

July 3, 1995
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Introduced By: Vance

Proposed No.: 94-730

ORDINANCE NO. **11886**

AN ORDINANCE adopting the Issaquah Creek Basin and Nonpoint Action Plan as a functional plan consistent with the King County Comprehensive Plan, adopting surface water management and environmental policies in the plan area, adding a new section to K.C.C. 20.12 and amending K.C.C. 16.82.050, K.C.C. 16.82.150, and K.C.C. 21A.12.030.

PREAMBLE:

For the purpose of effective surface water management in the Issaquah Creek basin, the Metropolitan King County Council makes the following findings of fact:

1. The Issaquah Creek basin covers approximately 61 square miles and includes Issaquah Creek, the North and East Forks of Issaquah Creek, and Tibbetts Creek.
2. The King County Council adopted Motion 7602 in July, 1989 authorizing an interlocal agreement between King County and the City of Issaquah to prepare the Issaquah Creek Basin and Nonpoint Action Plan.
3. The Issaquah Creek basin features many excellent natural resources, including high-quality habitat for eight species of anadromous salmon and trout.
4. Portions of the Issaquah Creek basin experience problems with flooding, erosion, sediment deposition, water pollution, and loss of fish habitat due to land development and insufficient standards for stormwater management.
5. Implementation of the policies set out in the plan will address many existing stormwater, water quality, and habitat problems, and will substantially reduce the impacts of future development on basin resources.

1 BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

2 SECTION 1. There is hereby added to K.C.C. 20.12 a new section to read as
3 follows:

4 The Watershed Management Committee - Proposed Issaquah Creek Basin and
5 Nonpoint Action Plan, as shown in Attachment A and amended in Attachment B, is
6 adopted to implement the surface water management and environmental policies of the
7 King County Comprehensive Plan. The Watershed Management Committee - Proposed
8 Issaquah Creek Basin and Nonpoint Action Plan constitutes official county policy with
9 regard to surface water management in the Issaquah Creek basin and designates
10 Regionally Significant Resource Areas and Locally Significant Resources Areas in the
11 basin. Pursuant to the policy NE-307 of the 1994 King County Comprehensive Plan the
12 King County Executive shall study the standards of protection needed for Regionally
13 Significant Resource Areas and Locally Significant Resources Areas and report the
14 findings and recommendations to the Council in 1995. Based on the report, the
15 Metropolitan King County Council will review and may revise the Regionally
16 Significant Resource Areas and Locally Significant Resources Areas designated in the
17 Issaquah Creek Basin Plan

18 SECTION 2. Ordinance 9614, Section 100, and K.C.C. 16.82.050 are each
19 hereby amended to read as follows:

20 **Clearing and Grading Permit required - Exceptions.** A. No person shall do
21 any clearing or grading without first having obtained a clearing and grading permit from
22 the director except for the following:

23 1. An on site excavation or fill for basements and footings of a building,
24 retaining wall, parking lot, or other structure authorized by a valid building permit. This
25 shall not exempt any fill made with the material from such excavation nor exempt any
26 excavation having an unsupported height greater than five feet after the completion of
27 such structure;

28 2. The depositing or covering of any garbage, rubbish or other material at any
29 solid waste facility operated by King County;

1 3. Maintenance of existing driveways or private access roads within their
2 existing road prisms, provided that the performance and restoration requirements of this
3 chapter are met and best management practices are utilized to protect water quality.

4 4. Any grading within a publicly owned road right-of-way;

5 5. Clearing or grading by a public agency for the following routine
6 maintenance activities:

7 a. Roadside ditch cleaning provided the ditch does not contain salmonids;

8 b. Pavement maintenance;

9 c. Normal grading of gravel shoulders;

10 d. Maintenance of culverts;

11 e. Maintenance of flood control or other approved surface water management
12 facilities;

13 f. Routine clearing within road right-of-way.

14 6. Any clearing or grading for roads within a preliminary or finally approved
15 residential plat which has been approved by the director and for which a bond has been
16 posted;

17 7. Maintenance or reconstruction of the facilities of a common carrier by a rail
18 in interstate commerce within its existing right-of-way; provided restoration is
19 consistent with the requirements of Section 16.82.110 ; provided that this exception
20 does not apply if the clearing or grading is within a sensitive area as regulated in K.C.C.
21 Chapter 21A.24.

22 8. Cemetery graves; provided that this exception does not apply except for
23 routine maintenance if the clearing or grading is within a sensitive area as regulated in
24 K.C.C. Chapter 21A.24 ;

25 9. Clearing or grading within a preliminarily or finally approved residential plat
26 not involving any excavation exceeding five feet in vertical depth or any fill exceeding
27 three feet in vertical depth, regardless of the amount of material to be removed; provided
28 that this exception does not apply if the clearing or grading is within a sensitive area as
29 regulated in K.C.C. Chapter

1 21A.24. This exception does not apply within an area placed into tracts or easements
2 for a wildlife habitat corridor pursuant to K.C.C. 21A.14 unless the proposed activity is
3 otherwise exempt under K.C.C. 21A.24;

4 10. Excavation less than five feet in vertical depth not involving more than
5 one hundred cubic yards of earth or other material on a single site; provided that the
6 exception does not apply if the clearing or grading is within a sensitive area as regulated
7 in K.C.C. Chapter 21A.24. This exception does not apply within an area placed into
8 tracts or easements for a wildlife habitat corridor pursuant to K.C.C. 21A.14 unless the
9 proposed activity is otherwise exempt under K.C.C. 21A.24;

10 11. Fill less than three feet in vertical depth not involving more than one
11 hundred cubic yards of earth or other material on a single site; provided that the
12 exception does not apply if the clearing or grading is within a sensitive area as regulated
13 in K.C.C. Chapter 21A.24. This exception does not apply within an area placed into
14 tracts or easements for a wildlife habitat corridor pursuant to K.C.C. 21A.14 unless the
15 proposed activity is otherwise exempt under K.C.C. 21A.24;

16 12. Minor stream restoration projects for fish habitat enhancement by a public
17 agency, utility or tribe as set out in K.C.C. Chapter 21A.24.

18 13. Clearing or grading for construction of livestock manure storage facilities
19 or associated nonpoint source pollution facilities designed to the standards of and
20 approved in a conservation plan by the King County conservation district, and
21 constructed and maintained to those standards or livestock flood sanctuaries constructed
22 and maintained to the standards approved by the Soil Conservation Service and
23 conservation district and the best management practices approved by King County.

24 14. Clearing and grading, performed as Class I, II, III or IV Special forest
25 practice in the F (Forestry) zone, that is conducted in accordance with RCW 76.09 and
26 WAC 222.

27 15. Any clearing or grading which has been approved by the director as part
28 of a Commercial Site Development permit and for which a bond has been posted.

1 16. The following activities are exempt from the clearing requirements of this
2 chapter and no permit shall be required:

3 a. Clearing outside of sensitive areas and buffers as regulated in K.C.C.
4 Chapter 21A.24 unless the development proposal site is in a basin with an adopted
5 basin plan and clearing standards identified in 16.82.150 or is within an area subject to
6 clearing restrictions contained in a wildlife habitat corridors pursuant to K.C.C. 21A.14,
7 a critical drainage area administrative rule or in p-suffix conditions in an adopted
8 community plan.

9 b. Within sensitive areas, as regulated in K.C.C. Chapter 21A.24 , the
10 following activities are exempt from the clearing requirements of this chapter and no
11 permit shall be required.

12 (1) Normal and routine maintenance of existing lawns and landscaping
13 subject to the limitations on the use of pesticides in sensitive areas as set out in K.C.C.
14 Chapter 21A.24.

15 (2) Permitted agricultural uses; provided the clearing is consistent with the
16 agricultural exemptions in sensitive areas as regulated in K.C.C. Chapter 21A.24.

17 (3) Emergency tree removal to prevent imminent danger or hazard to
18 persons or property.

19 (4) Normal and routine horticultural activities associated with commercial
20 orchards, nurseries, or Christmas tree farms in existence on the effective date of
21 Ordinance 9614 (November 27, 1990) subject to the limitations on the use of pesticides
22 in sensitive areas as set out in K.C.C. Chapter 21A.24. This does not include clearing or
23 grading in order to develop or expand such activities.

24 (5) Normal and routine maintenance of existing public parks and private
25 and public golf courses. This does not include clearing or grading in order to develop or
26 expand such activities in sensitive areas.

27 (6) Removal of noxious weeds from steep slope hazard areas and the
28 buffers of streams and wetlands subject to the limitations on the use of pesticides in
29 sensitive areas as set out in K.C.C. Chapter 21A.24.

1 (7) Pruning and limbing of vegetation for maintenance of above ground
2 electrical and telecommunication facilities; provided that the clearing is consistent with
3 the electric, natural gas, cable communication and telephone utility exemption in
4 sensitive areas as regulated in K.C.C. Chapter 21A.24.

5 (8) Class I, II, III and IV Special forest practices outside of areas zoned F
6 provided they occur on parcels that meet all of the following criteria for long term
7 forestry:

8 (a) The parcel is enrolled under the current use taxation program as
9 timber land pursuant to RCW 84.34 or as forest land pursuant to RCW 84.33;

10 (b) A long term management plan is approved for the parcel by the
11 Washington Department of Natural Resources;

12 (c) The parcel is located within areas designated rural or agricultural
13 by the King county comprehensive plan or applicable community plan;

14 (d) The parcel is located outside of expansion areas for incorporated
15 rural cities or rural towns and neighborhoods as designated in King County
16 comprehensive plan or applicable community plans;

17 (e) The parcel equals or exceeds 5 acres in size.

18 17. Clearing within seismic hazard area, except on slopes greater than 15%
19 and subject to clearing restrictions contained in wildlife habitat corridors pursuant to
20 21A.14, a critical drainage area established by administrative rule or in p-suffix
21 conditions in an adopted community plan, and provided the site contains no other
22 sensitive areas features.

23 B. TEMPORARY PERMITS. The director shall have the authority to issue
24 temporary permits for excavations, processing, quarrying and mining, and removal of
25 sand, gravel, rock and other natural deposits, together with the necessary buildings,
26 apparatus or appurtenances incident thereto for specific jobs on application for highway,
27 road, street, airport construction, flood control and other public works projects. In
28 conjunction with such operations, allied uses such as, but not limited to, rock crushers,

1 concrete-batching plants and asphalt-batching plants may be authorized by this
2 temporary permit.

3 The department of development and environmental services shall consider the effect of
4 the proposed operation on the county road system and any effect it may have on surface
5 or groundwater drainage and flood control, and shall make such recommendations as are
6 necessary to protect the public interest in this regard. The department of development
7 and environmental services shall also consider the effect of the proposed operation on
8 the current and future land use in the area affected by the proposed operation and shall
9 condition permits as necessary to protect the public interest in this regard. Temporary
10 permits are good for the life of the contract of the specific job but must be reviewed
11 annually. Each temporary permit site shall be fully restored during the term of the
12 temporary permit, unless the site is subsequently designated with a QM zone
13 classification or included in an unclassified use permit.

14 SECTION 3. Ordinance 9614, Section 103, and K.C.C. 16.82.150 are each
15 hereby amended to read as follows:

16 **Clearing standards.** A. For clearing and grading permits issued under this
17 chapter, the current clearing standards contained in the following regulations or adopted
18 policies shall apply:

- 19 1. The Sensitive Areas Code, K.C.C. 21A.24, and its adopted administrative rules;
- 20 2. P-suffix conditions within adopted community plans;
- 21 3. Critical drainage area designations identified by adopted administrative rule.
- 22 4. Wildlife habitat corridors pursuant to 21A.14

23 B. Where conflicts exist between standards in subsection A, the most restrictive
24 shall apply.

25 C. Within areas placed into tracts or conservation easements for wildlife habitat
26 corridors pursuant to 21A.14 or corridors pursuant to 21A.14 or P-suffix conditions, the
27 following uses are allowed:

1 1. Timber harvest in accordance with a timber harvest management plan and
2 clearing permit approved by the department of development and environmental services
3 or a successor agency;

4 2. Passive recreation uses and related facilities, including pedestrian and
5 bicycle trails, nature viewing areas, fishing and camping areas, and other similar uses
6 that do not require permanent structures, provided that cleared areas and/or areas of
7 compacted soils associated with these uses and facilities do not exceed eight percent of
8 the area of the tract or easement. Within wildlife habitat corridors, trail widths shall be
9 the minimum allowed under adopted trail standards and no other recreation uses shall be
10 permitted in the 150 foot minimum width of the corridor;

11 3. Utilities and utility easements, including surface water facilities, provided
12 that such uses are within or adjacent to existing road or utility easements whenever
13 possible. Existing or multiple utility uses within established easements shall be allowed
14 within the 150 foot minimum width of the corridor. Development of new utility
15 corridors shall be allowed only when multiple uses of existing easements are not
16 feasible and are sited and use county-approved best management practices to minimize
17 disturbance to the corridor; and

18 4. Removal of dangerous and or damaged trees.

19 D. For all new residential construction and residential subdivision in RA (Rural
20 Area) zoned areas in the Issaquah Creek basin:

21 1. Clearing shall be limited to a maximum of 35% of lot or plat area unless a
22 greater amount has been cleared prior to the effective date of this ordinance, except under
23 conditions specified in paragraphs D5 and D6 below.

24 2. For subdivisions and short subdivisions, portions of the plat that are not
25 designated for clearing shall be retained in one or more open space tracts, with all
26 developable lots sited on the portions of the plat that may be cleared. For purposes of this
27 subsection, the portion of the plat that may be cleared is identified as 35% of plat area or
28 the amount that was cleared prior to the effective date of this ordinance, whichever is
29 greater. Sensitive areas designated under K.C.C. Title 21 shall be recorded separately from

1 tracts mandated by this regulation, but may be counted towards meeting these
2 requirements. Tracts mandated by this regulation may be retained by the subdivider,
3 conveyed to residents of the subdivision, or conveyed to a third party. Open space tracts
4 shall be shown on all property maps and shall be protected by covenants, approved by the
5 County, that restrict their uses to the following:

6 a. Passive recreation uses and related facilities, including pedestrian and
7 bicycle trails, nature viewing areas, fishing and camping areas, and other similar uses
8 that do not require permanent structures, provided that cleared areas and/or areas of
9 compacted soils associated with these uses and facilities do not exceed eight percent of
10 the area of the open space tract.

11 b. Utilities and utility easements, including surface water facilities, provided
12 that, whenever possible, such uses are within or adjacent to existing road or utility
13 easements.

14 c. Timber harvest, provided that it is accomplished in accordance with a
15 timber harvest management plan and clearing permit that have been approved by the
16 Department of Development and Environmental Services. That Department shall
17 prepare administrative rules regarding the review and approval of timber harvest
18 management plans in consultation with the Surface Water Management Division of the
19 Department of Public Works before approving any permits for timber harvest after the
20 effective date of this ordinance.

21 d. For sensitive areas designated under K.C.C. Title 21 that are not within
22 areas designated for clearing in the plat, uses shall be limited to those specified in
23 K.C.C. 21A.24. Aside from approved timber harvest activities and removal of
24 dangerous and/or diseased trees, all trees within open space tracts at the time of
25 subdivision application shall be retained. All open space tracts established pursuant to
26 this regulation shall be clearly marked with at least one sign per buildable lot adjoining
27 the tract indicating that the tract is permanent, dedicated open space.

28 3. For individual lots, the clearing limits shall be applied at the time of building
29 permit application unless the lot is within a subdivision that has been approved with

1 other conditions to meet the standard established in paragraph D2. In cases where
2 conditions are applied to the subdivision, individual lots shall be exempt from the
3 clearing restrictions in paragraph D1. The uses and restrictions on the uncleared
4 portions of individual lots shall be those specified in paragraph D2. Sensitive areas
5 designated under K.C.C. Title 21 may be counted towards meeting requirements on
6 individual lots. On lots greater than or equal to 20,000 square feet, the restrictions in
7 paragraph D1 shall apply. On lots smaller than 20,000 square feet, up to 7,000 square
8 feet may be cleared.

9 4. Clearing required for the construction of infrastructure to serve any lots 1.25
10 acres or smaller in size shall not be counted towards the 35% maximum clearing
11 standard established in paragraph D1.

12 5. Clearing shall be limited to a maximum of 60% of the lot or plat area if the
13 permit applicant commits to constructing onsite retention/detention and water quality
14 facilities to the standards of the King County Surface Water Design Manual and the
15 Issaquah Creek Basin and Nonpoint Action Plan.

16 6. The subdivision or permitting of building on parcels that are cleared after the
17 effective date of this ordinance shall be subject to conditions requiring the restoration of
18 trees and understory vegetation on at least 65% of the plat or lot, or at least 40% if the
19 applicant chooses the conditions of paragraph D5. A restoration plan shall be required of
20 permit applicants, and shall be subject to the approval of the Department of Development
21 and Environmental Services. That Department shall prepare administrative rules regarding
22 the review and approval of restoration plans in consultation with the Surface Water
23 Management Division of the Department of Public Works before approving subdivision or
24 building permits for parcels cleared after the effective date of this ordinance. The
25 administrative rules shall also specify when a restoration plan will be deemed sufficient to
26 forego the six (6) year moratorium on permitting authorized in K.C.C. 16.82.140.

27 7. Public uses, including schools, churches, fire stations, parks, libraries,
28 hospitals and roads, shall be exempt from the requirements of paragraphs D1 through
29 D6.

1 8. In no case shall the amount of clearing and site disturbance exceed that
 2 allowable in the regulations and conditions specified in paragraphs A1 and A2 of this
 3 section.

4 SECTION 4. The requirements for drainage facilities in the Watershed
 5 Management Committee - Proposed Issaquah Creek Basin and Nonpoint Action Plan shall
 6 supersede requirements in the King County Surface Water Management Design Manual
 7 unless they are specifically superseded in an update of the manual.

8 SECTION 5. K.C.C. 21A.12.030 is hereby amended to read as follows:

9 **A Densities and Dimensions - Residential Zones**

STANDARDS	RESIDENTIAL													
	RURAL				URBAN RESERVE	URBAN RESIDENTIAL								
	RA-2.5	RA-	RA-1	RA-20	UR	R-1 (17)	R-4	R-6	R-8	R-12	R-18	R-24	R-48	
Base Density: Dwelling Unit/Acre(15)	0.4 du/ac	0.2 du/a	0.1 du/ac	0.05 du/ac	0.2 du/ac	1 du/ac	4 du/a (6)	6 du/ac	8 du/ac	12 du/ac	18 du/ac	24 du/ac	48 du/ac	
Maximum Density: Dwelling Unit/Acre (1)							6 du/a	9 du/ac	12 du/ac	18 du/ac	27 du/ac	36 du/ac	72 du/ac	
Minimum Density						(18)	85 (18)	85% (18)	85% (18)	80% (18)	75% (18)	70% (18)	65% (18)	
Minimum Lot Width: (3)	135 ft	135 ft	135 ft	135 ft	35 ft (7)	35 ft (7)	30 ft	30 ft	30 ft	30 ft	30 ft	30 ft	30 ft	
Minimum Street Setback (3)	30 ft	30 ft	30 ft	30 ft	30 ft (7)	30 ft (7)	10 ft (8)	10 ft (8)	10 ft (8)	10 ft (8)	10 ft (8)	10 FT (8)	10 FT (8)	
Minimum Interior Setback (3) (16)	35 ft (9)	35 ft (9)	35 ft (9)	35 ft (9)	10 ft (7)	10 ft (7)	5 ft	5 ft	5 ft	5 ft (10)	5 ft (10)	5 ft (10)	5 ft (10)	
Base Height (4)	40 ft	40 ft	40 ft	40 ft	35 ft	35 ft	35 ft	35 ft	35 ft	60 ft	60 ft	60 ft	60 ft 80 ft (14)	
Maximum Building Coverage: Percentage (5)	4% (11) (12)	2% (11) (12)	1% (11) (12)	0.5% (11) (12)	10 % (11) (12)	15% (11) (12)	35	50%	55%	60%	60%	70%	70%	
Maximum Impervious Surface: Percentage (5)	15% (13) (19)	10 (13) (19)	5% (13) (19)	2.5% (13) (19)	20% (13)	20%	45	70%	75%	85%	85%	85%	90%	

10 **B. Development conditions.**

1 1. The maximum density may be achieved only through the application of residential density
2 incentives or transfers of density credits pursuant to Chapters 21A.34 or 21A.36. Maximum density may
3 only be exceeded pursuant to Section 21A.34.040.F.1.f.

4 2. Also see Section 21A.12.060.

5 3. These standards may be modified under the provisions for zero-lot-line and townhouse
6 developments.

7 4. Height limits may be increased when portions of the structure which exceed the base height
8 limit provide one additional foot of street and interior setback for each foot above the base height limit,
9 provided that the maximum height may not exceed 75 feet.

10 5. Applies to each individual lot. Building coverage and impervious surface area standards for:

11 a. regional uses shall be established at the time of permit review; or

12 b. nonresidential uses in residential zones shall comply with K.C.C. 21A.12.120 and .220.

13 c. individual lots in the R-4 through R-8 zones which are less than 6500 square feet in area
14 shall be subject to the applicable provisions of the R-8 zone.

15 6. Mobile home parks shall be allowed a base density of six dwelling units per acre.

16 7. The standards of the R-4 zone shall apply if a lot is less than 15,000 square feet in area.

17 8. At least 20 linear feet of driveway shall be provided between any garage, carport, or other
18 fenced parking area and the street property line. The linear distance shall be measured along the centerline
19 of the driveway from the access point to such garage, carport or fenced area to the street property line.

20 9. a. Residences shall have a setback of at least 100 feet from any property line adjoining A, M
21 or F zones or existing extractive operations.

22 b. For lots between 1 acre and 2.5 acres in size, the setback requirements of the R-1 zone
23 shall apply. For lots under 1 acre, the setback requirements of the R-4 zone shall apply.

24 10. a. For developments consisting of three or more single-detached dwellings located on a
25 single parcel, the setback shall be 10 feet along any property line abutting R-1 through R-8, RA and UR
26 zones.

27 b. For townhouse and apartment development, the setback shall be 20 feet along any
28 property line abutting R-1 through R-8, RA and UR zones.

29 11. On any lot over 1 acre in area, an additional 5 percent may be used for buildings related to
30 agricultural or forestry practices.

31 12. The maximum building coverage on lots smaller than 15,000 square feet, shall comply
32 with the standards of the nearest comparable R-4 through R-8 zone. In the RA zone, the maximum
33 building coverage allowed shall be at least 2,500 square feet.

1 13. The maximum impervious surface area allowed shall be at least 10,000 square feet when
2 the lot is greater than 1 acre, and be twenty percent when the lot is less than 1 acre. Lots smaller than .5
3 acre in area shall comply with standards of the nearest comparable R-4 through R-8 zone.

4 14. The base height for projects using residential density incentives and transfer of density
5 credits pursuant to this title is 80 feet. In all other cases, the base height is 60 feet.

6 15. Density applies only to dwelling units and not to sleeping units

7 16. Vehicle access points from garages, carports or fenced parking areas shall be set back
8 from the property line upon which a joint use driveway is located to provide a straight line length of at
9 least 26 feet from the access point to the opposite side of the joint use driveway.

10 17. All subdivisions and short subdivisions in the R-1 zone shall be required to be clustered
11 away from sensitive areas to the extent possible and a permanent open space tract that includes at least 50
12 percent of the site shall be created.

13 18. See K.C.C. 21A.12.085

14 19. All subdivisions and short subdivisions in rural residential zones within the North Fork
15 and Upper Issaquah Creek subbasins of the Issaquah Creek Basin (the North Fork and Upper Issaquah
16 Creek subbasins are identified in the Issaquah Creek Basin and Nonpoint Action Plan) shall have a
17 maximum impervious surface area of 8% of the gross acreage of the plat. Distribution of the allowable
18 impervious area among the platted lots will be recorded on the face of the plat. Impervious surface of
19 roads need not be counted towards the allowable impervious area. In cases where both lot- and plat-
20 specific impervious limits apply, the more restrictive shall be required.

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SECTION 6. Severability. If any provision of this ordinance or its application to any person or circumstance is held invalid, the remainder of the ordinance or the application of the provision to other persons or circumstances is not affected.

INTRODUCED AND READ for the first time this 21st day of November, 1994.

PASSED by a vote of 11 to 1 this 10th day of July, 1995.

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

Kent Pullen
Chair

ATTEST:

Gerald A. Peterson
Clerk of the Council

APPROVED this 21st day of July, 1995.

Ray Lohr
King County Executive

Attachments:

- A. WMC-Proposed Issaquah Creek Basin and Non-Point Action Plan
- B. Amendments to be included in the Issaquah Creek Basin Plan and Non-Point Action Plan
 - 1. Amendments to Issaquah Creek Basin Plan and Non-Point Action Plan
 - 2. Glossary of Terms
 - 3. Map and Table showing property owners where to find all of the Basin Plan regulations which apply to their site.

Glossary

Alluvial: deposited by running water.

Anadromous: species, such as salmon, that hatch in fresh water, spend a large part of their lives in the ocean, and return to fresh water to reproduce.

Anticline: a fold of rock strata that is convex upward. The rock strata dip away and down from the crest, and oldest rock are in the center of the structure.

Aquifer: an underground layer of rock or soil in which groundwater resides. Aquifers are replenished or recharged by surface water percolating through soil. Wells are drilled into aquifers to extract water for human use.

Avulsion: a type of channel migration that occurs when a river abruptly switches to a new channel.

Backwater: water upstream from an obstruction that is deeper than it would normally be without the obstruction.

Basin: a geographical area that drains to a major water body such as a river, lake, or creek, usually the water body for which the basin is named.

Basin plan: a plan and all implementing regulations and procedures, including but not limited to land-use management adopted by ordinance, for managing surface and storm water management facilities and features within individual subbasins.

Bed load: Sediment moved by water along or near the streambed.

Berm: a constructed barrier of compacted earth.

Best management practices: a method, activity, maintenance procedure, or other management practice for reducing the amount of pollution entering a water body.

Biofiltration: the process of reducing pollutant concentrations in water by filtering the polluted water through biological materials such as vegetation or bacteria in the soil column (e.g., water seeps through thick vegetation in a wetland buffer, through the wetland, and then into a stream).

Braided, stream or river: reaches of streams or rivers with more than one active channel. Typically, these are active, high-energy sediment transport systems. Active sediment transport and deposition causes the streams to reform and destroy their channels or to switch from channel to channel, creating a "braided" appearance from above.

Buffer, riparian or wetland: a designated area contiguous to a stream or wetland intended to protect the stream or wetland and be an integral part of the stream or wetland ecosystem.

Capital improvement project (CIP): a project that constructs, or significantly improves or enhances a County physical asset having relatively high cost (or value) and a useful life of several years.

cfs: see Cubic feet per second.

Channel: a surface feature that conveys surface water and is open to the air. Channels can either be artificially constructed or natural systems such as streams, creeks, or swales.

Channel migration: the process of a river moving laterally across its floodplain by depositing bedload sediment in a bar on one bank and eroding the opposite bank (typically the outside of a bend).

Channel stability: a relative measure of the resistance of a stream or river to erosion. Stable reaches do not change markedly in appearance from year to year.

CIP: see Capital improvement project.

Clearing: the limbing, pruning, trimming, topping, cutting or removal of vegetation or other organic plant matter by physical, mechanical, chemical or other means.

Cobble: sediment particles larger than pebbles and smaller than boulders (2.5 to 10 inches diameter).

Conveyance system: the drainage facilities, both natural and artificial, that collect, contain, and provide for the flow of surface and storm water from the highest points on the land down to a receiving water. The natural elements of the conveyance system include swales and small drainage courses, streams, rivers, lakes, and wetlands. The artificial elements of the conveyance system include gutters, ditches, pipes, channels, and retention/detention facilities.

Cubic feet per second (cfs): the volume of water (measured in cubic feet) flowing past a reference point in one second.

Culvert: a pipe or concrete box structure that drains open channels, swales, or ditches under a roadway or embankment.

Degradation: 1) an artificial action that causes deterioration of natural systems; 2) lowering of the land surface by erosional processes.

Deposition: the process by which earth materials accumulate when dropped or precipitated from geologic phenomena, such as rivers, oceans, and glaciers.

Detention: the process of collecting and holding back stormwater for delayed release to receiving waters.

Determination of Nonsignificance (DNS): the written decision by the responsible official of the lead agency that a proposal is not likely to have significant adverse environmental impacts, and therefore an EIS is not required.

Discharge: the quantity of water that passes a reference point in a given time. Commonly measured in cubic feet per second (cfs).

Diversion: a change in the established drainage course or discharge location of surface water.

DNS: see Determination of nonsignificance.

Drainage: the collection, conveyance, containment, or discharge of surface and storm water runoff.

Drainage area: the geographic area contributing surface-water runoff to a given point. See Tributary area and Basin.

Drainage facility: see Conveyance system.

Floodplain: The land adjacent to a stream, built of alluvium and subject to repeated flooding. Also, the total area subject to inundation by the base flood.

Floodproofing: adaptations that ensure a structure is fully or partially protected from flood damage.

Flood routing: an analytical technique used to compute the effects of system storage and system dynamics on the shape and movement of flow represented by a hydrograph.

Floodway, zero-rise: the channel of a stream and that portion of the adjoining floodplain which is necessary to contain and discharge the base flood flow without any measurable increase in flood height. A measurable increase in base flood height means a calculated upward rise in the base flood elevation, equal to or greater than .01 foot, resulting from a comparison of existing conditions and changed conditions directly attributable to development in the floodplain. This definition is broader than that of the FEMA floodway, but always includes the FEMA floodway. The boundaries of the 100-year floodplain, as shown on the Flood Insurance Study for King County, are considered the boundaries of the zero-rise floodway unless otherwise delineated by a sensitive area special study.

Fluvial: produced by moving water.

Glacial outwash: sediment transported and deposited by meltwater streams flowing from a glacier. These deposits are generally loosely consolidated and are composed of layers of different sized materials.

Glacial till: unconsolidated glacial sediment that is directly deposited by a glacier. These deposits can be either tightly or loosely consolidated and are not sorted into layers of the same grain size but rather are a mixture of different sized materials.

Glaciolacustrine: pertaining to glacial lakes.

Groundwater: underground water stored in aquifers. Groundwater is created by rain that soaks into the ground and flows down to a point where the ground is not permeable. Groundwater then usually flows laterally toward a river, lake, or other receiving water.

Groundwater table: see water table.

Gully: a channel caused by the concentrated flow of surface and stormwater runoff over unprotected erodible land.

Habitat: the specific area or environment in which a particular plant or animal species lives. An organism's habitat must provide all of the basic requirements for life and should be protected from harmful contaminants.

Hardpan: a cemented or compacted and often clay-like layer of soil that is impenetrable by roots. In this region, the term is often applied to glacial till.

Hydrograph: a graph of runoff rate, inflow rate, or discharge rate, past a specific point over time.

Hydrologic cycle: the continual cycling of water between the land, the sea, and the atmosphere through evaporation, condensation, precipitation, absorption into the soil, and stream runoff.

Hydrologic simulation: a computerized model that simulates the changes in the hydrology of an area for a given rainfall intensity under varying conditions, such as the type of vegetation and extent of impervious surfaces. These are used to identify likely changes (increases or decreases) in the flow of surface water with different levels of development (e.g., strip malls would cause different changes than development at one home per five acres).

Hydrologic soil groups: a soil characteristic classification system defined by the U.S. Soil Conservation Service in which a soil may be categorized into one of four soil groups (A, B, C, or D) based upon infiltration rate and other properties.

Hyetograph: a graph showing the pattern of rainfall intensity over the course of a storm: for instance, a graph of a one-hour storm that produced 1 inch of rain might show that 0.1 inches came down in the first 15 minutes, 0.2 inches came down in the second 15 minutes, 0.5 inches came down in the third 15 minutes, and 0.2 inches came down in the fourth 15 minutes.

Hyporheic zone: an area of ground that connects the surface water in a channel with surrounding groundwater. This zone is an important source of cold water and nutrients for biotic productivity in the river channel and serves as an important substrate for the production of benthic invertebrates.

Impermeable surface: see impervious surface.

Impervious surface: any non-vertical surface artificially covered or hardened so as to prevent or impede the percolation of water into the soil mantle including, but not limited to, roof tops, swimming pools, paved or graveled roads and walkways or parking areas and excluding landscaping and surface water retention/detention facilities.

Infiltration facility: a drainage facility designed to promote the infiltration and percolation of collected surface and stormwater, thus recharging groundwater with water that would otherwise become stormflow.

Ingress/egress: the points of access to and from a property.

Inlet: the entrance to a drain or sewer conveyance.

Insecticide: a substance, usually chemical, that is used to kill insects.

Isopluvial map: a map with lines representing constant depths of total precipitation for a given return frequency.

Knickpoint: the upstream end of a steep segment of a stream channel. Knickpoints generally tend to migrate upstream.

Landslide: episodic downslope movement of a mass of soil or rock that includes but is not limited to rockfalls, slumps, mudflows, and earthflows.

Large woody debris: trees, in whole or part, that fall into the stream from the banks or float downstream until they lodge in the channel. Large woody debris provides variety in the local habitat, temporary sediment storage, and dissipates the energy of flowing water.

Leachate: water or other liquid that has washed (leached) from a solid material, such as a layer of soil or debris. Leachate may contain contaminants such as organics or mineral salts. Rainwater that percolates through a sanitary landfill and picks up contaminants is called the leachate from the landfill.

Levee: an artificially elevated portion of the riverbank, built to contain floodwaters.

Mass Wasting: the movement of large volumes of earth material down slope under their own weight.

Master Drainage Plan: a comprehensive drainage control plan intended to prevent significant adverse impacts to the natural and artificial drainage system, both on and off-site.

MDNS: a Mitigated Determination of Nonsignificance (See Determination of Nonsignificance and Mitigation).

Metals: elements found in rocks and minerals that are naturally released to the environment by erosion, as well as generated by human activities. Certain metals, such as mercury, lead, nickel, zinc, and cadmium are of environmental concern because they are released to the environment in excessive amounts by human activity. They are generally toxic to life at certain concentrations. Because metals are elements, they do not break down in the environment over time and can therefore be incorporated into plant and animal tissue.

Mitigation: the use of any or all of the following actions listed in descending order of preference:

- A. Avoiding the impact by not taking a certain action;
- B. Minimizing the impact by limiting the degree or magnitude of the action by using appropriate technology or by taking affirmative steps to avoid or reduce the impact;
- C. Rectifying the impact by repairing, rehabilitating or restoring the affected sensitive area or buffer;
- D. Reducing or eliminating the impact over time by preservation or maintenance operations during the life of the development proposal;
- E. Compensating for the impact by replacing, enhancing or providing substitute sensitive areas and environments; and
- F. Monitoring the impact and taking appropriate corrective measures.

Monitoring: evaluating the impacts of development proposals or other actions on biologic, hydrologic and geologic systems and assessing the performance of required mitigation through the collection and analysis of data for the purpose of understanding and documenting changes in natural ecosystems, functions and features including, but not limited to, gathering baseline data.

National Pollutant Discharge Elimination System (NPDES): the part of the federal Clean Water Act that requires point source dischargers to obtain permits. These permits are referred to as NPDES permits and are administered by the Washington State Department of Ecology.

Native Growth Protection Easements (NGPE): an easement granted to King County for the protection of native vegetation within a sensitive area or its associated buffer. NGPEs are recorded on the appropriate documents of title and filed with the King County Records and Election Division.

NGPE: see Native Growth Protection Easement.

Noncommercial/small farm: any farm that engages in livestock keeping or produces no more than subsistence levels of agricultural products.

Nonpoint pollution: Pollution that enters water from dispersed and uncontrolled sources (such as surface runoff) rather than through pipes. Nonpoint pollution may contribute pathogens, suspended solids, and toxicants.

NPDES: see National Pollutant Discharge Elimination System.

Nutrients: essential chemicals needed by plants or animals for growth. Excessive amounts of nutrients can lead to degradation of water quality and the growth of excessive numbers of algae. Some nutrients can be toxic at high concentrations.

Open space: general term for a broad category of undeveloped land useful for habitat, recreation, and/or scenic values.

Ordinary high-water mark: the mark that will be found by examining the bed and banks of a stream and ascertaining where the presence and action of waters are so common and usual, and so long maintained in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation.

Outwash deposits: see glacial outwash.

Pathogen: an agent, such as virus, bacterium, or fungus, that can cause diseases in humans. Pathogens can be present in municipal, industrial, and nonpoint source discharges.

PCB: see polychlorinated biphenyl.

Perched groundwater: a saturated zone of permeable material that is above the regional water table and is underlain by a layer of impervious material.

Permeable Soils: soil materials with a sufficiently rapid infiltration rate (typically 10 minutes per inch or better) so as to greatly reduce or eliminate surface and storm water runoff. These soils are classified as SCS hydrologic soil type A.

Perviousness: related to the size and continuity of void spaces in soils; related to a soil's infiltration rate.

Pesticide: a general term used to describe chemical substances used to destroy or control organisms; includes herbicides, insecticides, algicides, fungicides, and others. Many of these substances are manufactured and are not naturally found in the environment.

pH: the degree of alkalinity or acidity of a solution. A pH of 7.0 indicates neutral water; a pH of 5.5, for example, is acid and a reading of 8.5 is alkaline or basic. The pH of water influences many of the types of chemical reactions that will occur in it. For instance, a slight decrease in pH may greatly increase the toxicity of substances such as cyanides, sulfides, and most metals. A slight increase may greatly increase the toxicity of pollutants such as ammonia.

Plat: a map or representation of a subdivision showing the division of a tract or parcel of land into lots, blocks, streets, or other divisions and dedications.

Point Discharge: the release of collected and/or concentrated surface and storm water runoff from a pipe, culvert, or channel.

Polychlorinated biphenyl: industrial compound noted primarily as an environmental pollutant that accumulates in animal tissue with resultant pathogenic and teratogenic (causing fatal malformations) effects.

Pool, stream: that part of a stream channel deeper than other sections. Such deep sections occur at distances in equilibrium channels equal to about six times the channel width.

R/D: see Retention/detention facility.

Receiving waters: bodies of water that, because of their size, can receive water from upstream artificial systems without significant change in discharge or water level. For the purpose of this document receiving waters are: Cedar River, Green/Duwamish River (below river mile 6.0), Puget Sound, Lake Sammamish, Sammamish River, Skykomish River, Snoqualmie River, Lake Washington, Tolt River, and the White/Stuck River.

Recharge: the flow to groundwater from the infiltration of surface and stormwater runoff.

Recurrence interval: the average interval (in years) between events equaling or exceeding a given magnitude.

Regional detention facility: a stormwater quantity control structure designed to correct surface-water runoff problems generated by a large area of a basin or subbasin.

Retention: the process of collecting and holding surface and stormwater runoff with no surface outflow.

Retention/detention facility (R/D): a type of drainage facility designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration and/or infiltration into the ground; or to hold surface and storm water runoff for a short period of time and then release it to the surface and stormwater management system.

Retrofitting: the renovation of an existing structure or facility to meet changed conditions or to improve performance.

Return period: see Recurrence interval.

Revetment an artificially protected or armored portion of the riverbank, typically a rock-lined face, that helps prevent erosion but does not provide protection from overtopping.

Riffle: that part of a stream channel where the bed is higher and water flow is more rapid, often over gravelly substrate. Many degraded urban streams are almost entirely riffle habitat.

Riparian: pertaining to the banks of streams, wetlands, lakes or tidewater.

Riparian habitat: the transitional areas between aquatic and terrestrial environments that contain all of the environmental elements that directly contribute to the structural and functional processes of streams or rivers.

Riprap: a facing layer or protective mound of stones placed to prevent erosion or sloughing of a structure or embankment due to flow of surface and stormwater runoff.

River braiding: see Braided.

River mile: the distance, measured in miles along the path of the water flow, from the mouth to any point along a stream or river.

RM: see River mile.

Rodenticide: a substance used to destroy rodents.

Roughness element: any obstacle in a channel that deflects flow and changes its velocity.

Runoff: that portion of water originating from rainfall and other precipitation that is transported on the ground surface to downslope water features.

Salmonid: a member of the fish family salmonidae, including:

A. Chinook, coho, chum, sockeye and pink salmon;

- B. Rainbow, steelhead and cutthroat salmon;
- C. Brown trout;
- D. Brook and dolly varden char;
- E. Kokanee; and
- F. Whitefish.

Scour: Concentrated erosive action of flowing water in streams that removes material from the bed and banks.

SCS: Soil Conservation Service, U.S. Department of Agriculture.

SCS method: a hydrologic analysis based on the Curve Number method (National Engineering Handbook - Section 4: Hydrology, August, 1972) and using any acceptable analytical technology as delineated in the King County Surface Water Design Manual.

Sediment: fragmented material that originates from weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation: see Deposition.

Sediment load: the sediment transported through a channel by streamflow.

Seepage: groundwater emerging on the face of a streambank or hillside slope.

Sensitive areas: any of those areas in King County which are subject to natural hazards or those land features which support unique, fragile or valuable natural resources including fishes, wildlife and other organisms and their habitat and such resources which carry, hold or purify water in their natural state. Sensitive areas include coal mine hazard areas, erosion hazard areas, flood hazard areas, landslide hazard areas, seismic hazard areas, steep slope hazard areas, streams, volcanic hazard areas and wetlands.

Sensitive Areas Ordinance (SAO): King County Ordinance 9614 and administrative rules.

Sensitive Area Tract: a separate tract that is created to protect the sensitive area and its buffer, as required by the Sensitive Areas Ordinance.

SEPA: the Washington State Environmental Policy Act.

Sheet erosion: the relatively uniform removal of soil from an area without the development of conspicuous water channels.

Sheet flow: relatively uniform flow over plane surfaces without the concentration of water into conspicuous channels.

Shoreline development: a use within a shoreline of the state regulated by the Washington Shoreline Management Act (SMA) consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling, removal of any sand, gravel or minerals; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature (see Shoreline Management Act).

Shoreline Management Act (SMA): the 1971 Washington State law that manages the state's shorelines. The SMA applies to shorelines throughout the state, including lakes over 20 acres, all streams where the mean annual flow is greater than 20 cubic feet per second, and all marine waters. Wetlands associated with these waterbodies are also

covered, as is a 200-foot wide shoreline area landward from the water's edge. The Washington Department of Ecology administers the SMA in cooperation with local governments (cities and counties) under state and local Shoreline Master Programs (SMPs).

Silt: slightly cohesive to noncohesive soil composed of particles that are finer than sand but coarser than clay.

Siltation: the process by which a river, lake, or other water body becomes clogged with fine sediment, usually silt (or fine sand). Such sediment can clog gravel beds and prevent successful salmon spawning.

Slope: the gradient usually expressed as feet per foot or as a percent.

Sloughing: the sliding of overlying material. It is the same effect as caving, but it usually occurs when the bank or an underlying stratum is saturated or scoured.

Soil permeability: the ease with which gases, liquids, or plant roots penetrate or pass through a layer of soil.

Soil stabilization: the use of measures such as rock lining, vegetation, or other engineered structures to prevent the movement of soil when loads are applied to the soil.

State Environmental Policy Act (SEPA): the 1974 Washington State law intended to minimize environmental damage. SEPA requires that state agencies and local governments consider environmental factors when making decisions on activities, such as development proposals over a certain size and comprehensive plans. As part of this process, environmental documents are prepared and opportunities for public comment are provided.

Storm drains: a system of gutters, or pipes used to carry stormwater from surrounding lands to streams, lakes, or other receiving water. In practice, storm drains also carry a variety of substances, such as sediments, metals, bacteria, oil, and antifreeze, which enter the system through runoff, deliberate dumping, or spills. This term also refers to the end of the pipe where the stormwater is discharged.

Stormwater or stormflow: see Surface water.

Stream: those areas where surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water run-off devices or other entirely artificial watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction in such watercourses. For the purpose of this definition, a defined channel or bed is an area which demonstrates clear evidence of the passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds and defined-channel swales. The channel or bed need not contain water year-round.

Streambank failure: collapse or slippage of a large mass of bank material into the channel.

Stream classification: the following stream classification applies to all streams within King County:

- A. Class 1 streams, only including streams inventoried as "Shorelines of the State" under King County's Shoreline Master Program, K.C.C. Title 25, pursuant to RCW 90.58;
- B. Class 2 streams, only including streams smaller than class 1 streams which flow year-round during years of normal rainfall or those which are used by salmonids; and
- C. Class 3 streams, only including streams which are intermittent or ephemeral during years of normal rainfall and which are not used by salmonids.

Subbasin: an area that drains to a water course or waterbody named and noted on common maps, and that is contained within a basin as defined in K.C.C. 9.04.020.

Subdivision retention/detention facility: a retention/detention facility that is both (1) located within or associated with a short or formal plat subdivision containing only single family or duplex residential structures located on individual lots; and 2) required to handle excess runoff generated by development of an area of which two-thirds or more is designated for single family or duplex residential structures located on individual lots.

Surface water: water originating from rainfall and other precipitation that is found on the surface of the ground, in drainage facilities, rivers, streams, springs, seeps, ponds, lakes and wetlands as well as shallow ground water.

Surface Water Design Manual: the manual (and supporting documents as appropriate) describing surface and storm water runoff design and analysis requirements, procedures and guidance, that has been formally adopted by rule under the procedures specified in K.C.C. 2.98. The Surface Water Design Manual is available from the DDES Division permit center.

Surface water management system: drainage facilities and any other natural features that collect, store, control, treat and/or convey surface and storm water.

Suspended load: the part of the total sediment load that is carried in a stream for a considerable period of time at the velocity of the flow without contacting the streambed.

Suspended solids: particles that are suspended in and carried by the water. The term includes sand, mud, clay, and organic particles as well as solids in wastewater.

Swale: a shallow drainage conveyance with relatively gentle side slopes, generally with flow depths less than one foot.

SWM: the Surface Water Management Division of the King County Department of Public Works.

Tannic acid: a bitter substance present in the bark, fruits, and other parts of some plants. When present, tannic acid can discolor water found in wetland systems.

Till: see Glacial till.

Total suspended solids (TSS): the weight of particles that are suspended in water, usually expressed as milligrams per liter. Suspended solids in water reduce light penetration in the water column, can clog the gills of fish and invertebrates, and are often associated with toxic contaminants because organics and metals tend to bind to particles.

Toxic: poisonous, carcinogenic, or otherwise harmful to living organisms.

Tract: a legally created parcel of property designated for special non-residential and non-commercial uses.

Transpiration: evaporation of water from the exposed parts of plants, such as leaves.

Tributary: one that drains into, such as a drainage channel that flows into a larger drainage channel.

Tributary area: the geographical area that drains to the point of concern.

TSS: see Total suspended solids.

Turbidity: a measure of the amount of material suspended in the water, usually expressed in Nephelometric Turbidity Units (NTU). Increasing the turbidity of the water decreases the amount of light that penetrates the water column. High levels of turbidity are harmful to aquatic life.

Undisturbed buffer: see Buffer.

Urban growth boundary (UGB): a line drawn by King County under the 1990 Growth Management Act beyond which new urban growth (generally one dwelling unit or more per acre) cannot be located.

Volatile: can be readily vaporized at a relatively low temperature.

Water quality swale: an open vegetated drainage channel intended to optimize water quality treatment of surface and storm water runoff by following the specific design criteria described in the Surface Water Design Manual.

Watershed: see Basin.

Water table: the upper surface of groundwater, or the level below which the soil is saturated with water.

Water yield: the average volume of precipitation that appears as streamflow.

Wetland: those areas in King County which are inundated or saturated by ground or surface water at a frequency and duration sufficient to support, and 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. Where the vegetation has been removed or substantially altered, a wetland shall be determined by the presence or evidence of hydric or organic soil, as well as by other documentation, such as aerial photographs, of the previous existence of wetland vegetation. Wetlands generally include swamps, marshes, bogs, and similar areas

Wetland, classifications: The classification of wetlands in the Sensitive Areas Ordinance in the following categories:

- A. Class 1 wetlands, only including wetlands assigned the Unique/Outstanding #1 rating in the 1983 King County Wetlands Inventory or which meet any of the following criteria:
 - 1. are wetlands which have present species listed by the federal or state government as endangered or threatened or outstanding actual habitat for those species;
 - 2. are wetlands which have 40% to 60% permanent open water in dispersed patches with two or more classes of vegetation;
 - 3. are wetlands equal to or greater than ten acres in size and have three or more classes of vegetation, one of which is submerged vegetation in permanent open water; or
 - 4. are wetlands which have present plant associations of infrequent occurrence;
- B. Class 2 wetlands, only including wetlands assigned the Significant #2 rating in the 1983 King County Wetlands Inventory or which meet any of the following criteria:
 - 1. are wetlands greater than one acre in size;
 - 2. are wetlands equal to or less than one acre in size and have three or more classes of vegetation;
 - 3. are wetlands which:

Plan; a. are located within an area designated "urban" in the King County Comprehensive

- b. are equal to or less than one acre but larger than 2,500 square feet; and
- c. have three or more classes of vegetation;
- 4. are forested wetlands equal to or less than one acre but larger than 2500 square feet; or
- 5. are wetlands which have present heron rookeries or raptor nesting trees; and
- C. Class 3 wetlands, only including wetlands assigned the Lesser Concern #3 rating in the 1983 King County Wetlands Inventory or which meet any of the following criteria:

**Attachment B: Amendments to the
Issaquah Creek Basin and Nonpoint Action Plan**

As noted in the accompanying ordinance adopting the Issaquah Creek Basin and Nonpoint Action Plan, the King County Council approves the following revisions and additions as plan amendments. The justification for each amendment is shown in italics.

BW 3: Establishment of Open-Space Retention Requirements for Subdivisions and Clearing Restrictions on Existing Lots (page 4-6)

1. Modify the first sentence of the recommendation as follows:

The Metropolitan King County Council should amend the King County ~~Comprehensive Plan and the King County Zoning Code~~ Grading Code (KCC 16) to require...

Justification: Consistent with adoption ordinance.

2. Substitute the following language for the first sentence in the paragraph beginning "In addition to this mandatory open-space-retention requirement..." (page 4-6):

In the next update of the King County Comprehensive Plan, the Metropolitan King County Council should consider authorizing density bonuses in the rural area that could allow bonuses in the Issaquah Creek basin of up to a 50 percent increase in allowable density for subdivisions and short subdivisions that retain at least 80 percent of the property in one or more open-space tracts.

Justification: Bonus densities within rural residential zones are inconsistent with the 1994 King County Comprehensive Plan and therefore will not be approved through adoption of the Issaquah Creek Basin and Nonpoint Action Plan. The surface water benefits associated with larger open-space tracts warrant the re-evaluation of density bonuses in the next update of the Comprehensive Plan.

3. Add King Conservation District to the agencies charged with developing criteria for the review of timber harvest management plans (page 4-8).

Justification: The District, a WMC member, is interested in participating and has relevant expertise in timber harvest management.

4. Substitute the following language for the entire section entitled "Exemptions from Open-Space Tracts and Clearing Requirements" (page 4-8), and delete the last line in the paragraph beginning "On all lots larger than 20,000 square feet..." on page 4-9.

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Exemptions from Open-Space Tract and Clearing Requirements

The open-space tract and clearing requirements proposed in this recommendation should not apply in the following conditions:

A. For the subdivision or development of property for schools, churches, and public parks.

B. For parcels that were largely or wholly cleared of overstory and understory vegetation as of _____. Further definitions of the extent of clearing that would allow this exemption should be developed by DDES and SWM prior to the effective date of the adoption ordinance for this plan.

Justification: The existing plan language is inconsistent on exemptions for schools, churches, and parks, recommending them outright in one place and contingent on DDES approval in another. This amendment would adopt the outright exemption. The exemption for previously cleared land is simpler than the exemption previously proposed, and is consistent with the modest surface-water benefits of further regulations on already cleared parcels.

5. Add the following new section to the recommendation:

3. Revegetation Requirements for Clearing after Plan Adoption

The subdivision and development of parcels that are cleared after plan adoption, either through an unpermitted clearing activity or through a state-approved timber harvest practice, should be subject to the open space tract or clearing requirements in this recommendation. In addition, subdivision or building permits for development activities should include conditions for revegetation of the tracts or tree retention areas that emphasize the reestablishment of an assemblage of trees and understory vegetation that is characteristic of an undisturbed forest community. Standards and guidelines for revegetation should be developed by the same working group tasked with development of criteria for review of harvest management plan identified previously in this recommendation.

Justification: The combination of unpermitted clearing and state-approved timber harvesting (under non-conversion permits) could undermine the effectiveness of clearing and open-space tract requirements in reducing flood flows and protecting water quality unless measures are taken to restore forest vegetation on cleared sites. The proposed revegetation requirements would supplement the replanting regulations in the

State Forest Practices Act, and would help to restore the diverse forest communities that provide maximum surface-water benefits.

BW 6: Adoption of Zoning Changes in Critical Resource and Sensitive Areas
(page 4-13)

1. Modify the first sentence of the recommendation follows:

During periodic updates ~~the update~~ of the King County Comprehensive Plan....

Justification: Clarifies the intent of the recommendation to provide criteria for the review of basin zoning in future updates to the KCCP.

2. Delete the paragraphs beginning "There are two areas, one in McDonald Creek subbasin..." and "There are a few areas, however..." on page 4-14.

Justification: The zoning of the two areas described was reevaluated and changed consistent with the recommendation in the 1994 King County Comprehensive Plan.

BW 19: Water Quality Treatment Design Standards (page 4-37)

1. Modify the recommendation as follows:

Recommendation: The water quality treatment design standards of the King County Surface Water Design Manual are currently being updated. For purposes of applying these standards in the Issaquah and Tibbetts Creek basins, developments should be required to meet the proposed lake protection water quality treatment requirements for phosphorus removal (50% removal).

Prior to adoption of the *Design Manual*, new developments in the Issaquah Creek basin that require drainage facilities under the current *Design Manual* should achieve phosphorus removal using one of the following options:

1. A wetpond or combined detention/wetpond with a permanent pool volume equal to 4.5 times the volume of runoff from the mean annual storm (VB/VR = 4.5).

The VB/VR ratio is the volume of the wetpond basin divided by the volume of the runoff from the mean annual storm. The mean annual storm is equal to 0.46

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inches at SeaTac and 0.56 inches at Landsburg. Mean annual storm precipitation can be adjusted for intermediate locations using the 2-yr. 24-hour isopluvials as a guide. Runoff should be estimated using a runoff coefficient of 0.9 for impervious areas and 0.25 for pervious areas. Forested areas need not be included in the calculation for pond sizing (zero runoff is assumed). The SBUH model should not be used for estimating mean storm runoff values.

Pond volumes can be reduced for forest retention above 25 percent, according to the following schedule:

<u>% forest</u>	<u>VB/VR ratio</u>
<u>25</u>	<u>4.25</u>
<u>30</u>	<u>4.0</u>
<u>40</u>	<u>3.5</u>
<u>50</u>	<u>3.25</u>
<u>60</u>	<u>3.0</u>

2. Forest retention of 60 percent or greater in addition to one of the following facilities: biofiltration swale, filter strip, wetpond or combined detention/wetpond with a VB/VR of 3.0.

3. In addition to the above options, the use of two additional options involving sand filtration and infiltration are possible through a variance submitted to the SWM Division:

a. A biofiltration swale, filter strip, or wetpond with a VB/VR of 3.0 followed by a sand filter; or a single large sand filter.

b. Soil infiltration, if soils are suitable. Soils that are suitable for water quality treatment have relatively slow infiltration rates (less than or equal to 2.4 inches/hour), as well as specific characteristics of organic content, cation exchange capacity, or grain size distribution.

~~basic water quality facility (water quality swale or filter strip, sand filter, wet pond designed using a 2/3 of the 2-year, 24-hour storm, combined R/D and wet pond, constructed wetland, or infiltration) followed by an infiltration facility or sand filter. The second facility can be eliminated if some combination of site design alternatives are used that reduce the increase in phosphorus from a developed site. These include: native vegetation (e.g., forest) retention, extra detention, diversion of road runoff to pervious areas, and covered parking for multifamily or commercial developments. If site conditions allow for the construction of a single large wetpond or combined R/D and wetpond designed with a Vb/Vr ratio equal to 4.5, this can replace the two facility option.~~

Finally, if it can be demonstrated by the applicant that an alternative facility or combination of facilities is equally effective for phosphorus removal, then a variance request from this requirement can be submitted to the SWM Division for approval. Until the revisions are made to the Design Manual, guidance for the facility designs are available from the SWM Division.

SWM should continue to monitor the effectiveness of water quality treatment facilities through ongoing programs such as the Lake Sammamish Water Quality Management test projects and SWM's BMP monitoring program. SWM should incorporate the information from these studies into future updates of the Design Manual. As new treatment technologies are developed and current designs are improved, the water quality design standards should be updated to reflect the new information.

Justification: Standards for the use of sand filtration and infiltration facilities for water quality treatment are evolving, and cannot readily be applied in design and permitting of such facilities at present. The amended recommendation would allow such facilities as the standards evolve to the satisfaction of designers and SWM, the permit review agency.

UI 4: Riparian Buffers on Forest Land (page 5-10)

1. Substitute the following language for the entire recommendation, and delete the discussion:

Recommendation: When DNR initiates Watershed Analyses within the subbasin, King County should participate, with certified specialists, in the development of appropriate prescriptive riparian buffers. Prior to the completion of DNR's Watershed Analysis in this subbasin, the DNR should invite King County to participate in Interdisciplinary Team reviews of buffers for timber harvest and other forest management activities.

Estimated Cost: Included in BW 16.

Justification: DNR, a WMC member, was unable to concur with the original language. If implemented, the revised recommendation will allow but not mandate revision of buffer widths.

11886

T 5: Sunset Quarry Water Quality Restoration (page 5-98)

1. Modify the recommendation as follows:

Recommendation: King County DDES should condition all new operating and grading permits for Sunset Quarry on the development of an explicit, enforceable plan for assuring that the surface-water discharge from this site complies with State water quality standards the effluent limitations contained in the "NPDES and state waste discharge general permit for process water, stormwater, and mine dewatering water discharges associated with sand and gravel operations, rock quarries, and similar mining facilities", effective August 6, 1994. SWM and DDES technical staff should cooperate on development of specific standards of operation of the quarry that are consistent with this objective. The plan should specify the proposed actions for disposing of spoils, reclamation of disturbed areas, installation and maintenance of adequate drainage and water quality facilities, and the relocation of Tibbetts Creek around the open mining area. The plan must also detail the monitoring procedures necessary to demonstrate compliance with water quality regulations the effluent limitations contained in the NPDES general permit. SWM should review and approve the plan prior to DDES permitting action.

Justification: The permitting processes and standards for mine operations have changed as the Issaquah plan was being developed. The amended recommendation is more specific about current permitting requirements.

T-6: Mutual Materials Company's Newcastle Pit Stormwater Management (page 5-99)

1. Modify the recommendation as follows:

Recommendation: King County DDES should condition new operating or grading permits for the Mutual Materials Company's clay mine on the development and implementation of a pollution prevention plan for the site. The plan and schedule for plan development should correspond to the industrial NPDES general permit requirements for mining operations as outlined by the Washington Department of Ecology. The plan should specify the proposed actions for disposing of spoils, reclamation of disturbed areas, and management of stormwater, including erosion and sediment controls, and construction and maintenance of water quantity and quality controls. The plan should also include monitoring to demonstrate compliance with water quality standards the effluent limitations contained in the NPDES general permit dated August 6, 1994.

Justification: The permitting processes and standards for mine operations have changed as the Issaquah plan was being developed. The amended recommendation is more specific about current permitting requirements.

T-7: Harris/Interpace Mine Stormwater Management (page 5-100)

1. Modify the recommendation as follows:

Recommendation: King County DDES should condition all new operating and grading permits on the Harris/Interpace mine site on the development of an explicit, enforceable plan for assuring that the surface-water discharge from this site complies with State water quality standards the effluent limitations contained in the "NPDES and state waste discharge general permit for process water, stormwater, and mine dewatering water discharges associated with sand and gravel operations, rock quarries, and similar mining facilities", effective August 6, 1994. SWM and DDES technical staff should cooperate on development of specific standards for operation that are consistent with this objective. The plan should specify the proposed actions for disposing of spoils, reclamation of disturbed areas, and management of stormwater (including erosion and sediment controls), and construction and maintenance of water quantity and quality controls. The plan should also include monitoring to demonstrate compliance with water quality standards the effluent limitations contained in the NPDES general permit.

Justification: The permitting processes and standards for mine operations have changed as the Issaquah plan was being developed. The amended recommendation is more specific about current permitting requirements.

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**Issaquah Creek Basin and Nonpoint Action Plan
Criteria for Review of Restoration Plans**

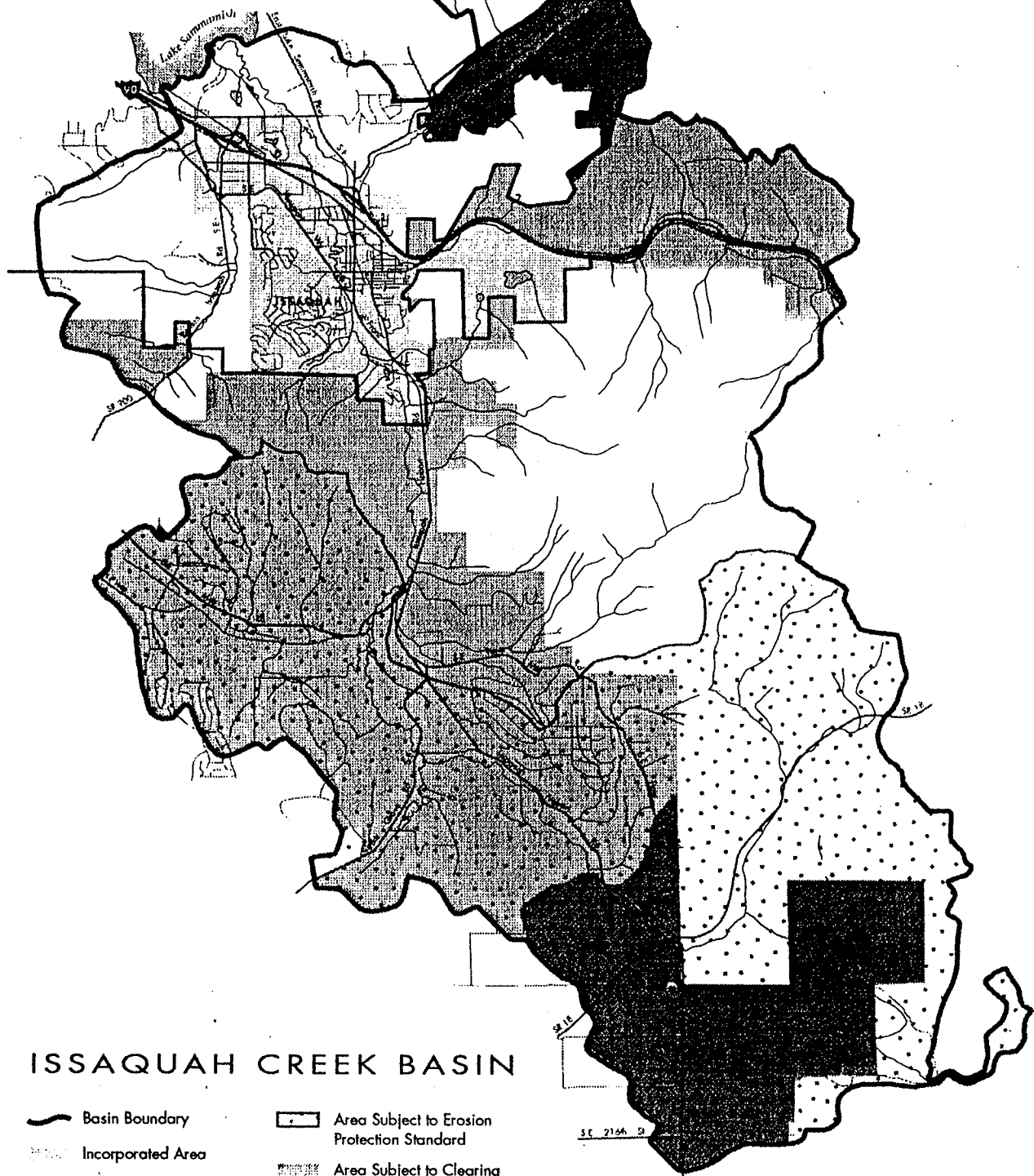
**King County Surface Water Management Division
February, 1995**

Issue: Basinwide recommendation 3 of the plan has been amended to require revegetation of parcels that are cleared after the adoption of the Issaquah Basin and Nonpoint Action Plan and subsequently are proposed for subdivision or development. The adoption ordinance would require that permit applicants prepare a restoration plan for DDES review and approval. Questions have been raised about the criteria that would apply in review of the restoration plans.

Response: After their review of this issue, the Watershed Management Committee (WMC) recommended that detailed criteria be developed jointly by SWM, DDES, the King Conservation District, the Washington Department of Natural Resources, and the Muckleshoot Indian Tribe after plan adoption. It is anticipated that the criteria will emphasize the following objectives for restoration:

1. Planting of native tree, shrub, and herb species that are comparable in number, diversity, and distribution to those in undisturbed forest communities in the basin.
2. Planting in varied patterns, with clustering of vegetation and establishment of gaps or edges within forest stands.
3. Locating restored areas to adjoin forested areas on adjacent lots.
4. Providing litter and debris on the forest floor to aid in growth of plantings and volunteer plants and to retard and infiltrate surface water runoff.
5. Controlling erosion on the cleared areas through short- (mulching, hydroseeding, etc) and long-term (debris and duff replacement) techniques.
6. Using low-impact restoration techniques, including procedures that minimize soil compaction.
7. Providing measures to maintain vegetation (watering, weeding, etc) until it is fully established.
8. Providing a program to monitor and, if necessary, replant portions of the restoration site.

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ISSAQUAH CREEK BASIN

- Basin Boundary
- Incorporated Area
- Stream/Lake
- Wetland 7
- Urban Growth Boundary
- Area Subject to Erosion Protection Standard
- Area Subject to Clearing Restrictions
- Area Subject to Impervious Area Limits and Clearing Restrictions



April 1995



CARTOGRAPHY & GRAPHICS

ORDINANCE 11886

**ISSAQUAH CREEK
WATERSHED MANAGEMENT COMMITTEE –
PROPOSED BASIN AND NONPOINT ACTION
PLAN**

KING COUNTY SURFACE WATER MANAGEMENT

ATTACHMENT(S) AVAILABLE IN ARCHIVES