

November 6, 1993
lan11-6.sub
1/31/94 clerk

Introduced by: Sullivan

Proposed No.: 93-483

ORDINANCE NO. **11210**

AN ORDINANCE relating to landscaping development regulations; amending Ordinance 10870, Sections 174, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 404 and K.C.C. 21A.06.670, 21A.16.010, 21A.16.020, 21A.16.030, 21A.16.040, 21A.16.050, 21A.16.060, 21A.16.070, 21A.16.080, 21A.16.090, 21A.16.100, and 21A.16.190; adding new sections to Ordinance 10870 and to K.C.C. 21A.06 and 21A.16; and repealing Ordinance 10870, Sections 396, 397, K.C.C. 21A.16.110 and 21A.16.120.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. Ordinance 10870, Section 386 and K.C.C. 21A.16.010 are each hereby amended to read as follows:

Purpose. The purpose of this chapter is to preserve the aesthetic character of communities; to improve the aesthetic quality of the built environment; to promote water efficiency; to promote native wildlife; to reduce the impacts of development on drainage systems and natural habitats; and to increase privacy for residential zones by:

A. Providing visual relief from large expanses of parking areas and reduction of perceived building scale;

B. Providing physical separation between residential and non-residential areas;

C. Providing visual screens and barriers as a transition between differing land uses;

D. Retaining existing vegetation and significant trees by incorporating them into the site design; ((and))

E. Providing increased areas of permeable surfaces to allow for:

1. Infiltration of surface water into groundwater resources;

2. Reduction in the quantity of storm water discharge; and

1 3. Improvement in the quality of storm water
2 discharge((-));

3 F. Encouraging the use of native plant species by their
4 retention or use in the landscape design;

5 G. Requiring water use efficiency through water budgeting
6 and efficient irrigation design standards; and

7 H. Encouraging the use of a diversity of plant species
8 which promote native wildlife habitat.

9 SECTION 2. Ordinance 10870, Section 387 and K.C.C.
10 21A.16.020 are each hereby amended to read as follows:

11 Application. Except for communication facilities
12 regulated pursuant to K.C.C. 21A.26, all new development listed
13 in K.C.C. 21A.16.030 shall be subject to the landscaping (~~and~~
14 ~~significant tree retention~~) provisions of this chapter,
15 provided that specific landscaping and tree retention
16 provisions for uses established through a conditional use
17 permit, (~~or~~) a special use permit, or an urban planned
18 development application shall be determined during the
19 applicable review process. (~~For the purpose of this chapter,~~
20 ~~a new development is one that requires a change of occupancy~~
21 ~~permit or a substantial improvement as defined in K.C.C.~~
22 ~~21A.06.~~)

23 SECTION 3. Ordinance 10870, Section 388 and K.C.C.
24 21A.16.030 are each hereby amended to read as follows:

25 Land use grouping. In order to facilitate the application
26 of this chapter, the land uses of K.C.C. 21A.08 have been
27 grouped in the following manner.

28 A. Residential development shall refer to those uses
29 listed in K.C.C. 21A.08.030, except those uses listed under
30 Accessory uses, provided:

31 1. Attached/group residences shall refer to:

32 (~~(a. townhouses;)~~)

33 ((b))a. apartments;

34 ((e))b. senior citizen assisted;

35 ((d))c. temporary lodging; and

1 ((e))d. group residences other than Type I community
2 residential facilities;

3 ((f))e. mobile home parks; and

4 2. Single ((detached)) family development shall refer
5 to:

6 a. residential subdivisions, including attached and
7 detached dwelling units on individually platted lots; and

8 b. type I community residential facilities.

9 B. Commercial development shall refer to those uses in:

10 1. K.C.C. 21A.08.040 as amusement/entertainment uses,
11 except golf facilities;

12 2. K.C.C. 21A.08.050 except recycling centers, health
13 and educational services, daycare I, churches, synagogues, and
14 temples; and

15 3. K.C.C. 21A.08.070, except forest product sales and
16 agricultural crop sales.

17 C. Industrial development shall refer to those uses
18 listed in:

19 1. K.C.C. 21A.08.050 as recycling center;

20 2. K.C.C. 21A.08.060 except government services;

21 3. K.C.C. 21A.08.080; and

22 4. K.C.C. 21A.08.090 as mineral extraction and
23 processing.

24 D. Institutional development shall refer to those uses
25 listed in:

26 1. K.C.C. 21A.08.040 as cultural uses, except
27 arboretums;

28 2. K.C.C. 21A.08.050 as churches, synagogues and
29 temples, health services, and education services except
30 specialized instruction schools permitted as an accessory use;
31 and

32 3. K.C.C. 21A.08.060 as government services.

33 E. Utility development shall refer to those listed in
34 K.C.C. 21A.08.060 as utility facilities.

1 F. Uses contained in K.C.C. 21A.08 that are not listed in
 2 subsections A-E of this section shall not be subject to
 3 landscaping and tree retention requirements except as specified
 4 in any applicable review of a conditional use or special use
 5 permits.

6 SECTION 4. Ordinance 10870, Section 389 and K.C.C.
 7 21A.16.040 are each hereby amended to read as follows:

8 Landscaping - screen types and description. The ~~((four))~~
 9 three types of landscaping screens are described and applied as
 10 follows:

11 A. Type I landscaping screen:

12 1. Type I landscaping is a "full screen" that
 13 functions as a visual barrier. This landscaping is typically
 14 found adjacent to freeways and between residential and non-
 15 residential areas.

16 2. Type I landscaping shall minimally consist of:

17 a. A mix of primarily evergreen trees and shrubs
 18 ~~((placed))~~ generally interspersed throughout the landscape
 19 strip and spaced to form a continuous screen;

20 b. ~~((At least))~~ Between 70 and 90 percent evergreen
 21 trees;

22 c. Trees provided at the rate of one per 10 linear
 23 feet of landscape strip and spaced no more than 30 feet apart
 24 on center;

25 ~~((e. Evergreen trees spaced no more than 15 feet on~~
 26 ~~center))~~);

27 ~~((d. Broadleaf trees spaced no more than 20 feet on~~
 28 ~~center))~~);

29 ~~((e))~~d. Evergreen shrubs ~~((spaced no more than))~~
 30 provided at the rate of one per linear four feet ~~((apart))~~; of
 31 landscape strip and spaced no more than 8 feet apart on center;

32 and

33 ~~((f))~~e. Ground cover pursuant to K.C.C. 21A.16.090;

34 B. Type II landscaping screen:

1 c. ~~Trees ((spaced no more than))~~ provided at the
 2 rate of one per linear 25 feet of landscape strip and spaced no
 3 more than 30 feet apart on center;

4 d. ~~Shrubs ((, that do not exceed a height of four~~
 5 ~~feet, spaced no more than))~~ provided at the rate of one per
 6 four linear feet ((apart)) of landscape strip and spaced no
 7 more than 8 feet apart on center; and

8 e. Ground cover pursuant to K.C.C. 21A.16.090.

9 ~~((D. Type IV landscaping:~~

10 ~~1. Type IV landscaping is "parking area landscaping"~~
 11 ~~that provides shade and visual relief while maintaining clear~~
 12 ~~sight lines within parking areas;~~

13 ~~2. Type IV landscaping shall consist of:~~

14 ~~a. Canopy type broadleaf or evergreen trees,~~
 15 ~~evergreen shrubs and ground covers planted in islands or~~
 16 ~~strips;~~

17 ~~b. Shrubs that do not exceed a height of four feet;~~

18 ~~c. Plantings contained in planting islands or~~
 19 ~~strips having an area of at least 75 square feet and with a~~
 20 ~~narrow dimension of no less than four feet;~~

21 ~~d. Ground cover pursuant to K.C.C. 21A.16.090; and~~

22 ~~e. At least 70 percent of the trees shall be~~
 23 ~~broadleaf.))~~

24 SECTION 5. Ordinance 10870, Section 390 and K.C.C.

25 21A.16.050 are each hereby amended to read as follows:

26 Landscaping - street frontages. The average width of
 27 ((P)) perimeter landscaping along street frontages shall be
 28 provided as follows:

29 A. Twenty feet of Type II landscaping shall be provided
 30 for an institutional use, excluding playgrounds and playfields;

31 B. Ten feet of Type II landscaping shall be provided for
 32 an industrial development;

33 C. Ten feet of Type II landscaping shall be provided for
 34 an above ground utility facilities development, excluding

1 1. Type II landscaping is a "filtered screen" that
2 functions as a visual separator. This landscaping is typically
3 found between commercial and industrial uses; between differing
4 types of residential development; and to screen industrial uses
5 from the street;

6 2. Type II landscaping shall minimally consist of:

7 a. A mix of evergreen and (~~broadleaf~~) deciduous
8 trees and shrubs generally interspersed throughout the
9 landscape strip spaced to create a filtered screen;

10 b. At least 50 percent (~~broadleaf~~) deciduous
11 trees and at least 30 percent evergreen trees;

12 c. Trees provided at the rate of one per 20 linear
13 feet of landscape strip and spaced no more than 30 feet apart
14 on center;

15 (~~e. Evergreen trees spaced no more than 15 feet on~~
16 ~~center;~~)

17 (~~d. Broadleaf trees spaced no more than 20 feet on~~
18 ~~center;~~)

19 ((e))d. Shrubs provided at the rate of one per four
20 linear feet of landscape strip and spaced no more than ((five))
21 eight feet apart on center; and

22 ((f))e. Ground cover pursuant to K.C.C. 21A.16 090;

23 C. Type III landscaping screen:

24 1. Type III landscaping is a "see-through
25 (~~buffer~~)screen" that functions as a partial visual separator
26 to soften the appearance of parking areas and building
27 elevations. This landscaping is typically found along street
28 frontage or between apartment developments;

29 2. Type III landscaping shall minimally consist of:

30 a. A mix of evergreen and (~~broadleaf~~) deciduous
31 trees generally interspersed throughout the landscape strip and
32 spaced to create a continuous canopy;

33 b. At least 70 percent (~~broadleaf~~) deciduous
34 trees;

1 distribution and transmission corridors, located outside a
2 public right-of-way;

3 D. Ten feet of Type III landscaping shall be provided for
4 a commercial or attached/group residence development; and

5 E. For single ((detached)) family subdivisions:

6 1. Trees shall be planted at the rate of one tree for
7 every 40 feet of frontage along a neighborhood collector street
8 or arterial street.((+

9 a. ~~Fifty feet of frontage along a neighborhood~~
10 ~~collector street; and~~

11 b. ~~Forty feet of frontage along an arterial~~
12 ~~street.~~))

13 2. The trees shall be:

14 a. Located within the street right-of-way if
15 permitted by the custodial state or local agency;

16 b. No more than 20 feet from the street right-of-
17 way line when located within a lot;

18 c. Maintained by the adjacent landowner unless part
19 of a county maintenance program; and

20 d. A species approved by the county.

21 3. The trees may be spaced at irregular intervals in
22 order to accommodate sight distance requirements for driveways
23 and intersections.

24 SECTION 6. Ordinance 10870, Section 391 and K.C.C.

25 21A.16.060 are each hereby amended to read as follows:

26 Landscaping - interior lot lines. The average width of
27 ((P))perimeter landscaping along interior lot lines shall be
28 provided as follows:

29 A. Twenty feet of Type I landscaping shall be included in
30 a commercial or industrial development along any portion
31 adjacent to a residential development;

32 B. Ten feet of Type II landscaping shall be included in
33 an attached/group residence development, except that along
34 portions of the development adjacent to another attached/group

1 residence development or adjacent to any non-residential use
2 the requirement shall be five feet of Type II landscaping;

3 C. Ten feet of Type II landscaping shall be included in
4 an industrial development along any portion adjacent to a
5 commercial or institutional development;

6 D. Ten feet of Type II landscaping shall be included in
7 an institutional use, excluding of playgrounds and playfields,
8 or an above-ground utility facility development, excluding
9 distribution or transmission corridors, when located outside a
10 public right-of-way.

11 SECTION 7. Ordinance 10870, Section 392 and K.C.C.
12 21A.16.070 are each hereby amended to read as follows:

13 Landscaping - surface parking areas. (~~Type IV~~) Parking
14 area landscaping shall be provided within surface parking areas
15 with ten or more parking stalls for the purpose of providing
16 shade and diminishing the visual impacts of large paved areas
17 as follows:

18 A. Residential developments with common parking areas
19 shall provide planting areas at the rate of 20 square feet per
20 parking stall;

21 B. Commercial, industrial, or institutional developments,
22 shall provided landscaping a rate of:

23 1. Twenty square feet per parking stall when 10 to 30
24 parking stalls are provided; and

25 2. Twenty-five square feet per parking stall when 31
26 or more parking stalls are provided;

27 C. Trees shall be provided and distributed throughout the
28 parking area at a rate of:

29 1. One tree for every five parking stalls for a
30 commercial or industrial development; and

31 2. One tree for every ten parking stalls for
32 residential or institutional development;

33 D. The maximum distance between any parking stall and
34 (~~required parking area~~) landscaping shall be no more than
35 (~~65~~) 100 feet;

1 E. Permanent curbs or structural barriers shall be
2 provided to protect the plantings from vehicle overhang((-));
3 and

4 F. Parking area landscaping shall consist of:

5 1. Canopy-type deciduous trees, evergreen trees,
6 evergreen shrubs and ground covers planted in islands or
7 strips;

8 2. Shrubs that do not exceed a maintained height of 42
9 inches;

10 3. Plantings contained in planting islands or strips
11 having an area of at least 100 square feet and with a narrow
12 dimension of no less than five feet;

13 4. Ground cover pursuant to K.C.C. 21A.16.090; and

14 5. At least 70 percent of trees are deciduous.

15 SECTION 8. Ordinance 10870, Section 393 and K.C.C.
16 21A.16.080 are each hereby amended to read as follows:

17 Landscaping - adjacent to freeway rights-of-way.

18 A. All residential developments shall provide a minimum
19 average width of 20 feet of Type I landscaping adjacent to
20 freeway rights-of-way.

21 B. All other developments shall provide a minimum average
22 width of 20 feet of Type III landscaping adjacent to freeway
23 rights-of-way.

24 NEW SECTION. SECTION 9. There is hereby added to
25 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
26 follows:

27 Landscaping - general standards for all landscape areas.
28 All new landscape areas proposed for a development shall be
29 subject to the following provisions:

30 A. Berms shall not exceed a slope of two horizontal feet
31 to one vertical foot (2:1).

32 B. All new turf areas, except all-weather, sand-based
33 athletic fields shall:

34 1. Be augmented with a two-inch layer of organic
35 material cultivated a minimum of six inches deep, or

1 2. Have an organic content of five percent or more to
2 a depth of six inches as shown in a soil sample analysis. The
3 soil analysis shall include:

4 a. Determination of soil texture, indicating
5 percentage of organic matter,

6 b. An approximated soil infiltration rate (either
7 measured or derived from soil/texture/infiltration rate
8 tables). A range of infiltration rates shall be noted where
9 appropriate, and

10 c. Measure Ph value.

11 C. Except as specifically outlined for turf areas in
12 subsection B, the organic content of soils in any landscape
13 area shall be as necessary to provide adequate nutrient and
14 moisture-retention levels for the establishment of plantings.

15 D. Landscape areas, except turf or areas of established
16 groundcover, shall be covered with at least two inches of mulch
17 to minimize evaporation.

18 E. Plants having similar water use characteristics shall
19 be grouped together in distinct hydrozones.

20 F. Plant selection shall consider adaptability to
21 climatic, geologic, and topographical conditions of the site.
22 Preservation of existing vegetation is encouraged.

23 SECTION 10. Ordinance 10870, Section 394 and K.C.C.

24 21A.16.090 are each hereby amended to read as follows:

25 Landscaping - (~~general requirements~~) additional
26 standards for required landscape areas. (~~Landscape designs~~
27 ~~shall conform to the following provisions~~) In addition to the
28 general standards of K.C.C. 21A.16.085, landscape areas
29 required pursuant to K.C.C. 21A.16.050 through .080 shall
30 conform to the following standards:

31 (~~A. New landscaping materials shall include species~~
32 ~~native to the coastal region of the Pacific Northwest or non-~~
33 ~~invasive naturalized species that have adapted to the climatic~~
34 ~~conditions of the coastal region of the Pacific Northwest in~~
35 ~~the following amounts:~~

- 1 ~~1. Seventy five percent of groundcover and shrubs, and~~
2 ~~2. Fifty percent of trees;))~~

3 ~~((B. At least 60 percent of new landscaping materials~~
4 ~~shall consist of drought tolerant species, except where site~~
5 ~~conditions within the required landscape areas assure adequate~~
6 ~~moisture for growth;))~~

7 ~~((E))A. All plants shall conform to American Association~~
8 ~~of Nurserymen (AAN) grades and standards as published in the~~
9 ~~"American Standard for Nursery Stock" manual, provided that~~
10 ~~e((E)xisting healthy vegetation ((may be)) used to augment new~~
11 ~~plantings shall not be required to meet the standards of this~~
12 ~~(chapter) manual;~~

13 ~~((D))B. ~~((Broadleaf trees shall have a caliper of at~~~~
14 ~~~~least 1.75 inches at the time of planting. The caliper may be~~~~
15 ~~~~averaged, but no individual tree shall have a caliper of less~~~~
16 ~~~~than 1.5 inches;))~~ Single-stemmed trees required pursuant to
17 ~~this chapter shall at the time of planting conform to the~~
18 ~~following standards:~~~~

19 ~~1. In parking area landscaping and in street rights-~~
20 ~~of-way:~~

21 ~~a. Deciduous trees shall have a minimum caliper of~~
22 ~~1.75 inches and a height of 10 feet, and~~

23 ~~b. Coniferous and broadleaf evergreens shall be at~~
24 ~~least five feet in height;~~

25 ~~2. In all other required landscape areas:~~

26 ~~a. Deciduous trees shall have a minimum caliper of~~
27 ~~1.5 inches and a height of ten feet, and~~

28 ~~b. Coniferous and broadleaf evergreen trees shall~~
29 ~~be at least five feet in height.~~

30 ~~((E))C. ~~((Evergreen trees shall be at least six feet in~~~~
31 ~~~~height measured from treetop to the ground at the time of~~~~
32 ~~~~planting;))~~ Multiple-stemmed trees shall be permitted as an
33 ~~option to single-stemmed trees provided that such multiple-~~
34 ~~stemmed trees are:~~~~

35 ~~1. At least six feet in height, and~~

1 2. Not allowed within street rights-of-way;

2 ((F))D. When the width of any landscape strip is 20 feet
3 or greater, the required trees shall be staggered in two or
4 more rows;

5 ((G))E. Shrubs shall be:

6 1. ~~((Two-gallon-size))~~ At least an AAN container class
7 #2 size at time of planting in Type II, III and ~~((IV))~~ parking
8 area landscaping,

9 2. At least 24 inches in height at the time of
10 planting for Type I landscaping, and

11 3. Maintained at a height not exceeding ~~((four-feet))~~
12 42 inches when located in Type III or ~~((IV))~~ parking area
13 landscaping;

14 ((H))F. Ground covers shall be planted and spaced to
15 result in total coverage of the majority of the required
16 landscape area within three years. ~~((as follows:~~

17 1. ~~Four-inch pots at 18 inches on center, or~~

18 2. ~~One-gallon or greater sized containers at 24 inches~~
19 ~~on-center));~~

20 ~~((I. Grass may be used as ground cover only in Type III~~
21 ~~and IV landscape areas provided that the grass area:~~

22 1. ~~Constitutes no more than 30 percent of such~~
23 ~~landscape areas; and~~

24 2. ~~Is at least five feet wide at the smallest~~
25 ~~dimension;))~~

26 ~~((J. Grass and ground cover areas shall contain at least~~
27 ~~two inches of composted organic material at finish grade;))~~

28 ((K))G. All fences shall be placed on the inward side of
29 any required perimeter landscaping along the street frontage.

30 ~~((L. Berms shall not exceed a slope of two horizontal~~
31 ~~feet to one vertical foot (2:1);~~

32 M. ~~Existing soils shall be augmented with a two-inch~~
33 ~~layer of fully composted organic material rototilled a minimum~~
34 ~~of six inches deep;~~

1 ~~N. Landscape areas shall be covered with at least two~~
 2 ~~inches of mulch to minimize evaporation. Mulch shall consist~~
 3 ~~of materials such as yard waste, sawdust and/or manure that is~~
 4 ~~fully composted;~~

5 ~~O. Drought tolerant and nondrought tolerant species shall~~
 6 ~~be grouped separately and be served by separate irrigation~~
 7 ~~systems;))~~

8 ((P))H. Required street landscaping may be placed within
 9 King County street rights-of-way subject to the County Road
 10 Design Standards with the permission of the King County
 11 department of public works, provided adequate space is
 12 maintained along the street line to replant the required
 13 landscaping should subsequent street improvements require the
 14 removal of landscaping within the rights-of-way((-));

15 I. Required street landscaping may be placed within
 16 Washington state rights-of-way subject to permission of the
 17 Washington state department of transportation.

18 J. New landscape material provided within areas of
 19 undisturbed vegetation or within the protected area of
 20 significant trees shall give preference to utilizing indigenous
 21 plant species.

22 SECTION 11. Ordinance 10870, Section 395 and K.C.C.
 23 21A.16.100 are each hereby amended to read as follows:

24 Landscaping - alternative options. The following
 25 alternative landscape options may be allowed, subject to county
 26 approval, only if they accomplish equal or better levels of
 27 screening, or when existing conditions on or adjacent to the
 28 site, such as significant topographic differences, vegetation,
 29 structures or utilities would render application of this
 30 chapter ineffective or result in scenic view obstruction:

31 ~~((and are subject to county approval:))~~

32 A. The amount of required landscape area may be reduced
 33 to ensure that ((When)) the total area for required landscaping
 34 ((and that)), the protected area ((within the dripline of))
 35 surrounding a designated significant ((retained)) tree(s).

1 and/or the area remaining undisturbed for the purpose of
2 wildlife habitat or corridors does not exceed((s)) 15 percent
3 of the net developable area of the site. For the purpose of
4 this subsection, the net developable area of the site shall not
5 include areas deemed unbuildable due to their location within
6 sensitive areas and any associated buffers. ((, the
7 landscaping requirement may be reduced so that the total
8 required landscape and tree retention area will not exceed the
9 15 percent of site area;))

10 B. The average width of the perimeter landscape strip may
11 be reduced up to 25 percent along any portion where:

12 1. Berms at least three feet in height or architectural
13 barriers at least six feet in height are incorporated into the
14 landscape design; or

15 2. The landscape materials are incorporated elsewhere on-
16 site;

17 C. The average width of the perimeter landscaping may be
18 reduced up to 25 percent when a development retains an
19 additional ten percent of significant trees or ten significant
20 trees per acre on-site (above the requirements of K.C.C.
21 21A.16. (~~130.C. and D.~~) 130.B. and C.), whichever is greater;

22 (~~D. The landscaping requirement may be modified when~~
23 ~~existing conditions on or adjacent to the site, such as~~
24 ~~significant topographic differences, vegetation, structures or~~
25 ~~utilities would render application of this chapter ineffective~~
26 ~~or result in scenic view obstruction;))~~

27 ((E))D. In pedestrian district overlays, street perimeter
28 landscaping may be waived provided a site plan, consistent with
29 the applicable adopted area zoning document, is approved that
30 provides street trees and other pedestrian-related amenities;
31 ((and))

32 ((F))E. When an existing structure precludes installation
33 of the total amount of required site perimeter landscaping,
34 such landscaping material shall be incorporated on another
35 portion of the site((+));

1 F. Single-stemmed deciduous tree species that cannot
2 generally be planted and established in larger sizes may have a
3 caliper of less than 1.5 inches; and

4 G. The number of trees and shrubs to be provided in
5 required perimeter and parking area landscaping may be reduced
6 up to 25 percent when a development uses landscaping materials
7 consisting of species typically associated with the Puget Sound
8 Basin in the following proportions:

9 1. Seventy-five percent of groundcover and shrubs, and

10 2. Fifty percent of trees.

11 H. The department shall, pursuant to K.C.C. 2.98, develop
12 and maintain an advisory listing of trees recommended for new
13 plantings. Such list shall describe their general
14 characteristics and suitability, and provide guidelines for
15 their inclusion within required landscape areas.

16 NEW SECTION. Section 12. There is hereby added to
17 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
18 follows:

19 Landscapeing - plan design, design review, and
20 installation.

21 A. The landscape plan shall be drawn on the same base map
22 as the development plans and shall identify the following:

23 1. Total landscape area and separate hydrozones,

24 2. Landscape materials botanical/common name and
25 applicable size,

26 3. Property lines,

27 4. Impervious surfaces,

28 5. Natural or man-made water features or bodies,

29 6. Existing or proposed structures, fences, and
30 retaining walls,

31 7. Natural features or vegetation left in natural
32 state, and

33 8. Designated recreational open space areas.

34 B. The proposed landscape plan shall be certified by a
35 Washington state registered landscape architect, Washington

1 state certified nurseryman, or Washington state certified
2 landscaper.

3 C. A person certified pursuant to subsection B shall
4 submit (within 30 days of completed installation) a signed
5 affidavit that landscaping has been installed per the plan.

6 D. The required landscaping shall be installed no later
7 than three months after issuance of a certificate of occupancy
8 for the project or project phase. However, the time limit for
9 compliance may be extended to allow installation of such
10 required landscaping during the next appropriate planting
11 season.

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1 SECTION 13. Ordinance 10870, Section 404 and K.C.C.
2 21A.16.190 are each hereby amended to read as follows:

3 Bonds/security. Performance bonds or other appropriate
4 security (including letters of credit and set aside letters)
5 shall be required for a period of (~~two years~~) no less than
6 six months after the planting or transplanting of vegetation to
7 insure proper installation, establishment and maintenance.
8 This time period may be extended to one year by the director,
9 if necessary to cover a planting and growing season.

10 NEW SECTION. SECTION 14. There is hereby added to
11 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
12 follows:

13 Water use - applicability of water budget for landscape
14 areas. Irrigation systems of any type are optional components
15 of a landscape area. However, a water budget for irrigation
16 purposes shall be established for all new development, except
17 for:

18 A. Individually platted single dwelling (attached or
19 detached) residential lots, provided that developer-installed
20 landscaping in common areas of residential projects is not
21 exempt; and

22 B. Any project with a total landscaped area less than 500
23 square feet.

24 NEW SECTION. SECTION 15. There is hereby added to
25 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
26 follows:

1 Water use - irrigation water budget calculated.

2 A. The water budget (WB) allocation shall be calculated
3 using the following formula:

4
$$WB = (ETo) \times (AF) \times (LA) \times (CF)$$

5 Eto: Referenced Evapotranspiration Rate (net seasonal
6 irrigation requirement in inches - see table below)

7 AF: Adjustment factor value of 0.8 (i.e., $0.5 \times (Eto) /$
8 0.625 irrigation efficiency coefficient)

9 LA: Landscape area (square feet)

10 CF: Conversion factor value of 0.62 (Eto inches to
11 gallons per square foot)

12 Reference Eto Table - Historical Data*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Season Total
13 Monthly Net													
14 Irrig.	.00	.00	.00	.00	1.59	3.13	4.48	3.51	1.77	.03	.00	.00	14.49
15 Requirement													
16 (Inches)													

17 * These figures are based on a 30-year average of National
18 Weather Service Data and represent the amount of additional
19 irrigation required for turf grass. The figures are adjusted
20 for turf typically used in commercial landscaping.

21 B. The county shall within three years of the
22 implementation of this chapter, submit an evaluation of the WB
23 calculation formula outlined in subsection A. The evaluation
24 shall include a recommendation to retain or modify the
25 adjustment factor or components thereof, and shall be made in
26 consultation with groups including landscape professionals and
27 water purveyors.

28 C. The water budget will be calculated upon the total
29 area of the site in landscape areas and in landscape water
30 features (such as decorative ponds, pools or fountains) that
31 are fed by irrigation water. For the purpose of calculating
32 the water budget, "landscape area" shall mean the entire
33 parcel, less:

- 34 1. Sensitive areas and their buffers,
35 2. The building footprint,

1 HA: Hydrozone area (square feet)

2 CF: Conversion factor value of 0.62 (Eto inches to
3 gallons per square foot)

4 IE: Irrigation efficiency value

5 B. Plant factor values shall be as follows, but may be
6 adjusted pursuant to subsection C:

- 7 1. 0 to 0.3 for low water use plants,
- 8 2. 0.4 to 0.6 for average water use plants, and
- 9 3. 0.7 to 1.0 for high water use plants.

10 C. For each hydrozone, plant factor values may be
11 determined and adjusted by the designer (based on professional
12 judgment and applicable reference materials) considering the
13 relevant factors such as:

- 14 1. Water requirements of the various plant species
15 proposed,
- 16 2. Density of the plantings,
- 17 3. Microclimate of the site, and
- 18 4. Soil conditions.

19 NEW SECTION. SECTION 17. There is hereby added to
20 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
21 follows:

22 Water use - irrigation efficiency goals and system design
23 standards. For purposes of this section, irrigation shall
24 include any means of applying water to landscaped areas. All
25 irrigation is at the applicant's option. Manually applied
26 irrigation methods shall comply with subsections A and B.
27 Irrigation applied through installed irrigation systems shall
28 comply with subsections A through C:

29 A. Irrigation water shall be applied with goals of
30 avoiding runoff, low head drainage, overspray, or other similar
31 conditions where water flows onto adjacent property, non-
32 irrigated areas, and impervious surfaces by:

- 33 1. Considering soil type and infiltration rates,

1 2. Using proper irrigation equipment and schedules,
2 including features such as repeat cycles, to closely match
3 application rates with infiltration rates, and

4 3. Considering special problems posed by irrigation on
5 slopes and in median strips.

6 B. All irrigation water outlets, except those using
7 alternative water sources, shall be downstream of the meter
8 used to measure irrigation water use.

9 C. Irrigation systems shall be subject to the following
10 additional provisions:

11 1. Systems shall not be located on any:

12 a. turfgrass slopes exceeding a slope of three
13 horizontal feet to one vertical foot (3:1), and

14 b. turfgrass portions of median strips.

15 2. Systems in landscape strips less than five feet in
16 width shall be designed to ensure that overspray and/or runoff
17 does not occur by use of system design options such as low
18 volume emitters.

19 3. Systems shall be designed to be consistent with the
20 requirements of the hydrozone in which they are located.

21 4. Systems shall be designed with a minimum average
22 irrigation efficiency of 0.625.

23 5. The use of automatic shutoff or override
24 capabilities using rain shutoffs or moisture sensors is
25 encouraged.

26 6. Systems shall utilize a master control valve
27 connected to an automatic controller.

28 7. Systems shall make provisions for winterization
29 either by providing:

30 a. manual drains (automatic drain valves are not
31 permitted at all low points), or

32 b. means to blow out lines with pressurized air.

33 8. Separate valves shall be used to irrigate plants
34 with differing water needs.

1 9. Sprinkler heads with consistent application rates
2 shall be selected for proper area coverage, operating pressure,
3 and adjustment capability.

4 NEW SECTION. SECTION 18. There is hereby added to
5 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
6 follows:

7 Water use - irrigation system design, design review and
8 audit at installation.

9 A. Irrigation plan design shall be certified by an
10 Irrigation Association (IA)-certified designer or a registered
11 landscape architect or professional engineer with irrigation
12 design experience.

13 B. The irrigation system must be audited and accepted at
14 installation by an IA-certified irrigation auditor.

15 NEW SECTION. SECTION 19. There is hereby added to
16 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
17 follows:

18 Water use - irrigation design plan contents. Proposed
19 irrigation system design plans shall be drawn on the same base
20 project map as the landscape plan and shall identify:

21 A. Location and size of any proposed separate water
22 meters for the landscape;

23 B. Location, type, and size of all components of the
24 irrigation system;

25 C. Static water pressure at the point of connection to
26 the water supply; and

27 D. Flow rate (gallons per minute), application rates
28 (inches per hour), and design operating pressure (PSI) for each
29 station.

30 NEW SECTION. SECTION 20. There is hereby added to
31 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
32 follows:

33 Water use - irrigation schedules. Irrigation schedules
34 consistent with the following shall be submitted:

1 A. A recommended irrigation program with monthly
2 irrigation schedules based, at a minimum on average monthly
3 Eto, shall be required for before and after establishment.

4 B. The irrigation schedule shall:

5 1. Include for each station the run time (in minutes
6 per cycle) and cycles per week,

7 2. Indicate the amount of applied water (in the
8 applicable billing unit used by a purveyor),

9 3. Incorporate use of evapotranspiration data
10 reflecting local microclimates,

11 4. Be adjusted for additional water need in
12 recreational areas,

13 5. Incorporate additional operating criteria such as
14 avoiding irrigation at times of high temperatures or winds.

15 NEW SECTION. SECTION 21. There is hereby added to
16 Ordinance 10870 and K.C.C. 21A.16 a new section to read as
17 follows:

18 Water use - irrigation system maintenance. Irrigation
19 systems shall be maintained and inspected periodically to
20 assure proper functioning. Replacement of components shall be
21 of originally specified parts or materials, or their
22 equivalents.

23 NEW SECTION. SECTION 22. There is hereby added to
24 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
25 follows:

26 Adjustment factor. Adjustment factor: a factor that when
27 applied to the reference evapotranspiration, adjusts for plant
28 factors and irrigation efficiency.

29 NEW SECTION. SECTION 23. There is hereby added to
30 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
31 follows:

32 Alternative water sources. Alternative water sources:
33 stored rainwater, or treated or recycled waste water of a
34 quality suitable for uses such as landscape irrigation. Such
35 water is not considered potable.

1 NEW SECTION. SECTION 24. There is hereby added to
2 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
3 follows:

4 Application rate. Application rate: the depth of water
5 applied to an area expressed in inches per hour.

6 NEW SECTION. SECTION 25. There is hereby added to
7 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
8 follows:

9 Conversion factor. Conversion factor: a number that
10 converts the water budget allowance from acre-inches per acre
11 per year to gallons per square foot per year or cubic feet per
12 year.

13 NEW SECTION. SECTION 26. There is hereby added to
14 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
15 follows:

16 Irrigation efficiency. Irrigation efficiency: is the
17 coefficient of the amount of water beneficially used divided by
18 the amount of water applied. This coefficient is derived from
19 actual measurements and an evaluation of the general
20 characteristics of the type of irrigation system and management
21 practices proposed.

22 NEW SECTION. SECTION 27. There is hereby added to
23 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
24 follows:

25 Infiltration rate. Infiltration rate: the rate of water
26 entry into the soil expressed in inches per hour.

27 NEW SECTION. SECTION 28. There is hereby added to
28 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
29 follows:

30 Landscape water features. Landscape water features: a
31 pond, pool or fountain used as a decorative component of a
32 development.

33 NEW SECTION. SECTION 29. There is hereby added to
34 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
35 follows:

1 Mulch. Mulch: any material such as leaves, bark, straw
2 left loose and applied to the soil surface to reduce
3 evaporation.

4 NEW SECTION. SECTION 30. There is hereby added to
5 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
6 follows:

7 Overspray. Overspray: irrigation water applied beyond
8 the landscape area.

9 NEW SECTION. SECTION 31. There is hereby added to
10 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
11 follows:

12 Plant factor. Plant factor: a factor which when
13 multiplied by reference evapotranspiration, estimates the
14 amount of water used by plants.

15 NEW SECTION. SECTION 32. There is hereby added to
16 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
17 follows:

18 Potable water. Potable water: water suitable for human
19 consumption.

20 NEW SECTION. SECTION 33. There is hereby added to
21 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
22 follows:

23 Reference evapotranspiration (Eto). Reference
24 evapotranspiration (Eto): a standard measurement of
25 environmental parameters which affect the water use of plants.

26 NEW SECTION. SECTION 34. There is hereby added to
27 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
28 follows:

29 Runoff. Runoff: water not absorbed by the soil in the
30 landscape area to which it is applied.

31 NEW SECTION. SECTION 35. There is hereby added to
32 Ordinance 10870 and K.C.C. 21A.06 a new section to read as
33 follows:

34 Water budget. Water budget: the upper limit of
35 irrigation water applied to the established landscape area.

1 SECTION 36. Ordinance 10870, Section 174 and K.C.C.

2 21A.06.670 are each hereby amended to read as follows:

3 Landscaping. Landscaping: live vegetative materials
4 required for a development. Said materials provided along the
5 boundaries of a development site is referred to as perimeter
6 landscaping. (~~Landscaping provided on the remainder of the~~
7 ~~site is referred to as interior landscaping~~)).

8 NEW SECTION. SECTION 37. There is hereby added a new
9 section to K.C.C. 21A.16 to read as follows:

10 The surface water management division shall prepare a
11 report on the effects on the environment of using less turf
12 grass and more mulch in landscaped areas and submit it to the
13 council by June 1, 1994.

14 The budget office shall prepare a report on the economic
15 and environmental impacts of using less turf grass and more
16 mulch in landscaped areas and submit it to the council by June
17 1, 1994.

18 SECTION 38. Ordinance 10870, Section 396 and K.C.C.
19 21A.16.110 are each hereby repealed.

20 SECTION 39. Ordinance 10870, Section 397 and K.C.C.
21 21A.16.120 are each hereby repealed.

22 INTRODUCED AND READ for the first time this 21st day
23 of June, 1993.

24 PASSED this 31st day of January, 1994.

25 KING COUNTY COUNCIL
26 KING COUNTY, WASHINGTON

27 Kent Pullen
28 Chair

29 ATTEST:

30 Guadalupe Peltier
31 Clerk of the Council

32 APPROVED this 14th day of February, 1994.

33 Ray Fode
34 King County Executive

Passed by a vote of 12 to 1.