

## Chapter 24.10

**CRITICAL AQUIFER RECHARGE AREAS****Sections:**

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- 24.10.010 Critical aquifer recharge areas – Applicability.**
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- 24.10.030 Critical aquifer recharge areas – General standards.**
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**24.10.005 Critical aquifer recharge areas – Purposes.**

The purposes of this section are to:

- A. Protect the public health and welfare by safeguarding Critical Aquifer Recharge Areas (CARA) and vital groundwater resources that serve as the county's primary potable water source. This includes avoiding or, where that is not possible, minimizing the risks of ground

water contamination from new, existing, expanded and altered land uses and activities, consistent with state water quality standards.

- B. Identify and protect aquifer recharge areas and vital groundwater resources based on their physical susceptibility to contamination, the potential for contamination from existing and allowed uses, the number of people or uses that rely on the aquifer as a potable water source, the presence of wellhead protection areas and whether there is an alternative water source.
- C. Recognize and maintain the delicate balance and connection between surface water and ground water in order to preserve essential biological, physical, and geochemical functions. This includes avoidance of saltwater intrusion, avoidance of pumping deep saline thermobaric water that could contaminate the upper aquifer(s), avoidance of groundwater withdrawals and interruptions that would diminish stream flows and temperatures sustaining anadromous fish or alter the quantity and timing of water sustaining wetlands and associated plants and wildlife.
- D. Ensure sufficient infiltration of water at the land's surface to sustain aquifers used as a potable water source, to maintain base flows in streams supporting anadromous fish, and maintain water levels in wetlands.
- E. Be consistent with RCW 36.70A.170 and 172; Public Water Systems Penalties and Compliance, chapters 70-119A RCW; Washington State Wellhead Protection Program and the Public Water Supplies, chapter 246-290 WAC; Dangerous Waste Regulations, chapter 173-303 WAC; the Water Quality Standards for Groundwater of the State of Washington, chapter 173-200 WAC; Articles III, IV, and VI of the Thurston County Sanitary Code; County adopted water resource inventory area watershed management plans; and County adopted water system plans and wellhead protection plans.

**24.10.010 Critical aquifer recharge areas – Applicability.**

This chapter applies to proposals for new development and alteration and expansion of existing uses listed in Table 24.10-1 that are located in an area defined as a critical aquifer recharge area in this title. These regulations also apply to the one, five and ten year time of travel zones of wellhead protection areas meeting the criteria in this chapter. See the map entitled "Wellhead Protection Areas." These maps shall be on file at the Thurston County Development Services Department.

- A. "Category I, extreme aquifer sensitivity" includes:
  1. Those areas which provide very rapid recharge with little protection, contain coarse soil textures and soil materials, and are derived from glacial outwash materials. The predominant soil series and types are those listed as Category I in Table 24.10-4 at the end of this chapter; and
  2. Wellhead protection areas as defined by chapter 24.03 TCC, including their one-, five-, and ten-year time of travel zones.
  3. Aquifers in subsurface geologic formations that are extremely vulnerable to contamination, as listed in Table 24.10-3 at the end of this chapter.

- B. "Category II, high aquifer sensitivity" includes:
1. Those areas which provide slightly lower recharge, also provide little protection, and contain materials from glacial deposit. The predominant soil series and types are those listed as Category II in Table 24.10-4 at the end of this chapter.
  2. Aquifers in subsurface geologic formations that are highly vulnerable to contamination, as listed in Table 24.10-3 at the end of this chapter.
- C. "Category III, moderate aquifer sensitivity" includes:
1. Those areas with aquifers present but which have a surface soil material that encourages run-off and slows water entry into the ground. The predominant soil series and types are those listed as Category III Table 24.10-4 at the end of this chapter.
  2. Aquifers in subsurface geologic formations that are moderately vulnerable to contamination, as listed in Table 24.10-3 at the end of this chapter.

**24.10.020 Critical aquifer recharge areas – Standards and restricted and prohibited uses.** Table 24.10-1 identifies the new, expanded, and altered land uses and activities that are restricted or prohibited in the CARA depicted on the Critical Aquifer Recharge Areas Map. These restricted and prohibited uses and activities are subject to the applicable standards in TCC 24.10.030-250 and all other applicable regulations. (See Article III of the Rules and Regulations of the Thurston County Board of Health Governing Water Supplies; Article IV, Rules and Regulations of the Thurston County Board of Health Governing Disposal of Sewage; and Article VI, Rules and Regulations of the Thurston County Board of Health Governing Nonpoint Pollution).

The general standards listed in TCC 24.10.030 apply to all uses in Table 24.10-1. Standards provided in TCC 24.10.040-250 apply to specific uses in CARAs, and are in addition to other requirements of this title. Table 24.10-1 contains the primary section references for each activity covered by this chapter.

**Table 24.10-1. Prohibited and Restricted Uses and Activities Within Critical Aquifer Recharge Areas**

| RESTRICTED USES AND ACTIVITIES  | AQUIFER RECHARGE AREA CATEGORY |                                    |              |    |     |
|---|--------------------------------|------------------------------------|--------------|----|-----|
|   | I                              |                                    |              | II | III |
|   | Wellhead Protection Areas      |                                    | Other CARA I |    |     |
|   | 1-year time of travel zone     | 5 and 10-year time of travel zones |              |    |     |
| Abandoned wells (Decommissioning of wells)<br>(TCC 24.10.040)   | A                              | A                                  | A            | A  | A   |
| Asphalt plants/cement and concrete plants<br>(TCC 24.10.070)  | X                              | X                                  | X            | P  | P   |
| Boat refinishing  | P                              | P                                  | P            | P  | P   |
| Cemeteries<br>(TCC 24.10.090)   | X                              | P                                  | P            | P  | P   |
| Chemical manufacturing/processing, mixing and remanufacturing<br>(TCC 24.10.100)  | X                              | X                                  | X            | P  | P   |
| Chemical storage facilities (not including fuel)<br>(TCC 24.10.100)   | X                              | P                                  | P            | P  | P   |
| Chemical/hazardous waste reprocessing and disposal<br>(TCC 24.10.100; 140)  | X                              | X                                  | X            | X  | X   |
| Commercial uses that do not use hazardous materials or generate hazardous waste   | P                              | P                                  | P            | P  | P   |
| Commercial uses that use or generate less than 220 pounds of hazardous waste or materials per month as described in WAC 173-303; including but not limited to; furniture staining, furniture stripping, repair, and refinishing; hardware, lumber, and parts stores; medical/dental/veterinary offices; photo processing/printing; printing and publishing<br>(TCC 24.10.100) | X/P                            | P                                  | P            | P  | P   |

## LEGEND

A = Allowed without a Critical Area Permit, subject to requirements of this title  
P = Permitted, subject to Critical Area Permit and requirements of this title  
X = Prohibited  
X/P = As determined by the approval authority, small scale uses or those using nonhazardous materials may be permitted when the quantity, nature of materials processed and mitigation methods are determined to contain no significant risk to groundwater

| TABLE 24.10-1 (CONT.)<br><br>RESTRICTED USES AND ACTIVITIES   | AQUIFER RECHARGE AREA CATEGORY |                                    |              |    |     |
|---|--------------------------------|------------------------------------|--------------|----|-----|
|   | I                              |                                    |              | II | III |
|   | Wellhead Protection Areas      |                                    | Other CARA I |    |     |
|   | 1-year time of travel zone     | 5 and 10-year time of travel zones |              |    |     |
| Commercial uses that use or generate more than 220 pounds of hazardous waste or materials per month as described in WAC 173-303; including but not limited to; furniture staining, furniture stripping, repair, and refinishing; hardware, lumber, and parts stores; medical/dental/veterinary offices; photo processing/printing; printing and publishing<br>(TCC 24.10.100) | X                              | X                                  | X            | P  | P   |
| Composting facilities, except home composting<br>(TCC 24.10.103)  | X                              | P                                  | P            | P  | P   |
| Dry cleaner facilities<br>(TCC24.10.105)  | X                              | X                                  | X            | P  | P   |
| Electroplating, metal plating<br>(TCC 24.10.145)  | X                              | X                                  | X            | P  | P   |
| Fuel dispensing, including gas stations<br>(TCC 24.10.110)  | X                              | P                                  | P            | P  | P   |
| Funeral facilities (except crematory facilities)<br>(TCC 24.10.100)   | X                              | X                                  | X            | P  | P   |
| Golf courses, parks, athletic fields, playgrounds<br>Campgrounds/RV Parks/landscaping more than one acre<br>(TCC 24.10.130)   | P                              | P                                  | P            | P  | P   |
| Greenhouse – commercial/Nursery – wholesale/retail<br>(TCC 24.10.135)   | X                              | P                                  | P            | P  | P   |
| (New) hazardous waste transfer and storage facilities including radioactive wastes as defined in Chapter 43.200 RCW<br>(TCC 24.10.100; 140)   | X                              | X                                  | X            | P  | P   |

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|--|--------------------------------|------------------------------------|--------------|----|-----|
|  | I                              |                                    |              | II | III |
|  | Wellhead Protection Areas      |                                    | Other CARA I |    |     |
|  | 1-year time of travel zone     | 5 and 10 year time of travel zones |              |    |     |
| Industrial uses that do not use hazardous materials or generate hazardous waste<br>(TCC 24.10.100)   | P                              | P                                  | P            | P  | P   |
| Industrial uses – other, including but not limited to battery processing, reprocessing, and storage, food processing facilities, tanning, textile dyeing, wood/pulp/paper processing, and metal finishing which generate less than 220 pounds of hazardous waste per month as described in WAC 173-303<br>(TCC 24.10.100)  | X                              | P                                  | P            | P  | P   |
| Industrial uses – other, including but not limited to battery processing, reprocessing, and storage, food processing facilities, tanning, textile dyeing, wood/pulp/paper processing, and metal finishing which generate more than 220 pounds of hazardous waste per month as described in WAC 173-303<br>(TCC 24.10.100)  | X                              | X                                  | X            | P  | P   |
| Infiltration of reclaimed water (application to the land's surface above agronomic rates)<br>*Critical area regulations will be proposed when more information is available to Thurston County from the Regional Groundwater Recharge Scientific Study, and using other studies and information for reclaimed water following the requirements of the Growth Management Act (chapter 36.70A RCW).<br><br>(TCC 24.10.190) | X*                             | X*                                 | X*           | X* | X*  |
| Injection wells-Class II (chapter 173-218 WAC)   | X                              | X                                  | X            | X  | X   |
| Kennels –with more than 10 animals<br>(TCC 24.10.100)  | P                              | P                                  | P            | P  | P   |
| Land spreading irrigation with reclaimed water at agronomic rates<br>(TCC 24.10.190)   | A                              | A                                  | A            | A  | A   |

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|---|--------------------------------|------------------------------------|--------------|----|-----|
|   | I                              |                                    |              | II | III |
|   | Wellhead Protection Areas      |                                    | Other CARA I |    |     |
|   | 1-year time of travel zone     | 5 and 10 year time of travel zones |              |    |     |
| Landfill—demolition (inert), municipal sanitary waste, solid waste, wood waste, hazardous waste<br>(TCC 24.10.100)                      | X                              | X                                  | X            | X  | X   |
| Machine shops, fabricating, metal processing with etchers and chemicals<br>(TCC 24.10.100)  | X                              | P                                  | P            | P  | P   |
| Maintenance/fueling facilities – municipal, county, state, school district, transit, airports, railroads, buses<br>(TCC 24.10.110, 230) | X                              | P                                  | P            | P  | P   |
| Manufacturing-electrical/electronic<br>(TCC 24.10.100)  | X                              | P                                  | P            | P  | P   |
| Mining-coal and minerals  | X                              | P                                  | P            | P  | P   |
| Mining—gravel and sand<br>(TCC 24.10.150)   | X                              | X                                  | P            | P  | P   |
| Pesticide/fertilizer storage facilities<br>(TCC 24.10.100; 140)   | X                              | P                                  | P            | P  | P   |
| Petroleum products refining and reprocessing<br>(TCC 24.10.100)   | X                              | X                                  | X            | P  | P   |
| Pier foundations<br>(TCC 24.10.170)   | P                              | P                                  | P            | P  | P   |
| Pipelines- liquid petroleum products or other hazardous liquid transmission<br>(TCC 24.10.180)  | X                              | P                                  | P            | P  | P   |
| Railroad yards-cargo transfer areas<br>(TCC 24.10.100)  | X                              | P                                  | P            | P  | P   |
| Research laboratories/facilities-chemical or biological<br>(TCC 24.10.100)  | X                              | P                                  | P            | P  | P   |
| Residential use/subdivisions, short plats, and large lots<br>(TCC 24.10.195)  | P                              | P                                  | P            | P  | P   |

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|--|--------------------------------|------------------------------------|--------------|----|-----|
|  | I                              |                                    |              | II | III |
|  | Wellhead Protection Areas      |                                    | Other CARA I |    |     |
|  | 1-year time of travel zone     | 5 and 10 year time of travel zones |              |    |     |
| Sawmills<br>(TCC 24.10.200)  | P                              | P                                  | P            | P  | P   |
| Sewage disposal-onsite<br>(TCC 24.10.160)  | P                              | P                                  | P            | P  | P   |
| Sewage disposal, large onsite (LOSS chapter 246-272B WAC)  | X                              | P                                  | P            | P  | P   |
| Sewage lift stations<br>(TCC 24.10.100)  | X                              | P                                  | P            | P  | P   |
| Solid waste processing/handling/transferring/recycling<br>(TCC 24.10.205)                              | X                              | P                                  | P            | P  | P   |
| Storage tanks-above ground (hazardous materials)<br>(TCC 24.10.050)                                    | X                              | P                                  | P            | P  | P   |
| Storage tanks-underground (hazardous materials)<br>(TCC 24.10.220)                                     | X                              | P                                  | P            | P  | P   |
| Storage tanks, residential (e.g. propane and oil tanks not to exceed 1,100 gallons)<br>(TCC 24.10.195) | P                              | P                                  | P            | P  | P   |
| Stormwater facilities/discharges, not including injection wells<br>(TCC 24.10.210)                     | P                              | P                                  | P            | P  | P   |
| Taxidermy<br>(TCC 24.10.100)   | P                              | P                                  | P            | P  | P   |
| Unattended gas powered portable generators<br>(TCC 24.10.120)  | P                              | P                                  | P            | P  | P   |
| Utility substations<br>(TCC 24.10.100)   | P                              | P                                  | P            | P  | P   |
| Vehicle wrecking/junk/scrap/salvage yards<br>(TCC 24.10.240)   | X                              | P                                  | P            | P  | P   |

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|---|--------------------------------|------------------------------------|--------------|----|-----|
|   | I                              |                                    |              | II | III |
|   | Wellhead Protection Areas      |                                    | Other CARA I |    |     |
|   | 1-year time of travel zone     | 5 and 10 year time of travel zones |              |    |     |
| Vehicle and boat repair/service garages/body shops<br>(TCC 24.10.230)   | X                              | P                                  | P            | P  | P   |
| Wastewater treatment or reuse facilities/recycling satellite plant, not including injection/infiltration of reclaimed water<br>(TCC 24.10.100)  | X                              | P                                  | P            | P  | P   |
| Wood and wood products preserving/treating<br>(TCC 24.10.250)   | X                              | X                                  | X            | X  | X   |
| All other activities involving the use and handling of hazardous materials or generating hazardous materials by their activities or actions in quantities exceeding the thresholds listed in TCC 24.10.140. | X                              | X                                  | X            | P  | P   |
| Other new and existing uses identified by the County as posing a risk to ground water quality   | P                              | P                                  | P            | P  | P   |

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**24.10.030 Critical aquifer recharge areas – General standards.**

The following requirements apply, as applicable, to all uses and activities in Table 24.10-1 that are not prohibited.

- A. Differences in regulations because of the overlap of two or more Critical Areas are governed by chapter 24.01 TCC.
- B. The approval authority, in consultation with a qualified hydrogeologist, shall evaluate hydrogeological reports required pursuant to this chapter to determine the proposed project's potential impacts to ground water and surface water. This evaluation shall include, if applicable, evaluation of the project's potential impact on base flows of streams regulated under chapter 24.25 TCC, and the quantity and timing of ground water flows sustaining wetlands regulated under chapter 24.30 TCC.
- C. The uses and activities listed in Table 24.10-1 shall not be allowed in a CARA if the approval authority determines, in consultation with others having expertise or jurisdiction, that the proposed use poses a risk to ground water quality, consistent with the provisions of this chapter.
- D. Best management practices. If warranted to protect ground water, the approval authority shall require applicants for new, expanded and altered uses listed in Table 24.10-1 that require a County permit to use best management practices (BMPs), including all known, available, reasonable treatments, to ensure the highest degree of aquifer protection. In this case, the applicant shall submit a report identifying the appropriate BMPs and describing how they will be employed to prevent degradation of ground water quality. The report shall be prepared by or under the direction of a qualified person with demonstrated expertise in the industry or field. The report shall include all necessary technical data, drawings, calculations, and other information to describe the proposed application of BMPs. If necessary, the approval authority will review the report with technical experts at the applicant's expense.
- E. Mitigation of impacts.
  - 1. The approval authority may condition the approval of a proposed use or activity if it is determined to be warranted in order to protect ground water quality, maintain stream flows and temperatures sufficient to sustain anadromous and native fish, and maintain the volume and timing of ground water flows sustaining wetlands and dependent plants and wildlife (see chapters 24.25 and 24.30 TCC).
  - 2. The approval authority may deny proposed wells or require mitigative measures (e.g., methods of prevention and control) for any use as necessary to preserve adequate ground water quality and quantity for existing users of the aquifer that do not have an alternative water source, particularly in areas subject to saltwater intrusion. This subsection shall not affect any right to use or appropriate water under state or federal law.
- F. New uses in Category I CARA. Applicants for uses proposed to be located within a Category I CARA that involve use, storage, handling or disposal of hazardous materials in excess of the quantity thresholds listed in TCC 24.10.140 shall submit to the County a BMP report,

consistent with subsection D above, documenting that BMPs will be used to prevent ground water degradation.

The approval authority, in consultation with the water purveyor serving the area and, if necessary, a third party consultant at the applicant's expense, will review the report to determine whether the proposed activity can be conducted without degrading the water quality of the affected aquifer. The County shall provide the applicant with a cost estimate and obtain their approval prior to consulting with the third party consultant. The application shall be closed if the applicant chooses not to bear the cost of the evaluation. The approval authority may approve, condition, or deny the project as they deem warranted in order to ensure adequate ground water protection. The applicant shall implement the approved report.

- G. Existing uses in Category I CARA. The approval authority may require the owner of any existing use within a Category I CARA which involves the use, storage, handling or disposal of hazardous materials above the minimum quantity thresholds listed in TCC 24.10.140 to submit a hazardous materials management plan (see TCC 24.35.045) that will ensure adequate protection of ground water. The approval authority, in consultation with the appropriate water purveyor and, if warranted, others with expertise, shall review this plan and determine whether to approve the plan as proposed or approve it subject to conditions in order to ensure adequate ground water protection.
- H. Decommissioning underground tanks. Underground storage tanks storing hazardous materials in the one-year time of travel zone for Category I CARA that do not meet current state and County standards (see chapter 173-360 WAC, chapter 14.32 TCC, International Fire Code, and TCC 24.10.220) shall be decommissioned or removed consistent with applicable regulations within one year of being notified by the approval authority, unless specified otherwise.
- I. Expansion of prohibited uses in CARAs.
  - 1. Uses prohibited by Table 24.10-1 in Category I-III CARA shall not be expanded unless the applicant demonstrates that all equipment/facilities involving hazardous materials will be brought into compliance with current standards and therefore pose less risk of ground water contamination than the existing use.
  - 2. Applicants for any proposed expansion of an existing use in Category I CARA that is listed as an allowable use in Table 24.10-1 under Category I which uses, stores, handles or disposes of hazardous materials above the minimum quantities referenced in TCC 24.10.140 shall submit a BMP report, consistent with subsection D above, for County review and approval, and a Hazardous Materials Management Plan consistent with TCC 24.35.045. The approval authority will review the submitted materials and determine whether the proposed expansion shall be approved, denied, or approved with conditions as necessary to ensure adequate ground water protection.
- J. A development proposal will be considered unacceptable if a hydrogeological report indicates that a ground water maximum contaminant level will be violated due to proposed development.

- K. A development proposal will be considered unacceptable if a hydrogeological report concludes that it will reduce the assimilative capacity of the aquifer by more than 10 percent for a contaminant of concern.
- L. Known spills, leakage, or other release of hazardous materials shall be remediated as determined by the approval authority. Unless otherwise specified, remediation activities shall begin within ninety (90) days of discovery of release.

**24.10.040 Critical aquifer recharge areas – Abandoned wells.**

Wells that cease to be used as a water source or are used, unmaintained, or in such disrepair as to be unusable shall be decommissioned, consistent with WAC 173-160 and Article III of the Rules and Regulations of the Thurston County Board of Health Governing Water Supplies, to prevent ground water contamination and remove any public safety hazards.

**24.10.050 Critical aquifer recharge areas – Above ground tanks and distribution systems.**

Above ground tanks and associated distribution systems for the storage or conveyance of hazardous materials, sewage sludge, fertilizers, or other chemical or biological substances defined as hazardous or dangerous waste in chapter 173-303 WAC are subject to the following:

- A. Compliance with state and county requirements. New above ground tanks and distribution systems must comply with chapters 173-303 WAC and 173-360 WAC, chapter 14.32 TCC, International Fire Code, and Article VI of the Rules and Regulations of the Thurston County Board of Health Governing Nonpoint Source Pollution.
- B. Secondary containment. New above ground tanks and distribution systems that will contain a hazardous material shall either be double walled or have a separate, impervious secondary containment system constructed around and under the tank/distribution system. The containment system shall be covered or otherwise designed so it does not collect precipitation or stormwater runoff. Secondary containment systems shall be sized to hold at least 110% of the largest tank's capacity and shall be designed and constructed with materials that are compatible with the substance to be stored in the tank.
- C. Leak detection. Leak detection devices shall be required for all double walled tanks and, when possible, for other tanks.
- D. Waiver. The approval authority may grant a waiver from one or more of the above requirements upon finding that the proposed above ground storage facility would not create a risk to ground water quality.
- E. Residential above ground storage tanks and vaults are regulated by the International Fire Code.

**24.10.070 Critical aquifer recharge areas – Asphalt plants/concrete plants.**

- A. Applicants for asphalt plants or concrete plants shall submit, in addition to other material required by this chapter, the following: the location of wells and wellhead protection areas within one mile down gradient of the proposed site or the two day time of travel, if known, whichever is greater; and a characterization of the proposed activity including a description of the industrial process, storage of materials, and discharge of water.

- B. All process water from production, pouring, and equipment cleaning activities shall be discharged to a sump or a recycling system. Process water treatment or materials shall use the least toxic products and raw materials available.
- C. The applicant shall submit a hazardous waste management plan consistent with TCC 24.35.045.
- D. The approval authority may require monitoring wells to the extent necessary to determine if pollution associated with the permitted activity is occurring, periodic monitoring, and remedial action if the monitoring reveals that ground water contamination is occurring. Also see chapter 24.70 TCC regarding sureties.

**24.10.080 Critical aquifer recharge areas – Biosolid application.**

Biosolid application and uses shall be regulated by the Washington Department of Ecology and meet all applicable federal and state standards, including chapter 173-308 WAC; and the memorandum of understanding, or similar document, between Thurston County and the Washington Department of Ecology in regard to biosolids and critical areas.

**24.10.090 Critical aquifer recharge areas – Cemeteries.**

Applicants for a cemetery shall submit a hydrogeological report evaluating the risk the proposed cemetery poses to groundwater and surface water. The approval authority may condition the project as necessary to protect ground water quality. The approval authority shall deny the proposed cemetery if it is determined that it would likely contaminate potable ground water supplies.

**24.10.100 Critical aquifer recharge areas – Commercial and industrial uses – General standards.**

Commercial and industrial uses and activities are allowed in CARAs as specified in Table 24.10-1, subject to Article VI of the Thurston County Sanitary Code, as amended, and the following standards, as applicable:

- A. Where floor drains are allowed, any floor drains in areas where hazardous materials are used, stored or otherwise present shall have a removable lip or barrier that will prevent spilled hazardous material from entering the drain, consistent with chapter 14.28 TCC, Uniform Plumbing Code. The approval authority may require that a sump or other device be used to ensure that hazardous material does not drain to the soil, sewage disposal system, or a water body.
- B. Areas where hazardous materials are used or stored shall not drain to the soil, a stormwater system, water body, or a sewage disposal system. The approval authority may require that a sump or other device, as appropriate to address the contaminants of concern, be used to ensure protection of ground water quality.
- C. All vehicle and equipment washing must be done in a self contained area (e.g., with recycling system) designed to ensure that hazardous materials do not reach the soil, a water body or a sewage disposal system. This does not apply to discharges to a sewer that were approved by the sewer utility, consistent with chapter 14.28 TCC. Water used in wash down areas shall be treated to remove contaminants prior to discharge. (See chapter 173-216 WAC and the BMPs for Vehicle and Equipment Discharges, Department of Ecology WQR 95-56, as amended).

- D. An integrated pest management plan shall be drafted to be consistent with the integrated pest management policies approved by the Health Officer. The plan shall be implemented upon approval by the Department. The County may periodically verify compliance with the approved plan.
- E. All new commercial and industrial land uses that involve the use, handling, storage, disposal, or transportation of hazardous materials or dangerous/extremely dangerous wastes, as defined in chapter 173-303 WAC, shall be required to prevent contact between the aforementioned materials and stormwater. This may not apply to materials applied in an outdoor setting as part of an approved activity's landscaping maintenance plan. This includes, but is not limited to, gas stations, fuel distributors, car/truck washes, trucking companies, asphalt plants and paint shops. The generation of hazardous materials or dangerous waste is separated into two categories:
1. A small quantity generator can generate up to 220 pounds of dangerous waste, or up to 2.2 pounds of certain pesticides or poisons, each month. Small quantity generators can accumulate up to 2,200 pounds of dangerous waste, or 2.2 pounds of certain pesticides or poisons, at their site before sending the waste off-site for proper disposal or recycling.
  2. Businesses that generate more than 220 pounds of hazardous wastes during any month must comply with the Washington State Dangerous Waste Regulations, Chapter 173-303 WAC.
- F. The applicant shall demonstrate that the proposed use or activity will not cause degradation of ground water quality exceeding the standards described in chapter 173-200 WAC (Water Quality Standards of the State of Washington) and comply with all other applicable local, state, and federal regulations.
- G. The approval authority may require that the applicant install monitoring wells, to the extent necessary to determine if pollution is occurring, periodic monitoring at specified intervals, and remedial action if the monitoring reveals that ground water contamination is occurring. (See chapter 24.70 TCC regarding surety.)
- H. The approval authority may require additional protective measures if necessary to protect surface and ground water quality, including but not limited to BMPs, devices or methods to provide a high level of nutrient removal from stormwater, consistent with the Drainage Design and Erosion Control Manual for Thurston County, as amended (chapter 15.05 TCC).

**24.10.103 Critical aquifer recharge areas – Composting facilities.**

- A. Composting shall be conducted in compliance with WAC 173-350-220, when applicable, and the requirements of Article V of the Thurston County Sanitary Code. Composting facilities required to obtain a permit from the health officer shall establish financial assurance in accordance with Article V, section 9 of the Thurston County Sanitary Code.
- B. Home composting shall be exempt from the requirements of this title and Article V of the Thurston County Sanitary Code if conducted in a manner such that there is no evidence of vectors that affect neighboring property.

- C. Composting facilities shall adhere to standards established in chapter 20.54 TCC for composting facilities, and TCC 24.10.100, where applicable.

**24.10.105 Critical aquifer recharge areas – Dry cleaner facilities.**

When permitted by the approval authority, dry cleaner facilities shall be consistent with standards established in TCC 24.10.100 and 24.10.140 and shall follow best management practices and control technologies for pollution prevention as described by the Washington State Department of Ecology, the U.S. Environmental Protection Agency, or as otherwise required by state or federal law.

**24.10.110 Critical aquifer recharge areas – Fuel dispensing.**

Sites where fuel is dispensed shall be designed to contain fuel spills on site without contaminating stormwater systems, sewage disposal systems, soil or water. This can be accomplished, for example, by installing a roof structure that shields the fueling area from precipitation and sloping the area surrounding the fuel pumps toward a sump with capacity for at least 100 gallons of fuel or by surrounding the covered fueling area with a shallow curb that provides capacity for at least 100 gallons of fuel. The storage capacity for the containment method may be adjusted by the approval authority, depending on the scale of the fuel dispensing facility.

**24.10.120 Critical aquifer recharge areas – (Unattended) Gasoline and diesel powered generators.**

Gasoline and diesel powered backup generators in a CARA shall be placed in a secondary containment device, consistent with TCC 24.10.050(B), such that a fuel spill or leak will not reach the soil or a water body unless the site where the generator will be operated contains a full time residence or is occupied a minimum of eight hours per day, five days a week by trained employees associated with the facility.

**24.10.130 Critical aquifer recharge areas – Golf courses, parks, playgrounds, athletic fields, and landscaped areas exceeding one acre in size.**

Fertilizer, herbicide and pesticide management practices for golf courses, parks, playgrounds, athletic fields and other public facilities and institutions with landscaped areas exceeding one acre in size shall comply with integrated pest management standards established in TCC 24.10.100.

**24.10.135 Critical aquifer recharge areas – Greenhouse/Nursery.**

Wholesale and retail greenhouses and nurseries (excluding facilities defined as agricultural activities in chapter 17.15 TCC) shall comply with integrated pest management standards established in TCC 24.10.100. Any fertilizers shall be applied at an agronomic rate in accordance with the timing and amount of crop demand for nitrate, unless the approval authority determines that a lower rate of application is appropriate to protect surface and groundwater quality.

**24.10.140 Critical aquifer recharge areas – Hazardous materials.**

- A. Hazardous materials shall be used, handled, stored, and disposed of in accordance with the standards contained in this section, chapter 14.32 TCC, International Fire Code, Article VI of the Thurston County Sanitary Code, and applicable state law (see RCW 70.105, chapter 173-303 WAC).
- B. Operators of new and existing uses and activities that involve the use, handling, storage or generation of hazardous materials exceeding thresholds specified in the International Fire

Code (2009), as amended, shall submit for County review and approval a hazardous materials management plan that demonstrates that the use or activity will not have an adverse impact on ground water quality. Notwithstanding the requirements of the International Fire Code, if the approval authority determines that the proposed use or activity poses a risk to ground water, they shall require submission of a hazardous materials management plan to protect ground water quality. Approved hazardous materials management plans shall be implemented. Hazardous materials management plans shall include, at a minimum, the information listed in TCC 24.35.045.

- C. Persons that possess liquid, soluble, or leachable hazardous materials shall contain such materials and the entire distribution system in a secondary containment device or system that will effectively prevent discharge on-site. Secondary containment may be achieved in a variety of ways, including, but not limited to, use of sloping floors that provide capacity to contain spills or installation of a curb around the perimeter of the structure. (See Article VI of the Thurston County Sanitary Code, the Rules and Regulations Governing Nonpoint Source Pollution. Also see chapters 15.54 and 17.21 RCW regarding pesticide storage. Refer to chapter 14.32 TCC, International Fire Code, regarding seismic standards).

**24.10.145 Critical aquifer recharge areas – Metal plating.**

When permitted by the approval authority, metal plating operations shall be consistent with standards established in TCC 24.10.100 and 24.10.140 and shall follow best management practices and control technologies for pollution prevention as described by the Washington State Department of Ecology, the U.S. Environmental Protection Agency, or as otherwise required by state or federal law.

**24.10.150 Critical aquifer recharge areas – Mineral extraction – Gravel and sand.**

See chapter 17.20 TCC and title 332 WAC.

- A. In addition to other stormwater mitigation requirements, stormwater from the portion of the site where hazardous materials are stored and/or where fueling of equipment occurs shall be directed away from the pit.
- B. Gravel mining shall not occur in locations where the approval authority determines, based on a hydrogeologic report, that proposed mining would likely diminish the volume of water in springs or shallow wells such that it would no longer meet the needs of dependent users, or influence water's quality, quantity, temperature, or turbidity such that it would no longer be suitable for drinking. As an alternative to project denial, the applicant may, with the consent of the affected property owner, mitigate such impacts by providing the affected residents with a deeper well or a connection to an alternative water system. Also see chapter 17.20 TCC.
- C. Mines shall be prohibited in areas with existing contamination that, if it were disturbed or exposed, could impair water quality, including water temperature, unless the applicant demonstrates that the proposed mining operation would be conducted in a manner that would not jeopardize ground and surface water quality. The approval authority may require a hydrogeologic report and soil testing and down gradient water testing for suspected toxic chemicals on the site.
- D. Fueling. See TCC 17.20.050.

- E. Monitoring. See TCC 17.20.160(B).
- F. Mining is not allowed in the one-, five- and ten-year time of travel zone of wellhead protection areas. In CARA I, II and III soils, the mine operator shall maintain a buffer of unsaturated material five feet in depth between the bottom of the pit and the seasonal high groundwater table. The approval authority may adjust the depth of the buffer based a hydrogeologic report as warranted to protect ground water quality.
- G. Redevelopment. The approval authority shall give protection of ground water the highest priority when considering proposed land uses at former gravel mine sites. The approval authority shall require, at the time of mine approval, that a note be filed with the title of the subject property indicating that use of the property subsequent to mine closure will be limited as the County determines necessary to protect ground water quality, consistent with the provisions of this section. In addition, gates and fencing shall be required at mine access points along public and private roads to prevent dumping.

**24.10.160 Critical aquifer recharge areas – Onsite sewage disposal.**

Onsite sewage disposal systems may be allowed subject to compliance with applicable County and state regulations (See Article IV of the Thurston County Sanitary Code; chapters 246-272A and 246-272B WAC (large on-site sewage systems), the On-Site Sewage Regulations of the Washington State Board of Health; and chapter 173-200 WAC, the Water Quality Standards for Ground water of the State of Washington) and the following:

- A. Applicants for large on-site sewage systems, or sewage disposal facilities with capacity for more than 3,500 gallons shall submit a hydrogeologic report demonstrating that the system will not degrade ground water quality, consistent with this section. The project must comply with the Health Department’s current Assimilative Capacity Policy, and in no case shall the project increase the nitrate concentration in the aquifer by more than ten percent (10%) above existing conditions. The approval authority shall condition or deny the project as necessary to maintain ground water quality.
- B. Nitrate levels at the applicable monitoring well or down-gradient property line of proposed subdivisions, short subdivisions, or binding site plans in a Category I CARA and areas identified as having elevated nitrate levels on the map entitled Known Area of Soil or Groundwater Concern, dated April 2004, as amended, shall conform with the current adopted Thurston County Health Department Assimilative Capacity Policy, as amended. A hydrogeological report may be required as determined by the director. The report must be prepared by a licensed hydrogeologist.
- C. Lots less than one acre in size shall not be created by subdivisions, short subdivisions, or binding site plans if they would use on-site sewage disposal systems in a Category I CARA, regardless of the proposed source of potable water, unless the applicant demonstrates, consistent with Article IV of the Thurston County Sanitary Code, that due to the proposed system design, vertical separation from ground water, and the existing soils, ground water quality will not be degraded. (Also see Article IV of the Thurston County Sanitary Code, section 22, and Areas of Special Concern).
- D. Monitoring. See Article IV of the Thurston County Sanitary Code.

- E. Hydrogeologic reports shall be required pursuant to Table 24.10-2 below. The report shall be prepared by a licensed hydrogeologist.
- F. The Washington State Department of Health is the permit authority for larger on-site sewage systems (LOSS) through chapter 246-272B WAC.

**Table 24.10-2. Report Requirements For Subdivisions, Short Subdivisions, Multifamily Residential And Nonresidential Projects Proposed To Use On-Site Sewage Disposal**

| Dwelling Unit Density and Volume Equivalent*  | Report Requirements by Aquifer Category |     |     |
|---|---|-----|-----|
|   | I                                       | II  | III |
| One Unit or Less per 5.0 Acres  | N/A                                     | N/A | N/A |
| One Unit per Acre to One Unit per 5.0 Acres   | HWD                                     | HWD | HWD |
| One to Two Units Per Acre   | H                                       | H   | H   |
| 2.0 Units per Acre or More  | H                                       | H   | H   |
| 3.5 Units per Acre, or more than 1,575 Gallons per Day of Sewage                    | X                                       | X   | X   |
| Large On-Site Sewage Systems (LOSS) with capacity for 3,500 gallons or more per day | H                                       | H   | H   |

\* Hydrogeologic reports are required for new/expanding development that create more than two new lots or generate/add 1,000 gallons of sewage per day or more.

| Legend |   |
|--------|---|
| X=     | Prohibited  |
| H =    | Hydrogeological report required   |
| HWD =  | Hydrogeological report required in areas of known water quality degradation |
| **     |   |

**24.10.170 Critical aquifer recharge areas – Pier foundations.**

Pier foundations that would extend more than twenty feet below the ground's surface that are proposed to be located within two-hundred feet of a well in a CARA shall be subject to review and approval by the approval authority. In the event the approval authority determines that the proposed foundation will pose a risk to the affected well's water quality, they may require that the proposed foundation be relocated, replaced with a shallow mat foundation, if feasible, or require other mitigation measures.

**24.10.180 Critical aquifer recharge areas – Pipelines.**

Applicants for pipelines that carry oil, gas, diesel, kerosene or any other liquid hazardous material shall identify spill prevention measures and submit a spill response plan that prioritizes response based on the susceptibility of the aquifer to contamination and its importance as a potable water supply, consistent with federal and state law. The approval authority shall require mitigative measures as necessary to minimize the risk of ground water contamination.

**24.10.190 Critical aquifer recharge areas – Reclaimed water.**

- A. Irrigation with Class A reclaimed water at agronomic rates is permitted in all CARAs, subject to TCC 24.10.030 .
- B. Infiltration of reclaimed water (application to the land’s surface above agronomic rates) Critical area regulations will be proposed when more information is available to Thurston County from the Regional Groundwater Recharge Scientific Study, and using other studies and information for reclaimed water following the requirements of the Growth Management Act (chapter 36.70A RCW).

**24.10.195 Critical aquifer recharge areas – Residential uses – General.**

Residential and appurtenant structures, and typical residential-scale activities are allowed subject to applicable sections of the Thurston County Code and Thurston County Sanitary Code. Onsite septic systems, including those associated with residential uses, are addressed in TCC 24.10.160.

**24.10.200 Critical aquifer recharge areas – Sawmills.**

See chapters 173-303 and 173-350 WAC and the best management practices to Prevent Stormwater Pollution at Log Yards, Washington Department of Ecology 95-53, as amended.

**24.10.205 Critical aquifer recharge areas – Solid waste.**

The processing, handling, transferring, and recycling of solid waste shall be consistent with applicable provisions of chapter 173-350 WAC, Article V of the Thurston County Sanitary Code, TCC 24.10.100, and other applicable provisions of the Thurston County Code.

**24.10.210 Critical aquifer recharge areas – Stormwater.**

See 24.10.100(F) TCC regarding stormwater management for commercial and industrial sites. Also see the Drainage Design and Erosion Control Manual for Thurston County, as amended (chapter 15.05 TCC), the Northern Thurston County Ground water Management Plan (1991), the Illicit Discharge Detection and Elimination Ordinance (chapter 15.07 TCC), and Article VI of the Thurston County Sanitary Code.

**24.10.220 Critical aquifer recharge areas – Underground storage tanks and vaults.**

- A. Residential underground storage tanks and vaults are regulated by the International Fire Code.
- B. Underground tanks and vaults for the storage of hazardous materials, fertilizers, or hazardous/dangerous waste, as defined in chapter 173-303 WAC, are allowed in a CARA only if they are designed and constructed consistent with state regulations (see chapter 173-360 WAC), chapter 14.32 TCC, International Fire Code, and Article VI, Rules and Regulations of the Thurston County Board of Health Governing Nonpoint Source Pollution, so as to:
  1. Prevent releases to the ground, ground water, and surface water due to corrosion, structural failure, or seismic activity for the operational life of the tank or vault. (See chapter 14.32 TCC, International Fire Code);
  2. Be protected against corrosion, constructed of non-corrosive material, or steel clad with a noncorrosive material, or contained in a secondary containment system to prevent the release of any stored substance;

3. Be composed of or lined with material that is compatible with the substance to be stored;
  4. Prevent releases to the ground, ground water, and surface water due to spillage. The opening for filling the tank shall be surrounded with impermeable material designed and sized to prevent spilled hazardous material from reaching the soil, groundwater, or surface water; and
  5. Provide for leak detection meeting state standards.
- C. The applicant shall submit design and as built drawings of the facilities and keep records of required testing consistent with state law.

**24.10.230 Critical aquifer recharge areas – Vehicle repair and servicing/body shops.**

- A. Vehicle repair/servicing shall be performed over an impermeable surface under cover from the weather.
- B. Dry wells shall not be permitted in conjunction with such uses.
- C. Use and storage of hazardous materials shall be consistent with standards established in TCC 24.10.100 and Article V of the Thurston County Sanitary Code.
- D. The approval authority shall require that new hydraulic hoists be located in a vault to ensure that any leaks from such equipment are contained.

**24.10.240 Critical aquifer recharge areas – Vehicle wrecking yards.**

- A. Vehicle wrecking yards shall conduct operations consistent with TCC 24.10.100.
- B. The approval authority may require submission and implementation of a monitoring program to ensure that the operation is in compliance with Article VI of the Thurston County Sanitary Code and any other conditions of County approval.
- C. The approval authority may require monitoring wells, to the extent necessary to determine if pollution is occurring, periodic monitoring, and remedial action if the monitoring reveals that ground water contamination is occurring.

**24.10.250 Critical aquifer recharge areas – Wood products preserving and treating.**

Wood products preserving and treating shall comply with TCC 24.10.100 and 24.10.140, and the following:

- A. Wood products preserving, treating, drying, and storage shall be conducted on an impermeable surface, consistent with the Resource Conservation and Recovery Act, 42 U.S.C. section 6901 et. seq.
- B. The approval authority shall require submittal of a monitoring plan for commercial/industrial wood products preserving and treating operations to ensure that the operation is in compliance with all applicable local, state and federal regulations pertaining to groundwater protection and any conditions of approval applied by the County. Remedial action shall be required if the monitoring reveals that ground water contamination is occurring.

**Table 24.10-3. Critical Aquifer Recharge Areas Geologic Features** (geologic units derived from WA Department of Natural Resources).

| <b>Category I<br/>Geologic<br/>Map Symbols</b>   | <b>Geologic Interpretation</b>   |
|--|--|
| <b>Qgyo3, Qgyo4<br/>series</b>                   | <b>Sandy to Coarse Deposits</b>  |
|  | Qgokb – Vashon kettle bottom (silt, peat with some gravel bottoms)                 |
|  | Qgok – Coarse kettle walls   |
|  | Qgon3 – Vashon recessional outwash gravels, Train 3 (sand and gravel)              |
|  | <b>Very Coarse Deposits – Municipal Water Supplies, Drinking Water Aquifers</b>    |
|  | Qgyo4 – Vashon recessional outwash (loose sand and gravel)                         |
|  | Qgyo3 – Vashon recessional outwash (cobbles, boulders, gravel and sand)            |
|  | Qga – Vashon advance outwash (sand, gravel, “drinking water aquifer”)              |
|  | Qgas – Vashon advance outwash (sandy outwash)                                      |
|  | Qa – Alluvium (sand and gravel)  |
| Qgm – Glacial moraine deposits                   |  |
| <b>Category II<br/>Geologic<br/>Map Symbols</b>  | <b>Geologic Interpretation</b>   |
| <b>Qga, Qgo series</b>                           | <b>Finer Sediments: Silty Sands and Thin Surficial Deposits Above Till</b>         |
|  | Qga – Vashon recessional outwash (surficial unit above till – 10 to 20 feet thick) |
|  | Qgo, Qgos, Qgosr – Vashon recessional outwash (sand, silty sand and gravel, silt)  |
|  | Qgp – Pre-Vashon glacial outwash   |
|  | Qgd – Glacial drift – Fraser Age   |
| <b>Category III<br/>Geologic Map<br/>Symbols</b> | <b>Geologic Interpretation</b>   |
| <b>Qgt – series<br/>E-series<br/>(Bedrock)</b>   | <b>Till Units</b>  |
|  | Qgto2 – Vashon till  |
|  | Qgt di – Vashon till – Dead ice (associated with eskers and kettles)               |
|  | Qgt – Vashon till – Drumlin ground moraine (clay, silt, sand)                      |
|  | <b>Tertiary Igneous Rocks - Bedrock</b>  |
|  | Even – Northcraft Formation (Volcanic breccias, volcanic-lithic sandstones)        |
|  | Eig – Gabbros (minor exposure/occurrence in Thurston County)                       |
|  | Emm – McIntosh Formation (marine sandstone and volcanic-lithic siltstones)         |
|  | Evc – Crescent basalt  |

**Table 24.10-4. Critical Aquifer Recharge Area soil series.**

| <b>CATEGORY I SOIL SERIES</b>   |                         |
|---------------------------------|-------------------------|
| <b>Series Name</b>              | <b>SCS Map Symbol #</b> |
| Baldhill                        | 5, 6, 7, 8              |
| Cagey                           | 20                      |
| Everett                         | 32, 33, 34, 35          |
| Grove                           | 42                      |
| Indianola                       | 46, 47, 48              |
| Newberg                         | 71, 72                  |
| Nisqually                       | 73, 74                  |
| Pilchuck                        | 84                      |
| Pits, gravel                    | 85                      |
| Puyallup                        | 89                      |
| Spanaway                        | 110, 111, 112, 113, 114 |
| Sultan                          | 115                     |
| Tenino                          | 117, 118, 119           |
| <b>CATEGORY II SOIL SERIES</b>  |                         |
| <b>Series Name</b>              | <b>SCS Map Symbol #</b> |
| Alderwood                       | 1, 2, 3, 4              |
| Chehalis                        | 26                      |
| Delphi                          | 27, 28                  |
| Eld                             | 31                      |
| Giles                           | 38, 39, 40              |
| Maytown                         | 64                      |
| Spana                           | 109                     |
| Yelm                            | 126, 127, 128           |
| <b>CATEGORY III SOIL SERIES</b> |                         |
| <b>Series Name</b>              | <b>SCS Map Symbol #</b> |
| Bellingham                      | 14                      |
| Dupont                          | 29                      |
| Everson                         | 36                      |
| Galvin                          | 37                      |
| Godfrey                         | 41                      |
| Hoogdal                         | 43, 44                  |
| Kapowsin                        | 50, 51, 52, 53, 54, 55  |
| Mashel                          | 62, 63                  |
| McKenna                         | 65                      |
| Mukilteo                        | 69, 70                  |
| Norma                           | 75, 76                  |
| Puget                           | 88                      |
| Scammen                         | 100, 101                |
| Semiamoo                        | 104                     |
| Shalkar                         | 105                     |
| Shalkar Variant                 | 106                     |
| Skipopa                         | 107, 108                |
| Tacoma                          | 116                     |
| Tisch                           | 120                     |