

Coastal Seawater Intrusion Policy

September 24, 2002

Goal: Jefferson County intends to protect groundwater quality from further degradation due to seawater intrusion, primarily through land use regulatory authority under Revised Code of Washington (RCW) 36.70A. A corollary goal is the promotion of public health through encouragement of public water system use throughout the county.

Elements: Designation of affected areas, voluntary and mandatory measures (implemented through Unified Development Code – UDC - and Environmental Health regulations), other policy elements, public outreach and education, monitoring and adaptive management.

Designation: Seawater Intrusion Protection Zones (SIPZ) include aquifers and land areas overlying aquifers at some level of vulnerability to seawater intrusion, as defined either by proximity to marine shoreline or by proximity to groundwater sources that have demonstrated high chloride readings. All land area within ¼ mile of marine shorelines and on all islands is classified as a coastal SIPZ, a subcategory of a Critical Aquifer Recharge Area. Additionally, areas within 1000 feet of a groundwater source with a history of chloride analyses above 100 milligrams per liter (mg/L) are categorized as either “at risk” (between 100 mg/L and 200 mg/L) or “high risk” (over 200 mg/L). High-risk SIPZ Individual groundwater sources with a history of chloride analyses above 200 mg/L shall be considered “sea-salt water intrusion areas,” which are among the “sources or potential sources of contamination” listed in Washington Administrative Code (WAC) 173-160-171, implementing code for the Water Well Construction Act.

In some cases, high chloride readings may be indicative of connate seawater (i.e., relic seawater in aquifers as opposed to active seawater intrusion). When best available science or a hydrogeologic assessment demonstrates that high chloride readings in a particular area are due to connate seawater, the area in question shall *not* be considered an at risk or high risk SIPZ. (The Chimacum valley is an example of this type of area.) When the status of an area is in question, the UDC Administrator is responsible for making the determination based upon recommendation from the Department of Health and Human Services.

Geographic Information Systems (GIS) maps of designated SIPZ will be periodically updated using data from permit applications, well monitoring, and other available information.

Voluntary and Mandatory Measures: Activities to be conditioned and regulated include well drilling, subdivision approval, and issuance of building permits. General information is provided, followed by voluntary and mandatory measures specific to coastal, at risk, and high risk SIPZ.

1. *Well Drilling:* The Washington State Department of Ecology (Ecology) is responsible for regulation of well drilling under RCW 18.104. Per WAC 173-160-171, proposed wells must be sited at least 100 feet from “known or potential sources of contamination,” which include “Sea-salt water intrusion areas.” Ecology provides a procedure for applicants to obtain a variance from a regulation or regulations of Chapter 173 WAC “[w]hen strict compliance with the requirements and standards of this chapter are impractical” (WAC

173-160-106). Though certain types of wells, including the standard individual well for domestic purposes, are exempted from the need to obtain a permit from Ecology, all wells are subject to State laws and administrative code. According to WAC 173-160-106, Ecology response to a variance application is given within fourteen days.

2. *Subdivisions*: Applications for land division (UDC Section 7) *in any SIPZ* when the average net density proposed is less than five acres per dwelling unit must include specific and conclusive proof of adequate supplies of potable water through a qualifying hydrogeologic assessment (relevant components of an Aquifer Recharge Area Report per UDC 3.6.10.e) that demonstrates that the creation of new lots and corresponding use of water will not impact the subject aquifer such that water quality is degraded by seawater intrusion. All subdivisions in Jefferson County that create more than six new lots are subject to the acquisition of water rights (per State Attorney General opinion).
3. *Issuance of a building permit*: RCW 19.27.097 states,
“Each applicant for a building permit of a building necessitating potable water shall provide evidence of an adequate water supply for the intended use of the building. Evidence may be in the form of a water right permit from the department of ecology, a letter from an approved water purveyor stating the ability to provide water, or another form sufficient to verify the existence of an adequate water supply. In addition to other authorities, the county or city may impose conditions on building permits requiring connection to an existing public water system where the existing system is willing and able to provide safe and reliable potable water to the applicant with reasonable economy and efficiency.”

Evidence of potable water may be an individual well, connection to a public water system, or an alternative system such as rainwater catchment. Whatever method is selected, the regulatory and operational standards for that method must be met, including Jefferson County Health Code and Washington Administrative Code. Public water systems shall be preferred from a public health standpoint to other alternatives, such as the importation of water or an individual surface or rainwater catchment system, though those alternatives are allowable subject to appropriate and established design and operational criteria.

Public water systems are subject to Washington State Department of Health (DOH) saltwater intrusion policy and all applicable safe drinking water standards. DOH and Ecology regulate public water systems to protect against water quality degradation. The Jefferson County seawater intrusion policy therefore concentrates on water supplies that are not regulated as public water systems by DOH and Ecology. Jefferson County shall encourage DOH and Ecology to consider amending licenses and water rights for public systems in areas where there is evidence of seawater intrusion in the public water source or as a result of groundwater withdrawal such that no additional connections to or expansions of the affected systems are permitted.

All types of building permits that require proof of potable water use are subject to this policy, specifically building permits for new single-family residences (SFRs) or other structures with plumbing that are not associated with an existing SFR (i.e., shops or garages with a bathroom).

Proof of Potable Water on Existing Lots of Record

Voluntary and mandatory measures of the Jefferson County seawater intrusion policy apply to well drilling proposals and building permit applications on existing lots of record within the coastal, at risk, and high risk SIPZ in the following manner:

COASTAL SIPZ

(i.e., all islands and area within ¼ mile of marine shoreline, but no history of chloride concentration above 100 mg/L in groundwater sources within 1000 feet)

VOLUNTARY:

- Water conservation measures.
- Installation of a flow meter.
- On-going well monitoring for chloride concentration.
- Submittal of monitoring data to County.

MANDATORY:

- For proof of potable water on a building permit application, applicant must utilize DOH-approved public water system *if available*.
- If public water is unavailable, a qualifying alternative system may be used as proof of potable water or an individual well may be used as proof of potable water subject to the following requirements:
 1. Chloride concentration of a laboratory-certified well water sample submitted with building permit application.

AT RISK SIPZ

(i.e., within 1000 feet of a groundwater source showing chloride between 100 and 200 mg/L)

VOLUNTARY:

- Water conservation measures.

MANDATORY:

- For proof of potable water on a building permit application, applicant must utilize DOH-approved public water system *if available*.
- If public water is unavailable, a qualifying alternative system may be used as proof of potable water or an individual well may be used as proof of potable water subject to the following requirements:
 1. Chloride concentration of a laboratory-certified well water sample submitted with building permit application.
 2. Installation of a flow meter.
 3. On-going well monitoring for chloride concentration.
 4. Submittal of flow and chloride data to the County per monitoring program.

HIGH RISK SIPZ

(i.e., within 1000 feet of a groundwater source showing chloride concentrations above 200 mg/L)

MANDATORY:

- Water conservation measures (per list maintained by UDC Administrator).
- For proof of potable water on a building permit application, applicant must utilize DOH-approved public water system *if available* and if public water is unavailable, a qualifying alternative system may be used as proof of potable water; an individual well *may only be used* as proof of potable water subject to the following requirements:
 1. Variance from Chapter 173 WAC standards granted by Ecology per WAC 173-160-106 for a new groundwater well within 100 feet of a sea-salt water intrusion area per WAC 173-160-171 (i.e., within ~~1100~~100 feet of a groundwater source showing chloride concentrations above 200 mg/L or within 100 feet of a marine shoreline); *or* for an existing or proposed groundwater well not subject to an Ecology variance, applicant must provide evidence through a qualifying hydrogeologic assessment (relevant components of an Aquifer Recharge Area Report per UDC 3.6.10.e) of a reasonable probability that the ~~that~~-subject aquifer will ~~not~~not be degraded by the proposed use of the well.
 2. Chloride concentration of a laboratory-certified well water sample submitted with building permit application.
 3. If chloride concentration exceeds 250 mg/L in a water sample submitted for a building permit, then the property owner shall be required to record a restrictive covenant that indicates a chloride reading exceeded the U.S. Environmental Protection Agency secondary standard (250 mg/L) under the National Secondary Drinking Water Regulations.
 4. Installation of a flow meter.
 5. On-going well monitoring for chloride concentration.
 6. Submittal of flow and chloride data to the County per monitoring program.

Other Policy Elements:

- Continue County approval of qualifying rainwater catchment systems as an alternative to individual wells (Environmental Health regulations).
- Develop policies to approve the importation and storage of water in certain problem areas (Environmental Health regulations).
- Strengthen approval and monitoring requirements for public water systems to ensure that chloride testing is an element of DOH monitoring for systems which have sources located within a SIPZ (Coordinated Water System Plan—CWSP—and DOH).
- Strengthen protections of aquifer recharge areas through adoption and implementation of Ecology 2001 *Stormwater Management Manual for Western Washington*, promoting on-site infiltration of stormwater (UDC regulations; amendment anticipated 2002).
- Eliminate off-site disposal of surface or sub-surface water (stormwater tightlines and curtain drains) unless exceptional circumstances justify off-site disposal and appropriate mitigation is proposed and implemented; adjust current regulation so that affected area extends from 500 feet to ¼ mile from marine shorelines (UDC regulations).
- In order to limit well construction and protect public health, continue promotion of public water systems as preferable to individual wells and other alternative water supplies;

continue requirement for connection to existing public water systems when proposed development location is within approved public water service area boundaries.

- Continue application of Uniform Plumbing Code (UPC) requirements with regard to low-flow faucets and other mandatory water conservation measures.

Public Outreach and Education:

- Conduct education and outreach program through Washington State University (WSU) Extension; establish Memorandum of Understanding (MOU) with WSU for program.
- Encourage water conservation measures countywide; mandate water conservation measures in high risk SIPZ.
- Send letter to new Jefferson County residents/property owners regarding groundwater use and protection; implement other means of public notice, as resources allow.

Monitoring:

- Enter into MOU with Public Utility District #1 (PUD) regarding the monitoring program.
- Standardize chloride sampling in a manner that assures quality control.
- Establish other well monitoring locations, as resources allow.
- Coordinate data interpretation and application through Water Resource Inventory Area (WRIA) Planning Units operating in Jefferson County per the Watershed Planning Act.
- Seek grant funding for additional research and encourage State and Federal partners to conduct research related to the issue of seawater intrusion in Jefferson County.

Adaptive Management: *for aquifers with degrading water quality due to seawater intrusion.*

Jefferson County will rely on technical input from the PUD, WRIA Planning Units, and others, as appropriate, in annual review of well monitoring data, building permit data, and other relevant data on groundwater quality and quantity in order to determine whether water quality vis-à-vis seawater intrusion is degrading. The Department of Health and Human Services and/or the Department of Community Development will report to the BOCC annually on the status of seawater intrusion in Jefferson County. Every five years a comprehensive analysis will be conducted and report generated summarizing results.

If the Board of County Commissioners determines that actions under the Jefferson County seawater intrusion policy prove insufficient to protect groundwater in at risk and high risk SIPZ from seawater intrusion (i.e., analysis of the monitoring data for a defined area using appropriate methodology¹ shows statistically significant degradation of water quality due to seawater intrusion), Jefferson County will immediately:

1. Adopt a moratorium in the affected area on the issuance of building permits for which individual groundwater wells are proposed as proof of potable water until such time as area water quality improves or a plan is developed with the objective of improving area water quality.
2. Adopt a moratorium on subdivisions in the affected area that propose individual groundwater wells as proof of potable water until such time as area water quality improves or a plan is developed with the objective of improving area water quality.

¹ Appropriate combination of accepted scientific methodology for evaluating seawater intrusion impact, as described in Pacific Groundwater Group study (1996), Washington Administrative Code, United States Geological Survey protocol, and other contemporary examples and approaches.

BOARD OF COUNTY COMMISSIONERS

3. Establish an aquifer protection district via public vote (RCW 36.36) *or, if necessary,* petition Ecology to form a groundwater management area (per WAC 173-100).