



Improving Management for Water Sensitive Areas - A Rural Setting

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Rural Land Program

3 Priority Regions

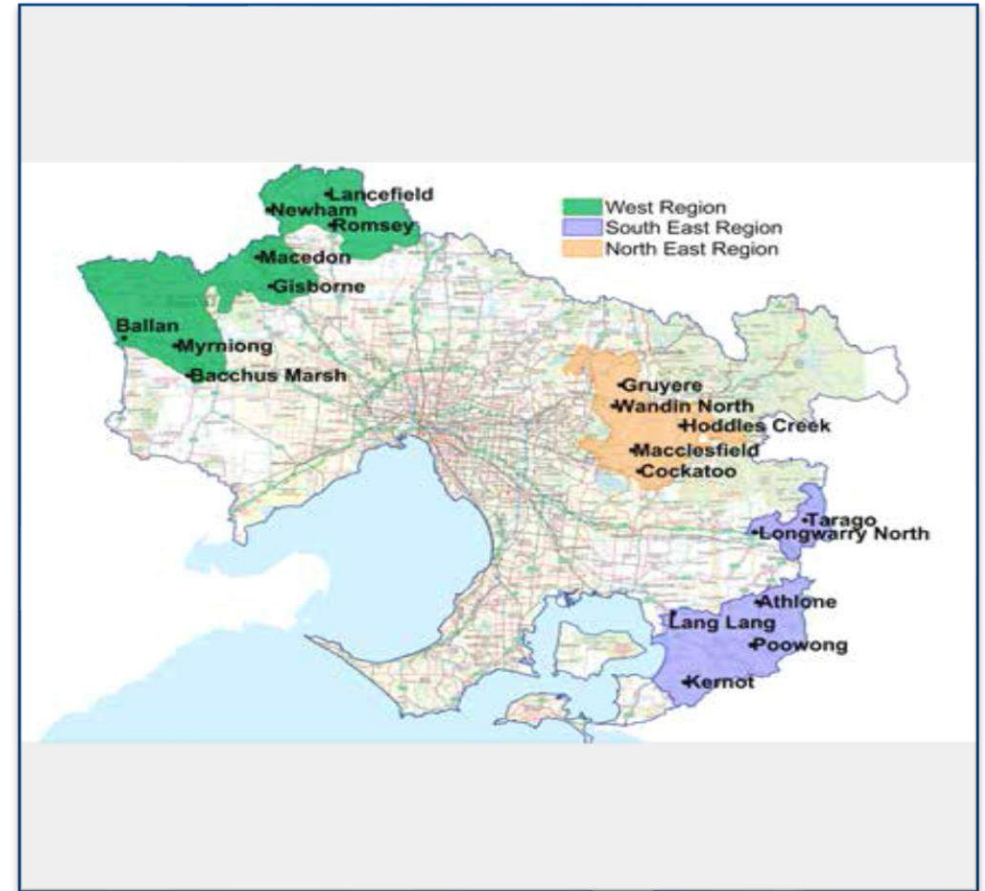
Technical assistance and

Funding opportunities for landholders

Projects that will keep soil and nutrients on their farm and out of waterways.

Promotes water use efficiency

Improve water security for existing diverters and the environment by protecting or enhancing stream flow.



River Health Incentives Program

Educate and recruit- Landholders

Collaboration- Local Council (environment departments)

Landcare Networks

Agribusiness industry associations

Port Phillip and Westernport CMA

Agriculture Victoria

Protect

To work with landholders recruited to develop and implement on ground projects co-funded by Melbourne Water with technical support from Storm Consulting.

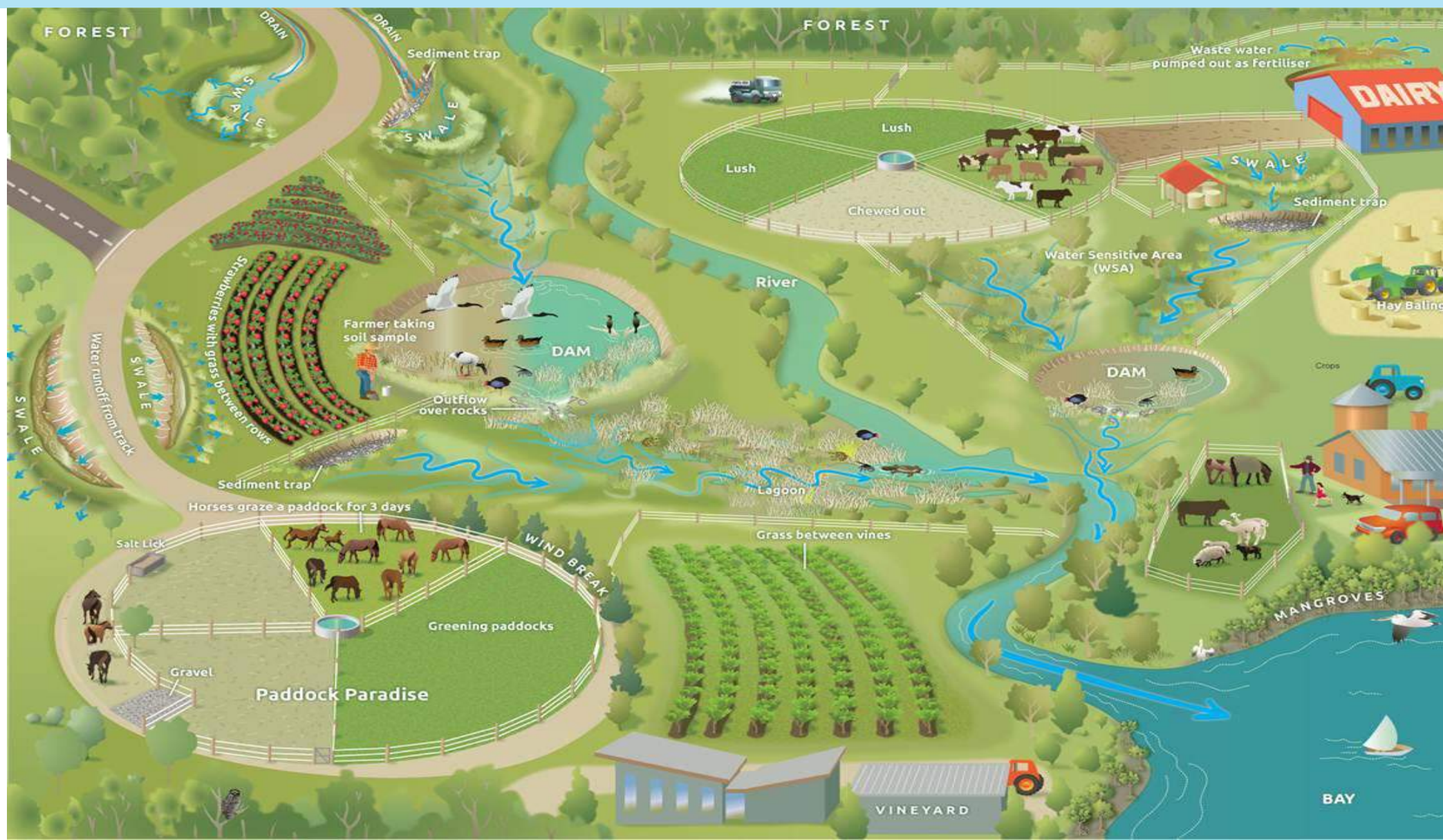
Other River Health Incentives include the;

- **Stream Frontage Management Program**
- **Corridors of Green**
- **Community Grants**

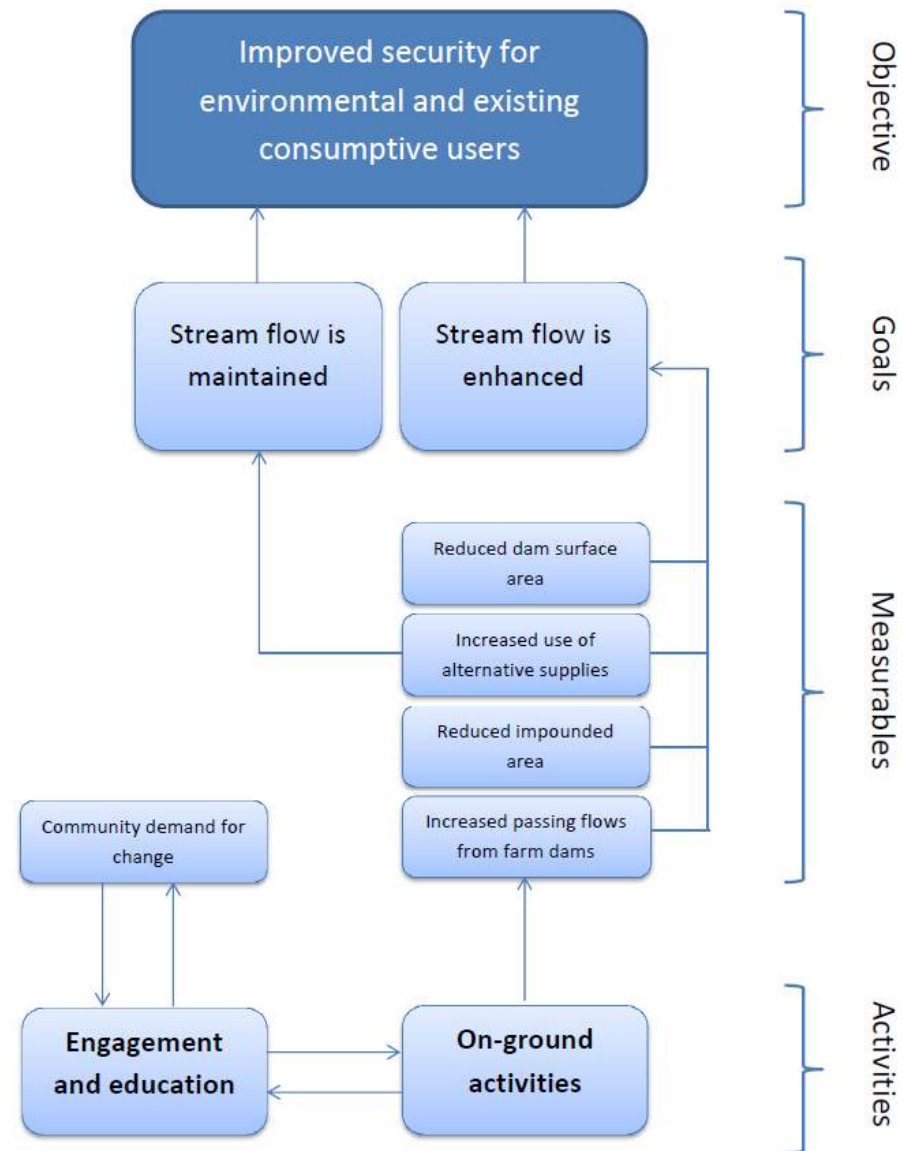
Project aims

- **To reduce extraction from the waterway during low flows**
- **To reduce sediment runoff into the waterway**
- **To promote the project as Best Practice to other landholders and rural industries**

Rural land use



Program logic



Land use – Yarra Catchment



Stream Flow Management Plans

The Rural Land Program assists the objectives of these plans with a focus on;

water **quantity (flows)**

as well as

quality (sediment and nutrient runoff)

Landholder benefits



Landholder benefits

- Cost sharing of infrastructure
- A water budget is one of the deliverables
- Water security as captured off stream and not susceptible to flow restrictions
- Cleaner water leading to less filtration
- Storage is often located closer to where it is applied therefore less energy in pumping.

Farm practices - cover crops



Activities funded - minor crossings



Activities funded - sediment ponds



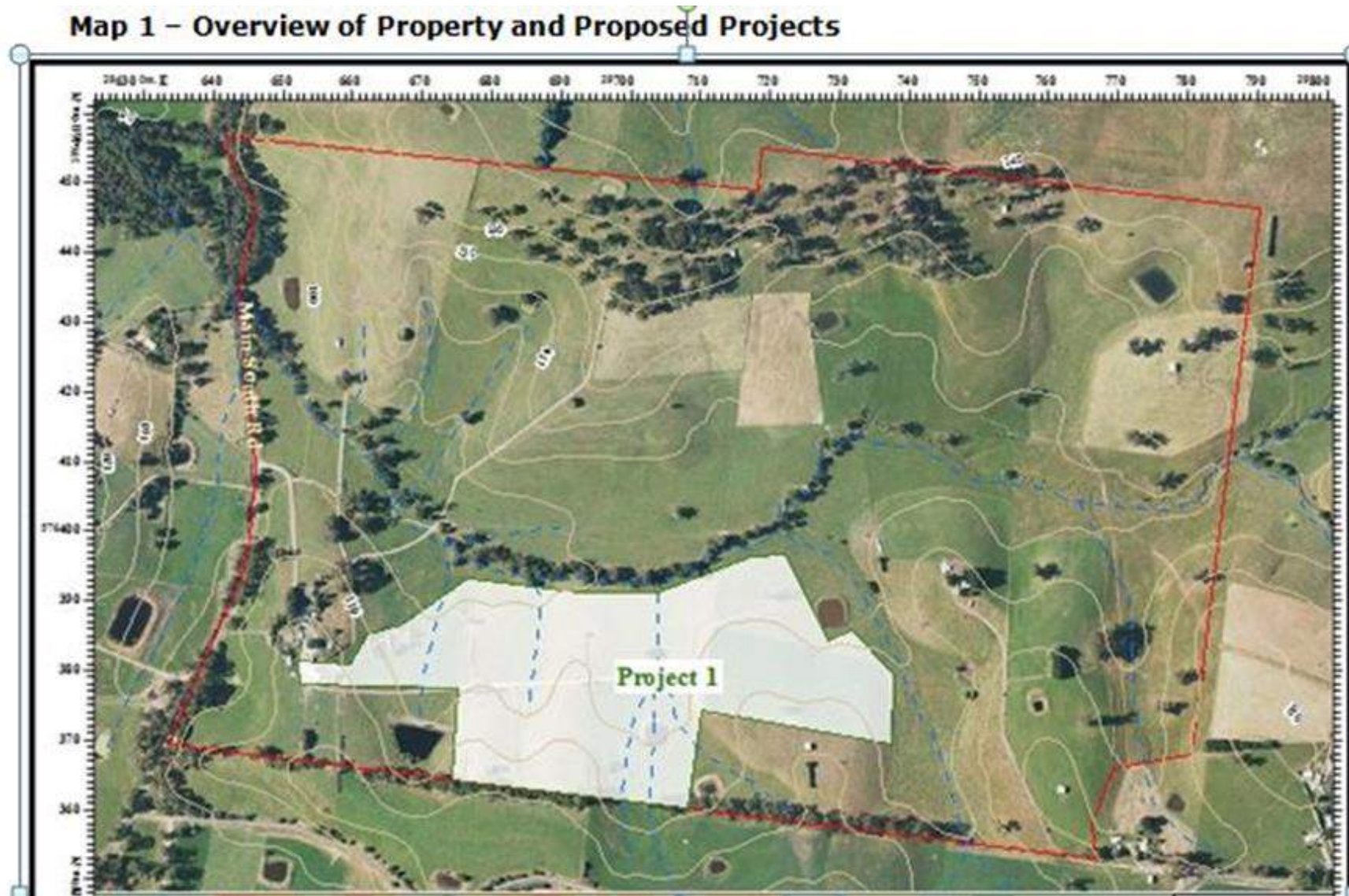
Activities funded - track and drainage improvements



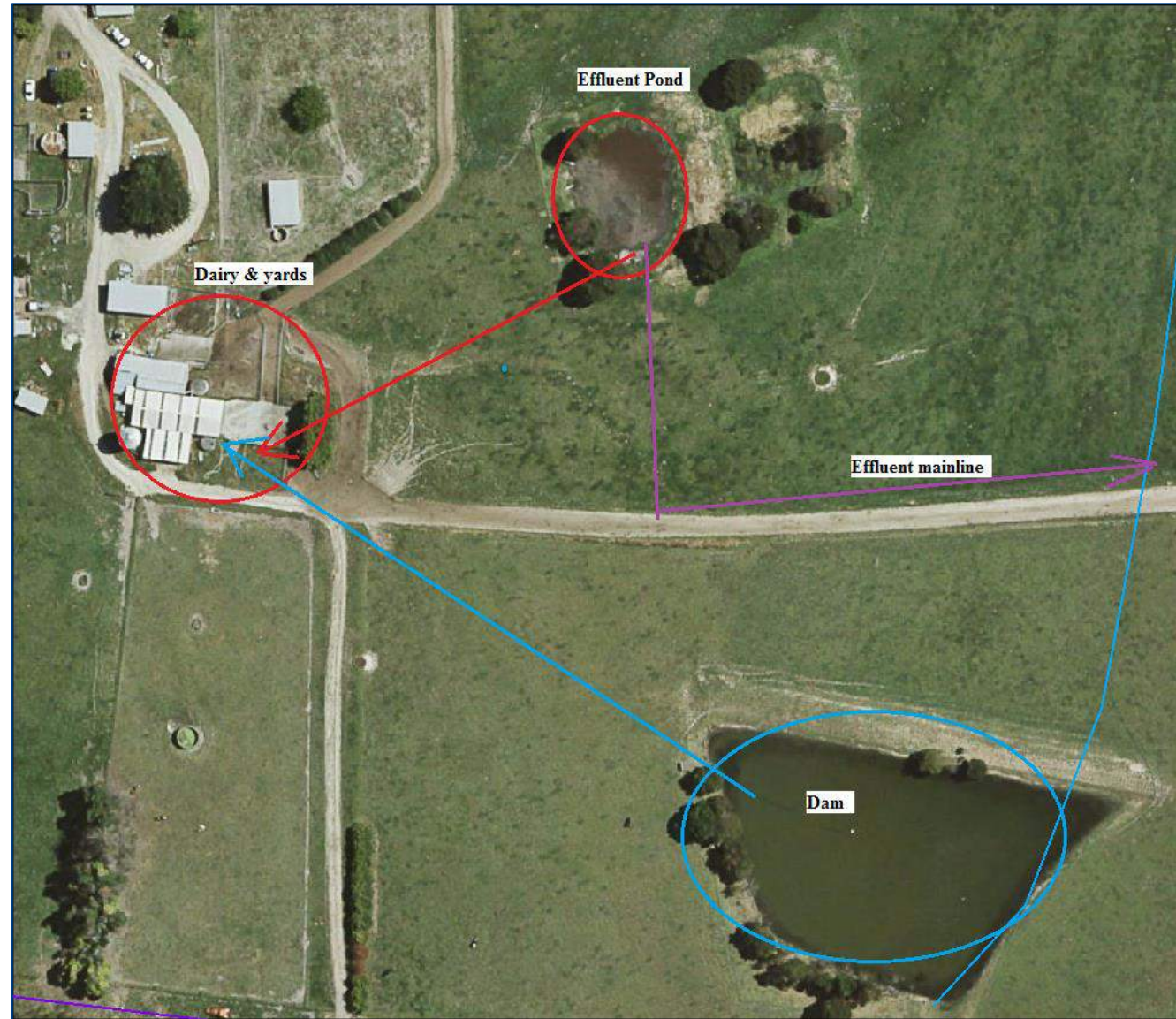
Activities funded - swales



Reuse of Dairy Effluent for Yard Washing



Design



On ground works



Benefits

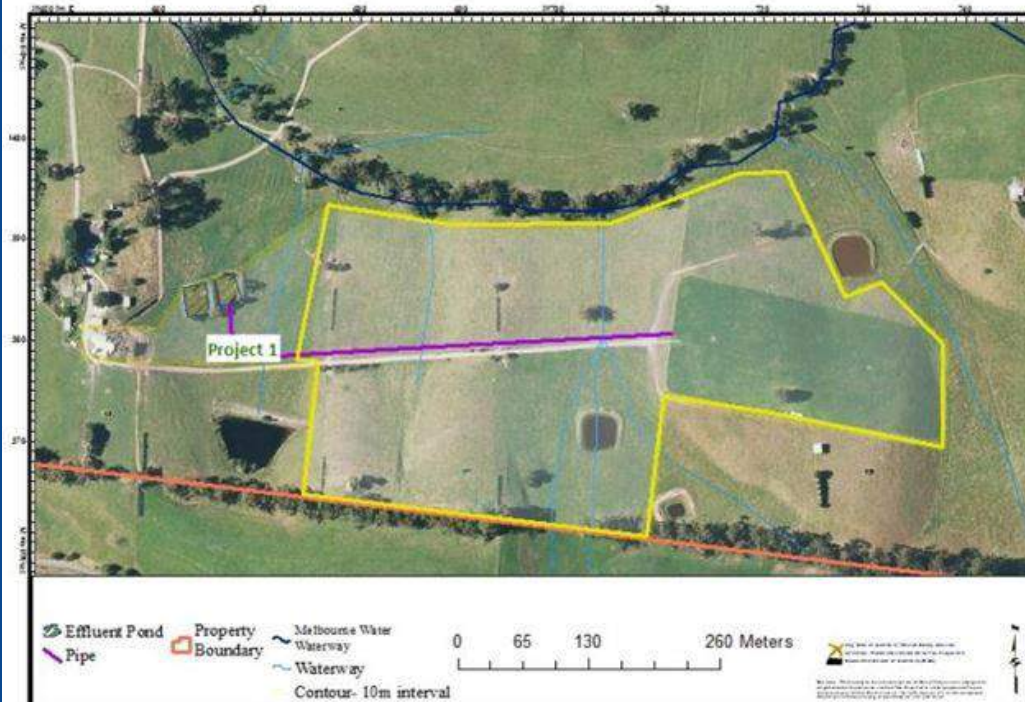
Project 1 - Effluent Mainline

Description:

This project involves installation of an effluent mainline to enable effluent to be applied over a larger area of the property. The project also includes installation of a system to enable recycled effluent to be used for yard washing. This will help to reduce the volume of effluent being generated, and therefore enhance and extending the storage capacity of the effluent system. Effluent has been applied to a few hectares, and the new system will enable application over a larger area. The key benefit for this project is that it enables the effluent to be strategically used on paddocks, and consequently reduces the need for purchased fertiliser to be applied. The existing effluent application area is illustrated by the purple line on the map below, and the proposed effluent application area is outlined by the yellow line on the map.

- Mainline length ~ 500 metres
- Proposed effluent application area = 15ha

Map 2 - Project 1 proposal



Project components

Effluent Pump

Electrician

Pontoon & floats for effluent pond

Tank

Yard blaster or flood wash

Irrigator

Mainline pipe, hydrants & fittings

Trenching

Labour

Dam Decommissioning, Newham & Timing of water extraction for stock, Lancefield

Values – Upper Deep Creek

Groundwater dependent ecosystem

Groundwater fed pools are an important habitat refuge for the Yarra Pygmy Perch, an EPBC listed species, and many other important flora and fauna species

RLP priority area based on EPBC listed species



Farm dam decommission - Upper Maribyrnong catchment

Pre-works in January Summer 2015
Dam surface area - 2,300m²

- Top of the catchment
- Important recharge area for groundwater
- Unused dam with significant evaporation potential
- Reliable storages where required on the property (rain water tanks)
- Enthusiastic landholder



Dam decommission-Post works: Sept. 2017



Site context - Deep Creek upstream of Doggetts Bridge, Lancefield

Pre-works ~2008



Post works ~2012



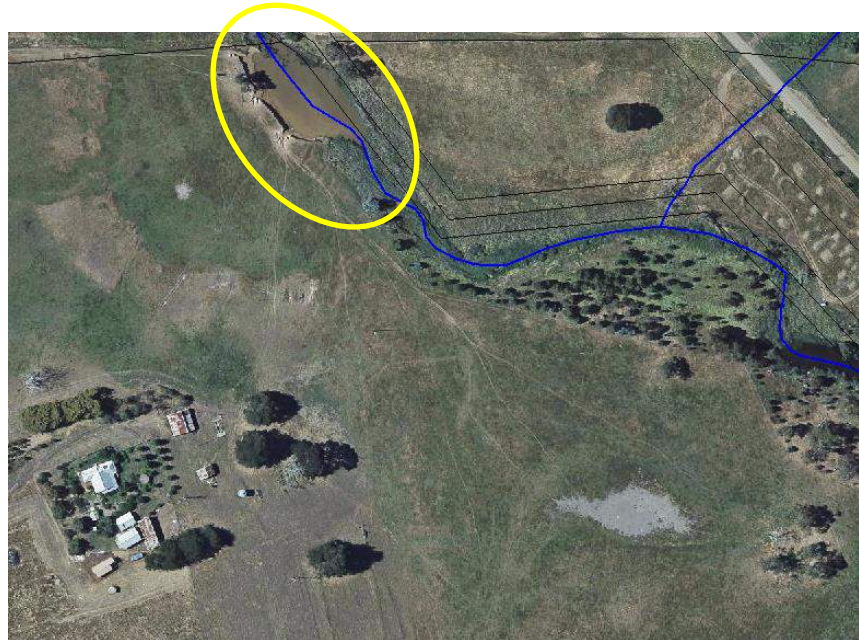
Private land that fronts 1.2km section of Deep Creek – east of Lancefield

Previous MW Capital investment – woody weed removal

Long term SFMP participant

Weed control, fencing, and revegetation along 95% of frontage

Deep pool that stock still accessed



Stock access

Erosion

Poor water quality

Limited ability for any riparian veg to grow

Reduced volume of water in system



Capacity building



- Increase production & crop yields
- Improve pasture health
- Improve stock health
- Increase property values
- Reduce erosion, stabilise soils & banks
- Improve water quality

Capacity building



Reflections

Successes:

Enables and compliments SFMP and RLP objectives

Achieves a range of targets: improved habitat, improved water quality, reduced demand on the system during drier periods

Increased capacity and knowledge (MW and landholders)

Challenges:

Suppliers – varied expertise required for both design and construction and for variation in projects

Drafting of agreement and alignment of targets

Alluvium Consultants were engaged to undertake evaluation of the program.

- Challenges
- Opportunities
- Partners

Thank you

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Rural Land Program

Storm Consulting-Melbourne Water
Partnership

Melbourne



STORM
CONSULTING

5 Year Project Partnership

Project Aims

- Understand Melbourne Water objectives
- Flexible and resilient methodology
- Economical design responses
- Repeatable deliverables
- Stakeholder collaboration
- Constructible designs



Deliver for Melbourne Water and the landowner

Rural Lands Project Objective

1. Improve water security for existing diverters and the environment by enhancing stream flow
2. Mitigation of soil and nutrients migration into waterways

- Engage with stakeholders
- Provide technical advice
- Provide ongoing support

Rural Water Cycle Management

- Water use
- Land use
- Stormwater & runoff
- Dams & water bodies
- Streams & waterways



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Rural Site Analysis

- Site water balance
- Water storage sizing
- Track and swale treatments
- Sedimentation treatments
- Overland flow control
- Creek connections and bank stabilisation
- Waterway crossings



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Projects

RURAL PROGRAM

Project- Nursey Monbulk

Site Information

- 15 Ha Nursery
- Bareroot and potted stock
- Potting and distribution area
- 84 ML licence
- Overhead irrigation
- 0.7 Ha of roof area



Project- Nursery Monbulk

Observations

- Track erosion
- Suspended soil particles
- Irrigation runoff
- Sediment filled swales
- Uncontrolled overland flow



Project-Nursery Monbulk

Recommendations

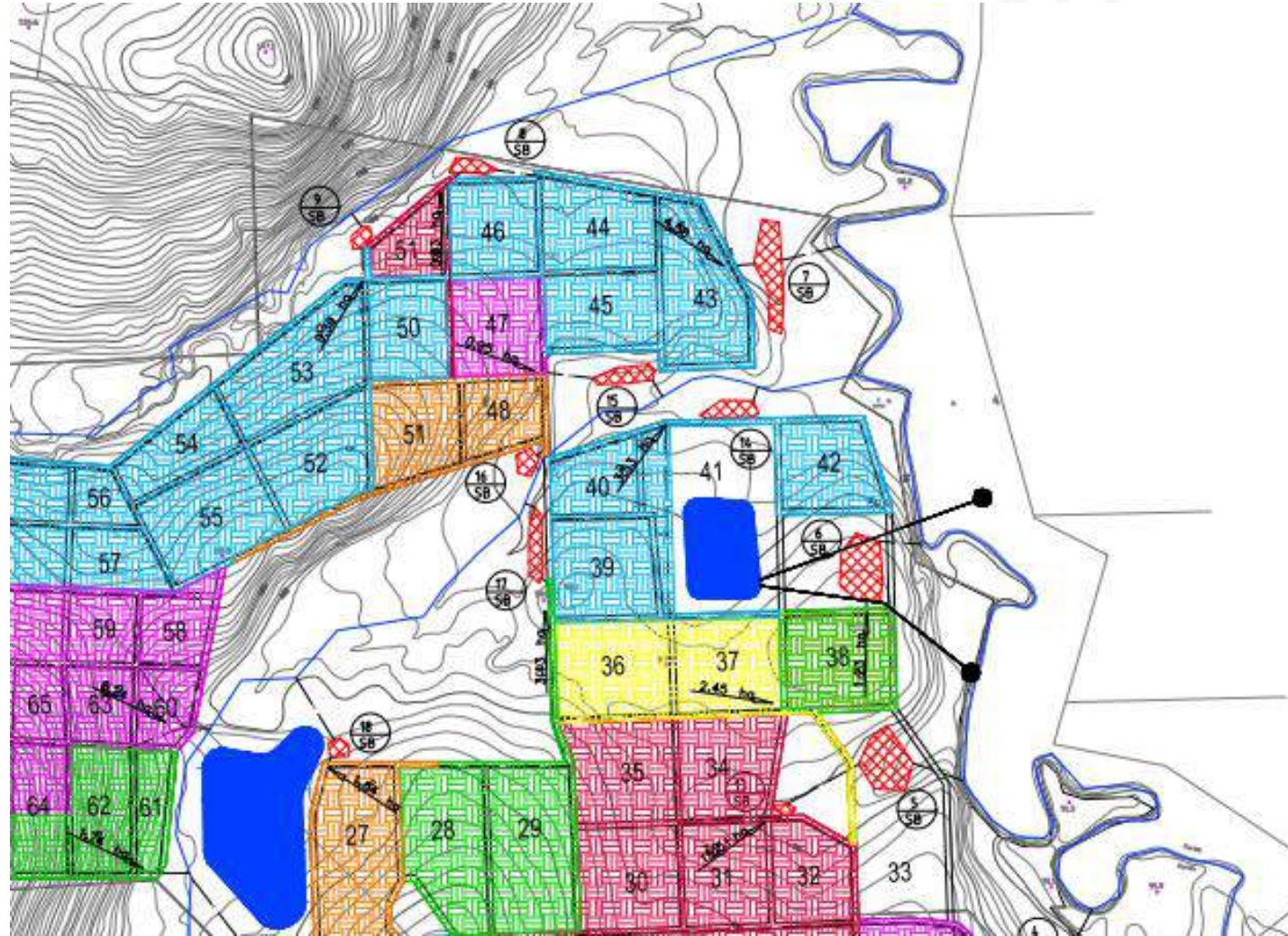
- Roof rainwater harvesting reuse
- Efficient irrigation
- Grass buffers
- Broad grassed swales
- Sedimentation pond prior to dam
- Rock armour steep swale sections



Project- Strawberry Farm Silvan

Site Information

- 116 Ha Strawberry Farm
- Significant river frontage
- 181 ML licence
- Drip irrigation
- 316 ML water demand
- 60 Ha polytunnels



Project- Strawberry Farm

Observations

- Track erosion
- Suspended soil particles in runoff
- No sediment control measures
- Uncontrolled overland flow



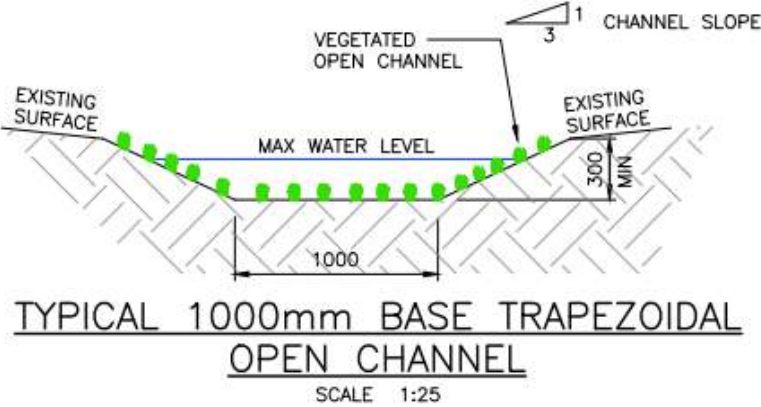
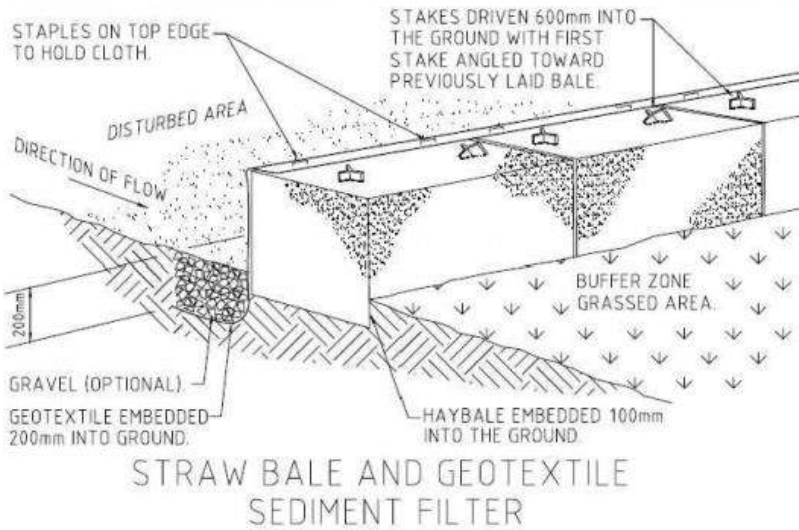
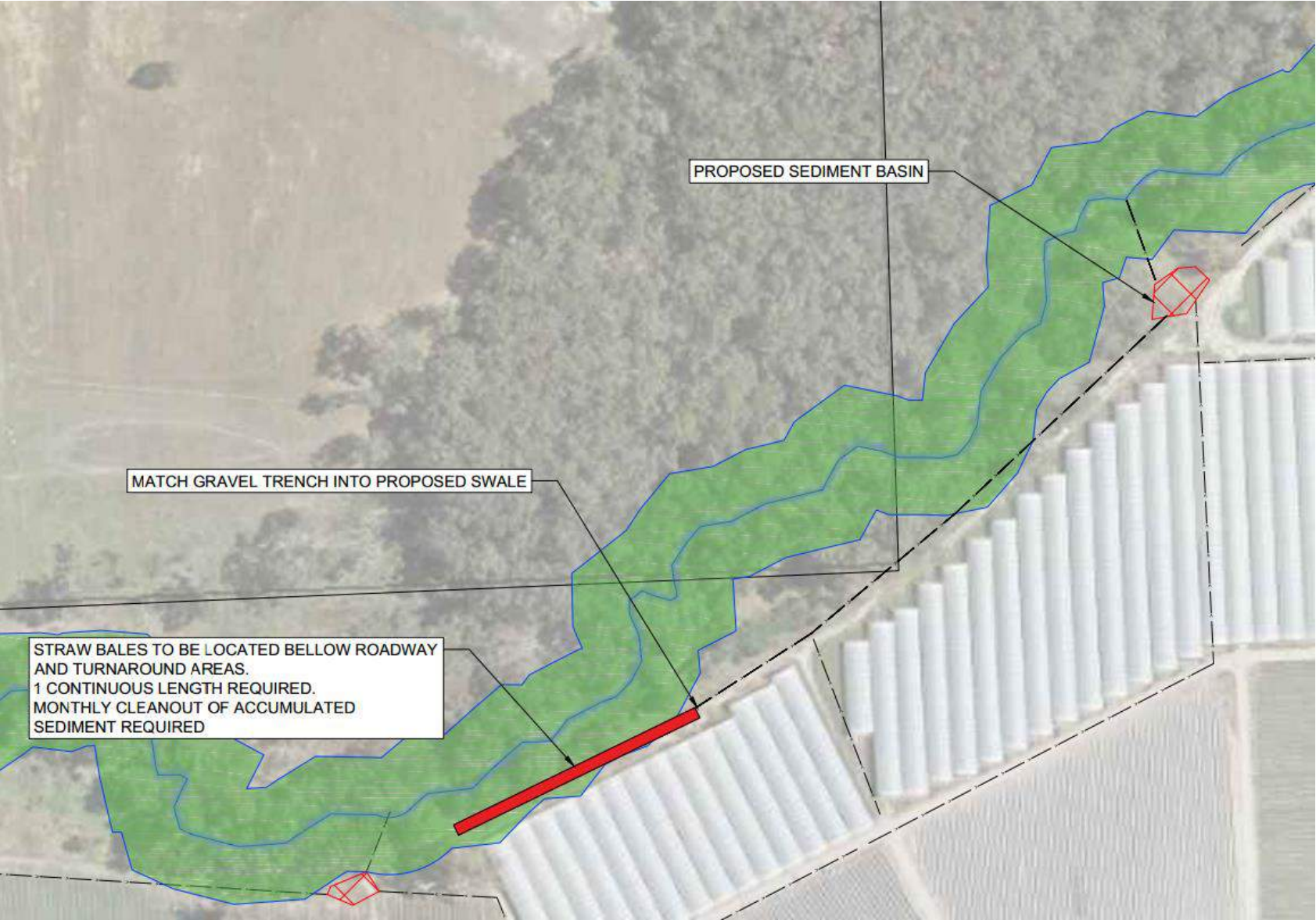
Project- Strawberry Farm

Recommendations

- Polytunnel harvesting reuse
- Grass buffers
- Broad grassed swales
- Sedimentation ponds prior to creeks
- Rock armour steep swale sections



Sedimentation Treatment



Other Projects

- Dam decommissioning
- Erosion mitigation
- Creek rehabilitation
- Wetland maintenance
- Crop irrigation calibration
- Rain tank sizing
- Culvert crossings
- Dairy access lanes



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Project Outcomes

- Rudimentary solutions
- Works implemented, constructed and maintained by the landholder
- Integrated water management key



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Questions?

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