

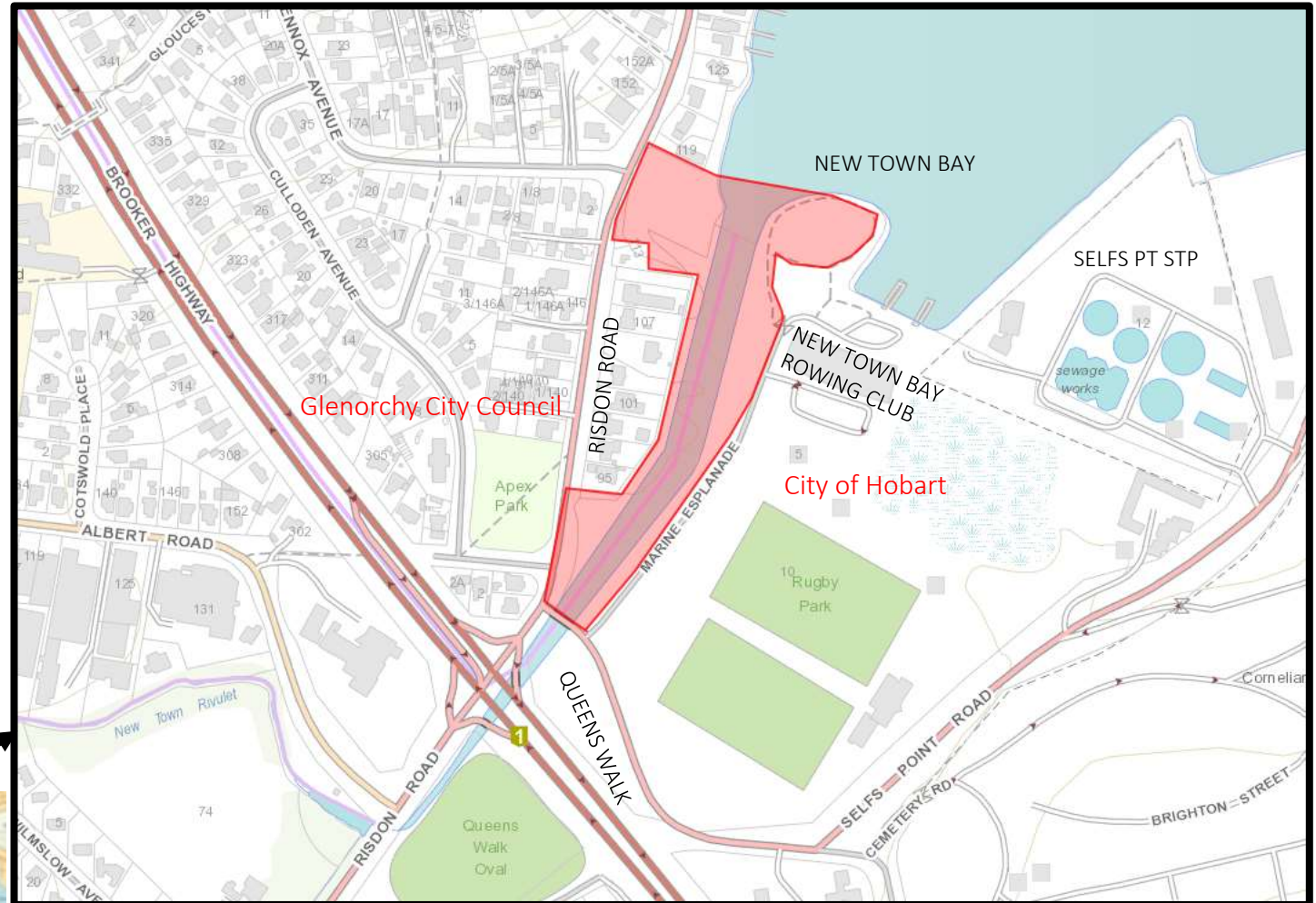
New Town Rivulet Estuary Restoration

Project update August 2023
Nigel Vivian (Project Manager)



Contents

- Project summary
- Background
- Design development
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- Stakeholder engagement



Project Location (Site boundary highlighted in red)

Site is bounded by Queens Walk Bridge, Risdon Road and Marine Esplanade

Location and context

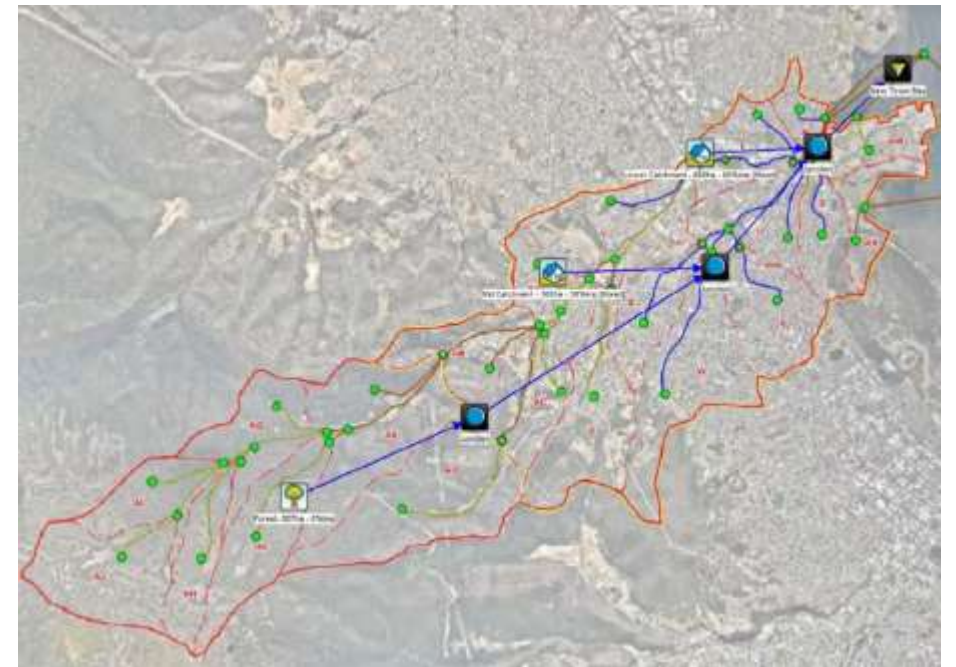
- New Town Rivulet forms the boundary between City of Hobart and Glenorchy City Council (5km north of Hobart CBD)
- Rivulet catchment (1815ha) extends to the foothills of kunanyi/Mt Wellington
- Includes urban and significant forest area in upper catchment
- Discharges to New Town Bay in Derwent Estuary
- Site immediately downstream of Brooker Highway
- Highway culverts create hydraulic constraint
- History of flooding upstream and adjacent to site
- Adjacent land use includes residential, recreation, utilities, environmental management, open space, community space
- Community activity adjacent to outlet:

Positive

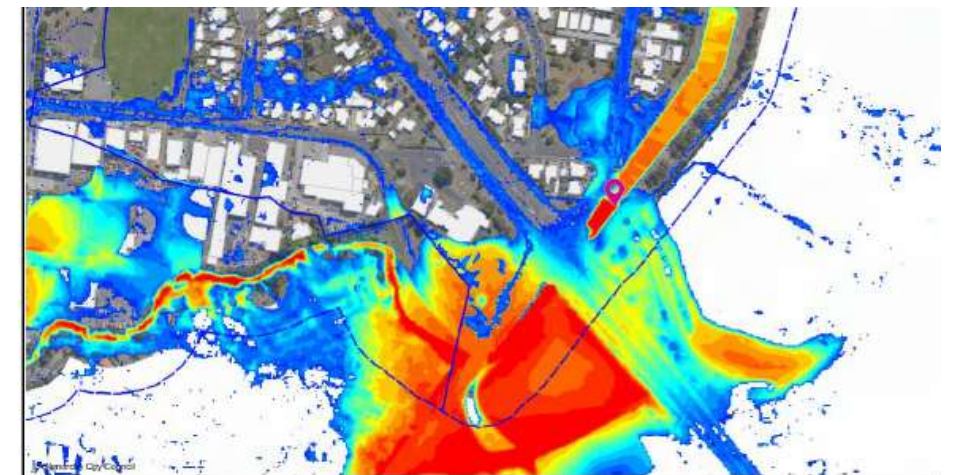
- Walking
- Dog walking
- Rowing (New Town Bay)
- Cards (Bridge Assoc.)

Negative

- Hooning
- Dogs off-lead
- Feeding ducks/geese
- Dumping of trolleys etc



Catchment area (MUSIC model set up)



*Flood hazard mapping
1% AEP climate change*

NOTES: The work has been undertaken using current practice and it must be noted that there are uncertainties associated with the terrain and flood model and use with the flood estimates. Variations in the flood information can be expected with better data, developments in flood modelling, land development and/or changes in catchment conditions. Refer to Glenorchy City Council, Engineering Section for any use, application or extension of this information.

Project summary

Client: City of Hobart (Project Sponsor)

Partner: Glenorchy City Council

Primary Driver:

- Failed assets (concrete batters, weir abutment)

Design objectives and key success factors:

- Flood levels no worse for adjacent private properties
- Safely convey peak flows without erosion
- Regular maintenance able to be completed by Council
- Improved amenity, opportunity for safe recreation by community
- Enhancement of environmental values
- Create diversity and abundance of vegetation species
- Alignment with the Selfs Point Masterplan



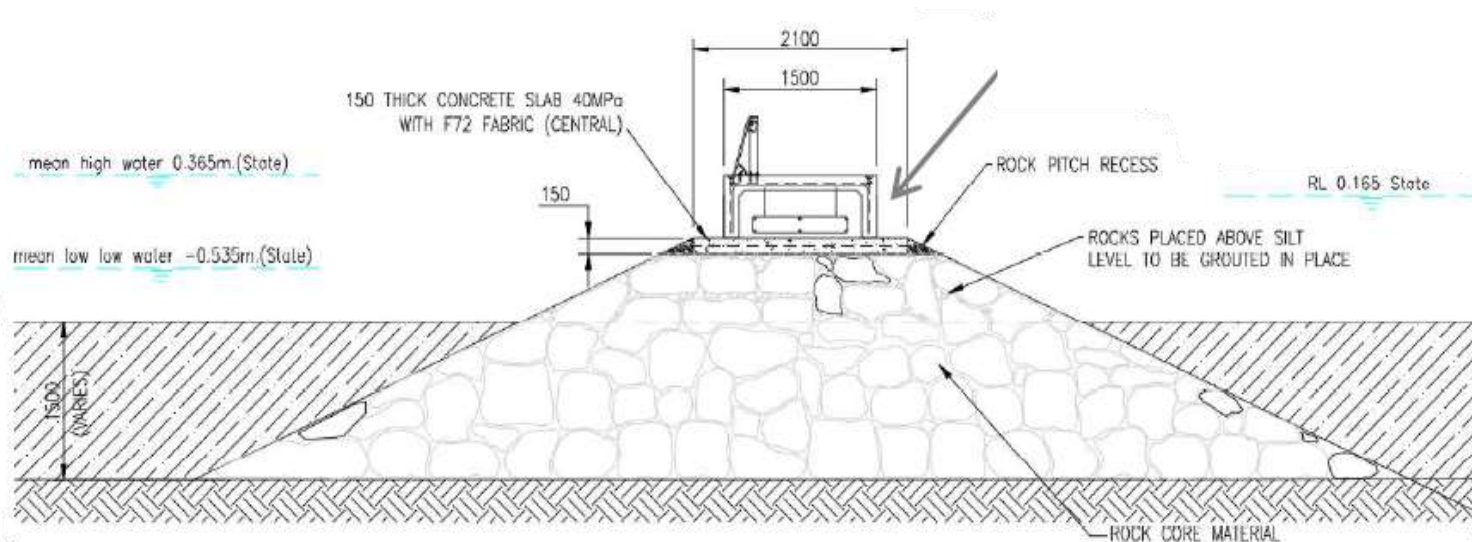
Weir and view upstream towards Queens Walk



Failure of concrete batters

Background

- Estuary was historically 'reclaimed' with uncontrolled fill
- Concrete batters installed in 1960s
- Concrete weir installed in 2003 to reduce sediment accumulation
- Litter trap installed downstream of weir (since removed)
- Estuarine wetland constructed (subsequently decommissioned)
- Large flood event in May 2018 (>1% AEP)
- Significant accumulation of contaminated sediment and vegetation
- Expensive maintenance



Weir design



*New Town Bay pre reclamation (1940's)
– Project area highlighted in red*



New Town Bay post reclamation (1960's)

Basis of design

- Concrete batters removed and batter slopes flattened
- Include bank sinuosity to mimic original alignment
- Existing weir to be retained and new concrete abutments
- Accumulated sediment behind the weir to be planted
- Batters to be protected by rockwork and vegetation
- Existing mature trees to be retained
- New trees, understory, riparian and turfed areas
- Carparks and footpaths to be improved
- 2x new maintenance access ramps
- Reuse of excavated material onsite (where possible)



Concept design (Dryside Engineering)

Design Development

- Structural assessment
- Geotechnical investigations
- Contaminated site investigations
- Flora and fauna survey
- Sediment transport modelling
- Hydraulic modelling
- Landscape and civil design
- Safety in Design assessment
- Asset location
- Stakeholder engagement



Early Concept Masterplan (REALM Studios)

Legend

- Existing Trees
- Proposed Tree Planting
- Marsh Planting Mix
- Ephemeral Planting Mix
- Terrestrial Planting Mix
- Under-storey Planting Mix
- Indigenous Grass Mix
- Compacted Gravel Path
- Recycled Concrete Feature Edge
- Gridlock Maintenance Access
- Bench Seat
- Table and Bench Seat
- Rock walls/banks/shrubs
- Habitat Log

Note:
Items labelled 'Proposed' will be delivered as part of stage 1
Items labelled 'Future' will be delivered as part of a future stage

New Town Rivulet Outlet
Landscape Concept Plan

Location Plan

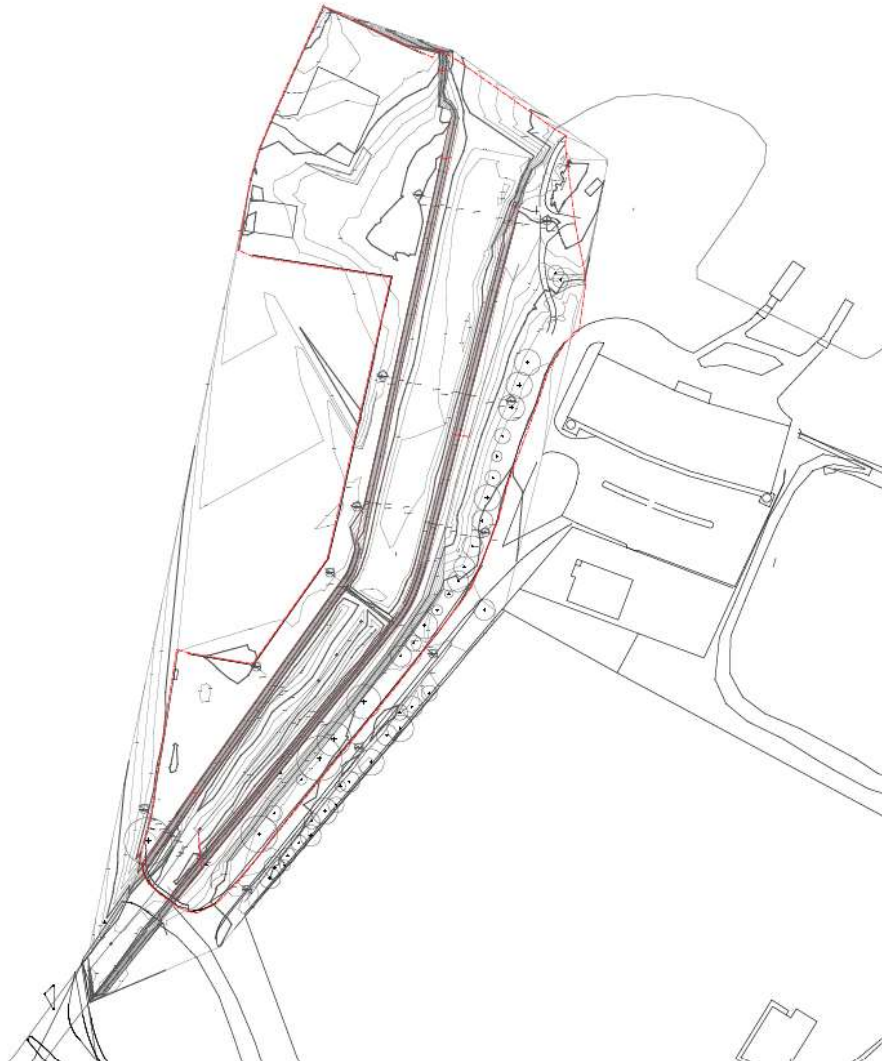
Address: Marine Esplanade New Town, TAS 7008	Date: 30/09/2022
Issue: Concept	Rev: Rev. A

Scale: rts @ A1

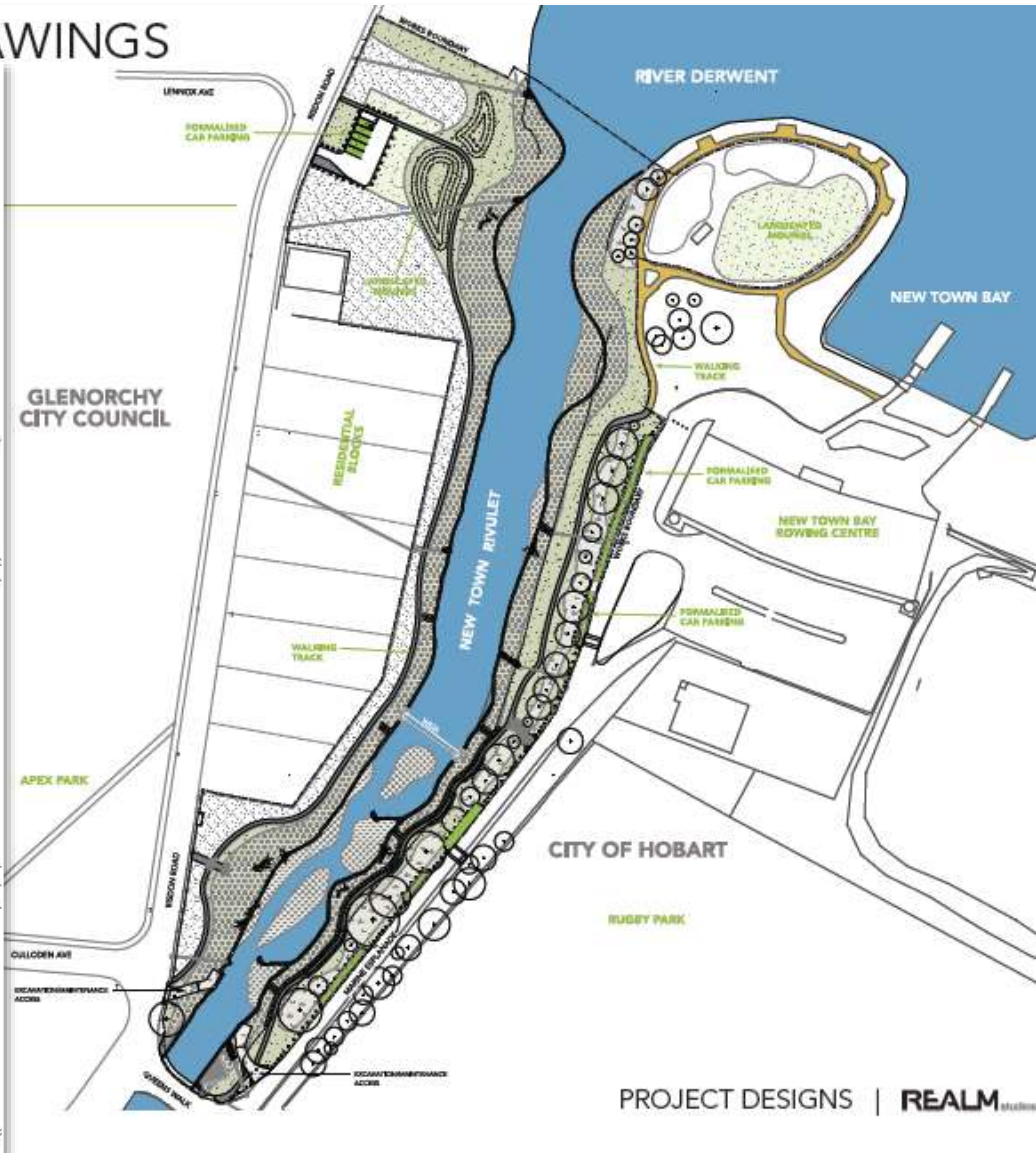
REALM studios

Design drawings - July 2023

ESTUARY RESTORATION PROJECT DESIGN DRAWINGS

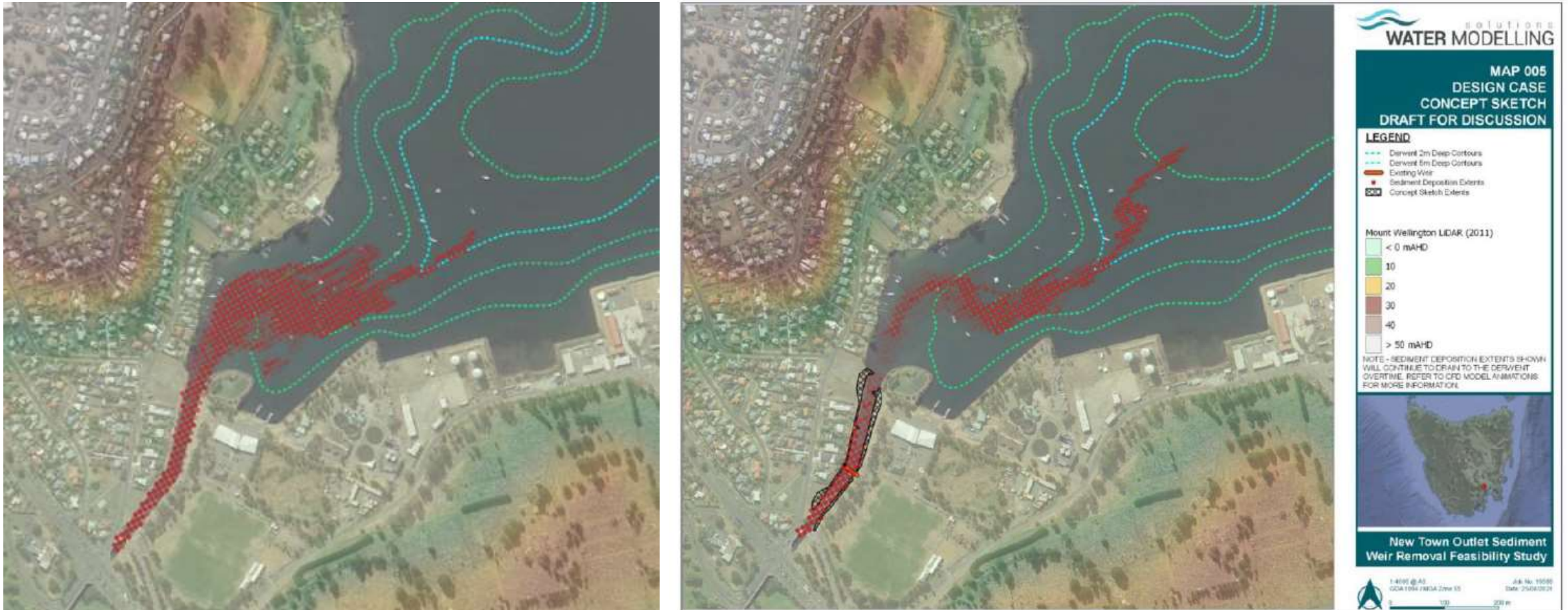


Existing infrastructure



Proposed design

Design Performance: Sediment transport modelling



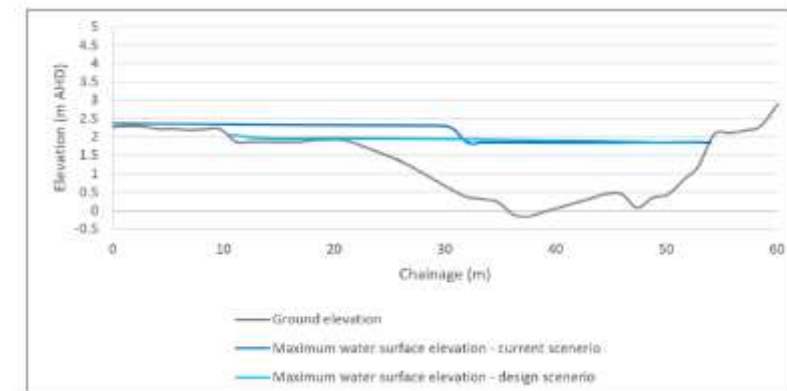
Sediment deposition modelling - without weir (L), with weir and naturalisation (R)

Design Performance: Hydraulic modelling (HECRAS)



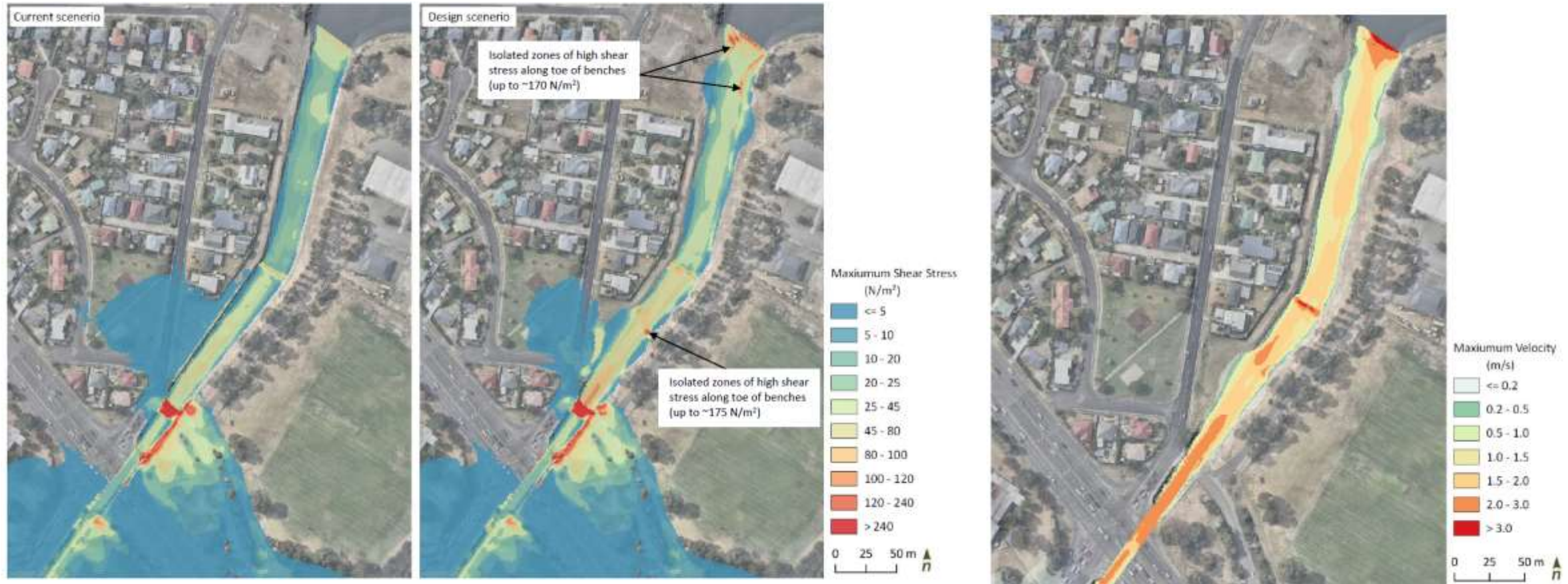
*Water Surface Elevation (1% AEP Climate change) – before (L), after (R)
Supplied by Alluvium*

1% AEP with climate change
Maximum Discharge: 69.5m³/s
Maximum velocity: 3.3m/s
Maximum water level: 1.9m AHD



*Upstream section
Supplied by Alluvium*

Design Performance: Hydraulic modelling



*Maximum Shear Stress (1% AEP Climate change, low tailwater)
– before (L), after (R)
Supplied by Alluvium*

*Maximum Velocity (10% AEP low tailwater)
Supplied by Alluvium*

Design constraints

- Adjacent private property boundaries
- Landowners (within project area)
 - City of Hobart
 - Glenorchy City Council
 - Crown
 - TasWater
- Existing infrastructure
 - Roads, bridge, footpaths and carparks
 - TasGas
 - TasNetwork
 - Stormwater culverts
- Existing vegetation (TPZ)
- Planning schemes
- EPA – Waste management
- Funding

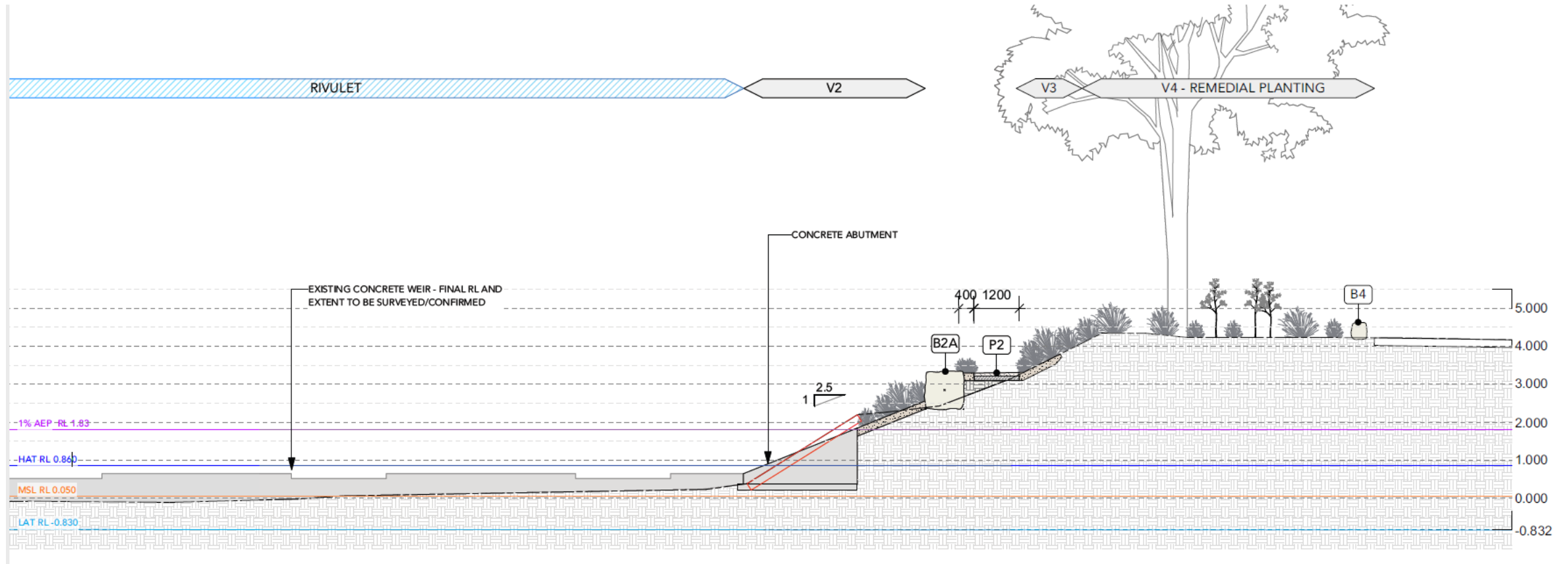


Civil design detail and existing services near Queens Walk

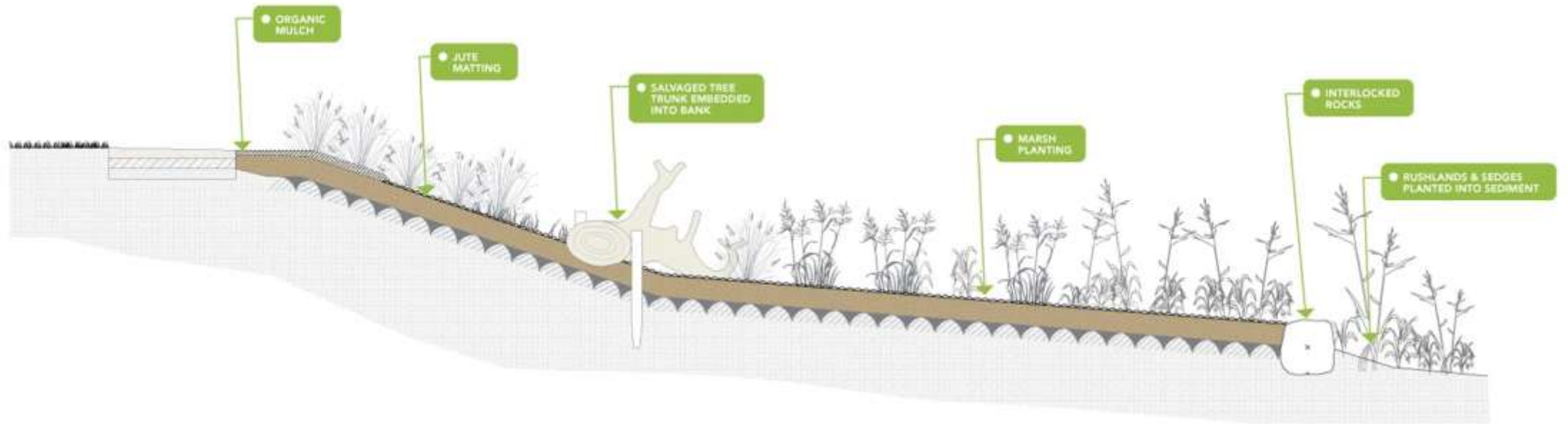


Tasmanian Planning Scheme – Glenorchy zones and overlays

Cross-section at weir (eastern bank)

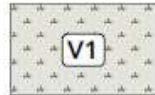


Typical cross-section (western bank)



Landscape plan

SOFTSCAPE FINISHES



SOIL PROFILE 1 - EXISTING SEDMIMENT
PLANTING IN EXISTING SEDIMENT
REFER TO DETAIL 1 | 821 AND MATERIAL SCHEDULE



SOIL PROFILE 2 - WATERWAYS
JUTE MATTING STABLISATION AND 200MM SOIL
REFER TO DETAIL 2 | 821 AND MATERIAL SCHEDULE



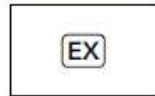
SOIL PROFILE 3 - TERRESTRIAL
MULCH AND 200MM SOIL
REFER TO DETAIL 3 | 821 AND MATERIAL SCHEDULE



SOIL PROFILE 3 - REMEDIAL
MULCH
REFER TO DETAIL 4 | 821 AND MATERIAL SCHEDULE



SOIL PROFILE 4 - TURF
REFER TO DETAIL 5 | 821 AND MATERIAL SCHEDULE



EXISTING SURFACES (TURF/GRAVEL)
MAKE GOOD IF DAMAGED

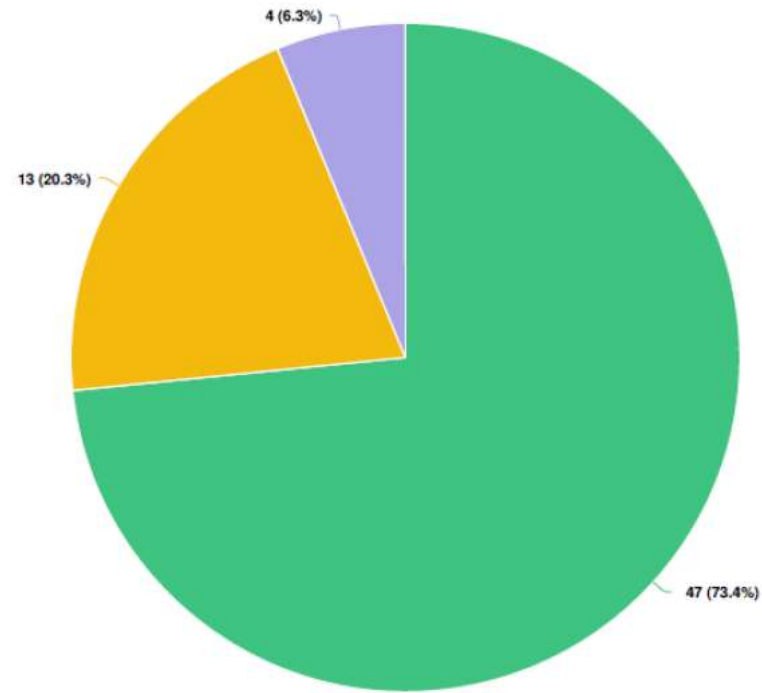


REALM studios

Landscaping detail upstream of weir including maintenance ramps

Stakeholder engagement

- City of Hobart
- Glenorchy City Council
- TasWater
- Crown
- EPA
- Derwent Estuary Program
- Tasmanian Bridge Association
- TasGas
- TasNetworks
- Neighbouring property owners
- Broader community
 - Media launch with Mayors
 - Council website
 - YourSay survey
 - Facebook
 - Council newsletter



Question options

- I am supportive
- I am somewhat supportive but have some questions or concerns
- I am unsupportive

Your Say survey (>90% support)

The image shows a Facebook post from Glenorchy City Council, dated May 5. The post features a large photo of two women holding a sign for the 'NEW TOWN RIVULET ESTUARY RESTORATION PROJECT'. Below this are three smaller photos showing the current state of the estuary: a concrete barrier, a pipe opening, and a duck. The post text reads: 'We are thrilled to be undertaking this joint project with City of Hobart to restore the New Town Rivulet to a more natural environment'. A comment from the City of Hobart, also dated May 5, says: 'Today we launched an ambitious plan to return the heavily concreted mouth of New Town Rivulet to a more natural state in a joint initiative with Glenorchy City C... See more'.

Facebook promotion

NEW TOWN RIVULET

ESTUARY RESTORATION PROJECT

The City of Hobart and Glenorchy City Council are seeking feedback on plans to return the heavily concreted New Town Rivulet Outlet to a more natural, estuarine environment.

Why is this project important?

- The current, wide concrete embankment walls are up to 60 years old and beginning to degrade, risking bank erosion.
- Replacing the concrete walls with bouldering and other natural materials while planting out the area with native plants will help bring back native waterbirds, aquatic life and create a beautiful natural area for residents.
- The project will formalise parking and walking tracks to improve accessibility and amenity for the public.
- Native plants and landscaping help trap sediment and historical contamination of river beds and are effective in stabilising embankments.

The current weir will remain and its structure improved to help prevent sediment build up at the mouth of the rivulet.

Excavated materials will be managed in an environmentally sustainable manner and re-used for landscaping near the rivulet mouth.

New maintenance access ramps will allow for the regular removal of accumulated sediment.

Community feedback

You can view the plans, provide feedback and learn more about this project by visiting the Your Say Hobart website at yoursay.hobartcity.com.au/new-town-rivulet or by scanning the QR code below.

This project will benefit local birdlife, improve estuarine health in the River Derwent and create a beautiful recreational area for residents.

SCAN THE QR CODE
TO LEARN MORE
AND HAVE YOUR SAY



Questions?

yoursay.hobartcity.com.au

