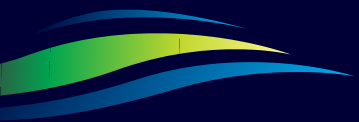


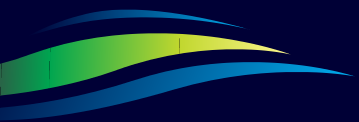
Implications for farm businesses of securing nutrient allocation



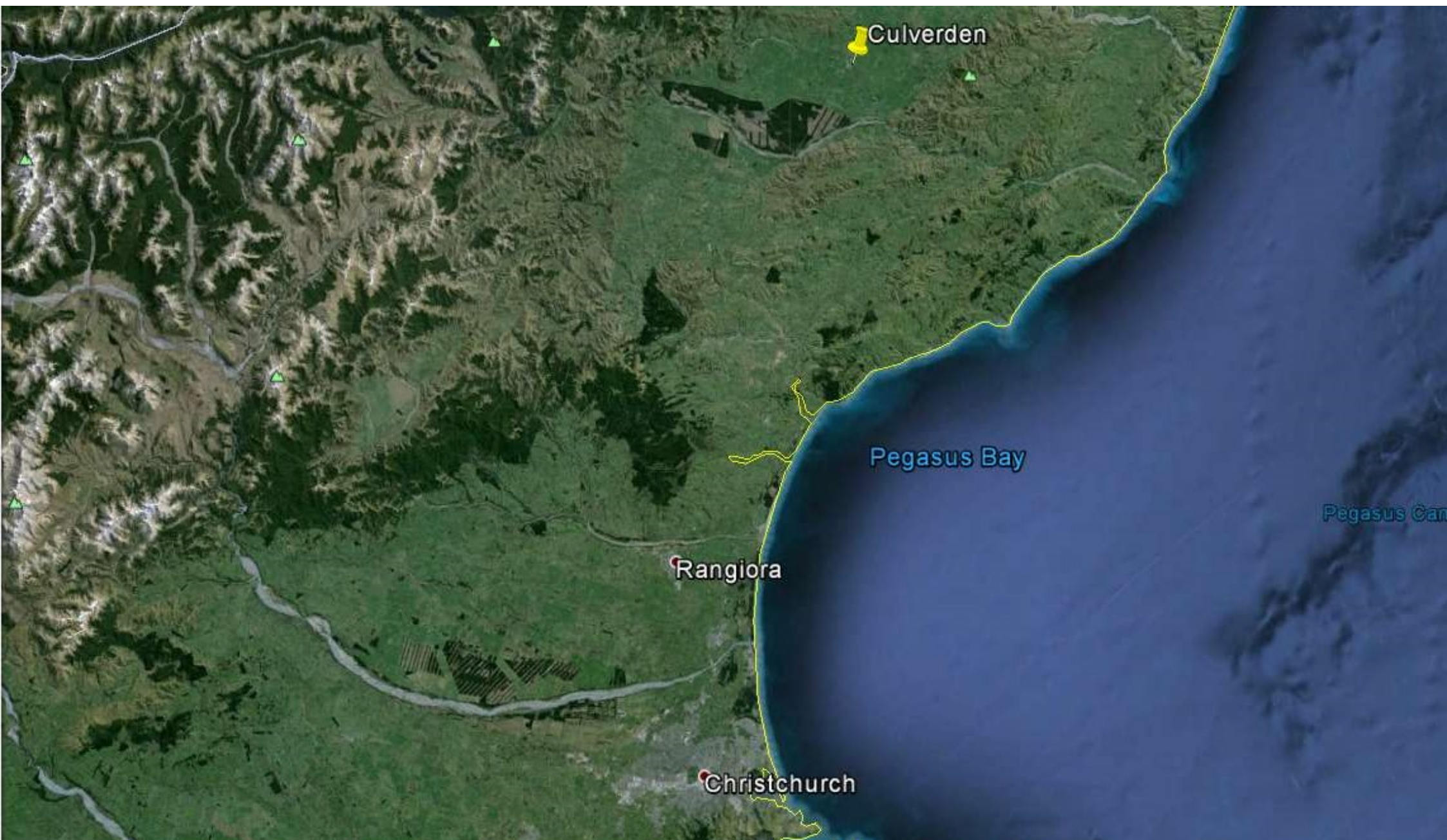
Implications



- Some certainty
- Plenty of responsibility

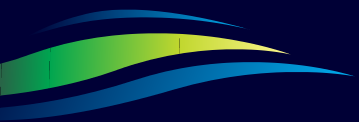


Culverden

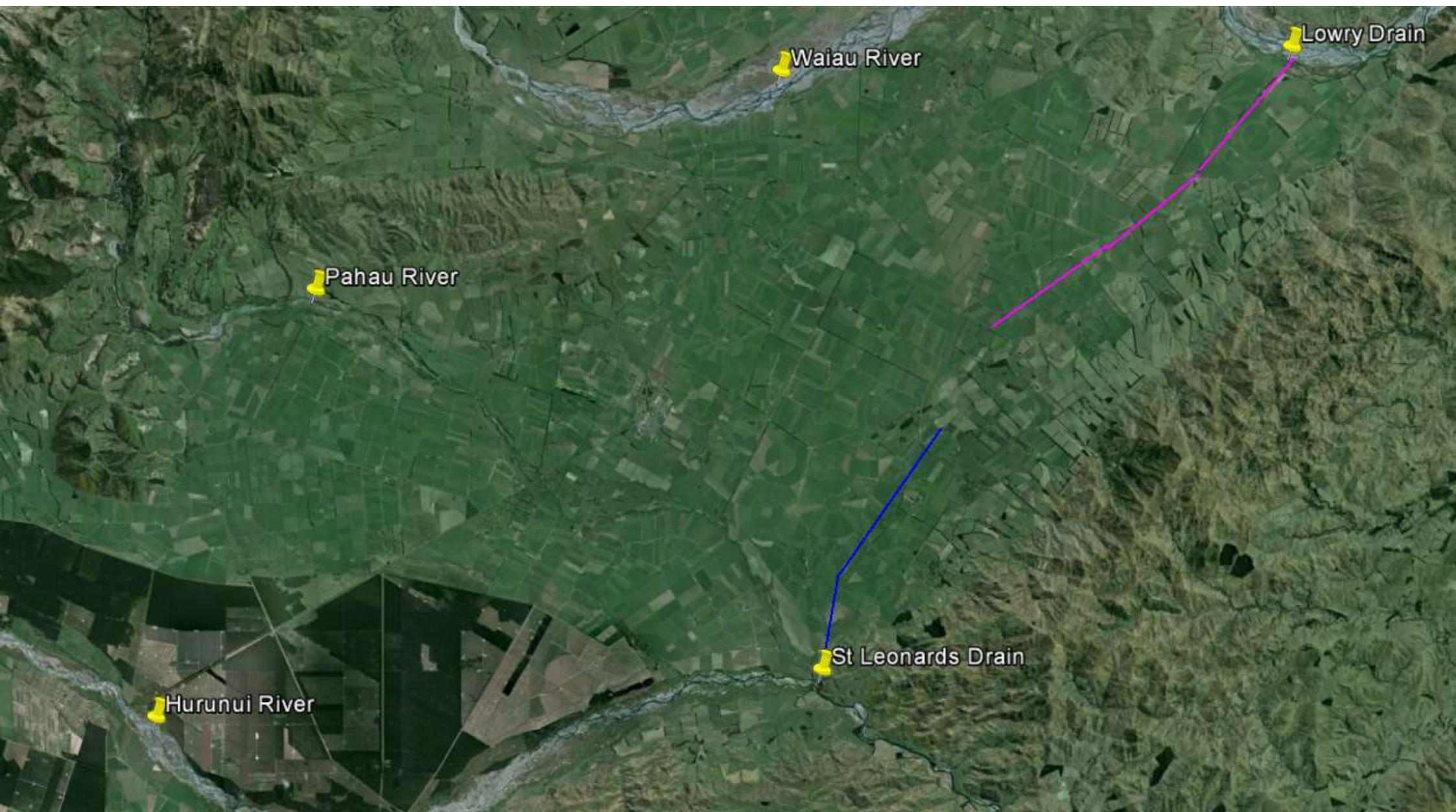


Geography

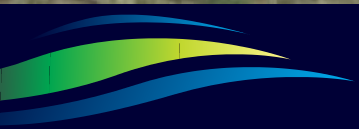
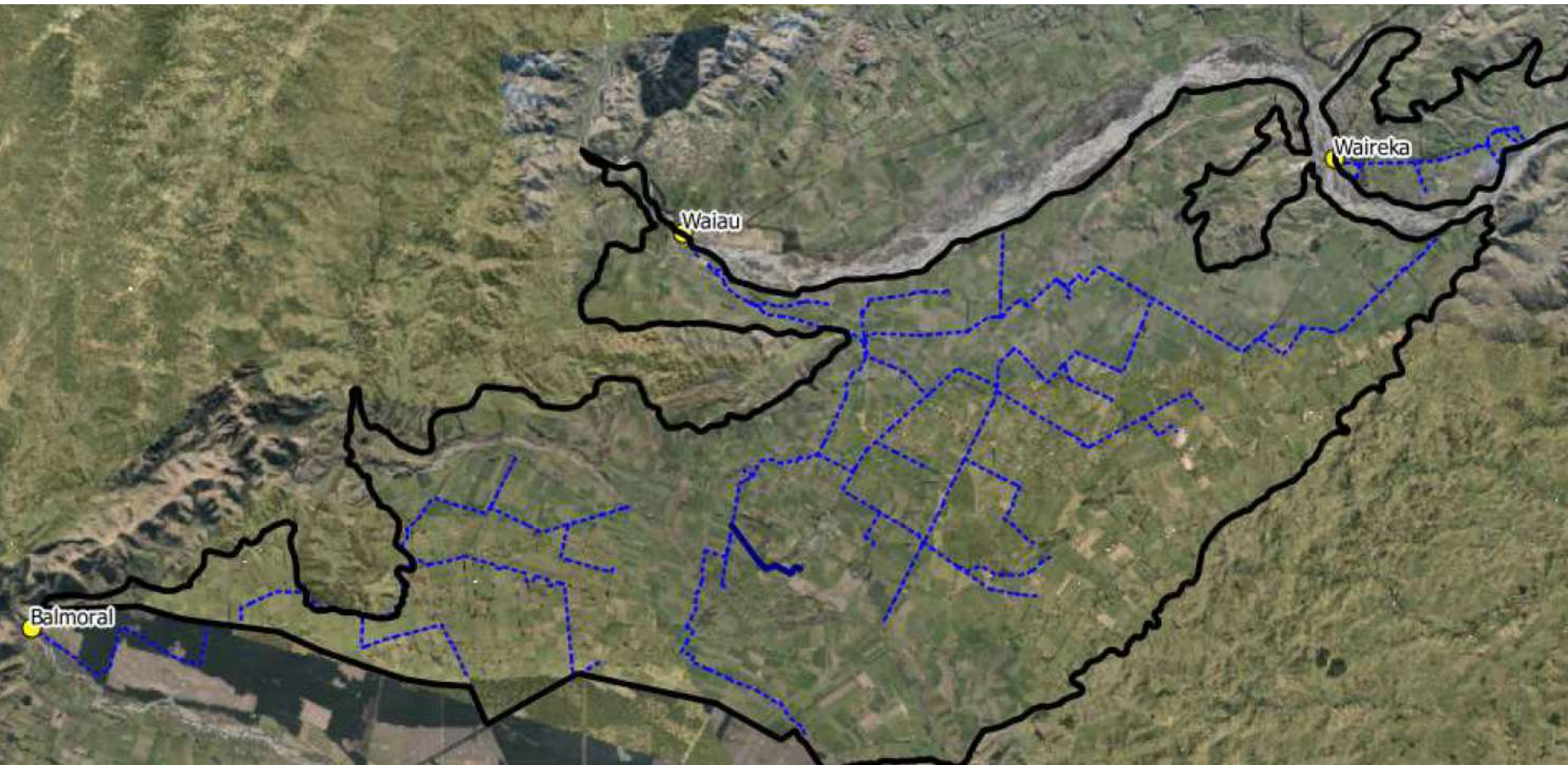
- Inland basin
- Everything exits via Hurunui & Waiau Rivers
- Hurunui mean flow = 53 cumecs
- Waiau mean flow = 97 cumecs
- Hurunui has greater development potential
- Hurunui flows regulated by Lake Sumner



Amuri Plain

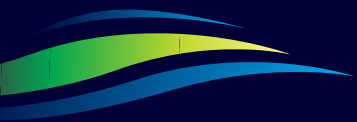


AIC Network



CWMS & ZIP

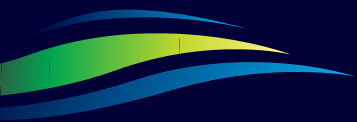
- Canterbury Water Management Strategy (CWMS)
- Primary objective of improving water quality
- Secondary objective of increasing irrigation area
- Local Zone Committee established to give effect to CWMS
- Extensive engagement with community
- Zone Implementation Programme (ZIP) completed
- ZIP forms basis on Proposed Plan



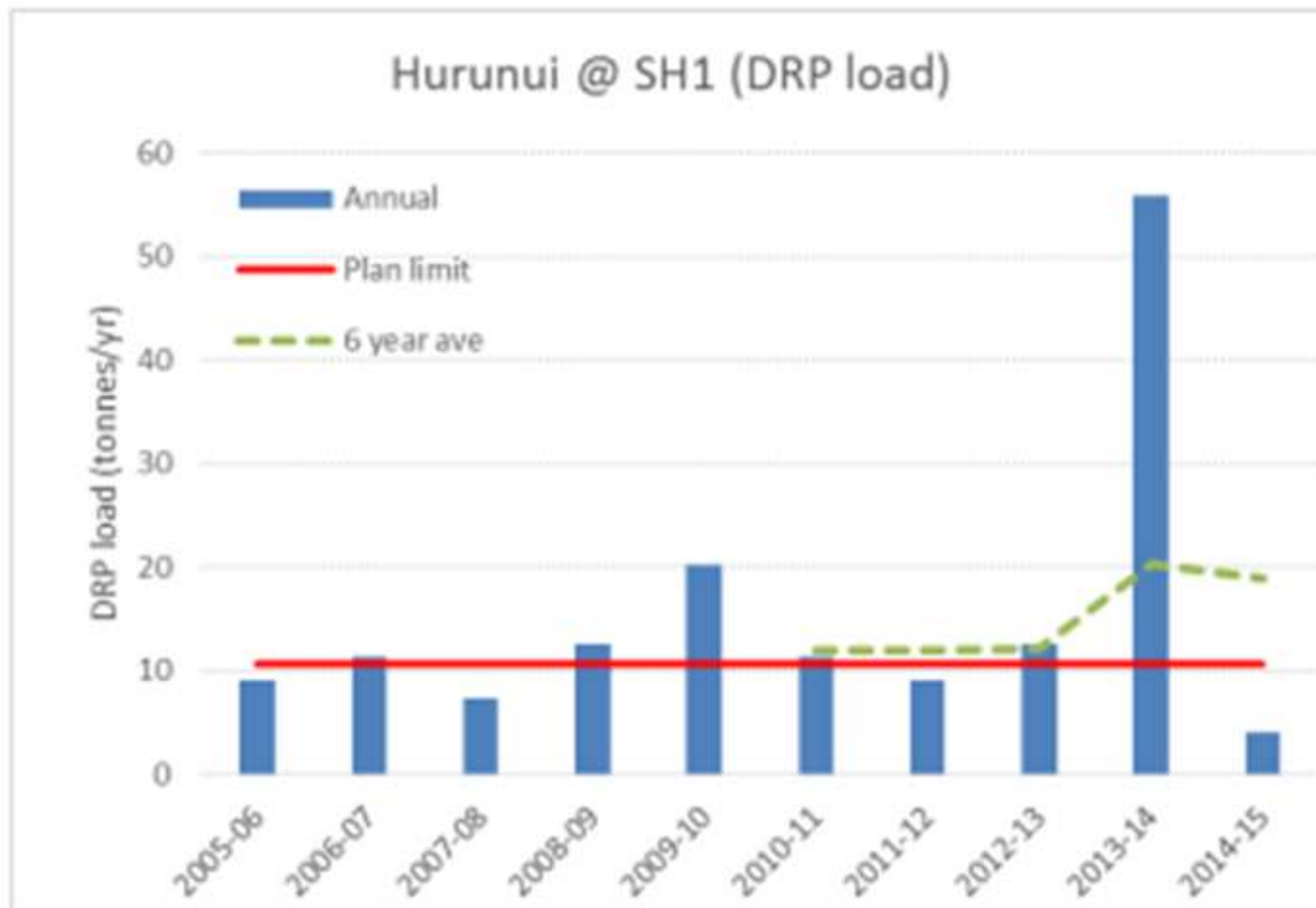
Regional Plan



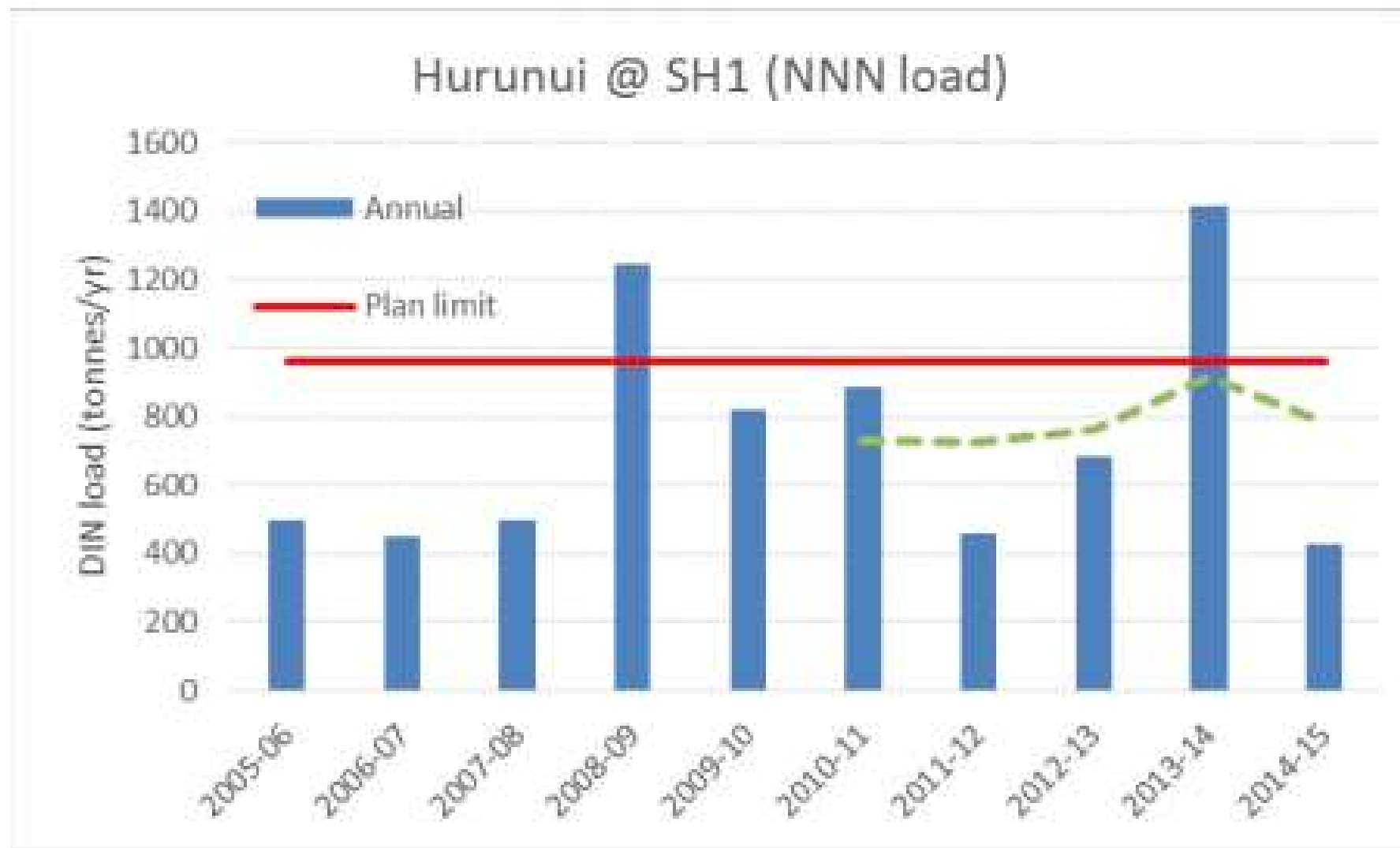
- Proposed Regional Plan
 - Minimum flows increase once large scale storage has been developed
 - N & P load limits set for Hurunui to match current loads
- Final Plan decision
 - Minimum flows increase immediately
 - N load limit increases by 25%
- Appeals only on points of law
- Decision undoes compromise agreements



Hurunui P Load

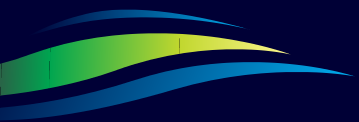


Hurunui N Load



Plan Implications

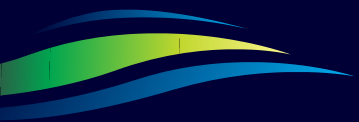
- Hurunui
 - Available N allocated to new irrigation schemes
 - No further land use change
 - No incentive to join collective
- Waiau
 - No load limit
 - Some ability to change land use
 - Incentive to join collective



How to implement plan

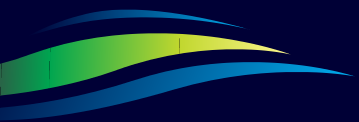


- AIC agrees with ZC & ECan to retain existing min flows
- In return AIC will:
 - Have FEPs for all shareholders by 2015
 - Implement EMS and start audits in 2016
 - Independent irrigators join EMS by 2016
 - Dryland farmers in AIC sub-catchments join EMS by 2017

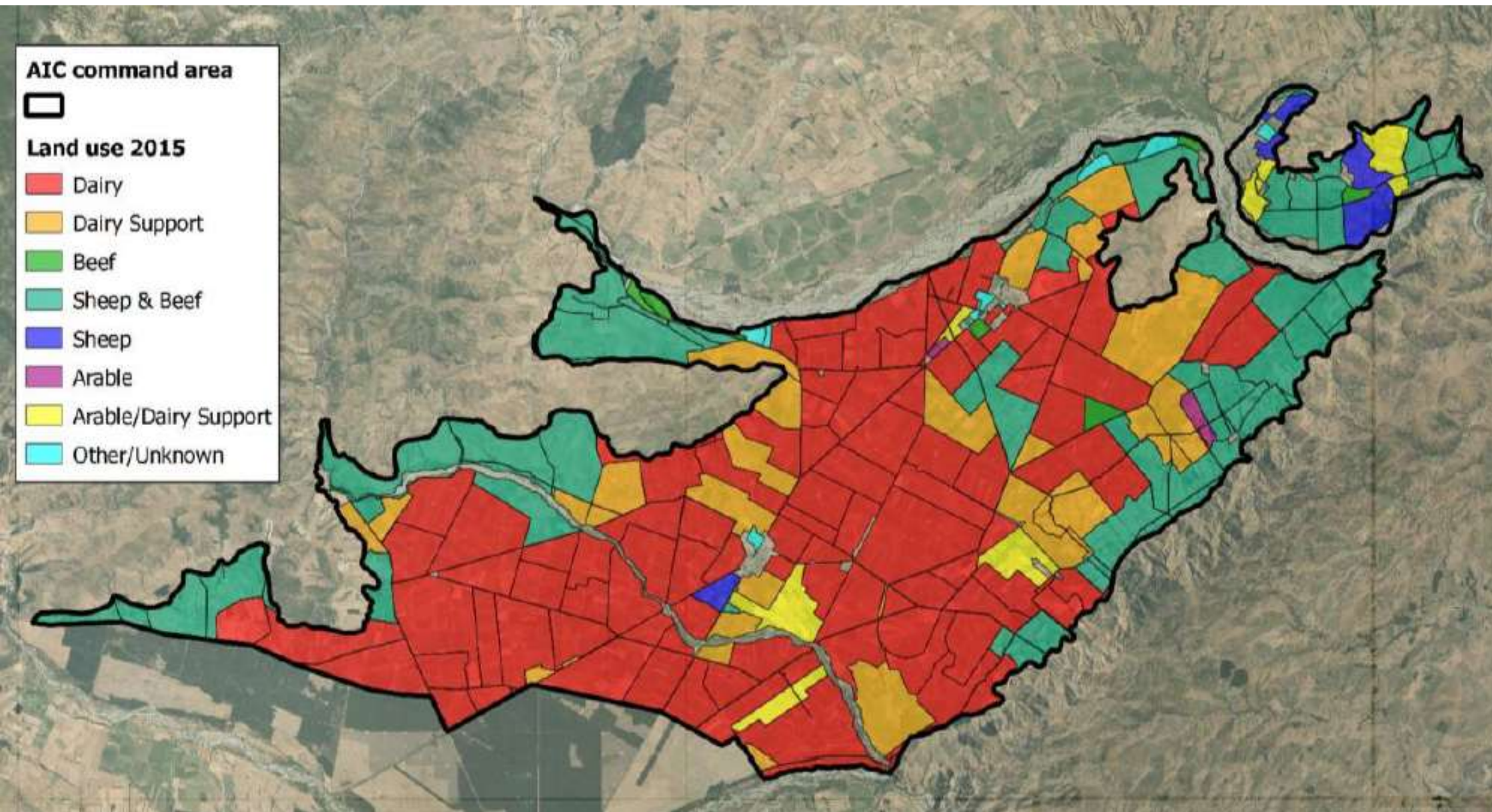


Land use consent

- Plan does not include a method to allocate N to users
- Consent provides certainty of AIC proportion of catchment N limit
- AIC Hurunui load = 2012/13 N loss
- AIC Waiau load = 2012/13 N loss + 7%
- 2033 expiry to match water permits
- Based on 80% water use efficiency



Land Use



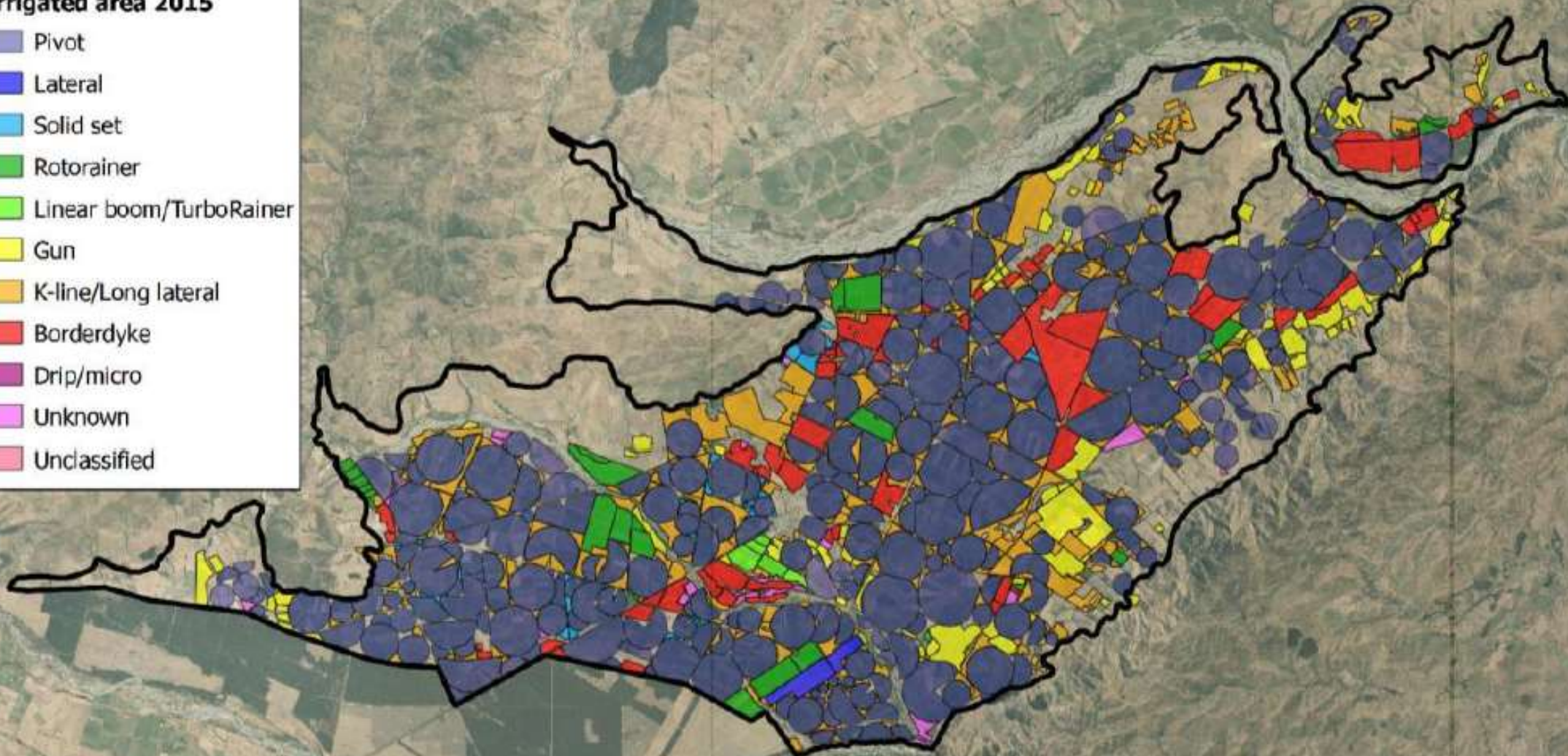
Irrigation Method

AIC command area



Irrigated area 2015

-  Pivot
-  Lateral
-  Solid set
-  Rotorainer
-  Linear boom/TurboRainer
-  Gun
-  K-line/Long lateral
-  Borderdyke
-  Drip/micro
-  Unknown
-  Unclassified



Land use consent

- Existing users must improve to create headroom for new irrigation
- E.g. rotorainer to pivot conversion reduces N loss by 1.2T

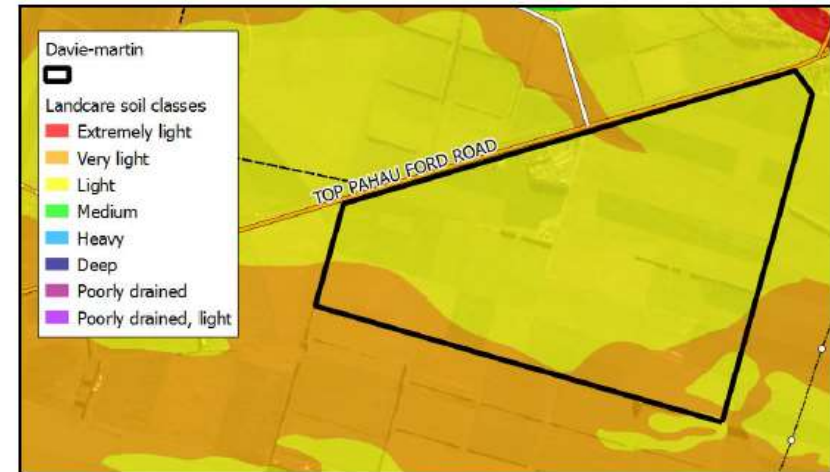


Figure 12: Davie-Martin soils

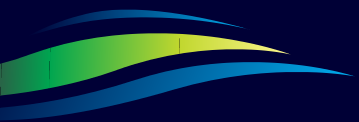


Figure 13: Davie-Martin current irrigation

AIC EMS

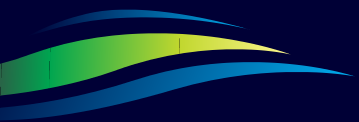
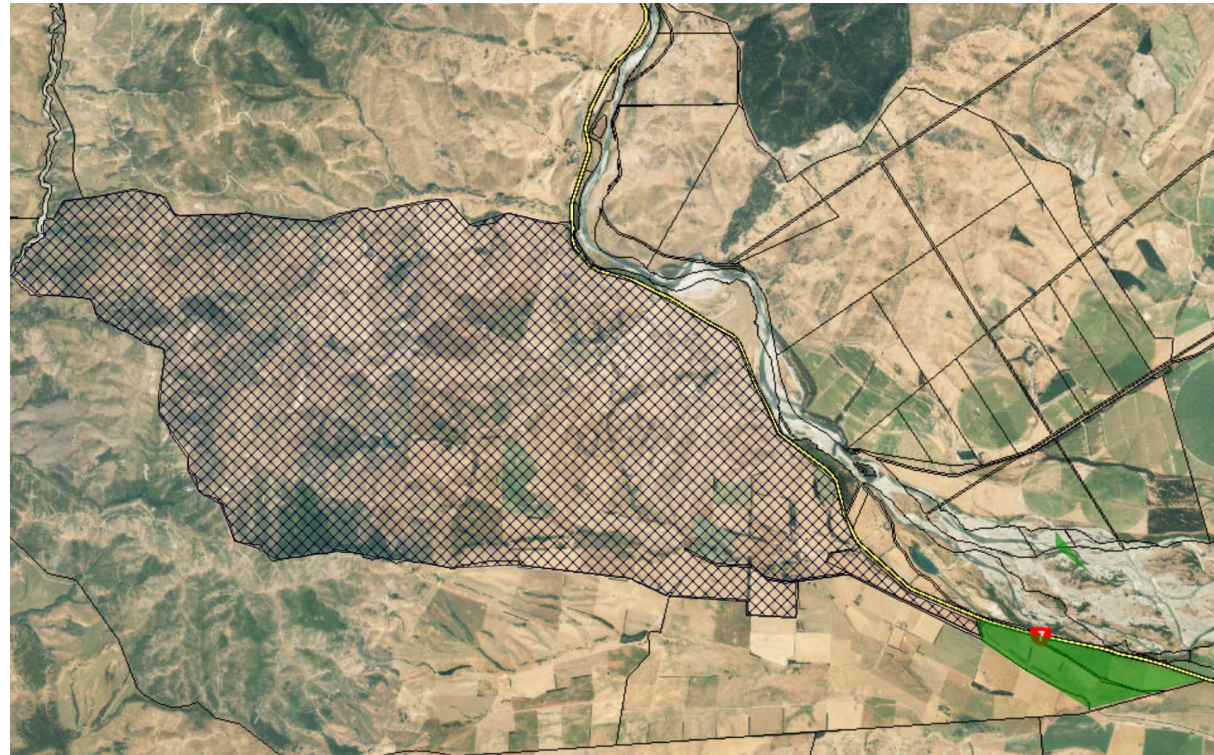


- Specifies the approach AIC will take to improve land management practices
- Procedure for non-compliance
- Identifies key risks and mitigation for land
- EMS Sub-committee established
 - Governance
 - Non shareholder members invited
 - Direction



AIC EMS

- Farm Environmental Plan covers entire farm
- 60% of area is dryland
- AIC has taken on the additional responsibility
- Outside of comfort zone
- Incentive sufficient to stretch traditional thinking



FEP Audits

- FEP Audits – 1/3 each year
- Upskilling farmers
- Sub-committee handles any disputes
- Independent audit of EMS process annually

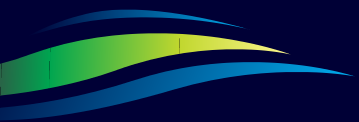
Audit Grade	Confidence level	Return	Cost
A	High	4 years	Nil
B	Medium-High	2 years	Nil
C	Medium-Low	1 year	Cost Recovery
D	Low	6 months	Cost Recovery



Certainty



- N load for existing land use with good practice
- Provides for \$80M pipe upgrade
- Minimum flows won't increase immediately
- Ownership of environmental process



Offtakes



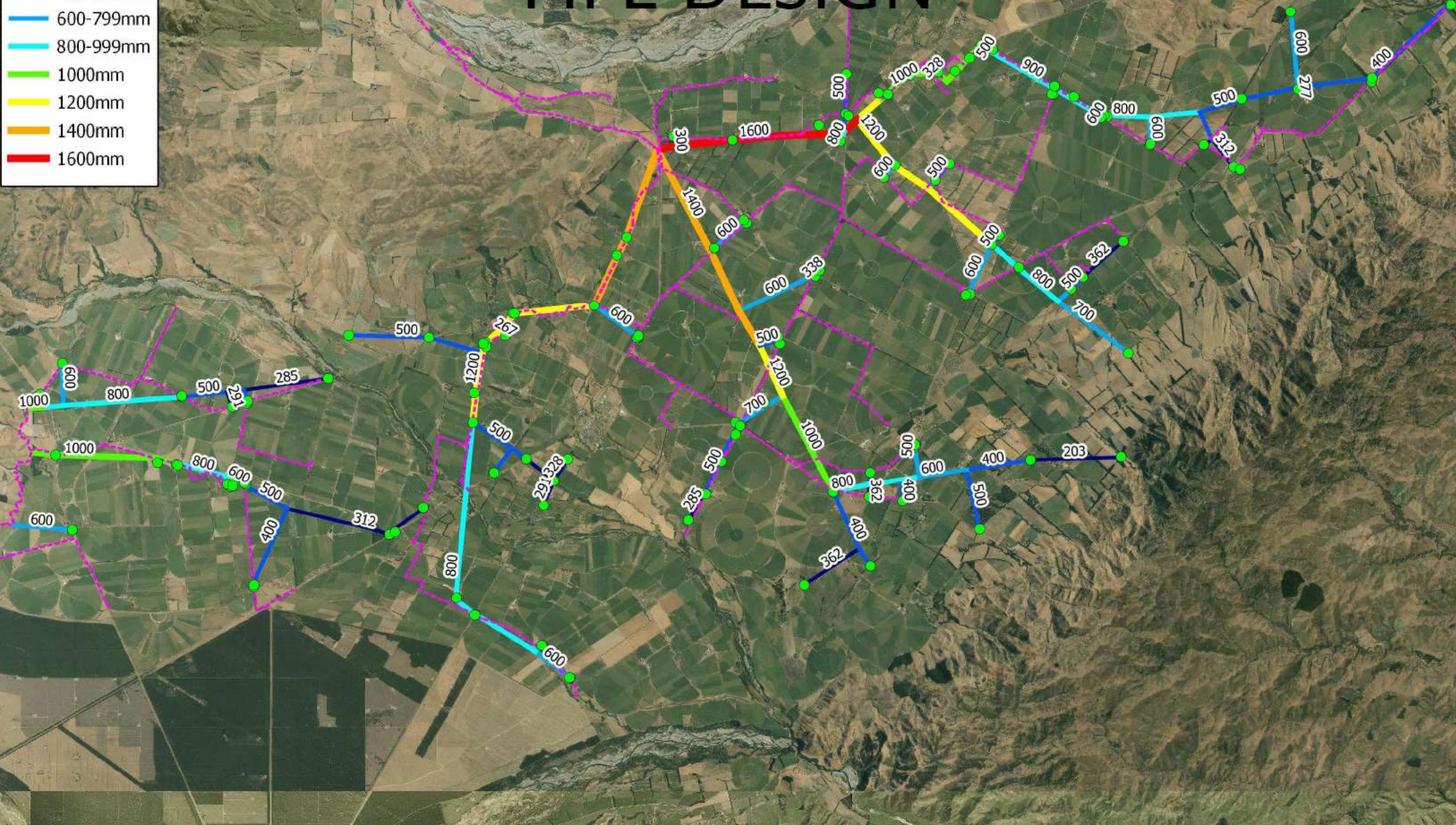
Existing races



Pipe ID

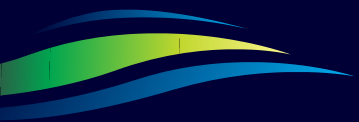
- <400mm
- 400-599mm
- 600-799mm
- 800-999mm
- 1000mm
- 1200mm
- 1400mm
- 1600mm

PIPE DESIGN



Responsibility

- Significant effort & expense
- AIC environmental expenditure now 15% of budget
- Includes own water quality sampling programme
- Responsibility extends beyond shareholder base
- Farm to GMP – leap of faith
- 80% water use efficiency
- No border dyke – resistance to change
- Improved effluent management infrastructure



Key Points

- Regulation needs some carrot
- Flexibility for local solutions helps
- Farmers are adaptable and will lead
- N limits without allocation creates uncertainty
- N Allocation necessary for investment
- $EMS + FEP = \$\$$
- Scarcity drives improvement
- Having an N allocation is hard work but worth it

