



ORDINANCE NO. O2000-010

AN ORDINANCE amending Title 13, Public Services, of the Tumwater Municipal Code relating to allowing for zero effect drainage discharge developments in Tumwater.

WHEREAS, typical site development presents many challenges to retaining stormwater on site; and

WHEREAS, stormwater discharge offsite has been shown to adversely impact fish habitat in streams; and

WHEREAS, retaining forest canopy has been shown to directly aid evapotranspiration and infiltration; and

WHEREAS, the City of Tumwater has prepared the amendments to Title 13, Public Services, through the addition of a new Chapter 13.22, Zero Effect Drainage Discharge, in accordance with the City of Tumwater Citizen Participation and Intergovernmental Coordination Policy, and the State Environmental Policy Act;

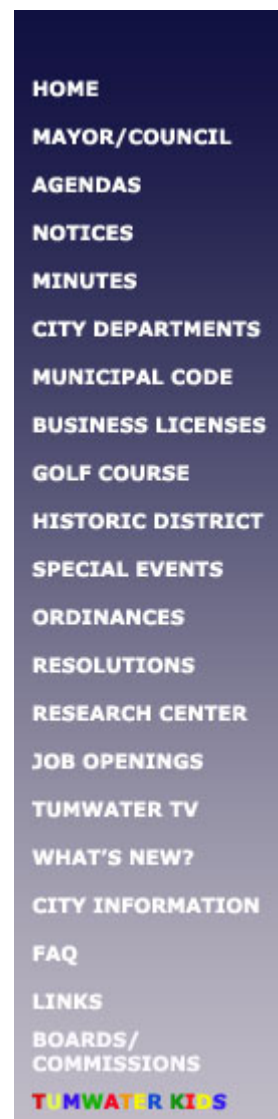
NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF TUMWATER, STATE OF WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Title 13, Public Services, of the Tumwater Municipal Code is hereby amended by adding a new Chapter 13.22, Zero Effect Drainage Discharge, to read as follows:

"Chapter 13.22

ZERO EFFECT DRAINAGE DISCHARGE

Sections:

**13.22.010 Intent.****13.22.020 Definitions.****13.22.030 Authorized deviations from engineering design and development guidelines and public works standards.****13.22.040 Official approval.****13.22.050 Evaluation and monitoring.****13.22.010 Intent.**

The intent of this Chapter is to define an alternative design standard that retains the critical functions of a forest including evapotranspiration and infiltration after site development such that near "zero effective impervious surface" is achieved. The purpose of such development is to dramatically reduce additional stormwater flow to streams and wetlands in order to enhance the aquatic environment and anadromous fisheries. As part of meeting this intent, this chapter is intended to fulfill the following purposes:

- A. Provide those developing land the opportunity to demonstrate zero effective impervious surfaces;
- B. Preserve conditions of habitat and ground and surface waters within a watershed with innovative urban residential design and development techniques;
- C. Foster broad community acceptance of the use of significantly less impervious surface and greater natural habitat conservation on sites;
- D. Provide the opportunity to identify and evaluate potential substantive changes to land use development regulations that support and improve natural functions of watersheds.

13.22.020 Definitions.

- A. "Adjacent Impervious Surfaces" means roofs, parking areas, and other impervious surfaces closer to each other than 100 feet apart. These shall be considered "adjacent impervious surfaces".
- B. "Defensible Space" means an area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.
- C. "Drainage collection system" means a system for conveying, treating and detaining stormwater runoff including but not limited to facilities such as catch basins, drains, swales, ponds, and outfalls.
- D. "Dripline" means a line on the ground defined by water dripping from a roof.
- E. "Effective Impervious Surface" means that impervious surface which is connected to surface water directly or with a conveyance device (such as a ditch or pipe)

F. "Forested area" means the type of vegetation cover that was likely prior to the immigration of Europeans to the United States over substantially the entire site. If original vegetation cover is unknown, it is assumed to be a conifer forest characterized by a predominance of Douglas Fir and cedar trees with undisturbed soils.

G. "Forest Restoration" means, on land protected by Native Growth Protection Area designation, the process of restoring native vegetation and soils and mulch on disturbed land with the intent of eventually achieving the forested condition.

H. "Garden Roof" means a vegetated roof carrying, and designed to carry at least 18 inches of soil supporting plant life, built by a licensed roofing contractor. A garden roof shall not be counted as impervious surface.

I. "Innovative site design" means development techniques for development using creative approaches to site design; habitat and tree retention; significant reduction of impervious surfaces; changes in traditional site features such as roads and structures in favor of natural habitat features which result in zero or near-zero drainage discharge from the site after development.

J. "Native Growth Protection Area" means land owned by the City or owned in common such as by a property owners association and protected in perpetuity by plat restrictions and signed agreement with the City; native soils and vegetation types on such land are preserved in perpetuity.

K. "Paired Structures" shall mean two single-family residences that share a driveway.

L. "Vegetated Roof" means a watertight roof system carrying, and designed to carry, a minimum of 6 inches of soil supporting vegetation. A Vegetated Roof shall not be counted as impervious surface.

M. "Zero effective impervious surface" means impervious surface reduction to a small fraction of that resulting from traditional site development techniques such that traditional drainage collection systems are not necessary.

N. "Zero effective impervious surface project" means those projects characterized by a reduction of total impervious surface to a small fraction of that which would result from traditional development. Such projects will place impervious surfaces in increments such that run off travel distance to a vegetative buffer is minimized and does not exceed a maximum of fifteen feet. Further, the landscaped areas within such projects will be minimized and buffered on the down-slope side by a forested area. A forested area shall comprise at least 65 per cent of the land area upon which the project is located; shall be maintained in perpetuity; and shall substitute for a traditional drainage system.

13.22.030 Authorized deviations from engineering design and development guidelines and public works standards.

In order to accomplish the intent of Chapter 13.22, the Development Services Director through the Development Review Committee may approve or, for those projects requiring review and approval by the hearing examiner, recommend approval of

deviations from engineering design and the provisions of the Tumwater development guide manual in accordance with the requirements set forth in this Chapter. Deviations shall be based on the following criteria:

A. The deviations contribute to and are consistent with the intent of this chapter as specified in 13.22.010.

B. The proposed development project offers reasonable assurance that near zero effect impervious surface will be achieved and maintained.

C. The deviations do not threaten public health or safety.

D. The deviations are consistent with generally accepted engineering and design criteria, except as necessary to achieve the purposes set forth herein. In addition, the deviations shall not lessen regulations regarding protection of life and property nor shall they decrease the requirement for fire department access, water supplies or protection of life and property from intrusion of fire from wild land or heavily vegetated areas.

E. The deviations promote one or more of the following:

1. Innovative site or housing design furthering the purposes of this program;

2. Increased on-site stormwater retention using a variety of native vegetation;

3. Retention of at least 65 per cent of the native forested conditions over the site; the forest shall be used to buffer impervious surfaces and should not be clustered on the site or segregated from impervious surfaces.

F. The deviations do not allow density greater or lesser than what would otherwise be allowed under city regulations then in effect. The deviations do not allow any relaxation of the critical areas regulations then in effect. The applicant will be required to list and document the justification for each deviation requested. In order for such a project to be approved, it must be demonstrated that the project meets all other requirements of the Tumwater Municipal Code except for such specific deviations and that such project has a reasonable assurance of long term success. There shall be submitted, in conjunction with each such project, covenants, conditions and restrictions which will be binding upon the property and which require forest retention, no net increases in impervious surface and such other critical features as the city may require.

G. Zero Effective Discharge Project Requirements

1. Native Growth Protection Areas shall count toward the 65% forested cover. Lots shall be considered cleared areas and shall not count toward the 65% forested cover, regardless of covenants restricting clearing.

2. Roads should run perpendicular to contour lines for slopes up to 10% and parallel to contour lines for steeper slopes to the maximum extent possible; roads on 5% or steeper grades must have water stops (such as a geotextile) every 50 feet to prevent piping in the ballast. The water stops shall be constructed the full width of and perpendicular to the road between the subgrade and the top of the ballast to create a barrier to subsurface water flow.

3. Local access streets (ADT less than 200) will be allowed to be constructed as one lane, 13 foot roadways for looped road sections with additional 3 foot shoulders on each side. If curbs are provided, they must be slotted with 1- foot minimum openings every 10 feet maximum.

4. Local access streets (ADT less than 200) will be allowed to be constructed as two lane, two-way, 20 foot wide clear, drivable surface for dead end and cul-de-sac road sections. Curbs may be omitted on roadways. If curbs are provided, they must be slotted with 1- foot minimum openings every 10 feet.

5. Local access streets (ADT less than 400) will be allowed to be constructed as two lane, two-way, 22 foot wide clear drivable surface for through streets. Curbs may be omitted on roadways. If curbs are provided, they must be slotted with 1- foot minimum openings every 10 feet.

6. Turnouts for emergency vehicles shall be provided at fire hydrants. Roadway sections at turnouts shall be 22 feet wide and shall be signed "No Parking – Fire Lane". Turnouts shall be a minimum of 40 feet long.

7. All roadways and associated turnouts and parking areas shall be designed for H-20 loading.

8. All roadways shall be signed "No Parking – Fire Lane" except at designated parking stalls.

9. Parking shall be provided at the rate of one parking stall per eight residential units.

10. All roads, turnouts for emergency vehicles, on-street parking pullouts and driveways shall be constructed on a roadway section meeting H-20 design requirements with adequate drainage for the pervious pavement. The roadway section shall be approved by the Public Works Director.

11. Road right-of-way shall include forested buffers of 50 feet minimum which will act as the storm drainage system for the road; the road must have a minimum 2% slope toward the forest buffer for the majority of the road network on site; driveways must be contained in easements across the buffer.

12. Grading of the site will not be allowed except for road and walk footprints, building pads, driveways and parking areas.

13. Developments must be designed for pedestrian circulation on one side of the street separate from the roadway surface.

14. Driveways must be shared where such sharing results in reduced impervious surface. The associated structures are referred to as "Paired Structures".

15. Paired Structures must be no more than 25 feet apart and must share a driveway.

16. On class C and D soils, a single family residence footprint shall be restricted to a footprint of 1200 square feet, including the garage. Two- and three-family townhouses shall be restricted to a footprint of 1200 square feet per unit including garages. Four unit townhouses shall be restricted to a footprint of 1000 square feet per

unit including garages.

17. On class C and D soils, Native Growth Protection Areas between structures or Paired Structures must be 100 feet wide minimum.

18. All roads, turnouts for emergency vehicles, on-street parking stalls and driveways shall be constructed with a wearing surface consisting of some type of approved pervious pavement, such as asphalt without fines, or a true interlocking concrete paver system with drainage openings to facilitate rainwater infiltration. The wearing surface shall be as approved by the Public Works Director.

19. The lowest floor elevation of any structure shall be a minimum of 24 inches above existing grade for 10 feet in any direction.

20. On class C and D soils, foundations for structures must be "no-excavation" type (eg, piles or "pin-pile footings").

21. Generally, roof-gutters are not permitted (except for over entry-ways) unless part of a cistern collection system.

22. Roof runoff must be either infiltrated in french drains at the roof dripline, collected in cisterns and used for domestic purposes, or partially retained on a Vegetated or Garden Roof.

23. All dwelling units including multi-family structures shall be designed with a single garage door serving all units.

24. Driveways shall be designed to shed water so that water does not pond on the surface. The wearing surface may be any of the materials specified in 13.22.030 G. 18., or a pervious, grass paving system.

25. Covenants shall describe sanctions against tree removal and the addition of impervious surfaces for patios, tennis courts, etc. Raised decks that allow the passage of water through decking shall not be considered impervious.

26. In addition to on-street parking specified in 13.22.030 G. 9., temporary parking for two cars per lot shall be provided. The wearing surface for these parking areas may be any of the materials specified in 13.22.030 G. 18., or a pervious, grass paving system. Cars shall not be allowed to park on vegetated surfaces unless pervious, grass-paving systems are provided.

27. Covenants shall describe provisions for maintenance of private streets.

28. All structures shall be protected by a full NFPA 13 compliant fire sprinkler system.

29. Non combustible siding and roofing materials for all structures and enclosed under floor areas are required.

30. There shall be a 30 foot defensible space in which only low lying native vegetation that do not form a means of readily transmitting fire from vegetation to any structure. Trees are allowed within the defensible space provided that the distances between crowns and crowns from adjacent trees, structures, or unmodified fuel is not less than 15 feet. Trees shall be maintained free of dead wood and litter. Exception: the following construction standards may be substituted for defensible space:

- a) Roofs shall have at least Class B roof covering or an approved noncombustible roof covering. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be fire stopped to preclude entry of flames or embers.
- b) Combustible eaves, fascias and soffits shall be enclosed with solid materials with a minimum thickness of $\frac{3}{4}$ inch. No exposed rafter tails shall be permitted unless constructed of heavy timber materials.
- c) Gutters and downspouts should generally be avoided, but if used shall be constructed of noncombustible material.
- d) Exterior walls of buildings or structures shall be constructed with materials approved for a minimum of one-hour-rated fire-resistive construction on the exterior side or constructed with approved non-combustible materials. Such material shall extend from the top of the foundation to the underside of the roof sheathing.
Exception: Heavy timber or log wall construction.
- e) Buildings or structures shall have all underfloor areas enclosed to the ground, with exterior walls in accordance with (d) above.
Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior one-hour rated fire-resistive construction or heavy timber construction.
- f) Unenclosed accessory structures attached to buildings with habitable spaces and projections, such as decks, shall be a minimum of one-hour-rated fire-resistive construction, heavy timber construction or constructed with approved noncombustible materials. When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas enclosed to within 6 inches of the ground, with exterior wall construction in accordance with (d) above.
Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior one-hour rated fire-resistive construction or heavy timber construction, or constructed with approved non-combustible materials.
- g) Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, multi-layered glazed panels, glass block or have a fire-protection rating of not less than 20 minutes.
- h) Exterior doors shall be approved noncombustible construction, solid core wood not less than $1\frac{3}{4}$ inch thick, or have a fire-protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with (d) above.
- i) Attic ventilation openings, foundation or underfloor vents or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches each. Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed $\frac{1}{4}$ inch. Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located at least 10 feet from property lines.

Underfloor ventilation openings shall be located as close to grade as practical.

13.22.040 Official approval.

All projects proposed utilizing the alternative standards of this chapter 13.22 shall be approved in conjunction with a plat or an official site plan pursuant to the provisions of this code in recordable form which shall be binding upon the owners of the real property, their heirs and assigns. Such plat or official site plan shall include a specific land clearing and tree retention plan, which shall be referenced upon the face of the plat, or binding site plan. All development of the land, site design, landscaping, natural drainage features, habitat protection, stormwater design and the design, placement and size of housing or other buildings and any additional site features shall be consistent with the approved plat or site plan. Any changes will require a formal application and amendment of either the plat or the official adopted site plan pursuant to the provisions of the Tumwater Municipal Code.

13.22.050 Evaluation and monitoring.

Each application for approval of a project pursuant to the terms of this chapter shall be accompanied by a proposed monitoring and evaluation process designed to measure the performance of specific elements addressed in the deviations sought for the project. After the approval of a project, the city shall, with such cooperation as may be required of the property owner, document project progress, and in particular, those innovations and code deviations granted as part of such project approval. Written progress evaluations shall be prepared by the staff of the Development Services Department and provided to the City Council. An annual report on all such approved projects shall be prepared for the City Council including a summary description and evaluation of each selected project and any recommendations regarding substantive changes to the Tumwater Municipal Code which are supported by such evaluation."

Section 2. This ordinance shall become effective thirty days after passage, approval and publication as provided by law.

ADOPTED this 2nd day of April, 2002.

CITY OF TUMWATER
Ralph C. Osgood, Mayor

ATTEST:
Gayla Gjertsen, Clerk/Treasurer

PUBLISHED: 4-5-2002

APPROVED AS TO FORM:
Pat Brock, City Attorney

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City of Tumwater
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