

Planning for Sustainable Tourism



Part II: Infrastructure Overview Study

Volume IIb: City & County of Honolulu
Appendix

Prepared for

DBEDT
THE DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
S T A T E O F H A W A I I

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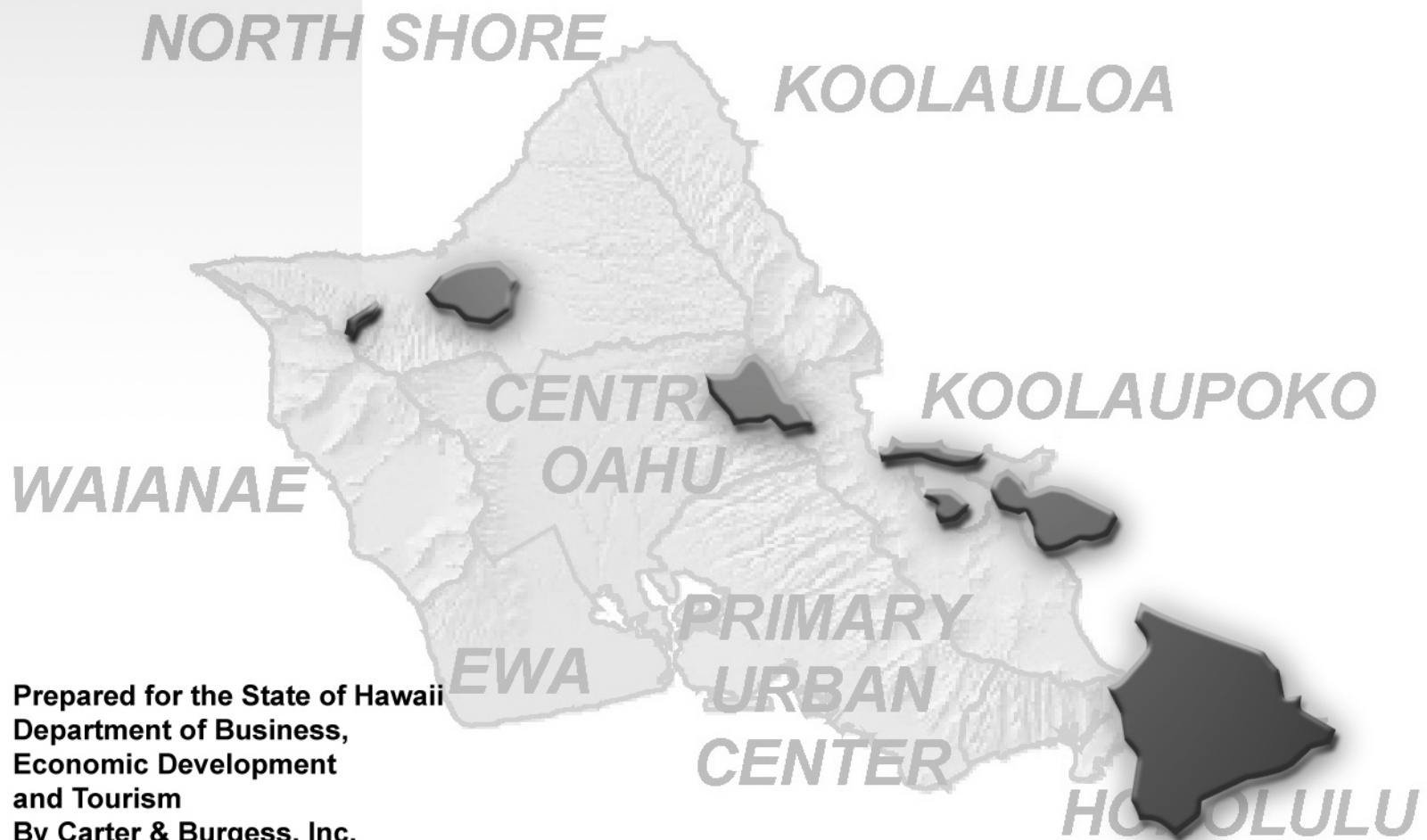
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Planning for Sustainable Tourism in Hawaii

INFRASTRUCTURE & ENVIRONMENTAL OVERVIEW STUDY

Volume IIB: City and County of Honolulu
Appendix



Prepared for the State of Hawaii
Department of Business,
Economic Development
and Tourism
By Carter & Burgess, Inc.

December, 2002

General map of Oahu, or City and County of Honolulu, and its major towns and communities.



Appendix: City & County of Honolulu – Oahu Map
 Hawaii- Web Site
<http://www.hana-maui.com/maps/oahutv.jpg>

Appendix: City & County of Honolulu – Oahu Board of Water Supply

(http://www.lava.net/bws/ea_wat_resource/ea01_ct01_mainpage.htm)

Reservoirs and their millions of gallons capacity for the island of Oahu.

Storage facilities on Oahu are divided into three categories: closed potable water reservoirs, closed nonpotable water reservoirs, and open reservoirs (nonpotable).

Our reservoirs are as follows (mg=million gallons):

- **Honolulu District** - 66 reservoirs 52.07 mg capacity
 - **Windward District** - 20 reservoirs 26.30 mg capacity
 - **Waialua-Kahuku** - 8 reservoirs 6.80 mg capacity
 - **Wahiawa District** - 7 reservoirs 8.00 mg capacity
 - **Waianae District** - 11 reservoirs 8.06 mg capacity
 - **Ewa District** - 11 reservoirs 27.50 mg capacity
 - **Pearl Harbor District** - 40 reservoirs 40.80 mg capacity
- Total Storage Capacity:** 163 reservoirs 169.63 mg capacity
- Nonpotable Reservoirs:** 2 reservoirs 2.50 mg capacity

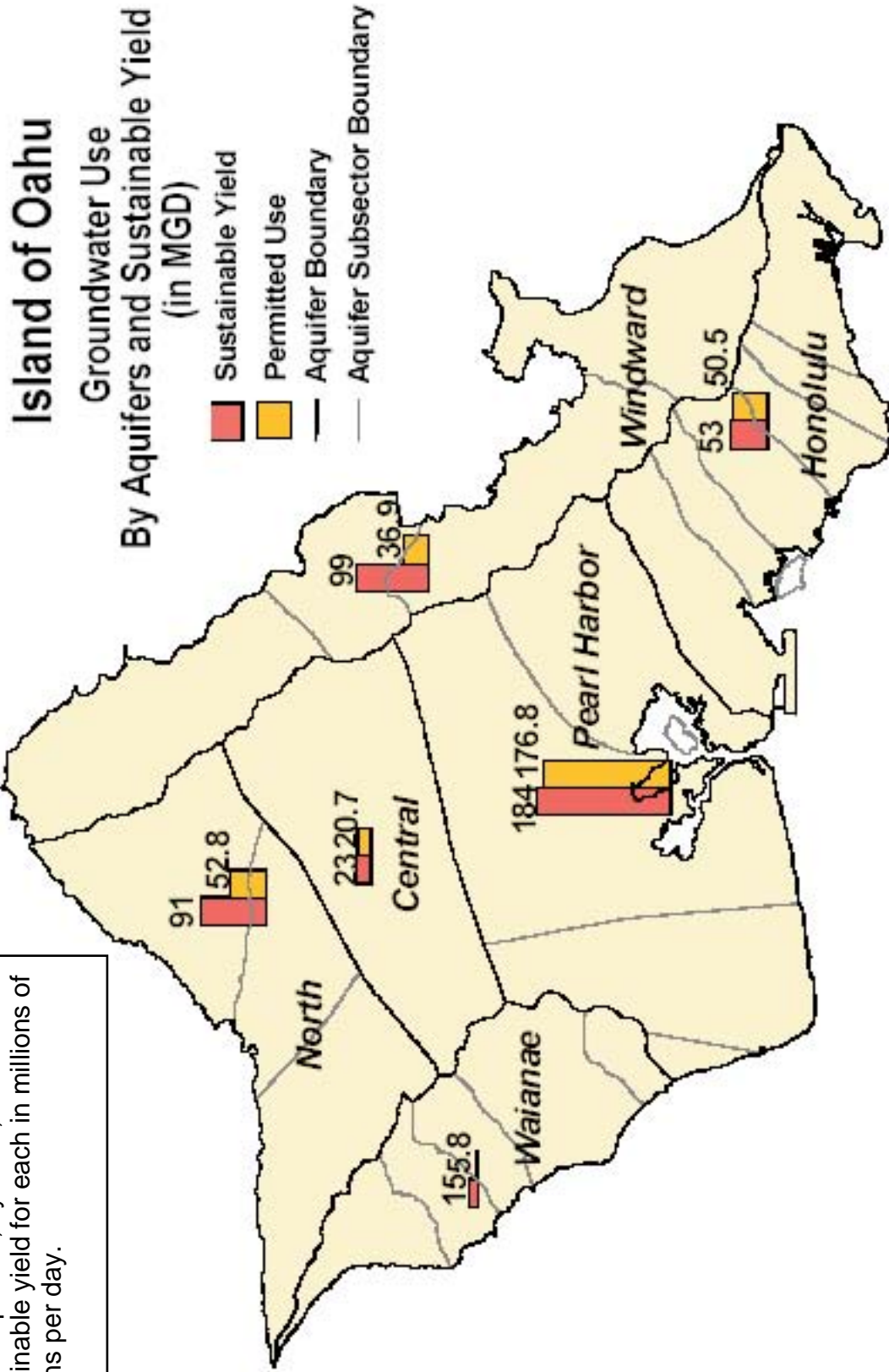
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Surface Water Reservoirs:

- Nuuanu #1
- Nuuanu #2
- Nuuanu #3
- Nuuanu #4
- Mauna Olu Nonpotable

Groundwater Use By Aquifer

Oahu's aquifers, by code, and the sustainable yield for each in millions of gallons per day.



<http://www.hawaii.gov/dbedt/db00/05/052700.pdf>

The table below outlines refuse and sewage statistics for Oahu from 1990 through 2000.

- REFUSE AND SEWAGE STATISTICS FOR OAHU: 1990 TO 2000

[Years ended June 30]

Year	Tons of municipal solid waste delivered 1/			Sewage treated 2/ (millions of gallons)
	Total	City and County refuse vehicles	Other vehicles	
1990	825,058	276,178	548,880	41,763
1991	1,015,842	293,857	721,985	44,484
1992	1,049,647	331,269	718,378	42,705
1993	1,023,113	322,901	700,212	42,415
1994	1,017,367	331,602	685,765	42,756
1995	1,017,709	325,381	692,328	43,175
1996	959,793	288,057	671,736	41,403
1997	945,081	302,078	643,003	42,616
1998	861,851	295,117	566,714	41,289
1999	830,035	284,007	546,028	40,750
2000	868,588	298,207	570,381	41,444

Year	Sewage pumped 2/ (millions of gallons)	Miles of sewers 2/	City and County pump stations	City and County treatment plants
1990	50,858	1,828	62	13
1991	52,849	1,859	64	13
1992	53,290	1,890	65	12
1993	52,480	1,914	67	11
1994	53,298	1,945	69	8
1995	53,088	1,893	64	8
1996	52,114	1,910	65	8
1997	54,197	1,940	63	8
1998	50,605	1,940	64	8
1999	49,379	1,970	65	8
2000	49,623	2,230	65	8

1/ Excludes small landfill controlled by armed forces.

2/ Data limited to system maintained by the City and County of Honolulu, Department of Environmental Services.

Source: City and County of Honolulu, Department of Environmental Services.

Appendix: City & County of Honolulu – Oahu Recycling Program

(<http://www.maui.net/~mrqhimex/oahuprog.html#OAHU%20RECYCLING>)

The graphic below depicts the multiple recycling center on Oahu and the materials recycled at each.



*RCC=Refuse Convenience Center

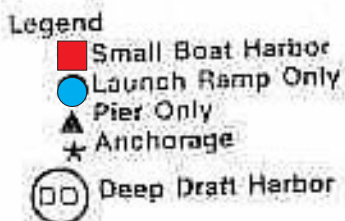
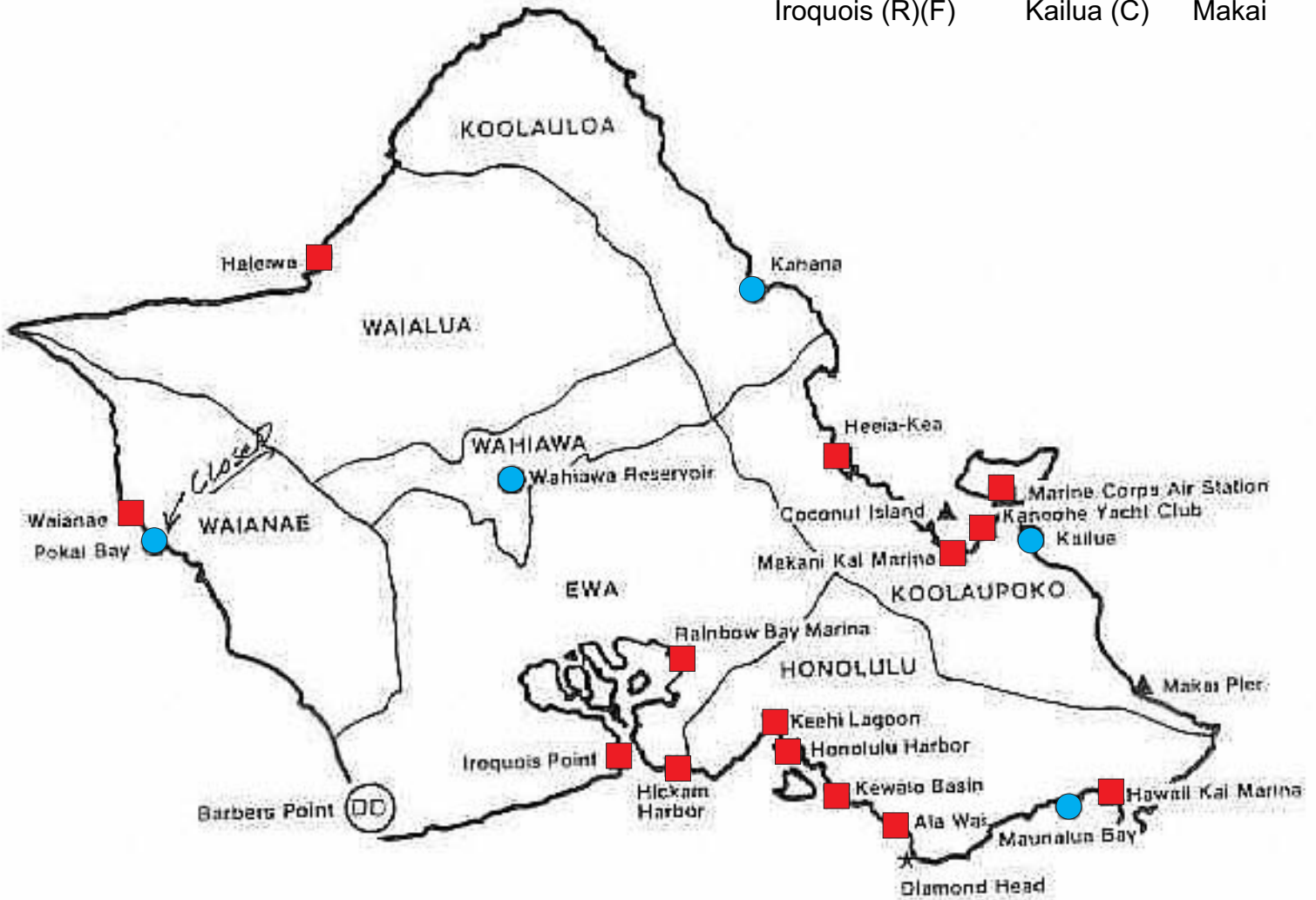
Appendix: City & County of Honolulu – Fishery Monitoring Economics Program

<http://www.nmfs.hawaii.edu/fmpi/fmep/reef/harbor/OAHU.JPG>

The map below points out the fishery monitoring station for Oahu. Note how they correspond to boat launching facilities.

Small Boat Harbor **Launch Ramp Only** **Pier Only** **Anchorage** **Deep Draft Harbor**

- Waiane (S)** Maunaloa Bay (S) Coconut Island (R)
- Diamond Head (P)** Barbers Point (R)(C) 1
- Iroquois (R)(F)** Kailua (C) Makai

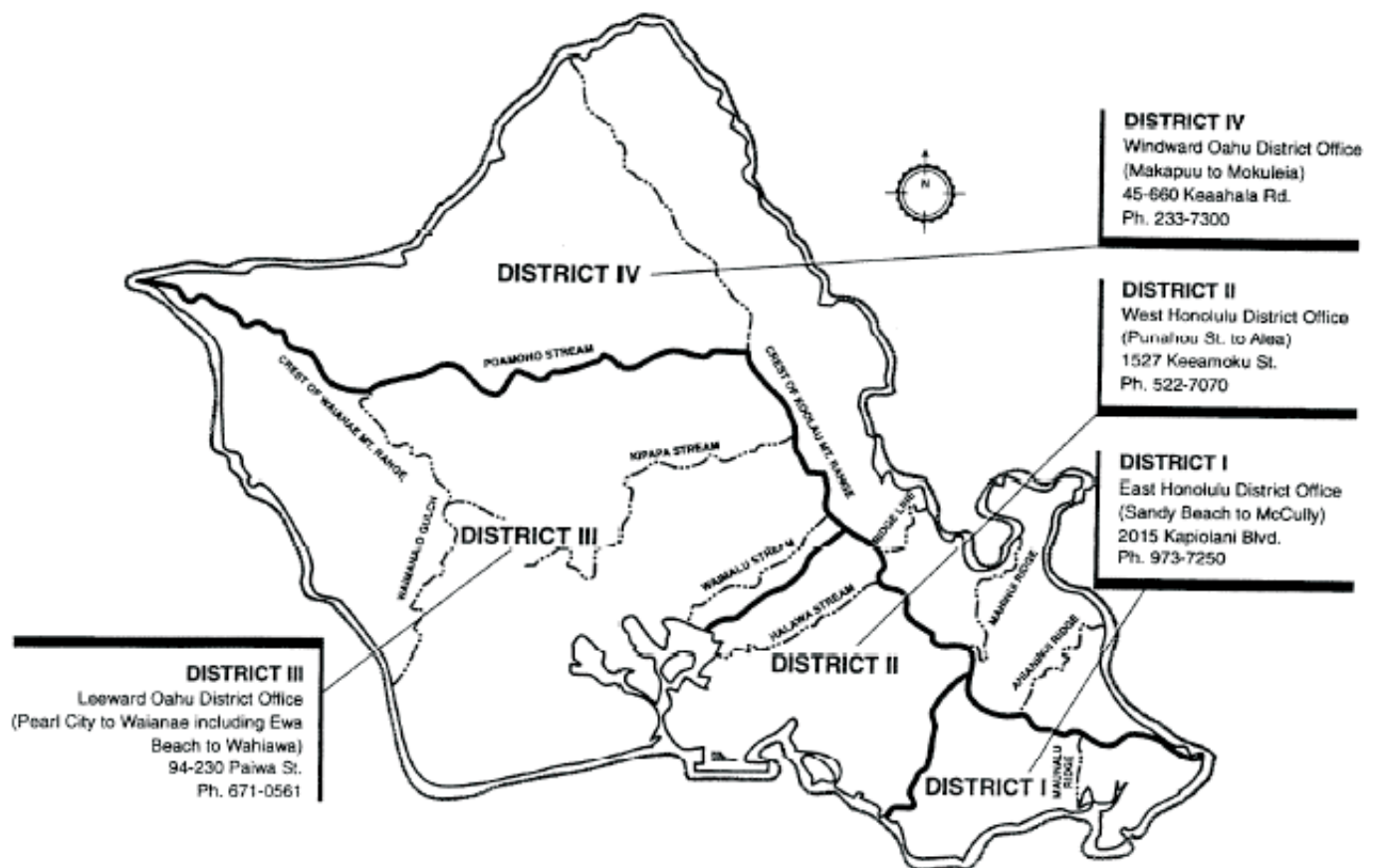


OAHU

Appendix: County of Maui - Fiscal Year 2003 Executive Program and Budget

<http://www.co.honolulu.hi.us/budget/execbgt/Fy03dpr.pdf>

The map below gives an overview of the types and count of parks available on Oahu and the district divisions.



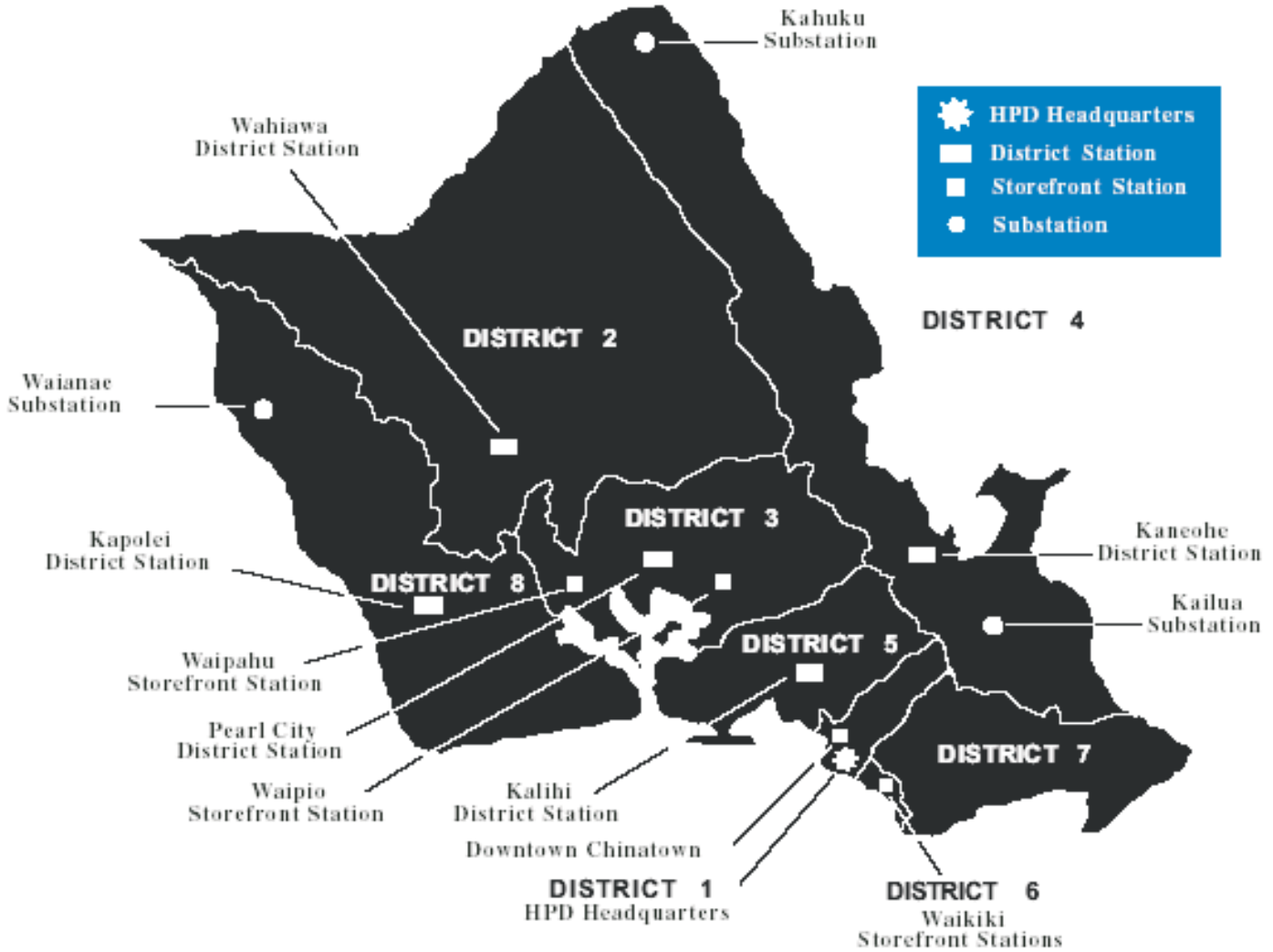
TOTAL NUMBER OF PARKS AND RECREATION AREAS: 475

Including:	17	Regional Parks and Nature Preservers
	67	Beach Park
	90	Beach Access Right-Of-Ways
	205	Community Park
	91	Traffic Related Landscaped Areas
	5	Botanical Gardens

Appendix: City & County of Honolulu – Police Department

<http://www.honoluluupd.org/pdf/hpd2001.pdf>

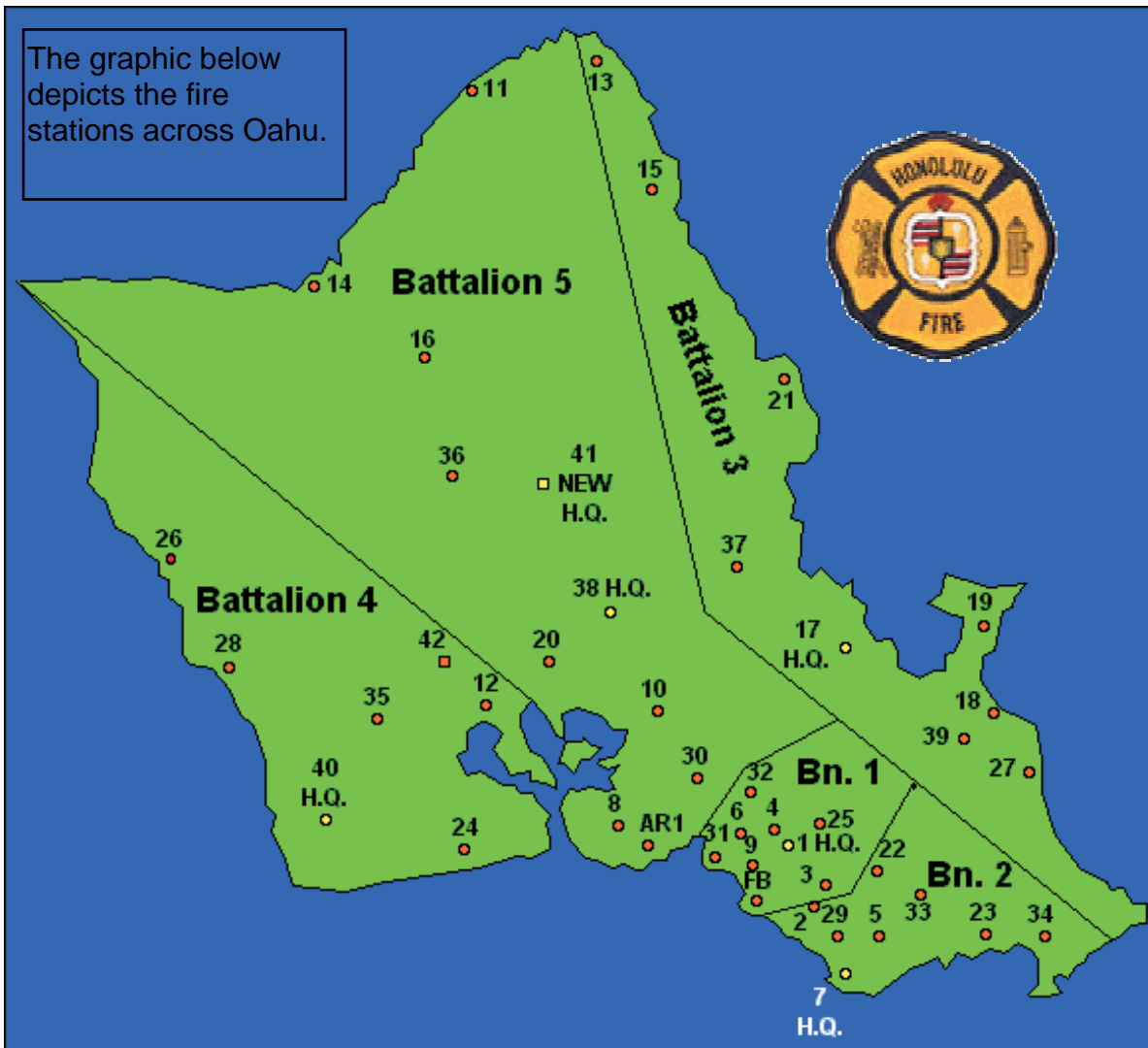
Below, the map illustrates the Honolulu Police Department districts. they do not correspond with the planning communities.



Appendix: City and County of Honolulu - Fiscal Year 2003 Executive Program and Budget

<http://www.co.honolulu.hi.us/budget/execbqt/fy03hfd.pdf>

The graphic below depicts the fire stations across Oahu.



Island of O'ahu
42 Fire Stations

Station	Name	Companies	Station	Name	Companies
FB	Waterfront	Fireboat	22	Manoa	E22
1	Central	Bn1, E1	23	Wailupe	E23
2	Pawaa	E2, L2, R1	24	Ewa Beach	E24
3	Makiki	E3	25	Nuuna	E25
4	Kuakini	E4, L4	26	Waianae	E26, Q26, T26
5	Kaimuki	E5, L5	27	Waimanalo	E27
6	Kalihi	E6	28	Nanakuli	F28, T28
7	Waikiki	Bn2, E7, L7	29	McCully	E29, L29
8	Mokulele	E8	30	Moanalua	E30, L30, T30
9	Kakaako	E9, S9	31	Kalihi Kai	E30, L30, R2
10	Aiea	F10	32	Kalihi Uka	E32, HM1
11	Sunset	E11	33	Palolo	E33
12	Waipahu	E12, L12, T12	34	Hawaii Kai	E34, Q34
13	Kahuku	E13	35	Makakilo	E35
14	Waialua	E14	36	Mililani	E36
15	Hauula	E15, T15	37	Kahaluu	E37
16	Wahiawa	E16, T16	38	Waiau	E38, Q38
17	Kaneohe	Bn3, E17, L17	39	Olomano	E39
18	Kailua	E18, L18	40	Kapolei	Bn4, E40, Q40, HM2
19	Aieahi	E19	41	Mililani Mauka	Bn5, E41, Q41
20	Pearl City	E20	42	Waikele	E42
21	Kaaawa	E31	Air1	Aircraft	Air1

Appendix: City & County of Honolulu – Emergency Services Department

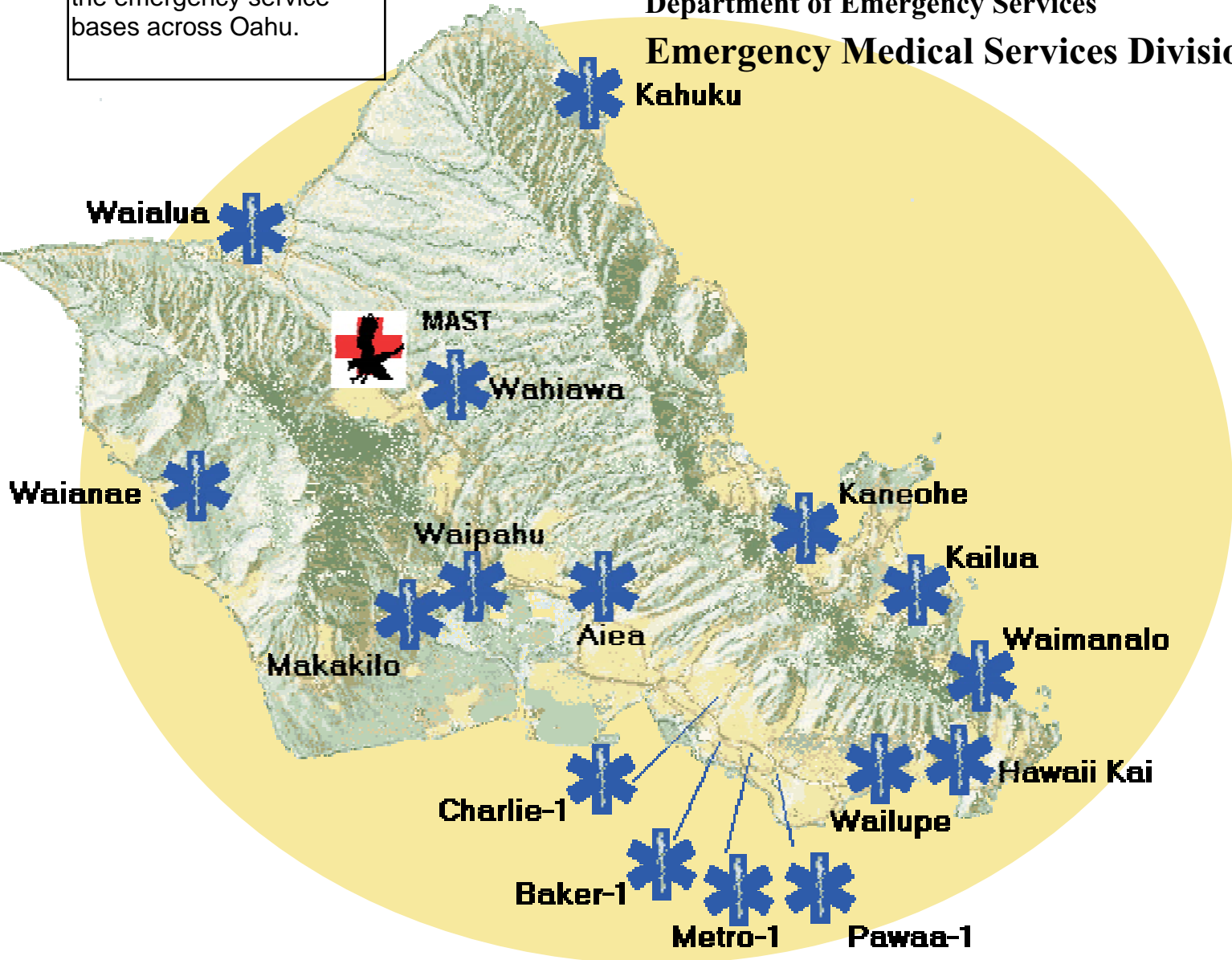
<http://www.co.honolulu.hi.us/esd/ems/ccemsmap.htm>

The graphic below depicts the emergency service bases across Oahu.

MAP OF EMS UNITS

City & County of Honolulu
Department of Emergency Services

Emergency Medical Services Division



UNIT LOCATION UNIT LOCATION

Kaneohe	Kaneohe Fire Station	Kailua	Kailua Fire Station
Charlie-1	St. Francis Hospital	Metro-1	Kaimuki
Pawaa-1	Waikiki Fire Station	Waialua	Waialua Fire Station
Waianae	Waianae Fire Station	Wailupe	Wailupe Fire Station
Waimanalo	Waimanalo Fire Station	Waipahu	Waipahu Fire Station
Baker-1	Queens' Medical Center	Wahiawa	Wahiawa Hospital
Kahuku	Kahuku Hospital	Aiea	Kapiolani Hospital at Pali Momi
Hawaii Kai	Hawaii Kai Fire Station	Makakilo	St. Francis West Hospital

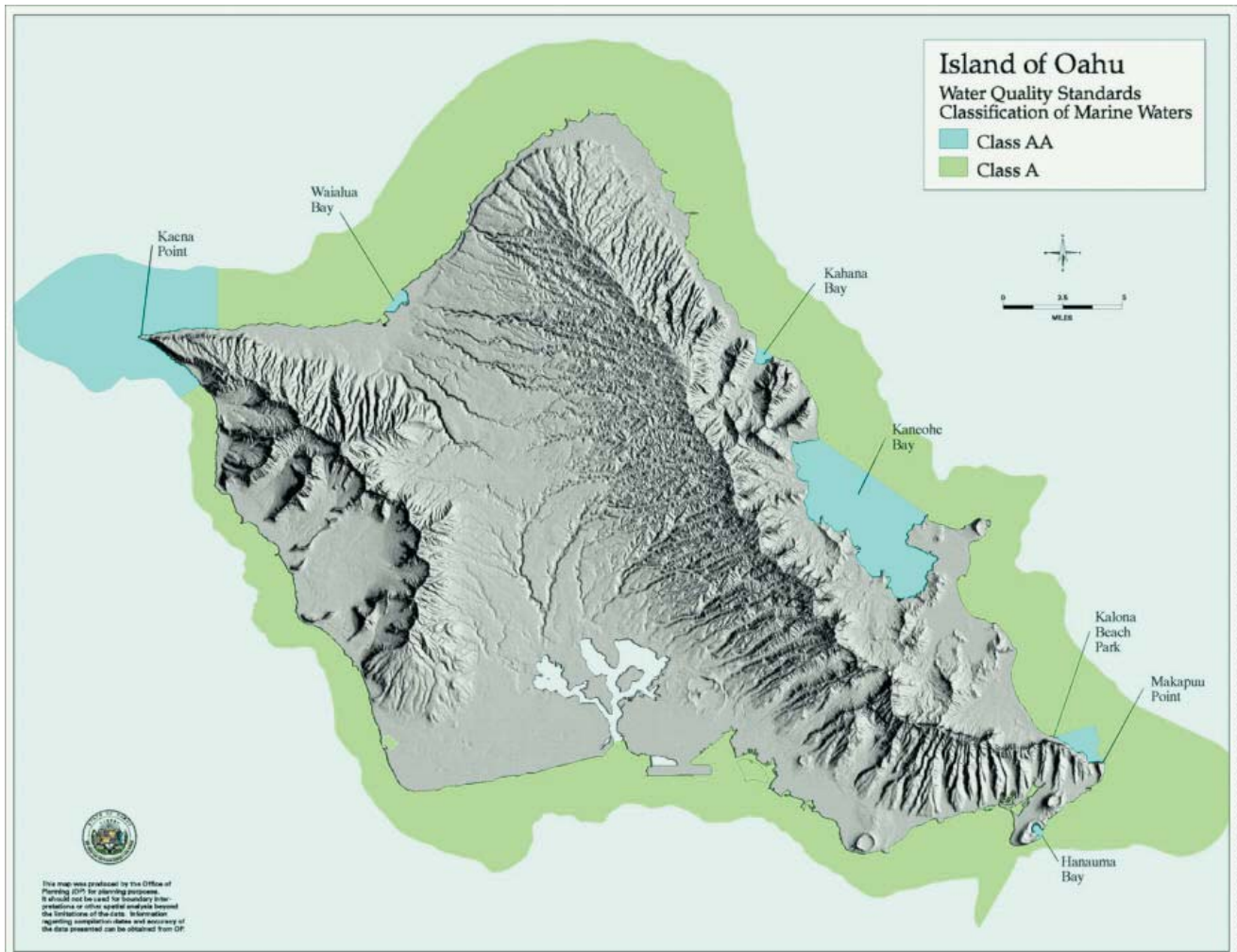
MEDIVAC HELICOPTERS LOCATION

68 Medical Det. (MAST), US Army Wheeler AFB, Wahiawa

Appendix: City & County of Honolulu - Environmental Planning Office

(<http://www.geocities.com/hawaii/epo/owqc.jpg>)

Classifications of coastal water quality are outlined in the map below.



AA

Remain in natural state
Minimum of pollution
Maintain wilderness character

Oceanographic research
Support aquatic life
Conserve coral reefs
Compatible recreation

No zones of mixing (with exceptions)

A

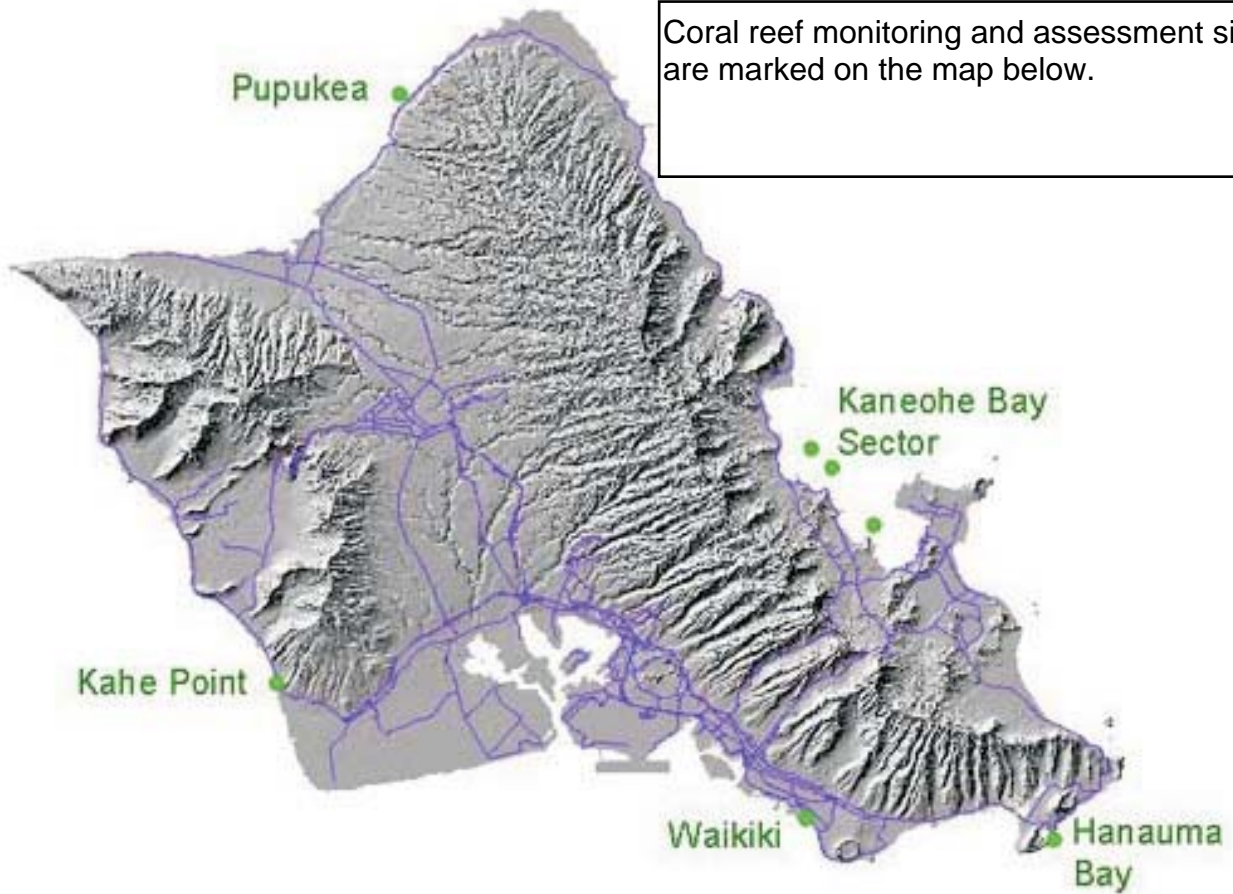
Support recreation

All uses compatible with recreation and support of aquatic wildlife

Entering discharge must receive best degree of treatment
No new sewage discharges within embayments
No new industrial discharges within embayments (with exceptions)

Appendix: City and County of Honolulu – Coral Reef Assessment & Monitoring Program

http://cramp.wcc.hawaii.edu/Study_Sites/Oahu/Hanauma_Bay/Maps_and_Photos.asp

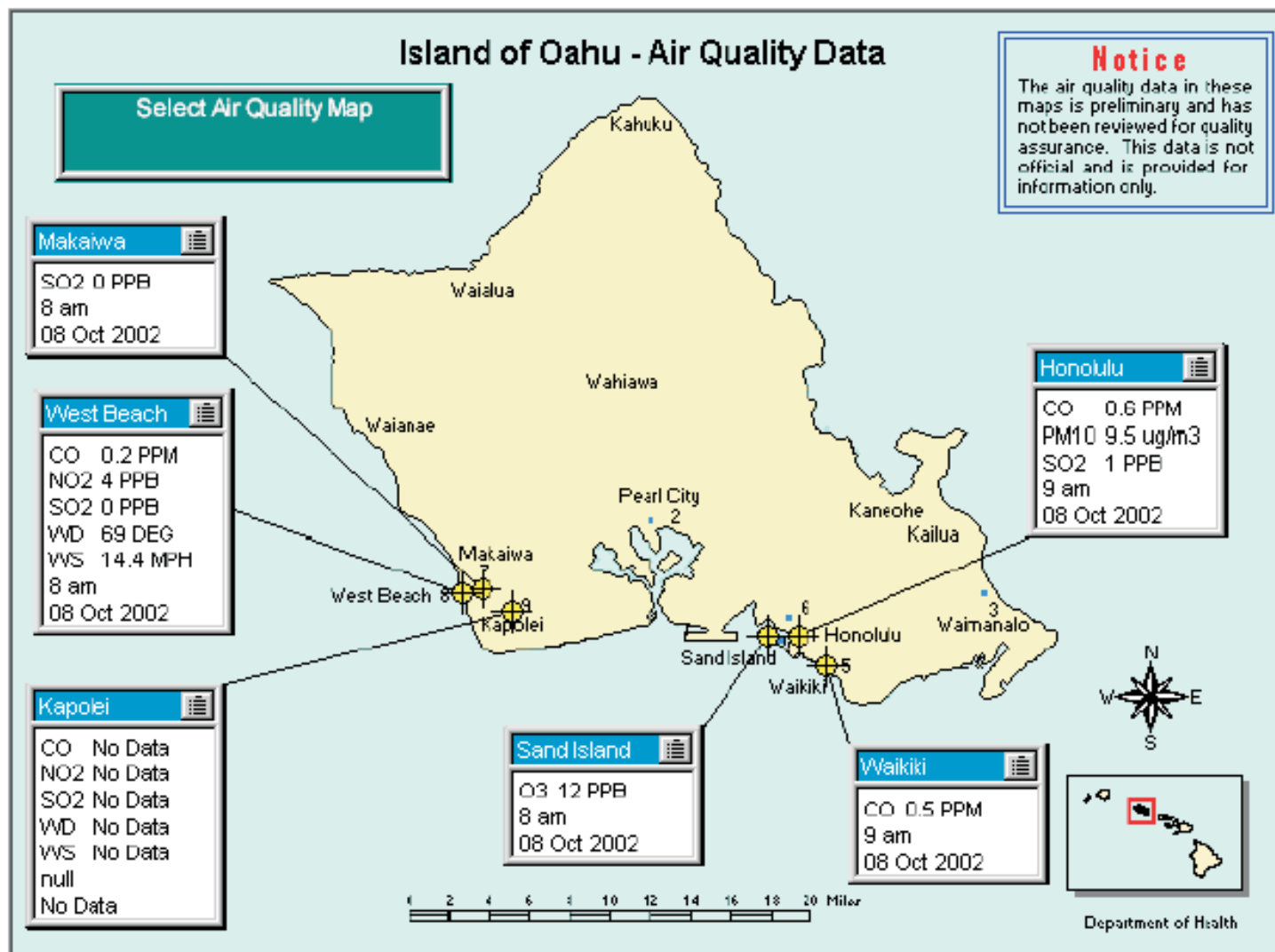


CORAL REEF MONITORING SITES ON OAHU

Appendix: City and County of Honolulu – Department of Health

<http://www.hawaii.gov/health/air-quality/index.html>

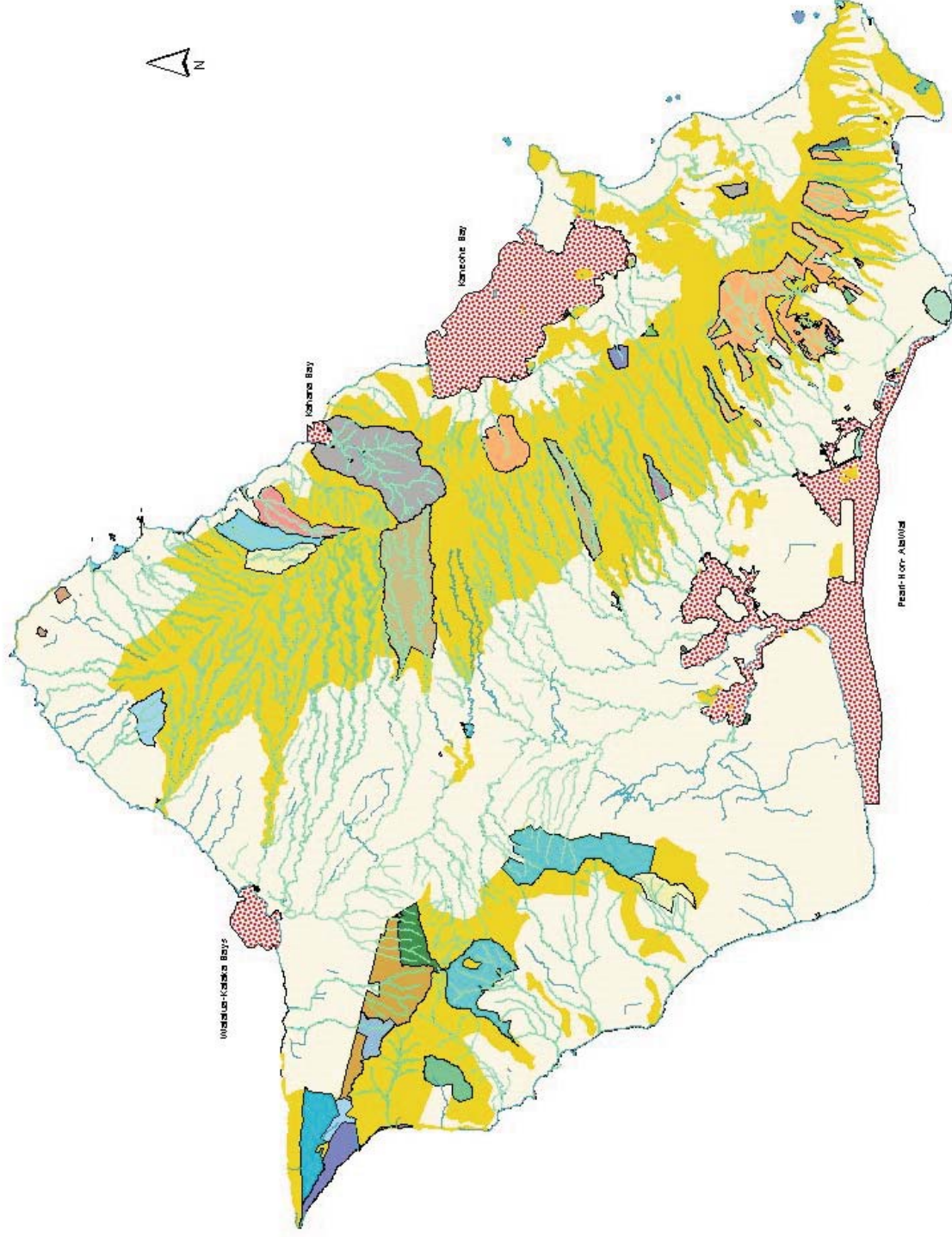
Air quality monitoring sites and some of their readings are noted on the map below.



STREAMS & CONSERVATION MAP

Oahu Legend

- Perennial streams
- Intermittent streams
- Oahu river ship
- AIE ABAY STATE RECREATION AREA
- DIAMOND HEAD STATE MONUMENT
- EWA FOREST RESERVE
- HANAUMA BAY STATE UNDERWATER PARK
- HAUULA FOREST RESERVE
- HEEIA STATE PARK
- HONOLULU WATERSHED FOREST RESERVE
- HONOLULU PRESERVE (NATURE CONSERVANCY)
- IOLANI PALACE STATE MONUMENT
- KAALA NATURAL AREA RESERVE
- KAENA POINT NATURAL AREA RESERVE
- KAENA POINT STATE PARK
- KAHANA VALLEY STATE PARK
- KAIPAPA FOREST RESERVE
- KANEHOHE FOREST RESERVE
- KAOHIKAIPI ISLAND STATE SEABIRD SANCTUARY
- KEAWA HEIAU STATE RECREATION AREA
- KEPEA ISLAND STATE SEABIRD SANCTUARY
- KIHEWAMOKU ISLAND STATE SEABIRD SANCTUARY
- KIINATIONAL WILDLIFE REFUGE
- KUAOKALA FOREST RESERVE
- KUAOKALA GAME MANAGEMENT AREA
- KUKANILOKO BIRTHSTONES STATE MONUMENT
- KUKIHOOLUA ISLAND STATE SEABIRD SANCTUARY
- KULIHOLO FOREST RESERVE
- LAIE POINT STATE WAYSIDE
- MAKAPUU POINT STATE WAYSIDE
- MAKIKI TANTALUS STATE PARK
- MAKUA KEAUA FOREST RESERVE
- MALAEKAHANA STATE RECREATION AREA
- MANANA ISLAND STATE SEABIRD SANCTUARY
- MOKOLEA ROCK STATE SEABIRD SANCTUARY
- MOKU MANU ISLAND STATE SEABIRD SANCTUARY
- MOKUALAI ISLAND STATE SEABIRD SANCTUARY
- MOKUAUIA ISLAND STATE SEABIRD SANCTUARY
- MOKULEIA FOREST RESERVE
- MOKULUA ISLAND STATE SEABIRD SANCTUARY
- MOUNT OLOMANA STATE MONUMENT
- NANAKULI FOREST RESERVE
- NUUANU PALI STATE WAYSIDE
- PAHOLE NATURAL AREA RESERVE
- PAIKO LAGOON WILDLIFE SANCTUARY
- POPOIA ISLAND STATE SEABIRD SANCTUARY
- PULEMOKU ROCK STATE SEABIRD SANCTUARY
- PUNAMANO NATIONAL WILDLIFE REFUGE
- PUPUKEA-PAUMALU FOREST RESERVE
- PUU O MAHUKA HEIAU STATE MONUMENT
- PUU UALAKEA STATE WAYSIDE
- ROUND TOP FOREST RESERVE
- ROYAL MAUSOLEUM STATE MONUMENT
- SACRED FALLS STATE PARK
- SAND ISLAND STATE RECREATION AREA
- ULU PO HEIAU STATE MONUMENT
- WAAHILAIRIDGE STATE PARK
- WAIHAWA FRESHWATER STATE RECREATION AREA
- WAIHOLE FOREST RESERVE (IOLEKAA SEC)
- WAIHOLE FOREST RESERVE (WAIHOLE SEC)
- WAIANAE KAI FOREST RESERVE
- WAIMANO GULCH STATE PARK RESERVE
- WILDLIFE REFUGE
- Conservation land use district
- Water Quality Limited Segments



The map above shows Oahu streams and conservation areas.

Appendix: City & County of Honolulu – Hawaii Environmental Planning Office

(<http://www.geocities.com/hawaii/epo/StreamProposal.html>)



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