

# Draft Wellhead Protection Ordinance

---

## Draft Wellhead Protection Ordinance, County of Maui, Hawaii

### 1. PURPOSE AND INTENT

The jurisdiction of Maui County recognizes that many residents rely on groundwater for their safe drinking water supply, and that certain land uses can contaminate groundwater. To ensure the protection of these drinking water supplies, this ordinance establishes a zoning overlay district to be known as the Wellhead Protection Overlay District.

The purpose of the Wellhead Protection Overlay District is to protect public health and safety by minimizing contamination of aquifers and preserving and protecting existing and potential sources of drinking water supplies. It is the intent to accomplish this through both public education and public cooperation, as well as by creating appropriate land use regulations that may be imposed in addition to those currently imposed by existing zoning districts or other county regulations.

The Wellhead Protection Overlay District is superimposed on current zoning districts and shall apply to all new construction, reconstruction, or expansion of existing buildings and new or expanded uses. Applicable activities/ uses allowed in a portion of one of the underlying zoning districts which fall within the

Wellhead Protection Overlay District must additionally comply with the requirements of this district. Uses prohibited in the underlying zoning districts shall not be permitted in the Wellhead Protection Overlay District.

## **2. DEFINITIONS**

For the purposes of this section, the following terms are defined below:

**AQUIFER.** A geological formation, group of formations or part of a formation composed of rock, sand or gravel capable of storing and yielding groundwater to wells and springs.

**CONTAMINATION.** An impairment of water quality by chemicals, radionuclides, biologic organisms, or other extraneous matter whether or not it affects the potential or intended beneficial use of water.

**DEVELOPMENT.** The carrying out of any construction, reconstruction, alteration of surface or structure or change of land use or intensity of use.

**FACILITY.** Something that is built, installed, or established for a particular purpose.

**HAZARDOUS MATERIAL.** A material which is defined in one or more of the following categories:

**Ignitable:** A gas, liquid or solid which may cause fires through friction, absorption of moisture, or which has low flash points. Examples: white phosphorous and gasoline.

**Carcinogenic:** A gas, liquid, or solid which is normally considered to be cancer causing or mutagenic. Examples: PCB's in some waste oils.

**Explosive:** A reactive gas, liquid or solid which will vigorously and energetically react uncontrollably if exposed to heat, shock, pressure or combinations thereof. Examples: dynamite, organic peroxides and ammonium nitrate.

**Highly Toxic:** A gas, liquid, or solid so dangerous to man as to afford an unusual hazard to life. Example: chlorine gas.

**Moderately Toxic:** A gas, liquid or solid which through repeated exposure or in a single large dose can be hazardous to man.

Corrosive: Any material, whether acid or alkaline, which will cause severe damage to human tissue, or in case of leakage might damage or destroy other containers of hazardous materials and cause the release of their contents. Examples: battery acid and phosphoric acid

PRIMARY CONTAINMENT FACILITY. A tank, pit, container, pipe or vessel of first containment of a liquid or chemical.

RELEASE. Any unplanned or improper discharge, leak, or spill of a potential contaminant including a hazardous material.

SECONDARY CONTAINMENT FACILITY. A second tank, catchment pit, pipe, or vessel that limits and contains liquid or chemical leaking or leaching from a primary containment area; monitoring and recovery are required,

TIME-OF-TRAVEL DISTANCE. The distance that groundwater will travel in a specified time. This distance is generally a function of the permeability and slope of the aquifer.

WELLHEAD PROTECTION AREA. The surface and subsurface area surrounding a water well or wellfield, that supplies a public water supply system, through which contaminants are reasonably likely to move toward and reach the water well or wellfield.

WELLHEAD PROTECTION OVERLAY DISTRICT: The zoning district defined to overlay other zoning districts in Maui County. This district may include the designated wellhead protection areas as identified on Land Zoning Maps.

### **3. ZONES WITHIN THE WELLHEAD PROTECTION OVERLAY DISTRICT**

#### **3.1 ZONE A1 – 50 FEET DIRECT CHEMICAL CONTAMINATION ZONE.**

Zone A1 is defined as the fixed 50 feet radius around each well. The purpose of this zone is to provide protection from vandalism, tampering, or other threats at the well site.

##### **a. Permitted Uses.**

The following uses are allowed within Zone A1 provided they meet the appropriate performance standards outlined in 3.1.b below and are designed so as to prevent any groundwater contamination.

---

**Draft Wellhead Protection Ordinance**

---

Necessary public utilities/facilities including the construction, maintenance, repair, and enlargement of drinking water supply related facilities such as, but not limited to, wells, pipelines, aqueducts, and tunnels.

**b. Performance Standards:**

Vehicles shall not be parked in the immediate well area, even when working on well maintenance or repair, unless required for power supply

Motor oil, fuel, paints, and any maintenance chemicals shall not be stored in the pump house or Zone A1.

Any underground storage tanks, hazardous materials, and septic systems shall be removed or relocated from this zone, where possible

Hazardous materials shall be stored in a secure building on an impermeable surface with adequate spill containment

Propane gas shall be used for power pumps

Any non-water supply activities shall be kept out of the Zone A1 area

**3.2 ZONE A2 – 1,000 FEET DIRECT CHEMICAL CONTAMINATION ZONE.**

Zone A2 is defined as the intersection of the modeled Wellhead Protection Area and the fixed 1,000 feet radius around each well. The purpose of this zone is to provide minimum distance from sources of pollution consistent with Hawaii Well Construction and Pump Installation Standards.

**a. Prohibited Uses:**

The following uses are prohibited within Zone A2:

Cesspool, septic tank, or subsurface sewage leaching field

Hazardous waste landfills and ponds, or chemical storage

Treated effluent injection well

**3.3 ZONE B – INDIRECT MICROBIAL CONTAMINATION ZONE: 2 YEAR TRAVEL TIME.**

Zone B consists of the surface area overlying the portion of the aquifer(s) that contributes water to the well within a two-year time-of-travel.

**a. Permitted Uses:**

All other uses permitted in the underlying zoning districts, unless prohibited under 3.3 b. provided that they can meet the Performance Standards as outlined for the Wellhead Protection Overlay District under 3.3.e.

Minimum lot size for unsewered residential uses shall be two acres, except for; a) existing lots of record on the effective date of this Ordinance and b) developments which will be served by municipal sewer within five years of the approval of the development. In order to provide for efficiently serving these developments with municipal sewer, lots smaller than two acres can be approved, provided that sufficient land area will be maintained in an undeveloped state such that no more than one residence is allowed for each two acres of the overall development.

New development construction shall implement best management practices described in 3.3.e.

**b. Prohibited Uses.**

The following uses are prohibited within Zone B, the two-year time-of-travel zone.

Electrical/electronic manufacturing facility;

Funeral services/graveyards

Golf courses

Metal plating/finishing/fabricating facility;

Chemical processing/storage facility;

Plastics/synthetic production facility;

Junk/scrap/salvage yard;

Major transportation corridors/highways/freeways/turnpikes;

Mines/gravel pit

Landfills/dumps

Injection wells/dry wells/sumps;

---

**Draft Wellhead Protection Ordinance**

---

Artificial recharge projects (non-potable water)

Reclaimed wastewater irrigation class R2 and R3

Sewage sludge land application

Underground storage tanks, (except those with spill, overflow, and corrosion protection requirements in place);

All uses not permitted in the underlying zone district

**c. Prohibited Uses Subject To Exception:**

The following uses, unless granted an exception under 3.3.d., are prohibited within Zone B, the two-year time-of-travel zone.

Automobile body/repair shop;

Car washes;

Cement/concrete plants;

Gas station;

Fleet/trucking/bus terminal;

Dry cleaner;

Irrigated crops using soil fumigants (> 50 acres) or pesticides with high leachability;

Land divisions resulting in high density (>1 unit/2 acre) septic systems;

Machine shop;

Wood preserving/treating facility;

Confined animal feeding operations

Equipment maintenance/fueling areas;

Hospitals;

Parking lots/malls (>50 spaces);

Reclaimed wastewater irrigation R1 or better;

Waste transfer/recycling stations;

Above ground storage tanks;

All other facilities involving collection, handling, manufacture, use, storage, transfer or disposal of any solid or liquid material or waste having potentially harmful impact on groundwater quality;

**d. Exceptions:**

Where the underlying zoning permits a use that would be prohibited by this ordinance, a wellhead area exception may be granted by the County Department of Water Supply, provided that the use conforms to provisions of the underlying zoning district as certified by the County Department of Planning, meets the performance standards outlined in 3.3.e below, follows design guidelines outlined in section 4, that any concerns of the State Department of Health have been addressed, and that adequate information to evaluate the project has been provided.

Exception may be approved by the County Department of Water Supply for expansion of existing non-conforming uses to the extent allowed by the underlying district. The applicant should consult the local zoning plan to confirm nonconforming uses. The County Department of Water Supply reserves the right to review all applications and shall not grant approval unless it finds such expansion does not pose greater potential contamination of groundwater than the existing use.

**e. Performance Standards:**

The following standards shall apply to uses in Zones B and C of the Wellhead Protection Overlay District:

Any facility involving the collection, handling, manufacture, use, storage, transfer or disposal of any solid or liquid material or wastes, unless granted a special exception either through permit or another ordinance, must have a secondary containment system which is easily inspected and whose purpose is to intercept any leak or release from the primary containment vessel or structure. Underground tanks must be in compliance with underground storage tank rules adopted January 28,2000 in HAR Title 11 Chapter 281.

Open liquid waste ponds containing materials referred to in item (1) above will not be permitted without a secondary containment system.

---

**Draft Wellhead Protection Ordinance**

---

All permitted facilities must adhere to appropriate federal and state standards for storage, handling and disposal of any hazardous waste materials.

All abandoned wells should be properly plugged according to local and state regulations.

Confined animal facilities should meet “Management Measure for Wastewater and Runoff from Confined Animal Facilities” as set in Hawaii’s Coastal Nonpoint Pollution Control Program Management Plan, Volume 1, 1996.

Irrigated crops should implement Integrated Pest Management in accordance with US Department of Agriculture Natural Resources Conservation Service Technical Guide 1989.

Construction activities shall be in accordance to County Code Chapter 20.08 and these standards:

There shall be a designated person on site during operating hours who is responsible for supervising the use, storage, and handling of hazardous material and who shall take appropriate mitigating actions necessary in the event of fire or spill.

Hazardous materials left on site when the site is unsupervised must be inaccessible to the public. Locked storage sheds, locked fencing, locked fuel tanks on construction vehicles, or other techniques may be used if they will preclude access.

Construction vehicles and stationary equipment that are found to be leaking fuel, hydraulic fluid, and/or other hazardous materials shall be removed from the site and from Wellhead Protection Zones A, B or C. The vehicle or equipment may be repaired in place, provided the leakage is completely contained.

Storage and dispensing of flammable and combustible liquids from tanks, containers, and tank vehicles into the fuel and fluid reservoirs of construction vehicles or stationary equipment on the construction site shall be in accordance with these standards and County Fire Code Chapter 16.04A

Hazardous materials and other deleterious substances shall not be allowed to enter stormwater systems.

**3.4 ZONE C – INDIRECT CHEMICAL CONTAMINATION ZONE: 10 YEAR TRAVEL TIME.**

Zone C consists of the surface area overlying the portion of the aquifer(s) that contributes water to the well within a ten-year time-of-travel.



**a. Permitted Uses:**

All other uses permitted in the underlying zoning districts, unless prohibited under 3.3 b. provided that they can meet the Performance Standards as outlined for the Wellhead Protection Overlay District under 3.3.e.

**b. Prohibited Uses.**

The following uses are prohibited within Zone C, the ten-year time-of-travel zone.

Electrical/electronic manufacturing facility;

Chemical processing/storage facility;

Plastics/synthetic production facility;

Junk/scrap/salvage yard;

Metal plating/finishing/fabricating facility;

Mines/gravel pit

Landfills/dumps

Injection wells/dry wells/sumps;

Underground storage tanks, (except those with spill, overflow, and corrosion protection requirements in place);

All uses not permitted in the underlying zone district

**c. Prohibited Uses Subject To Exception:**

The following uses, unless granted an exception under 3.4.d., are prohibited within Zone B, the ten-year time-of-travel zone.

Automobile body/repair shop;

Gas station;

Fleet/trucking/bus terminal;

Dry cleaner;

Golf courses;

Machine shop;

Wood preserving/treating facility;

Confined animal feeding operations

Land divisions resulting in high density (>1 unit/acre) septic systems;

Equipment maintenance/fueling areas;

All other facilities involving collection, handling, manufacture, use, storage, transfer or disposal of any solid or liquid material or waste having potentially harmful impact on groundwater quality;

**d. Exceptions:**

Where the underlying zoning permits a use that would be prohibited by this ordinance, a wellhead area exception may be granted by the County Department of Water Supply, provided that the use conforms to provisions of the underlying zoning district as certified by the County Department of Planning, meets the performance standards outlined in 3.3.e below, follows design guidelines outlined in section 4, that any concerns of the State Department of Health have been addressed, and that adequate information to evaluate the project has been provided.

Exception may be approved by the County Department of Water Supply for expansion of existing nonconforming uses to the extent allowed by the underlying district. The applicant should consult the local zoning plan to confirm nonconforming uses. The County Department of Water Supply reserves the right to review all applications and shall not grant approval unless it finds such expansion does not pose greater potential contamination of groundwater than the existing use.

**4. DEVELOPMENT GUIDELINES**

The following design guidelines are encouraged for all new commercial, residential or mixed use development projects, excluding residential subdivisions of 2 lots or less in the 2-year time of travel Zone B:

Commercial and high-density residential development should be minimized and located at as far distance from the wellhead as possible.

Appropriate uses are open space, passive parks, schools and low density residential (minimum 2-acre lots)

The following design guidelines are encouraged for all new commercial, residential or mixed use development projects, excluding residential subdivisions of 2 lots or less in the 10 year time of travel Zone C:

High risk commercial and high-density residential development should be minimized and located at as far distance from the wellhead as possible.

Appropriate uses are open space, passive parks, schools, low risk commercial and low density residential (minimum 1-acre lots)

The following design guidelines are encouraged for all new commercial, residential or mixed use development projects, excluding residential subdivisions of 2 lots or less in Zone B and C:

Storm-water infiltration basins should be located outside the WHPA where feasible.

Active parks and schools should implement Integrated Pest Management.

Where development is proposed on property extending both inside and outside the WHPA, and where sufficient buildable land area exists on the portion of the property outside the WHPA boundary to accommodate the proposed development, and where applicable setbacks permit, that area in its entirety should be utilized before any land within the WHPA should be used. Where insufficient buildable land area exists on the portion of the property outside the WHPA to accommodate the proposed development, as much of the development as possible should be sited outside the WHPA.

Proposed development entirely within the WHPA should be grouped and sited on the subject parcel at as far distance as possible from the wellhead.

Expansions of existing uses should at least conform to these guidelines where the use is expanding beyond its' property boundaries.

Vegetative cover should be provided on all disturbed land areas, excluding fallow agricultural fields, not covered by paving, stone or other solid material. The maintenance or use of native plant materials with lower water and nutrient requirements is encouraged.

## **5. LIABILITY**

Nothing in this ordinance shall be construed to imply that the County of Maui has accepted any of an owner/developer's liability if a permitted facility or use contaminates groundwater in any aquifer.

**6. DISTRICT BOUNDARY DISPUTES**

If the location of the Wellhead Protection Overlay District boundary in relation to a particular parcel is in doubt, the rules in Chapter 19.06 apply.

**7. ENFORCEMENT**

- a. Any person may submit a verbal or written complaint alleging a violation of this ordinance.
- b. Any approval or permit issued pursuant to the provisions of this ordinance shall comply with all applicable requirements of Chapter 19.530.
- c. Where an exception to a prohibited use is granted condition to performance standards, the appropriate enforcement agency of the applicable performance standard shall be notified to follow up with inspection as needed.

**8. SAVING CLAUSE**

Should any section or provision of this ordinance be declared invalid, such decision shall not affect the validity of the ordinance as a whole or any other part thereof. A determination that any portion or provision of this overlay protection district is invalid shall not invalidate any special permit previously issued thereunder.

Approved by: \_\_\_\_\_

Date: \_\_\_\_\_