

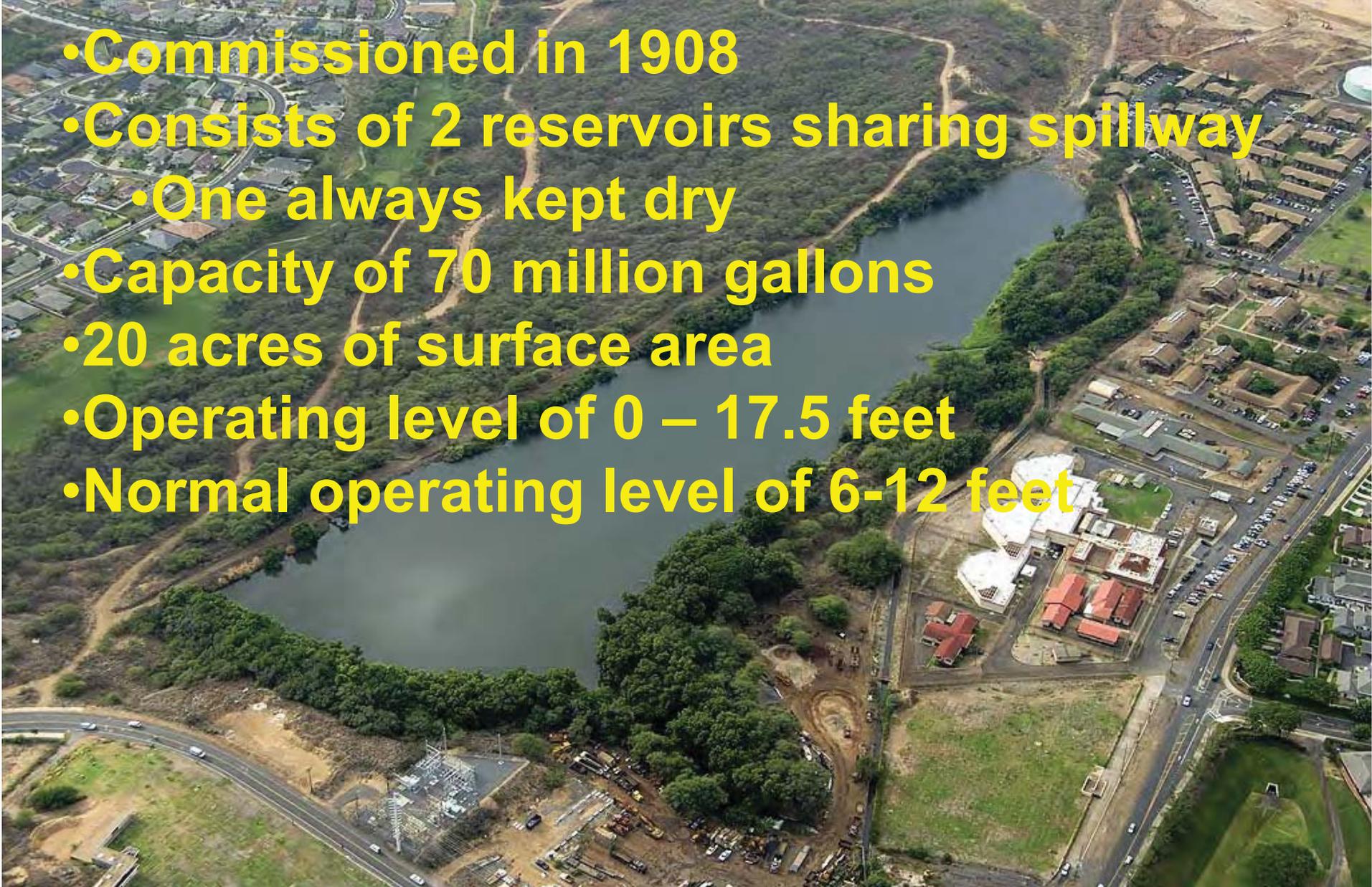
# Waiale Reservoir – pre IIFS



# Waiale Reservoir Overview



- Commissioned in 1908
- Consists of 2 reservoirs sharing spillway
  - One always kept dry
- Capacity of 70 million gallons
- 20 acres of surface area
- Operating level of 0 – 17.5 feet
- Normal operating level of 6-12 feet



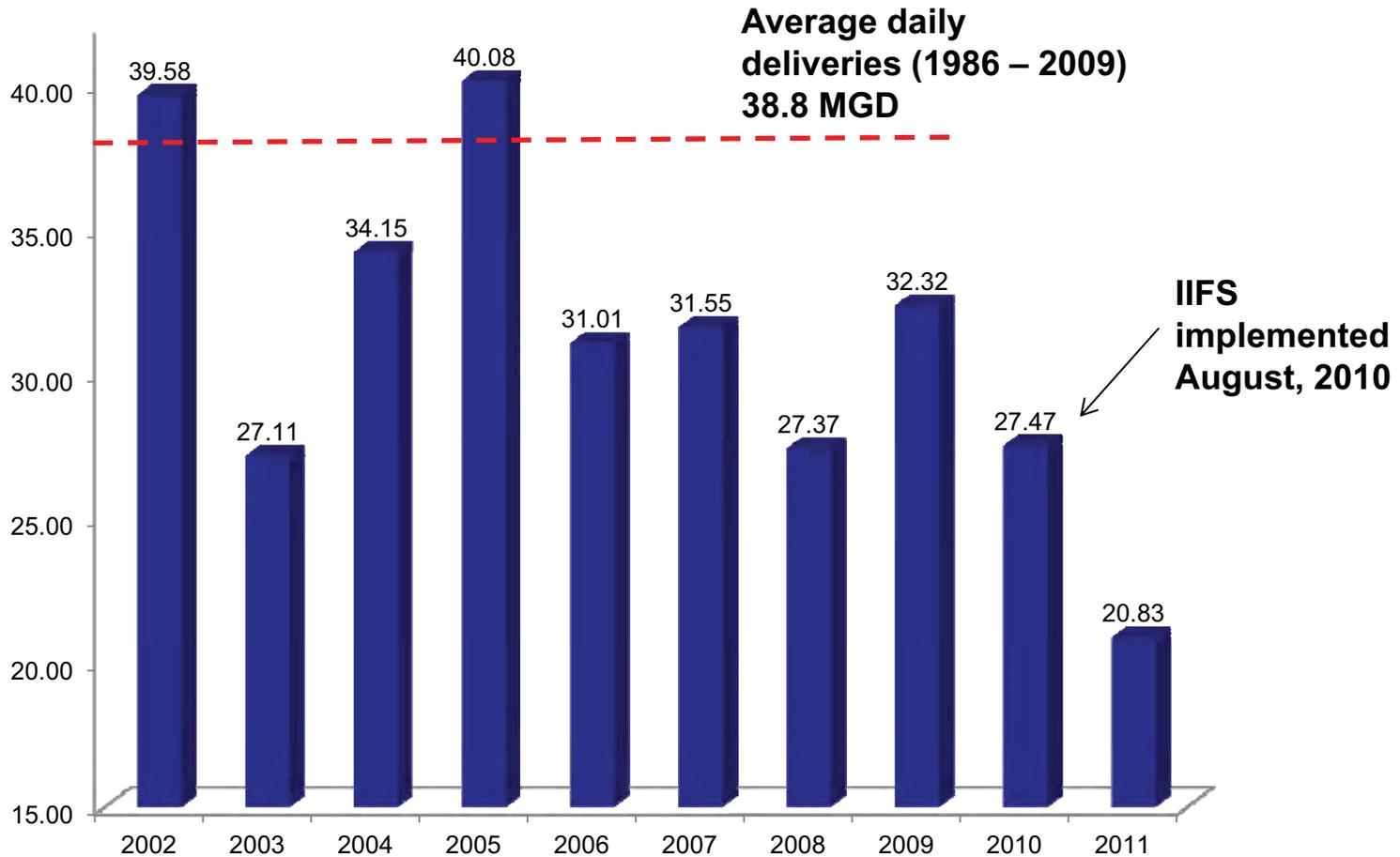
# Storm Water Runoff Analysis



# Reservoir Inflow Analysis



## Average Daily Waiale Reservoir Deliveries (MGD)



# Waiale Reservoir – post IIFS





- **Lining of existing reservoir**
  - **Concrete**
  - **HDPE**
- **Lining of smaller configuration**
- **Bypass existing reservoir**
  - **Flume through reservoir 73**
  - **Ditch through reservoir 74**

# Lining Options - Partial



# Bypass Option



# Bypass Option



Reservoir 73

Reservoir 74

New concrete lined ditch from reservoir inlet to outlet

Outlet Works

# IIFS Timeline Compliance



Date	Action
June 2010	CWRM issues Decision and Order on IIFS for Na Wai Eha Streams
August 2010	HC&S implements IIFS for Waihee and South Waiehu Streams within 2 months as specified by the D&O
August 2010	Stipulation and Order for South Waiehu Stream, IIFS suspended for 60 days
November 2010	Second Stipulation and Order for South Waiehu Stream, IIFS suspended for 60 days
December 2010	Third Stipulation and Order for South Waiehu Stream, IIFS suspended for a one year period
January 2011 to present	HC&S transmits monthly ground water reports to Commission for Well 7 which includes groundwater levels and salinity measurements
February 2011 to present	HC&S installs water meter to measure actual quantity of water being consumed under the existing use from the Iao Tunnel
April 2011	HC&S meets with Division of Aquatic Resources and Commission Staff in the field to discuss and agree upon specific diversion modifications to achieve biological connectivity for streams in Na Wai Eha
June 2011	HC&S submits to Commission draft implementation plan for the proposed diversion modification work
July 2011	HC&S completes proposed diversion modification work on the Iao stream Spreckels Ditch diversion
November 2011	DAR and Commission Staff conducts field trip to inspect and approve diversion modifications

## Next Steps



- **Groundwater baseline data collection**
  - ongoing
- **Engage engineering/design consultant**
  - **January 2012**
- **Conduct cost/benefit analysis**
  - **March 2012**
- **Selection of loss mitigation measure**
  - **April 2012**
- **Begin permitting and approval process**
  - **July 2012**