

RUSH

REQUEST FOR LEGAL SERVICES

Date: July 25, 2018
From: Alika Atay, Chair
Water Resources Committee

RECEIVED
CORPORATION COUNSEL

2018 JUL 25 PM 2:57

TRANSMITTAL

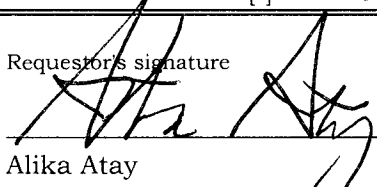
Memo to: DEPARTMENT OF THE CORPORATION COUNSEL
Attention: Jennifer Oana, Esq.

Subject: WELLHEAD PROTECTION OVERLAY DISTRICT (WR-18)

Background Data: Please review and, if appropriate, approve as to form and legality, the attached further revised proposed resolution. A signed, hard copy of the resolution is requested with your response.

Work Requested: ☒ FOR APPROVAL AS TO FORM AND LEGALITY

☐ OTHER:

Requestor's signature  Alika Atay	Contact Person James Krueger (Telephone Extension: 7761)
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- ☐ ROUTINE (WITHIN 15 WORKING DAYS) ☐ RUSH (WITHIN 5 WORKING DAYS)
☐ PRIORITY (WITHIN 10 WORKING DAYS) ☐ URGENT (WITHIN 3 WORKING DAYS)

☒ SPECIFY DUE DATE (IF IMPOSED BY SPECIFIC CIRCUMSTANCES): July 26, 2018, at 9:00 a.m.

REASON: For posting on July 26, 2018 for the August 1, 2018 WR Committee meeting agenda.

FOR CORPORATION COUNSEL'S RESPONSE

ASSIGNED TO: JMO	ASSIGNMENT NO. 2017-0094	BY: MM
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TO REQUESTOR: ☒ APPROVED ☐ DISAPPROVED ☐ OTHER (SEE COMMENTS BELOW)
☐ RETURNING--PLEASE EXPAND AND PROVIDE DETAILS REGARDING ITEMS AS NOTED

COMMENTS (NOTE - THIS SECTION NOT TO BE USED FOR LEGAL ADVICE):

Revised Reso to include Planning Director in #3

DEPARTMENT OF THE CORPORATION COUNSEL

Date 7/25/18

By 

(Rev. 7/03)

wr:ltr:018acc03

Attachment

Resolution

No. _____

REFERRING TO THE MAUI, MOLOKAI, AND LANAI PLANNING
COMMISSIONS A PROPOSED BILL AMENDING TITLE 19,
MAUI COUNTY CODE, RELATING TO WELLHEAD PROTECTION

WHEREAS, the Council is considering a proposed bill to amend Title 19, Maui County Code, to add a new Chapter 19.61, relating to a Wellhead Protection Overlay District; and

WHEREAS, Sections 8-8.4 and 8-8.6 of the Revised Charter of the County of Maui (1983), as amended, require that the appropriate planning commissions review proposed land use ordinances and provide findings and recommendations to the Council; now, therefore,

BE IT RESOLVED by the Council of the County of Maui:

1. That it hereby refers the proposed bill, entitled "A BILL FOR AN ORDINANCE AMENDING TITLE 19, MAUI COUNTY CODE, TO ESTABLISH A WELLHEAD PROTECTION OVERLAY DISTRICT," a copy of which is attached hereto as Exhibit "A" and made a part hereof, to the Maui Planning Commission, the Molokai Planning Commission, and the Lanai Planning Commission, pursuant to Sections 8-8.4 and 8-8.6 of the Revised Charter of the County of Maui (1983), as amended; and
2. That it respectfully requests that the Maui Planning Commission, the Molokai Planning Commission, and the Lanai Planning Commission transmit their respective findings and recommendations to the Council as expeditiously as possible; and

Resolution No. _____

3. That certified copies of this resolution be transmitted to the Mayor, the Acting Director of Water Supply, the Planning Director, the Maui Planning Commission, the Molokai Planning Commission, and the Lanai Planning Commission.

APPROVED AS TO FORM
AND LEGALITY:

A handwritten signature in black ink, appearing to read 'Jm', is written over a horizontal line.

JENNIFER M.P.E. OANA
Deputy Corporation Counsel
County of Maui

wr:misc:018areso02:jgk

07/24/18 DRAFT

ORDINANCE NO. _____

BILL NO. _____ (2018)

A BILL FOR AN ORDINANCE AMENDING TITLE 19, MAUI COUNTY CODE, TO
ESTABLISH A WELLHEAD PROTECTION OVERLAY DISTRICT

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Title 19, Maui County Code, is amended by adding a new
chapter to be appropriately designated and to read as follows:

"CHAPTER 19.61

WELLHEAD PROTECTION OVERLAY DISTRICT

Sections:

- 19.61.010 Purpose and intent.
- 19.61.020 Definitions.
- 19.61.030 Applicability.
- 19.61.040 Wellhead protection overlay district zones
and maps.
- 19.61.050 Regulations for Zone A.
- 19.61.060 Regulations for Zone B.
- 19.61.070 Regulations for Zone C.
- 19.61.080 Wellhead protection permits.
- 19.61.090 Best management practices.
- 19.61.100 Design guidelines.
- 19.61.110 Liability.
- 19.61.120 Interpretation of wellhead protection overlay district
zone boundaries.
- 19.61.130 Enforcement.
- 19.61.140 Administrative rules.
- 19.61.150 Severability.

19.61.010 Purpose and intent. Maui County recognizes
that many residents rely on groundwater for their safe drinking
water supply, and that certain land uses may contaminate

groundwater sources. To ensure the protection of these drinking water sources, this ordinance establishes a zoning overlay district to be known as the wellhead protection overlay district ("WPOD"). The purpose and intent of the WPOD is to:

- A. Protect the public's health, welfare, and safety by minimizing the risks of contamination of aquifers.
- B. Preserve and protect existing and potential drinking water sources.
- C. Implement land use policies consistent with the Maui County general plan and community plans.
- D. Restrict and prohibit land uses that are incompatible with groundwater protection.

19.61.020 Definitions. The following definitions shall apply to this chapter. Terms not defined below shall have the meanings set forth in section 19.04.040 of this title, unless the context clearly indicates a different meaning:

"Animal feeding operation" means a lot or facility (other than an aquatic animal production facility) where animals will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and where crops, vegetation forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility. Pasture operations are not animal feeding operations.

"Contamination" means an impairment of water quality by one or more of the substances regulated under the United States Environmental Protection Agency National Primary Drinking Water Regulations or under the Rules Relating to Public Water Systems pursuant to Hawaii Administrative Rules Title 11, Chapter 20.

"Dump" means a lawfully operated and privately-owned refuse disposal site.

"Hazardous material" means substances that are identified as hazardous waste by the United States Environmental Protection Agency, as set forth in 40 Code of Federal Regulations Part 261 Subpart D, or designated a hazardous substance by the United States Environmental Protection Agency pursuant to 40 Code of Federal Regulations Part 302.

"Integrated pest management" means a decision-making process that considers cultural, mechanical, biological, and chemical controls of pests such as insects or rodents. Control mechanisms are selected as each situation warrants. Where chemical control is indicated, specific pest populations are targeted for treatment when they are most vulnerable rather than by general pesticide application.

"Landfill" means any sanitary landfill maintained and operated by the County.

"Primary Containment Facility" means a tank, pit, container, pipe, vessel, or area containing a liquid or chemical that is not a secondary containment facility.

"Public water system" means a water system which provides water for human consumption through pipes or other constructed conveyances if the system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least sixty days out of any twelve-month period, as defined in section 11-20-2 of the Hawaii Administrative Rules. Such term includes any collection treatment, storage, and distribution facility under control of the operator of such system; and any collection or pretreatment storage facility not under such control which is used primarily in connection with such system.

"Regulated substance" means a substance regulated under the United States Environmental Protection Agency National Primary Drinking Water Regulations or under the Rules Relating to Public Water Systems pursuant to Hawaii Administrative Rules Title 11, Chapter 20.

"Release" means any unplanned or unpermitted discharge, leak, or spill of a potential contaminant including a hazardous material.

"Secondary containment facility" means a second tank, catchment pit, pipe, or vessel that limits and contains liquid or chemicals leaking or leaching from a primary containment facility.

"Sewage sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, industrial process, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

"Subdivision" means a subdivision as defined in title 14, article 1, of this code.

"Time-of-travel distance" or "TOT distance" means 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 overlay district" or "WPOD" means the zoning district consisting of the surface and subsurface areas surrounding a water well or well field that are regulated to prevent contaminants from reaching the water well or well field, as identified on the maps entitled "Wellhead Protection Overlay District," on file in the office of the county clerk with certified copies being placed on file in the department of planning and the department of water supply. The maps shall be deemed to accompany, and are made a part of, the ordinance codified in this title, and may be amended in the same manner as any part of this title.

19.61.030 Applicability. This ordinance shall apply to wellhead protection overlay district zones as defined herein for department of water supply wells, and not to private wells. Nonconforming uses as defined in section 19.04.040 of this title are subject to the provisions of section 19.500.110 of this title.

19.61.040 Wellhead protection overlay district zones and maps. A. WPOD zones are delineated by the University of Hawaii Department of Geology and Geophysics utilizing a fixed distance for Zone A nearest to the well, and TOT distance criteria for Zones B and C using the United States Geological Survey three-dimensional numerical groundwater model MODFLOW followed by a particle tracking program MODPATH. Zone B is intended to designate a conservative estimate of the area that may contribute bacteria and viruses to the wellhead. A two-year TOT criterion is based on survival times for bacteria and viruses in soil and groundwater. Zone C is based on a ten-year TOT to allow sufficient time to implement management and remedial measures to mitigate contamination from accidental contaminant spills and other causes.

B. The WPOD zones are superimposed on all current zoning districts and identified on the maps entitled "Wellhead Protection Overlay District."

C. The WPOD zones are designated as follows, with Zone A being the most restrictive and Zone C being the least restrictive:

1. Zone A - 50-foot direct chemical contamination zone. Zone A is defined as the fixed 50-foot radius around each well. The purpose of this zone is to provide protection from vandalism, tampering, or other threats at a well site.

2. Zone B - Indirect microbial contamination zone. Zone B consists of the surface and subsurface area overlying the portion of an aquifer that contributes water to the well within two years.

3. Zone C - Indirect chemical contamination zone. Zone C consists of the surface and subsurface area overlying the portion of an aquifer that contributes water to the well within ten years.

19.61.050 Regulations for Zone A. Within Zone A, necessary public utilities and facilities shall be permitted uses, including the construction, operations, maintenance, repair, and enlargement of drinking water supply-related facilities such as wells, pipelines, aqueducts, and tunnels. All other uses are prohibited. No wellhead protection permits shall be issued for parcels within Zone A.

19.61.060 Regulations for Zone B. A. Within Zone B, all uses permitted in the underlying zoning districts shall be permitted, unless a wellhead protection permit is required pursuant to subsection B of this section, or a use is prohibited by subsection C.

B. Permit required. The following uses in Zone B shall require a wellhead protection permit issued by the director of water supply pursuant to section 19.61.080:

1. Commercial automobile body or commercial automobile repair shops.

2. Car washes.
3. Cement or concrete plants.
4. Petroleum or mixed-biofuel fueling stations.
5. Fleet, trucking, or bus terminals.
6. Dry cleaners.
7. The use of pesticides rated by the United States

Environmental Protection Agency as having high leachability potential, as identified on the document entitled "State of Hawaii Department of Agriculture List of Pesticides of Concern," with current copies on file with the department of water supply. This document, as may be amended by the State Department of Agriculture from time to time, shall be deemed to accompany the ordinance codified in this title, as may be amended, and is made a part of the ordinance.

8. Commercial machine shops.
9. Commercial wood preserving or treatment facilities.
10. Animal feeding operations.
11. Commercial equipment maintenance or fueling areas.
12. Hospitals.
13. Paved and unpaved parking lots with more than 20 parking spaces.
14. Waste transfer or recycling stations.
15. Any collection, handling, manufacture, use, storage, transfer, or disposal of more than fifty-five gallons of petroleum products or more than ten gallons of any other regulated substance as defined herein.
16. Subdivisions that create four or more developable lots.
17. Construction of three or more dwelling units on a single lot, parcel, or site.

C. Prohibited uses. The following uses are prohibited within Zone B:

1. Commercial electrical or electronic manufacturing facilities that utilize a regulated substance as defined herein.
2. Mortuaries or graveyards.
3. Golf courses.
4. Commercial metal plating, finishing, or fabricating facilities that utilize a regulated substance as defined herein.
5. Commercial chemical processing or storage facilities.
6. Commercial plastics or synthetic production facilities that utilize a regulated substance as defined herein.
7. Commercial junk, scrap, or salvage yards.
8. Mines.
9. Landfills or dumps.
10. Injection wells, dry wells, or sumps on non-residential properties.

11. Irrigation with reclaimed wastewater classes R-2 and R-3.
12. Sewage sludge land applications.
13. Commercial slaughterhouses.
14. Wastewater percolation ponds.

19.61.070 Regulations for Zone C. A. Within Zone C, all uses permitted in the underlying zoning districts shall be permitted, unless a wellhead protection permit is required pursuant to subsection B of this section, or a use is prohibited by subsection C.

B. Permit required. The following uses in Zone C shall require a wellhead protection permit issued by the director of water supply pursuant to section 19.61.080:

1. Commercial automobile body or repair shops.
2. Petroleum or mixed-biofuel fueling stations.
3. Fleet, trucking, or bus terminals.
4. Dry cleaners.
5. Golf courses.
6. Commercial machine shops.
7. Commercial wood preserving or treatment facilities.
8. Animal feeding operations.
9. Commercial equipment maintenance or fueling areas.
10. Any collection, handling, manufacture, use, storage, transfer, or disposal of more than fifty-five gallons of petroleum products or more than ten gallons of any other regulated substance as defined herein.
11. Subdivisions that create four or more developable lots.
12. Construction of three or more dwelling units on a single lot, parcel, or site.

C. Prohibited uses. The following uses are prohibited within Zone C:

1. Commercial electrical or electronic manufacturing facilities that utilize a regulated substance as defined herein.
2. Commercial chemical processing or storage facilities.
3. Commercial plastics or synthetic production facilities that utilize a regulated substance as defined herein.
4. Commercial junk, scrap, or salvage yards.
5. Commercial metal plating, finishing, or fabricating facilities that utilize a regulated substance as defined herein.
6. Mines.
7. Landfills or dumps.
8. Injection wells, dry wells, or sumps on non-residential properties.

9. Wastewater percolation ponds.

19.61.080 Wellhead protection permits.

A. Wellhead protection permit applications shall be submitted to the director of water supply and shall include:

1. The name, address, and phone number of the applicant who will be responsible for implementation of best management practices.
2. Verification of property ownership and authorization by all property owners if the applicant is not the sole owner of the subject property.
3. The tax map key of the project site.
4. A plot plan showing the project location on the parcel.
5. A description of the proposed use, including names and quantities of any regulated substances collected, handled, manufactured, used, stored, transferred, or disposed of at the project site.
6. A best management practices plan addressing all activities subject to the wellhead protection permit.
7. Additional information as may be requested by the director of water supply.

B. Permit processing.

1. Upon receipt of a complete application, the director of water supply shall approve or deny the application pursuant to the requirements of this chapter, and may impose conditions upon the proposed use to ensure that the purpose and intent of this chapter are met. If a complete application does not meet the requirements of this chapter, it shall be denied.

2. An initial permit shall be valid for a period of up to five years. Subsequent permit renewals and permit amendments may be granted by the director of water supply for longer duration. In reviewing applications for renewals, the director of water supply shall require evidence of compliance with applicable best management practices and any other permit conditions.

3. All permits and renewals shall contain a provision for inspection at reasonable times and upon presentation of appropriate credentials.

C. Revocation and appeal. A wellhead protection permit may be revoked at any time and an application for permit renewal may be denied by the director of water supply if the permit terms and conditions have been violated or if the requirements of this chapter have not been met. Appeals of permit denials, revocations, or non-renewals, or alleging errors, shall be heard and determined by the board of variances and appeals pursuant to chapter 19.520 of this title.

19.61.090 Best management practices. The following standards shall apply to uses in Zones B and C of any WPOD:

A. Any collection, handling, manufacture, use, storage, transfer, or disposal of more than fifty-five gallons of petroleum products or more than ten gallons of any regulated substance as defined herein, must have a secondary containment facility which shall be easily inspected and whose purpose is to intercept any leak or release from the primary containment facility.

B. An animal feeding operation shall meet the minimum requirements for operation set forth in the "Guidelines for Livestock Waste Management" prepared by the University of Hawaii at Manoa Cooperative Extension Service, College of Tropical Agriculture and Human Resources, dated January 19, 2010, as may be amended.

C. The irrigation of crops shall follow integrated pest management in accordance with the United States Department of Agriculture Natural Resources Conservation Service Technical Guide dated 1989, as may be amended.

D. Subdivisions that create four or more developable lots in unsewered areas that serve more than one residential unit per acre shall install aerobic treatment units or alternative treatment units achieving equal or higher level of wastewater treatment than aerobic treatment units.

E. Parking lots shall be maintained on a yearly basis, including cleaning catch basins, and sweeping and sealing cracks. Runoff from parking lots shall be diverted to storm water drains.

F. Waste transfer or recycling stations shall have an operating manual to ensure that only clean, marketable recyclables are collected. Storage of residuals shall be accomplished to prevent spillage and leaking.

G. Golf course development shall meet best management practices for use of nutrients and pesticides as set forth in "Golf Course Management Measure," Hawaii's Coastal Nonpoint Pollution Control Program Management Plan, dated June 1996, as may be amended.

H. Construction activities shall be in accordance with chapter 20.08 of this code and the following standards:

1. There shall be a designated person on site during construction activities who shall be 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.

2. 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 prevent access.

3. Construction vehicles and stationary equipment that are found to be leaking fuel, hydraulic fluid, or other hazardous materials shall be removed from the site and from

any wellhead protection overlay district zone. The vehicle or equipment may be repaired in place, provided the leakage is completely contained.

4. Hazardous materials shall not be allowed to enter stormwater systems.

19.61.100 Design guidelines. Upon issuance of the appropriate wellhead protection permit for parcels in Zone B or C, the following design guidelines shall apply to subdivisions that create four or more developable lots, and to the construction of three or more dwelling units on a single lot, parcel, or site:

1. Proposed development and uses shall be located as far from the wellhead as feasible.

2. Storm-water infiltration basins shall be located outside the WPOD where feasible, provided that if this is not feasible, then the basins shall be located as far from the wellhead as feasible.

3. Active parks and schools shall implement integrated pest management.

4. If a development or use is proposed on property which is partially within a WPOD, the proposed development or use shall be located to the maximum extent feasible on the portion of the property that is outside the WPOD.

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

19.61.120 Interpretation of wellhead protection overlay district zone boundaries.

A. If parts of a parcel lie within one or more of the delineated zones of the WPOD, each part shall be governed by the restrictions applicable to the zone in which the part is located.

B. Where the boundary between two WPOD zones passes through a facility, the entire facility shall be considered in the more restrictive zone.

C. Where a facility, or portion thereof, is overlapped by delineated WPOD zones of different wells or well fields, the more restrictive zone shall apply.

19.61.130 Enforcement. Any violation of this chapter shall be enforced pursuant to chapter 19.530 of this title, and through revocation or non-renewal as prescribed herein.

19.61.140 Administrative rules. The planning director and the director of water supply may adopt administrative rules regarding the administration of this chapter, pursuant to chapter 91, Hawaii Revised Statutes.

19.61.150 Severability. 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 wellhead protection overlay district is invalid shall not invalidate any permit previously issued hereunder.”

SECTION 2. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM
AND LEGALITY:

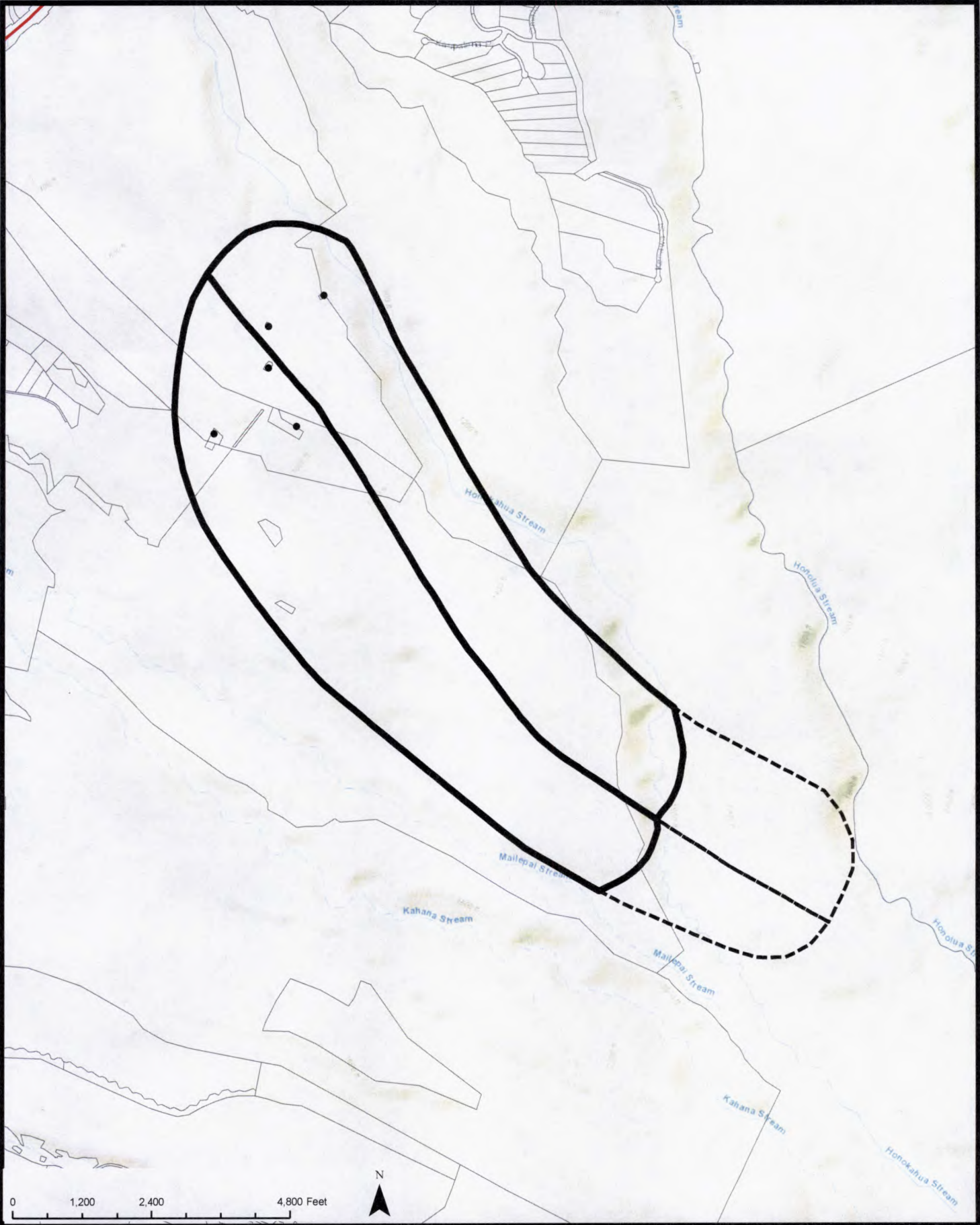
EDWARD S. KUSHI, JR.
First Deputy Corporation Counsel

DRAFT

STATE OF HAWAII DEPARTMENT OF AGRICULTURE
LIST OF PESTICIDES OF CONCERN

Common Name	Brand/Other Name
Alachlor	
Acephate	
Acetochlor	Surpass, Fultime, Topnotch
Acifluorfen	
Aldicarb	Temik
Atrazine	Aatrex
Bentazon	Basagran
Azinphos-methyl	Guthion, azinphosmethyl, azinphos
Azoxystrobin	Azoxystrobin, Heritage, Amistar, Quadris, Bankit
Bensulfuron methyl	
Bispyribac-sodium	
Bromacil	Krovar, Hyvar
Carbaryl	Carbaryl
Chloropicrin	PS and nitrochloroform
Chlorothalonil	Bravo, Daconil, tetrachloroisophthalonitrile, Daconil, Celeste, Bronco, Agronil, Aminil
Chlorsulfuron	
Clomazone	Dimethazone
Cycloate	Dimethazone
Dacthal	Dacthal
2,4-D, 2-ethylhexyl ester	
2,4-D, diethanolamine salt	
2,4-D, dimethylamine salt	
2,4-D, isooctyl ester	
2,4-DP-P, dimethylamine salt (dichlorprop-P, dimethylamine salt)	
Dazomet	Mylon; Basamid, Thiazone; Mylone; Tiazon; DMTT; Dimethylformocarbthialdine; Carbothialdin; Basamide; Nefusan
Diazinon	Diethoxy-[(2-isopropyl-6-methyl-4-pyrimidinyl)oxy]-thioxophosphorane
Dicamba, diglycolamine salt	
Dicamba, dimethylamine salt	
Dicamba	Dicamba
Dichlobenil	
Dichloran	
Diffenazopyr, sodium salt	
Dimethenamid-P	Frontier Herbicide, Dimethenamid-P ((S)-isomer) ¹
Dimethoate	O,O-dimethyl S-methylcarbamoylmethyl phosphorodithioate Phosphorodithioic acid, O,O-Dimethyl S-(2-(methylamino)-2-oxoethyl)ester
Dinotefuran	RS-1-methyl-2-nitro-3-[(tetrahydro-3-furanyl) methyl] guanidine; MTI-446
Diquat dibromide	1,1'-Ethylene-2,2'-bipyridyldiylum dibromide
Dithiopyr	
Diuron	Diuron, Karmex, Krovar
Endothall, dipotassium salt	
Endothall, mono (N,N-dimethyl alkylamine) salt	
EPTC	
Ethofumesate	
Ethoprop	
Fenoxycarb	Varikill, Insegar, Logic
Fludioxonil	
Flutolanil	
Fosetyl-Al (aluminum tris)	
Halosulfuron-methyl	
Hexazinone	Hexazinone, Pronone, Velpar
Imazamox, ammonium salt	
Imazapic, ammonium salt	
Imazethapyr, ammonium salt	

Imidacloprid	
Iprodione	Glycophene, Promidione
Isoxaben	Benzamizole, Flexidor, Gallery, X-Pand, Prolan
Lindane	Agrox, Kernal Guard, Lindane
Linuron	Linex, Lorox
Malathion	2-(dimethoxyphosphinothioylthio) butanedioic acid diethyl ester, Malathion, Carbofos, Maldison, Mercaptothion, Ortho malathion
Mefenoxam	
Metaldehyde	2,4,6,8-tetramethyl-1,3,5,7-tetraoxocanemetacetaldehyde
Metalaxyl	Allegiance, Apron, Gaucho, Raxil, Ridomil, Rival, Subdue
Methiocarb	Mercaptodimethur, Mesurol
Methomyl	Bluestreak, Deosect, Lannate, Mesomile, Methomex, Nudrin
Methyl isothiocyanate	MITC
Methyl parathion	E605
Metolachlor	Drexel, Parallel, Bicep, Dual, Cinch, Lexar, Medal
(S)-Metolachlor	Dual, Pimagram, Bicep, CGA-24705, Pennant
Metribuzin	Axium, Metribuzin, Sencor
Napropamide	
Nitrapyrin	
Oryzalin	
Oxydemeton-methyl	Methylmercaptophos oxide
Penoxsulam	
Phorate	Thimet (trademark)
Picloram	Tordon, Grazon, Pathway
Piperonyl butoxide	
Prometon	Enforcer, Pramitol, Turf King
Prometryn	
Propanil	Propanide
Propyzamide	
Pyrazon	
Rimsulfuron	
Siduron	
Simazine	Pramitol, Princep, Simazine
Sulfometuron-methyl	
Tebuthiuron	Brulan; Brush Bullet; EL-103; Graslan; Perflan; Herbec; Herbic; Reclaim, Spike, Sprakel
Terrazole	
Thiamethoxam	
Thiobencarb	
Thiophanate methyl	
Triallate	
Triclopyr, butoxyethyl ester	
Triclopyr, triethylamine salt	
Uniconazole-P	
Vinclozolin	Ronilan, Curalan, Vorlan, Touche, Vinclozoline



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS

NOTE:

WPOD zones were delineated by the University of Hawaii Department of Geology & Geophysics utilizing fixed distance for the ZONE A nearest the well and Time of Travel (TOT) criteria for Zones B and C using the USGS 3-dimensional numerical groundwater model, MODFLOW, followed by the particle tracking program, MODPATH.

ZONE B is intended to designate a conservative estimate of the area that may contribute bacteria and viruses to the wellhead.
A 2-year TOT criterion is based on survival times for bacteria and viruses in soil and groundwater.

ZONE C is based on a 10-year TOT to allow sufficient time to implement management and remedial measures to mitigate contamination from accidental contaminant spills and other causes.

OFFICE OF THE COUNTY CLERK

200 SO. HIGH ST., WAILUKU, MAUI, HAWAII 96793

**WELLHEAD PROTECTION
OVERLAY DISTRICT
MAP No. 1**

AREA SOUTH-EAST OF NAPILI, MAUI

APPROVED:

COUNTY CLERK

DATE

APPROVED:

PLANNING DIRECTOR

DATE

PUBLIC HEARING: _____

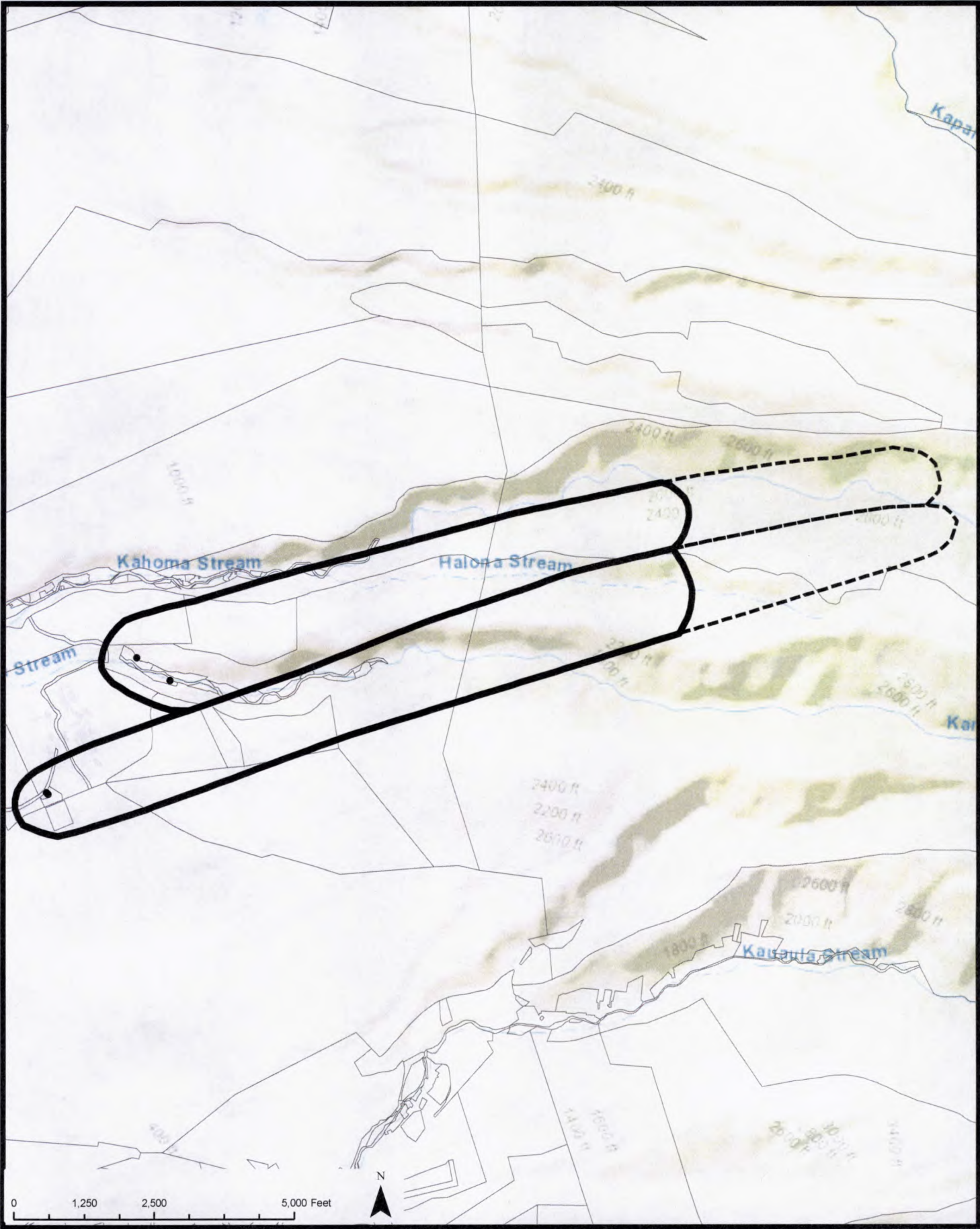
ADOPTED BY
COUNCIL: _____

ADOPTED BY
MAYOR: _____

BILL No./YEAR _____

ORDINANCE No. _____

WPOD Map 1



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⋯ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



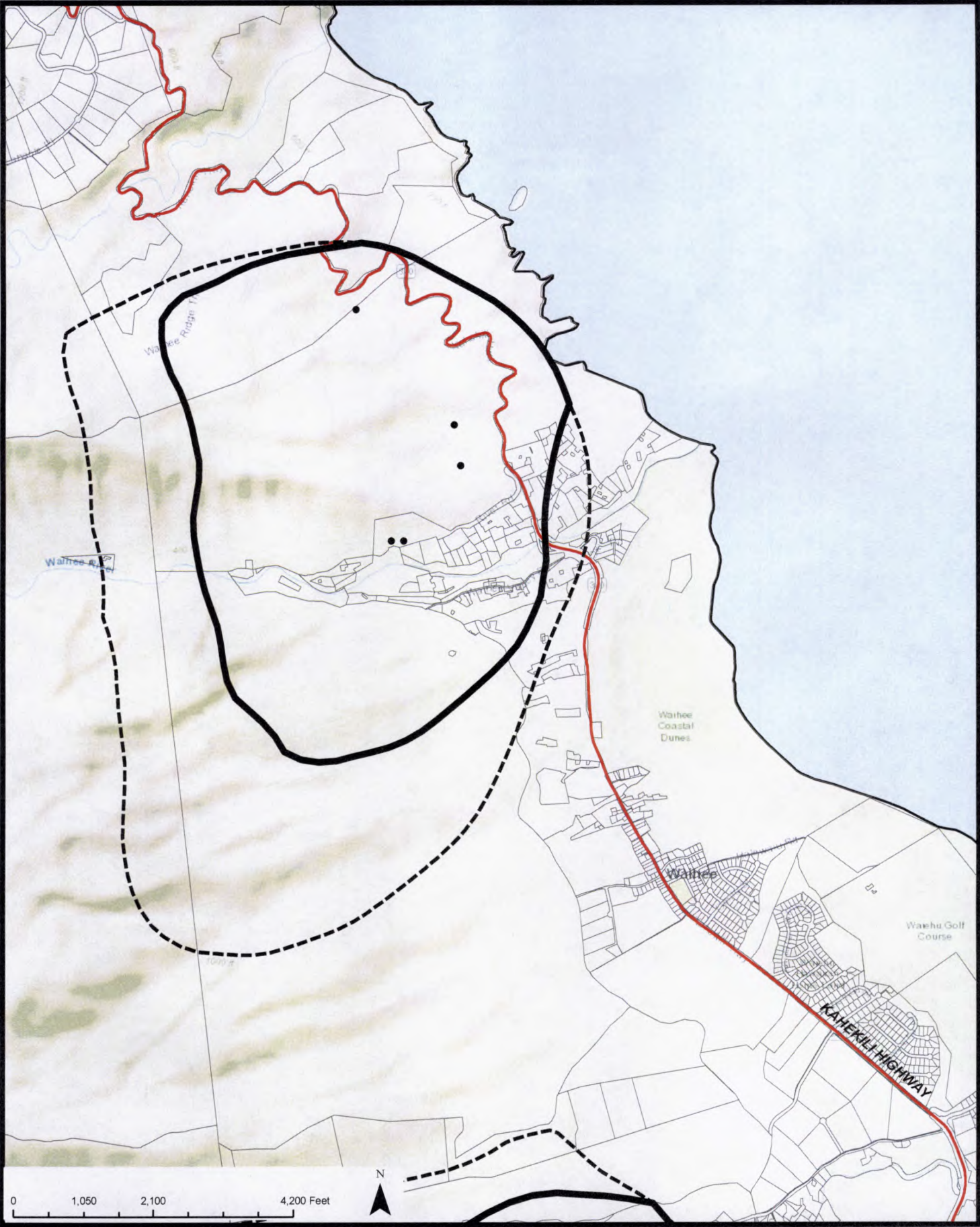
NOTE:

WPOD zones were delineated by the University of Hawaii Department of Geology & Geophysics utilizing fixed distance for the ZONE A nearest the well and Time of Travel (TOT) criteria for Zones B and C using the USGS 3-dimensional numerical groundwater model, MODFLOW, followed by the particle tracking program, MODPATH.

ZONE B is intended to designate a conservative estimate of the area that may contribute bacteria and viruses to the wellhead.
A 2-year TOT criterion is based on survival times for bacteria and viruses in soil and groundwater.

ZONE C is based on a 10-year TOT to allow sufficient time to implement management and remedial measures to mitigate contamination from accidental contaminant spills and other causes.

OFFICE OF THE COUNTY CLERK 200 SO. HIGH ST., WAILUKU, MAUI, HAWAII 96793	
WELLHEAD PROTECTION OVERLAY DISTRICT MAP No. 2 AREA NORTH-EAST OF LAHAINA TOWN, MAUI	
APPROVED: COUNTY CLERK _____ DATE _____	PUBLIC HEARING: _____ ADOPTED BY COUNCIL: _____
APPROVED: PLANNING DIRECTOR _____ DATE _____	ADOPTED BY MAYOR: _____ BILL No./YEAR _____ ORDINANCE No. _____
WPOD Map 2	



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⋯ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS

NOTE:

WPOD zones were delineated by the University of Hawaii Department of Geology & Geophysics utilizing fixed distance for the ZONE A nearest the well and Time of Travel (TOT) criteria for Zones B and C using the USGS 3-dimensional numerical groundwater model, MODFLOW, followed by the particle tracking program, MODPATH.

ZONE B is intended to designate a conservative estimate of the area that may contribute bacteria and viruses to the wellhead.
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ZONE C is based on a 10-year TOT to allow sufficient time to implement management and remedial measures to mitigate contamination from accidental contaminant spills and other causes.

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**WELLHEAD PROTECTION
OVERLAY DISTRICT
MAP No. 3
KAHAKULOA TO WAIHEE, MAUI**

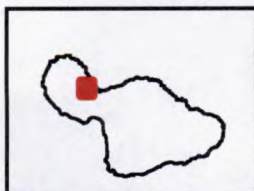
APPROVED:	PUBLIC HEARING: _____
COUNTY CLERK _____ DATE _____	ADOPTED BY COUNCIL: _____
APPROVED:	ADOPTED BY MAYOR: _____
PLANNING DIRECTOR _____ DATE _____	BILL No./YEAR _____ ORDINANCE No. _____

WPOD Map 3



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⋯ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



NOTE:

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WELLHEAD PROTECTION OVERLAY DISTRICT MAP No. 4

KOPE GULCH TO IAO STREAM, MAUI

APPROVED:

COUNTY CLERK

DATE

APPROVED:

PLANNING DIRECTOR

DATE

PUBLIC HEARING: _____

ADOPTED BY
COUNCIL: _____

ADOPTED BY
MAYOR: _____

BILL No./YEAR _____

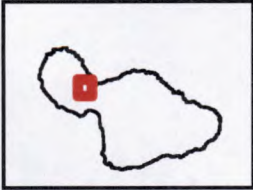
ORDINANCE No. _____

WPOD Map **4**



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⊖ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



NOTE:

WPOD zones were delineated by the University of Hawaii Department of Geology & Geophysics utilizing fixed distance for the ZONE A nearest the well and Time of Travel (TOT) criteria for Zones B and C using the USGS 3-dimensional numerical groundwater model, MODFLOW, followed by the particle tracking program, MODPATH.

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ZONE C is based on a 10-year TOT to allow sufficient time to implement management and remedial measures to mitigate contamination from accidental contaminant spills and other causes.

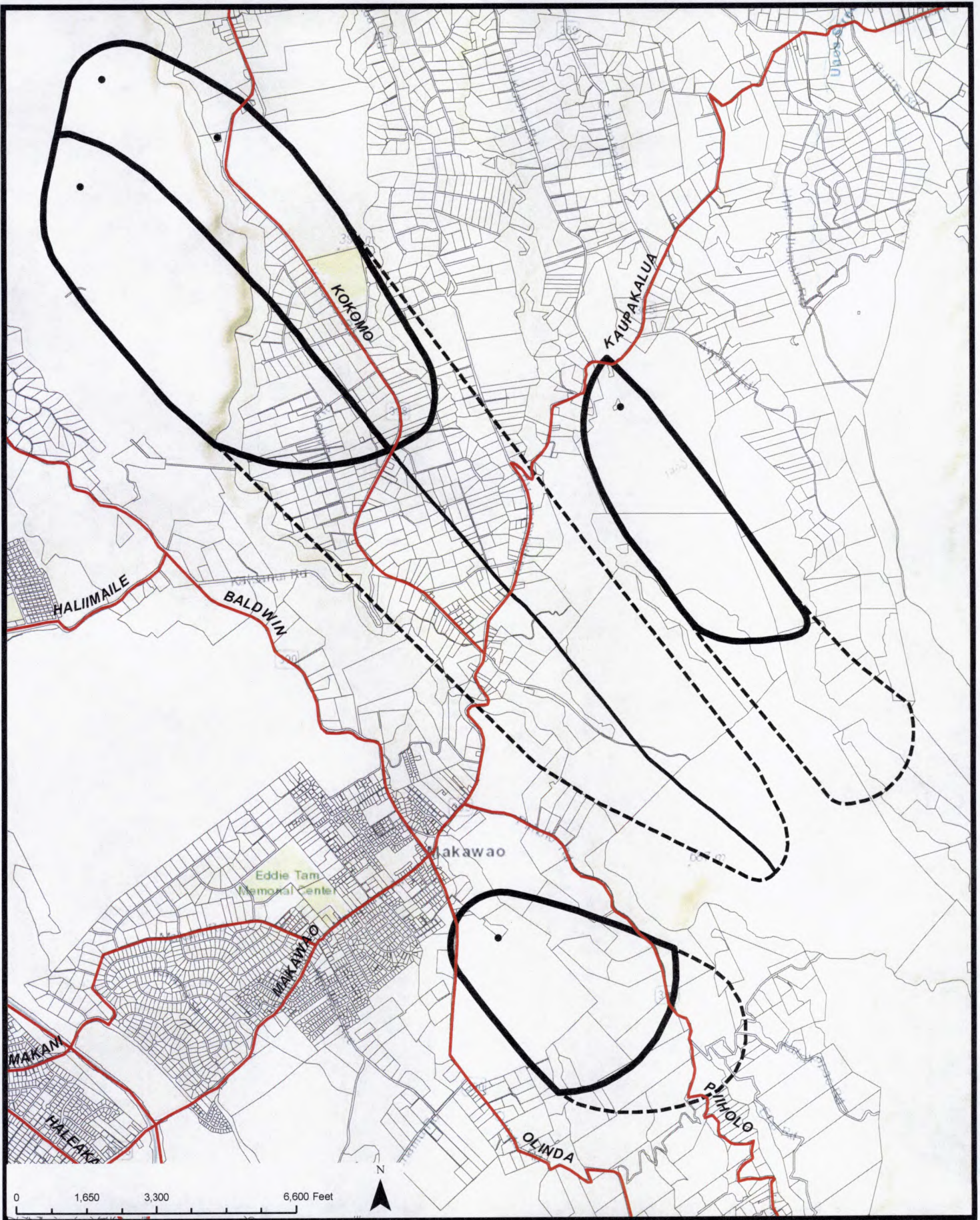
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**WELLHEAD PROTECTION
OVERLAY DISTRICT
MAP No. 5**

IAO STREAM TO WAIKAPU, MAUI

APPROVED:	PUBLIC HEARING: _____
COUNTY CLERK _____ DATE _____	ADOPTED BY COUNCIL: _____
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PLANNING DIRECTOR _____ DATE _____	BILL No./YEAR _____ ORDINANCE No. _____

WPOD Map 5



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⋯ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



NOTE:

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ZONE B is intended to designate a conservative estimate of the area that may contribute bacteria and viruses to the wellhead.
A 2-year TOT criterion is based on survival times for bacteria and viruses in soil and groundwater.

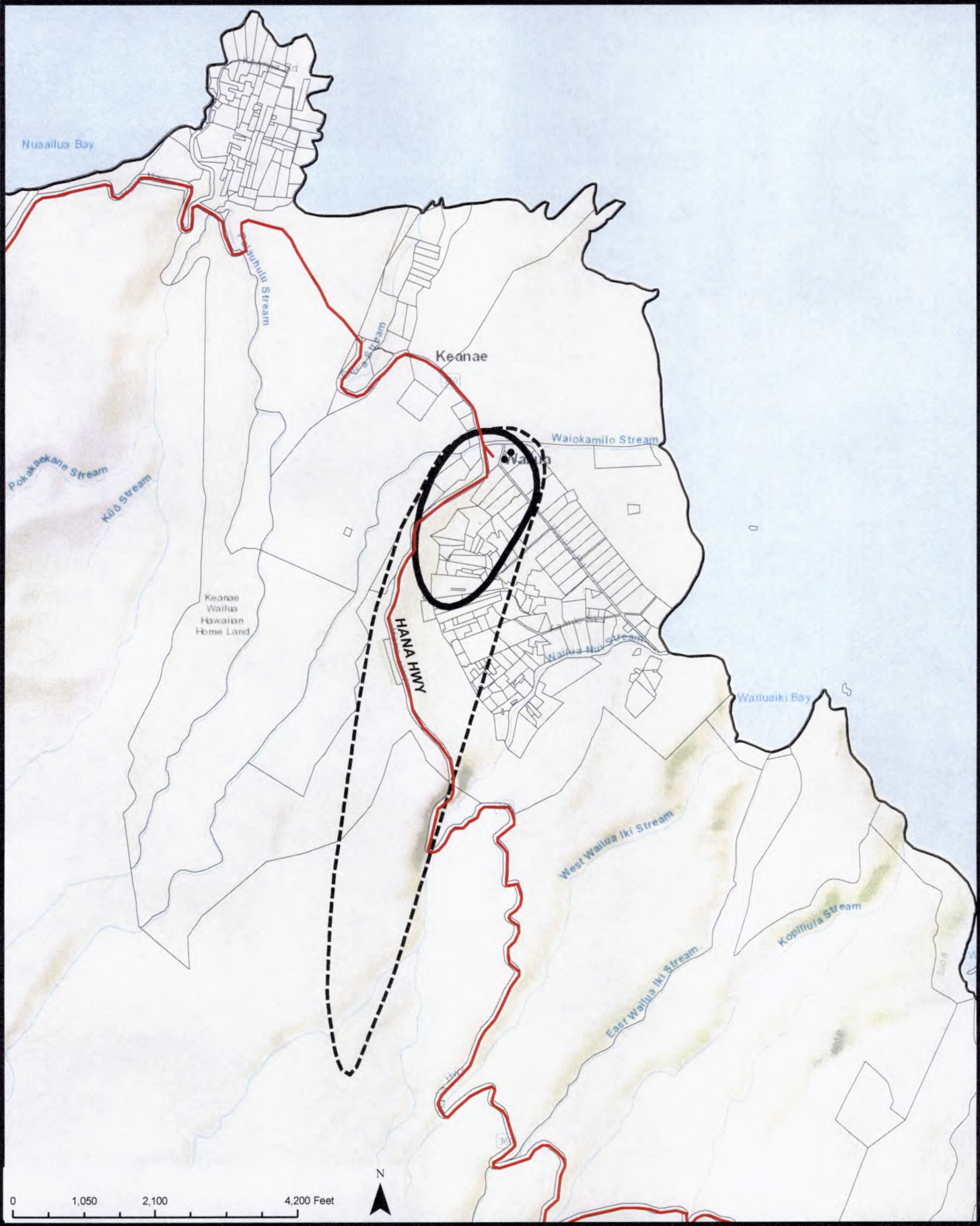
ZONE C is based on a 10-year TOT to allow sufficient time to implement management and remedial measures to mitigate contamination from accidental contaminant spills and other causes.

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**WELLHEAD PROTECTION
OVERLAY DISTRICT
MAP No. 6
KOKOMO - PIIHOLO - AWALAU, MAUI**

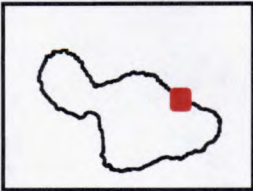
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PLANNING DIRECTOR _____ DATE _____	BILL No./YEAR _____ ORDINANCE No. _____

WPOD Map_ 6



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⊖ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



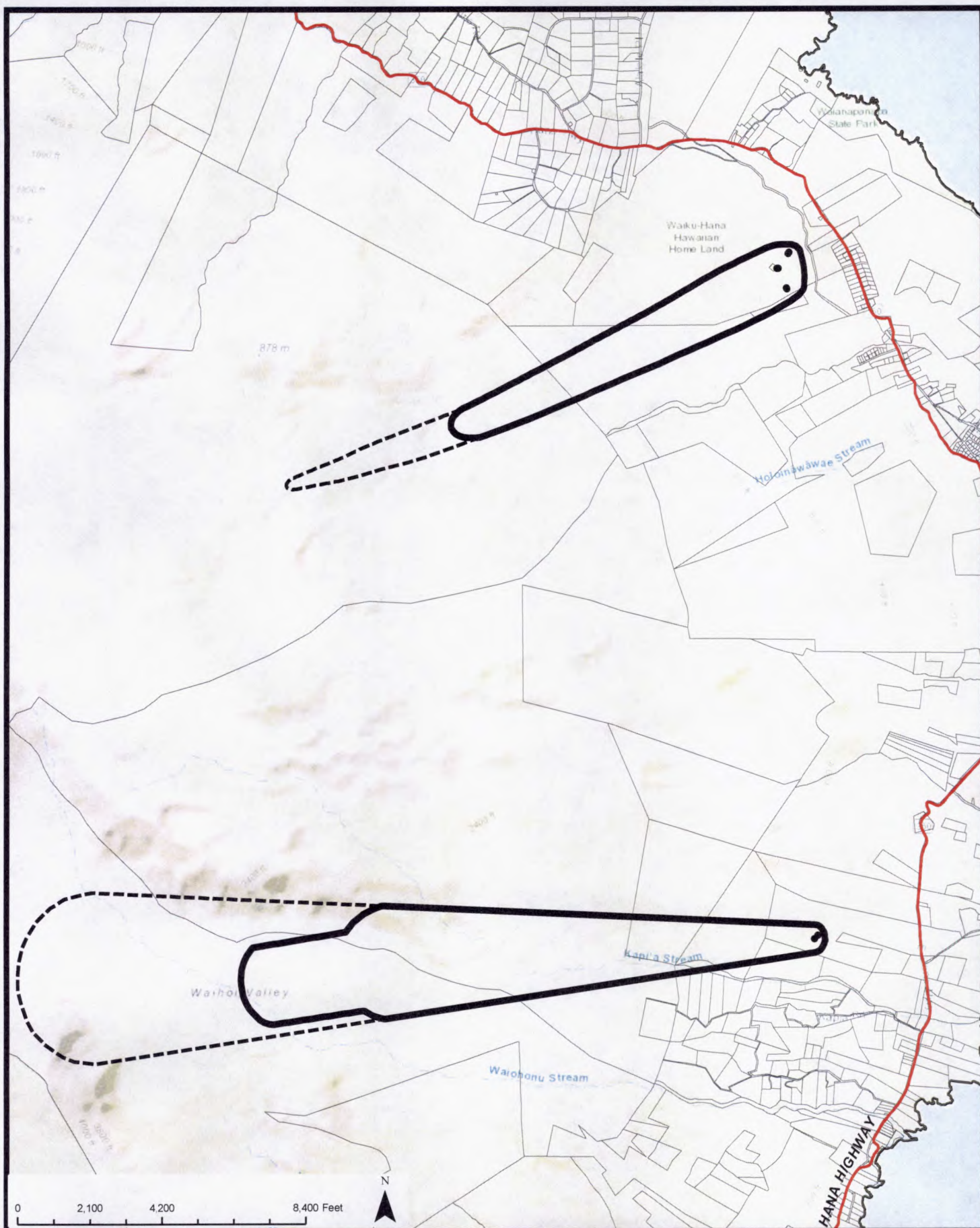
NOTE:

WPOD zones were delineated by the University of Hawaii Department of Geology & Geophysics utilizing fixed distance for the ZONE A nearest the well and Time of Travel (TOT) criteria for Zones B and C using the USGS 3-dimensional numerical groundwater model, MODFLOW, followed by the particle tracking program, MODPATH.

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WELLHEAD PROTECTION OVERLAY DISTRICT MAP No. 7 KEANAE - WAILUA, MAUI	
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APPROVED: PLANNING DIRECTOR _____ DATE _____	ADOPTED BY MAYOR: _____ BILL No./YEAR _____ ORDINANCE No. _____
WPOD Map 7	



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⌚ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



NOTE:

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WELLHEAD PROTECTION OVERLAY DISTRICT MAP No. 8

KAWAIPAPA GULCH TO WAIHOI VALLEY, MAUI

APPROVED:

PUBLIC HEARING: _____

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COUNCIL: _____

APPROVED:

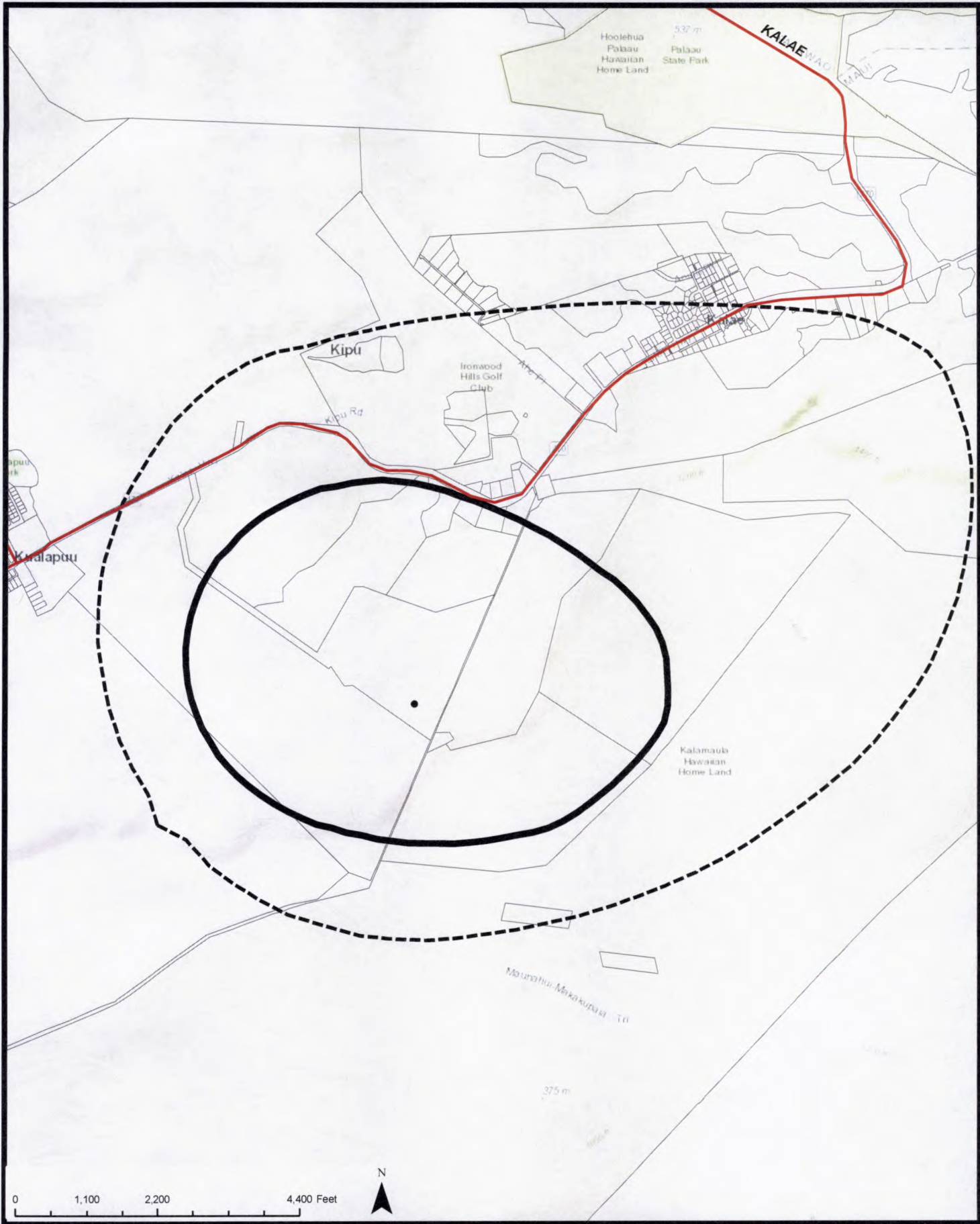
ADOPTED BY
MAYOR: _____

PLANNING DIRECTOR	DATE
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BILL No./YEAR _____

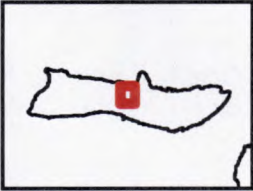
ORDINANCE No. _____

WPOD Map 8



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⋯ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



NOTE:

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**WELLHEAD PROTECTION
OVERLAY DISTRICT
MAP No. 9
AREA SOUTH OF KALAE, MOLOKAI**

APPROVED:

COUNTY CLERK _____ DATE _____

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PLANNING DIRECTOR _____ DATE _____

PUBLIC HEARING: _____

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COUNCIL: _____

ADOPTED BY
MAYOR: _____

BILL No./YEAR _____

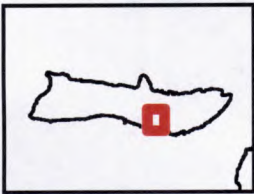
ORDINANCE No. _____

WPOD Map 9



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- ⋯ WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS



NOTE:

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**WELLHEAD PROTECTION
OVERLAY DISTRICT
MAP No. 10
KAWELA, MOLOKAI**

APPROVED:	PUBLIC HEARING: _____
COUNTY CLERK _____ DATE _____	ADOPTED BY COUNCIL: _____
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PLANNING DIRECTOR _____ DATE _____	BILL No./YEAR _____
	ORDINANCE No. _____

WPOD Map 10



LEGEND

- WPOD ZONE A
- WPOD ZONE B - 2 year
- WPOD ZONE C - 10 year
- 2017 PARCEL
- MAJOR ROADS

NOTE:

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WELLHEAD PROTECTION OVERLAY DISTRICT MAP No. 11 UALAPUE, MOLOKAI	
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COUNTY CLERK _____ DATE _____	ADOPTED BY COUNCIL: _____
APPROVED:	ADOPTED BY MAYOR: _____
PLANNING DIRECTOR _____ DATE _____	BILL No./YEAR _____
	ORDINANCE No. _____
WPOD Map 11	