

Commission on Water Resource Management
Kalanimoku Building, Oahu
December 17, 2008



Staff Briefing on the
Implementation of East Maui
Interim Instream Flow Standards

Honopou (6034), Hanehoi (6037), Piinaau (6053),
Waiokamilo (6055), and Wailuanui (6056), Maui



State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management

Petition to Amend IIFS

HONOPOU

- Honopou Stream

HANEHOI

- Hanehoi and Puolua Streams

PIINAUU

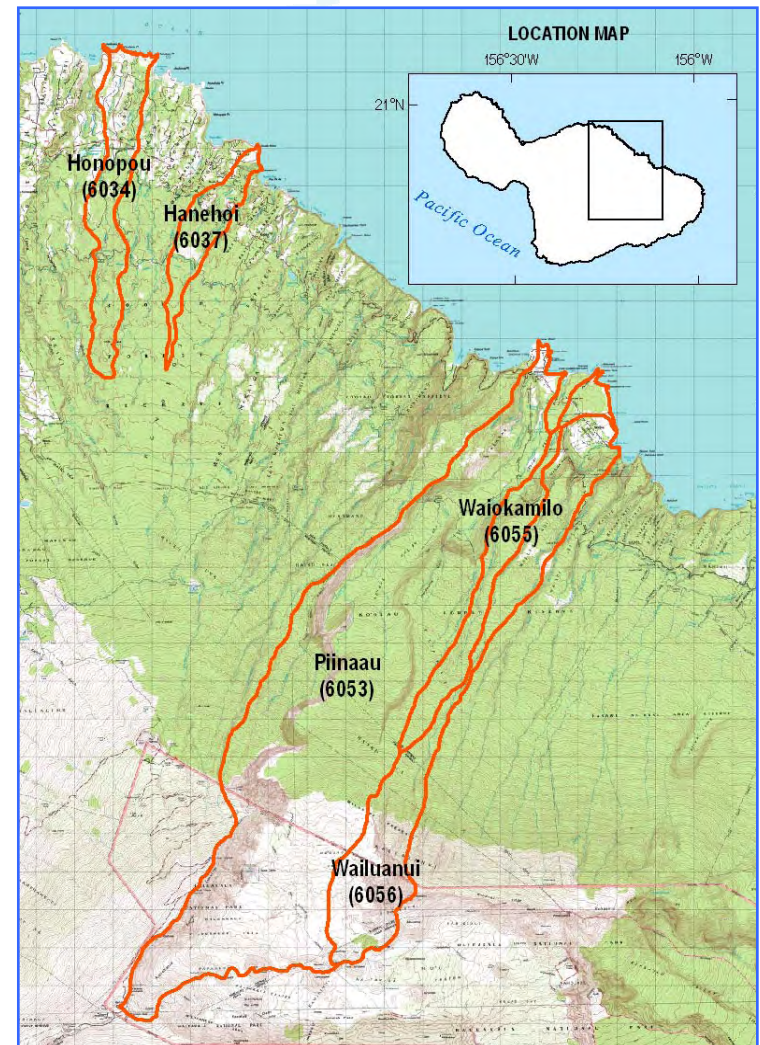
- Piinauu Stream
- Palauhulu Stream

WAIOKAMILO

- Waiokamilo Stream
- Kualani Stream

WAILUANUI

- East and West Wailuanui Streams
- Waikani Waterfall [Stream]



East Maui Trips

Trip 1: October 23-24, 2008

- Site selection with USGS
- Flow measurements ~ Honopou, Puolua

Trip 2: October 27-29, 2008

- Flow measurements ~ Honopou, Puolua, Wailuanui
- Interim actions ~ Honopou, Hanehoi



East Maui Trips

Trip 3: November 17-19, 2008

- Flow measurements ~ Hanehoi, Puolua
- Document high flows
- Interim action ~ Kano, Kualani (makai)

Trip 4: December 8-10, 2008

- Flow measurements ~ Palauhulu, Wailuanui
- Interim actions ~ Wailuanui
- Document diversions ~ Waiokamilo, Piinaau
- Locate Kualani (mauka), Kaleiomaui



East Maui Trips

Trip 5 (Tentative): February 2-4, 2009

- Visit Wailuanui Valley and taro loi
- Waiokamilo
- Keanae



An aerial photograph of a river delta, likely the Honopou River, showing a wide, shallow channel that branches out into smaller distributaries. The water is a murky, brownish-green color, and the surrounding land is a mix of green and brown, indicating a mix of vegetation and bare earth. The sky is a pale, overcast grey. The text 'Honopou' is overlaid in the top right corner in a large, bold, black font with a white outline.

Honopou

Interim Instream Flow Standards

- **IFS A:** Below Haiku Ditch
2.00 cfs (1.29 mgd)
- **IFS B:** Below all Honopou diversions
0.72 cfs (0.47 mgd)

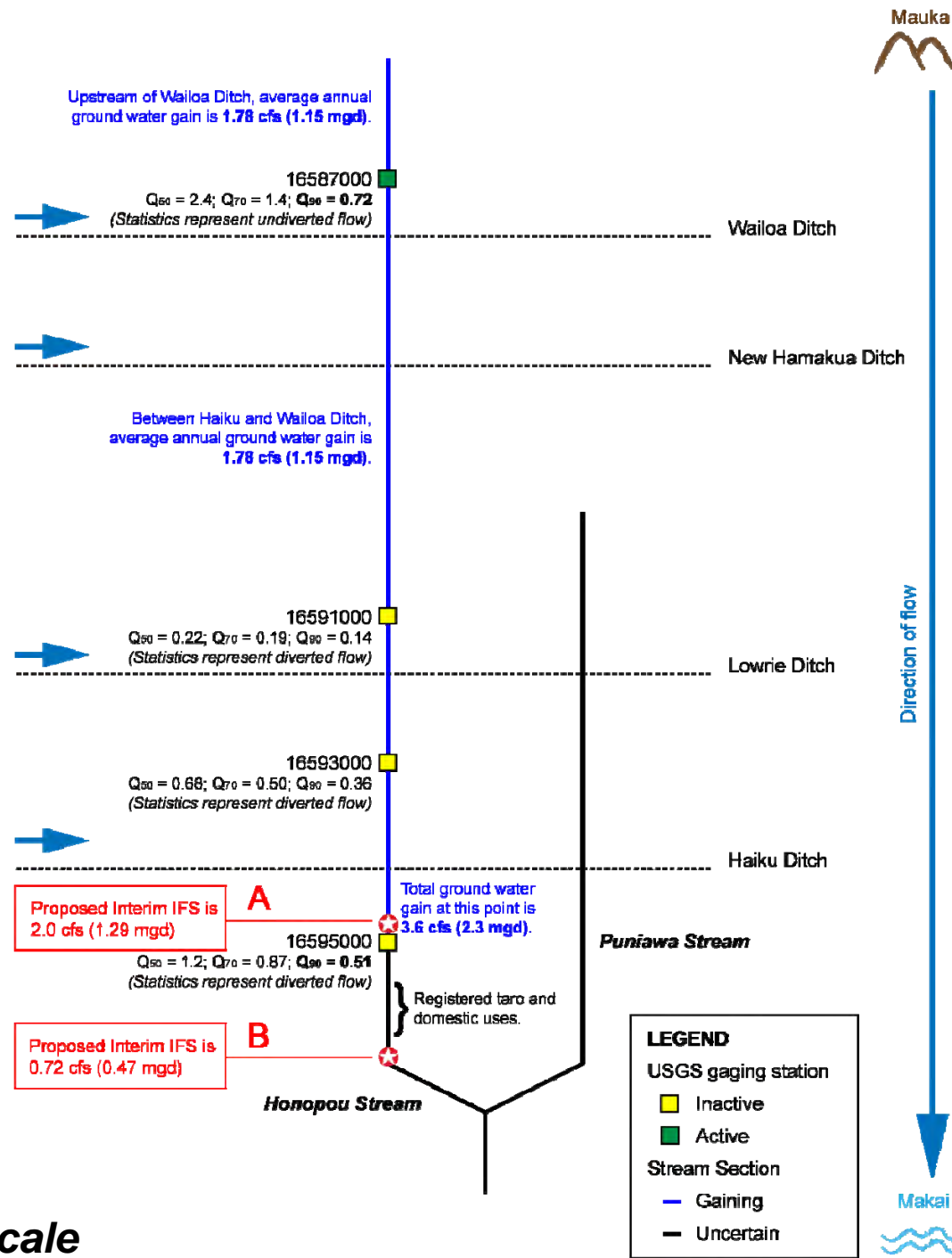


Diagram not to scale

IFS Site A

10/23/2008



IFS Site A

10/23/2008



IFS Site A

10/23/2008



IFS Site A

10/23/2008



Measurements at IFS Site A

Date	Time	Discharge
10/23/2008	0830 hr	0.229 cfs (meter)
10/27/2008	0911 hr	0.242 cfs (meter)
10/28/2008	0825 hr	0.060 cfs (meter)
10/29/2008	1045 hr	0.093 cfs (bucket)
10/29/2008	1730 hr	0.085 cfs (bucket)
IIFS		2.000 cfs



IFS Site B

10/23/2008



IFS Site B

10/23/2008



IFS Site B

10/23/2008



Measurements at IFS Site B

Date	Time	Discharge
10/23/2008	1109 hr	0.189 cfs (meter)
10/27/2008	1038 hr	0.139 cfs (meter)
10/28/2008	1000 hr	0.151 cfs (meter)
IIFS		0.72 cfs



Haiku Ditch

10/27/2008



Haiku Ditch

10/27/2008



Haiku Ditch

11/18/2008



Haiku Ditch

11/18/2008



Lowrie Ditch

10/27/2008



An aerial photograph of a coastline. On the left, a river flows through a landscape with some buildings and fields. The river meets the ocean on the right, where white waves are breaking against a dark, rocky shore. The sky is overcast and grey.

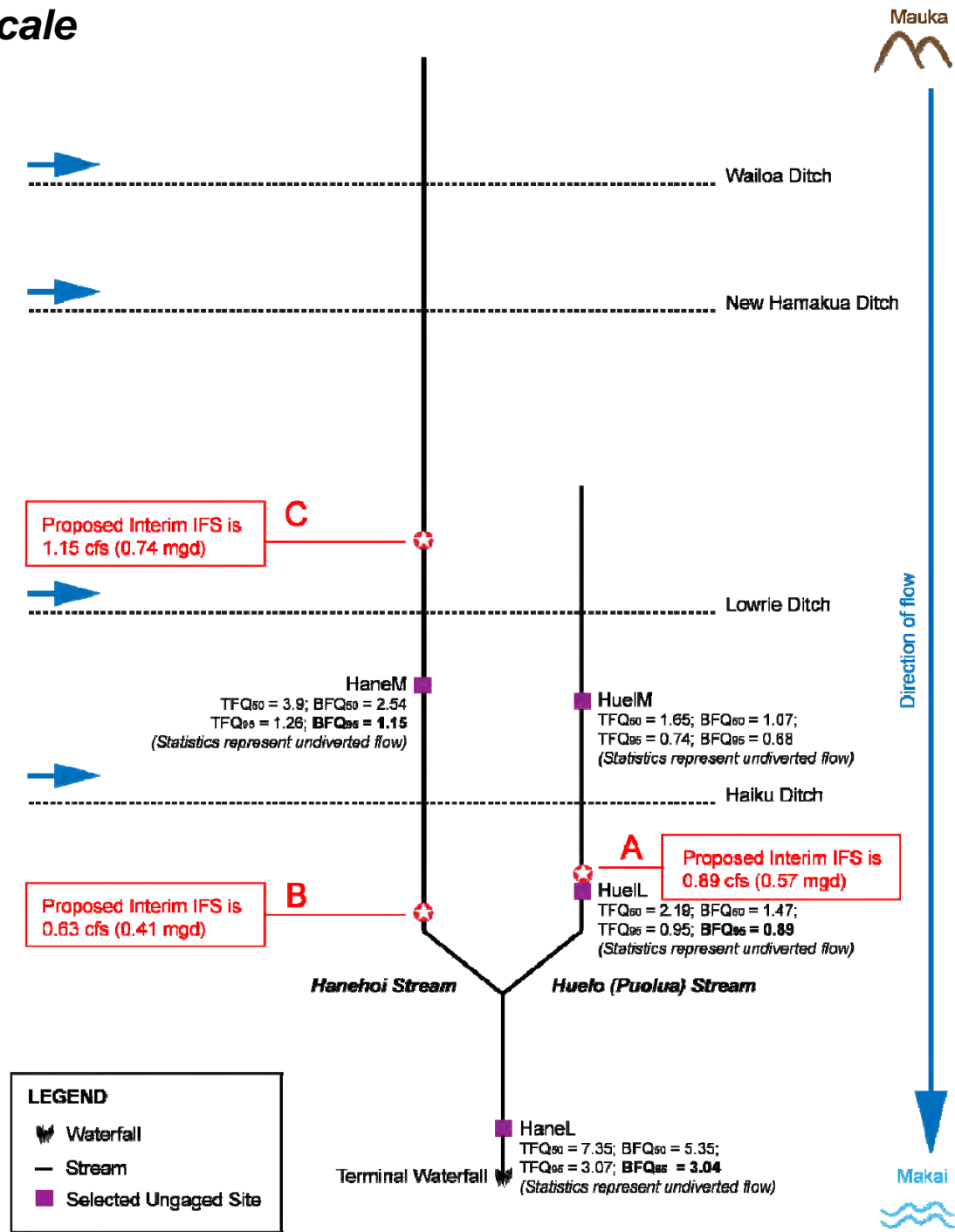
Hanehoi

Interim Instream Flow Standards

- **IFS A:** Below Haiku Ditch on Puolua (Huelo)
0.89 cfs (0.74 mgd)
- **IFS B:** Below Haiku Ditch on Hanehoi
0.63 cfs (0.41 mgd)
- **IFS C:** Above Lowrie Ditch on Hanehoi
1.15 cfs (0.74 mgd)

Diagram not to scale

HANEHOI



IFS Site A

10/23/2008



IFS Site A

10/23/2008



IFS Site A

10/23/2008



IFS Site A

10/23/2008



IFS Site A

10/23/2008



IFS Site A

10/28/2008



Measurements at IFS Site A

Date	Time	Discharge
10/23/2008	1404 hr	0.052 cfs (meter)
10/27/2008	1403 hr	0.047 cfs (meter)
10/27/2008	1430 hr	0.063 cfs (bucket)
10/28/2008	1130 hr	0.062 cfs (bucket)
10/28/2008	1312 hr	0.055 cfs (meter)
11/19/2008	1340 hr	0.244 cfs (meter)
IIFS		0.890 cfs



IFS Site B

10/24/2008



IFS Site B

10/24/2008



IFS Site B

10/24/2008



IFS Site B

10/28/2008



IFS Site B

11/19/2008



IFS Site B

11/19/2008



Measurements at IFS Site B

Date	Time	Discharge
10/24/2008	0800 hr	Dry
11/19/2008	1544 hr	4.711 cfs (meter)
IIFS		0.630 cfs



IFS Site C

10/24/2008



IFS Site C

10/24/2008



IFS Site C

10/24/2008



IFS Site C

10/24/2008



IFS Site C

10/24/2008



Measurements at IFS Site C

Date	Time	Discharge
10/24/2008	1043 hr	0.065 cfs (meter)
IIFS		1.150 cfs





Piinaau

Interim Instream Flow Standards

- **IFS A:** Below Koolau Ditch on Piinaau
Status quo
- **IFS B:** Above Piinaau/Palauhulu confluence
5.5 cfs (3.56 mgd)

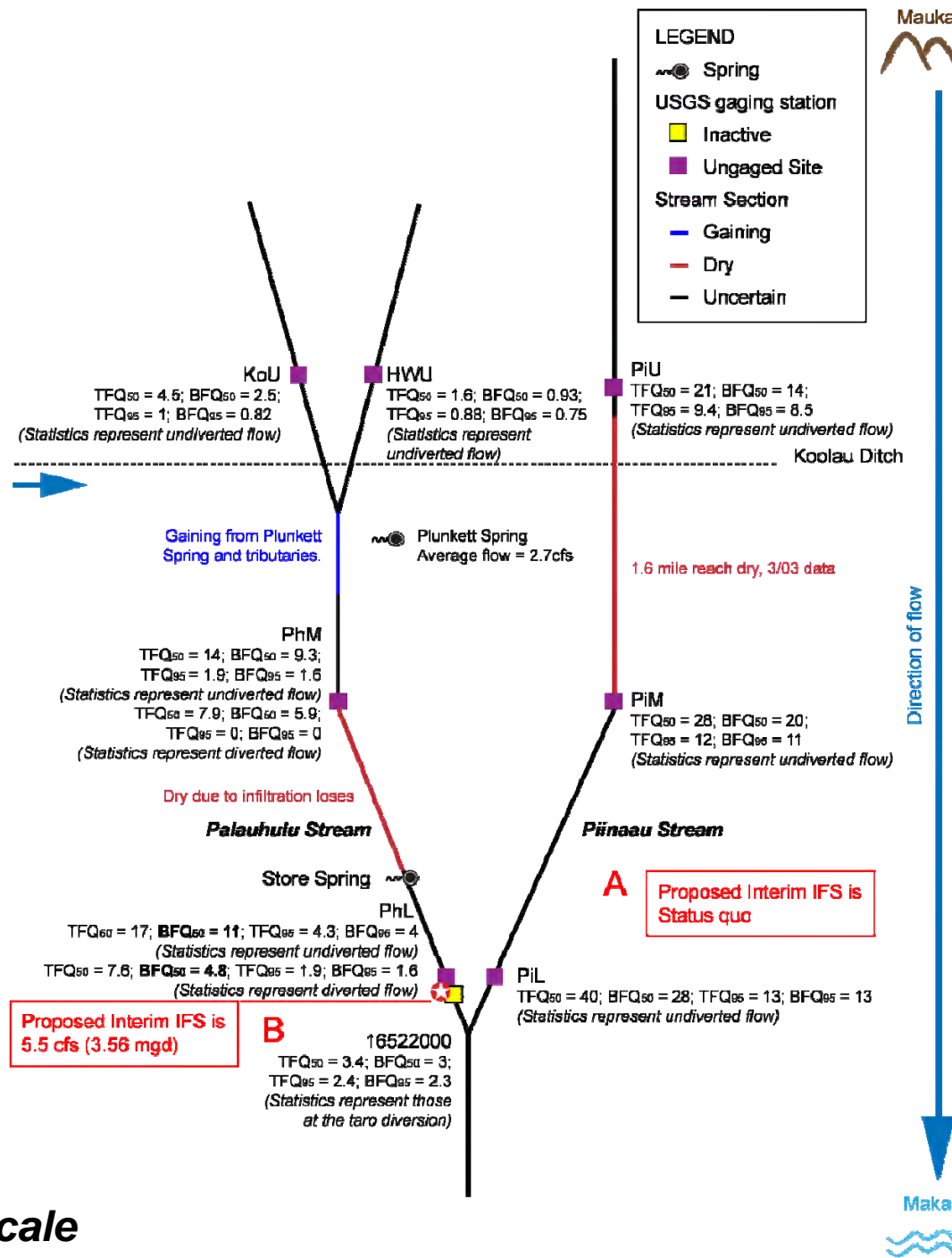


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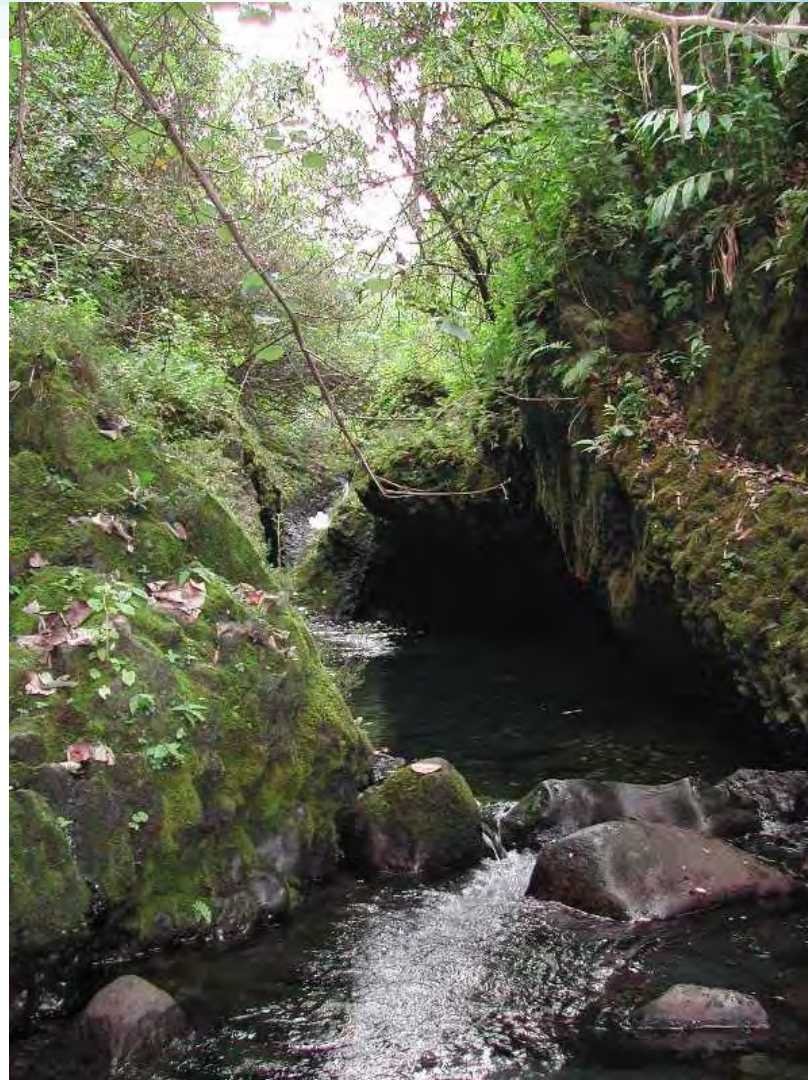
IFS Site B

10/28/2008



IFS Site B

10/28/2008



IFS Site B

10/28/2008



IFS Site B

12/09/2008



IFS Site B

11/19/2008



IFS Site B

11/19/2008



Measurements at IFS Site B

Date	Time	Discharge
10/28/2008	1555 hr	1.951 cfs (meter)
11/17/2008	0921 hr	2.133 cfs (meter)
11/18/2008		High flow
11/19/2008		High flow
IIFS		5.500 cfs



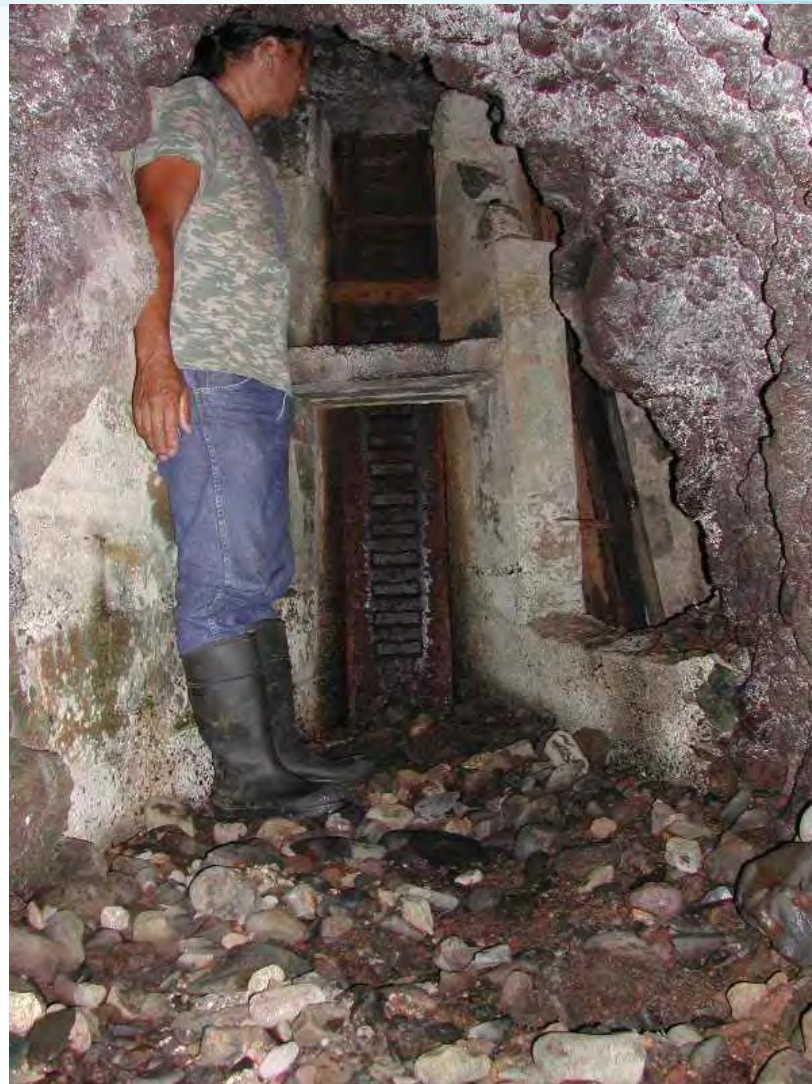
Koolau Ditch

11/17/2008



Koolau Ditch

11/17/2008



Koolau Ditch

11/17/2008



An aerial photograph of the Waiokamilo coastline. A river flows from the upper left towards the center, where it meets the ocean. The coastline is rugged with several inlets and a prominent point on the right. The water is a deep blue, and the land is a mix of green and brown. The title 'Waiokamilo' is overlaid in the top right corner.

Waiokamilo

Interim Instream Flow Standards

- **IFS A:** Above Dam 3 on Waiokamilo
4.9 cfs (3.17 mgd)
- **IFS B:** Kualani
Status quo

WAIOKAMILO

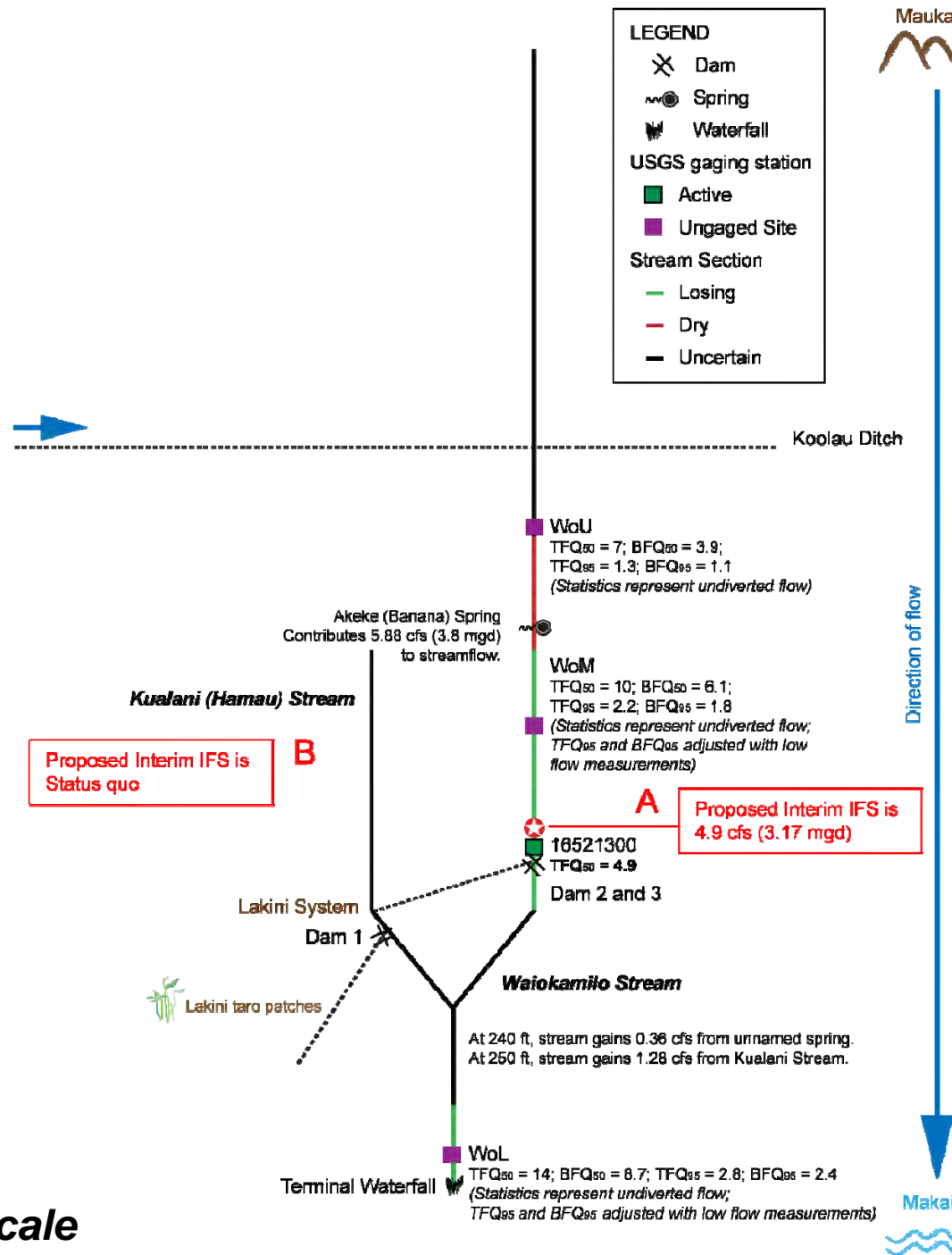


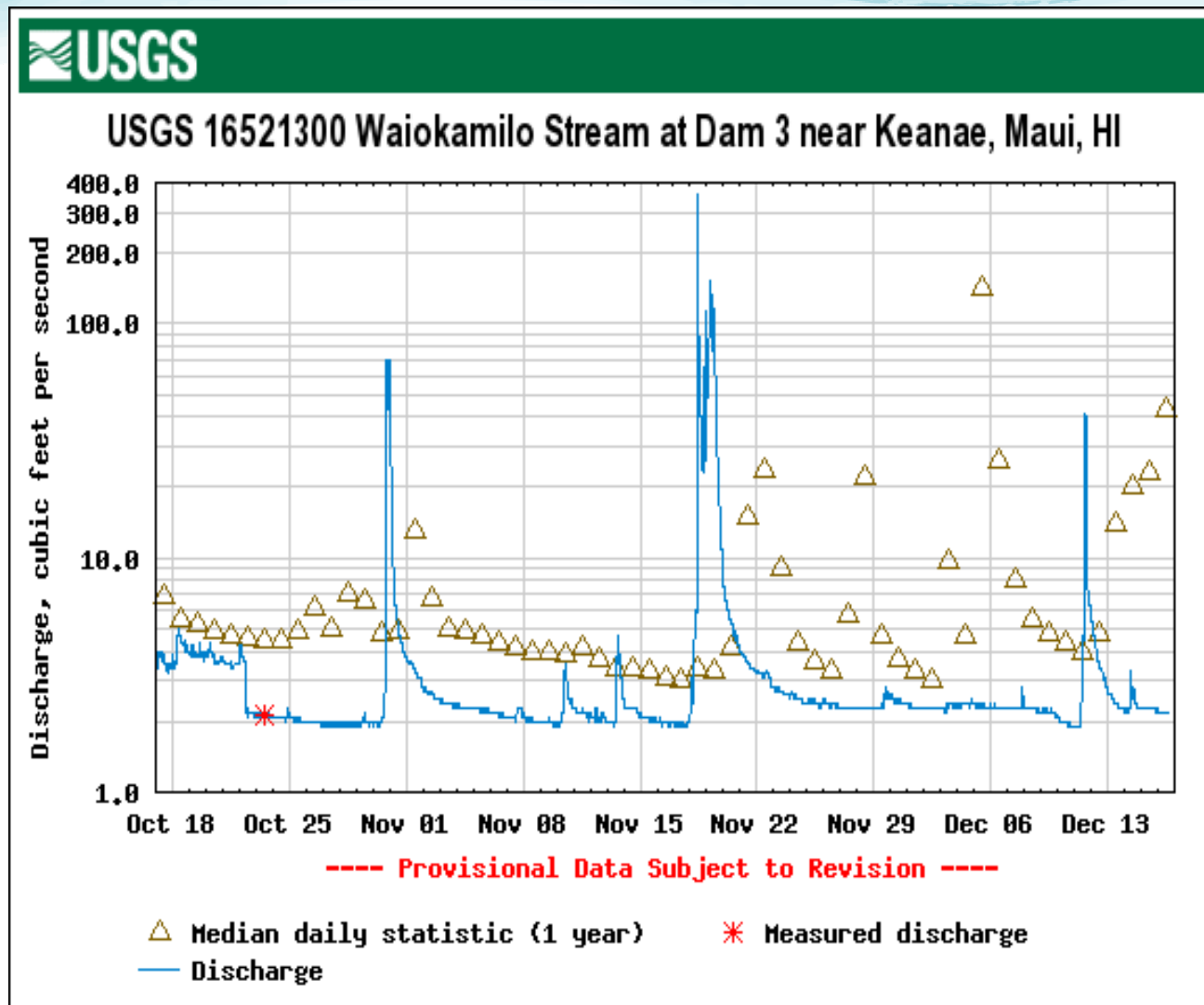
Diagram not to scale

IIFS Site – Dam 3

8/13/2008



USGS Gage Data



An aerial photograph showing a wide river valley. The river is on the right side, flowing from the top right towards the bottom right. The valley floor is a mix of green and brown, indicating vegetation and some cleared areas. The text 'Wailuanui' is overlaid in the top right corner.

Wailuanui

Interim Instream Flow Standards

- **IFS:** Below East/West Wailuani confluence
3.05 cfs (1.97 mgd)

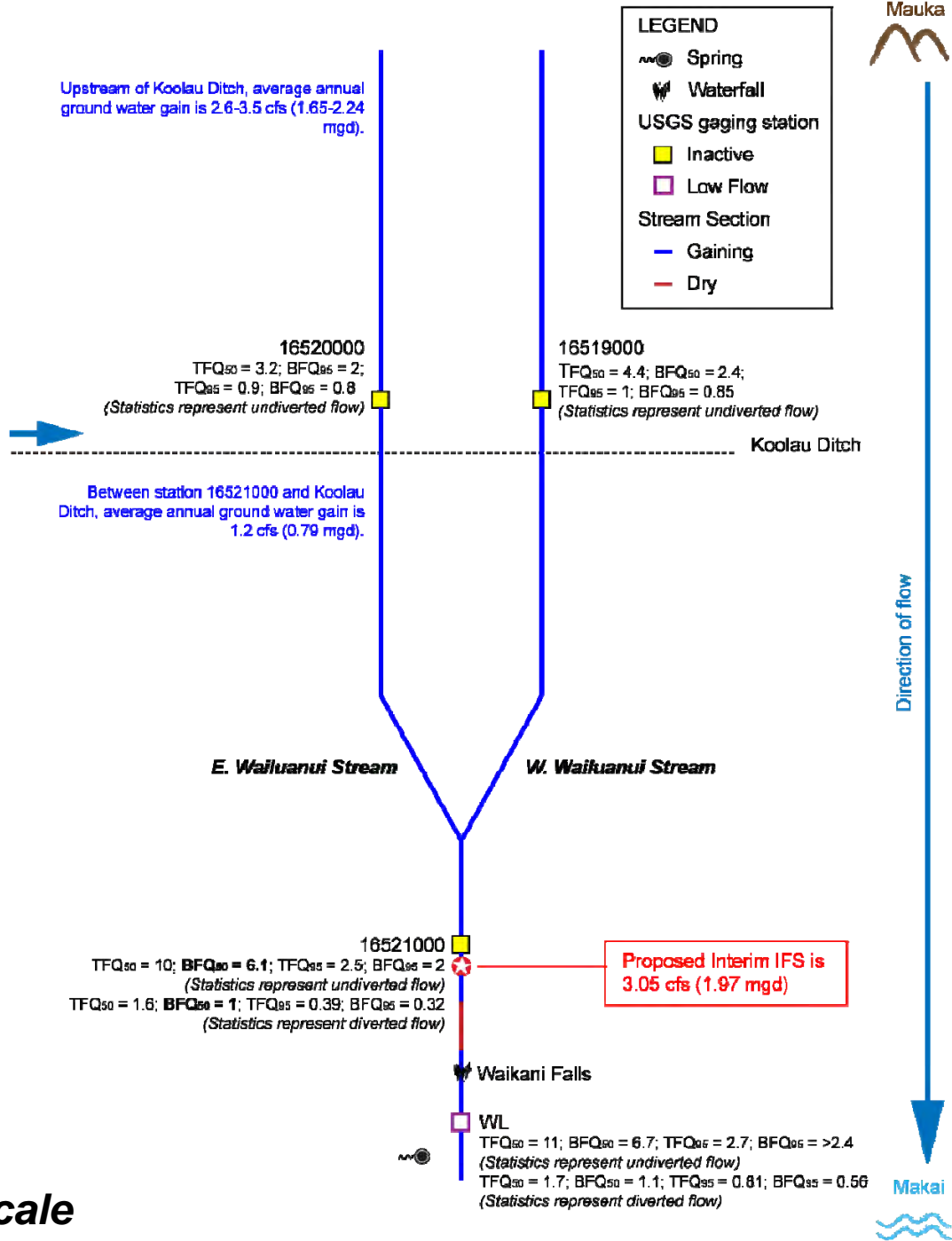


Diagram not to scale

IFS Site

10/29/2008



IFS Site

12/09/2008



East Wailuanui Intake #6

12/08/2008



East Wailuanui Intake #6

12/10/2008



West Wailuanui Intake #9

12/08/2008



West Wailuanui Intake #9

12/10/2008



Measurements at IFS Site B

Date	Time	Discharge
10/29/2008	1437 hr	2.293 cfs (meter)
12/08/2008	1502 hr	2.803 cfs (meter)*
12/09/2008	1037 hr	2.392 cfs (meter)*
12/10/2008	0920 hr	2.076 cfs (meter)*
IIFS		5.500 cfs

*Data has not been checked yet.



Questions?



Ke Kahuwai Pono

“The trustee who oversees the rightful sharing of water.”