34	3,25	13,27	29,28	3,25	13,17	24,26			
0.2	Constant-flux	24.00	16.04	31.00 (dry)	56.99	37.81	36.21	9.59	39.27	38.79	30.30	23.6	0.9	55.1
2.0	Constant-flux	2.52	.74	17.56	54.47	17.90	17.28	1.01	19.42	19.32	12.71	34.2	5.1	69.7
2.0	Constant head	.03	.52	17.22	54.88	.13	2.84	.99	.06	1.26	3.60	27.1	1.1	59.4
20.0	Constant head	.00	1.00	16.53	54.76	.10	2.45	.00	.05	1.05	2.83	32.1	-2.1	61.7

[1]Equals vertical hydraulic conductivity of the river bed divided by the thickness of the river bed, in feet per day per foot.

[2]Nodes are located; near shoreline, near Dungeness River, near center of aquifer (relatively unaffected by Dungeness River), and in upland area, respectively.

[3]Nodes are located; near shoreline, near center of aquifer, and at farthest upland extent of aquifer, respectively.

[4]For leakage coefficient of 0.2, drawdown and flow rates are computed after 10 years of no irrigation. The model would not compute beyond 10 years because of an excess number of dry nodes.

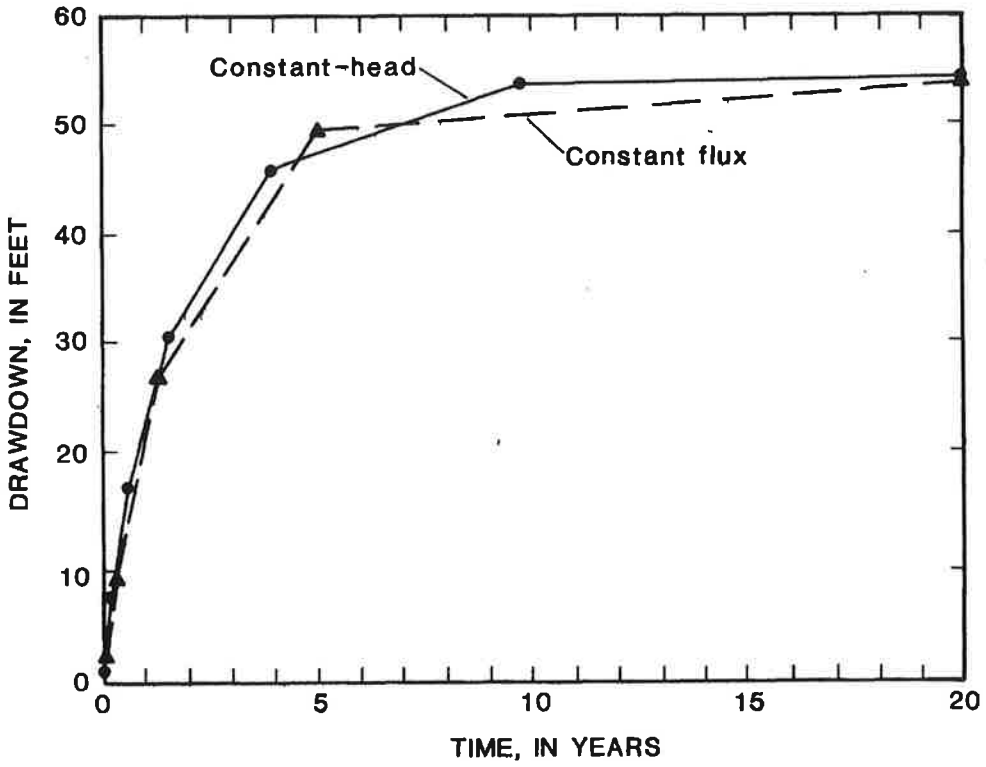


FIGURE 21.--Drawdown at node 26,34 in the water-table aquifer, computed by the model assuming no irrigation and river leakage coefficient of 2.0 feet per day per foot.

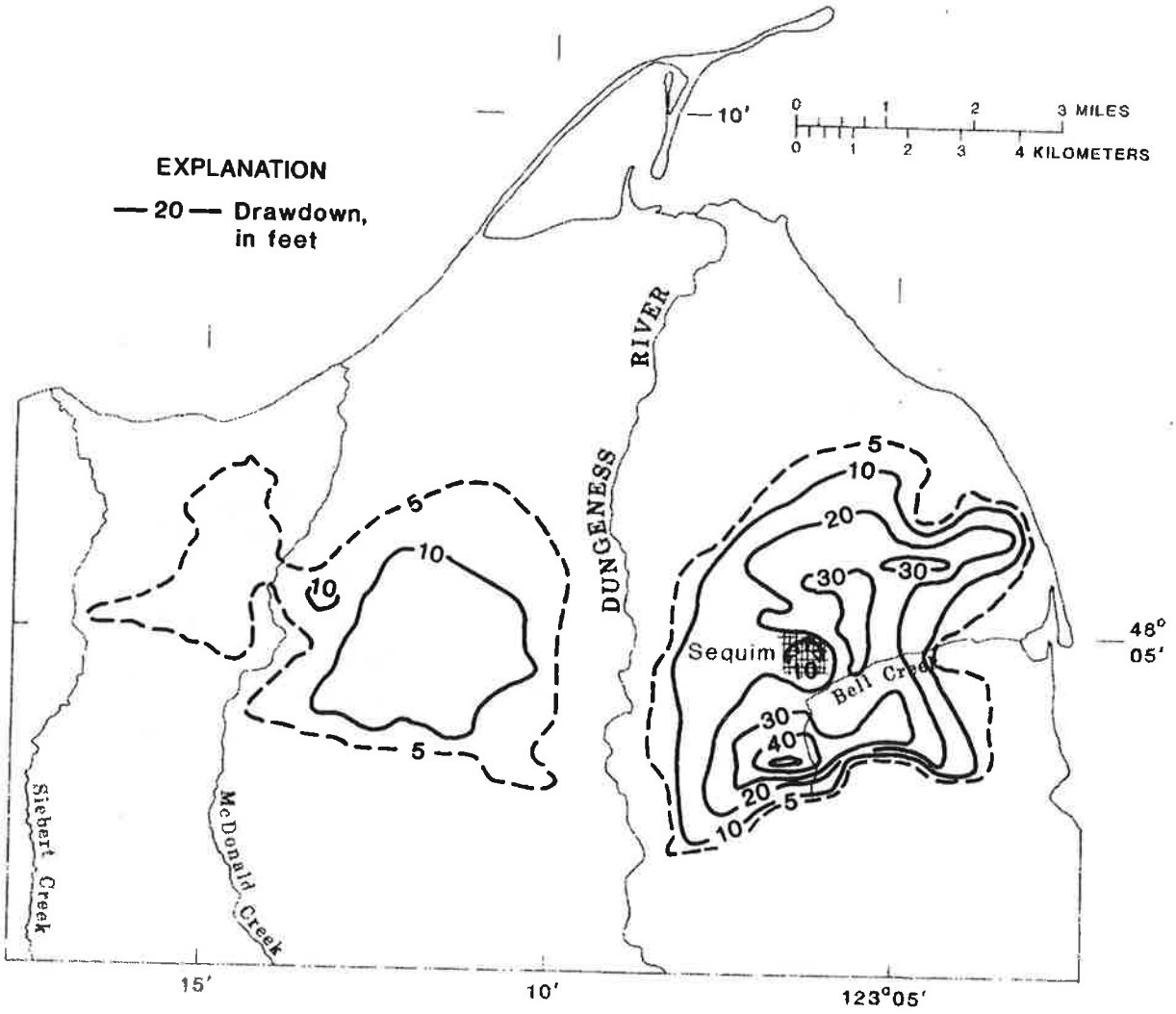


FIGURE 22.--Drawdown after 20 years of no irrigation, calculated by the model using river leakage coefficient of 2.0 feet per day per foot and constant-head conditions in the water-table aquifer.

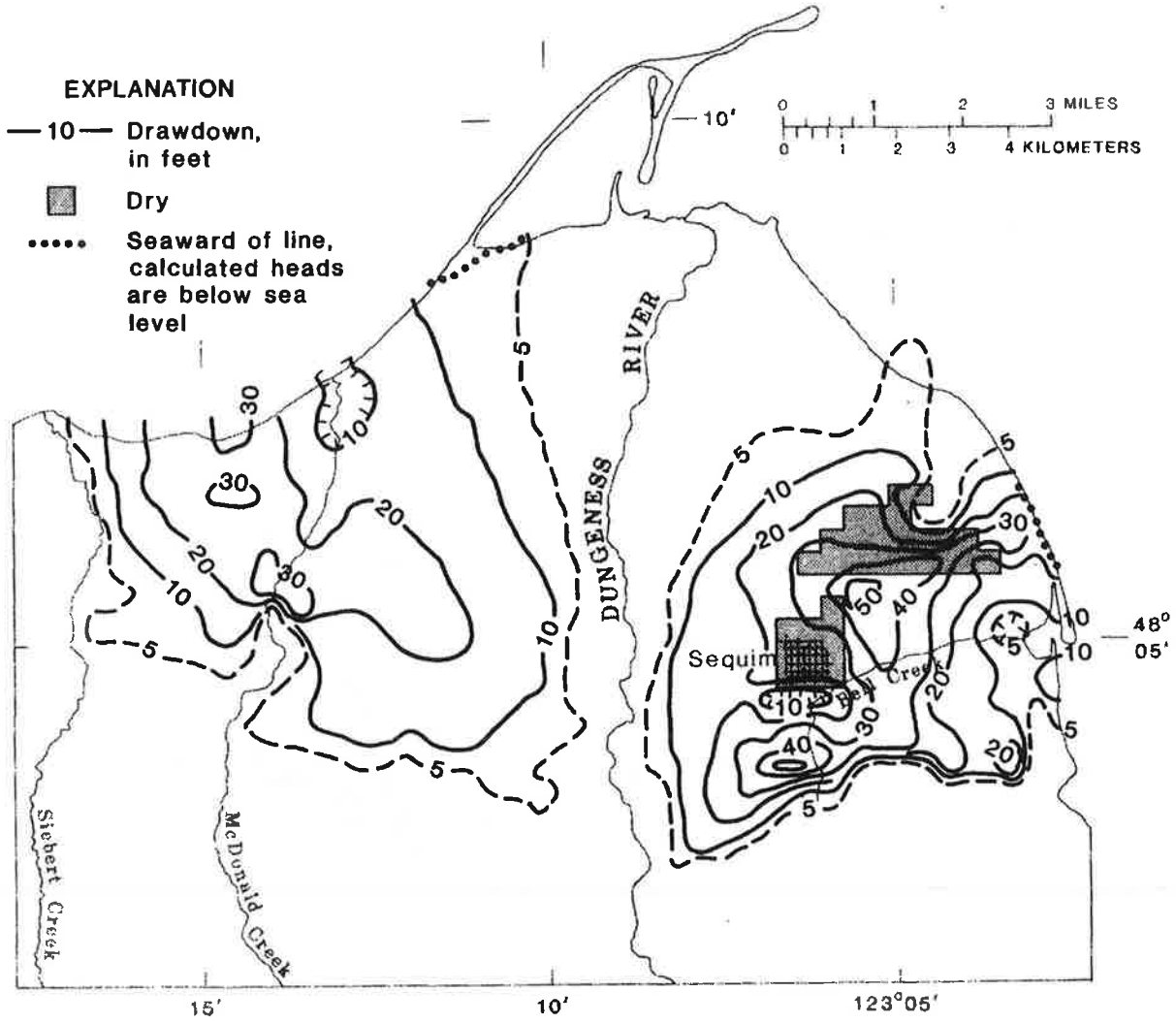


FIGURE 23.--Drawdown after 20 years of no irrigation, calculated by the model using river leakage coefficient of 2.0 feet per day per foot and constant-flux conditions in the water-table aquifer.

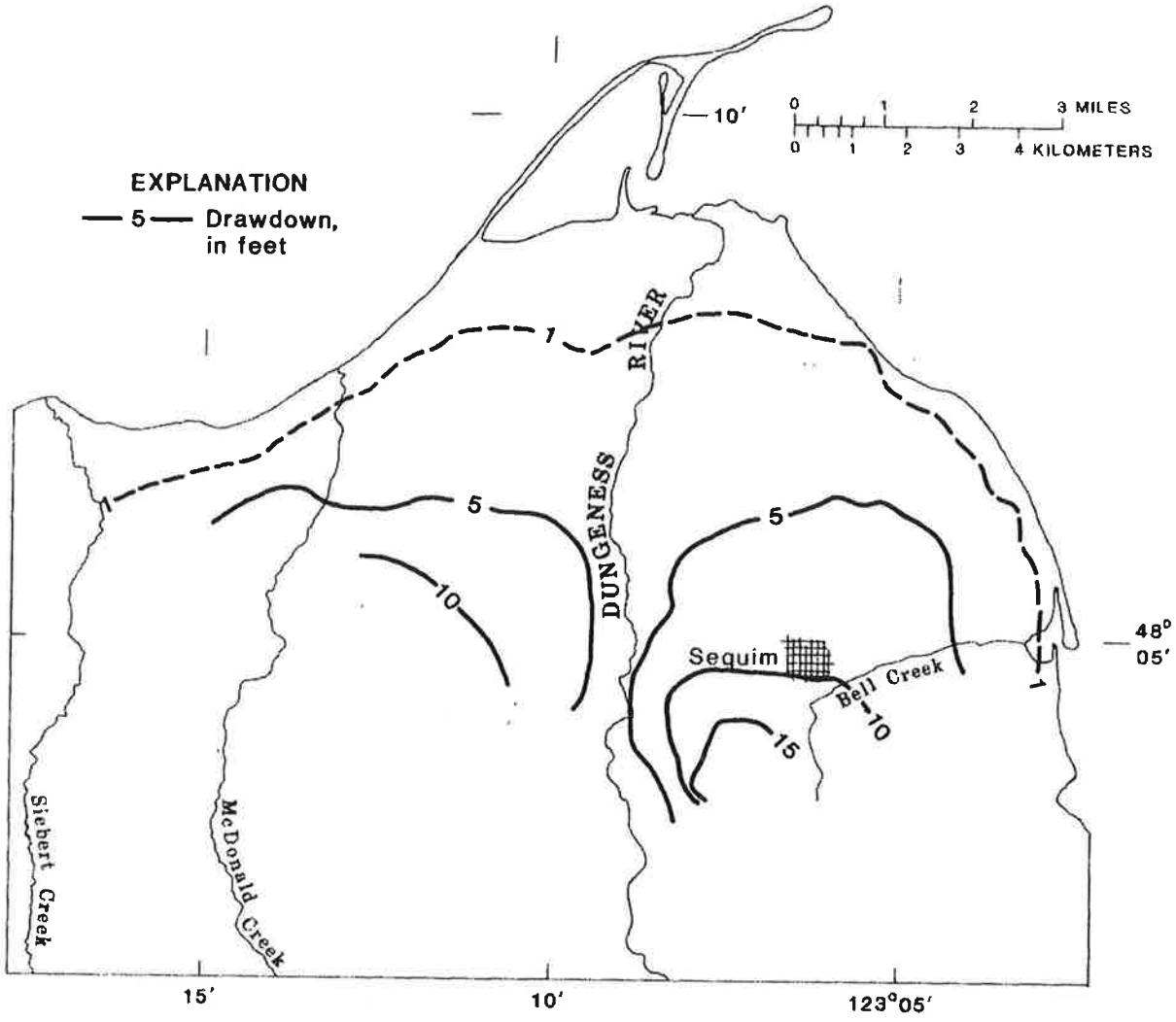


FIGURE 24.--Drawdown after 20 years of no irrigation, calculated by the model using river leakage coefficient of 2.0 feet per day per foot and constant-head conditions in the upper artesian aquifer.

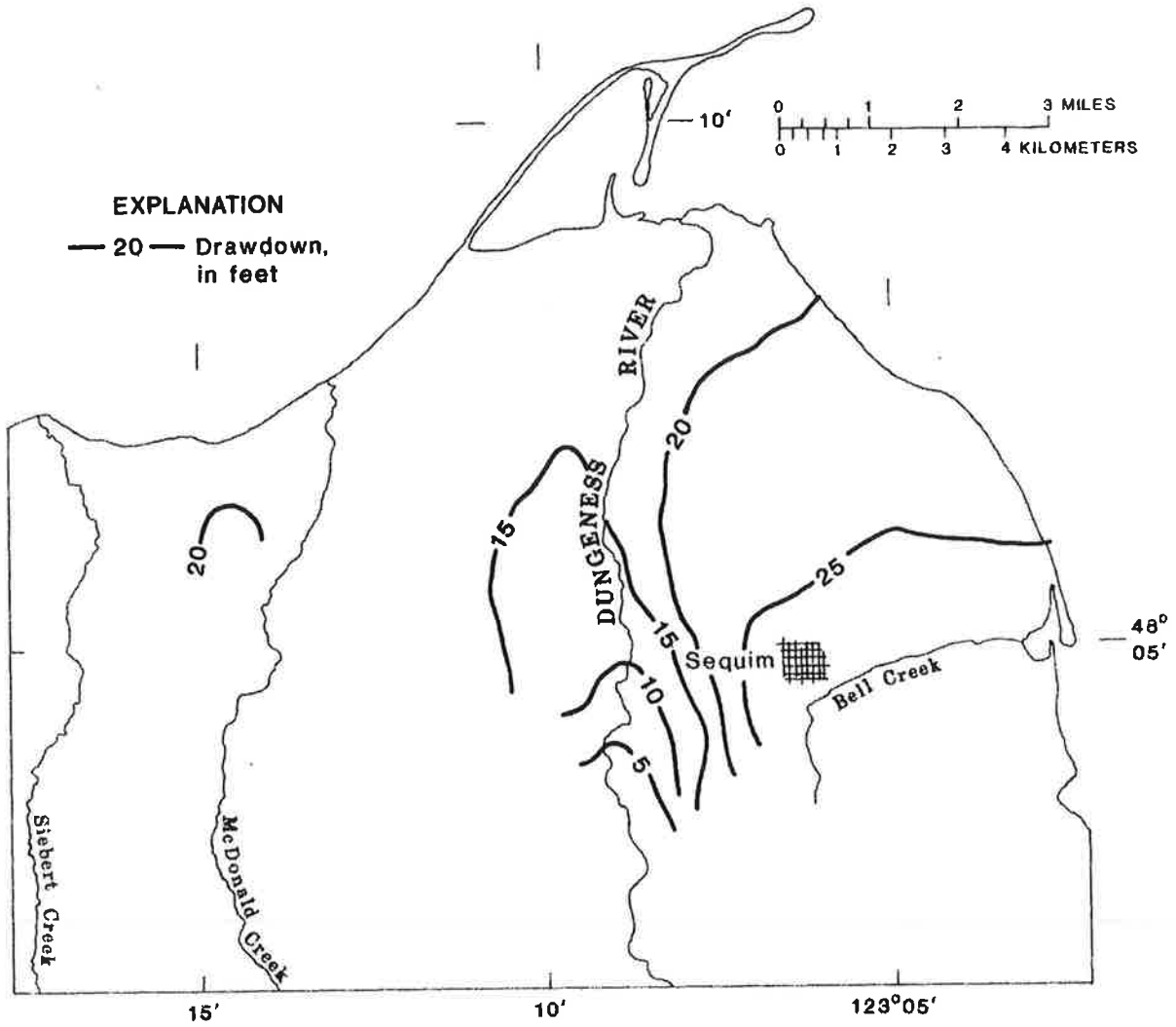


FIGURE 25.--Drawdown after 20 years of no irrigation, calculated by the model using river leakage coefficient of 2.0 feet per day per foot and constant-flux conditions in the upper artesian aquifer.

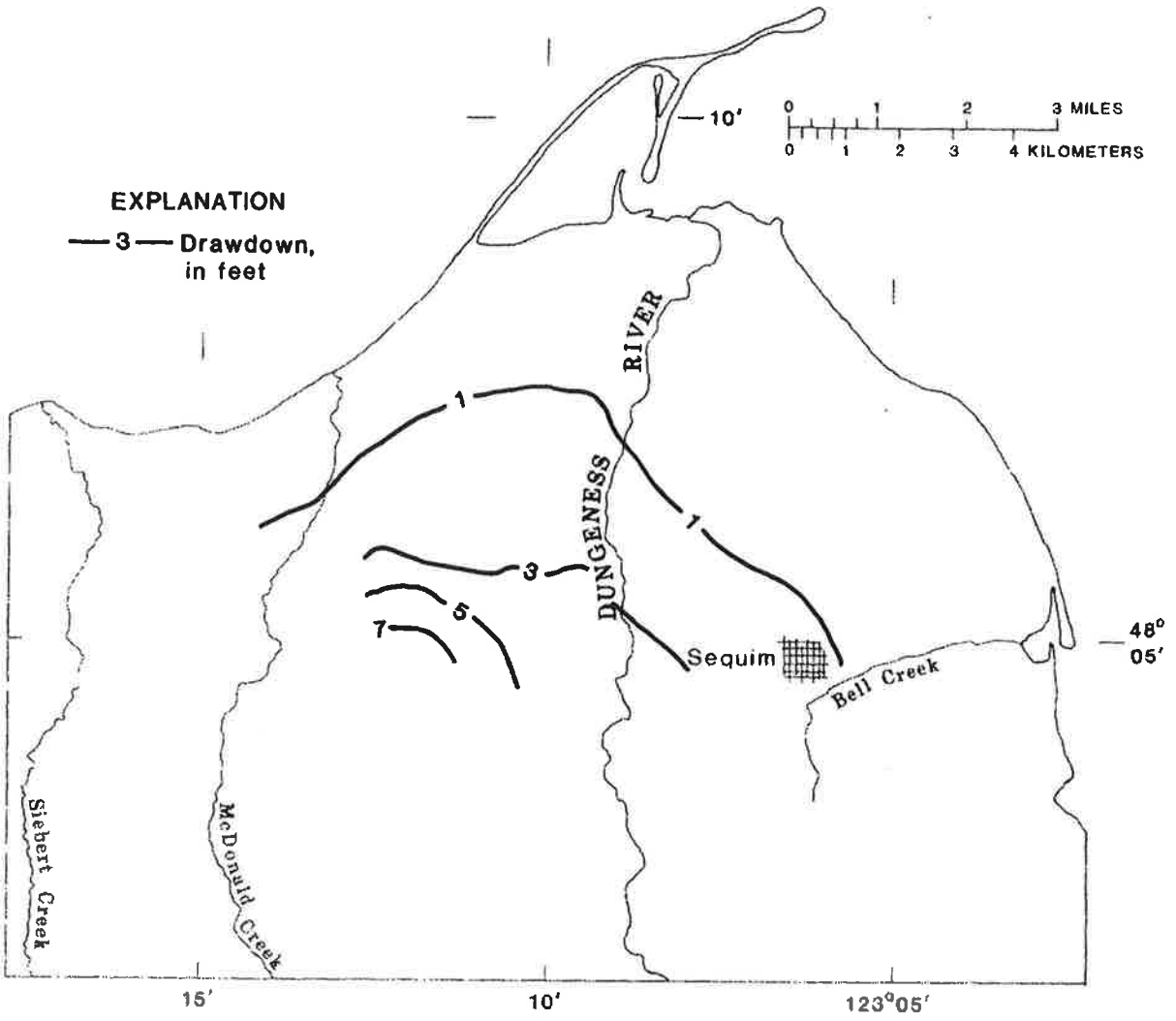


FIGURE 26.--Drawdown after 20 years of no irrigation, calculated by the model using river leakage coefficient of 2.0 feet per day per foot and constant-head conditions in the lower artesian aquifer.

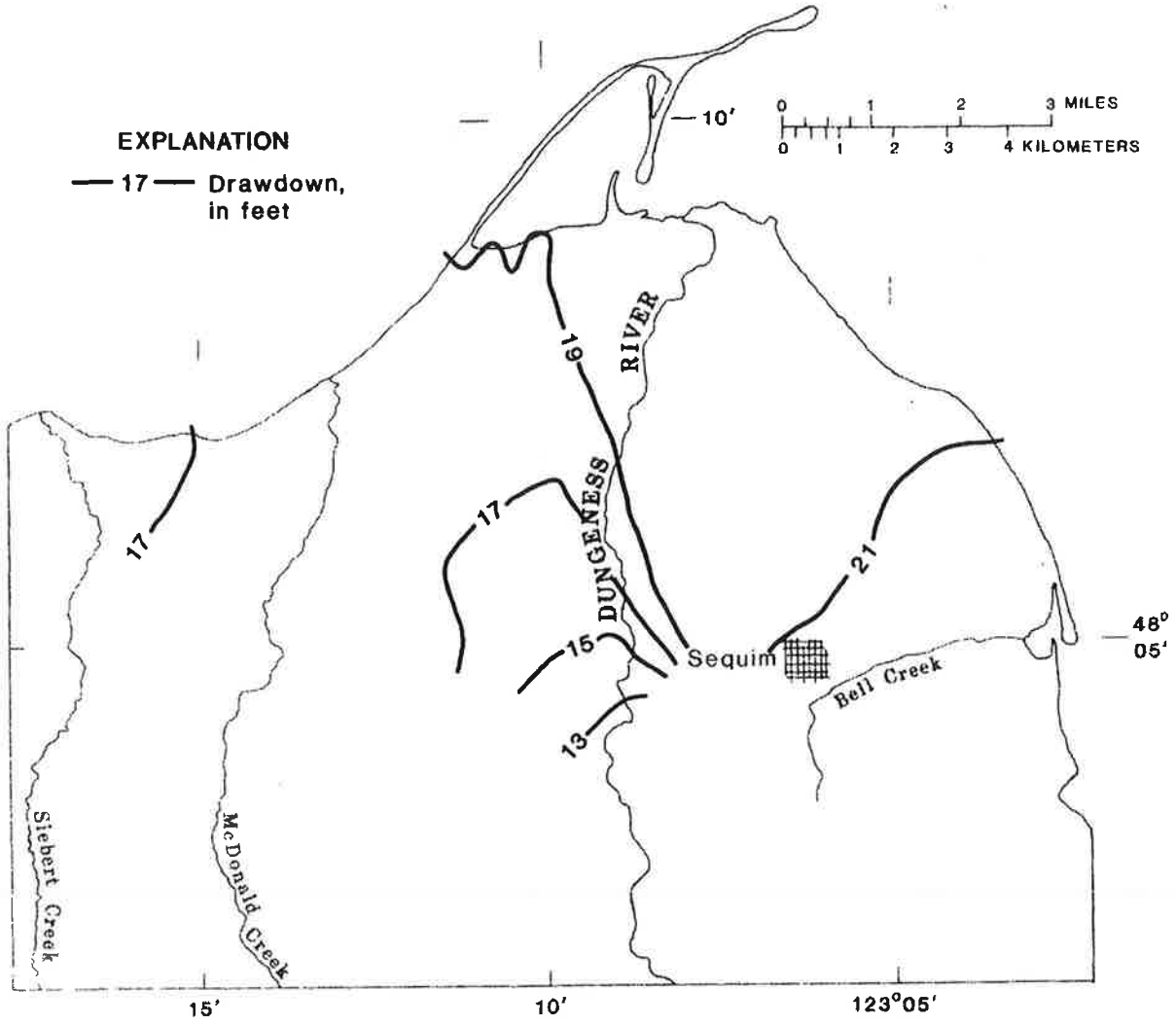


FIGURE 27.--Drawdown after 20 years of no irrigation, calculated by the model using river leakage coefficient of 2.0 feet per day per foot and constant-flux conditions in the lower artesian aquifer.

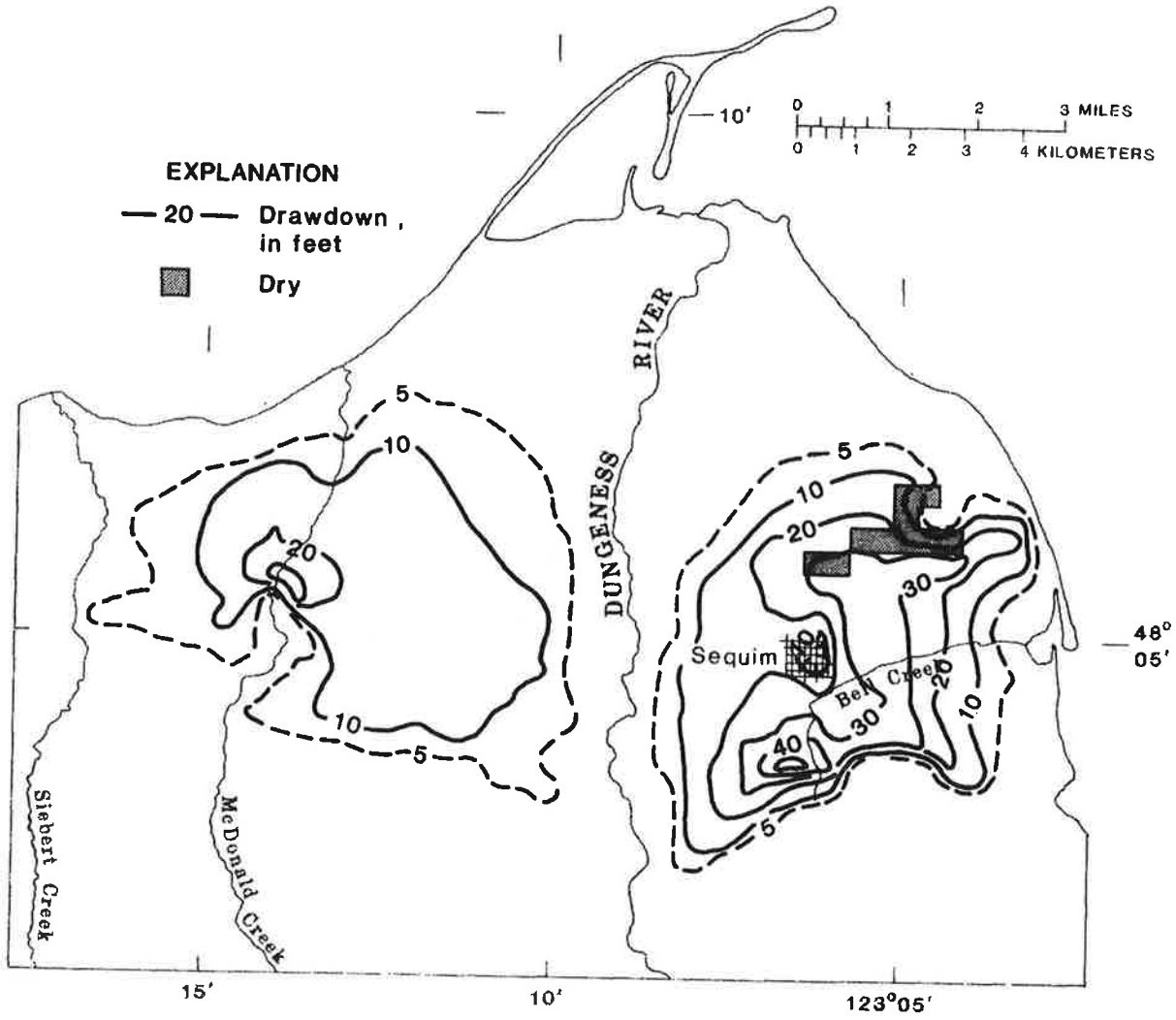


FIGURE 28.--Drawdown in the water-table aquifer calculated by the model after 20 years of no irrigation, using constant-head conditions and river leakage coefficient of 20 feet per day per foot.

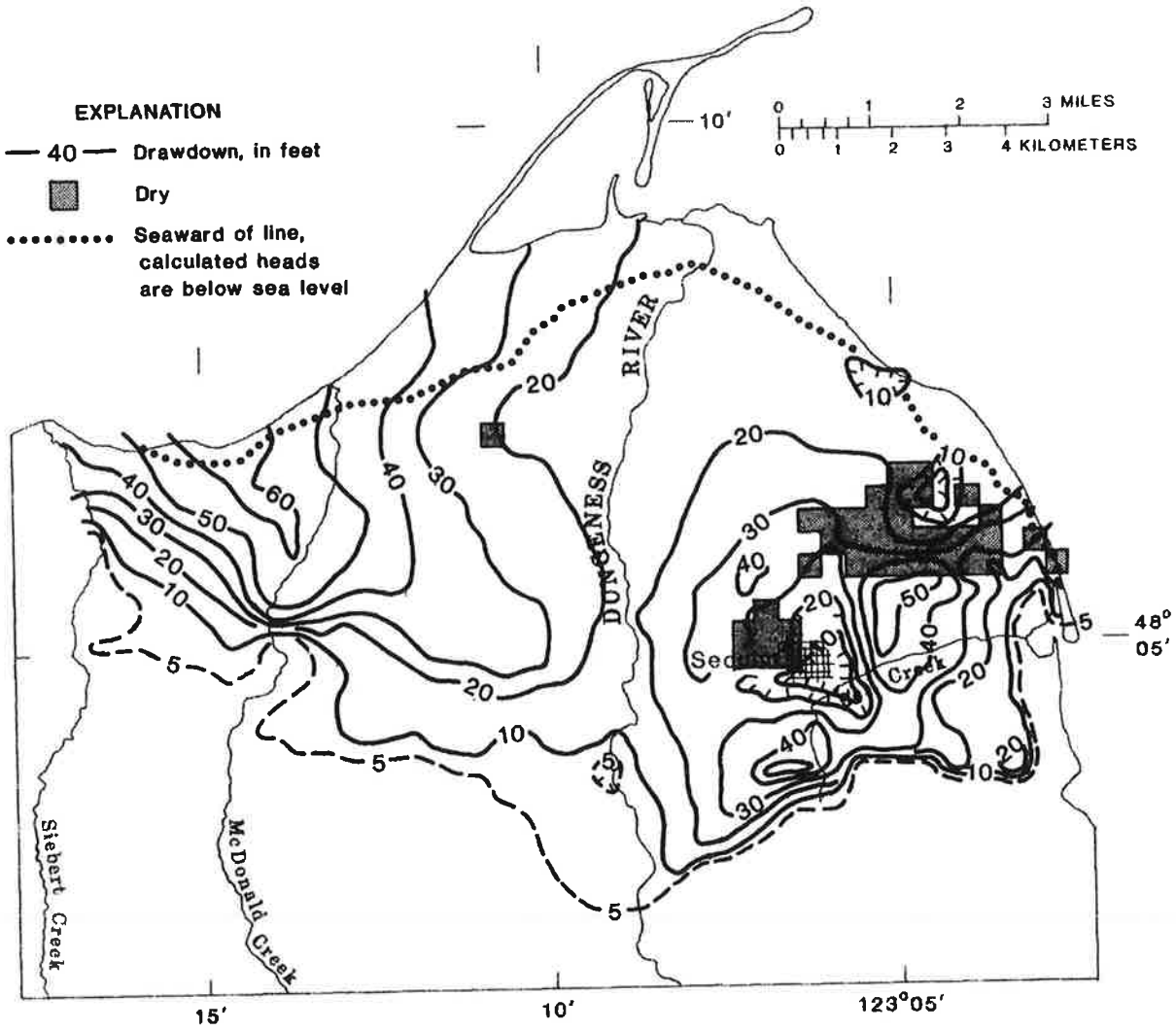


FIGURE 29.--Drawdown in the water-table aquifer calculated by the model after 10 years of no irrigation, using constant-flux conditions and river leakage coefficient of 0.2 foot per day per foot.

SUMMARY AND CONCLUSIONS

1. The digital model described in this report simulated the ground-water flow system within the accuracy of the input data.

2. The model confirms that leakage from the irrigation system is the largest source of recharge to the ground-water system. The leakage occurs primarily from the ditch system, not from water actually applied to fields.

3. Termination of the irrigation system would lead to lower heads throughout the ground-water system. The ground-water levels in the water-table aquifer could have average declines of about 20 feet, and some areas could become completely unsaturated. Several hundred wells could go dry.

4. Ground-water quality, as of June 1980, has apparently not been greatly affected by the use of on-site domestic sewage-disposal systems. The potential for future contamination cannot be assessed with the data presently available.

Future studies should include the following.

1. Ground-water levels and rates of irrigation diversion would need to be monitored in order to assess the impact of any changes in land use.

2. Flow in the Dungeness River would need to be monitored, at least at the gage and at Dungeness. This information would be required to properly interpret any changes observed in number 1 (above).

3. Water quality would need to be tested periodically and compared with the baseline data (June 1980) presented in this report.

4. If a significant increase in development of the artesian aquifers occurs, the new data could be used to update the model and test its ability to accurately simulate flow in these aquifers.

REFERENCES

Bentall, Ray, 1963, Methods of determining permeability, transmissivity, and drawdown: U.S. Geological Survey Water-Supply Paper 1536-I, p. 272-282 and 332-340.

Grimstad, Peder, and Carson, Robert J., 1981, Geology and ground-water resources of eastern Jefferson County, Washington: State of Washington, Department of Ecology, Water-Supply Bulletin 54, 125 p.

Johnson, A. I., 1963, Application of laboratory permeability data: U.S. Geological Survey Open-File Report, unnumbered, 34 p.

Keeting, Virginia, 1976, Dungeness: The lure of a river: Sequim Bicentennial History Book Committee, 190 p.

Lohman, S. W., 1979, Ground-water hydraulics: U.S. Geological Survey Professional Paper 708, p.9.

Noble, J. B., 1960, A preliminary report on the geology and ground-water of the Sequim-Dungeness area, Clallam County, Washington: State of Washington, Department of Conservation, Division of Water Resources, Water Supply Bulletin No. 11, 43 p.

Noble, J. B., and Balmer, D. K., 1980, Hydrologic analysis of proposed plat for Carlsborg Mill Village, Clallam County, Washington: in Draft Environment Impact Statement, Carlsborg Mill Village, Clallam County, Washington, by J. J. Sleavin and Associates, Inc., Tacoma, Washington, 1980, 69 p.

Othberg, K. L., and Palmer, Pam, 1980a, Preliminary surficial geologic map of the Carlsborg quadrangle, Clallam County, Washington Division of Geology and Earth Resources Open-File Report 79-20, 1 p.

-----, 1980b, Preliminary surficial geologic map of the Dungeness quadrangle, Clallam County, Washington Division of Geology and Earth Resources Open-File Report 79-17, 3 p.

-----, 1980c, Preliminary surficial geologic map of the Sequim quadrangle, Clallam County, Washington Division of Geology and Earth Resources Open-File Report 79-18, 4 p.

Porter, K. S., 1980, An evaluation of sources of nitrogen as causes of ground-water contamination in Nassau County, Long Island: Ground Water, v. 18, no. 6, p. 617-625.

Tabor, R. W., and Cady, W. M., 1978, Geologic map of the Olympic Peninsula, Washington: U.S. Geological Survey, Miscellaneous Investigations Series, Map I-994.

Trescott, P. C.,1975, Documentation of finite-difference model for simulation of three-dimensional ground-water flow: U.S. Geological Survey, Open-File Report 75-438, 103 p.

U.S. Department of Agriculture, 1970, Irrigation water requirements: U.S. Soil Conservation Service, Engineering Division, Technical Release no. 21, 79 p.

U.S. Department of Commerce, 1965-73, Climatological data, Washington: vol. 69-77.

U.S. Department of Housing and Urban Development, Federal Insurance Administration, 1980, Flood Insurance study, Clallam County, Washington, 45 p.

[U.S.] National Oceanic and Atmospheric Administration, 1974-79, Climatological data, Washington: vol. 78-83.

U.S. Weather Bureau, 1920-65, Climatological data, Washington: vol. 24-69.

-----, 1965, Mean annual precipitation, 1930-57, State of Washington: Portland, Oregon, U.S. Soil Conservation Service Map M-4430.

Walters, K. L., 1971, Reconnaissance of seawater intrusion along coastal Washington, 1966-68: State of Washington, Department of Ecology, Water-Supply Bulletin No. 32, 208 p.

CITY OF SEQUIM

DEPARTMENT OF COMMUNITY & ECONOMIC DEVELOPMENT
152 W. Cedar Street, Sequim, WA 98382

March 26, 2026

Bruce Emery
Clallam County Department of Community Development
223 E. 4th Street, Suite 5
Port Angeles, WA 98362

Subject: City-County Coordination under the Growth Management Act for 2025 Comprehensive Plan periodic update

Dear Bruce:

This letter memorializes the coordination between the City of Sequim and Clallam County in meeting the requirements of the Washington State Growth Management Act (GMA), including ongoing collaboration related to Urban Growth Areas (UGAs), housing allocations, and land capacity.

Under the GMA, counties and cities are required to coordinate planning efforts, particularly with respect to the designation and review of UGAs. Pursuant to RCW 36.70A.130(3)(a), UGAs must be reviewed and, if necessary, revised as part of the periodic update process to ensure sufficient land capacity for projected growth. These periodic updates are required every ten years under RCW 36.70A.130(5)(b).

Consistent with these requirements, the City and County have engaged in substantial coordination throughout the current periodic update cycle, including:

- Population and Housing Targets (2024): The County coordinated with all cities on the allocation of population and housing growth targets, including distribution by income band, consistent with GMA housing requirements.
- Land Capacity Analysis (LCA) Methodology (2025): The County shared its development and coordination of land capacity analysis methodology, including population, housing and jobs allocations.
- City Land Capacity Analysis Results (2025): The City's completed LCA demonstrated that existing land within the current city limits is sufficient to accommodate the City's allocated growth. Accordingly, no expansion of the City's UGA is warranted.
- Select UGA Land Designation Changes (2025): the County conducted outreach and coordination in Fall 2025 regarding proposed select Sequim UGA areas needing a land use designation change in order to accommodate the County's housing allocations across income bands. The City reviewed these proposals at the time, reviewed them again as currently presented on the County's website, and has no objection to the County's approach.
- Emergency Housing / Bed Allocation (2025): The City coordinated with the County regarding emergency housing needs, including a re-allocation of 27 emergency beds.

The City appreciates the County's ongoing partnership and the collaborative environment that has supported this work.

Please feel free to contact me if additional information is needed.

Sincerely,

Karla Boughton
Director

Clallam County Comprehensive Plan Update
Summary of Public Testimony and Corresponding Recommendations
as of March 27, 2026, Table Version 3.2.a

The following provides a summary and recommended response to testimony received during the public hearing process. To avoid duplication and per the planning Commission's instruction, this table is being provided as a supplement to CPU Policy Response Table 3.

Summary of Testimony	Recommended Policy/Response
32) Emailed testimony from Anne Leighton, dated March 16, 2026. Comments expressed objection to policy articulated under 31.03.195(1)(d), supporting the development of the Miller Peninsula State Park. Concerns included a current lack of a clear plan for the park, impacts to groundwater resources, sewage and solid waste, sea level rise, wildfires, high bank cliff erosion, forest ecosystems, wetland ecosystems, species decline, and economic loss.	Section 31.03.195(3) describes the need for identifying and increasing recreational and public access opportunities in the region. However, that section also requires that such improvements occur "…where appropriate and complimentary to the natural and cultural characteristics of the area. The Miller Peninsula is an area where water resources are limited, fire risk is noted, and transportation services are challenged by the width of Diamond Point Road and the intersection with SR 101. To balance these factors, suggest amending 31.03.195(1)(d) as follows: "Support development of the Miller Peninsula State Park~~,~~ only upon a demonstration that implementation will not adversely impact potable groundwater resources in the area, increase fire risk, exacerbate erosion or other environmental impacts, and transportation improvements are implemented to ensure no adverse impacts to area residents or the greater community. As a general principle, primitive facility designs are preferable to more intensive designs. Park plans should also consider and facilitate ~~balancing between maintaining the environmental attributes of the site and surrounding properties with the need for active recreational opportunities,~~ developing connecting links to the Olympic Discovery Trail for non-motorized access." Alternatively, 31.03.195(1)(d) could be removed if desired by the Planning Commission. A third alternative is addressed in Testimony 36 (c), below.

33) Emailed testimony from Debi Maloney, dated March 16, 2026. Comments are same as #32, above.	See response to #32, above.
34) Emailed testimony from Penny Burdick, dated March 16, 2026. Comments are same as #32, above.	See response to #32, above.
35) Emailed testimony from Ellen Massey, dated March 17, 2026. Comments are same as #32, above.	See response to #32, above.
36) Emailed letter of testimony from Darlene Schanfald, Chair, North Olympic Group Sierra Club, dated March 17, 2026. Testimony includes: a) broader integration of risks/impacts from sea level rise under 31.02.330 and 31.02.340(3) and (4)(c). b) Measures should be taken to "stem" growth in light of climate change, such as reduction in allowing ADUs. c) recommends replacing 31.03.195(d), with the following: Miller Peninsula State Park should remain Natural, day use for hikers, non-motorized biking and horseback riding. This will preserve the rural character of Miller Peninsula, its existing communities, and its natural resources and clean ambient.	a) Recommend amending the 7th sentence of the 3rd paragraph, 31.02.330 as follows: Impacts from climate change, such as increased frequency and severity of storm events, sea level rise, and ~~F~~flood damage can devastate community resources, with human health and safety impacts, economic losses, and loss of infrastructure and habitat. b) Climate change is a crisis and so is housing and housing affordability. ADU development is one avenue to help address housing needs. No policy change is recommended. c) The recommendation in this section represents a third viable option for addressing concerns with 31.03.195(d). If selected, would recommend ending sentence with "…and pristine environment." d) It is mandated by RCW 36.70A.142 to allow *organic materials management facilities*, which are defined under RCW 70A.205.015(17) to include: "…management of organic materials through composting,

d) Recommends striking "*anaerobic digestion*" from the definition of "*organic materials management facility* (33.03.010(77))." e) Strongly expressed that master planned resorts should not be allowed (31.02.250). f) Requests amendment to 31.02.340(14)(f), to "spell out where motorbike areas are allowed so users and the public know. It should not be voluntary or a request, but a mandate." g) concerns were also expressed regarding where land availability existed (per LCA), and allowance of ADU development tending towards sprawl.	anaerobic digestion, vermiculture, black soldier fly, or similar technologies. No amendment is recommended. e) In accordance with RCW 36.70A.360(1), the County is not obligated to have provisions for the siting of MPRs. The Planning Commission could consider whether to retain 31.02.250 in its entirety. f) The Zoning Code regulates *racetracks* as a recognized land use—typically allowed only in industrial and some commercial areas. Shared use of public spaces is less a land use function and more a peace and morals function, requiring the input of Parks, the Trails Coalition, and ultimately the Clallam County Sheriff's Office for administration of such regulations. It is outside of the scope of the CPU. g) The LCA was based on an analysis of data. Mapped information was not produced. ADU development was addressed in 36.b, above. No policy change is recommended.
37) Emailed testimony from Donald Mazzola, dated March 17, 2026. Comments are similar to #32, above. Questions whether the motive for supporting the park facility is driven by economic benefit. Recommends removal of the policy and including policies that protect natural attributes of the region.	The remainder of 31.03.195, and all of 31.02.340, address the protection of environmental attributes referenced in the comments. The same response to #32, above is recommended.
38) Emailed testimony from Tricia Sears, Department of Natural Resources, dated March 11, 2026. Comments included three primary recommendations:	a) Recommend amending 31.02.340(10), as follows: *Geologically Hazardous Areas. (Policy 31)* The public should be protected from personal injury, loss of life, or property damage from ~~environmental~~geologic hazards. Land use practices in geologically hazardous areas should not cause or exacerbate natural processes which endanger the lives, property and resources of residents. Undevelopable geologically hazardous areas should be utilized as open

a) Consider referencing DNR Washington Geologic Information Portal for more information. b) Consider adding a reference to the definition of geologically hazardous areas, WAC 365-190-120, in other areas besides the CAO. c) Consider adding a reference to WAC 365-196-480 for natural resource lands.	space whenever possible. More information concerning geologically hazardous areas and updated recommendations for safety can be viewed at the Department of Natural Resource's Washington Geologic Information Portal, at https://dnr.wa.gov/washington-geological-survey/publications-and-data/geologic-information-portal. b) Recommend amending 31.02.050, Definitions, as follows: (21) "Geologic hazardous areas" means those areas susceptible to erosion, sliding, earthquake, or other geological events, as further defined under WAC 365-190-120, as now or hereafter amended. c) Recommend amending the 2nd sentence of 31.02.110, *Resource Land Issues*, as follows: The Act requires local governments to classify and designate agricultural, forest and mineral resource lands and to adopt interim development regulations to assure their conservation, in accordance with RCW 36.70A.050 and WAC 365-196-480, as now or hereafter amended. Other recommendations will be integrated in the Critical Areas Ordinance and Shorelines Master Program updates, as applicable.
39) Emailed testimony from Sue Gilman, dated March 14, 2026. Comments are similar to #32, above.	The same response to #32, above is recommended. Based on comments, it appears the commentor considers 31.03.195(1)(d) a new policy proposal. It has been in the Sequim-Dungeness Regional Plan since its first adopted in 1995.
40) Emailed testimony from Paula Simms, dated March 14, 2026. Comments are same as #32, above.	See response to #32, above.
41) Emailed testimony from Bob Smith, dated March 15, 2026. Comments are same as #32, above.	See response to #32, above.

42) Emailed testimony from Thomas P. Schlosser, dated March 15, 2026. Comments are similar to #32, above.	See response to #32, above.
43) Emailed testimony from Sue Spier, dated March 15, 2026. Comments are same as #32, above.	See response to #32, above.
44) Emailed testimony from Sharman Richardson, dated March 16, 2026. Comments express concern in regard to the Miller Peninsula State Park.	See response to #32, above.
45) Hand-delivered written testimony from Heather Cantua, received March 18, 2026. Comments included a request for there to be a public meeting in the Western Region to address the following: a) The types of uses that should be allowed through the conditional use permit (CUP) process. b) Density standards for uses allowed through the CUP process. c) Notice requirements for the CUP process. d) How master planned resorts fit within the "RW5 CUP process?"	The issues identified are directly correlated to the regulatory structures present in the Zoning Code. Although referenced, Master Planned Resorts (MPR) deal with large-scale, fully contained resort communities 240 acres and greater (CCC 33.25). The Luminary Project, which is the basis of the comments, was not within the scope of a MPR, but was processed as a CUP as an unclassified use. Pursuant to 33.05.010, "[u]nclassified uses may be allowed through the issuance of a conditional use permit." Resort facilities are not a listed use under the RW5 zone. With several of these issues being regulatory in nature, it is staff's recommendation that they be docketed as amendments to the Zoning Code and Permit Process Code and to consider hosting a Planning Commission meeting in the Western Region to hear testimony on these matters. Given the current ambiguity and concern regarding destination resort facilities and lack of reasonable considerations, Staff suggests the following new policy to 31.06.100, as follows: (5) Given the increase in permit activity and interest in the development of new destination resort

	facilities, carefully consider development standards to ensure the protection of rural character, natural resources and other community attributes, including: a) Clearly define and identify the destination resort facilities within the Zoning Code and include as permitted, conditional or prohibited within each zone's use tables. b) Develop overnight accommodation density standards and facility coverage standards to ensure the scope and intensity of such uses remains commensurate with rural and natural settings. c) Consider expanded notification requirements, especially where such uses rely on existing private drives with shared access.
46) Hand-delivered testimony received from Judy Larson, received March 18, 2026. Comments included: a) Concern that comments offered during the 7/23/25 Public Engagement Meeting (Guy Cole Center) was not present in Table 3. b) Concern that reconciliation has not yet occurred between the City and County's CPUs. c) That the BOCC has received findings supporting the Planning Commission's recommendation to approve the CPU.	a) The comments received from Ms. Larson during the 7/23/25 Public Engagement Meeting was memorialized in Comment #20, Table 1, first submitted to the Planning Commission in their September 3, 2025, Packet. It remains in the current edition of Table 1. b) "Reconciliation" is not required under the GMA. RCW 36.70A.100, merely requires that CPUs are "coordinated and consistent," which the City and County has done through frequent and ongoing discussions. c) The BOCC has not been provided a copy of the Draft Findings. They have only been provided to the Planning Commission for their consideration and will only be forwarded to the BOCC upon concurrence of the Planning Commission.
47) Hand-delivered testimony received from Virginia Shogren, received March 18, 2026. Comments included:	a) The issue of the Conservation District's irrigation tightlining project were articulated in response to Comment #20, Table 1, which includes: *The Dungeness Valley Irrigation tightlining project was originated within the WRIA 18 Watershed Plan. A Final Environmental Impact Statement*

a) Concerns expressed regarding the tightlining of irrigation ditches in the Sequim-Dungeness Valley. b) Concerns regarding adequate notice of the CPU, requesting "proper legal notice, and further extend the public process..."	*was issued for the project in November 2003. The project is sponsored by the Washington Department of Fish & Wildlife, is considered a watershed restoration project in accordance with RCW 89.08.460(2)(c), and possibly a fish enhancement project in accordance with RCW 77.55.181. Local permit authority is preempted by RCW 77.55.181(3)(a) and RCW 89.08.470. Further, since it was originated by the WRIA 18 Watershed Plan, Clallam County does not oppose the project in any way as it addresses the illicit withdrawal of waters of the Dungeness.* b) Staff has prepared a Public Engagement Report detailing the efforts made to generate public engagement in the CPU process. Staff already acknowledged the deficiency with the email notices that were to be generated whenever the CPU web page was updated (discovered 3/4/36) but has utilized the email list for notice purposes since. Legal notice was provided at the onset of the public hearings before the Planning Commission on October 18 and 25, 2025 in the Peninsula Daily News. The Planning Commission took action to extend the public hearing through April 15, 2026, in order to provide ample opportunity for public review.
48) Emailed testimony from Diane Raven, dated March 19, 2026. Comments are similar to #32, above.	See response to #32, above.
49) Email from Heather Cantua, dated March 21, 2026. Comments referred to a real estate listing with an exceptional asking price, indicating that the ability to do a range of land uses under the CUP process in the RW5 zone was the reason for high asking price.	Testimony provide supporting information related to prior concerns about the permissiveness of uses allowed under the conditional use permit process within the RW5 Zoning District.

50) Email from Virginia Shogren, dated March 23, 2026. Comments centered on concerns related to the Clallam Conservation District's irrigation tightlining project; included four attachments and a cover email. Comments included: a) Indication that no SEPA review was conducted for the project. b) Requested that a moratorium on additional irrigation tightlining be established. c) That an "active historic designation/preservation" of the remaining ditch system be established.	a) The ditch tightlining project was promulgated under the Dungeness River Agricultural Water Users Association Comprehensive Water Conservation Pan, which was jointly adopted in 1999. Following a challenge by Graysmarsh LLC, a Final Environmental Impact Statement (FEIS) was issued in November 2003, with the Department of Ecology as Lead Agency. The FEIS evaluated all anticipated impacts from the project, including impacts to ground water levels, streams and wetlands—indicating that the current water resources were "artificially" supplemented by ditch leakage. The EIS identified that the tightlining project was necessary for the restoration of anadromous fish runs for the Dungeness River. No policy change is recommended. b) The ditch tight-lining project is consistent with the WRIA 18 Watershed Plan (Section 3.1.8(C)(2)(c) and (F)), adopted by Clallam County 6/7/2005. As an implementing step of an approved watershed plan, Clallam County has already committed to the project. Imposition of a moratorium would violate the adopted watershed plan. The FEIS maintains that the tight-lining project is necessary to protect and restore ESA listed salmonid species. No policy change is recommended. c) For the reasons cited under b) above, designation as a historic structure would contradict the County's mandate to protect and restore anadromous fisheries and the requirements of the Endangered Species Act, as well as existing policy regarding the same. No policy change is recommended.