Thurston County Community Planning

Thurston County Critical Aquifer Recharge Area Draft Guidance Comments

Comments by number, page and Section:

• P4. Section 1 – Introduction – Critical Aquifer Recharge Areas: Aquifers are 3-Dimentional. The word "Areas" may be misleading if used alone. It should be clarified to indicate that 2-Dimentional mapping of aquifers is insufficient. Significant aquifers may exist below confining layers yet still become contaminated or be depleted.

• P5. Section 1 – Introduction – Maps and performance standards: Maps should show areas of deeper aquifers providing drinking water supply or stream baseflow, where these can be damaged by piercing confining units or excavating through low-permeability soils (Types 5-7).

• P8. Section 1 – Introduction – Groundwater and other critical areas: Text should note that groundwater provides the majority of stream baseflow.

• P16. Section 2 – Basic Groundwater Concepts - Susceptibility Factors: Text should note that confining layers protect deeper supply aquifers and should not be breached.

• P18. Section 3 – Streamflow, Water Availability and Permit-Exempt Wells: Bullet list should note confining-layer mapping can assist in identifying deeper protected aquifers, and places where confining layers should not be breached.

• P32. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 1....Resources: Also valuable to note here that a wealth of valuable information on probable well locations may also be available from the local permitting authority, such as the Planning Department (property use), Health Department (septic systems) or Tax Assessor (occupancy data).

• P33. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 2: Analyze the susceptibility of the natural setting where groundwater occurs: Text should note the susceptibility of confining units to being breached by UIC wells or stormwater management facilities.

• P35. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 2: Analyze the susceptibility of the natural setting where groundwater occurs – Soil Type: Text should note the susceptibility of low-permeability soils (WAC 246-272A-0220 Soil Types 5-7) to being breached by stormwater management facilities.

• Pp 37-38 – Stormwater Infiltration (second paragraph) In recognition that not all jurisdictions, construction activity, and businesses are governed by the State's stormwater permit program, we suggest editing the second paragraph to read:
o The state has an extensive stormwater permit program that uses stormwater manuals to guide pollution prevention efforts and flow control. These manuals provide extensive guidance on

construction stormwater, industrial, and municipal stormwater best management practices and stormwater infrastructure requirements to remove contaminants from stormwater before it is released to the environment. These requirements and best management practices also apply to discharges to underground injection control wells (UIC wells) under the state Underground Injection Control (UIC) Program65 as well as to the permits issued under the state's stormwater management program.

• P37. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 3: Inventory existing and potential sources of groundwater contamination: Also valuable to note that a wealth of valuable information on contaminant sources may also be available from the local permitting authority, such as the Planning Department (property use), Health Department (septic systems) or Tax Assessor (occupancy data).

• P38. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 3: Inventory existing and potential sources of groundwater contamination - Stormwater Infiltration: Deep UIC wells are a significant risk factor for contaminant entry into a deeper drinking water supply aquifer (>20feet deep). Deep UIC wells can cut through protective overlying confining units, exposing drinking water supply aquifers to leaks, spills and stormwater. The City of Vancouver, WA recently suffered a major loss of an important drinking water supply well when UIC well(s) introduced gasoline from a tanker spill directly to the public water supply aquifer. Underground Injection Control (UIC) wells are regulated under the Federal Safe Drinking Water Act (SDWA) under which SDWA-applicable AKART technologies must be used. However, Ecology regulates UICs under the Clean Water Act (CWA) stormwater rules in its stormwater design manual, using AKART technologies not capable of meeting SDWA water quality requirements, nor of meeting Ecology's own anti-degradation requirements. The current registration process for UIC wells used by Ecology does not adequately protect drinking water aquifers by bypassing numerous protective measures cited in other parts of WAC, and does not meet SDWA AKART technology performance requirements. The text should be revised to strongly discourage or prohibit the use of deep UIC wells.

• P39. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 4: Classify the relative vulnerability of groundwater to contamination events – second bullet list: Stormwater UICs in commercial-industrial areas should be included as a risk factor to be categorized.

• P40. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 5: Designate areas that are most at risk to contamination events: CARA guidance should note the importance of designating vertically-susceptible aquifers when 2D mapping alone might not depict them.

• P40. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 6: Protect by minimizing activities and conditions that pose contamination risks: Very polluting activities could move into a facility without local regulator knowledge. For this reason and others, CARA guidance should suggest significant restrictions or an outright ban on deep UIC wells when potentially-polluting commercial or industrial activities or roadways feed them.

• P43. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 7: Ensure that contamination prevention plans and best management practices are followed: CARA

guidance should recommend that an "Assimilative Capacity" be calculated when contamination sources' proposed cumulative density rises above natural systems' ability to assimilate them (e.g. human wastes from septic systems).

• P43. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 8: Manage groundwater withdrawals and recharge: CARA guidance should note that only the Department of Ecology has the authority to regulate groundwater withdrawals under RCW Chapter 90.

• P44. Section 4 - Protecting the Functions and Values of Critical Aquifer Recharge Areas, Step 8: Manage groundwater withdrawals and recharge – Water Supply Planning: "Chemicals of Emerging Concern" such as pharmaceuticals and perflourinated (PFAS) chemicals are likely to be regulated as human health risks, and should be included in the assessment of future risks to water supplies.

• P47 – Best available science laws and rules. Suggest expanding this subsection (or create a new subsection in Section 5) to include guidance to for local jurisdictions on the development review and approval process for projects proposed within a CARA. Providing an application review checklist to aid in plan reviewers (by both health officers and building officials) that describes the minimum types of information (e.g., data, mapping, and modeling) that should be included as part of the assessment process would be helpful. While the draft guidance manual discusses the types of information in its various sections, providing a summary in the form of a checklist would help bring it all together. We recommend providing guidance on instances when jurisdictions should provide notification to potentially affected parties (e.g., water districts/utilities) as part of the development review process (e.g., proposed deep UIC well).

• P51. Section 5 – Best Available Science - Sources for Best Available Science for Critical Aquifer Recharge Areas: Also valuable to note here that a wealth of valuable information supporting Best Available Science may also be available from the local permitting authority, such as groundwater quality data, and groundwater flow and transport modeling.

• P55. Section 6 – Working with State and Federal Laws and Rules: CARA guidance should cite the Safe Drinking Water Act (SDWA in 40 CFR 141) and the regulations appurtenant to the Underground Injection Control (UIC) program.

• P 57-58 – Stormwater Pollution Prevention Regarding deep UIC wells, suggest including specific section references contained Ecology's stormwater management manuals pertaining to guidance for deep UIC wells (i.e., SMMEW Section 5.6.15; SMMWW Section I-4.15) as well as UIC prohibitions (i.e., SMMEW Section 5.6.12; SMMWW Section I-4.12). In reference to local jurisdictions may impose additional limits . . . ., it would be helpful to include examples of local limits that have been imposed along with an explanation for the basis of those limitations.
• P68 – Prohibited and Conditioned Uses. Suggest including references to the prohibitions included in Ecology's stormwater management, manuals (i.e., SMMEW Section 5.6.12; SMMWW Section I-4.12).
• P76-78 – Section 11 – Implementation Suggest elaborating on guidance for pre, during, and post-construction inspections (including ongoing inspections). Providing examples of inspection checklists to use during these inspection phases would also be helpful. Suggest including guidance for proactive mitigation planning and response procedures in the event of a well failure, accidental spill, or contamination within a CARA. Such guidance would also compliment the Manual's Section

8 – Adaptive Management.