

PRELIMINARY STAFF REPORT

**Mineral Lands GMA Compliance Issue**

Date: December 21, 2011

Public Hearing Date: Tentative February 8, 2012

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Proponent/Applicant: Thurston County

Action Requested: Consider amendments to the Chapter 3 Natural Resources in the Thurston County Comprehensive Plan and Chapter 20.30B.030 of the Thurston County Code to change the mineral lands designation requirements.

Location: County-wide

Map Changes  Text Changes  Both  Affects Comprehensive Plans/documents  
 Affected Jurisdictions

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PURPOSE:

The intent of this preliminary staff report is to:

- Provide the Planning Commission with sufficient background information to objectively hear public testimony on proposed amendments.
- Provide the Planning Commission an analysis of relevant sections of the Revised Code of Washington and the Washington Administrative Code.
- Allow the Planning Commission to make informed recommendations to the Board of County Commissioners (Board).

BACKGROUND:

On September 7, 2010, the Board of County Commissioners amended the County’s criteria for designating mineral lands of long-term commercial significance by adopting Resolution No. 14401 and Ordinance No. 14402. The adoption followed significant research and analysis by stakeholder committees, the Planning Commission, and the Board of County Commissioners. On November 23, 2010, mineral lands interest groups filed a challenge to the County’s ordinance

1 with the WWGMHB. Of the 23 issues brought by the challenge, the WWGMHB held that  
2 Thurston County must reconsider seven.

3 WESTERN WASHINGTON GROWTH MANAGEMENT HEARINGS BOARD  
4 COMPLIANCE ORDER:

5 In its Final Decision and Order dated May 23, 2011, the Western Washington Growth  
6 Management Hearings Board found that Thurston County must reconsider seven of the 23 issues  
7 brought by the challenge. In summary, the Hearings Board found that Thurston County:  
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- 9 • **Failed to show record that Thurston County considered minimum state guidelines.**  
10 While jurisdictions are not required to follow minimum state guidelines, they are required  
11 to show record that they at least *considered* them. According to the Growth Management  
12 Hearings Board, Thurston County showed inadequate record of its consideration of the  
13 minimum guidelines, particularly when the county barred the co-designation of mineral-  
14 resource lands and forest lands, and prohibited land from being designated as mineral-  
15 resource land if it contained certain types of critical areas. The minimum guidelines are  
16 discussed on the following page. Among other things, the plaintiffs held that Thurston  
17 County’s prohibition against mining in forest-resource lands barred the expansion of one  
18 of the state’s primary quarries that provides a unique type of rock used in marine jetties.  
19 Thus, the plaintiffs claimed, Thurston County violated the goals of the GMA to maintain  
20 and enhance the mineral resource industry.  
21
- 22 • **Failed to comply with the Growth Management Act’s requirements for protecting**  
23 **critical areas.** In summary, the Hearings Board found that Thurston County’s prohibition  
24 on designating mineral resource lands if they contain certain types of critical areas  
25 amounts to a defacto type of critical areas protection that is not supported by Best  
26 Available Science.  
27
- 28 • **Violated standards for public participation** as set forth in RCW 360.70A.035(2): The  
29 Growth Management Hearings Board found that, after holding public hearings, Thurston  
30 County made significant revisions to the drafts of Resolution No. 14401 and Ordinance  
31 No. 14402 and then approved them. (Those revisions banned the co-designation of  
32 mineral lands of long-term commercial significance and forest lands of long-term  
33 commercial significance.) The Hearings Board found that, because of those significant  
34 revisions, Thurston County should have provided the public with an additional  
35 opportunity to review and comment.  
36

37 Thurston County must be in compliance by November 21, 2011.

38  
39 GMA REQUIREMENTS:

40 The Growth Management Act (GMA), Chapter 36.70A Revised Code of Washington (RCW),  
41 requires Thurston County to designate resource uses (mineral, forest, and agricultural lands not  
42 already characterized by urban growth), as well as protect critical areas (RCW 36.70A.170).  
43 These can sometimes be competing requirements of the GMA, but all need conservation and  
44 protection from incompatible development by the county through its regulations and preservation  
45 activities.

1 The GMA does not list resource lands/critical areas in any order of priority; nor does it present  
2 them as mutually exclusive designations. RCW 36.70A.030 defines them as follows:

- 3 • (2) "Agricultural land" means land primarily devoted to the commercial production of  
4 horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of  
5 berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed  
6 by \*RCW 84.33.100 through 84.33.140, finfish in upland hatcheries, or livestock, and that  
7 has long-term commercial significance for agricultural production.
- 8 • (5) "Critical areas" include the following areas and ecosystems: (a) Wetlands; (b) areas  
9 with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife  
10 habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous  
11 areas.
- 12 • (8) "Forest land" means land primarily devoted to growing trees for long-term commercial  
13 timber production on land that can be economically and practically managed for such  
14 production, including Christmas trees subject to the excise tax imposed under RCW  
15 84.33.100 through 84.33.140, and that has long-term commercial significance. In  
16 determining whether forest land [*meets these requirements*]. . . , the following factors shall  
17 be considered: (a) the proximity of the land to urban, suburban, and rural settlements; (b)  
18 surrounding parcel size and the compatibility and intensity of adjacent and nearby land  
19 uses; (c) long-term local economic conditions that affect the ability to manage for timber  
20 production; and (d) the availability of public facilities and services conducive to  
21 conversion of forest land to other uses.
- 22 • (11) "Minerals" include gravel, sand, and valuable metallic substances.

23 In designating resource lands/critical areas, the county must consider guidelines developed  
24 pursuant to RCW 36.70A.050 by the Department of Commerce to classify agriculture, forest, and  
25 mineral lands and critical areas. These guidelines are adopted as part of the Washington  
26 Administrative Code (WAC), and are the minimum guidelines for all jurisdictions. Regulations  
27 adopted by the jurisdiction for the continuation of the resource designations and the protection of  
28 critical areas must also be adopted in consideration of the guidelines.  
29

### 30 GMA GOALS:

31 In addition, the GMA requires county amendments to be guided by the goals of the GMA. GMA  
32 goals are found in RCW 36.70A.020 and 36.70A.480:

- 33 1. *Urban growth.* Encourage development in urban areas where adequate public facilities  
34 and services exist or can be provided in an efficient manner.
- 35 2. *Reduce sprawl.* Reduce the inappropriate conversion of undeveloped land into sprawling,  
36 low-density development.
- 37 3. *Transportation.* Encourage efficient multimodal transportation systems that are based on  
38 regional priorities and coordinated with county and city comprehensive plans.
- 39 4. *Housing.* Encourage the availability of affordable housing to all economic segments of  
40 the population of this state, promote a variety of residential densities and housing types,  
41 and encourage preservation of existing housing stock.

- 1 5. *Economic development.* Encourage economic development throughout the state that is  
2 consistent with adopted comprehensive plans, promote economic opportunity for all  
3 citizens of this state, especially for unemployed and for disadvantaged persons, and  
4 encourage growth in areas experiencing insufficient economic growth, all within the  
5 capacities of the state's natural resources, public services, and public facilities.
- 6 6. *Property rights.* Private property shall not be taken for public use without just  
7 compensation having been made. The property rights of landowners shall be protected  
8 from arbitrary and discriminatory actions.
- 9 7. *Permits.* Applications for both state and local government permits should be processed in  
10 a timely and fair manner to ensure predictability.
- 11 8. *Natural resource industries.* Maintain and enhance natural resource-based industries,  
12 including productive timber, agricultural, and fisheries industries. Encourage the  
13 conservation of productive forest lands and productive agricultural lands, and discourage  
14 incompatible uses.
- 15 9. *Open space and recreation.* Encourage the retention of open space and development of  
16 recreational opportunities, conserve fish and wildlife habitat, increase access to natural  
17 resource lands and water, and develop parks.
- 18 10. *Environment.* Protect the environment and enhance the state's high quality of life,  
19 including air and water quality, and the availability of water.
- 20 11. *Citizen participation and coordination.* Encourage the involvement of citizens in the  
21 planning process and ensure coordination between communities and jurisdictions to  
22 reconcile conflicts.
- 23 12. *Public facilities and services.* Ensure that those public facilities and services necessary to  
24 support development shall be adequate to serve the development at the time the  
25 development is available for occupancy and use without decreasing current service levels  
26 below locally established minimum standards.
- 27 13. *Historic preservation.* Identify and encourage the preservation of lands, sites, and  
28 structures that have historical or archaeological significance.
- 29 14. *Shorelines.* Manage shorelines wisely according to the goals in the Shorelines  
30 Management Act (RCW 36.70A.480).

31 The most pertinent goals to the present discussion are (8) Natural Resources, (9) Open space and  
32 recreation, (10) Environment, and (14) Shorelines. These goals are not listed in any priority, and  
33 should be given equal weight in analysis and discussion. In consideration of the goals, the courts  
34 have found that specific requirements of the GMA, such as the use of best available science in the  
35 protection of critical areas or the designation of resource lands can and do outweigh the more  
36 general GMA goals (*Swinomish v. Western Washington Growth Management Hearings Board*  
37 161 Wn.2d 415; 166 P.3d 1198; 2007).

38 For natural resource lands, including mineral lands, Goal (8) provides three prongs: (1) To  
39 maintain and enhance; (2) To encourage conservation; and, (3) To discourage incompatible uses.  
40 (*WEAN v. Island County 95-2-0063 (Compliance Order, 4-10-96)*).

41 Preserving natural resource lands either under critical areas regulations or a resource overlay or  
42 designation both essentially preserve the resource. Critical areas regulations are required to  
43 protect property from further degradation. This usually means that development for certain

1 critical areas, such as wetlands or habitat areas, is either very restricted or not permitted. While a  
2 mineral resource can not be mined, the resource is still protected from incompatible development  
3 that would preclude future extraction of the resource should other mineral resources become  
4 unavailable. Essentially, critical areas designation accomplishes part or all of the four pertinent  
5 goals noted above.

6 WASHINGTON ADMINISTRATIVE CODE:

7 During an August 3, 2011 meeting, Thurston County staff presented the minimum guidelines  
8 contained in WAC 365-190-020(7), and WAC 365-190-040 (7a) to the Planning Commission  
9 during its regularly scheduled meeting. The Planning Commission had a substantial discussion  
10 about the minimum guidelines within the WACs and the Best Available Science that was  
11 discussed in 2005, 2010, and again in 2011 during Planning Commission work sessions on the  
12 Critical Areas Ordinance.

13 The minimum guidelines contained in the WACs were in fact considered by the Planning  
14 Commission during a meeting back in June 22, 2005. As stated in the meeting minutes, “Ms.  
15 Hayes referred to critical areas and mineral lands designation. The minimum guidelines for  
16 designating resource lands and critical areas are located in Chapter 365-190 WAC.

17 It should be noted “By directing all cities and counties to ‘consider’ the Minimum Guidelines, the  
18 Legislature did not order them to adopt the recommendations contained in the Minimum  
19 Guidelines, but assured that the decisions of cities and counties would be informed by the  
20 guidance developed” *1000 Friends of Washington et al., v. City of Anacortes*, WWGMHB No.  
21 03-2-0017 (FDO 2-10-04 at 22). RCW 36.70A.170 requires that the minimum guidelines in  
22 WAC 365-190 be “considered.”

23 As part of its review, the GMHB found the county did not substantiate in the record the review of  
24 the minimum guidelines in Chapter 365-190 WAC. Specifically, that the county precludes co-  
25 designation of mineral lands and specified critical areas without evidence in the record as to why  
26 the county deviated from the guidelines. WAC 365-190-040 addresses co-designation:

27 “(7) Overlapping designations. The designation process may result in critical  
28 area designations that overlay other critical area or natural resource land  
29 classifications. Overlapping designations should not necessarily be  
30 considered inconsistent. If two or more critical area designations apply to a  
31 given parcel, or portion of a given parcel, both or all designations apply.

32 (a) If a critical area designation overlies a natural resource land  
33 designation, both designations apply. For counties and cities  
34 required or opting to plan under the act, reconciling these multiple  
35 designations will be the subject of local development regulations  
36 adopted pursuant to RCW 36.70A.060.

37 (b) If two or more natural resource land designations apply, counties  
38 and cities must determine if these designations are incompatible. If  
39 they are incompatible, counties and cities should examine the  
40 criteria to determine which use has the greatest long-term  
41 commercial significance, and that resource use should be assigned  
42 to the lands being designated.”

43 In order to preclude co-designation due to a local environmental circumstance, the county must  
44 provide the appropriate evidence and analysis in the record. Using environmental information in

1 the development of designation criteria for and classification of mineral resource lands is  
2 consistent with WAC 365-190-070(3)(a) which states, “Counties and cities classify mineral  
3 resource lands based on geologic, environmental, and economic factors, existing land uses, and  
4 land ownership (emphasis added).”

5 Limiting designation of specific known critical areas would also be consistent with WAC 365-  
6 190-070(3)(d) which indicates that the classification of mineral resources should be based on  
7 geology and the distance to market:

8 “(d) Classifying mineral resource lands should be based on the geology and the  
9 distance to market of potential mineral resource lands, including:

10 (i) Physical and topographic characteristics of the mineral resource site,  
11 including the depth and quantity of the resource and depth of the  
12 overburden;

13 (ii) Physical properties of the resource including quality and type;

14 (iii) Projected life of the resource;

15 (iv) Resource availability in the region; and

16 (v) Accessibility and proximity to the point of use or market.

17 (e) Other factors to consider when classifying potential mineral resource lands should  
18 include three aspects of mineral resource lands:

19 (i) The ability to access needed minerals may be lost if suitable mineral  
20 resource lands are not classified and designated; and

21 (ii) The effects of proximity to population areas and the possibility of more  
22 intense uses of the land in both the short and long-term, as indicated by the  
23 following:

24 (A) General land use patterns in the area;

25 (B) Availability of utilities, including water supply;

26 (C) Surrounding parcel sizes and surrounding uses;

27 (D) Availability of public roads and other public services; and

28 (E) Subdivision or zoning for urban or small lots.

29 (iii) Energy costs of transporting minerals.”

30 Eliminating specified critical areas, such as wetlands, can be based on the general physical  
31 properties of the proposed site and the quantity and quality of the available resource. Certain  
32 critical areas, such as wetlands, are not generally viable mining resources, and therefore would  
33 not be classified as having potential long-term commercial significance. An overlapping  
34 designation would not be appropriate given the guidelines and the requirement to protect critical  
35 areas. Overlapping designations would be appropriate when it is difficult to delineate a critical  
36 area at the time of designation because of changing occupancy by species, lack of access by the  
37 county to analyze critical areas other than through remote sensing (aerial photography), or when  
38 there may be conflicts or justification for later delineation. Please see later in this report for  
39 analysis on designation of certain critical areas that are in the designation criteria including  
40 Category I and II wetlands, marine bluff hazard areas, frequently flooded areas, and fish and  
41 wildlife conservation areas.

1 Category I and II wetlands, marine bluff hazard areas, frequently flooded areas, and fish and  
2 wildlife conservation areas.

3 Definitions are located in 365-190-020. While all of the definitions are applicable to the current  
4 discussion, aside from the definitions for critical areas, two definitions to note include:

5 (11) "Long-term commercial significance" includes the growing capacity, productivity,  
6 and soil composition of the land for long-term commercial production, in  
7 consideration with the land's proximity to population areas, and the possibility of  
8 more intense uses of land. Long-term commercial significance means the land is  
9 capable of producing the specified natural resources at commercially sustainable  
10 levels for at least the twenty-year planning period, if adequately conserved.  
11 Designated mineral resource lands of long-term commercial significance may have  
12 alternative post-mining land uses, as provided by the Surface Mining Reclamation  
13 Act, comprehensive plan and development regulations, or other laws.

14 (13) "Mineral resource lands" means lands primarily devoted to the extraction of  
15 minerals or that have known or potential long-term commercial significance for the  
16 extraction of minerals.

17 Not designating certain critical areas as a mineral resource land when it is well known that mining  
18 is not commercially viable due to reasons that may include geologic conditions, or because  
19 mining may jeopardize the environmental function of a natural resource (drinking water, habitat,  
20 and etc.) is consistent with the above definitions for mineral resource lands and long term  
21 commercial significance. In order for land to have long term commercial significance for gravel  
22 or hard rock mining, it would necessarily need to have a soil composition for producing  
23 economically sustainable gravel. Certain critical areas such as a wetland do not generally have  
24 the appropriate soil composition or type for gravel production.

25 An analysis of co-designating resource lands and specific critical areas is discussed later in this  
26 report, the critical areas to be discussed include:

- 27 • Category I Critical Aquifer Recharge Areas and Wellhead Protection Areas
- 28 • Mining in Category I and II Wetlands
- 29 • Mining in Fish and Wildlife Conservation Areas
- 30 • Frequently Flooded Areas

31 In general, co-designation does not mean a critical area may be mined, as this would be contrary  
32 to the mandate by the GMA that the county protect critical areas, and would be contrary to the  
33 accompanying WAC for the designation of critical areas described later in this report. If  
34 designation of a known or unknown critical area as a resource land of long-term commercial  
35 significance is allowed, then the conditions under which mining is or is not permitted need to be  
36 addressed in the development code. This can take place in the critical areas ordinance or the  
37 zoning ordinance. To guide the regulations, the Comprehensive Plan should be amended to  
38 address and guide the resolution of conflicts between resource uses and critical areas.  
39

40 REQUIRED REGULATIONS:

1 RCW 36.70A.060 requires the county to adopt regulations for the conservation of resource lands  
2 and for the protection of critical areas. Policies guiding the protection of critical areas are in the  
3 Comprehensive Plan with specific regulations governing critical areas in the Thurston County  
4 Code. In the context of the GMA, to protect critical areas means, at a minimum, to prevent new  
5 harm to critical areas and not to allow degradation of existing conditions (Swinomish v.  
6 WWGMHB 2007).

7 Designation of resource uses takes place in the Comprehensive Plan and the zoning code through  
8 overlay areas and specific land use designations and zoning districts. New regulations for  
9 resource uses need to assure the continuation of agricultural, mineral and forest resource uses, and  
10 that surrounding land uses will not interfere with their continued use for the designated purpose  
11 while also adhering to other requirements. Resource uses do need to follow best practices, and  
12 the GMA does not preclude the county from adopting operational conditions as it would normally  
13 do for permitted and special uses.

14 As with other sections of the GMA, the county must designate resource lands and protect critical  
15 areas both, and neither is given priority over the other. Where the GMA does not give a specific  
16 priority, it is then up to the local jurisdiction to make a balanced decision based on the GMA,  
17 associated WAC, and local circumstances that accomplishes both. This takes place when GMA  
18 mandates are completed.

#### 19 CRITICAL AREAS REGULATIONS:

20 Under the GMA, critical areas that must be designated include wetlands, fish and wildlife habitat  
21 conservation areas, frequently flooded areas, critical aquifer recharge areas, and geologically  
22 hazardous areas (RCW 36.70A.030). These terms are further defined in the GMA, in the  
23 Washington Administrative Code (Chapter 365-190 WAC), and in the Thurston County Code  
24 (TCC). In the Thurston County Critical Areas Ordinance (CAO), critical areas are generally  
25 classified according to the five major areas mentioned above.

26 In Thurston County, designation of critical areas is achieved through textual definition and  
27 criteria in the CAO, Chapter 17.15 TCC. Policies are also included in the Comprehensive Plan.  
28 While maps are maintained by Thurston County GeoData, these maps are not all inclusive, and  
29 are not always intended to be used as a final indicator for the location of a critical area. Some  
30 maps, such as prairie and gopher soils and wetland maps, are used as an initial screening tool.  
31 Other maps, such as the high groundwater hazard map, show the location of mapped high  
32 groundwater hazards from previous flooding events.

33 In the classification and designation of critical areas, the GMA requires Thurston County to  
34 substantively consider best available science (BAS) in developing policies and development  
35 regulations to protect the structure, value and functions of critical areas (RCW 36.70A.172). This  
36 provision was added to the Growth Management Act in 1995. In order to assist jurisdictions in  
37 deciding what constitutes best available science, between 1998 and 2000, the Washington State  
38 Department of Commerce developed the rules in Chapter 365-195 WAC, as amended. In  
39 addition, a Critical Areas Assistance Handbook and a list of BAS were developed by various  
40 State of Washington agencies. Jurisdictions in and around Thurston County have also developed  
41 BAS for their CAO. Under the GMA, it is up to the Board of County Commissioners to decide  
42 what is the best available science that provides a basis for the Thurston County CAO.

43 Based on previous case law, the Growth Management Hearings Board generally will apply three  
44 factors to determine if the Thurston County CAO is based on BAS:

- 1 1. If Thurston County’s decision is within the parameters of the Growth Management Act,  
2 including its goals, as directed by RCW 36.70A.172(1) on the designation of critical areas.
- 3 2. The evidence provided in the record, including scientific analysis and documentation.
- 4 3. Whether Thurston County’s analysis of the evidence provided in the record, including  
5 scientific analysis and documentation, involved a reasoned process.

6 (Clark County Natural Resources Council, et al. v. Clark County, et al, WWGMHB Case No. 96-2-0017c)

7 Whenever a regulatory approach is used that is not supported by BAS, the County will have to  
8 demonstrate how it considered BAS and why local circumstances prompted the County to use a  
9 different approach. The County does have the discretion of adopting critical areas regulations that  
10 allow localized impacts on critical areas, however, this must be used sparingly and for good  
11 cause. The effect of critical areas regulations must result in no net loss of the structure, value and  
12 functions of natural systems (Pilchuck v. Snohomish County CPSGMHB 1995).

13 The rules and criteria for BAS in Chapter 365-195 WAC are briefly described below:

- 14 1. Methods for determining what is BAS. WAC 365-195-905.
- 15 2. Criteria for obtaining BAS. WAC 365-195-910. This section outlines the specific criteria  
16 which generally includes obtaining technical assistance, publications, and guidance from  
17 state and federal agencies, developing, acquiring and compiling scientific information that  
18 meets best available science through county efforts and expertise.
- 19 3. Assessment of inadequate scientific information. WAC 365-195-920. In some cases, there  
20 may be a lack of scientific data for a given critical area subject. This section of criteria  
21 addresses such situations, and guides jurisdictions to take a precautionary or no risk  
22 approach in which development and land use activities are strictly limited.
- 23 4. Inclusion of BAS in developing policies and development regulations. WAC 365-195-  
24 915. This section outlines the criteria for including BAS in the development of critical  
25 areas, and that BAS must be used in granting variances, waivers, and exemptions.
- 26 5. Special considerations for anadromous fisheries. WAC 365-195-925). Counties must give  
27 special consideration or protection measures for anadromous fisheries.

28 BAS needs to be the product of a valid scientific process as shown in Section 365-195-905 (5)  
29 WAC, which is as follows:

30 “To ensure that the best available science is being included, a county or city should  
31 consider the following:

32 (a) Characteristics of a valid scientific process. In the context of critical areas  
33 protection, a valid scientific process is one that produces reliable information  
34 useful in understanding the consequences of a local government's regulatory  
35 decisions and in developing critical areas policies and development regulations  
36 that will be effective in protecting the functions and values of critical areas. To  
37 determine whether information received during the public participation process is  
38 reliable scientific information, a county or city should determine whether the  
39 source of the information displays the characteristics of a valid scientific process.  
40 The characteristics generally to be expected in a valid scientific process are as  
41 follows:

- 1 1. Peer review. The information has been critically reviewed by other persons  
2 who are qualified scientific experts in that scientific discipline. The  
3 criticism of the peer reviewers has been addressed by the proponents of the  
4 information. Publication in a refereed scientific journal usually indicates  
5 that the information has been appropriately peer-reviewed.
- 6 2. Methods. The methods that were used to obtain the information are clearly  
7 stated and able to be replicated. The methods are standardized in the  
8 pertinent scientific discipline or, if not, the methods have been  
9 appropriately peer-reviewed to assure their reliability and validity.
- 10 3. Logical conclusions and reasonable inferences. The conclusions presented  
11 are based on reasonable assumptions supported by other studies and  
12 consistent with the general theory underlying the assumptions. The  
13 conclusions are logically and reasonably derived from the assumptions and  
14 supported by the data presented. Any gaps in information and  
15 inconsistencies with other pertinent scientific information are adequately  
16 explained.
- 17 4. Quantitative analysis. The data have been analyzed using appropriate  
18 statistical or quantitative methods.
- 19 5. Context. The information is placed in proper context. The assumptions,  
20 analytical techniques, data, and conclusions are appropriately framed with  
21 respect to the prevailing body of pertinent scientific knowledge.
- 22 6. References. The assumptions, analytical techniques, and conclusions are  
23 well referenced with citations to relevant, credible literature and other  
24 pertinent existing information.

25 The list of science in this report is not intended to be an exhaustive list or summary of scientific  
26 documents for all critical areas in relation to mineral extraction. The information that has been  
27 reviewed for this summary report is pertinent to Thurston County, and appears to be the best  
28 available given the issue of mineral extraction and critical areas present in the county.

### 29 COUNTY-WIDE PLANNING POLICIES:

30 The Thurston County County-Wide Planning Policies were initially adopted by Thurston County  
31 after ratification by the cities and towns in 1993 to ensure a consistent planning approach under  
32 the Growth Management Act, and updated in 2003. The policies provide guidance on urban  
33 growth areas, orderly urban development and provision of urban services, joint planning,  
34 transportation, housing, economic development and environmental quality. The policies  
35 generally call for environmentally sound development policies and expansions of urban growth  
36 areas. Both expansions and reductions in urban growth areas must be compatible with critical  
37 areas and resource lands.

38 Section IX of the County-Wide Planning Policies specifically covers environmental quality  
39 including critical areas regulation and natural resource lands preservation. Two other sections  
40 listed below also have pertinent policies.

41 The related policies in Section II. Promotion of Contiguous and Orderly Development &  
42 Provision of Urban Services include:

#### 43 2.1 Concentrate development in growth areas by:

1 ...

2 d. Designate rural areas for low density, non-urban uses that preserve natural  
3 resource lands, protect rural areas from sprawling, low-density development and  
4 assure that rural areas may be served with lower cost, non-urban public services  
5 and utilities.

6 ...

7 2.3 Provide capacity to accommodate planned growth by:

8 ...

9 b. Protection of ground water supplies from contamination and maintenance of  
10 groundwater in adequate supply by identifying and reserving future supplies well  
11 in advance of need.

12 The related policies in Section IV Economic Development and Employment include:

13 6.2 Support the retention and expansion of existing public sector and commercial  
14 development and environmentally sound, economically viable industrial development and  
15 resource uses;

16 The related policies in Section IX Environmental Quality include:

17 9.1 Recognize our interdependence on natural systems and maintain a balance between human  
18 uses and the natural environment by:

19 a. Establishing a pattern and intensity of land and resource use in concert with the  
20 ability of land and resources to sustain such use; and

21 b. Concentrating development in urban growth areas in order to conserve natural  
22 resources and enable continued resource use;

23 9.2 Protect ground and surface water and the water of Puget Sound from further degradation  
24 by adopting and participating in comprehensive, multi-jurisdictional program to protect  
25 and monitor water resources for all uses;

26 9.3 Protect and enhance air quality;

27 9.4 Minimize high noise levels that would degrade the residents' quality of life;

28 9.5 Maintain significant wildlife habitat and corridors; and

29 9.6 Preserve and promote awareness of our historic, cultural, and natural heritage.

30 .....

31 9.9 Plan for the amount of population that can be sustained by our air, land and water  
32 resources without degrading livability and environmental quality.

33 THURSTON COUNTY COMPREHENSIVE PLAN:

34 The Thurston County Comprehensive Plan (Comprehensive Plan) provides the policy direction  
35 for making decisions in the unincorporated area of Thurston County. It provides guidance for  
36 development regulations, capital facilities planning, land use permitting, related plans, inter-local  
37 agreements, and other various county programs. The Comprehensive Plan also includes the joint  
38 plans adopted for the unincorporated urban growth areas as well as other specialized plans and  
39 sub-area plans.

1 Chapter 3 Natural Resources, includes both the designation criteria and policies for mineral  
2 extraction, as well as for agricultural and forest lands. At issue in the current matter is the  
3 designation criteria, which are covered elsewhere in this report. Policies for mineral extraction  
4 are located under Goal 7, which states “Mineral resource lands of long-term commercial  
5 significance should be allowed to be used by extraction industries, with minimal harm to the  
6 environment.” The subsequent policies generally call for

- 7 • Conservation of mineral resource lands of long-term commercial significance for mineral  
8 extraction
- 9 • Allowing mineral extraction industries where the prime natural resource exists
- 10 • Restoration
- 11 • The incompatibility of agricultural lands
- 12 • Discouraging incompatible uses from nearby areas
- 13 • Protecting existing residential uses from mineral extraction activities
- 14 • Protecting public health and safety from mineral extraction

15 The policies in this section do not directly indicate that critical areas should not be mined,  
16 however, two policies address issues related to critical areas. Specifically, Mima mounds are  
17 referenced in Policy 7 as follows, “Extraction industries should not alter significant geologic  
18 features such as mima mounds.” Mima mounds are a significant geologic feature unique to  
19 Thurston County, and are not replicable. Mounds can exist in native, semi-native, and historic  
20 prairies. Prairies are considered a critical area. Mima mounds can be detected through onsite  
21 visits, review of LiDAR imagery, or aerial photography.

22 The Spanaway-Nisqually Complex 2 to 10% slopes (soil type 114) is primarily located in areas  
23 with Mima mounds and in areas in between the mounds. The soil description is largely based on  
24 the presence of Mima mounds. It has been used in the past to help map the historic extent of  
25 prairies in Thurston County, and is a listed Prairie soil in the WDFW *Priority Habitat and Species*  
26 *List*. For a complete description of each soil type please see the USDA Natural Resources  
27 Conservation Service *Soil Survey of Thurston County*. This soil type also can be a good source of  
28 gravel for mineral extraction.

29 Policy 10 indicates that “mineral extraction should not negatively affect nor endanger surface and  
30 ground water quality.” This touches on fish and wildlife habitat areas, wetlands, critical aquifer  
31 recharge areas, and wellhead protection areas, all of which will be discussed later in this report.

32 Chapter 9 Environment includes narrative, goals and policies on critical areas. In addition to  
33 consideration of best available science, the GMA and the associated WACs, these are used to  
34 guide development of critical areas regulations. The Growth Management Hearings Board  
35 requested further analysis of several criteria for the designation of mineral lands of long-term  
36 commercial significance relating to critical areas. The specific critical areas in question include  
37 geologic hazard areas including marine bluffs, critical aquifer recharge areas, wetlands, fish and  
38 wildlife conservation areas, and frequently flooded areas. Chapter 9 Environment has been  
39 attached for your review.

40 For geologic hazards in Section III Part A. Geologic Hazard Areas, the goal and associated  
41 policies focus on hazard avoidance and mitigation, particularly in ensuring that development,  
42 including mining, does not exacerbate hazards. The designation criteria indicate that marine bluff

1 hazard areas are inappropriate for designation. Policies 2 and 4 in this section support this, and  
2 indicate that:

3 2. The county should restrict development and resource use within or near areas  
4 susceptible to significant damage from erosion, landslides, earthquakes or lahar  
5 flows, as necessary to protect life, property, and wildlife habitats (e.g. streams and  
6 marine waters downslope).

7 ...

8 4. The county should protect the public from natural hazards, minimize the need for  
9 emergency rescues and replacement of public facilities damaged by natural forces,  
10 and avoid public subsidy of private development located in areas vulnerable to  
11 damage from natural events by minimizing the amount of development at risk.

12 Permitting designation of marine bluff hazard areas as mineral lands of long term commercial  
13 significance in the comprehensive plan and subsequent mining would be inconsistent with the  
14 above policies.

15 Policies for critical aquifer recharge areas are located in Section III B. Groundwater and Aquifer  
16 Recharge Areas. The goal is clear, simple and proscriptive “ Protect Groundwater Quality and  
17 Quantity.” The policies generally call for:

- 18 • Cumulative impact assessment
- 19 • Prevention of contamination, degradation, and depletion through comprehensive  
20 management
- 21 • Implementation of restrictions and management practices to sustain anadromous fish
- 22 • Special consideration of reduced density and development where withdrawals would  
23 diminish stream flows and elevate water temperatures
- 24 • Regulation of land uses in wellhead protection areas to prevent degradation of  
25 groundwater quality as well as development and implementation of wellhead protection  
26 area plans

27 Permitting designation of wellhead protection areas as mineral lands of long term commercial  
28 significance in the comprehensive plan and subsequent mining may be inconsistent with the  
29 policies in this section of the comprehensive plan if it increases the likelihood for contamination  
30 and degradation of groundwater supplies, or if the activity negatively impacts anadromous fish.

31 Section III C. Surface Water, includes a goal, objectives and associated policies for the protection  
32 of surface water, including wetlands, shorelines, lakes, and rivers. The goal is clear and succinct,  
33 “Protect and improve the water quality and biological health of lakes, wetlands, rivers, streams,  
34 and Puget Sound.” The policies in this section area also clear, succinct and address the issue at  
35 hand. The more pertinent policies call for:

- 36 • Protection and management of surface water consistent with best available science and  
37 cumulative impact assessments of existing and planned future land and resource uses  
38 within watersheds.
- 39 • Retention of ponds, wetlands, rivers, lakes, and streams and their associated buffers  
40 substantially in their natural state.

- 1 • Protection from adverse impacts including elevation of water temperatures, flow, and
- 2 channel damage and sedimentation.
- 3 • Designate and protect wetlands and surface waters through natural or restored native
- 4 vegetation buffers, as well as prevention of development and activity that would damage
- 5 water quality and habitat functions.
- 6 • Restoration of degraded buffers
- 7 • Regulate uses and activities along the marine shoreline based on best available
- 8 • Identify and protect sensitive marine habitats and special shoreline features.

9 Section III D. Frequently Flooded Areas includes a succinct goal “protect life and structures from  
 10 flood hazards and retain the flood storage, transmission capacity, and habitat value of flood  
 11 plains.” The object and policies of this section add more detail. The more pertinent policies call  
 12 for:

- 13 • Providing the highest degree of flood protection at the least cost with natural flooding and
- 14 channel migration processes.
- 15 • Prohibit development and placement of fill in floodways and floodplains except to
- 16 accommodate public infrastructure and utilities that cannot be placed elsewhere.
- 17 • Provide for resource uses such as forestry and existing agriculture and water-dependant
- 18 uses in areas subject to river flooding to minimize risks and retain or enhance habitat
- 19 functions. Other uses need to be restricted to minimize risk and loss of habitat function.

20 Allowing the designation and subsequent mineral extraction of gravel from streams and  
 21 floodplains would be inconsistent with the policies of this section of the Comprehensive Plan.  
 22 Two resource uses, forestry and existing agriculture, are specifically indicated as generally  
 23 appropriate for frequently flooded areas, thereby permitting overlapping resource and critical  
 24 areas designations.

25 Section III E. Important Fish, Wildlife, and Plant Habitat also has a clear goal, “Protect, conserve,  
 26 and enhance the ecological functions of important fish, wildlife, and plant habitats.” Like other  
 27 sections above, the objective and policies include more specificity to the goal. The policies  
 28 indicate the following:

- 29 • Protect habitats that are important to the long term viability of important habitat and
- 30 species.
- 31 • Identify and protect land essential for important habitat connectivity including riparian
- 32 areas, opens spaces and other habitats.
- 33 • Establish riparian areas to maintain or enhance habitat functions in associated streams.
- 34 • Study stream and riparian areas for anadromous fish and other native fish for long-term
- 35 habitat viability. If any would not be sustainable for fish in the long-term, then amend
- 36 zoning and development regulations and other remedial actions.
- 37 • Identify priorities for fish and wildlife habitat protection.

- 1 • Removal prohibition of man made barriers.
- 2 • Preserve water quality and quantity for fish including dissolved oxygen, chemical content,  
3 sediment load, and temperature.
- 4 • Prohibition of uses and activities that degrade lakes and streams and result in the loss of  
5 natural functions.
- 6 • Policy 14: “The county should prevent development and activities in streams, riparian  
7 areas, wetlands, other protected wildlife habitats and any associated buffers that would  
8 damage their functions, except for the minimum extent necessary when there is no  
9 reasonable alternative for accommodating an essential use (e.g., an essential road or utility  
10 crossing).

11 Designating and subsequent mining of known habitat and riparian areas would be inconsistent  
12 with the policies in this section of the Comprehensive Plan. Avoidance and preservation of the  
13 natural state is a common theme in the policies. The policies actually call for remedial actions  
14 when necessary. Remedial actions may include increase buffer widths and retention of riparian  
15 areas, streams, and other important habitats in their natural state.

#### 16 HISTORY OF RESEARCH AND DELIBERATIONS:

##### 17 **Board of County Commissioners:**

18 During the seven-year review of the Comprehensive Plan in 2003, the Board of County  
19 Commissioners reviewed and, in some cases, expanded existing designated mineral lands of long-  
20 term commercial significance. The Board’s decision led to citizen challenges over these new  
21 designations. To provide time for the County to consider citizens’ concerns, the Board in October  
22 2003 adopted Interim Ordinance No. 13030. The ordinance effectively froze future decisions  
23 about mineral lands until a Mineral Lands Task Force provided recommendations for  
24 consideration by the Planning Commission and Board. Specifically, the ordinance prohibited the:

- 25 • designation of new mineral resource lands.
- 26 • permitting of new gravel mining operations.
- 27 • permitting of new asphalt plants outside the Rural Resource Industrial zone.

28 The Mineral Lands Task Force was formed shortly after the ordinance was passed. Its mission  
29 was to develop policy recommendations that would address citizens’ concerns and comply with  
30 the GMA and, in doing so, ultimately enable the Board of Commissioners to lift the prohibitions.

31 The Board of Commissioners has renewed Interim Ordinance No. 13030 several times, most  
32 recently on August 9, 2011 for a six-month period (with amendments). This latest renewal will  
33 allow time for Thurston County to come into compliance with the Growth Management Hearings  
34 Board findings.

##### 35 **Mineral Lands Task Force:**

36 In October 2003, the Board of Commissioners appointed an 11-member Mineral Lands Task  
37 Force made up of representatives from the mining and asphalt industries, building industry,  
38 municipalities, environmentalists, and the general public. A facilitator was hired to help the task  
39 force develop recommendations. The task force reviewed existing County policies and  
40 regulations, case law, scientific studies, maps, and related technical information. It also heard  
41 from experts on mining and asphalt plant regulation. The task force met from January through

1 June 2004 and delivered its final recommendations in July 2004. The task force recommended the  
2 following with regard to the designation of mineral lands of long-term commercial significance:

- 3 • Lands may be co-designated as both forest lands of long-term commercial  
4 significance and as mineral lands of long-term commercial significance, provided  
5 Thurston County experiences no net loss in forest lands of long-term commercial  
6 significance.
- 7 • Designated mineral lands may contain Class 3 and Class 4 wetlands, but not Class  
8 1 or 2 wetlands and their protective buffers.
- 9 • Designated mineral lands may not be located within 100-year floodplains.
- 10 • Designated mineral lands should be located at least 1,000 feet away from public  
11 preserves, including parks, national wildlife refuges, state conservation areas,  
12 wildlife areas, and other government-owned preserves (except exclusive hunting  
13 areas).
- 14 • Designated mineral lands may include important habitats and species. Potential  
15 impacts to these areas would be evaluated during the permitting process.
- 16 • Designated mineral lands may include wellhead protection areas, critical aquifers,  
17 and other critical areas not excluded by the criteria above. Potential impacts to  
18 these areas would be evaluated during the permitting process.

#### 19 **Planning Commission Review:**

20 On February 18, 2009, the Planning Commission decided to form a subcommittee to further  
21 review the designation and permitting criteria for mineral lands of long-term commercial  
22 significance in light of Best Available Science. The subcommittee gave its final report to the full  
23 Planning Commission in October 2009, and the Planning Commission then held a public hearing  
24 on November 18, 2009. The Planning Commission gave its final recommendations to the Board  
25 of County Commissioners on February 17, 2010. The recommendations included the following  
26 provisions:

- 27 • Forest lands of long-term commercial significance may be co-designated as  
28 mineral lands of long-term commercial significance.
- 29 • Mineral resource lands shall not include Class 1 or Class 2 wetlands or their  
30 protective buffers, but may include Class 3 and Class 4 wetlands.
- 31 • Mineral resource lands shall not include any Federal Emergency Management  
32 Agency (FEMA) 100-year floodplains.
- 33 • Mineral resource lands shall not include important habitats and species areas and  
34 their buffers as established by the Critical Areas Ordinance at the time of  
35 designation.
- 36 • Mineral resource lands shall not include delineated wellhead protection areas and  
37 Category 1 Critical Aquifer Recharge Areas.

#### 38 **Board of County Commissioner Review and Adoption of Ordinance No. 14402:**

39 The Board held a work session on March 30, 2010 and a hearing on April 20, 2010 and several  
40 follow up work sessions on May 19, June 2 and June 16, 2010. During these work sessions, the  
41 Board considered Best Available Science and deliberated on the recommendations from the

1 Mineral Lands Task Force, the Planning Commission, staff, and the public. The Board of County  
2 Commissioners adopted Resolution No. 14401 and Ordinance No. 14402 amending mineral lands  
3 designation criteria on September 7, 2010.

4 In general, Ordinance No. 14402 adopted the Planning Commission’s recommendations, with one  
5 significant exception: The ordinance prohibits forest lands of long-term commercial significance  
6 from being co-designated as mineral lands of long-term commercial significance – in effect,  
7 prohibiting mining in forest resource lands.

8 In November 2010, mineral lands interest groups filed a challenge to Ordinance No. 14402 with  
9 the Western Washington Growth Management Hearings Board.

10 PROPOSED TEXT CHANGE FOR CO-DESIGNATION OF FOREST LANDS AND  
11 MINERAL LANDS:

12 In August of 2011, the Planning Commission selected to strike to allow the designation of mineral  
13 resource lands in designated forest lands, thus making the County’s rules consistent with the  
14 state’s guidance on co-designation. Further, at this time there does not appear to be any evidence  
15 in front of the Planning Commission to justify departure from the minimum guidelines.

16 CRITICAL AQUIFER RECHARGE AREAS:

17 CARAs are not defined in the GMA (RCW 36.70A.030), but are included as a critical area. The  
18 State of Washington, through WAC 365–190-030 defines Critical Aquifer Recharge Areas  
19 (CARAs) as:

20 “areas with a critical recharging effect on aquifers used for potable water, including areas  
21 where an aquifer that is a source of drinking water is vulnerable to contamination that  
22 would affect the potability of the water, or is susceptible to reduced recharge.”

23 Thurston County, in its current Critical Areas Ordinance, defines CARAs based on their  
24 susceptibility to contamination. The rankings are CARA I through IV with CARA I denoting the  
25 most sensitive areas. The county defines a CARA I as:

26 "Category I, extreme aquifer sensitivity - are those areas which provide very rapid  
27 recharge with little protection, contain coarse soil textures and soil materials, and are  
28 derived from glacial outwash materials.”

29 Generally, Wellhead Protection Areas are geographically located within CARA I(Figure 1). The  
30 State of Washington Wellhead Protection Program Guidance Document provides guidance to  
31 jurisdictions to delineate management zones for wellhead protection areas (WHPA):

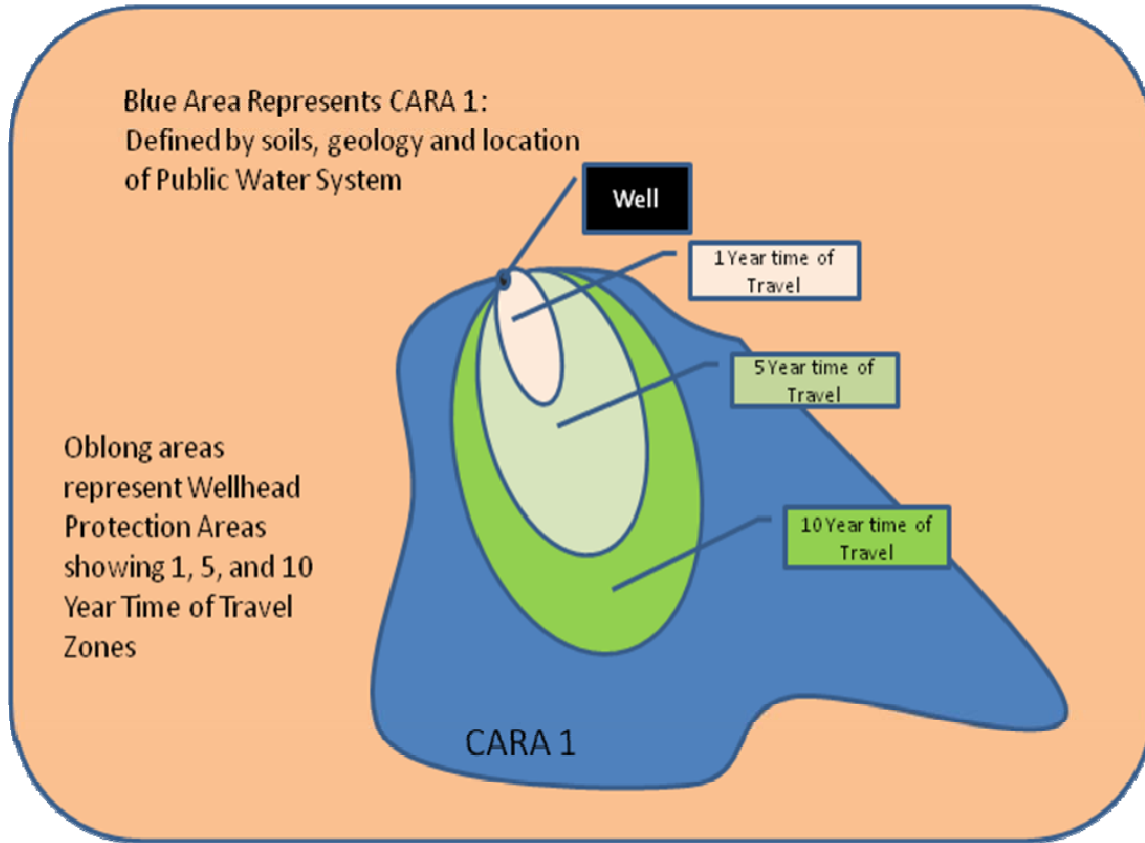
32 “...a wellhead protection area is based on established times of travel. Each management  
33 zone in the wellhead protection area corresponds to an established time-of-travel in the  
34 aquifer. Thus, each of the zones represents the interval between the time a particle of  
35 water is introduced at the zone boundary and its eventual arrival at the well.”

36 The state defines three zones within WHPAs. Zone 1 is the one-year time of travel zone; Zone 2  
37 is the five-year time of travel zone; and Zone 3 is the 10-year time of travel zone. Zone 1 is  
38 managed to protect the drinking water supply from viral, microbial, and direct chemical  
39 contamination. Zone 2 is managed to control potential chemical contaminants. All potential  
40 contaminant sources must be addressed with emphasis on pollution prevention and risk reduction.

41 Thurston County is a region whose public health and economic prosperity depend on ground  
42 water quality and quantity. Groundwater sources account for 99 percent of the drinking water

1 supplies for County residents (TRPC 2011). Thurston County and the incorporated municipalities  
2 of Lacey, Olympia, Tumwater, Tenino and Yelm's WHPAs are geographically located within  
3 CARA I areas. In a region reliant on ground water, the contamination of a ground water source  
4 for even a short time could have significant public health and economic consequences.

5



6

7

8

9

CARA Figure 1.

10

### Best Available Science

11 In 1995 Thurston County published the study The Direct and Cumulative Effects of Gravel  
12 Mining on Ground Water within Thurston County Washington (Mead, 1995). In his study, Mead  
13 considered the following effects related to mineral extraction in relation to impacts on ground  
14 water:

15

16

17

18

- Water Level Effects
- Increased Evaporation
- Water Chemistry Effects
- Interchanges between Aquifers

19 Mead found that the effects of mining on water quality and quantity were very localized to the  
20 area where the mining activity was occurring. Mead summarized his review of mining effects in  
21 the following:

22

23

24

“The simplest form of gravel mining, excavating well above the water table with no associated activities such as vehicle maintenance or asphalt batch plants, causes relatively low risk to the groundwater quantity and quality. Because the protective soils have been

1 removed, these types of excavations are extremely sensitive to the introduction of any type  
2 of contamination. But this type of mining, because it is essentially a relatively simple  
3 process of loading unconsolidated materials, does not pose a serious risk of introducing  
4 those contaminants.”

5 A later science review for the Canadian Ministry of Natural Resources, titled Applied Research  
6 on Source Water Protection Issues in the Aggregate Industry Phase 1 Findings (Blackport  
7 Hydrogeology Inc. and Golder Associates, 2006), supported Mead’s findings that sand and gravel  
8 mining poses a low risk to ground and surface water quality and quantity for CARAs:

9 “...the main issue with respect to the aggregate industry, is the impact of removal of the  
10 soil zone and additional aggregate material from the water table. Although the aggregate  
11 industry does not generate pathogens, some of the factors that could affect survival and  
12 retention time of pathogens have been altered with the removal of the soil zone and some  
13 of the unsaturated zone. The impact of this alteration will be variable. Each setting will be  
14 different, but consideration should be given to:

- 15 • The travel times from an aggregate operation to a source of drinking water;
- 16 • Surface water runoff from outside the area of active aggregate extraction into an  
17 active aggregate operation or un-rehabilitated area; and,
- 18 • Post extraction land use with the potential to increase pathogen risks in areas of  
19 higher aquifer vulnerability if there are drinking water sources within a two-year  
20 time of travel of the extraction operation.”

21 While Mead classifies the risk to groundwater quality and quantity as relatively moderate to low  
22 with regard to mining in CARAs, he does acknowledge that the accessory uses that accompany  
23 mining create significant risk:

24 “Asphalt batch plants present a lower risk to groundwater than concrete plants  
25 from stormwater, vehicle fueling, and fuel storage and handling. Like concrete plants  
26 however, asphalt plants are a very significant source of risk to ground water and require  
27 adequate regulatory oversight and enforcement.

28 Petroleum leaks and spills resulting from vehicle fueling, maintenance, and washing are  
29 probably the most common major threat to groundwater sand and gravel mining. This risk  
30 can be difficult to assess because it is highly variable depending on the scale of these  
31 activities and the degree of oversight provided by the mining operation management. That  
32 a problem exists with petroleum leaks and spills is clear from the Department of Ecology  
33 incident reports. *Because a lack of groundwater monitoring and follow-up investigation*  
34 *these incidents, the actual degree of ground water impact is unknown.”* (Emphasis  
35 added.)\_

36  
37  
38 The Ministry of Natural Resources study suggests that additional research be performed on the  
39 effects of aggregate mining activities and its impacts to groundwater and CARAs:

40 “...the removal of the active soil zone and at least a portion of the underlying  
41 unsaturated zone is relatively unique to the aggregate industry.... Although this can occur  
42 to varying degrees with any land development, aggregate extraction usually takes place  
43 over a longer time, so there is an increased vulnerability for a longer time.”

1 “The impact of this removal on the attenuative capability of the site, with respect to the  
2 rate and mobility of pathogens and degradation of hydrocarbons... should be addressed to  
3 determine whether it has any implications for source water protection, as related to time of  
4 travel within the aquifer.”

5 It is clear that spills of hazardous materials associated with mining activities are still occurring.  
6 The January 2010 Department of Ecology fact sheet on sand and gravel permitting provides the  
7 following information:

8 “SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

9 A compliance report covering the period from February 2005 to September 2009 (18  
10 quarterly reporting periods) showed 4992 permit violations for the 644 active reporting  
11 facilities. Nonreporting (no submittal of a discharge monitoring report or not analyzing for  
12 a required parameter) accounted for 4006 (80%) of these violations. Of the 980 other  
13 violations, 502 were for pH exceedance, 353 were for turbidity exceedance, 56 were for  
14 oil/grease exceedance, 40 were for TDS exceedance and 29 were for TSS exceedance.  
15 During this same period, Ecology took 2221 enforcement actions. Most enforcement  
16 actions were informal (e.g. warning letters) but Ecology also issued 62 penalties and 55  
17 notices of violation or enforcement orders in this period.

18 Nearly all of the facilities covered under this general permit have received a least one site  
19 visit and have received technical assistance to help them comply with the terms and  
20 conditions of the current permit. Because of the large number of Permittees, Ecology has  
21 concentrated repeat visits on those facilities with compliance problems.”

22 **Growth Management Act and CARAs:**

23 The Growth Management Act (GMA) requires jurisdictions to protect critical areas as well as  
24 natural resource lands (forest, agricultural and mineral lands) (WAC 365-190-050 to 080). While  
25 both critical areas and natural resource lands require protection, the GMA also recognizes that not  
26 all critical areas are equal and some, due to their public value, should be protected to the  
27 maximum extent possible – that is, to avoid the critical area altogether:

28 WAC 365–190–020(4) “There are qualitative differences between and among  
29 critical areas. Not all areas and ecosystems are critical for the same reasons. Some  
30 are critical because of the hazard they present to public health and safety, some  
31 because of the values they represent to the public welfare. In some cases, the risk  
32 posed to the public by use or development of a critical area can be mitigated or  
33 reduced by engineering or design; in other cases that risk cannot be effectively  
34 reduced except by avoidance of the critical area. Classification and designation of  
35 critical areas is intended to lead counties and cities to recognize the differences  
36 among these areas, and to develop appropriate regulatory and nonregulatory  
37 actions in response.” (Emphasis added.)

38 **Conclusion:**

39 The effects on water quality and quantity due to the designation of the land as a mineral land of  
40 long term commercial significance will not in and of itself pose as a direct risk. However,  
41 aggregate mining increases the risk of pathogenic contamination to groundwater. Regulated  
42 activities that accompany aggregate mining also generate spills of hazardous materials that pose  
43 significant risk to groundwater and in many cases go unreported. The long-term effects of these  
44 hazardous material spills are an area of study where data is lacking. A majority of the region’s

1 drinking water sources are wellheads located in CARA I designated areas. The contamination of  
2 these sources for even a short period of time in a region reliant on groundwater creates substantial  
3 public health and economic risk. Therefore, the designation of Mineral Lands of Long Term  
4 Commercial Significance within the 1- and 5-year time of travel of municipal wellhead protection  
5 areas should be avoided.

6 **Recommendations:**

7 Recommendations for designating mineral lands of long term commercial significance in Critical  
8 Aquifer Recharge Areas include:

- 9 1. Prohibit the designation of mineral lands within the one- and five-year horizontal time of  
10 travel zone of municipal water supplies.
- 11 2. Require hydrologic studies during the permit process that assess site-specific conditions  
12 and predict effects to ground and surface water quality and quantity, including impacts to  
13 public and private water systems.
- 14 3. Develop specific policies under the mining goal in Chapter 3 Natural Resources to address  
15 mining.

16 **Proposed Text Amendments:**

17 Comprehensive Plan Designation Criteria in Chapter 3 Natural Resources should be amended as  
18 follows:

19 ...

20 11. Mineral Resource Lands shall not be designated within the Zone 1 or Zone 2 Horizontal Time  
21 of Travel boundaries for any Group A Public Water System.

22  
23 Thurston County Code, Section 20.30B.030(1)(g) should be amended as follows:

24 ...

25 vi Mineral Resource Lands shall not be designated in the Zone 1 or Zone 2 Horizontal Time of  
26 Travel Boundary for any Group A Public Water System.

27 ...

28  
29 **FISH AND WILDLIFE HABITAT CONSERVATION AREAS:**

30 Fish and wildlife habitat conservation areas are one of five types of critical areas that are required  
31 to be identified by the GMA.

32 WAC 365-190-030(6)(a) and (b) define Fish and Wildlife Habitat Conservation Areas as:

- 33 (a) "areas that serve a critical role in sustaining needed habitats and species for the  
34 functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that  
35 the species will persist over the long term. These areas may include, but are not limited to,  
36 rare or vulnerable ecological systems, communities, and habitat or habitat elements  
37 including seasonal ranges, breeding habitat, winter range, and movement corridors; and  
38 areas with high relative population density or species richness. Counties and cities may  
39 also designate locally important habitats and species.

1 (b) "Habitats of local importance" designated as fish and wildlife habitat conservation  
2 areas include those areas found to be locally important by counties and cities.

3 WAC 365-190-130(4)(a) recommends counties:

4 "...identify and classify seasonal ranges and habitat elements where federal and state  
5 listed endangered, threatened and sensitive species have a primary association and which,  
6 if altered, may reduce the likelihood that the species will persist over the long term.  
7 Counties and cities should consult current information on priority habitats and species  
8 identified by the Washington state department of fish and wildlife."

9 Furthermore WAC 365-190-130(4)(b) recommends that counties:

10 "...identify, classify and designate locally important habitats and species. Counties and  
11 cities should consult current information on priority habitats and species identified by the  
12 Washington state department of fish and wildlife. Priority habitat and species information  
13 includes endangered, threatened and sensitive species, but also includes candidate species  
14 and other vulnerable and unique species and habitats. While these priorities are those of  
15 the Washington state department of fish and wildlife, they should be considered by  
16 counties and cities as they include the best available science. The Washington state  
17 department of fish and wildlife can also provide assistance with identifying and mapping  
18 important habitat areas at various landscape scales. Similarly, the Washington state  
19 department of natural resources' natural heritage program can provide a list of high quality  
20 ecological communities and systems and rare plants."

21 **Fish and Wildlife Conservation Area Identification:**

22 To identify known conservation areas, Thurston County refers to data maintained by the United  
23 States Fish and Wildlife Service, Washington Department of Natural Resources' Natural Heritage  
24 and Aquatic Resource Programs, and the Priority Habitat and Species List maintained by the  
25 Washington Department of Fish and Wildlife. In cases where the science is emerging regarding  
26 "seasonal ranges and habitat elements, the County takes a precautionary approach and consults  
27 with federal and state agencies as well as local sources, e.g. Tribes or Nature Conservancy.

28 When the presence of habitat and/or species are in question, staff conducts a site visit and may  
29 recommend a formal biological survey by a licensed professional, that in turn may result in the  
30 requirement for a habitat conservation plan.

31 An example of this process is with implementation of the Interim Prairie and Oregon White Oak  
32 Ordinance. The range of prairie and Oregon white oak habitats and the species associated with  
33 these types of habitat are currently being studied by federal and state wildlife agencies.

34  
35  
36 Development applications are reviewed and screened for the presence of prairie and oak  
37 woodland habitat using the prairie soils map maintained by Thurston Geodata. If the proposed  
38 development site is identified as being located on prairie soils, staff visits the site to determine the  
39 presence of habitat and/or species.

40 Historically, the range of south Puget Sound prairie and other grasslands may have exceeded  
41 300,000 acres across the region. County maps show approximately 93,000 acres identified as  
42 having prairie soil (excluding cities, including UGAs), equating to about 36,600 total parcels.  
43 Approximately 79,000 acres and 21,000 of those properties are in rural county, outside of city

1 urban growth areas. Soils known to be utilized by the Mazama pocket gopher, a state threatened  
2 and federal candidate species cover approximately 73,000 acres (excluding cities, including  
3 UGAs).

4 From 2007 - April 2011, there have been approximately 4,400 applications on prairie or gopher  
5 soils, and a total of 26 habitat management plans have been required. Looking from July 2009  
6 (original adoption of interim prairie ordinance) - April 2011, there have been about 1,200 projects  
7 on prairie or gopher soils. During this time, twelve pocket gopher surveys were required, and  
8 only six habitat management plans were required. Two of those were county projects.

9 What this data demonstrates is that designation of conservation areas requires study and support  
10 of federal and state agencies or, in the case of locally important species and habitat, county  
11 analysis and site visits to accurately identify conservation areas requiring protection. Given that  
12 species move (nest site to nest site or burrow to burrow) overtime, the studies that identify  
13 conservation habitat areas should be appropriately current.

#### 14 **Best Available Science Review:**

##### 15 Prairies:

16 Science suggests habitat loss to development has eliminated most of the prairie vegetation, and  
17 that expanding human development has resulted in an increasing number of species being  
18 restricted to small pieces of isolated habitat that require intensive management for the species to  
19 survive (Stinson, 2005). Basically, habitat loss due to forest succession, agriculture and  
20 development has eliminated most of the prairie vegetation.

21 South Puget Sound prairies are located on glacial outwash gravels. Some of these glacial gravel  
22 deposits are very deep and valuable for use in construction and road-building, and prairie sites of  
23 significant size may be destroyed by gravel mining. According to Stinson (2005), one of the  
24 historic sites where Tacoma pocket gophers were collected became a large gravel pit, and two  
25 gravel pits have been opened on occupied gopher habitat in Pierce County south of the City of  
26 Roy.

##### 27 Riparian Zone and 100 Year Flood Plains:

28 Destruction of the riparian zone during gravel extraction operations can have multiple deleterious  
29 effects on anadromous fish habitat, which are afforded special consideration under the Growth  
30 Management Act (RCW 36.70A.172). The importance of riparian habitat to anadromous fish  
31 should not be underestimated. For example, a stream's capacity to produce salmonids is  
32 controlled by the structure and function of the riparian zone. The riparian zone includes stream  
33 banks and riparian vegetative cover. Damaging any one of these elements can cause stream bank  
34 destabilization resulting in increased erosion, sediment and nutrient inputs, and reduced shading  
35 and bank cover leading to increased stream temperatures. Destruction of riparian trees also means  
36 a decrease in the supply of large woody debris. This results in a loss of instream habitat  
37 complexity and diversity caused by removing the source of materials partially responsible for  
38 creating pools and riffles that are critical for anadromous fish growth and survival (Hogarth,  
39 2005).

40 In the complex geology of glacial beach ridge setting, the removal of sand and gravel can alter  
41 ground water flow paths and affect the supply of water available to wetlands that are fed by  
42 discharge from the sand and gravel. Open-water ponds created by sand and gravel mining change  
43 ground water temperatures, though the magnitude and extent of those changes is not yet known.  
44 This is an ongoing concern that needs further study (Green, 2005). During excavation, if

1 floodplain pits are kept dry via pumping, local water tables may be lowered, potentially  
2 dewatering nearby tributary channels and desiccating riparian vegetation and floodplain wetlands  
3 (White Paper, 2002).

4 Gravel mining can significantly alter the natural habitat structures and processes to which native  
5 plants and animals are adapted. Depending on the type of habitat affected, biological  
6 consequences include changes in the quantity and quality of spawning, rearing, migration, and  
7 disturbance refuge habitats, availability and quality of food, greater exposure to predators and  
8 increased competitive interactions. (Thurston County, 2005) Further, mineral extraction in and  
9 near streams can cause many adverse impacts to anadromous fish and their habitat. The impacts  
10 can extend far beyond the mining site, and stream recovery can take decades. (Hogarth, 2005)

11 The transport of sand- and gravel-sized sediment is particularly important in determining channel  
12 form, and a reduction in the supply of these sediments may induce channel changes. Moreover,  
13 gravel and cobbles have tremendous ecological importance as habitat for benthic  
14 macroinvertebrates and as spawning habitat for salmon and trout (White Paper, 2002). Mineral  
15 extraction of alluvial material from within or near a stream bed has a direct impact on the stream's  
16 physical habitat parameters such as channel geometry, bed elevation, substrate composition and  
17 stability, instream roughness elements (large woody debris, boulders, etc.), depth, velocity,  
18 turbidity, sediment transport, stream discharge, and temperature (Hogarth, 2005).

19 Smolts (juvenile fish) migrate seaward with the flowing water, so their progress is affected not so  
20 much by minor barriers, but passage over dams or through hydroelectric turbines, diversion into  
21 irrigation ditches, post-flood stranding in off-channel water bodies such as captured gravel pits,  
22 excessive water temperatures, and predation (White Paper, 2002). As pointed out in the White  
23 Paper, (2002), floodplain gravel pits, highway prisms, railroad grades and other urbanization  
24 reduce floodplain connectivity and restrict channel migration, which, along with reduced base  
25 flows from irrigation diversions, have substantially reduced habitat diversity. At one site  
26 investigated, 90% of the ground water basin's flow is now surfacing in the quarry. Ground water  
27 that previously discharged at a spring now discharges in the quarry where it is exposed to  
28 quarrying activities. This premature surfacing of the ground water also alters its temperature,  
29 changing the temperature characteristics of the receiving stream and potentially affecting its  
30 aquatic life (Green, 2005).

31 The National Marine Fisheries Service (NMFS) recommends that mining pit excavations located  
32 on the adjacent floodplain or terraces should be preferentially sited outside the channel migration  
33 zone, and as far from the stream as possible. They also recommend that pits be separated from  
34 the active channel by a buffer designed to maintain this separation for several decades (Hogarth,  
35 2005). NMFS continues that the cumulative impacts of gravel extraction operations to  
36 anadromous fish and their habitat be addressed by federal, state, and local resource management  
37 and permitting agencies and be considered in the permitting process (Hogarth, 2005).

### 38 **Conclusion:**

39 Best available science indicates that fish and wildlife habitat conservation areas are irreversibly  
40 affected by mining. The designation of Mineral Lands of Long Term Commercial Significance  
41 where federal or state studies have mapped conservation habitat with either threatened or  
42 endangered species is incompatible with Federal and State conservation policies. Where the range  
43 of habitat is in question as is the case with prairie and Oregon white oak woodlands, it is not  
44 feasible to exclude the designation of Mineral Lands of Long Term Commercial Significance.  
45 Rather the conservation areas would be addressed at the time of permitting when details of the

1 proposal are available and site-specific analyses can be prepared. The delineation of these areas at  
2 the time of designation can be more difficult due to the different types of habitat and natural  
3 changes over time. The intent of designation of a mineral land is to locate and preserve potential  
4 mineral resources, not to outline where the applicant intends to mine. Protection of fish and  
5 wildlife habitat conservation areas will still be a high priority at the time of a permit application.  
6 Protection measures for these areas will be better evaluated at the permitting stage and the permit  
7 will be required to meet the Critical Areas Ordinance in effect at that time.

#### 8 **Recommendations:**

- 9 **1.** Prohibit the designation of MLTS in known conservation areas identified by federal, state  
10 or local agencies.
- 11 **2.** In areas where emerging science has not yet led to a consensus of the vulnerability of a  
12 species or habitat (e.g. where species are candidates for listing under a federal or state  
13 agency), provisionally allow the designation of MLTS, and evaluate current science and  
14 other relevant data during the permitting process.
- 15 **3.** Review criteria in Mineral Land Special Use Permit requirements to ensure that fish and  
16 wildlife habitat conservation areas are addressed at the time of permit application.
- 17 **4.** Review mineral lands goal and policies in Chapter 3 of the Comprehensive Plan to ensure  
18 they are adequate to guide the development of regulations for the protection of fish and  
19 wildlife conservation areas during permitting.

#### 20 FREQUENTLY FLOODED AREAS:

21 These areas perform important hydrologic functions but may present a risk to persons and  
22 property. Classifications of frequently flooded areas should include, at a minimum, the 100-year  
23 flood plain, designations of the Federal Emergency Management Agency, and the National Flood  
24 Insurance Program (WAC 365-190-110).

25 The GMA does not define frequently flooded areas; they are defined in WAC 365-190-030 as  
26 follows:

27 (8) “Frequently flooded areas” are lands in the flood plain subject to at least a one percent  
28 or greater chance of flooding in any given year, or within areas subject to flooding due to  
29 high groundwater. These areas include, but are not limited to, streams, rivers, lakes,  
30 coastal areas, wetlands and areas where high groundwater forms ponds on the ground  
31 surface.”

32 In September 2008, the National Marine Fisheries Service (NMFS) released a biological opinion  
33 on the effects of FEMA's National Flood Insurance Program (NFIP) throughout Puget Sound. The  
34 opinion, required by a decision of the U.S. District Court in November 2004, finds that FEMA  
35 has the ability to change the way the NFIP is implemented in Puget Sound communities to reduce  
36 impacts on critical habitat areas for certain species of salmon and Southern Resident killer whales  
37 (Release Number: R10-08-132).

38 The Biological Opinion (BiOp) developed by NMFS suggests that no development, including  
39 mining, should be allowed in floodways, channel migration zones and an area extending landward  
40 fifty feet, and/or the riparian buffer zone. In order to protect fish habitat and flood storage in the  
41 remaining 100-year floodplain, NMFS suggests either prohibiting development in the 100-year  
42 floodplain, or providing mitigation for any effects to floodwater storage and fish habitat function  
43 within the 100-year floodplain.

1 **Best Available Science:**

2 Impacts in Floodplains:

3 According to the Federal Interagency Stream Restoration Working Group (1998), agriculture,  
4 forestry, grazing, mining, recreation, and urbanization are some of the main land uses that can  
5 result in disturbance of stream corridor structure and functions. Even small scale developments  
6 can cause impacts in floodplains and have cumulative effects (NMFS, 2008).

7 Exploration, extraction, processing, and transportation of coal, minerals, sand, gravel, and other  
8 materials have had and continue to have a profound effect on stream corridors across the nation.  
9 Both surface mining and subsurface mining damage stream corridors. Changes to hydrologic  
10 conditions due to mining activity are extensive. Surface mining is, perhaps, the only land use with  
11 a greater capacity to change the hydrologic regime of a stream than urbanization. Increased runoff  
12 and decreased surface roughness will cause peaks earlier in the hydrograph with steeper rising and  
13 falling limbs. Once-perennial streams may become intermittent or short-lived as base flow  
14 decreases. (Federal Interagency Stream Restoration Working Group, 1998)

15 Protecting floodplain areas from cumulative impacts caused by development and climate change  
16 is increasingly urgent because of the expected increases in flood frequency and severity caused by  
17 future development (NMFS, 2008). To protect these systems, it is necessary to safeguard against  
18 upstream river development and damaging land uses that modify runoff and sediment supply in  
19 the watershed (Poff, 1997).

20 Recently, there has been considerable degradation of natural floodplains. This is mainly due to  
21 dredging, bank armoring, and stream channelization. Other development has also continued this  
22 process of stream channel manipulation. (May and Peterson, 2003) To prevent or reduce these  
23 negative effects, Judge et al. from the Puget Sound Partnership (2010) suggest that development  
24 within 100-year floodplains and inside the riparian buffer zone (RBZ) should be prohibited or at  
25 the least, mitigated. In its analysis of proposed regulations developed in response to listing under  
26 the Federal Endangered Species Act, Parametrix suggests that prohibiting development activity in  
27 inner portions of riparian areas and allowing native vegetation to recover is beneficial to salmon.  
28 This could include placing riparian areas in separate, protected tracts such as native growth  
29 protection or conservation easements (Parametrix, 2002).

30 Impacts in Aquatic Environments:

31 Human influences have had profound impacts on the abundance of many prey species in the  
32 northeastern Pacific Ocean during the past 150 years. Foremost among these, many stocks of  
33 salmon have declined significantly due to overfishing, harmful artificial propagation practices,  
34 and degradation of freshwater and estuarine habitats through habitat conversion due to  
35 development and urbanization, dam building, and forestry, agricultural, and mining practices  
36 (NMFS, 2008). Further, the Federal Interagency Stream Restoration Working Group (1998)  
37 suggests that increasing development and urbanization may reduce the ability of the stream  
38 corridor to support a wide variety of fish and wildlife species and, at the same time, generate  
39 additional pressure for recreational uses.

40 In spite of the important scientific, cultural, and socio-economic value of salmonids, many  
41 genetically unique salmon populations are in danger of being lost forever. This is especially true  
42 in the Puget Sound Lowland eco-region, where rapid population growth and widespread  
43 development are putting pressure on the remaining natural resource areas that support native  
44 salmonids (May and Peterson, 2003). Development activities have limited access to historical  
45 spawning grounds and altered downstream flow and thermal conditions. Watershed development

1 and associated urbanization throughout the Puget Sound, Hood Canal, and Strait of Juan de Fuca  
2 regions have increased sedimentation, raised water temperatures, decreased large woody debris,  
3 decreased gravel, reduced river pools and spawning areas, and dredged and filled estuarine  
4 rearing areas (NMFS, 2008). The specific practices that have resulted in diminished ecosystem  
5 health include mining, among other activities. The cumulative effects of timber harvest, fire  
6 suppression, livestock grazing, mining, irrigation, and other factors have greatly altered the health  
7 of river basins in eastern Washington and have consequently lead to widespread declines in  
8 anadromous fish populations (Knutson & Naef, 1997).

9 Recent effects of mining on stream and riparian ecosystems include water contamination with  
10 leachates from sand and gravel excavation in stream channels and floodplains. Removing gravel  
11 from rivers can alter flow patterns in channels and overload aquatic habitats with sediments. This  
12 causes changes in substrate composition, depth, velocity flow patterns, turbidity, suspended  
13 sediments, and temperature, all of which determine the abundance and biodiversity of aquatic  
14 organisms. (Knutson, 1997)

15 Water temperature is affected by air temperature, flow, shade, turbidity, groundwater-surface  
16 water interactions, channel complexity, water diversions, substrate composition, the presence of  
17 headwater wetlands and lakes, and reservoir releases. Many of these conditions and associated  
18 impacts are affected by land development practices. Cool, well-oxygenated water is essential for  
19 salmonid survival, and natural streams generally contain an abundant supply of dissolved oxygen.  
20 Changes in temperature can influence water chemistry, with warmer temperatures increasing the  
21 metabolic demand for oxygen while at the same time decreasing the capacity of freshwater to  
22 hold oxygen in solution. The concentration of dissolved oxygen must be above a critical level for  
23 salmonids to exist in freshwater streams (Knight, 2009). Declining base flows (from increased  
24 water withdrawals and loss of groundwater recharge), and loss of riparian vegetation associated  
25 with increased urbanization and development activities has contributed to an upward trend in  
26 water temperatures over the last 20 years (Parametrix, 2002).

27 Mining can often remove large areas of vegetation at the mine site and associated transportation  
28 facilities, processing plants, and tailings piles. Reduced shade can increase water temperatures  
29 enough to harm aquatic species. Loss of vegetation cover, poor water quality, changes in food  
30 availability, disruption of migration patterns, and similar difficulties can have serious effects on  
31 terrestrial wildlife. Species composition may change significantly with a shift to more tolerant  
32 species. Population is also likely to decline. Mining holds few positive benefits for most wildlife  
33 species (Federal Interagency Stream Restoration Working Group, 1998). Development within the  
34 floodplain results in stream channelization, habitat instability, vegetation removal, and point and  
35 nonpoint source pollution all of which contribute to degraded salmon habitat (NMFS, 2008).

36 In the process of building their redds (nests), salmonids actually fan away the fine sediment from  
37 the streambed gravels thus improving the flow of water to the incubating eggs. Survival to alevin  
38 emergence from the streambed is generally strongly correlated to the percentage of fine sediment  
39 ("fines") in the substratum. Elevated levels of fine sediment in spawning gravels have been  
40 associated with timber-harvest activities, mining, grazing, and other human activities (May,  
41 2003).

42 Continued development of floodplains will exacerbate flood conditions in a manner that reduces  
43 juvenile Chinook salmonid survival rates, further lowering the rate of productivity which is  
44 already non-viable, hastening the trend toward extirpation of these populations (NMFS, 2008).  
45 Coho salmon, which normally out-compete cutthroat trout in natural streams, appear to be more  
46 sensitive to changes associated with urbanization and therefore decline in abundance as urban

1 development increases (May, 2009). These effects impair conditions for juvenile salmon  
2 development and migration.

3 **Conclusion:**

4 Surface mining in the 100-year floodplain negatively impacts important hydrologic functions and  
5 anadromous fisheries through vegetation removal, changes in water temperature, reductions in  
6 water quality, among other effects. Climate change is expected to increase flood frequency and  
7 severity in Washington State, thus exacerbating impacts and risks currently experienced locally.  
8 In addition to the impacts outlined herein, authorizing development activities such as surface  
9 mining within the 100-year floodplain contravenes federal guidance for endangered species  
10 preservation and should be avoided.

11 **Recommendation:**

12 Prohibit designation of mineral lands in the 100-year floodplain.

13 **Proposed Amendments:**

14 Comprehensive Plan Designation Criteria in Chapter 3 Natural Resources should be amended as  
15 follows:

16 ...

17 7. Mineral resource lands shall not include agriculture lands of long-term commercial  
18 significance, historical/cultural preservation sites, and any Federal Emergency  
19 Management Agency (FEMA) 100-year floodplain.

20 ...

21 Thurston County Code Section 20.30B.030(1)(g) should be amended as follows:

22 ...

23 iii. Mineral resource lands shall not include agriculture lands of long-term commercial  
24 significance, historical/cultural preservation sites, and any Federal Emergency  
25 Management Agency (FEMA) 100 year floodplain.

26 WETLANDS:

27 The Growth Management Act, RCW 36.70A.030, WAC 365-190-030 and Thurston County's  
28 Critical Areas Ordinance (CAO) define wetlands as follows:

29 "Wetland" or "wetlands" means areas that are inundated or saturated by surface  
30 water or groundwater at a frequency and duration sufficient to support, and that  
31 under normal circumstances do support, a prevalence of vegetation typically  
32 adapted for life in saturated soil conditions. Wetlands generally include swamps,  
33 marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands  
34 intentionally created from nonwetland sites, including, but not limited to,  
35 irrigation and drainage ditches, grass-lined swales, canals, detention facilities,  
36 wastewater treatment facilities, farm ponds, and landscape amenities, or those  
37 wetlands created after July 1, 1990, that were unintentionally created as a result of  
38 the construction of a road, street, or highway. Wetlands may include those  
39 artificial wetlands intentionally created from nonwetland areas created to mitigate  
40 conversion of wetlands.

1 Wetlands in Thurston County are rated according to the Washington State Wetland Rating System  
2 for Western Washington, August 2006, as amended. Wetlands are rated as Category 1-4.  
3 Thurston County's current CAO identifies wetlands as Class 1-3, with Categories 3 and 4 grouped  
4 together under Class 3. For purposes of this chapter, Class and Category should be considered to  
5 be the same.

6 The current Thurston County Critical Areas Ordinance (CAO) prohibits mining in Category 1 (I)  
7 and 2 (II) wetlands. Thurston County's CAO defines Category 1 and 2 wetlands as such:

8 "Class I wetlands" can be described as the cream of the crop. Generally, these  
9 wetlands are not common and would make up a small percentage of the wetlands  
10 in the state. These are wetlands that: (1) provide a life support function for  
11 threatened or endangered species that have been documented, and the wetland is  
12 on file in databases maintained by state agencies, (2) represents a high quality  
13 example of a rare wetland type, (3) are rare habitat type within a given region, or  
14 (4) are relatively undisturbed and contain ecological attributes that are impossible  
15 to replace within a human lifetime.

16 Class I wetland are:

- 17 1. Those that have a documented occurrence in the wetland of a federal or state listed  
18 endangered, threatened plant, animal, or fish species; or
- 19 2. High quality native wetland communities which qualify for inclusion in the Natural  
20 heritage Information System; or
- 21 3. Documented as regionally significant waterfowl or shorebird concentration areas; or
- 22 4. Wetlands with irreplaceable ecological attributes which are impossible to replace in a  
23 human lifetime, such as bogs.

24 "Class II wetlands" occur more commonly than Class I wetlands. These wetlands  
25 are those that: (1) provide habitat for very sensitive or important wildlife or  
26 plants, (2) are either difficult to replace, or (3) provide very high functions and  
27 values, particularly for wildlife habitat.

28 Class II wetlands satisfy no Class I criteria and are:

- 29 1. Those that have a documented occurrence in the wetland of a federal or state listed  
30 sensitive plant, animal, or fish species; or
- 31 2. Those that contain priority species or habitats recognized by state agencies; or
- 32 3. Wetlands with significant functions which may not be adequately replicated through  
33 creation or restoration; or
- 34 4. Wetlands with significant habitat value of twenty-two or more points from the rating  
35 system.

### 36 **Best Available Science Review:**

37 Wetlands provide many benefits to watersheds such as water purification, flood control, carbon  
38 sequestration, recreation and open space, shoreline stability, and support for biodiversity and  
39 wildlife habitat. Regrettably, many have recently been damaged from draining for development  
40 or other uses. Development alters the movement and storage of surface water and groundwater  
41 within a wetland's contributing basin. These changes can significantly affect the wetlands and  
42 other aquatic resources, causing a negative effect on many wetland functions (Sheldon, 2005).

1 These negative effects can include decreased species richness and local extinctions, isolation of  
2 wetlands and habitat fragmentation (King County, 2004). The specific practices that have resulted  
3 in diminished ecosystem health include mining (Knutson & Naef, 1997).

4 In 1989, Governor Booth Gardner signed an Executive Order establishing a statewide goal of no  
5 net loss addressing wetlands protection. State agencies reporting to the Governor were directed to  
6 implement this goal through specific tasks, and other agencies and local governments were  
7 encouraged to make their actions consistent with the goal.

8 "It is the interim goal...to achieve no overall net loss in acreage and function of Washington's  
9 remaining wetlands base. It is further the long-term goal to increase the quantity and quality of  
10 Washington's wetlands resource base." (E.O. 89-10).

#### 11 Wetland Functions Descriptions:

12 Wetlands perform an array of ecological functions that we have only recently begun to appreciate.  
13 Scientists today recognize the environmental benefits that wetlands provide, and the importance  
14 of preserving rather than eliminating our wetland resources.

15 Our understanding of the complexities of wetland ecosystems is still developing, and it seems the  
16 more we learn, the more valuable wetlands become. Wetland ecologists have already documented  
17 the following environmental benefits of wetlands: water purification, flood protection, shoreline  
18 stabilization, groundwater recharge, and streamflow maintenance. Wetlands also provide habitat  
19 for fish and wildlife species, including endangered species. Not all wetlands provide all of these  
20 benefits, and how a particular wetland functions depends on its location and its type. Here is a  
21 simple summary of how wetlands perform their complicated functions, along with a brief  
22 explanation of how these functions support humans and other species.

#### 23 Water Purification:

24 Wetlands protect water quality by trapping sediments and retaining excess nutrients and other  
25 pollutants such as heavy metals. These functions are especially important when a wetland is  
26 connected to groundwater or surface water sources (such as rivers and lakes) that are in turn used  
27 by humans for drinking, swimming, fishing, or other activities. These same functions are also  
28 critical to the fish and other wildlife that inhabit these waters. (Sheldon, 2005)

29 Sediments, nutrients, and toxic chemicals enter wetlands primarily by way of "runoff," a term  
30 used to describe the rain and stormwater that travels over land surfaces on its way to receiving  
31 waters. In urban areas, runoff washes over buildings and streets in industrial, commercial, and  
32 residential areas where it picks up pollutants and carries them to receiving waters. In rural areas,  
33 agricultural and forest practices can affect runoff. Where the runoff drains a disturbed area it may  
34 carry too much sediment. Runoff may also carry pesticides and fertilizers if these have been  
35 applied to the land. (Sheldon, 2005)

36 Sediments, which are particles of soil, settle into the gravel of streambeds and disrupt or prevent  
37 fish from spawning, and can smother fish eggs. Other pollutants -- notably heavy metals -- are  
38 often attached to sediments and present the potential for further water contamination. Wetlands  
39 remove these pollutants by trapping the sediments and holding them. The slow velocity of water  
40 in wetlands allows the sediments to settle to the bottom where wetland plants hold the  
41 accumulated sediments in place. Removing these soils and plants poses a greater risk to wildlife  
42 species as well as the groundwater we drink. (Sheldon, 2005)

43 Runoff waters often carry nutrients that can cause water quality problems. An example of such an  
44 occurrence is an "algae bloom." Besides the aesthetic problems associated with algae blooms (a

1 green, smelly slime) they result in low levels of oxygen in the water. This oxygen depletion can  
2 result in the death of fish and other aquatic life. Some algae release toxins that can kill pets and  
3 livestock when bloom conditions occur. Wetlands protect surface waters from the problems of  
4 nutrient overload by removing the excess nutrients, some of which are taken up and used by  
5 wetland plants, and some of which are converted to less harmful chemical forms in the soil.  
6 (Sheldon, 2005)

7 Toxic chemicals reach surface waters in the same way as nutrients, and can cause disease, death,  
8 or other problems upon exposure to plants and animals (including humans). In a function similar  
9 to nutrient removal, wetlands trap and bury these chemicals or may even convert some of them to  
10 less harmful forms. Scientists are continuing to study the fate of toxic chemicals when they enter  
11 wetlands, and they warn us that even if the toxins are buried, they are still potentially dangerous.  
12 Disruption of wetland soils could release the toxins back into the aquatic environment. (Sheldon,  
13 2005)

#### 14 Flood Protection:

15 Almost any wetland can provide some measure of flood protection by holding excess runoff after  
16 a storm, and then releasing it slowly. The size, shape, location, and soil type of a wetland  
17 determine its capacity to reduce local and downstream flooding. While wetlands cannot prevent  
18 flooding, they do lower flood peaks by temporarily holding water and by slowing the water's  
19 velocity. Wetland soils act as a sponge, holding much more water than other soil types. Even  
20 isolated wetlands can reduce local flooding -- if the wetlands were not there to hold stormwater  
21 runoff, backyards and basements might end up under water. (Sheldon, 2005)

#### 22 Shoreline Stabilization:

23 Wetlands that occur along the shoreline of lakes or along the banks of rivers and streams help  
24 protect the shoreline soils from the erosive forces of waves and currents. The wetland plants act as  
25 a buffer zone by dissipating the water's energy and providing stability by binding the soils with  
26 their extensive root systems. (Sheldon, 2005)

#### 27 Groundwater Recharge and Streamflow Maintenance:

28 Aquifers and groundwater are "recharged," that is, replenished with water by precipitation that  
29 seeps into the ground and supplies surface waters. Those wetlands that are connected to  
30 groundwater systems or aquifers represent important areas for groundwater exchange. They retain  
31 water, thus providing time for infiltration to occur. Groundwater, in turn, provides water for  
32 drinking, irrigation, and maintenance of streamflow and lake and reservoir levels. During periods  
33 of low streamflow (or low lake water levels), the slow discharge of groundwater often helps  
34 maintain minimum water levels. In addition, wetlands located along streams, lakes, and reservoirs  
35 may release stored water directly into these systems, thus also contributing to their maintenance.  
36 Wetlands' many intricate connections with groundwater, streamflow, and lake and reservoir water  
37 levels make them essential in the proper functioning of the hydrologic cycle. (Sheldon, 2005)

#### 38 Fish and Wildlife Habitat:

39 Many species of birds, fish, mammals, reptiles, and amphibians rely on wetland habitat for  
40 breeding, foraging, and cover. The special wetland conditions provide unique habitat for species  
41 that cannot survive elsewhere. Migratory birds depend on wetlands, and many endangered and  
42 threatened animal species require wetlands during part of their life cycle. The incredibly high rate  
43 of wetlands loss has contributed to the demise of dependent species. (Sheldon, 2005)

1 Wetland plants and small animals -- especially insects -- are essential links at the lowest levels of  
2 the food chain. A wetlands environment supports these plants and animals, which in turn support  
3 the larger animals that feed on them. While an otter or a trout may be a more attractive species to  
4 protect than some anonymous insect or plant, the latter are no less important in the overall  
5 scheme. If we diminish the lowest levels of the food chain, the higher levels will suffer as well.  
6 (Sheldon, 2005)

#### 7 Economic Benefits:

8 The economic benefits associated with the environmental functions of wetlands can be  
9 substantial. For example, construction of flood control or water treatment systems to replace those  
10 functions provided by wetlands can result in costs that far outweigh the land purchase price of  
11 preserving the natural wetland systems. Similarly, when wetlands lose their value as fish habitat,  
12 this value is difficult to replace, and the consequential losses to the recreational and commercial  
13 fishing industries can be significant. There are as yet no precise formulas that can be used to  
14 determine the accurate dollar value per acre of wetland, but the more we learn about wetlands, the  
15 higher that value becomes. (Sheldon, 2005)

#### 16 The Limits of Wetlands:

17 As broad as the benefits of wetlands are, and for all their ecological contributions, they do have  
18 limits. A partially filled or otherwise damaged wetland is one that only partially meets its  
19 potential for flood control, shoreline stabilization, or groundwater recharge. A badly degraded  
20 wetland can lose its capacity to remove excess sediments, nutrients, and other pollutants, and can  
21 lose habitat value for fish and wildlife. Wetlands may have tremendous capacities to provide  
22 environmental benefits, but they are not indestructible. In order for wetlands to continue to  
23 perform their ecological functions, they need to be protected. (Sheldon, 2005)

#### 24 **Results of Mining on Wetlands:**

25 In reviewing scientific literature regarding impacts from mining on wetlands and their buffers,  
26 staff was careful to distinguish between the types of mining being discussed e.g. hard rock versus  
27 sand and gravel. For the purposes of this report only those impacts addressed by activities  
28 regulated by the county's Critical Areas Ordinance are addressed, that is, sand and gravel mining.  
29 The direct link from specific surface mining activities to degradation of adjacent wetlands is not  
30 well documented in scientific literature, however impacts from disturbance and disruption of  
31 functions is well researched (Sheldon, 2005).

32 The literature supports that there are threats to wetlands from mining due to:

- 33 • alterations in the landscape processes that support healthy wetlands,  
34  
35 ○ "Mining disrupts wetland ecosystems by altering watershed processes that  
36 ultimately influence the attributes of streams, lakes, and estuaries. Further, mining  
37 may alter the timing and routing of surface and subsurface flows. This may  
38 increase stream flow and storm runoff, as a result of compaction of mine spoils,  
39 reduction of vegetated cover, and the loss of organic top soils, all of which reduce  
40 infiltration," (Spence 1996).  
41
- 42 • localized effects to water quality due nearby mining activities,  
43

- “Surface and gravel mining activities increase turbidity. In locations where ground water discharges to surface water, increasing turbidity of ground water may have a harmful effect on the surface water ecosystem (Mead 1995).”

- and hypotheses based on the experience of state wetland scientists,

- See attached Table 4.3. Summary of types of environmental disturbances created by some types of land uses from Sheldon 2005.

Wetlands can be severely degraded by storm water discharges from development due both to pollutants and to the disruption of natural flow rates into the wetland. If unchecked, sediments washed off construction sites can fill in wetlands. Since wetlands provide multiple benefits including flood storage, groundwater recharge, and water purification, it is important that discharges to wetlands be controlled to protect the hydrologic characteristics necessary to support the wetland (FEMA, 2002).

Mining generates large quantities of unusable rock that is often left on the surface after it is extracted. This exposes the rock (called spoils) to an oxidizing environment, resulting in several chemical reactions. The minerals contained in the spoils are not in equilibrium with the environment and almost immediately begin weathering. The reactions are similar to geologic weathering which usually takes hundreds to thousands of years. The accelerated weathering can release damaging amounts of acid and metals into the environment. Because of this, the two major disturbances created by surface mining are an increase in the acidity of surface waters and an increase in the levels of heavy metals that are toxic to many organisms (Sheldon, 2005). The most serious consequence of mining on aquatic ecosystems might be contamination of surface waters by acid leaching from mine spoils (Spence, 1996).

In addition to the introduction of pollutants, development near a wetland can alter the quantity and timing of surface and ground water inputs to the wetland. Considerable research has documented the adverse impacts from changes in wetland hydroperiod (Granger, 2005). Spence (1996) stated that mining disrupts wetland ecosystems by altering watershed processes that ultimately influence the attributes of streams, lakes, and estuaries. Further, mining may alter the timing and routing of surface and subsurface flows. This may increase stream flow and storm runoff, as a result of compaction of mine spoils, reduction of vegetative cover, and the loss of organic top soils, all of which reduce infiltration. Lower infiltration rates results in increases to overland runoff and stream flows, particularly during storm events (Spence, 1996). Additionally, mining may increase the amount of suspended fine sediments and turbidity in the water column. Fine sediments may settle in gravel pits or travel downstream to settle in other slow-water areas. As a result, downstream areas may become covered with sand, mud, and silt (Spence, 1996).

Development in or near wetlands can have serious negative impacts to the functions of watersheds. Draining and filling of wetlands and swamps in floodplains reduces the storage capacity of the system and leads to more downstream flooding (Bolton, 2001). Currently, watershed development, and associated increased imperviousness, alters all aspects of wetland hydrology by intercepting precipitation, reducing the water that infiltrates into the soil and causing higher runoff volumes and more frequent peaks to either enter or bypass wetlands (King County, 2004). Development can change stormwater flows and add pollutants to water bodies, impacting the water quality, quantity, and habitat. Even low levels of development can degrade fish populations. Research indicates that very low levels of development alters biological

1 functions with measurable impacts to salmon populations occurring with as little one home per  
2 acre as a result of changes in storm water flows (CH2M Hill, 2001).

3 An additional factor in determining whether to co-designate wetlands and mineral lands is to look  
4 to whether wetland areas meet the criteria of Mineral Lands. To determine whether to designate  
5 Category 1 and 2 wetlands as Mineral Lands of Long Term Commercial Significance, the  
6 composition of wetlands must be assessed for their value to mineral lands. Wetlands are  
7 composed of silts, clays, and decaying organic matter that are typically devoid of significant  
8 deposits of sand and gravel materials. Wetland soils such as Norma or Mukilteo Muck are not  
9 considered soils that contain gravel or sand. Typical wetland soils are highly organic and poorly  
10 drained. The water table is high and uses are limited. Typical soils for gravel mines are  
11 Spanaway-Nisqually which are coarse, well-drained and contain sufficient gravel for extraction  
12 (NRCS Soil Survey for Thurston County 1990). Wetland, or hydric, soils are not appropriate for  
13 gravel mining, therefore wetlands would not be considered Mineral Lands of Long Term  
14 Commercial Significance. Because wetland soils are not considered appropriate for mineral  
15 extraction, it would be inconsistent with WAC 365-190 to co-designate as a mineral land of long-  
16 term commercial significance.

17 With regard to wetland buffers, scientific literature indicates that buffers are crucial to protecting  
18 the functions of the wetlands they surround. Moreover, runoff from clearing and construction  
19 activities and from residential and commercial development would maintain higher winter  
20 wetland water levels than with infiltration, therefore decreasing the live storage and flood control  
21 capacities. Higher runoff also means lessened subsurface flows, recharge, and storage. Therefore  
22 wetlands may be expected to dry out for greater lengths and more frequency with concomitant  
23 hydrological effects on other aquatic areas.

24 In considering whether or not Class 1 and 2 wetland buffers should be excluded from designation  
25 as MLTS, staff found evidence to suggest that even the widest wetland buffers may not be  
26 sufficient in certain geologic settings. Ground water interaction is largely determined by surficial  
27 geology and land use setting, although buffer widths may also influence this process (Dunne and  
28 Leopold 1978). The hydrology of wetlands in high recharge areas of outwash soil with deep  
29 organic matter and vegetative complexity may be sustained by proposed buffer widths. However,  
30 in bedrock and till areas with low organic soils and sparse vegetation structure, buffers of 300 feet  
31 or greater averaged widths may not protect hydrological functions. In these situations, protecting  
32 watershed characteristics, especially infiltration areas, organic soils, and diverse vegetation is  
33 critical (King County 2004).

#### 34 **Impacts of Mining on Wetlands:**

35 Urbanization permanently alters many natural watershed processes, and in some cases, little may  
36 be done to mitigate effects. Thus, Spence (1996) suggests that the most effective way to minimize  
37 impacts is through careful land-use planning that minimizes the total impervious area and that  
38 prevents development along streams and in natural floodplains. The risk comes from altering the  
39 hydrologic recharge in timing, quantity and quality of ground and surface water sources to  
40 wetlands, the sedimentation of wetlands due to mining runoff, and the alteration of water  
41 chemistry due to runoff from sand and gravel stock piles.

42 Protection of wetlands was also included in the Parametrix review of proposed land use  
43 regulations aimed at protecting salmon after listing under the Federal Endangered Species Act  
44 (2002). Parametrix concluded that the proposed rules would have a beneficial effect on salmon

1 habitat. Additionally, according to Larson (2004), activities such as mining that significantly alter  
2 the landscape or vegetation in wildlife habitat areas should be avoided.

3 Maximum protection from a fish and wildlife perspective would likely involve no development  
4 anywhere (Knutson & Naef, 1997). However, a more likely and reasonable solution to protect  
5 fish and wildlife is to integrate fish and wildlife management considerations in all land use  
6 decisions. High impact development should be focused away from priority fish and wildlife  
7 habitats. Lands outside critical areas are also important to fish and wildlife as they help protect  
8 critical areas from surrounding urban development (Knutson & Naef, 1997). Development  
9 activities could have setback provisions that minimize impacts on groundwater movement and  
10 avoid the filling of wetlands (Parametrix, 2002). These suggestions are consistent with the  
11 County's current CAO which prohibits mining within Category 1 and 2 wetlands and further  
12 language could be incorporated into the Thurston County Comprehensive Plan and designation  
13 criteria by prohibiting the designation of mineral lands in these specified areas. The potential  
14 impacts to the highest quality wetlands (those identified as irreplaceable in our lifetimes)  
15 represents a high risk should these wetlands be designated as mineral lands.

### 16 **Analysis:**

17 During the June 15, 2005 Planning Commission meeting, staff presented several maps showing  
18 the likelihood of future gravel site location. The task force recommended that those sites with  
19 Category 1 and 2 wetlands were not suitable for Mineral Land designation, but that Category 3  
20 and 4 wetlands could be included in Mineral Land designation and evaluated and protected at the  
21 time of permitting subject to critical areas regulations. Category 1 and 2 wetlands are larger and  
22 could be identified through a wetland report. The smaller Category 3 and 4 wetlands would be  
23 identified at the permit stage although not allowed to be impacted due to the high functional  
24 values of wetlands. In order to identify the category of wetland, a wetland report that  
25 categorizes the wetland would have to be required at the time of designation. Identifying the  
26 Category 1 and 2 wetlands at the time of designation prevents designation of lands that are not  
27 appropriate for gravel mining and that do not contain mineral lands of long term commercial  
28 significance.

### 29 **Conclusion:**

30 Wetland science suggests that sand and gravel mining activities pose a high risk to wetland  
31 functions and that both wetlands and their buffers should be protected from disturbance. Further,  
32 given that wetlands are composed of silts, clays and other decaying organic matter that is  
33 typically devoid of significant sand and gravel deposits, extraction of minerals within these areas  
34 would not be anticipated to occur. It is highly unlikely than any Category 1 or 2 wetland could  
35 be considered as Mineral Lands of Long Term Commercial Significance.

### 36 **Recommendations:**

- 37 1. Prohibit the designation of mineral resource lands in known mapped wetlands that are  
38 Category 1 and 2 wetlands due to their high quality and irreplaceable functions.  
39
- 40 2. Address Category 3 and 4 wetlands and any specific impacts of mining development at the  
41 time of permitting when site specific details are available  
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**Proposed Amendments:**

Comprehensive Plan Designation Criteria in Chapter 3 Natural Resources should be amended as follows:

...

8. Mineral resource lands shall not include Class 1 or Class 2 wetlands or their protective buffers, but may include Class 3 and Class 4 wetlands.

...

Thurston County Code Section 20.30B.030(1)(g) should be amended as follows:

... 11

i. Mineral resource lands shall not include Class 1 or Class 2 wetlands or their protective buffers, but may include Class 3 and Class 4 wetlands.

NEXT STEPS:

The Planning Commission will hold another briefing to discuss mineral land designation criteria on January 4, 2012. A public hearing will be requested at the January 4<sup>th</sup> meeting to set a public hearing for February 8, 2012 to take comment on these proposed options. A follow up work session will be held prior to forwarding a recommendation to the Board of County Commissioners. A decision must be made by Thurston County by April 19, 2012 which is the compliance deadline.

ATTACHMENTS:

CHAPTER 365-190 WAC

CHAPTER 365-195 WAC

CHAPTER 9 ENVIRONMENT, THURSTON COUNTY COMPREHENSIVE PLAN

WORKS CITED

## Chapter 365-190 WAC

### Minimum Guidelines to Classify Agriculture, Forest, Mineral Lands, and Critical Areas

## Chapter 365-190 WAC

Last Update: 11/2/10

Minimum guidelines to classify agriculture, forest, mineral lands and critical areas

## WAC Sections

## PART ONE

## PURPOSE/AUTHORITY

365-190-010 Authority.

365-190-020 Purpose.

## PART TWO

## GENERAL REQUIREMENTS

365-190-030 Definitions.

## PART THREE

## GUIDELINES

365-190-040 Process.

365-190-050 Agricultural resource lands.

365-190-060 Forest resource lands.

365-190-070 Mineral resource lands.

365-190-080 Critical areas.

365-190-090 Wetlands.

365-190-100 Critical aquifer recharge areas.

365-190-110 Frequently flooded areas.

365-190-120 Geologically hazardous areas.

365-190-130 Fish and wildlife habitat conservation areas.

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**365-190-010****Authority.**

This chapter is established pursuant to RCW 36.70A.050.

[Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-010, filed 3/15/91, effective 4/15/91.]

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**365-190-020****Purpose.**

(1) The intent of this chapter is to establish minimum guidelines to assist all counties and cities in classifying and designating agricultural lands, forest lands, mineral resource lands, and critical areas.

(2) Growth management, natural resource land conservation, and critical areas protection share problems related to governmental costs and efficiency. The unwise development of natural resource lands or areas susceptible to natural hazards may lead to inefficient use of limited public resources, jeopardize environmental resource functions and values, subject persons and property to unsafe conditions, and affect the perceived quality of life. It is more costly to remedy the loss of natural resource lands or critical areas than to conserve and protect them from loss or degradation. The inherent economic, ecological, social, and cultural values of natural resource lands and critical areas should be considered in the development of strategies designed to conserve and protect these lands.

(3) In recognition of these common concerns, classification and designation of natural resource lands and critical areas is intended to assure the long-term conservation of natural resource lands and the protection of critical areas, and to preclude land uses and developments which are incompatible with natural resource lands and critical areas. When classifying and designating natural resource

lands and critical areas, counties and cities should integrate regulatory and nonregulatory approaches together in a comprehensive program that relates to existing local, state, and federal efforts. An integrated approach should also consider other applicable planning requirements, including the need to identify open space corridors in RCW 36.70A.160, and the need to include the best available science in policies and regulations protecting critical areas in RCW 36.70A.172.

(4) There are qualitative differences between and among critical areas. Not all areas and ecosystems are critical for the same reasons. Some are critical because of the hazard they present to public health and safety, some because of the values they represent to the public welfare. In some cases, the risk posed to the public by use or development of a critical area can be mitigated or reduced by engineering or design; in other cases that risk cannot be effectively reduced except by avoidance of the critical area. Classification and designation of critical areas is intended to lead counties and cities to recognize the differences among these areas, and to develop appropriate regulatory and nonregulatory actions in response.

(5) There are also qualitative differences between and among natural resource lands. The three types of natural resource lands (agricultural, forest, and mineral) vary widely in their use, location, and size. One type may overlap another type. For example, designated forest resource lands may also include designated mineral resource lands. Agricultural resource lands vary based on the types of crops produced, their location on the landscape, and their relationship to sustaining agricultural industries in an identified geographic area.

(6) Counties and cities required or opting to plan under the act should consider the definitions and guidelines in this chapter when preparing development regulations that preclude uses and development incompatible with natural resource lands and critical areas (see RCW 36.70A.060). Precluding incompatible uses and development does not mean a prohibition of all uses or development. Rather, it means governing changes in land uses, new activities, or development that could adversely affect natural resource lands or critical areas. For each type of natural resource land and critical area, counties and cities planning under the act should define classification schemes and prepare development regulations that govern changes in land uses and new activities by prohibiting clearly inappropriate actions and restricting, allowing, or conditioning other activities as appropriate.

(7) It is the intent of these guidelines that critical areas designations overlay other land uses including designated natural resource lands. For example, if both critical area and natural resource land use designations apply to a given parcel or a portion of a parcel, both or all designations must be made. Regarding natural resource lands, counties and cities should allow existing and ongoing resource management operations, that have long-term commercial significance, to continue. Counties and cities should encourage resource land managers to use the best management practices of their industry, especially where existing and ongoing resource management operations that have long-term commercial significance include designated critical areas. Future operations or expansion of existing operations should be done in consideration of protecting critical areas, and with special consideration for conservation or protection measures needed to preserve or enhance anadromous fisheries.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-020, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-020, filed 3/15/91, effective 4/15/91.]

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### 365-190-030

#### Definitions.

(1) "Agricultural land" is land primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, finfish in upland hatcheries, or livestock, and that has long-term commercial significance for agricultural production. These lands are referred to in this chapter as agricultural resource lands to distinguish between formally designated lands, and other lands used for agricultural purposes.

(2) "City" means any city or town, including a code city.

(3) "Critical aquifer recharge areas" are areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.

(4) "Critical areas" include the following:

(a) Wetlands;

(b) Areas with a critical recharging effect on aquifers used for potable water, referred to in this chapter as critical aquifer recharge areas;

(c) Fish and wildlife habitat conservation areas;

(d) Frequently flooded areas; and

(e) Geologically hazardous areas.

(5) "Erosion hazard areas" are those areas containing soils which, according to the United States Department of Agriculture Natural Resources Conservation Service Soil Survey Program, may experience significant erosion. Erosion hazard areas also include coastal erosion-prone areas and channel migration zones.

(6)(a) "Fish and wildlife habitat conservation areas" are areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness. Counties and cities may also designate locally important habitats and species.

(b) "Habitats of local importance" designated as fish and wildlife habitat conservation areas include those areas found to be locally important by counties and cities.

(7) "Forest land" is land primarily devoted to growing trees for long-term commercial timber production on land that can be economically and practically managed for such production, including Christmas trees subject to the excise tax imposed under RCW 84.33.100 through 84.33.140, and that has long-term commercial significance. These lands are referred to in this chapter as forest resource lands to distinguish between formally designated lands, and other lands used for forestry purposes.

(8) "Frequently flooded areas" are lands in the flood plain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. These areas include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and areas where high groundwater forms ponds on the ground surface.

(9) "Geologically hazardous areas" are areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to siting commercial, residential, or industrial development consistent with public health or safety concerns.

(10) "Landslide hazard areas" are areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors.

(11) "Long-term commercial significance" includes the growing capacity, productivity, and soil composition of the land for long-term commercial production, in consideration with the land's proximity to population areas, and the possibility of more intense uses of land. Long-term commercial significance means the land is capable of producing the specified natural resources at commercially sustainable levels for at least the twenty-year planning period, if adequately conserved. Designated mineral resource lands of long-term commercial significance may have alternative post-mining land uses, as provided by the Surface Mining Reclamation Act, comprehensive plan and development regulations, or other laws.

(12) "Mine hazard areas" are those areas directly underlain by, adjacent to, or affected by mine workings such as adits, tunnels, drifts, or air shafts.

(13) "Mineral resource lands" means lands primarily devoted to the extraction of minerals or that have known or potential long-term commercial significance for the extraction of minerals.

(14) "Minerals" include gravel, sand, and valuable metallic substances.

(15) "Natural resource lands" means agricultural, forest and mineral resource lands which have long-term commercial significance.

(16) "Public facilities" include streets, roads, highways, sidewalks, street and road lighting systems, traffic signals, domestic water systems, storm and sanitary sewer systems, parks and recreational facilities, and schools.

(17) "Public services" include fire protection and suppression, law enforcement, public health, education, recreation, environmental protection, and other governmental services.

(18) "Seismic hazard areas" are areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, soil liquefaction, debris flows, lahars, or tsunamis.

(19) "Species of local importance" are those species that are of local concern due to their population status or their sensitivity to habitat alteration or that are game species.

(20) "Urban growth" refers to growth that makes intensive use of land for the location of buildings, structures, and impermeable surfaces to such a degree as to be incompatible with the primary use of such land for the production of food, other agricultural products, or fiber, or the extraction of mineral resources. Urban growth typically requires urban governmental services. "Characterized by urban

growth" refers to land having urban growth located on it, or to land located in relationship to an area with urban growth on it as to be appropriate for urban growth.

(21) "Volcanic hazard areas" shall include areas subject to pyroclastic flows, lava flows, and inundation by debris flows, lahars, mudflows, or related flooding resulting from volcanic activity.

(22) "Wetland" or "wetlands" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate conversion of wetlands, if permitted by the county or city.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-030, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-030, filed 3/15/91, effective 4/15/91.]

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### 365-190-040

#### Process.

(1) The classification and designation of natural resource lands and critical areas is an important step among several in the overall growth management process. These steps, outlined in subsections (4) and (5) of this section comprise a vision of the future, and that vision gives direction to the steps in the form of specific goals and objectives. Under the act, the timing of the first steps coincided with development of the larger vision through the comprehensive planning process.

(2) The act required preliminary classifications and designations of natural resource lands and critical areas to be completed in 1991. Counties and cities planning under the act were to enact interim regulations to protect and conserve these natural resource lands and critical areas by September 1, 1991. By July 1, 1992, counties and cities not planning under the act were to bring their development regulations into conformance with their comprehensive plans. By July 1, 1993, counties and cities planning under the act were to adopt comprehensive plans, consistent with the goals of the act. Implementation of the comprehensive plans was to occur by the following year.

(3) Under RCW 36.70A.130, all counties and cities must review, and if needed, update their natural resource lands and critical areas designations. Counties and cities fully planning under the act must also review and, if needed, update their natural resource lands conservation provisions, comprehensive plans and development regulations. Legal challenges to some updates have led to clarifications of the ongoing review and update requirements in RCW 36.70A.130, and the process for implementing those requirements. The process description and recommendations in this section incorporate those clarifications and describe both the initial designation and conservation or protection of natural resource lands and critical areas, as well as subsequent local actions to amend those designations and provisions.

(4) Classification is the first step in implementing RCW 36.70A.170 and requires defining categories to which natural resource lands and critical areas will be assigned.

(a) Counties and cities are encouraged to adopt classification schemes that are consistent with federal and state classification schemes and those of adjacent jurisdictions to ensure regional consistency. Specific classification schemes for natural resource lands and critical areas are described in WAC 365-190-050 through 365-190-130.

(b) State agency classification schemes are available for specific critical area types, including the wetlands rating systems for eastern and western Washington from the Washington state department of ecology, the priority habitats and species categories and recommendations from the Washington state department of fish and wildlife, and the high quality ecosystem and rare plant categories and listings from the department of natural resources, natural heritage program. The Washington state department of natural resources provides significant information on geologic hazards and aquatic resources that may be useful in classifying these critical areas. Not all areas classified by state agencies must be designated, but such areas may be likely candidates for designation.

(5) Designation is the second step in implementing RCW 36.70A.170.

(a) Pursuant to RCW 36.70A.170, natural resource lands and critical areas must be designated based on their defined classifications. For planning purposes, designation establishes:

(i) The classification scheme;

- (ii) The distribution, location, and extent of the uses of land, where appropriate, for agriculture, forestry, and mineral extraction; and
- (iii) The general distribution, location, and extent of critical areas.

(b) Inventories and maps should indicate designations of natural resource lands. In circumstances where critical areas cannot be readily identified, these areas should be designated by performance standards or definitions, so they can be specifically identified during the processing of a permit or development authorization.

(c) Designation means, at a minimum, formal adoption of a policy statement, and may include further legislative action. Designating inventoried lands for comprehensive planning and policy definition may be less precise than subsequent regulation of specific parcels for conservation and protection.

(d) Successful achievement of the natural resource industries goal set forth in RCW 36.70A.020 requires the conservation of land base sufficient in size and quality to maintain and enhance those industries, and the development and use of land use techniques that discourage uses incompatible to the management of designated lands.

(e) Mineral resource lands especially should be designated as close as possible to their likely end use areas, to avoid losing access to those valuable minerals by development, and to minimize the costs of production and transport. It is expected that mineral resource lands will be depleted of minerals over time, and that subsequent land uses may occur on these lands after mining is completed.

(6) Classifying, inventorying, and designating lands or areas does not imply a change in a landowner's right to use his or her land under current law. The law requires that natural resource land uses be protected from land uses on adjacent lands that would restrict resource production. Development regulations adopted to protect critical areas may limit some land development options. Land uses are regulated on a parcel basis and innovative land use management techniques should be applied when counties and cities adopt development regulations to conserve and protect designated natural resource lands and critical areas. The purpose of designating natural resource lands is to enable industries to maintain access to lands with long-term commercial significance for agricultural, forest, and mineral resource production. The purpose is not to confine all natural resource production activity only to designated lands nor to require designation as the basis for a permit to engage in natural resource production. The department provides technical assistance to counties and cities on a wide array of regulatory options and alternative land use management techniques.

(7) Overlapping designations. The designation process may result in critical area designations that overlay other critical area or natural resource land classifications. Overlapping designations should not necessarily be considered inconsistent. If two or more critical area designations apply to a given parcel, or portion of a given parcel, both or all designations apply.

(a) If a critical area designation overlies a natural resource land designation, both designations apply. For counties and cities required or opting to plan under the act, reconciling these multiple designations will be the subject of local development regulations adopted pursuant to RCW 36.70A.060.

(b) If two or more natural resource land designations apply, counties and cities must determine if these designations are incompatible. If they are incompatible, counties and cities should examine the criteria to determine which use has the greatest long-term commercial significance, and that resource use should be assigned to the lands being designated.

(8) Counties and cities must involve the public in classifying and designating natural resource lands and critical areas. The process should include:

(a) Public participation program:

(i) Public participation should include, at a minimum, representative participation from the following entities: Landowners; representatives of agriculture, forestry, mining, business, environmental, and community groups; tribal governments; representatives of adjacent counties and cities; and state agencies. The public participation program should include early and timely public notice of pending designations and regulations and should address proposed nonregulatory incentive programs.

(ii) Counties and cities are encouraged to consider a variety of opportunities to adequately communicate with the public. These methods of notification may include, but are not limited to, traditional forms of mailed notices, published announcements, electronic mail, and internet sites to distribute informational brochures, meeting times, project timelines, and design and map proposals to provide an opportunity for the public to participate.

(iii) The department provides technical assistance in preparing public participation programs.

(b) Adoption process. Statutory and local processes already in place governing land use decisions are the minimum processes required for designation and regulation pursuant to RCW 36.70A.060 and 36.70A.170. At a minimum the following steps should be included in the adoption process:

(i) Accept the requirements of chapter 36.70A RCW;

- (ii) Consider minimum guidelines developed by the department under RCW 36.70A.050;
  - (iii) Consider other definitions used by state and federal regulatory agencies;
  - (iv) Consider definitions used by similarly situated counties and cities;
  - (v) Determine recommended definitions and check conformance with minimum definitions in chapter 36.70A RCW;
  - (vi) Adopt definitions, classifications, and standards;
  - (vii) Apply definitions by mapping designated natural resource lands; and
  - (viii) Establish procedures for amending natural resource lands and critical areas designations.
- (c) Intergovernmental coordination.

(i) The act requires coordination among counties and cities to reconcile conflicts and strive for consistent definitions, standards, and designations within regions. The minimum coordination process may include one of two options:

(A) Notification option: Adjacent cities (or those with overlapping or adjacent planning areas); counties and the cities within them; and adjacent counties would provide each other and special purpose districts and special purpose districts within them notice of their intent to classify and designate natural resource lands and critical areas within their jurisdiction. Counties or cities receiving notice may provide comments and input to the notifying jurisdiction. The notifying jurisdiction specifies a comment period prior to adoption. Within forty-five days of the jurisdiction's date of adoption of classifications or designations, affected jurisdictions are supplied information on how to locate a copy of the proposal. The department may provide mediation services to counties and cities to help resolve disputed classifications or designations.

(B) Interlocal agreement option: Adjacent counties and cities; all the cities within a county; or several counties and the cities within them may choose to cooperatively classify and designate natural resource lands and critical areas within their jurisdictions. Counties and cities by interlocal agreement would identify the definitions, classification, designation, and process that will be used to classify and designate lands within their areas. State and federal agencies or tribes may participate in the interlocal agreement or be provided a method of commenting on designations and classifications prior to adoption by jurisdictions.

(ii) Counties or cities may begin with the notification option in (c)(i)(A) of this subsection and choose to change to the interlocal agreement method in (c)(i)(B) of this subsection prior to completion of the classification and designations within their jurisdictions. Approaches to intergovernmental coordination may vary between natural resource land and critical area designation. It is intended that state and federal agencies with land ownership or management responsibilities, special purpose districts, and Indian tribes with interests within the counties or cities adopting classification and designation be consulted and their input considered in the development and adoption of designations and classifications. The department may provide mediation services to help resolve disputes between counties and cities that are using either the notification or interlocal agreement method of coordinating between jurisdictions.

(d) Mapping natural resource lands. Mapping should be done to identify designated natural resource lands. For counties and cities fully planning under the act, natural resource lands designations must be incorporated into the comprehensive plan land use element and should be shown on the future land use map required under RCW 36.70A.070.

(9) Evaluation. When counties and cities adopt a comprehensive plan, the act requires them to evaluate their designations and development regulations to assure that they are consistent with and implement the comprehensive plan. When considering changes to the designations or development regulations, counties and cities should seek interjurisdictional coordination and must include public participation.

(10) Designation amendment process.

(a) Land use planning is a dynamic process. Designation procedures should provide a rational and predictable basis for accommodating change.

(b) Reviewing natural resource lands designation. In classifying and designating natural resource lands, counties must approach the effort as a county-wide or regional process. Counties and cities should not review natural resource lands designations solely on a parcel-by-parcel process. Designation amendments should be based on consistency with one or more of the following criteria:

(i) A change in circumstances pertaining to the comprehensive plan or public policy related to designation criteria in WAC 365-190-050(3), 365-190-060(2), and 365-190-070(3);

(ii) A change in circumstances to the subject property, which is beyond the control of the landowner and is related to designation criteria in WAC 365-190-050(3), 365-190-060(2), and 365-190-070(3);

(iii) An error in designation or failure to designate;

(iv) New information on natural resource land or critical area status related to the designation criteria in WAC 365-190-050(3), 365-190-060(2), and 365-190-070(3); or

(v) A change in population growth rates, or consumption rates, especially of mineral resources.

(11) Use of innovative land use management techniques.

(a) Natural resource uses have preferred and primary status in designated natural resource lands. Counties and cities must determine if and to what extent other uses will be allowed. If other uses are allowed, counties and cities should consider using innovative land management techniques that minimize land use incompatibilities and most effectively maintain current and future natural resource lands.

(b) Techniques to conserve and protect agricultural, forest lands, and mineral resource lands include the purchase or transfer of development rights, fee simple purchase of the land, less than fee simple purchase, purchase with leaseback, buffering, land trades, conservation easements, current use assessments, innovative zoning, or other innovations which maintain current uses and assure the conservation of these natural resource lands.

(12) Development in and adjacent to agricultural, forest, and mineral resource lands shall assure the continued management of these lands for natural resource production. Uses that would convert natural resource lands to other uses or would interfere with the allowed natural resource uses must be prohibited except as authorized in accessory uses under RCW 36.70A.177 or other applicable statutes. Any uses adjacent to agricultural, forest, and mineral resource lands of long-term commercial significance must not interfere with their continued use for the production of agricultural, forest, or mineral products respectively. Counties and cities should consider the adoption of right-to-farm provisions, and may also adopt measures to conserve and enhance marine aquaculture. Covenants or easements recognizing that farming, forestry, and mining activities will occur should be imposed on new development in or adjacent to agricultural, forest, or mineral resource lands. Where buffering is used it should be on land within the adjacent development unless an alternative is mutually agreed on by adjacent landowners.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-040, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-040, filed 3/15/91, effective 4/15/91.]

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### **365-190-050**

#### **Agricultural resource lands.**

(1) In classifying and designating agricultural resource lands, counties must approach the effort as a county-wide or area-wide process. Counties and cities should not review resource lands designations solely on a parcel-by-parcel process. Counties and cities must have a program for the transfer or purchase of development rights prior to designating agricultural resource lands in urban growth areas. Cities are encouraged to coordinate their agricultural resource lands designations with their county and any adjacent jurisdictions.

(2) Once lands are designated, counties and cities planning under the act must adopt development regulations that assure the conservation of agricultural resource lands. Recommendations for those regulations are found in WAC 365-196-815.

(3) Lands should be considered for designation as agricultural resource lands based on three factors:

(a) The land is not already characterized by urban growth. To evaluate this factor, counties and cities should use the criteria contained in WAC 365-196-310.

(b) The land is used or capable of being used for agricultural production. This factor evaluates whether lands are well suited to agricultural use based primarily on their physical and geographic characteristics. Some agricultural operations are less dependent on soil quality than others, including some livestock production operations.

(i) Lands that are currently used for agricultural production and lands that are capable of such use must be evaluated for designation. The intent of a landowner to use land for agriculture or to cease such use is not the controlling factor in determining if land is used or capable of being used for agricultural production. Land enrolled in federal conservation reserve programs is recommended for designation based on previous agricultural use, management requirements, and potential for reuse as agricultural land.

(ii) In determining whether lands are used or capable of being used for agricultural production, counties and cities shall use the land-capability classification system of the United States Department of Agriculture Natural Resources Conservation Service as defined in relevant Field Office Technical Guides. These eight classes are incorporated by the United States Department of Agriculture into map

units described in published soil surveys, and are based on the growing capacity, productivity and soil composition of the land.

(c) The land has long-term commercial significance for agriculture. In determining this factor, counties and cities should consider the following nonexclusive criteria, as applicable:

- (i) The classification of prime and unique farmland soils as mapped by the Natural Resources Conservation Service;
- (ii) The availability of public facilities, including roads used in transporting agricultural products;
- (iii) Tax status, including whether lands are enrolled under the current use tax assessment under chapter 84.34 RCW and whether the optional public benefit rating system is used locally, and whether there is the ability to purchase or transfer land development rights;
- (iv) The availability of public services;
- (v) Relationship or proximity to urban growth areas;
- (vi) Predominant parcel size;
- (vii) Land use settlement patterns and their compatibility with agricultural practices;
- (viii) Intensity of nearby land uses;
- (ix) History of land development permits issued nearby;
- (x) Land values under alternative uses; and
- (xi) Proximity to markets.

(4) When designating agricultural resource lands, counties and cities may consider food security issues, which may include providing local food supplies for food banks, schools and institutions, vocational training opportunities in agricultural operations, and preserving heritage or artisanal foods.

(5) When applying the criteria in subsection (3)(c) of this section, the process should result in designating an amount of agricultural resource lands sufficient to maintain and enhance the economic viability of the agricultural industry in the county over the long term; and to retain supporting agricultural businesses, such as processors, farm suppliers, and equipment maintenance and repair facilities.

(6) Counties and cities may further classify additional agricultural lands of local importance. Classifying additional agricultural lands of local importance should include, in addition to general public involvement, consultation with the board of the local conservation district and the local committee of the farm service agency. It may also be useful to consult with any existing local organizations marketing or using local produce, including the boards of local farmers markets, school districts, other large institutions, such as hospitals, correctional facilities, or existing food cooperatives.

These additional lands may include designated critical areas, such as bogs used to grow cranberries or farmed wetlands. Where these lands are also designated critical areas, counties and cities planning under the act must weigh the compatibility of adjacent land uses and development with the continuing need to protect the functions and values of critical areas and ecosystems.

[Statutory Authority: RCW 36.70A.050, 36.70A.190. 10-22-103, § 365-190-050, filed 11/2/10, effective 12/3/10; 10-03-085, § 365-190-050, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-050, filed 3/15/91, effective 4/15/91.]

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### **365-190-060**

#### **Forest resource lands.**

(1) In classifying and designating forest resource lands, counties must approach the effort as a county-wide or regional process. Cities are encouraged to coordinate their forest resource lands designations with their county and any adjacent jurisdictions. Counties and cities should not review forest resource lands designations solely on a parcel-by-parcel basis.

(2) Lands should be designated as forest resource lands of long-term commercial significance based on three factors:

(a) The land is not already characterized by urban growth. To evaluate this factor, counties and cities should use the criteria contained in WAC 365-196-310.

(b) The land is used or capable of being used for forestry production. To evaluate this factor, counties and cities should determine whether lands are well suited for forestry use based primarily on their physical and geographic characteristics.

Lands that are currently used for forestry production and lands that are capable of such use must be evaluated for designation. The landowner's intent to either use land for forestry or to cease such use is not the controlling factor in determining if land is used or capable of being used for forestry production.

(c) The land has long-term commercial significance. When determining whether lands are used or capable of being used for forestry production, counties and cities should determine which land grade constitutes forest land of long-term commercial significance, based on local physical, biological, economic, and land use considerations. Counties and cities should use the private forest land grades of the department of revenue (WAC 458-40-530). This system incorporates consideration of growing capacity, productivity, and soil composition of the land. Forest land of long-term commercial significance will generally have a predominance of the higher private forest land grades. However, the presence of lower private forest land grades within the areas of predominantly higher grades need not preclude designation as forest land.

(3) Counties and cities may also consider secondary benefits from retaining commercial forestry operations. Benefits from retaining commercial forestry may include protecting air and water quality, maintaining adequate aquifer recharge areas, reducing forest fire risks, supporting tourism and access to recreational opportunities, providing carbon sequestration benefits, and improving wildlife habitat and connectivity for upland species. These are only potential secondary benefits from retaining commercial forestry operations, and should not be used alone as a basis for designating or dedesignating forest resource lands.

(4) Counties and cities must also consider the effects of proximity to population areas and the possibility of more intense uses of the land as indicated by the following criteria as applicable:

(a) The availability of public services and facilities conducive to the conversion of forest land;

(b) The proximity of forest land to urban and suburban areas and rural settlements: Forest lands of long-term commercial significance are located outside the urban and suburban areas and rural settlements;

(c) The size of the parcels: Forest lands consist of predominantly large parcels;

(d) The compatibility and intensity of adjacent and nearby land use and settlement patterns with forest lands of long-term commercial significance;

(e) Property tax classification: Property is assessed as open space or forest land pursuant to chapter 84.33 or 84.34 RCW;

(f) Local economic conditions which affect the ability to manage timberlands for long-term commercial production; and

(g) History of land development permits issued nearby.

(5) When applying the criteria in subsection (4) of this section, counties or cities should designate at least the minimum amount of forest resource lands needed to maintain economic viability for the forestry industry and to retain supporting forestry businesses, such as loggers, mills, forest product processors, equipment suppliers, and equipment maintenance and repair facilities. Economic viability in this context is that amount of designated forestry resource land needed to maintain economic viability of the forestry industry in the region over the long term.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-060, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-060, filed 3/15/91, effective 4/15/91.]

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### **365-190-070**

#### **Mineral resource lands.**

(1) In designating mineral resource lands, counties and cities must approach the effort as a county-wide or regional process, with the exception of owner-initiated requests for designation. Counties and cities should not review mineral resource lands designations solely on a parcel-by-parcel basis.

(2) Counties and cities must identify and classify mineral resource lands from which the extraction of minerals occurs or can be anticipated. Counties and cities may consider the need for a longer planning period specifically to address mineral resource lands, based on the need to assure availability of minerals for future uses, and to not inadvertently preclude access to available mineral resources due to incompatible development. Other proposed land uses within these areas may require special attention to ensure future supply of aggregate and mineral resource material, while maintaining a balance of land uses.

(3) Classification criteria.

(a) Counties and cities classify mineral resource lands based on geologic, environmental, and economic factors, existing land uses, and land ownership. It is expected that mineral resource lands will be depleted of minerals over time, and that subsequent land uses may occur on these lands after mining is completed. Counties and cities may approve and permit land uses on these mineral resource lands to occur after mining is completed.

(b) Counties and cities should classify lands with potential long-term commercial significance for extracting at least the following minerals: Sand, gravel, and valuable metallic substances. Other minerals may be classified as appropriate.

(c) When classifying these areas, counties and cities should use maps and information on location and extent of mineral deposits provided by the department of natural resources, the United States Geological Service and any relevant information provided by property owners. Counties and cities may also use all or part of a detailed minerals classification system developed by the department of natural resources.

(d) Classifying mineral resource lands should be based on the geology and the distance to market of potential mineral resource lands, including:

(i) Physical and topographic characteristics of the mineral resource site, including the depth and quantity of the resource and depth of the overburden;

(ii) Physical properties of the resource including quality and type;

(iii) Projected life of the resource;

(iv) Resource availability in the region; and

(v) Accessibility and proximity to the point of use or market.

(e) Other factors to consider when classifying potential mineral resource lands should include three aspects of mineral resource lands:

(i) The ability to access needed minerals may be lost if suitable mineral resource lands are not classified and designated; and

(ii) The effects of proximity to population areas and the possibility of more intense uses of the land in both the short and long-term, as indicated by the following:

(A) General land use patterns in the area;

(B) Availability of utilities, including water supply;

(C) Surrounding parcel sizes and surrounding uses;

(D) Availability of public roads and other public services; and

(E) Subdivision or zoning for urban or small lots.

(iii) Energy costs of transporting minerals.

(4) Designation of mineral resource lands.

(a) Counties and cities must designate known mineral deposits so that access to mineral resources of long-term commercial significance is not knowingly precluded. Priority land use for mineral extraction should be retained for all designated mineral resource lands.

(b) In designating mineral resource lands, counties and cities should determine if adequate mineral resources are available for projected needs from currently designated mineral resource lands.

(c) Counties and cities may consult with the department of transportation and the regional transportation planning organization to determine projected future mineral resource needs for large transportation projects planned in their area.

(d) In designating mineral resource lands, counties and cities must also consider that mining may be a temporary use at any given mine, depending on the amount of minerals available and the consumption rate, and that other land uses can occur on the mine site after mining is completed, subject to approval.

(e) Successful achievement of the natural resource industries goal set forth in RCW 36.70A.020 requires the conservation of a land base sufficient in size and quality to maintain and enhance those industries and the development and use of land use techniques that discourage uses incompatible with the management of designated lands.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-070, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-070, filed 3/15/91, effective 4/15/91.]

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### 365-190-080

#### Critical areas.

(1) Counties and cities must protect critical areas. Counties and cities required or opting to plan under the act must consider the definitions and guidelines in this chapter when designating critical areas and when preparing development regulations that protect the function and values of critical areas. The department provides additional recommendations for adopting critical areas regulations in WAC 365-196-485.

(2) Counties and cities must include the best available science as described in chapter 365-195 WAC, when designating critical areas and when developing policies and regulations that protect critical areas. Counties and cities must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries. Counties and cities are encouraged to also protect both surface and groundwater resources, because these waters often recharge wetlands, streams and lakes.

(3) Counties and cities are encouraged to develop a coordinated regional critical areas protection program that combines interjurisdictional cooperation, public education, incentives to promote voluntary protective measures, and regulatory standards that serve to protect these critical areas.

(4) Counties and cities should designate critical areas by using maps and performance standards.

(a) Maps may benefit the public by increasing public awareness of critical areas and their locations. County and city staff may also benefit from maps which provide a useful tool for determining whether a particular land use permit application may affect a critical area. However, because maps may be too inexact for regulatory purposes, counties and cities should rely primarily on performance standards to protect critical areas. Counties and cities should apply performance standards to protect critical areas when a land use permit decision is made.

(b) Counties and cities should clearly state that maps showing known critical areas are only for information or illustrative purposes.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-080, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050. 91-07-041, § 365-190-080, filed 3/15/91, effective 4/15/91.]

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### 365-190-090

#### Wetlands.

(1) The wetlands of Washington state are fragile ecosystems that serve a number of important beneficial functions. Wetlands assist in reducing erosion, siltation, flooding, ground and surface water pollution, and provide wildlife, plant, and fisheries habitats. Wetlands destruction or impairment may result in increased public and private costs and property losses.

(2) In designating wetlands for regulatory purposes, counties and cities must use the definition of wetlands in RCW 36.70A.030. Counties and cities are requested and encouraged to make their actions consistent with the intent and goals of "protection of wetlands," Executive Orders 89-10 and 90-04 as they existed on September 1, 1990. Additionally, counties and cities should consider wetlands protection guidance provided by the department of ecology, including the management recommendations based on the best available science, mitigation guidance, and provisions addressing the option of using wetland mitigation banks.

(3) Wetlands rating systems. Wetland functions vary widely.

(a) When designating wetlands, counties and cities should use a rating system that evaluates the existing wetland functions and values to determine what functions must be protected.

(b) In developing wetlands rating systems, counties and cities should consider using the wetland rating system developed jointly by the department of ecology and the United States Army Corps of Engineers.

(c) If a county or city chooses to use an alternative rating system, it must include the best available science.

(d) A rating system should evaluate, at a minimum, the following factors:

(i) Wetlands functions and values;

(ii) Degree of sensitivity to disturbance;

(iii) Rarity;

(iv) The degree to which a wetland contributes to functions and values of a larger ecosystem. Rating systems should generally rate wetlands higher when they are well-connected to adjacent or nearby habitats, are part of an intact ecosystem or function in a network of critical areas; and

(v) The ability to replace the functions and values through compensatory mitigation.

(4) Counties and cities may use the National Wetlands Inventory and a landscape-scale watershed characterization as information sources for determining the approximate distribution and extent of wetlands. The National Wetlands Inventory is an inventory providing maps of wetland areas according to the definition of wetlands issued by the United States Department of Interior Fish and Wildlife Service. A landscape-scale watershed characterization may identify areas that are conducive to forming wetlands based on topography, soils and geology, and hydrology. Any potential locations of wetlands based on the National Wetlands Inventory or landscape-scale watershed characterization should be confirmed by field visits, either before or as part of permitting activities, and identified wetlands should have their boundaries delineated for regulation consistent with the wetlands definition in RCW 36.70A.030.

(5) Counties and cities must use the methodology for regulatory delineations in the adopted state manual identified in RCW 36.70A.175.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-090, filed 1/19/10, effective 2/19/10.]

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### 365-190-100

#### Critical aquifer recharge areas.

(1) Potable water is an essential life sustaining element for people and many other species. Much of Washington's drinking water comes from groundwater. Once groundwater is contaminated it is difficult, costly, and sometimes impossible to clean up. Preventing contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people and ecosystems.

(2) The quality and quantity of groundwater in an aquifer is inextricably linked to its recharge area. Where aquifers and their recharge areas have been studied, affected counties and cities should use this information as the basis for classifying and designating these areas. Where no specific studies have been done, counties and cities may use existing soil and surficial geologic information to determine where recharge areas exist. To determine the threat to groundwater quality, existing land use activities and their potential to lead to contamination should be evaluated.

(3) Counties and cities must classify recharge areas for aquifers according to the aquifer vulnerability. Vulnerability is the combined effect of hydrogeological susceptibility to contamination and the contamination loading potential. High vulnerability is indicated by land uses that contribute directly or indirectly to contamination that may degrade groundwater, and hydrogeologic conditions that facilitate degradation. Low vulnerability is indicated by land uses that do not contribute contaminants that will degrade groundwater, and by hydrogeologic conditions that do not facilitate degradation. Hydrological conditions may include those induced by limited recharge of an aquifer. Reduced aquifer recharge from effective impervious surfaces may result in higher concentrations of contaminants than would otherwise occur.

(a) To characterize hydrogeologic susceptibility of the recharge area to contamination, counties and cities may consider the following physical characteristics:

(i) Depth to groundwater;

(ii) Aquifer properties such as hydraulic conductivity, gradients, and size;

(iii) Soil (texture, permeability, and contaminant attenuation properties);

(iv) Characteristics of the vadose zone including permeability and attenuation properties; and

(v) Other relevant factors.

(b) The following may be considered to evaluate vulnerability based on the contaminant loading potential:

(i) General land use;

(ii) Waste disposal sites;

(iii) Agriculture activities;

(iv) Well logs and water quality test results;

(v) Proximity to marine shorelines; and

(vi) Other information about the potential for contamination.

(4) A classification strategy for aquifer recharge areas should be to maintain the quality, and if needed, the quantity of the groundwater, with particular attention to recharge areas of high susceptibility.

(a) In recharge areas that are highly vulnerable, studies should be initiated to determine if groundwater contamination has occurred. Classification of these areas should include consideration of the degree to which the aquifer is used as a potable water source, feasibility of protective measures to preclude further degradation, availability of treatment measures to maintain potability, and availability of alternative potable water sources.

(b) Examples of areas with a critical recharging effect on aquifers used for potable water may include:

(i) Recharge areas for sole source aquifers designated pursuant to the Federal Safe Drinking Water Act;

(ii) Areas established for special protection pursuant to a groundwater management program, chapters 90.44, 90.48, and 90.54 RCW, and chapters 173-100 and 173-200 WAC;

(iii) Areas designated for wellhead protection pursuant to the Federal Safe Drinking Water Act;

(iv) Areas near marine waters where aquifers may be subject to saltwater intrusion; and

(v) Other areas meeting the definition of "areas with a critical recharging effect on aquifers used for potable water" in these guidelines.

(c) Some aquifers may also have critical recharging effects on streams, lakes, and wetlands that provide critical fish and wildlife habitat. Protecting adequate recharge of these aquifers may provide additional benefits in maintaining fish and wildlife habitat conservation areas.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-100, filed 1/19/10, effective 2/19/10.]

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### **365-190-110**

#### **Frequently flooded areas.**

Frequently flooded areas. Flood plains and other areas subject to flooding perform important hydrologic functions and may present a risk to persons and property.

(1) Classifications of frequently flooded areas should include, at a minimum, the 100-year flood plain designations of the Federal Emergency Management Agency and the National Flood Insurance Program.

(2) Counties and cities should consider the following when designating and classifying frequently flooded areas:

(a) Effects of flooding on human health and safety, and to public facilities and services;

(b) Available documentation including federal, state, and local laws, regulations, and programs, local studies and maps, and federal flood insurance programs, including the provisions for urban growth areas in RCW 36.70A.110;

(c) The future flow flood plain, defined as the channel of the stream and that portion of the adjoining flood plain that is necessary to contain and discharge the base flood flow at build out;

(d) The potential effects of tsunamis, high tides with strong winds, sea level rise, and extreme weather events, including those potentially resulting from global climate change;

(e) Greater surface runoff caused by increasing impervious surfaces.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-110, filed 1/19/10, effective 2/19/10.]

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### 365-190-120

#### Geologically hazardous areas.

(1) Geologically hazardous areas. Geologically hazardous areas include areas susceptible to erosion, sliding, earthquake, or other geological events. They pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in areas of significant hazard.

(2) Some geological hazards can be reduced or mitigated by engineering, design, or modified construction or mining practices so that risks to public health and safety are minimized. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas must be avoided. The distinction between avoidance and compensatory mitigation should be considered by counties and cities that do not currently classify geological hazards, as they develop their classification scheme.

(3) Areas that are susceptible to one or more of the following types of hazards shall be classified as a geologically hazardous area:

(a) Erosion hazard;

(b) Landslide hazard;

(c) Seismic hazard; or

(d) Areas subject to other geological events such as coal mine hazards and volcanic hazards including: Mass wasting, debris flows, rock falls, and differential settlement.

(4) Counties and cities should assess the risks and classify geologically hazardous areas as either:

(a) Known or suspected risk;

(b) No known risk; or

(c) Risk unknown - data are not available to determine the presence or absence of risk.

(5) Erosion hazard areas include areas likely to become unstable, such as bluffs, steep slopes, and areas with unconsolidated soils. Erosion hazard areas may also include coastal erosion areas: This information can be found in the Washington state coastal atlas available from the department of ecology. Counties and cities may consult with the United States Department of Agriculture Natural Resources Conservation Service for data to help identify erosion hazard areas.

(6) Landslide hazard areas include areas subject to landslides based on a combination of geologic, topographic, and hydrologic factors. They include any areas susceptible to landslide because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors, and include, at a minimum, the following:

(a) Areas of historic failures, such as:

(i) Those areas delineated by the United States Department of Agriculture Natural Resources Conservation Service as having a significant limitation for building site development;

(ii) Those coastal areas mapped as class u (unstable), uos (unstable old slides), and urs (unstable recent slides) in the department of ecology Washington coastal atlas; or

(iii) Areas designated as quaternary slumps, earthflows, mudflows, lahars, or landslides on maps published by the United States Geological Survey or Washington department of natural resources.

(b) Areas with all three of the following characteristics:

(i) Slopes steeper than fifteen percent;

(ii) Hillside intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and

(iii) Springs or groundwater seepage.

(c) Areas that have shown movement during the holocene epoch (from ten thousand years ago to the present) or which are underlain or covered by mass wastage debris of this epoch;

(d) Slopes that are parallel or subparallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;

(e) Slopes having gradients steeper than eighty percent subject to rockfall during seismic shaking;

(f) Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action, including stream channel migration zones;

(g) Areas that show evidence of, or are at risk from snow avalanches;

(h) Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding; and

(i) Any area with a slope of forty percent or steeper and with a vertical relief of ten or more feet except areas composed of bedrock. A slope is delineated by establishing its toe and top and measured by averaging the inclination over at least ten feet of vertical relief.

(7) Seismic hazard areas must include areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement or subsidence, soil liquefaction, surface faulting, or tsunamis. Settlement and soil liquefaction conditions occur in areas underlain by cohesionless soils of low density, typically in association with a shallow groundwater table. One indicator of potential for future earthquake damage is a record of earthquake damage in the past. Ground shaking is the primary cause of earthquake damage in Washington, and ground settlement may occur with shaking. The strength of ground shaking is primarily affected by:

(a) The magnitude of an earthquake;

(b) The distance from the source of an earthquake;

(c) The type or thickness of geologic materials at the surface; and

(d) The type of subsurface geologic structure.

(8) Other geological hazard areas:

(a) Volcanic hazard areas must include areas subject to pyroclastic flows, lava flows, debris avalanche, or inundation by debris flows, lahars, mudflows, or related flooding resulting from volcanic activity.

(b) Mine hazard areas are those areas underlain by, adjacent to, or affected by mine workings such as adits, gangways, tunnels, drifts, or air shafts. Factors which should be considered include: Proximity to development, depth from ground surface to the mine working, and geologic material.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-120, filed 1/19/10, effective 2/19/10.]

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### 365-190-130

#### Fish and wildlife habitat conservation areas.

(1) "Fish and wildlife habitat conservation" means land management for maintaining populations of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long term and isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term. Counties and cities should engage in

cooperative planning and coordination to help assure long term population viability.

Fish and wildlife habitat conservation areas contribute to the state's biodiversity and occur on both publicly and privately owned lands. Designating these areas is an important part of land use planning for appropriate development densities, urban growth area boundaries, open space corridors, and incentive-based land conservation and stewardship programs.

(2) Fish and wildlife habitat conservation areas that must be considered for classification and designation include:

- (a) Areas where endangered, threatened, and sensitive species have a primary association;
- (b) Habitats and species of local importance, as determined locally;
- (c) Commercial and recreational shellfish areas;
- (d) Kelp and eelgrass beds; herring, smelt, and other forage fish spawning areas;
- (e) Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat;
- (f) Waters of the state;
- (g) Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; and
- (h) State natural area preserves, natural resource conservation areas, and state wildlife areas.

(3) When classifying and designating these areas, counties and cities must include the best available science, as described in chapter 365-195 WAC.

(a) Counties and cities should consider the following:

- (i) Creating a system of fish and wildlife habitat with connections between larger habitat blocks and open spaces, integrating with open space corridor planning where appropriate;
- (ii) Level of human activity in such areas including presence of roads and level of recreation type (passive or active recreation may be appropriate for certain areas and habitats);
- (iii) Protecting riparian ecosystems including salmonid habitat, which also includes marine nearshore areas;
- (iv) Evaluating land uses surrounding ponds and fish and wildlife habitat conservation areas that may negatively impact these areas, or conversely, that may contribute positively to their function;

(v) Establishing buffer zones around these areas to separate incompatible uses from habitat areas;

(b) Counties and cities may also consider the following:

- (i) Potential for restoring lost and impaired salmonid habitat;
- (ii) Potential for designating areas important for local and ecoregional biodiversity; and
- (iii) Establishing or enhancing nonregulatory approaches in addition to regulatory methods to protect fish and wildlife habitat conservation areas.

(4) Sources and methods.

(a) Endangered, threatened and sensitive species. Counties and cities should identify and classify seasonal ranges and habitat elements where federal and state listed endangered, threatened and sensitive species have a primary association and which, if altered, may reduce the likelihood that the species will persist over the long term. Counties and cities should consult current information on priority habitats and species identified by the Washington state department of fish and wildlife. Recovery plans and management recommendations for many of these species are available from the United States Fish and Wildlife Service, the National Marine Fisheries Service and the Washington state department of fish and wildlife. Additional information is also available from the Washington state department of natural resources, natural heritage program, and aquatic resources program.

(b) Habitats and species areas of local importance. Counties and cities should identify, classify and designate locally important habitats and species. Counties and cities should consult current information on priority habitats and species identified by the Washington state department of fish and wildlife. Priority habitat and species information includes endangered, threatened and sensitive species, but also includes candidate species and other vulnerable and unique species and habitats. While these priorities are those of

the Washington state department of fish and wildlife, they should be considered by counties and cities as they include the best available science. The Washington state department of fish and wildlife can also provide assistance with identifying and mapping important habitat areas at various landscape scales. Similarly, the Washington state department of natural resources' natural heritage program can provide a list of high quality ecological communities and systems and rare plants.

(c) Shellfish areas. All public and private tidelands or bedlands suitable for shellfish harvest shall be classified as critical areas. Counties and cities should consider both commercial and recreational shellfish areas. Counties and cities should consider the Washington state department of health classification of commercial and recreational shellfish growing areas to determine the existing condition of these areas. Further consideration should be given to the vulnerability of these areas to contamination. Shellfish protection districts established pursuant to chapter 90.72 RCW shall be included in the classification of critical shellfish areas.

(d) Kelp and eelgrass beds; herring, smelt and other forage fish spawning areas. Counties and cities must classify kelp and eelgrass beds, identified by the Washington state department of natural resources and the department of ecology. Though not an inclusive inventory, locations of kelp and eelgrass beds are compiled in the Washington coastal atlas published by the department of ecology. Herring, smelt and other forage fish spawning times and locations are outlined in WAC 220-110-240 through 220-110-271.

(e) Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat. Naturally occurring ponds do not include ponds deliberately designed and created from dry sites, such as canals, detention facilities, wastewater treatment facilities, farmponds, temporary construction ponds (of less than three years duration) and landscape amenities. However, naturally occurring ponds may include those artificial ponds intentionally created from dry areas in order to mitigate conversion of ponds, if permitted by a regulatory authority.

(f) Waters of the state.

(i) Waters of the state are defined in RCW 90.48.020 and include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses in Washington. Stream types are classified in Title 222 WAC, the forest practices regulations. Counties and cities may use the classification system established in WAC 222-16-030 to classify waters of the state. Counties and cities using the water types defined in WAC 222-16-030 or 222-16-031 (interim) should not rely solely on Washington state department of natural resources maps of these stream types for purposes of regulating land uses or establishing stream buffers.

(ii) Counties and cities that use the stream typing system developed by the department of natural resources should develop a process to verify actual stream conditions, identify flow alterations, and locate fish passage barriers by conducting a field visit. Field verification of all intermittent or nonfish bearing streams should occur during the wet season months of October to March or as determined locally.

(iii) Counties and cities may consider the following factors when classifying waters of the state as fish and wildlife habitat conservation areas:

- (A) Species present which are endangered, threatened or sensitive, and other species of concern;
- (B) Species present which are sensitive to habitat manipulation (e.g., priority habitats and species program);
- (C) Historic presence of species of local importance;
- (D) Existing surrounding land uses that are incompatible with salmonid habitat;
- (E) Presence and size of riparian ecosystems;
- (F) Existing water rights; and
- (G) The intermittent nature of some waters of the state.

(g) Lakes, ponds, streams, and rivers planted with game fish. This includes game fish planted in these water bodies under the auspices of a federal, state, local, or tribal program or which supports priority fish species as identified by the Washington state department of fish and wildlife.

(h) State natural area preserves, natural resource conservation areas, and state wildlife areas. Natural area preserves and natural resource conservation areas are defined, established, and managed by the department of natural resources. State wildlife areas are defined, established, and managed by the Washington state department of fish and wildlife, which provides information about state wildlife areas for each county.

(i) Salmonid habitat. Counties and cities should consider recommendations found in salmon recovery plans (see the governor's salmon recovery office). Counties and cities may use information prepared by the United States Department of the Interior Fish and Wildlife Service, National Marine Fisheries Service, the Washington state department of fish and wildlife, the state recreation and

conservation office, and the Puget Sound partnership to designate, protect and restore salmonid habitat.

[Statutory Authority: RCW 36.70A.050 and 36.70A.190. 10-03-085, § 365-190-130, filed 1/19/10, effective 2/19/10.]

Chapter 365-195 WAC

Growth Management Act – Best Available  
Science

## WAC Sections

## PART NINE

## BEST AVAILABLE SCIENCE

- 365-195-900 Background and purpose.
- 365-195-905 Criteria for determining which information is the "best available science."
- 365-195-910 Criteria for obtaining the best available science.
- 365-195-915 Criteria for including the best available science in developing policies and development regulations.
- 365-195-920 Criteria for addressing inadequate scientific information.
- 365-195-925 Criteria for demonstrating "special consideration" has been given to conservation or protection measures necessary to preserve or enhance anadromous fisheries.

**DISPOSITIONS OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER**

- 365-195-010 Background. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-010, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-020 Purpose. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-020, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-030 Applicability. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-030, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-040 General method. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-040, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-050 Presumption of validity. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-050, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-060 Regional and local variations. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-060, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-070 Interpretations. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-070, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-200 Statutory definitions. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-200, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-210 Definitions of terms as used in this chapter. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-210, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-210, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-220 Additional definitions to be adopted locally. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-220, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-220, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-300 Mandatory elements. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-300, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-305 Land use element. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-305, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-310 Housing element. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-310, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-315 Capital facilities element. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-315, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-320 Utilities element. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-320, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-325 Transportation element. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-325, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-330 Rural element. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-330, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-335 Urban growth areas. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-335, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-340 Siting essential public facilities. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-340, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-345 Optional elements. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-345, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-400 Natural resource lands. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-400, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-410 Critical areas. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-410, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-420 Identification of open space corridors. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-420, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-430 Identification of lands useful for public purposes. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-430, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.

- 365-195-500 Internal consistency. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-500, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-510 Concurrency. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-510, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-520 Interjurisdictional consistency. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-520, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-530 Coordination with other plans. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-530, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-540 Analysis of cumulative effects. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-540, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-600 Public participation. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-600, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-610 State Environmental Policy Act (SEPA). [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-610, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-620 Submissions to state. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-620, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-620, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-630 Amendment. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-630, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-640 Record of process. [Statutory Authority: RCW 36.70A.190 (4)(b). 92-23-065, § 365-195-640, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-700 Background. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-700, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-700, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-705 Basic assumptions. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-705, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-710 Identification of other laws. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-710, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-710, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-715 Integrating external considerations. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-715, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-720 Sources of law. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-720, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-720, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-725 Constitutional provisions. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-725, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-730 Federal authorities. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-730, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-735 State and regional authorities. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-735, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-740 Regional perspective. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-740, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-745 Special siting statutes. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-745, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-750 Explicit statutory directions. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-750, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-755 Voluntary interjurisdictional planning efforts. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-755, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-760 Integration of SEPA process with creation and adoption of comprehensive plans and development regulations. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-760, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-765 State agency compliance. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-765, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-770 Compliance by regional agencies and special districts. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-770, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-800 Relationship to comprehensive plans. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-800, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-800, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-805 Implementation strategy. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-805, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-810 Timing of initial adoption. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-810, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-810, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-815 Review for compliance. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-815, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-820 Submissions to state. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-820, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-820, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-825 Regulations specifically required by the act. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-825, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-830 Optional authorizations. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-830, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-830, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-835 Concurrency regulations. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-835, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.

- 365-195-840 Essential public facilities. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-840, filed 8/11/93, effective 9/11/93; 92-23-065, § 365-195-840, filed 11/17/92, effective 12/18/92.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-845 Permit process. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-845, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-850 Impact fees. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-850, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-855 Protection of private property. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-855, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-860 Housing for persons with handicaps. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-860, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.
- 365-195-865 Supplementing, amending and monitoring. [Statutory Authority: RCW 36.70A.190 (4)(b). 93-17-040, § 365-195-865, filed 8/11/93, effective 9/11/93.] Repealed by 10-03-085, filed 1/19/10, effective 2/19/10. Statutory Authority: RCW 36.70A.050 and 36.70A.190.

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## 365-195-900

### Background and purpose.

(1) Counties and cities planning under RCW 36.70A.040 are subject to continuing review and evaluation of their comprehensive land use plan and development regulations. Every five years they must take action to review and revise their plans and regulations, if needed, to ensure they comply with the requirements of the Growth Management Act. RCW 36.70A.130.

(2) Counties and cities must include the "best available science" when developing policies and development regulations to protect the functions and values of critical areas and must give "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries. RCW 36.70A.172(1). The rules in WAC 365-195-900 through 365-195-925 are intended to assist counties and cities in identifying and including the best available science in newly adopted policies and regulations and in this periodic review and evaluation and in demonstrating they have met their statutory obligations under RCW 36.70A.172(1).

(3) The inclusion of the best available science in the development of critical areas policies and regulations is especially important to salmon recovery efforts, and to other decision-making affecting threatened or endangered species.

(4) These rules are adopted under the authority of RCW 36.70A.190 (4)(b) which requires the department of community, trade, and economic development (department) to adopt rules to assist counties and cities to comply with the goals and requirements of the Growth Management Act.

[Statutory Authority: RCW 36.70A.190 (4)(b). 01-08-056, § 365-195-900, filed 4/2/01, effective 5/3/01; 00-16-064, § 365-195-900, filed 7/27/00, effective 8/27/00.]

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## 365-195-905

### Criteria for determining which information is the "best available science."

(1) This section provides assessment criteria to assist counties and cities in determining whether information obtained during development of critical areas policies and regulations constitutes the "best available science."

(2) Counties and cities may use information that local, state or federal natural resource agencies have determined represents the best available science consistent with criteria set out in WAC 365-195-900 through 365-195-925. The department will make available a list of resources that state agencies have identified as meeting the criteria for best available science pursuant to this chapter. Such information should be reviewed for local applicability.

(3) The responsibility for including the best available science in the development and implementation of critical areas policies or regulations rests with the legislative authority of the county or city. However, when feasible, counties and cities should consult with a qualified scientific expert or team of qualified scientific experts to identify scientific information, determine the best available science, and assess its applicability to the relevant critical areas. The scientific expert or experts may rely on their professional judgment based on experience and training, but they should use the criteria set out in WAC 365-195-900 through 365-195-925 and any technical guidance provided by the department. Use of these criteria also should guide counties and cities that lack the assistance of a qualified expert or experts, but these criteria are not intended to be a substitute for an assessment and recommendation by a qualified scientific expert or team of experts.

(4) Whether a person is a qualified scientific expert with expertise appropriate to the relevant critical areas is determined by the person's professional credentials and/or certification, any advanced degrees earned in the pertinent scientific discipline from a recognized university, the number of years of experience in the pertinent scientific discipline, recognized leadership in the discipline of interest, formal training in the specific area of expertise, and field and/or laboratory experience with evidence of the ability to produce peer-reviewed publications or other professional literature. No one factor is determinative in deciding whether a person is a qualified scientific expert. Where pertinent scientific information implicates multiple scientific disciplines, counties and cities are encouraged to

consult a team of qualified scientific experts representing the various disciplines to ensure the identification and inclusion of the best available science.

(5) Scientific information can be produced only through a valid scientific process. To ensure that the best available science is being included, a county or city should consider the following:

(a) **Characteristics of a valid scientific process.** In the context of critical areas protection, a valid scientific process is one that produces reliable information useful in understanding the consequences of a local government's regulatory decisions and in developing critical areas policies and development regulations that will be effective in protecting the functions and values of critical areas. To determine whether information received during the public participation process is reliable scientific information, a county or city should determine whether the source of the information displays the characteristics of a valid scientific process. The characteristics generally to be expected in a valid scientific process are as follows:

1. **Peer review.** The information has been critically reviewed by other persons who are qualified scientific experts in that scientific discipline. The criticism of the peer reviewers has been addressed by the proponents of the information. Publication in a refereed scientific journal usually indicates that the information has been appropriately peer-reviewed.

2. **Methods.** The methods that were used to obtain the information are clearly stated and able to be replicated. The methods are standardized in the pertinent scientific discipline or, if not, the methods have been appropriately peer-reviewed to assure their reliability and validity.

3. **Logical conclusions and reasonable inferences.** The conclusions presented are based on reasonable assumptions supported by other studies and consistent with the general theory underlying the assumptions. The conclusions are logically and reasonably derived from the assumptions and supported by the data presented. Any gaps in information and inconsistencies with other pertinent scientific information are adequately explained.

4. **Quantitative analysis.** The data have been analyzed using appropriate statistical or quantitative methods.

5. **Context.** The information is placed in proper context. The assumptions, analytical techniques, data, and conclusions are appropriately framed with respect to the prevailing body of pertinent scientific knowledge.

6. **References.** The assumptions, analytical techniques, and conclusions are well referenced with citations to relevant, credible literature and other pertinent existing information.

(b) **Common sources of scientific information.** Some sources of information routinely exhibit all or some of the characteristics listed in (a) of this subsection. Information derived from one of the following sources may be considered scientific information if the source possesses the characteristics in Table 1. A county or city may consider information to be scientifically valid if the source possesses the characteristics listed in (a) of this subsection. The information found in Table 1 provides a general indication of the characteristics of a valid scientific process typically associated with common sources of scientific information.

Table 1	CHARACTERISTICS					
	Peer review	Methods	Logical conclusions & reasonable inferences	Quantitative analysis	Context	References
SOURCES OF SCIENTIFIC INFORMATION						
<b>A. Research.</b> Research data collected and analyzed as part of a controlled experiment (or other appropriate methodology) to test a specific hypothesis.	X	X	X	X	X	X
<b>B. Monitoring.</b> Monitoring data collected periodically over time to determine a resource trend or evaluate a		X	X	Y	X	X

management program.						
<b>C. Inventory.</b> Inventory data collected from an entire population or population segment (e.g., individuals in a plant or animal species) or an entire ecosystem or ecosystem segment (e.g., the species in a particular wetland).		X	X	Y	X	X
<b>D. Survey.</b> Survey data collected from a statistical sample from a population or ecosystem.		X	X	Y	X	X
<b>E. Modeling.</b> Mathematical or symbolic simulation or representation of a natural system. Models generally are used to understand and explain occurrences that cannot be directly observed.	X	X	X	X	X	X
<b>F. Assessment.</b> Inspection and evaluation of site-specific information by a qualified scientific expert. An assessment may or may not involve collection of new data.		X	X		X	X
<b>G. Synthesis.</b> A comprehensive review and explanation of pertinent literature and other relevant existing knowledge by a qualified scientific expert.	X	X	X		X	X
<b>H. Expert Opinion.</b> Statement of a qualified scientific expert based on his or her best professional judgment and experience in the pertinent scientific discipline. The opinion may or may not be based on site-specific information.			X		X	X

X = characteristic must be present for information derived to be considered scientifically valid and reliable

Y = presence of characteristic strengthens scientific validity and reliability of information derived, but is not essential to ensure scientific validity and reliability

(c) **Common sources of nonscientific information.** Many sources of information usually do not produce scientific information because they do not exhibit the necessary characteristics for scientific validity and reliability. Information from these sources may provide valuable information to supplement scientific information, but it is not an adequate substitute for scientific information. Nonscientific information should not be used as a substitute for valid and available scientific information. Common sources of nonscientific information include the following:

(i) Anecdotal information. One or more observations which are not part of an organized scientific effort (for example, "I saw a grizzly bear in that area while I was hiking").

(ii) Nonexpert opinion. Opinion of a person who is not a qualified scientific expert in a pertinent scientific discipline (for example, "I do not believe there are grizzly bears in that area").

(iii) Hearsay. Information repeated from communication with others (for example, "At a lecture last week, Dr. Smith said there were no grizzly bears in that area").

(6) Counties and cities are encouraged to monitor and evaluate their efforts in critical areas protection and incorporate new scientific information, as it becomes available.

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**365-195-910****Criteria for obtaining the best available science.**

(1) Consultation with state and federal natural resources agencies and tribes can provide a quick and cost-effective way to develop scientific information and recommendations. State natural resource agencies provide numerous guidance documents and model ordinances that incorporate the agencies' assessments of the best available science. The department can provide technical assistance in obtaining such information from state natural resources agencies, developing model GMA-compliant critical areas policies and development regulations, and related subjects. The department will make available to interested parties a current list of the best available science determined to be consistent with criteria set out in WAC 365-195-905 as identified by state or federal natural resource agencies for critical areas.

(2) A county or city may compile scientific information through its own efforts, with or without the assistance of qualified experts, and through state agency review and the Growth Management Act's required public participation process. The county or city should assess whether the scientific information it compiles constitutes the best available science applicable to the critical areas to be protected, using the criteria set out in WAC 365-195-900 through 365-195-925 and any technical guidance provided by the department. If not, the county or city should identify and assemble additional scientific information to ensure it has included the best available science.

[Statutory Authority: RCW 36.70A.190 (4)(b). 00-16-064, § 365-195-910, filed 7/27/00, effective 8/27/00.]

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**365-195-915****Criteria for including the best available science in developing policies and development regulations.**

(1) To demonstrate that the best available science has been included in the development of critical areas policies and regulations, counties and cities should address each of the following on the record:

(a) The specific policies and development regulations adopted to protect the functions and values of the critical areas at issue.

(b) The relevant sources of best available scientific information included in the decision-making.

(c) Any nonscientific information -- including legal, social, cultural, economic, and political information -- used as a basis for critical area policies and regulations that depart from recommendations derived from the best available science. A county or city departing from science-based recommendations should:

(i) Identify the information in the record that supports its decision to depart from science-based recommendations;

(ii) Explain its rationale for departing from science-based recommendations; and

(iii) Identify potential risks to the functions and values of the critical area or areas at issue and any additional measures chosen to limit such risks. State Environmental Policy Act (SEPA) review often provides an opportunity to establish and publish the record of this assessment.

(2) Counties and cities should include the best available science in determining whether to grant applications for administrative variances and exemptions from generally applicable provisions in policies and development regulations adopted to protect the functions and values of critical areas. Counties and cities should adopt procedures and criteria to ensure that the best available science is included in every review of an application for an administrative variance or exemption.

[Statutory Authority: RCW 36.70A.190 (4)(b). 00-16-064, § 365-195-915, filed 7/27/00, effective 8/27/00.]

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**365-195-920****Criteria for addressing inadequate scientific information.**

Where there is an absence of valid scientific information or incomplete scientific information relating to a county's or city's critical areas, leading to uncertainty about which development and land uses could lead to harm of critical areas or uncertainty about the risk to critical area function of permitting development, counties and cities should use the following approach:

(1) A "precautionary or a no risk approach," in which development and land use activities are strictly limited until the uncertainty is sufficiently resolved; and

(2) As an interim approach, an effective adaptive management program that relies on scientific methods to evaluate how well regulatory and nonregulatory actions achieve their objectives. Management, policy, and regulatory actions are treated as experiments that are purposefully monitored and evaluated to determine whether they are effective and, if not, how they should be improved to increase their effectiveness. An adaptive management program is a formal and deliberate scientific approach to taking action and obtaining information in the face of uncertainty. To effectively implement an adaptive management program, counties and cities should be willing to:

(a) Address funding for the research component of the adaptive management program;

(b) Change course based on the results and interpretation of new information that resolves uncertainties; and

(c) Commit to the appropriate time frame and scale necessary to reliably evaluate regulatory and nonregulatory actions affecting critical areas protection and anadromous fisheries.

[Statutory Authority: RCW 36.70A.190 (4)(b). 00-16-064, § 365-195-920, filed 7/27/00, effective 8/27/00.]

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### 365-195-925

#### **Criteria for demonstrating "special consideration" has been given to conservation or protection measures necessary to preserve or enhance anadromous fisheries.**

(1) RCW 36.70A.172(1) imposes two distinct but related requirements on counties and cities. Counties and cities must include the "best available science" when developing policies and development regulations to protect the functions and values of critical areas, and counties and cities must give "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries. Local governments should address both requirements in RCW 36.70A.172(1) when developing their records to support their critical areas policies and development regulations.

(2) To demonstrate compliance with RCW 36.70A.172(1), a county or city adopting policies and development regulations to protect critical areas should include in the record evidence that it has given "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries. The record should be developed using the criteria set out in WAC 365-195-900 through 365-195-925 to ensure that conservation or protection measures necessary to preserve or enhance anadromous fisheries are grounded in the best available science.

(3) Conservation or protection measures necessary to preserve or enhance anadromous fisheries include measures that protect habitat important for all life stages of anadromous fish, including, but not limited to, spawning and incubation, juvenile rearing and adult residence, juvenile migration downstream to the sea, and adult migration upstream to spawning areas. Special consideration should be given to habitat protection measures based on the best available science relevant to stream flows, water quality and temperature, spawning substrates, instream structural diversity, migratory access, estuary and nearshore marine habitat quality, and the maintenance of salmon prey species. Conservation or protection measures can include the adoption of interim actions and long-term strategies to protect and enhance fisheries resources.

[Statutory Authority: RCW 36.70A.190 (4)(b). 00-16-064, § 365-195-925, filed 7/27/00, effective 8/27/00.]

## Chapter 9 Environment

### Thurston County Comprehensive Plan

## **CHAPTER NINE - NATURAL ENVIRONMENT**

### **I. INTRODUCTION**

The natural environment is among Thurston County's most important assets. It performs many functions that sustain and enrich us, such as providing recreational opportunities, a vital source of potable water, economic opportunities, and habitat for fish and wildlife. A variety of land uses, from agriculture, forestry, and mining to residential and commercial developments, both impact and are influenced by the natural environment. The challenge for the county is to adopt and implement regulations and programs that accommodate these land uses while protecting, enhancing and conserving the quality of its natural environment.

The Growth Management Act and the County-wide Planning Policies it mandates provide direction to help the county meet this challenge. The Growth Management Act calls for protecting the environment and enhancing the state's high quality of life, including air and water quality, and the availability of water (Planning Goal 10). The Act also requires the development of regulations, based on best available science, to protect critical environmental resources and avoid natural hazards. These "Critical Areas" include, but are not limited to, aquifer recharge areas (where water infiltrates to aquifers), geologic hazard areas (such as steep slopes prone to landslides), important wildlife habitats and species, frequently flooded areas (such as floodplains and surfacing groundwater), and wetlands.

County-wide Planning Policies 9.1 through 9.8 call for all jurisdictions in the county to recognize their dependence on natural systems and maintain a balance between human uses and the natural environment, protect ground and surface water from degradation, protect and enhance air quality, minimize high noise levels, promote awareness of cultural and natural heritage, encourage recycling of materials and products and reduction of waste, and to plan for growth in a manner that can be sustained without degrading the county's livability and environmental quality.

This Natural Environment Chapter, together with other chapters of the Comprehensive Plan, establishes a framework of goals, objectives, and policies that indicate how the county will protect its natural beauty and environmental quality while minimizing the impacts of natural hazards, consistent with state law and the County-wide Planning Policies.

### **II. BACKGROUND**

#### **A. ENVIRONMENTAL FEATURES**

Thurston County has a rich diversity of terrain and natural features. The county contains approximately 128 miles of marine shoreline along four peninsulas jutting into Puget Sound. This shoreline includes high bluffs, beaches, spits, points, barrier berms, and a

delta at the mouth of the Nisqually River. The central portion of the county consists mainly of prairies with remnant stands of Oregon white oak and conifers that are bounded by the Black Hills to the west and the Cascade foothills to the southeast. Other notable natural features in the county include expansive floodplains; the Mima Mounds; important fish and wildlife habitats; and McAllister Springs, a major public drinking water source.

Many of the county's natural features perform vital environmental functions that are sensitive to human impacts or pose hazards to life and property. For example, wetlands store and cleanse stormwater, thereby mitigating flooding and improving water quality. They also provide important wildlife habitat. These functions are easily destroyed or degraded by development and other activities. The steep slopes and unstable soils that occupy about thirteen percent of the county are subject to erosion, slippage, or settling in the event of earthquakes, rain saturation, or improper building practices.

The county's diverse terrain and habitat types support a wide variety of fish, birds, mammals, amphibians and other wildlife, including state and federally protected species. For example, the Nisqually Wildlife Refuge supports over 300 species of wildlife.

The county's air quality is generally good due to climate, physiography, and the limited number of particulate producing industries.

## **B. WATER RESOURCES**

The Growth Management Act requires the county to: "Provide for protection of groundwater quality and quantity, and provide guidance for corrective actions to mitigate or cleanse those discharges entering Puget Sound or other waters of the State."

The county's water resources include four marine inlets (Budd, Eld, Henderson, and Totten) and the Nisqually Reach, all of which support shellfish beds, anadromous fish and a variety of other marine life and birds. The county also contains 108 lakes totaling approximately 6,343 acres. Alder Lake, a 1,117-acre reservoir on the Nisqually River, is the largest of the county's lakes. Black Lake, which spans 576 acres, is the county's largest natural lake.

In addition, the county contains several rivers and numerous small streams, many of which support anadromous and resident fish. Most of Thurston County is located within three major drainage basins. The largest drains the southwest portion of the county through the Black, Skookumchuck, and Chehalis rivers, which eventually flow to the Pacific Ocean. The Deschutes River drains the central portion of the county before flowing through Capitol Lake to Puget Sound. The Nisqually River drains a narrow area along the county's eastern boundary enroute to the Nisqually Reach of Puget Sound. Several small streams, including Woodland, Kennedy, Woodard, Green Cove, Perry and McLane creeks, flow directly to Puget Sound.

Wetlands comprise nearly ten percent of the county and, as previously mentioned, perform the important functions of cleansing and slowly releasing stormwater, thereby improving water quality and moderating stream flows.

Most Thurston County residents rely on groundwater for their drinking water. Except for minor surface withdrawals, groundwater also provides all of the water used by industry and agriculture. In addition, during the dry season, groundwater sustains stream flows and dependent fish, aquatic life, and other wildlife.

Nearly all of the groundwater in Thurston County starts as rain that falls within the county. For the most part, the county's soils, even sloping and clay-rich soils, allow rainfall to infiltrate into the local aquifers (i.e., layers of subsurface material with voids where the groundwater collects.) However, various parts of the county have very different aquifers. The northern and southeastern portions of Thurston County generally are underlain by four major aquifers stacked on top of each other with clay-rich confining layers between them. McAllister and Allison springs flow from these aquifers and serve as major water sources for the north county public water system. Much of southwestern Thurston County is underlain by a single shallow aquifer with no confining layers, making it susceptible to contamination.

Aquifers in the vicinity of the Black Hills, Bald Hills, the Maytown uplands near Tenino, and Michigan Hill in the southwestern portion of the county are not reliable sources of potable water. Also, in some places, small ponds and streams are dry for significant portions of the year due to lowering of the groundwater levels in the upper aquifer. The Deschutes River, Chehalis River, Yelm Creek, and Scatter Creek are all influenced to some degree by groundwater withdrawals. Projected population growth may require additional groundwater withdrawals to serve new residents. Care must be taken to ensure that these withdrawals do not result in reduced summer stream flows or elevated water temperatures that jeopardize the survival of fish or other aquatic life.

Groundwater in the county is of generally high quality, with some exceptions. Scattered leaks and spills of fuels and solvents have contaminated small areas of some aquifers. Also, in several areas, wells have been contaminated by pesticides or nitrates, forcing their abandonment. A few areas in the county have nitrate levels that are significantly above background levels.

The county participated in multi-jurisdictional watershed planning for the four Water Resource Inventory Areas that encompass the county's major watersheds. The plans address water quantity and quality issues, including instream flow and aquatic habitat protection. These plans provide a greater understanding of each watershed and will help the county and other jurisdictions, tribes, and agencies to prudently manage our water resources.

### C. NATURAL HAZARDS

The forces of nature periodically ravage the county. Approximately 41.7 square miles of the county (about seven percent of the unincorporated area) lie within 100-year floodplains (areas with a 1 in 100 chance of being flooded each year). Winter storms in 1996 and early 1997 produced flooding that destroyed more than two dozen homes in the county and inundated approximately 200 others, contaminated about 200 wells, caused numerous septic system failures, and closed 300 road segments. More than 1,000 people evacuated their homes. Losses totaled in excess of forty million dollars. In 1999, Thurston County adopted the Thurston County Flood Hazard Management Plan to establish countywide management strategies to minimize the risks to life and property from flooding. In 2000, the county enrolled in the Community Rating System (CRS) through the National Flood Insurance Program. The CRS provides a framework for flood hazard mitigation and other activities to reduce the county's risk of flood damage. The county's current rating (2003) is Class 5, one of the highest ratings for a county in the nation. This rating enables residents and property owners within the unincorporated county to receive a twenty-five percent reduction in flood insurance rates.

During wet winters, surfacing groundwater inundates substantial portions of the county, particularly in the Salmon Creek Basin south of the City of Tumwater. The county has adopted regulations to regulate development in proximity to these flood hazard areas to avoid property damage and groundwater contamination.

Saturated soils, particularly in areas where groundwater is perched above a shallow till layer, also pose problems for development in portions of the north county and contribute to slope failure in some instances. Projected population increases will likely lead to infiltration of additional rainwater into the soils as the evapo-transpiration capacity of forests is reduced by development. Care must be taken to ensure that new development does not worsen groundwater flooding or increase the potential of landslides.

Mount Rainier, which graces much of the county's skyline, poses the risk of a volcanic eruption. In past centuries, lahar flows composed of mud, rock and trees have spewed from the mountain and buried the lower elevation areas along the entire length of the Nisqually River. If future flows breach Alder Dam on the Nisqually River, the impact could be devastating.

Steep slopes and bluffs pose risk of landslides, especially where springs or stormwater undermine their stability. Areas with significant potential for landslides include marine bluffs, steep slopes and bluffs along streams, and steep slopes in Black Hills and Bald Hills. Maps of landslide hazard areas are available online through the county's GeoData Center.

Earthquakes have caused significant damage in Thurston County. In 2001, the county was shaken violently by a 6.8 earthquake centered near the mouth of the Nisqually

River. While most of the county escaped with only minor damage, development on poorly consolidated fill and soils subject to liquefaction were severely damaged. In 2003, Thurston Regional Planning Council worked with the county's jurisdictions to prepare the "Natural Hazards Mitigation Plan for the Thurston Region." This plan provides a coordinated approach for addressing the natural hazards occurring in the county.

#### **D. IMPORTANT GREENSPACES**

The Growth Management Act requires that the Comprehensive Plan identify "open space corridors within and between urban areas." These open space corridors are to include "lands useful for recreation, wildlife habitats, trails, and connection of critical areas." Planning Goal 9 of the Act states "Encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks."

In addition, the County-wide Planning Policies call for the county to: "Maintain significant wildlife habitat and corridors" and "provide for parks and open spaces."

The Important Greenspaces Map (M-31) in this plan, identifies areas important for recreation, water quality protection, trails, open space and resource use (i.e., long term forestry and agriculture) within and adjacent to the county.

The Comprehensive Parks, Recreation, Trails and Natural Resource Preserve Plan 2020, adopted separately from the Comprehensive Plan, provides a coordinated approach for park and trail development, natural resource preservation, and provision of recreation services. It calls for completion of a regional, interconnected trail and open space system that spans the north county urban growth areas and extends through rural areas to provide links to south county communities.

As of October 2002, the Thurston County Parks and Recreation Department manages 2,773 acres, including 42.5 miles of regional trails (23 miles of which are open for public use as of 2003), expansive natural areas within parks, and several natural area preserves. The preserves include Indian Road Park (5 acres), Woodland Creek Wetlands Preserve (75 acres), Lake Lawrence Park (15 acres), Black River-Mima Prairie Glacial Heritage Preserve (1,020 acres), Johnson Point Wetlands Preserve (26 acres), and the Black River Natural Area (13 acres). Appendix 1 of the Comprehensive Parks, Recreation, Trails and Natural Resource Preserve Plan 2020 contains a complete list of the county's parks and open space along with a description of their characteristics and facilities.

In addition to county parks and open spaces, state and federal agencies manage approximately 49,714 acres in the county comprised of state parks, natural area preserves, such as the Woodard Bay Natural Resource Conservation Area on Henderson Inlet, many recreational sites within the state's Capitol Forest, the state and federal Nisqually Wildlife Refuge, the Black River Wildlife Refuge, and other wildlife

habitat mitigation and management sites. The state also owns or operates several boat ramps in the county. In addition, private groups have purchased land and easements to preserve important natural areas in the county (see Map 31).

The Comprehensive Parks, Recreation, Trails and Natural Resource Preserve Plan 2020 identifies county residents' priorities for additional parks, recreation facilities, trails, greenways, and natural resource preservation. The community strongly supports development and acquisition of multiple use trails and greenways, water access sites, natural resource preserves, picnic sites, athletic fields and other active recreation facilities. The plan establishes a strategy for accommodating these community desires.

### III. GOALS, OBJECTIVES AND POLICIES

#### A. GEOLOGIC HAZARD AREAS

**GOAL:** MINIMIZE THE LOSS OF LIFE AND PROPERTY FROM LANDSLIDES AND SEISMIC, VOLCANIC, OR OTHER NATURALLY OCCURRING EVENTS, AND MINIMIZE OR ELIMINATE LAND USE IMPACTS ON GEOLOGICALLY HAZARDOUS AREAS.

**OBJECTIVE:** To designate and manage geologic hazard areas to avoid loss of life and damage to structures by guiding development away from geologic hazard areas and by regulating uses and activities that occur within or near such areas in a manner that minimizes the potential for damage or loss of life.

**POLICIES:**

1. The county should designate and provide for the protection and management of geologic hazard areas based on best available science and cumulative impact assessments of existing and planned land and resource uses within and near geologic hazard areas.
2. The county should restrict development and resource use within or near areas susceptible to significant damage from erosion, landslides, earthquakes or lahar flows, as necessary to protect life, property, and wildlife habitats (e.g., streams and marine waters downslope).
3. The county should cooperate with other jurisdictions and agencies to implement the “Natural Hazards Mitigation Plan for the Thurston Region,” TRPC 2003, or as hereafter amended.
4. The county should protect the public from natural hazards, minimize the need for emergency rescues and replacement of public facilities damaged by natural forces, and avoid public subsidy of private development located in areas vulnerable to damage from natural events by minimizing the amount of development at risk.
5. The county should delineate landslide hazards, the path of potential lahar flows, and other natural hazard areas with the greatest degree of accuracy possible. Reevaluate land use regulations in light of the refined mapping and make changes as warranted, consistent with public safety and best available science.
6. The county should collaborate with other jurisdictions and agencies to gain a better understanding of earthquake hazards in the county and devise appropriate mitigative measures to minimize the loss of life and property.

**ACTION NEEDS:**

1. Review and amend as necessary the geologic hazard areas section of the Critical Area regulations at least every five years to reflect best available science,

relevant new information, the results of project monitoring and evaluation, and cumulative impact assessments of existing and planned future land and resource uses within and near geologic hazard areas.

2. Update maps depicting liquefaction susceptibility and create a map identifying areas with strong ground motion with the greatest level of accuracy possible.
3. Evaluate areas of groundwater flooding, unstable soils, and steep slopes to identify areas where additional infiltrated stormwater might intensify known flooding and landslide hazards.
4. Evaluate potential earthquake damage in the county using HAZUS software or other appropriate computer model.
5. Evaluate critical county-owned facilities to identify their vulnerability to seismic events.
6. Develop a public outreach program to provide information related to earthquake preparedness.

## **B. GROUNDWATER AND AQUIFER RECHARGE AREAS**

**GOAL:** PROTECT Groundwater QUALITY AND QUANTITY.

**OBJECTIVE:** To provide for the identification and protection of sensitive aquifer recharge areas, protect groundwater quality, and prudently conserve groundwater resources.

### **POLICIES:**

1. The county should designate and provide for the protection and management of groundwater and aquifer recharge areas based on best available science and cumulative impact assessments of existing and planned future land and resource uses within and near aquifer recharge areas.
2. The county should protect groundwater quality and prevent aquifer contamination, degradation, and depletion through the comprehensive management of groundwater in conformance with the Clean Water Act, the Northern Thurston County Ground Water Management Plan, the South Thurston County Aquifer Protection Strategy, and all other applicable federal, state and local water quality regulations.
3. The county should determine, based on watershed plans, if there are areas where low summer stream flows or elevated instream water temperature may, now or in the future, imperil anadromous or native resident fish. If such areas are identified, the county should devise and implement development restrictions and management practices as necessary to sustain the fish.

4. The county should reduce allowed land use densities, in areas where the supply of groundwater is limited, to the extent necessary to preserve sufficient water for existing uses, unless alternative domestic water supplies are available from other sources. Special consideration should be given to areas where additional groundwater withdrawals would diminish summer stream flows and elevate instream water temperatures and thereby jeopardize the survival of anadromous or native resident fish.
5. The county should regulate land uses within designated wellhead protection areas to prevent degradation of groundwater quality.
6. The county should strive to develop and fully implement regional wellhead protection policies and locally developed wellhead protection plans. Support efforts by water utilities to acquire or provide long-term management of wellhead protection areas.
7. The county should encourage that coordinated, reliable water systems be used to provide water in the urban growth areas. Urge jurisdictions to develop compatible, coordinated water system design standards for their growth areas.
8. The county should discourage construction and use of individual private wells in urban growth areas where community or public water sources are reasonably and economically available.
9. The county should encourage the use of community or public water in unsewered areas where residential density is in excess of one unit per acre. Community or public water systems should also be provided in residential developments with densities in excess of one unit per two acres and excessive soil permeability.
10. The county should ensure that community and public water systems and supplies are managed to meet state and local health standards.
11. The county should regularly monitor and protect the water quality of watersheds feeding into water bodies used for drinking water (e.g., Summit Lake). If pollution is identified, the county should devise and implement programs to improve water quality.
12. The county should encourage the safe recycling and reuse of water and treated wastewater in order to recharge aquifers, conserve groundwater supplies, and reduce contamination of receiving waters.
13. The county should encourage the use of no- and low-water use appliances and fixtures, particularly in conjunction with septic systems, to reduce the potential for groundwater contamination.
14. The county should promote the use of integrated pest management and the reduction of pesticide and fertilizer use by residents, businesses, and

governmental agencies in designated wellhead protection areas and in areas identified as a source of contamination to important wildlife habitats and shellfish beds.

The county should develop a strategy for conserving water in periods of drought that includes public education and notification.

**ACTION NEEDS:**

1. Review and amend as necessary the aquifer recharge areas section of the Critical Area regulations at least every five years to reflect best available science, relevant new information, the results of project monitoring and evaluation, and cumulative impact assessments of current and planned land and resource uses within and near aquifer recharge areas.
2. Work with municipal water purveyors to secure a long-term funding source to provide water resource protection services for the entire county.
3. Work with municipal water purveyors to monitor water quality in aquifers in order to assess long-term trends, and identify and respond to water quality problems. Encourage data sharing with other jurisdictions, agencies, and water purveyors. Seek funding to support these efforts.
4. Review the extent and nature of well siting problems and adopt solutions. This includes evaluating and addressing potential cumulative threats to instream flow posed by wells that do not require acquisition of State water rights.
5. Support development of Watershed Plans and Total Maximum Daily Load programs to address groundwater quality and quantity, as well as instream flow protection and elevated instream water temperature.
6. Review the urban water supply service area plan and give consideration to the development of a regional water source and distribution system. The plan should examine 50+ year supply issues and be funded through inter-jurisdictional agreements.
7. Identify areas critical to the protection of drinking water supplies and measures needed to assure their protection.
8. Make literature available to residents that compare the efficiency of low-water use fixtures to conventional fixtures.
9. Make private water purveyors aware of the adopted Coordinated Water System Plans for the Urban Growth Areas in North and South Thurston County.
10. Examine opportunities for developing a rural-area Coordinated Water System Plan or other water service policy framework to provide for improved reliability and prudent management of water resources.

11. Provide technical assistance and education, to the extent resources allow, to small businesses, industries, and residents in designated wellhead protection areas regarding proper storage, handling and disposal of hazardous materials.
12. Participate, as resources allow, in planning and training for regional spill response in designated wellhead protection areas.
13. Incorporate methods to mitigate the risk from commercial hazardous materials transportation through designated wellhead protection areas when planning new transportation corridors.
14. Provide, as resources allow, local information to the existing data management program within the Department of Ecology to develop and maintain an underground storage tank database for commercial underground storage tanks.
15. Coordinate environmental review with other jurisdictions when evaluating development proposals within designated wellhead protection areas.
16. Address domestic drinking water supply as part of land use planning.
17. Incorporate requirements for enhanced protection of wellhead protection areas in the stormwater drainage manual and development regulations.
18. Work with other jurisdictions to coordinate educational programs to provide a basic wellhead protection message and deliver the message to community groups and private parties whenever possible.
19. Encourage the Thurston Conservation District Board to continue their voluntary efforts regarding education, conservation planning, and installation of best management practices on existing farms, golf courses, parks, schools, residences, and other facilities which use pesticides and fertilizers in designated wellhead protection areas.

To extent that resources permit, the county should implement the relevant portions of adopted Watershed Plans prepared in accordance with RCW 90.82.

### **C. SURFACE WATER**

**GOAL:** PROTECT AND IMPROVE THE WATER QUALITY AND BIOLOGICAL HEALTH OF LAKES, WETLANDS, RIVERS, STREAMS, AND PUGET SOUND.

**OBJECTIVE 1:** To manage surface water in a manner that will protect or improve the quality of water sustaining human use, wildlife, and aquatic life.

**POLICIES:**

1. The county should provide for the protection and management of surface water, consistent with the Clean Water Act, based on best available science and

- cumulative impact assessments of existing and planned future land and resource uses within the watersheds.
2. The county should retain substantially in their natural condition: ponds, wetlands, rivers, lakes and streams, and their associated buffers and riparian areas.
  3. The county should protect streams from the adverse impacts of activities occurring within their watersheds to avoid degradation of their water quality and biological health. These impacts include, but are not limit to, elevation of stream water temperature and low flows in summer and stream channel damage and sedimentation from excessive flows during winter.
  4. The county should protect and maintain the valuable natural functions of wetlands by maintaining an undisturbed or restored native vegetation buffer around the wetland and by prohibiting filling, draining, and clearing within wetlands and their associated buffers.
  5. The county should designate and protect riparian habitat areas to help maintain water quality consistent with best available science. (Also see related policies under Section E, Important Fish, Wildlife, and Plant Habitat).
  6. The county should prevent development and activities in streams, riparian areas, and wetlands and any associated buffers that would damage water quality or habitat functions, except to the minimum extent necessary when there is no reasonable alternative for accommodating an essential use (e.g., an essential road or utility crossing).
  7. The county should consider establishing a wetland mitigation bank to provide an alternative to individual stream and wetland mitigation projects associated with essential public projects. Enhancement of degraded wetlands is preferred over creation of new wetlands.
  8. The county should require, to the extent legally permissible, restoration of degraded buffers and wetlands associated with lakes, streams, rivers, and Puget Sound as a part of new land uses and development activity.
  9. The county should cooperate with adjoining jurisdictions to develop complementary regulations pertaining to streams, upland wildlife habitat, and other Critical Areas that span jurisdictional boundaries.
  10. The county should evaluate the performance of county regulations in maintaining surface water and monitor the performance of restoration and enhancement projects to provide a basis for periodic refinement of county regulations and management practices.
  11. The county should promote the use of integrated pest management, reduction of pesticide and fertilizer use, and best management practices for animal waste by

residents, businesses, and governmental agencies in areas identified as a source of contamination of surface water, particularly if it affects the harvest of shellfish.

12. The county should provide technical assistance and education, to the extent resources allow, to operators of small businesses and industrial uses, and residents located near surface water bodies regarding proper storage, handling and disposal of hazardous materials.
13. The county should encourage the Thurston Conservation District Board to continue their voluntary efforts regarding education, conservation planning, and use of best management practices on existing farms, golf courses, parks, schools, residences, and other facilities that use pesticides and fertilizers near surface water bodies.

**ACTION NEEDS:**

1. Review and amend as necessary the sections of Critical Area regulations relevant to surface water at least every five years to reflect best available science, relevant new information, the results of project monitoring and evaluation, and cumulative impact assessments within the watersheds.
2. Develop or endorse stream and wetland restoration guidelines, consistent with best available science, which serve to improve water quality and habitat values, while providing for some economic use of the land.
3. Regularly update wetland and stream maps with the greatest degree of accuracy possible.
4. Support development of Watershed Plans and Total Maximum Daily Load programs to address instream flow protection, water temperature problems, and water quality.

Educate landowners regarding the importance of protecting natural vegetation in riparian habitat areas and wetland buffers.

**OBJECTIVE 2: *Lake Management*** - To provide for a comprehensive, long-term approach to lake management that accommodates all appropriate uses and benefits, consistent with the maintenance or enhancement of water quality.

**POLICIES:**

1. The county should work with property owners and interested parties to develop an integrated aquatic management plan for lakes, consistent with best available science and the Clean Water Act, that addresses pollution sources, such as stormwater runoff and on-site disposal system effluent, and the cumulative impacts of existing and planned future land and resource uses within the watersheds.

2. The county should strive to reduce the spread of Eurasian milfoil and other exotic aquatic weeds through monitoring, public information and other means.

**OBJECTIVE 3:** *Marine Waters and Shoreline Management* - To preserve and protect marine shorelines and near shore areas as valuable natural resources and habitats, consistent with state and federal law.

**POLICIES:**

1. The county should regulate uses and activities along the marine shoreline and within the waters of Puget Sound, consistent with the State Shoreline Management Act and the Clean Water Act, based on best available science and cumulative impact assessments of existing and planned future land and resource uses in upland watersheds.
2. The county should identify and protect, consistent with best available science, important, sensitive marine habitats, such as juvenile salmon migration corridors, kelp and eelgrass beds, shellfish beds, and herring and smelt spawning areas.
3. The county should protect special shoreline features, such as dry accretion beaches, and undeveloped bays and lagoons.
4. The county should provide information to property owners regarding various protection options for their marine shoreline consistent with the State Shoreline Management Act and the Shoreline Master Program for the Thurston Region. Encourage the use of “bioengineered” shoreline stabilization as an alternative to bulkheading or other forms of shoreline armoring where necessary to protect existing structures from erosion.

**ACTION NEED:**

1. Update the Shoreline Master Program consistent with state law, and integrate it into the Comprehensive Plan and the development regulations to facilitate coordination and administration.

**D. FREQUENTLY FLOODED AREAS**

**GOAL:** protect life and structures from flood hazards and retain the flood storage, transmission capacity, and habitat value of floodplains.

**OBJECTIVE:** To provide the highest degree of flood protection at the least cost.

**POLICIES:**

1. The county should provide the highest degree of flood protection at the least cost through identification and accommodation of natural flooding and channel migration processes that pose hazards to life or property. Protection and management should be based on best available science and cumulative impact assessments of existing and planned future land and resource uses within the floodplains, channel migration zones, and watersheds.

2. The county should prohibit development and emplacement of fill in floodways and floodplains, except to the minimum extent necessary to accommodate public infrastructure and utilities that cannot be accommodated elsewhere and to stabilize channels against erosion in order to protect existing agricultural lands, public roads and bridges, public infrastructure, utilities and significant private structures, and to achieve habitat enhancement. Any development in the floodways should be designed to avoid habitat degradation. Stream bank stabilization, if necessary, should be of a type that maintains or enhances habitat functions. Rip-rap and other hard armoring should only be used if there is no effective alternative, based on sound engineering principles, to protect existing structures or public facilities.
3. The county should provide for land uses such as forestry, open space, public recreation, existing agriculture and water-dependent uses in areas subject to river flooding to minimize risks to life and structures and help retain or enhance habitat functions. Other uses and development in the floodplain should be restricted to minimize public safety risks (e.g., through compensating design features) and loss of habitat function.
4. The county should minimize disruption of long-term stream channel migration processes that allow formation of essential habitat features by prohibiting construction of new structures in channel migration zones and minimizing streambank stabilization.
5. The county should actively participate in the multi-jurisdictional flood hazard reduction efforts within the Chehalis River Basin.
6. The county should regulate uses in and around areas where groundwater periodically surfaces as necessary to avoid property damage and protect groundwater quality.
7. The county should maintain the county's enrollment in the Community Rating System through the National Flood Insurance Program.

**ACTION NEEDS:**

1. Review and amend as necessary the frequently flooded areas section of the Critical Area regulations at least every five years to reflect best available science, relevant new information, the results of project monitoring and evaluation, and cumulative impact assessments of current and planned future land and resource uses within and near frequently flooded areas.
2. Map floodways, floodplains, channel migration zones and areas subject to high groundwater flooding with the greatest degree of accuracy possible.
3. Install and maintain flood elevation poles and gauges along major rivers and within designated groundwater flood hazard areas.

4. Create maps depicting projected flood inundation from possible failure of the Skookumchuck Dam on the Skookumchuck River and the Alder and La Grande dams on the Nisqually River.
5. Develop management programs to avoid or minimize flooding risks for existing and future land uses. This could include a range of measures including regulation and compensation for the removal of structures subject to frequent flooding.
6. Prioritize properties in the floodplain to purchase in the event federal money becomes available for that purpose.
7. Prioritize residences in the 100-year floodplain that the county would help elevate if state or federal monies become available for that purpose.
8. Identify structures and properties subject to repeated flooding that are not already listed by FEMA.

#### **E. IMPORTANT FISH, WILDLIFE, AND PLANT HABITAT**

**GOAL:** PROTECT, CONSERVE, AND ENHANCE THE ECOLOGICAL FUNCTIONS OF IMPORTANT FISH, WILDLIFE, AND PLANT HABITATS.

**OBJECTIVE:** Identify important fish, wildlife, and plant habitats and develop strategies for protecting or restoring important habitats, particularly if they are at risk of significant degradation.

#### **POLICIES:**

1. The county should protect fish and wildlife habitats that are important to the long-term viability of locally important species in Thurston County, which are unique or rare, or which contain state priority species or species listed under the federal Endangered Species Act.
2. The county should identify and protect (e.g., through easements, fee acquisition, or regulations) land providing essential connections between riparian habitat areas, open spaces, and significant wildlife habitats sustaining state priority, federally listed, or locally important wildlife species. Include wildlife corridors that lead away from riparian areas to facilitate wildlife migration to upland habitats and minimize the potential for increased fecal contamination of streams from wildlife sources.
3. The county should encourage protection of areas containing special plants and special plant communities listed by the state Department of Natural Resources Heritage Program.
4. The county should establish and protect riparian habitat areas to maintain or enhance the functions sustaining aquatic life and terrestrial wildlife, consistent with best available science.

5. The county should establish priorities for performing stream/subwatershed assessments to tailor and refine riparian habitat widths, consistent with best available science, to provide appropriate water quality and habitat protection while minimizing the burden on affected property owners. Priority should be given to those areas at greatest risk of degradation, for example, due to potential impacts from existing and planned development, the sensitivity of dependent species, or the sensitivity of the watershed's hydrology to development.
6. The county should evaluate streams/riparian areas supporting anadromous fish, sensitive native resident fish, or state priority wildlife species to determine their long-term viability to sustain such fish and wildlife at buildout of the drainage basin under current regulations, consistent with best available science. The county should build upon the information and analysis produced through the Watershed Resource Inventory Area projects as necessary to assess current and projected stream and riparian conditions. In performing the assessments, consider factors such as stream gradient, channel dimensions, valley configurations, historical conditions, current stream conditions, the width, continuity and quality of riparian areas, the presence of any associated wetlands, aquatic and terrestrial habitat utilization and sensitivity, the intensity of adjacent uses, current zoning, the cumulative impacts of existing and planned future land and resource use, subwatershed hydrology (e.g., based on soil characteristics, tree cover, land use types and characteristics, impervious surface coverage, and the performance of existing stormwater facilities), and water quality.

If any streams/riparian areas that currently support anadromous fish, sensitive native resident fish, or state priority wildlife species would not be expected to sustain such fish and wildlife at buildout of the subwatershed under current zoning and development regulations, the county should identify and pursue viable remedial actions to preserve or enhance the habitat functions (e.g., maintaining water quality). Remedial actions may include, for example, limits on effective impervious surface coverage and retention of substantial tree cover in the subwatershed, higher stormwater standards, reduced housing density, limits on stream crossings by roads or utility lines to maintain the continuity of riparian areas, expanded riparian areas, and restoration.

7. The county should identify priorities for fish and wildlife habitat protection/acquisition and other remedial actions necessary to maintain or restore the riparian or important upland habitat. Consider giving highest priority for habitat protection/acquisition to the following:
  - a. streams/riparian areas with sensitive fish or wildlife species in watersheds with existing or planned levels of development that threaten fish and wildlife survival;
  - b. streams/riparian areas that support significant numbers of anadromous or sensitive native resident fish in drainages with moderate levels of development which,

based on best available science, have potential to be maintained or restored if prompt action is taken;

c. streams/riparian areas largely in a natural condition that support the county's largest or most sensitive populations of Chinook, coho or chum salmon, steelhead, cutthroat trout or other native fish, particularly if they are listed as endangered or threatened species; and

d. streams/riparian areas that support sensitive populations of priority wildlife species or significantly affect shellfish beds subject to harvest restrictions or closures.

8. The county should provide for removal of existing "man made" barriers to anadromous fish migration in streams (e.g., impassible culverts) and prohibit installation of new barriers.

9. The county should preserve adequate water quantity and quality for fish migration, spawning, incubation and rearing, including peak and summer flow levels, dissolved oxygen and chemical content, sediment load, and temperature.

10. The county should maintain and improve surface water quality, consistent with the Clean Water Act, such that pollution does not imperil public health or the survival of fish, shellfish, or other aquatic life or prevent the harvest of shellfish. Surface waters within the drainage basins of Geological Sensitive Areas, and areas of significant recreational or commercial shellfish harvesting should be maintained or restored to the highest quality possible.

11. The county should prohibit uses and activities that degrade lakes, streams and shellfish beds or result in the loss of the natural functions of waterbodies, wetlands, and groundwater aquifers.

12. The county should require that sewage treatment plant owners explore opportunities for the beneficial use of treated wastewater before any new point discharges are authorized. The county should prohibit any new wastewater discharges, including those from sewage treatment plants, into waters where shellfish are harvested, if the discharges would significantly harm the shellfish or their harvest potential.

13. The county should cooperate with adjoining jurisdictions to develop complementary regulations pertaining to streams, fish, wildlife, plant habitats, and other Critical Areas that span jurisdictional boundaries.

14. The county should prevent development and activities in streams, riparian areas, wetlands, other protected wildlife habitats and any associated buffers that would damage their functions, except to the minimum extent necessary when there is no reasonable alternative for accommodating an essential use (e.g., an essential road or utility crossing).

15. The county should encourage stream and wetland restoration activities consistent with best available science through partnerships between the county, conservation district, other agencies, and landowners. Provide incentives for landowners to retain, enhance, or restore important wildlife habitat such as reduced permit fees, expedited permit review, and reduction in property taxes.

**ACTION NEEDS:**

1. Review and amend as necessary the important habitat and species section of the Critical Area regulations at least every five years to reflect best available science, relevant new information, and the results of project monitoring and evaluation.
2. Seek funding to perform stream/watershed assessments to refine riparian habitat protection programs, including refined riparian habitat area widths, and determine the need for additional complementary actions necessary to maintain habitat per Policy E-6.
3. Identify sources of contamination that jeopardize shellfish survival or harvest. Devise appropriate remedial actions to address identified water quality problems.

**F. GREENSPACES**

**GOAL:** IDENTIFY AND PROTECT IMPORTANT GREENSPACES USEFUL FOR RECREATION, TRAILS, WATER RESOURCE PROTECTION OR WHICH CONTAIN IMPORTANT WILDLIFE HABITATS.

**OBJECTIVE 1:** *Important Greenspaces Designation* – To provide for identification of important greenspaces within and adjacent to Thurston County, consistent with state law.

**POLICIES:**

1. The county should periodically update the Important Greenspaces Map (Map 31) to accurately reflect current conditions and knowledge regarding sites, open space corridors (including corridors within and between urban growth areas), and ecological units which are useful for recreation, trails, or water resource protection, contain important wildlife habitats and species, or provide connections to Critical Areas that would be useful for wildlife travel or dispersal.
2. The county should coordinate greenspaces planning with important greenspaces stakeholders (e.g., tribes, federal agencies, state departments, county departments, adjacent jurisdictions, private conservation organizations, local land trusts, resource land owners, county residents and other interested parties.)
3. The county should support greenspaces planning efforts by important greenspaces stakeholders within or adjacent to Thurston County.
4. The county should provide for extensions of urban trails that have been identified by an adjacent jurisdiction, consistent with the Important Greenspaces Map (Map

31). However, important wildlife habitats, including riparian areas, should have priority over trails. Therefore, locate, design, and construct trails to avoid significantly degrading important wildlife habitats or disrupting their use by state priority or federally protected wildlife species.

**ACTION NEEDS:**

1. Regularly update the inventory of important greenspaces.
2. Solicit information about potential important greenspaces from the following stakeholders: tribes, federal agencies, state departments, county departments, adjacent jurisdictions, private conservation organizations, local land trusts, resource land owners, county residents and other interested parties.

**OBJECTIVE 2:** *Protection Options* - Use a variety of protection options in order to protect the greatest number of priority greenspaces.

**POLICIES:**

1. The county should establish a system for identifying and prioritizing greenspaces for acquisition or other form of protection in order to maximize public benefits. The following types of lands should be considered for acquisition:
  - a. lands important to public health and safety, such as critical aquifer recharge areas for public drinking water supplies, wellhead protection areas, flood prone areas, geologically hazardous areas, and sensitive and priority watersheds defined in adopted basin plans;
  - b. lands containing environmental features with significant educational, scientific, wildlife habitat (especially areas important to the preservation of anadromous fish), natural or historic values;
  - c. lands that provide access to fresh and marine waters;
  - d. lands with recreational values, such as sites with potential to accommodate picnicking, boating, fishing, swimming, camping, trail use, nature observation, play areas and sports fields, or open space corridors within and between urban growth areas, consistent with the Important Greenspaces Map (Map 31); and
  - e. lands that provide scenic amenity or community identity.
2. The county should identify and evaluate the protection options for each important greenspace. Preservation options should include, but not be limited to: critical area designation (where appropriate), clustered development, enrollment in the open space tax program, conservation easements, purchase or transfer of development rights, and public acquisition.

3. The county should provide for identification and preservation of important greenspaces in coordination with the acquisition and development of future county parks, trails, preserves, and water resource protection areas.
4. The county should encourage private property owners to protect important greenspaces through the clustering of development on the least sensitive portion of the property.
5. The county should encourage private property owners with priority resources, according to the Public Benefit Rating System, to enroll their properties in the Open Space Tax Program.
6. The county should support efforts by land trusts and conservation organizations to acquire either fee simple property for preserves or conservation easements on private lands serving important habitat or water quality functions, protecting critical areas, or identified on the Important Greenspaces Map (Map 31).
7. The county should support efforts to protect lands identified in the Washington Department of Natural Resources Natural Heritage Data Base, through either private initiatives or public acquisition.
8. The county should support efforts by other governmental agencies to acquire and develop parks, trails or preserves within or adjacent to Thurston County, consistent with adopted park plans, the Important Greenspaces Map (Map 31), and the preservation of important wildlife habitat.
9. The county should examine, and act on as appropriate, opportunities to develop operating agreements and/or leases for land in proximity to urbanizing areas that are appropriate for preservation as open space, nature study areas or conservation areas.
10. The county should develop liaison with the Nature Conservancy, land trusts and other organizations and agencies interested in acquisition of lands for conservation and preservation.
11. The county should require, to the extent legally permissible, that areas for active recreation or open space be dedicated as part of the development approval process for residential developments containing ten or more acres that are zoned for more than one residential dwelling unit per acre, based on the demand expected to be generated by the developments for such areas.
12. The county should consider amending the open space program enrollment criteria to enable enrollment of parcels of less than five acres that contain important wildlife habitat, consistent with Chapter 84.34 RCW.
13. The county should encourage the use of special incentives to preserve and protect high quality or sensitive environmental resources that regulations do not

adequately protect or to minimize the burden of affected private property owners. The means to be used (in order of priority) include: open space taxation, the assistance of federal or state resource agencies, the initiatives of private conservation organizations and local land trusts, or public acquisition.

**ACTION NEEDS:**

1. Form a committee composed of representatives from affected county departments and greenspace stakeholders to establish a system for identifying and prioritizing greenspaces for acquisition or other form of preservation.
2. Undertake a detailed evaluation of all important greenspaces to determine the primary protection option for each site.
3. Update the Thurston County Open Space Tax Program to reflect recent changes in the state law and to facilitate private land preservation efforts.
4. Encourage private property owners with priority resources, according to the Open Space Tax Program, to enroll their properties.
5. Partner with local land trusts, conservation groups, and state and federal agencies to acquire property and/or easements on important green spaces using conservation futures monies and matching funds.

**G. AIR QUALITY**

**GOAL:** PROTECT AND IMPROVE THE COUNTY'S AIR QUALITY AND MINIMIZE OR ELIMINATE ODOR AND NOISE FROM NEW LAND USES THAT WOULD REDUCE THE LIVABILITY OF RESIDENTIAL AREAS OR SIGNIFICANTLY DEGRADE IMPORTANT WILDLIFE HABITAT.

**OBJECTIVE:** To protect the livability of established neighborhoods and to protect sensitive wildlife habitats.

**POLICIES:**

1. The county should support federal, state, and regional clean air policies and air quality standards and regulations.
2. The county should assess the impacts of new land uses and activities on air quality, including pollution, particulate matter, odor and noise. The county should direct those uses that are likely to generate health or nuisance problems away from residential neighborhoods, schools, hospitals, and facilities housing residents who are particularly susceptible to air quality problems (e.g., long-term health care centers), and wildlife refuges.
3. The county should maintain the peace and quiet of residential neighborhoods by:

- a. limiting noisy, polluting, or heavy traffic generating land uses and activities in close proximity to such areas;
  - b. through the use of screens, open space, or other buffers; and
  - c. through enforcement of noise and air emission standards.
4. The county should minimize the noise impacts from noise-producing sources, such as airports and military firing ranges, by designating noise impacted lands for use as forestry, agriculture, public reserves, industrial and, as a last priority, low density residential. Require that the deed, title, or covenants for lots in new residential subdivisions contain statements notifying prospective purchasers that the property will be affected by noise.
  5. The county should continue to coordinate with local and regional government agencies to reduce air pollution by adopting land use and transportation plans that help reduce the amount of vehicle emissions.
  6. The county should provide education and information to the public to promote reduction of air pollutants and particulate matter.

#### **H. MANAGEMENT APPROACHES**

**GOAL:** ENCOURAGE COMPREHENSIVE, SCALE-APPROPRIATE APPROACHES TO ENVIRONMENTAL RESOURCE MANAGEMENT AND COORDINATION OF MANAGEMENT ACTIONS.

**OBJECTIVE 1:** *Management Approaches-* To encourage and facilitate coordination of resource management to enable efficient use of public funds, maximize environmental and public benefits through coordinated and complementary actions, and to facilitate work at the appropriate scale (e.g., subwatershed).

**POLICIES:**

1. The county should establish management approaches that reflect our dependence on natural systems and maintain a balance between human uses and the natural environment.
2. The county should establish a pattern and intensity of land and resource use that are consistent with the limitations imposed by natural constraints (e.g., flooding, steep slopes prone to landslides, and saturated soil conditions), sustain environmental functions (e.g., aquifer recharge, water storage and cleansing performed by wetlands), and minimize public safety risks.
3. The county should assess the cumulative impacts of past, current, and planned future land and resource uses on the county's natural environment and implement management and protection programs that address these impacts.

4. The county should incorporate in management approaches, education programs; the use of incentives; regulation; restoration; construction; maintenance; county or land trust acquisition; and adaptive management, including establishing performance goals and monitoring programs, to enable evaluation of the effectiveness of implemented regulations and programs.
5. The county should provide for management at the appropriate scale (e.g., subwatershed), take into account the many factors and interests involved, and draw upon best available science.
6. The county should select a management approach that best addresses the degree of risks or hazards to the public, the uniqueness and sensitivity of the resource, and the long-term public benefit and the cost and financing feasibility.
7. The county should designate and manage Critical Areas in a manner that will sustain dependent human and wildlife use and avoid loss of life and damage to structures.
8. The county should identify and designate in the Critical Areas regulations geographic areas with unusual physical features or high sensitivity to human impacts that require management approaches specially designed for each area.

**ACTION NEEDS:**

1. Develop and implement education programs, as needed, for all environmental resources (air, land, water, and wildlife) and continue existing education programs that fulfill environmental quality objectives.
2. Develop site-specific habitat protection strategies for important stream corridors. These strategies should help identify priority areas requiring special protection, such as increased riparian habitat area widths, acquisition of easements or land, or incentive programs.
3. Work with adjoining jurisdictions, agencies, land preservation groups, conservation organizations, and tribes to coordinate management activities and acquisition of land and conservation easements for maximum beneficial impact. Convene an annual meeting with these and other stakeholders to review planned activities and identify opportunities for coordination that could yield greater benefits than independent actions. Work to develop a coordinated strategy for achieving mutual goals.
4. Seek funding to assess the current condition of the county's natural environment and the cumulative impacts on the environment of existing and planned future land and resource uses.
5. Seek funding to monitor and assess the effectiveness of implemented management and protection programs and to assess the need for additional

complementary actions to protect the natural environment consistent with the policies of this chapter.

**OBJECTIVE 2:** *Water Resource Management Approaches* – To coordinate water resources planning, funding and implementation within Thurston County to ensure high quality surface and groundwater, preserve the functions of water resources, ensure compatibility between land and water uses and minimize the costs of parallel programs.

**POLICIES:**

1. The county should manage county-wide water resources through a coordinated water resources program that integrates county groundwater, stormwater, lakes, stream and wetland programs related to water quantity and quality.
2. The county should consider the hydrologic continuity between ground and surface water when managing water resources.
3. The county should address water resource concerns by the appropriate scale, such as a catchment, subwatershed or sub-basin for surface waters and by aquifers for groundwater.
4. The county should support watershed planning processes conducted under RCW 90.82 as a framework for comprehensive water resource management.
5. The county should involve affected stakeholders in groundwater, watershed and stormwater basin planning.
6. The county should support and implement the county-adopted water resource plans addressing watersheds, stormwater, sewerage, groundwater, water supply and solid waste, including the Northern Thurston County Ground Water Management Plan and the South Thurston County Aquifer Protection Strategy.
7. The county should protect public water supplies from contamination to avoid the cost of developing new water sources.
8. The county should manage water resources for multiple beneficial uses. Use for one purpose should preserve opportunities for other uses, while maintaining overall water quality. When conflicts arise, the natural system should be given priority, particularly if the use would be detrimental to anadromous fish or public safety.
9. The county should monitor both surface water and groundwater to evaluate program effectiveness, establish long-term trends for both water quality and water quantity, and provide for the early detection of pollution, to minimize the damage and the cost of resource restoration, and to provide a basis for adaptive management.

**ACTION NEEDS:**

1. Implement the polices and action recommendations contained within county adopted water resource plans.
2. Identify and implement a long-term funding source to provide for water resource protection services including investigation and enforcement.
3. Establish a unified source of funding for water resource protection efforts to reduce multiple and piecemeal fees and charges for water protection efforts.
4. Work with other jurisdictions to merge their water quality monitoring data into a common Geographic Information System thereby making the information more accessible to the public.
5. Annually distribute a report card on county-wide water quality that includes an evaluation of the data by watershed and the type of water resource.

## Works Cited

## **Works Cited**

This document covers works cited in the staff report. It is not a comprehensive list of best available science for the designation of mineral lands of long-term commercial significance, or for mining.

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