

Integrated Catchment Management Directorate

Presentation to Healthy Rivers Wai Ora CSG

19 February 2016



Healthy environment

Strong economy

Vibrant communities.

1953 Flood: Waikato River at Rangiriri

Lake Waikare

*Waikato River
Main channel*

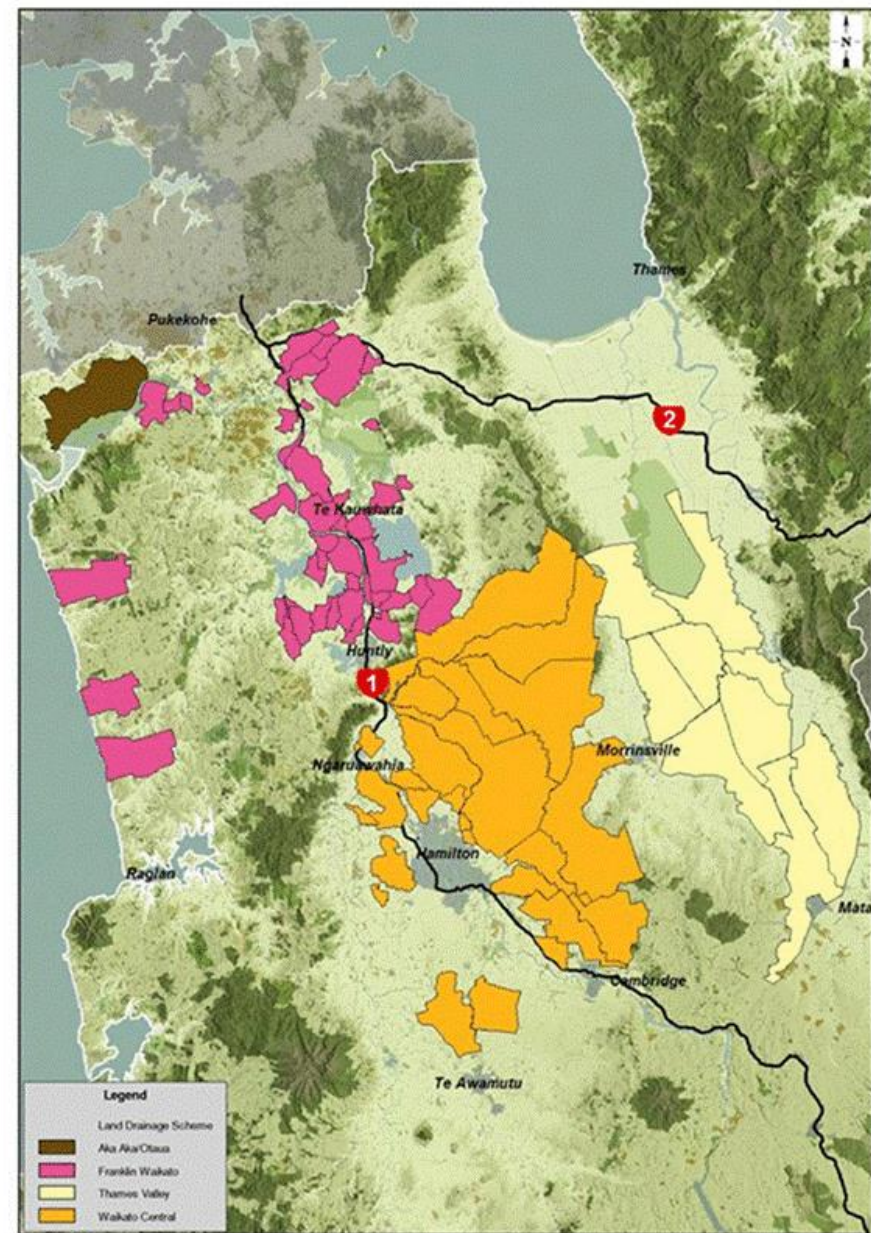
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Land Drainage

- Drainage areas were developed at turn of century
- Formed under Land Drainage Act 1908 to create an efficient network and equitable income base
- Each drainage area is self-funding via targeted rates (80 administered by WRC in Waikato; additional TLA and private districts)



Basis of WRC land drainage

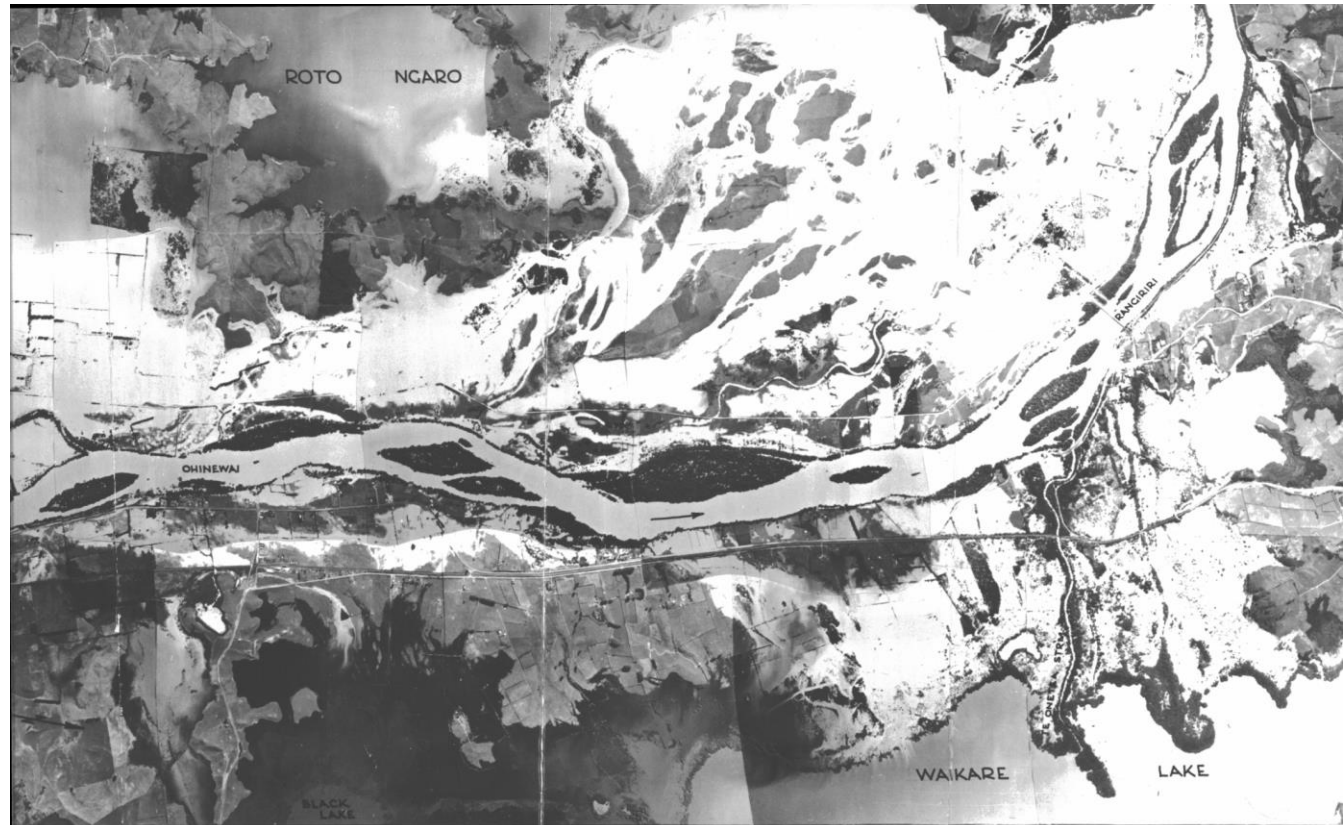
- Land drainage is a part of WRC core business
- Primary function – to manage groundwater levels
- Secondary function – to clear ponded water within three days for a 10 year run off event
- Only a specific arterial network (main drainage channel) is maintained
- Ongoing requirement for access to undertake maintenance – key planning consideration for council

Drainage maintenance and setbacks

- Maintenance provided by spraying or machine cleaning
- Fencing and planting can impact ability to undertake drain maintenance
- Distance of setback is critical to enable maintenance to be undertaken



Waikato River Flood Management



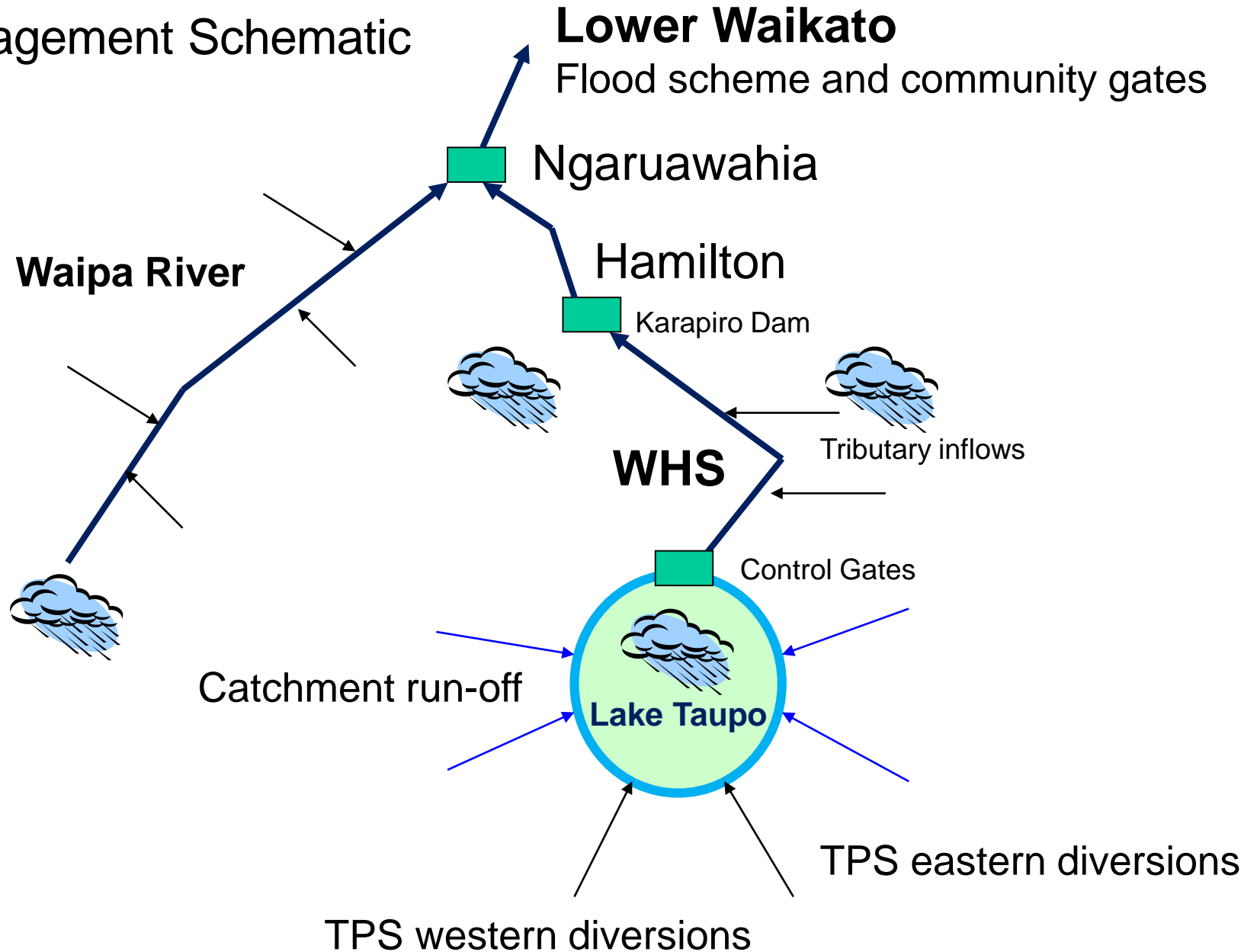
WAIKATO VALLEY AUTHORITY.
 LOWER WAIKATO RIVER FEB/MAR. 1958 FLOOD. MOSAIC SHOWING FLOODING
 0-1 FT BELOW PEAK LEVEL AT RANGIRIRI. 3-30 P.M. 1-3-58.
 APP. 30 CHAINS TO AN INCH.

Healthy environment

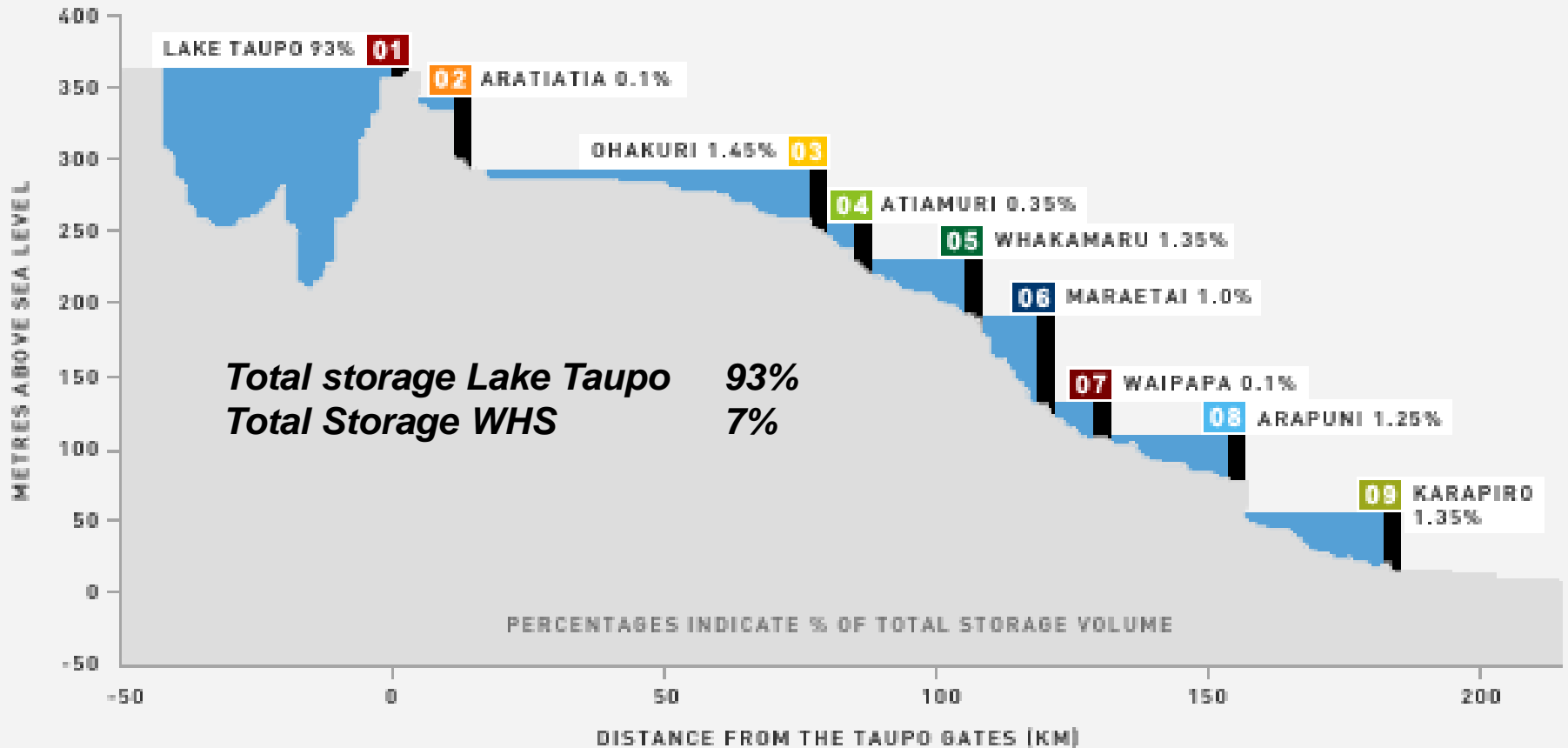
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Waikato Flood Management Schematic



Waikato Hydro System (relative storage)



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Waipa/Waikato River confluence, July 1998





WAIPA

CATCHMENT PLAN

Te Rautakinga mō Waipa Awa

Developed with co-funding from



Waikato River
Authority

Waikato

REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato



Lower Waikato Context



- Scheme directly protects ~17,200 ha land
- Zone asset replacement value ~\$146,367,000 (31/12/14)
- Estimated value of economic activity protected by scheme ~326 million p.a. (2009)
- Protects nationally significant infrastructure, e.g. SH1, rail, national grid and natural gas lines

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Lower Waikato Context



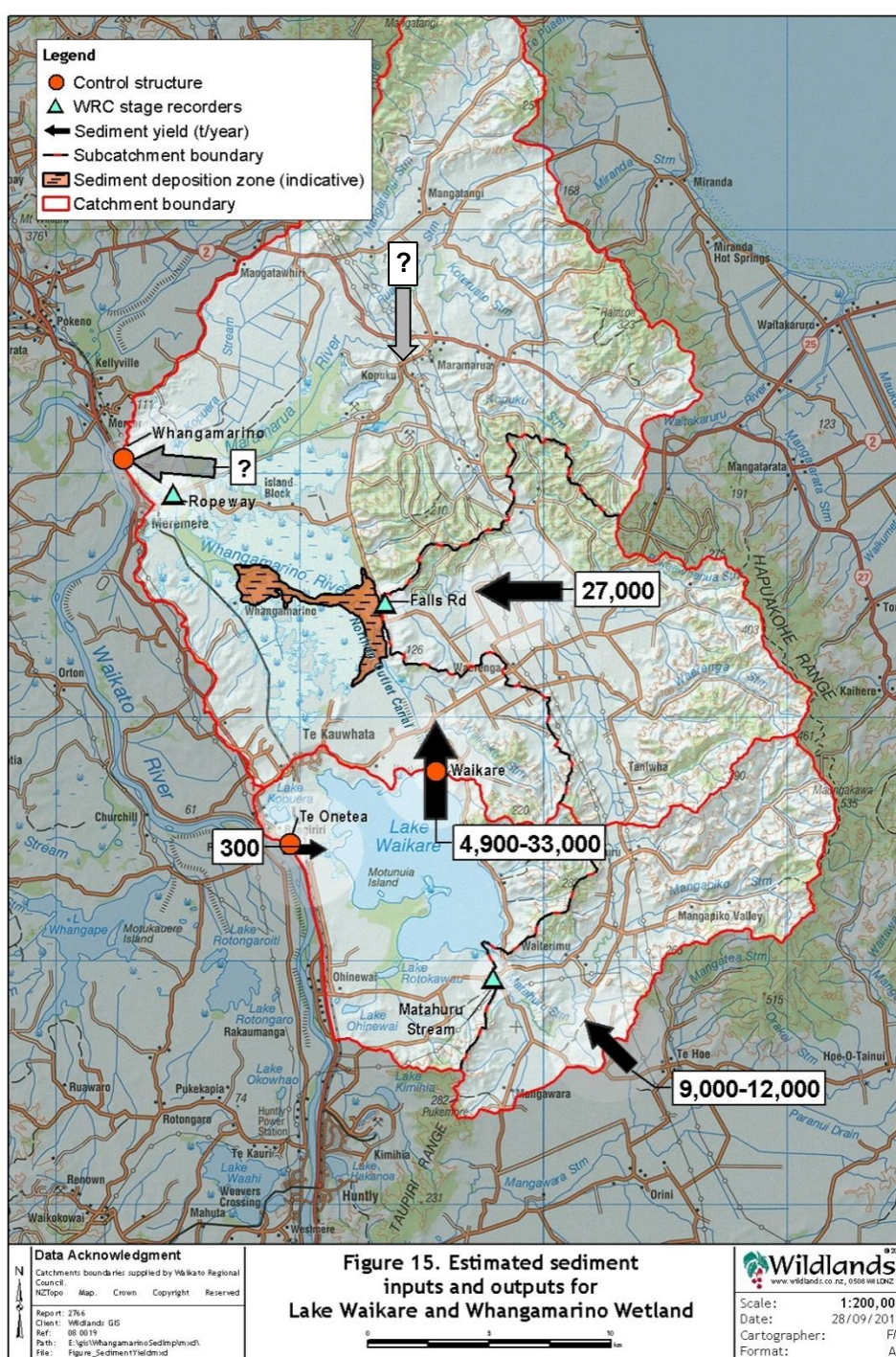
Annual rates levied – Flood protection
2016

- Waikato-Waipā incl. \$10.832m
- Lower Waikato \$6.207m

	L.Waikato	Waikato-Waipā
Stopbanks	250 km	
Pump Stations	64	
Control gates	3	

Rangiriri Spillway – 1998







Whangamarino wetland

Flood storage area 2

Waikare gate

Gate varied daily to manage lake levels, closed when Whangamarino control gate is closed

Lake Waikare

Flood storage area 1

Waikare spillway

Operates when Waikare levels exceed 7.37m

Te Kauwhata

Rangiriri spillway


8.8m above sealevel triggers spillway.

Meremere


Waikato River


Whangamarino control gate

Closed to prevent backflow from Waikato River into Whangamarino wetland only.

 Floodable area


 Protected area

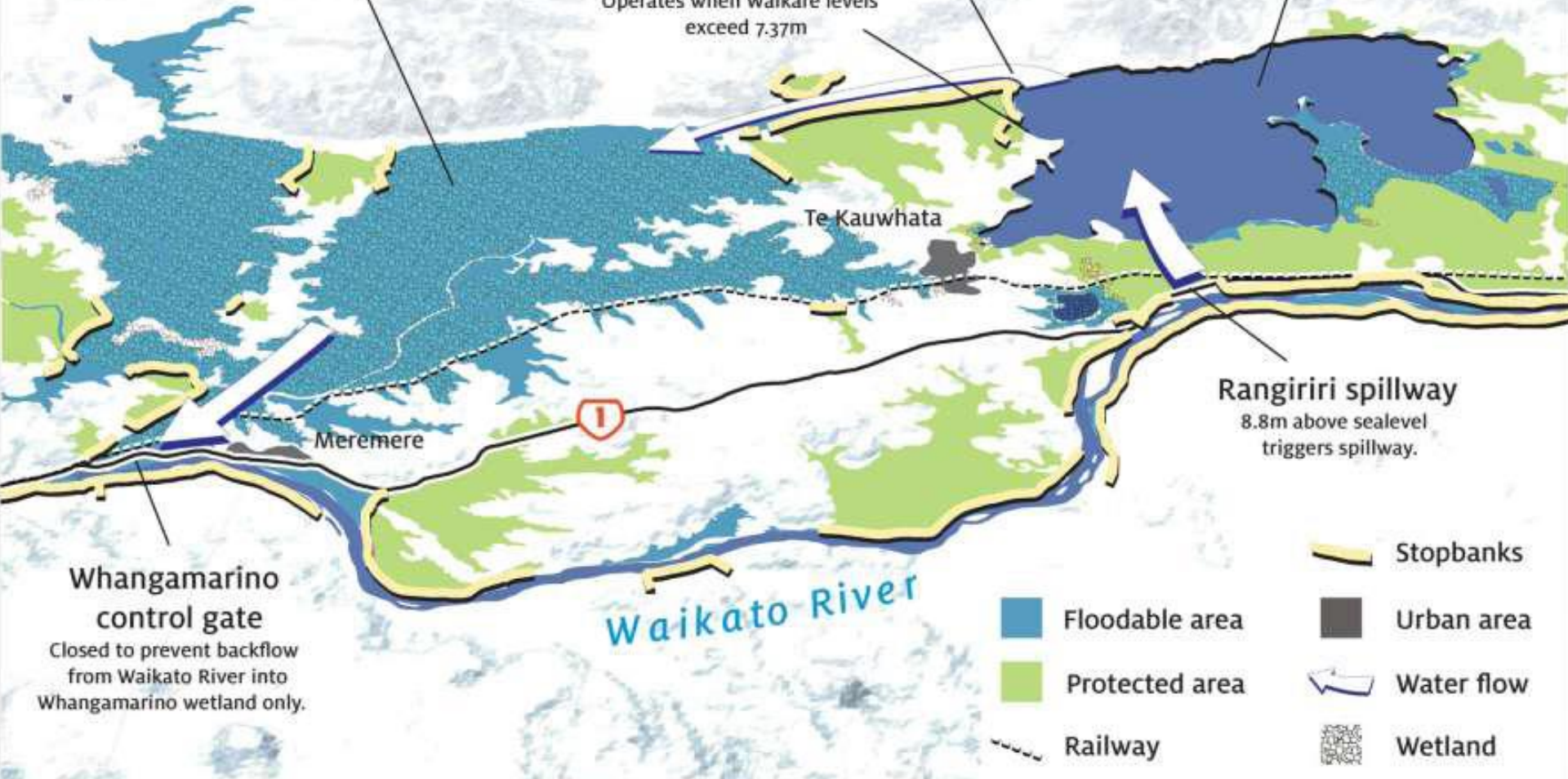
 Railway

 Stopbanks

 Urban area

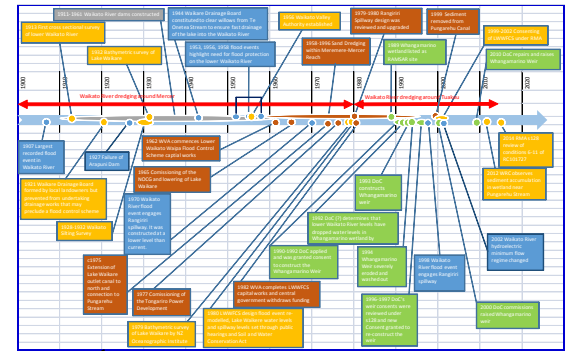
 Water flow

 Wetland



Historical Background

LWWFCS Timeline



- Illustrates key dates and events over last 100 years
- Provides context and appreciation of the range of influencing factors, complexities and agencies over time
 - 1982 Central Government withdraws on completion of the capital works
- Further development and changes within the catchment are expected – environmental performance is lifting and..
- Increased expectations from co management partners, ratepayers, stakeholders and communities

Lake Waikare/Whangamarino CMP

Whangamarino wetland

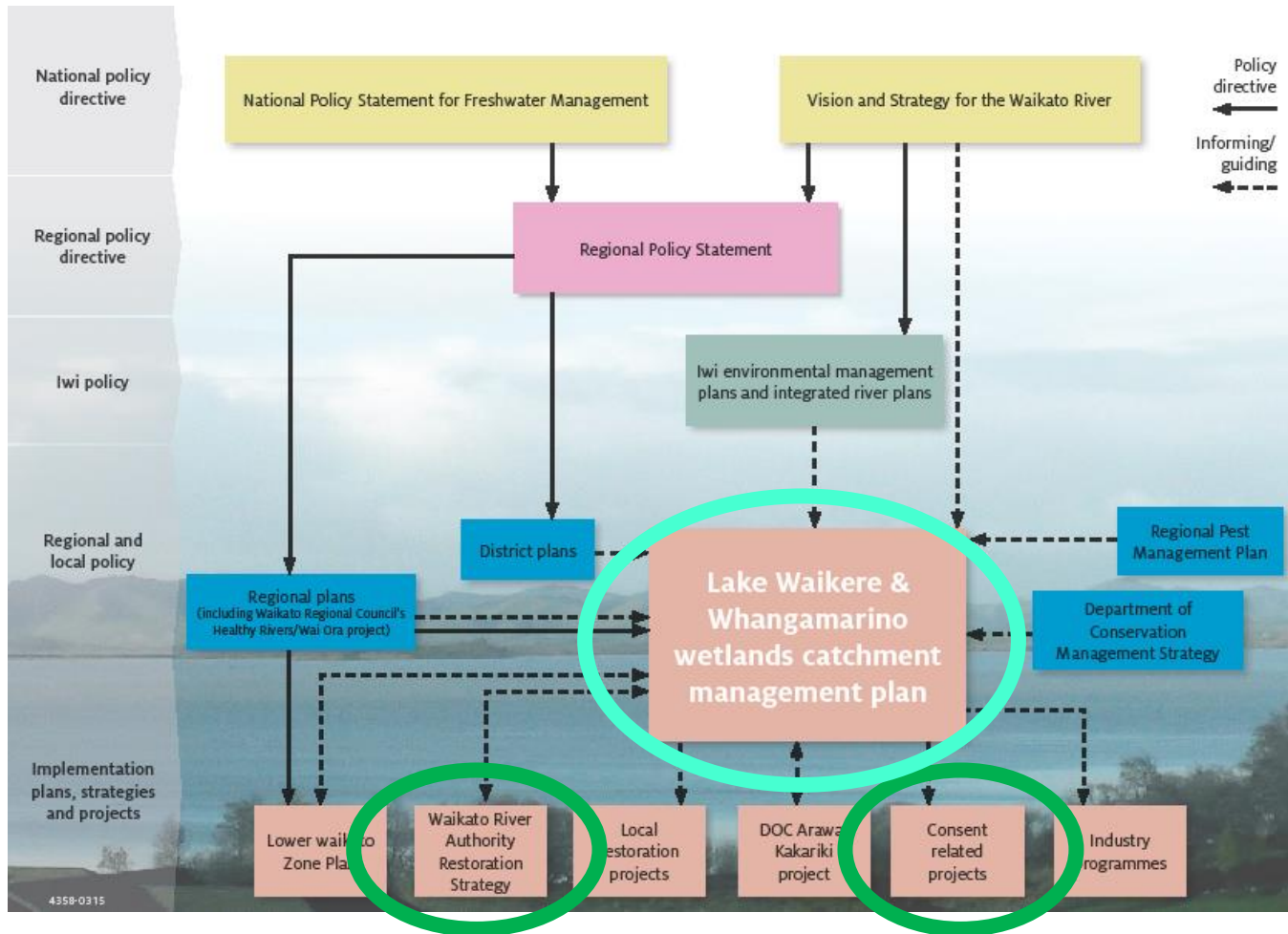
- Ramsar status

- Strong biodiversity aspect

- Degradation over 100+ years
- Changed land use /extent (encroachment) hydrology, water quality, invasive species (inc. Koi carp)
- Conferred 1989. Limited data: spatial, historic, trends
- Sediment deposition (more akin to estuarine modelling / monitoring; mixing in some areas; largely local other areas).
- Partial, limited modelling to date.
- Different spatial activities and magnitudes likely required.
- Co-ordinated interventions across hydrology, land use, water quality, invasive species likely required.



Lake Waikare / Whangamarino CMP



CMP

- additional tech work
- pull all info together
- inform targets
- inform interventions

Restoration strategy

- prioritisation of interventions in LW & L.Waikare

S128

- works in/around gate/canal

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Considerations relevant to plan change process

- Catchment planning – role in informing/refining interventions, targets and monitoring
- Existing flood infrastructure – benefits to region
- Drainage service and farming – access to drains and drain contribution to water quality
- Property plans – variety of levels of detail/expectation
- Stock access – drains to be included
- Land owner knowledge, engagement lessons to date
- Capacity/capability lessons to date

Presentation

concludes



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