GLASSON HUXTABLE
LANDSCAPE ARCHITECTS

MANANUI MINERAL SANDS PROJECT

APPENDIX 2:

Landscape and Visual - Graphic Supplement

December 2024 - Revision 2

CONTENTS

1.0 WIDER CONTEXT PLAN

KEY

- Proposed Application Area
- State Highway 6

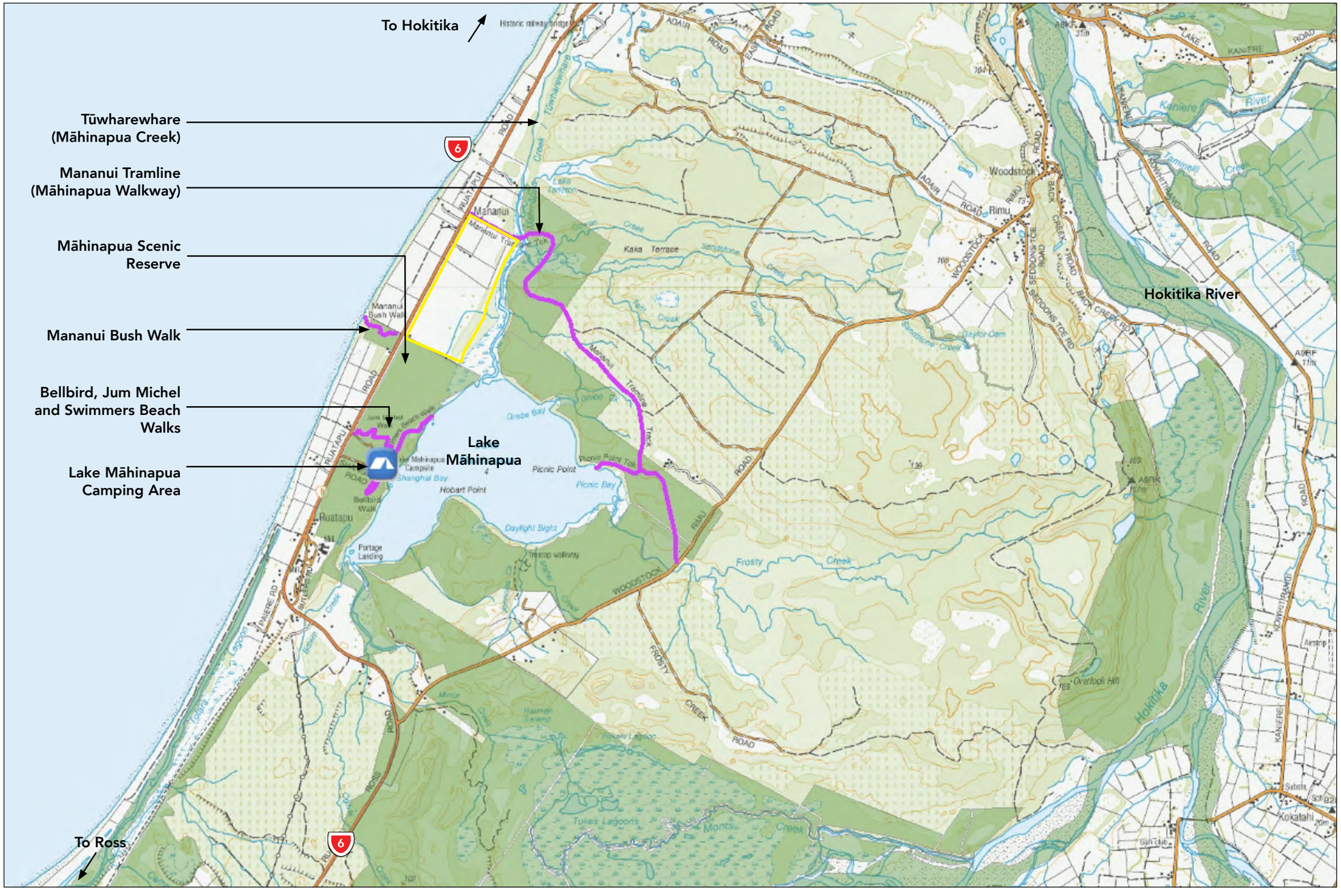
N

SCALE: 1: 50,000@ A3

0 0.5 1 2 3 4 5KM

Basemap credit:
Eagle Technology, LINZ

2.0 PUBLIC CONSERVATION AREAS, SCENIC RESERVES AND WALKWAYS



KEY

- Public Conservation and Scenic Areas
- Waterbody
- Lake Māhinapua Camping Area
- Walking Track
- Proposed Application Area
- State Highway 6

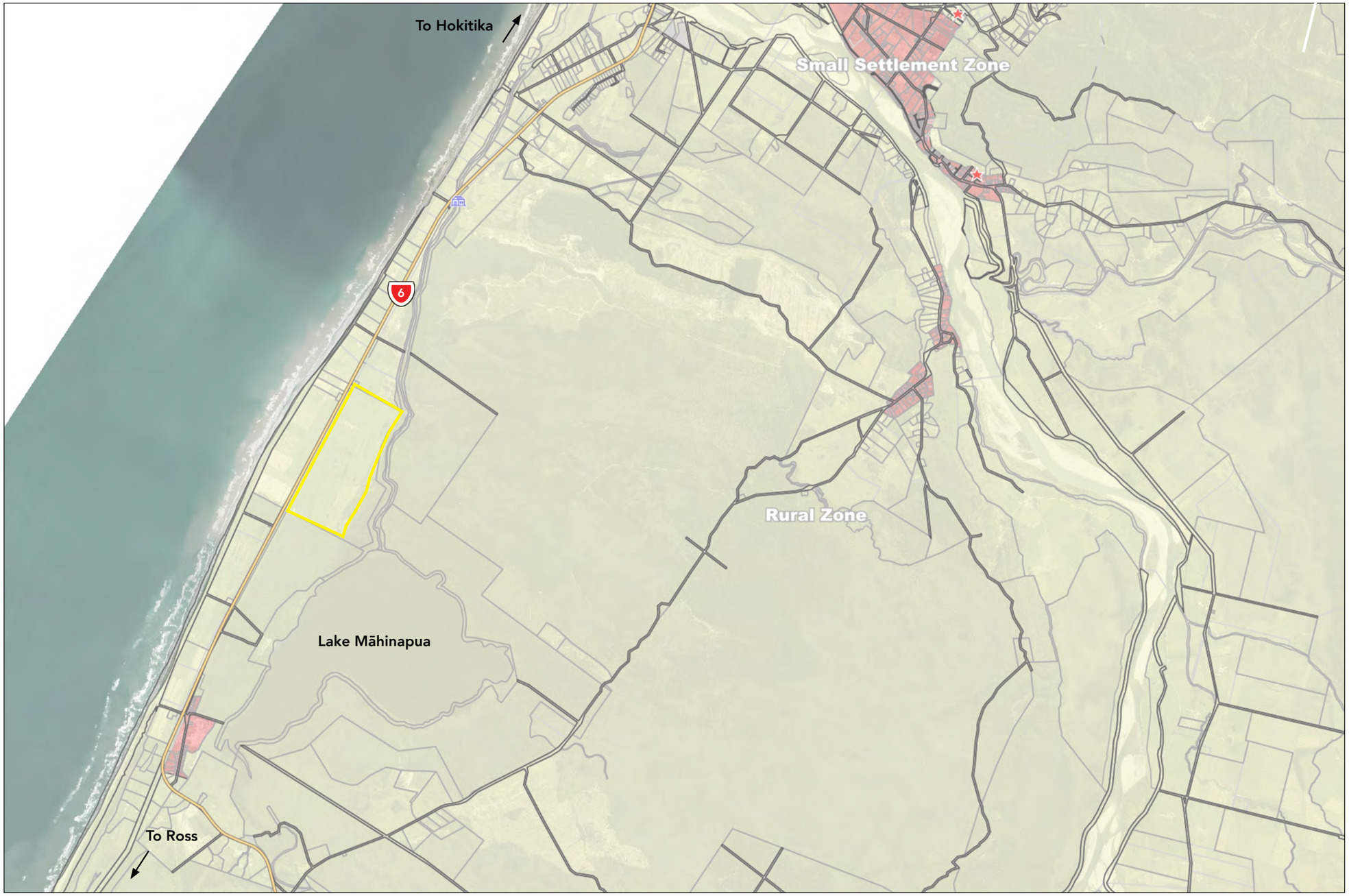
N

SCALE: 1: 50,000@ A3

0 0.5 1 2 3 4 5KM

Basemap credit:
Department of Conservation (DOC)

3.0 WESTLAND OPERATIVE DISTRICT PLAN



KEY

- Proposed Application Area
- State Highway 6
- Small Settlement Zone
- Rural Zone
- Designated Land
- Historic Application Area

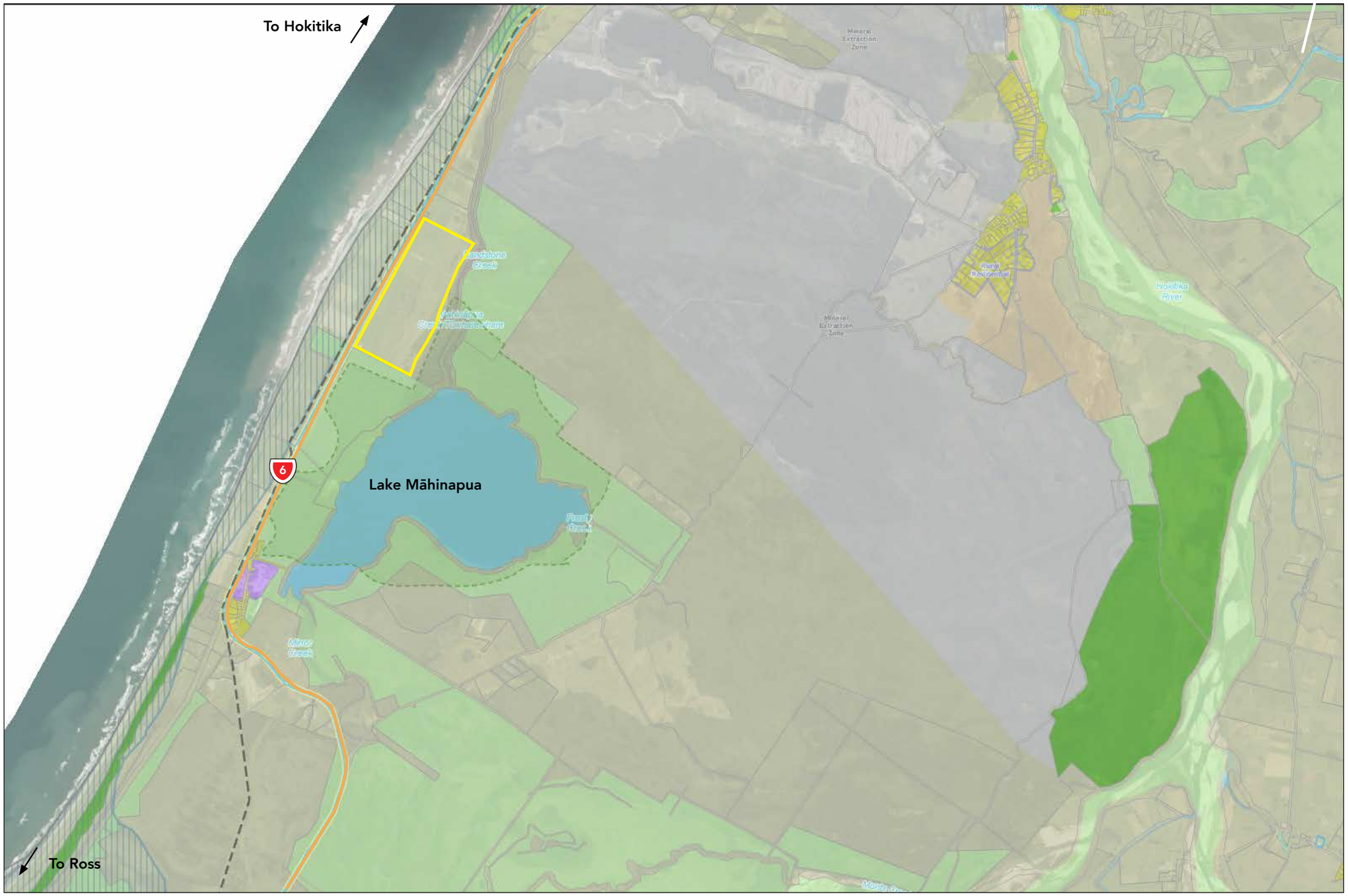
N

SCALE: 1: 50,000@ A3

0 0.5 1 2 3 4 5KM

Basemap credit:
Westland District Council, Intra Maps

4.0 PROPOSED TE TAI O POUTINI PLAN



KEY

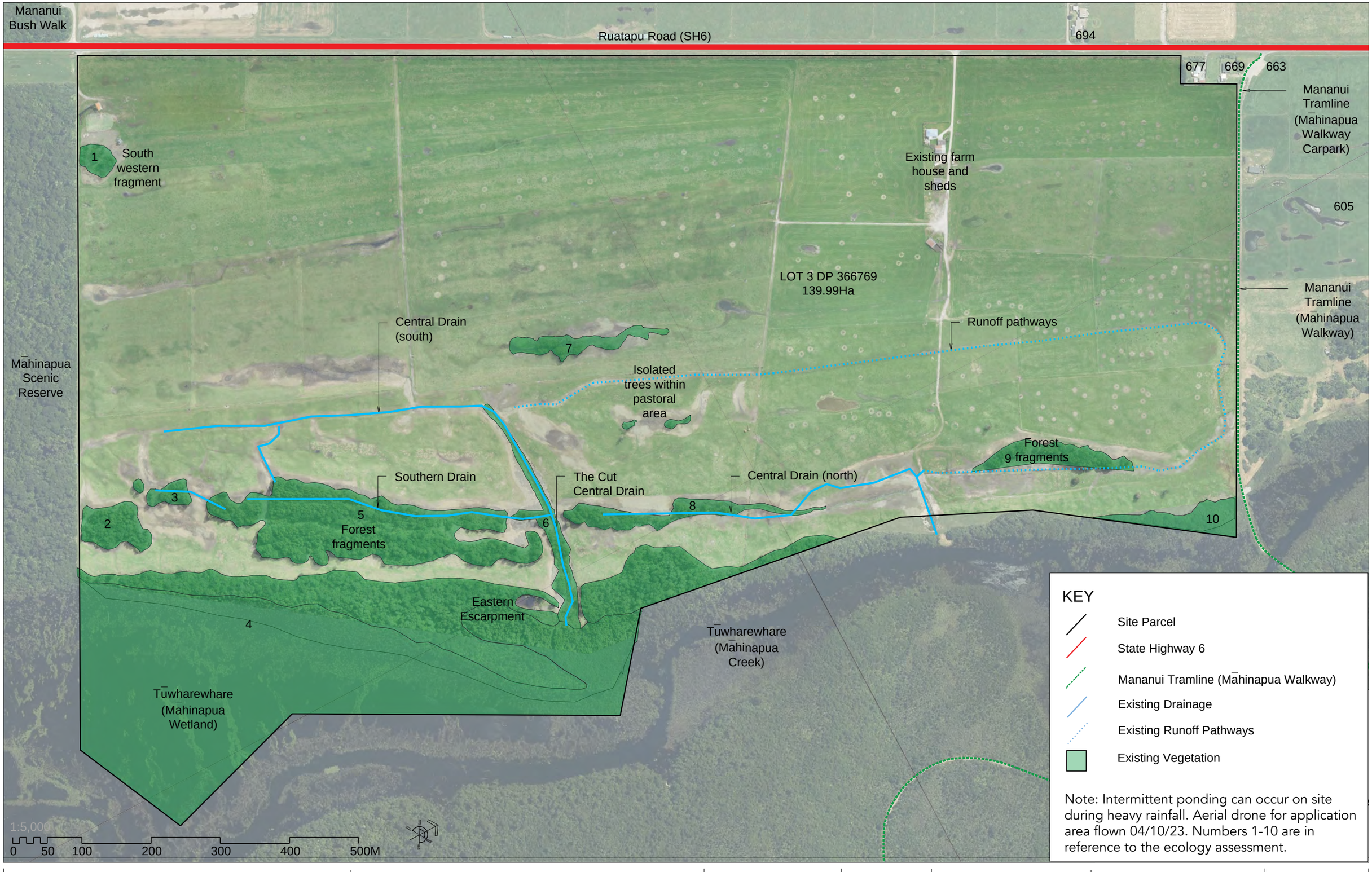
- Proposed Application Area
- State Highway 6
- Significant Electricity Distribution Line
- Outstanding Natural Landscape
- Coastal Environment
- Natural Open Space Zone
- Open Space Zone
- General Industrial Zone
- Rural Lifestyle Zone
- General Rural Zone
- Mineral Extraction Zone
- Settlement Zone
- Waterbody

N

SCALE:NTS

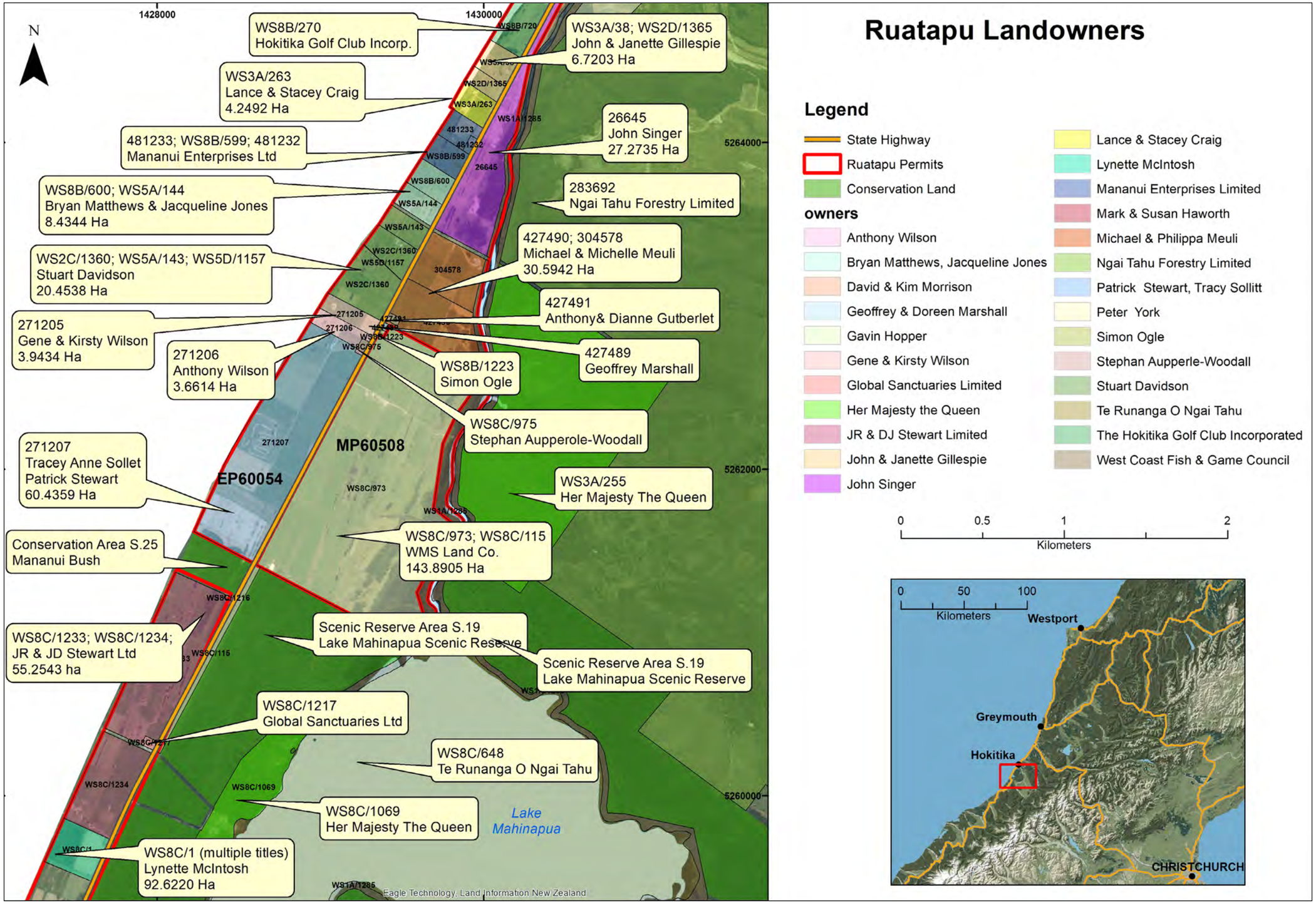
Basemap credit:
Te Tai o Poutini Plan, West Coast

5.0 EXISTING SITE PLAN



MANANUI MINERAL SANDS PROJECT	Existing Site Plan	PROJECT NUMBER 2309	REVISION Final	SCALE 1:5000@A3 1:2500@A1	DESIGN: GHLA,WMS,HP DRAWN: EM APPVD: NC	DATE 07/10/2023	7

6.0 NEIGHBOURING PROPERTIES



Ruatapu Landowners

Legend

- State Highway
- Ruatapu Permits
- Conservation Land

owners

- Anthony Wilson
- Bryan Matthews, Jacqueline Jones
- David & Kim Morrison
- Geoffrey & Doreen Marshall
- Gavin Hopper
- Gene & Kirsty Wilson
- Global Sanctuaries Limited
- Her Majesty the Queen
- JR & DJ Stewart Limited
- John & Janette Gillespie
- John Singer
- Lance & Stacey Craig
- Lynette McIntosh
- Mananui Enterprises Limited
- Mark & Susan Haworth
- Michael & Philippa Meuli
- Ngai Tahu Forestry Limited
- Patrick Stewart, Tracy Sollitt
- Peter York
- Simon Ogle
- Stephan Aupperle-Woodall
- Stuart Davidson
- Te Runanga O Ngai Tahu
- The Hokitika Golf Club Incorporated
- West Coast Fish & Game Council

0 0.5 1 2
Kilometers

N

SCALE: 1: 10,000@ A3

0 100 200 400 600 800 1000M

Basemap credit:
Tai Poutini Resources

7.0 CHARACTER IMAGES - THE APPLICATION AREA

1. View of historical dune system within the Application Area.

2. Erosion and slumping evident within Application Area.

3. View of remnant bush on the south eastern portion of the Application Area, with both natives and large patches of gorse.

4. Existing sheds behind the farmhouse

5. Driveway access to the existing farmhouse.

6. Typical view of the Application Area character with pastoral grassland.

7. The Application Area as viewed from the air after leaving Hokitika Airport.

8.0 CHARACTER IMAGES - THE SURROUNDING AREA

1. Typical windswept vegetation outside the Application Area.

2. View across Lake Māhinapua to the Tree Top Walk.

3. The Mananui Tramline (Māhinapua Walkway).

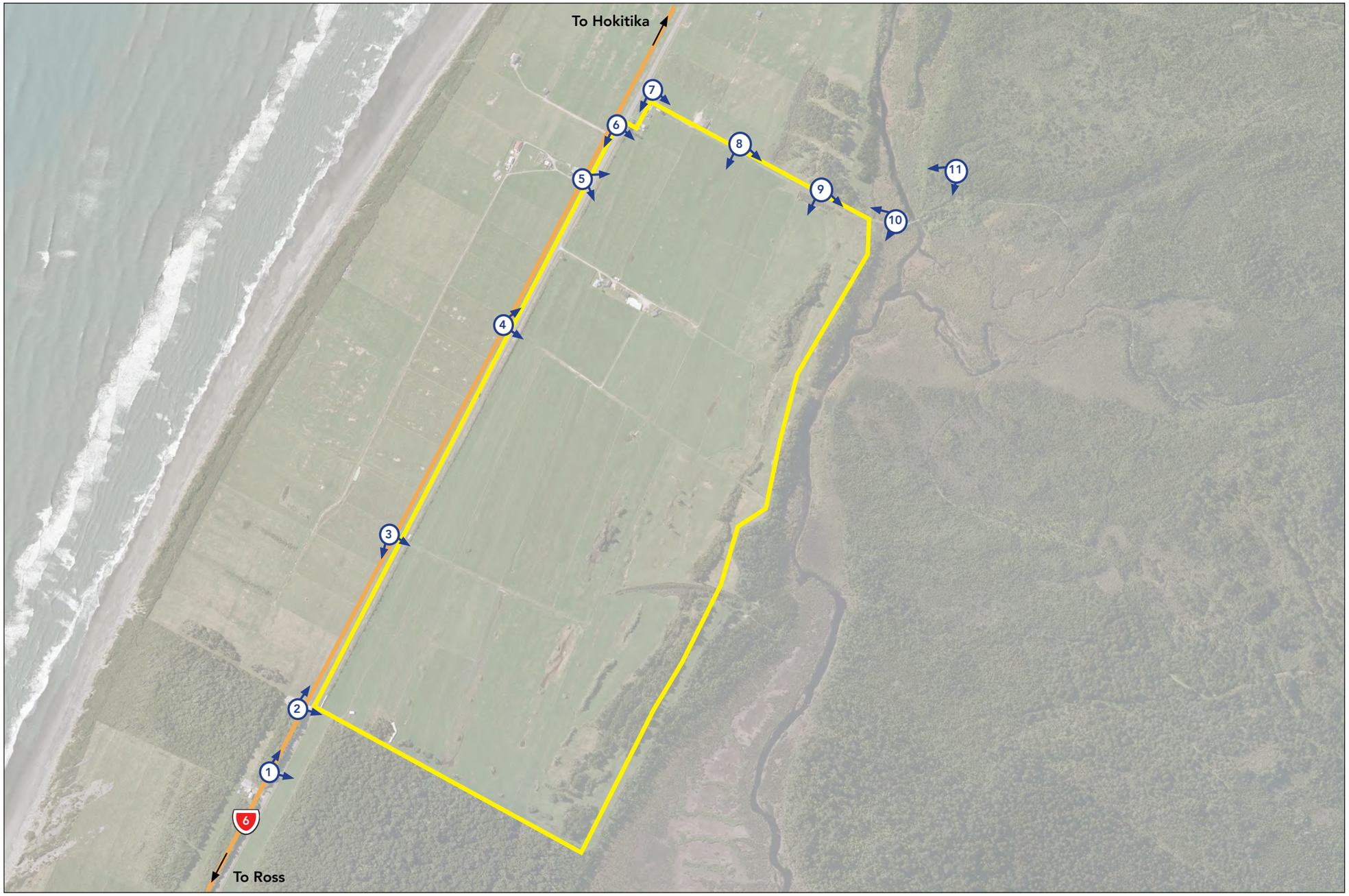
4. Historic sawmill relics on the Mananui Tramline.

5. A 'window' from the Application Area to the Tūwharewhare (Māhinapua Creek) below.

6. Tūwharewhare (Māhinapua Creek) and wetland area.

7. Tūwharewhare (Māhinapua Creek) as viewed from the boardwalk portion of the walkway.

9.0 VIEWPOINTS PLAN



KEY:

- State Highway 6
- Mining Area
- Public Viewpoint

Note: The viewpoints illustrated on this page correspond with the annotated panoramas shown on the following pages.

N

SCALE: 1: 10,000@ A3

0 100 200 400 600 800 1000M

VIEWPOINT 1: LOOKING NORTH ALONG SH6 TOWARDS THE APPLICATION AREA

Viewpoint 1: Panoramic view taken beside the driveway of 866 Ruatapu Road (SH6). This viewpoint is looking in north along SH6 towards the Application Area.
Taken on the 31st May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 2: LOOKING FROM THE MANANUI BUSH WALK CARPARK TOWARDS THE APPLICATION AREA

Viewpoint 2: Panoramic view from the entrance to the Mananui Bush Walk carpark. The viewpoint is looking north-east across SH6 towards the southern part of the Application Area.
Taken on the 30th May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 3: LOOKING FROM SH6 TO THE PROPOSED MINE PLANT AREA

Viewpoint 3: Panoramic view from beside SH6 facing the Application Area. This viewpoint is looking east and shows the approximate location for the mine plant area and access road.
Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 4: LOOKING FROM SH6 TO THE WESTERN BOUNDARY OF THE APPLICATION AREA

Viewpoint 4: Panoramic view from the grass verge along SH6. This viewpoint is looking north and illustrates the existing gorse bund on the western boundary of the Application Area.
Taken on the 30th May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 5: LOOKING FROM OUTSIDE 694/696 RUATAPU ROAD TOWARDS THE APPLICATION AREA

Viewpoint 5: Panoramic view from taken from the end of the driveway to 696 Ruatapu Road (SH6). This viewpoint is looking east towards the Application Area.
Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 6: LOOKING SOUTH ALONG SH6 TOWARDS THE APPLICATION AREA

Viewpoint 6: Panoramic view from the northern corner of the Application Area beside SH6 and the neighbouring property at 677 Ruatapu Road. This viewpoint is looking south towards the Application Area.
Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 7: LOOKING FROM THE MANANUI TRAMLINE (MĀHINAPUA WALKWAY) CARPARK

Viewpoint 7: Panoramic view from the Mananui Tramline (Māhinapua Walkway) carpark at the northern end of the walkway. This viewpoint is looking south-east towards the Application Area and illustrates the walkway along the northern boundary of the Application Area. Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

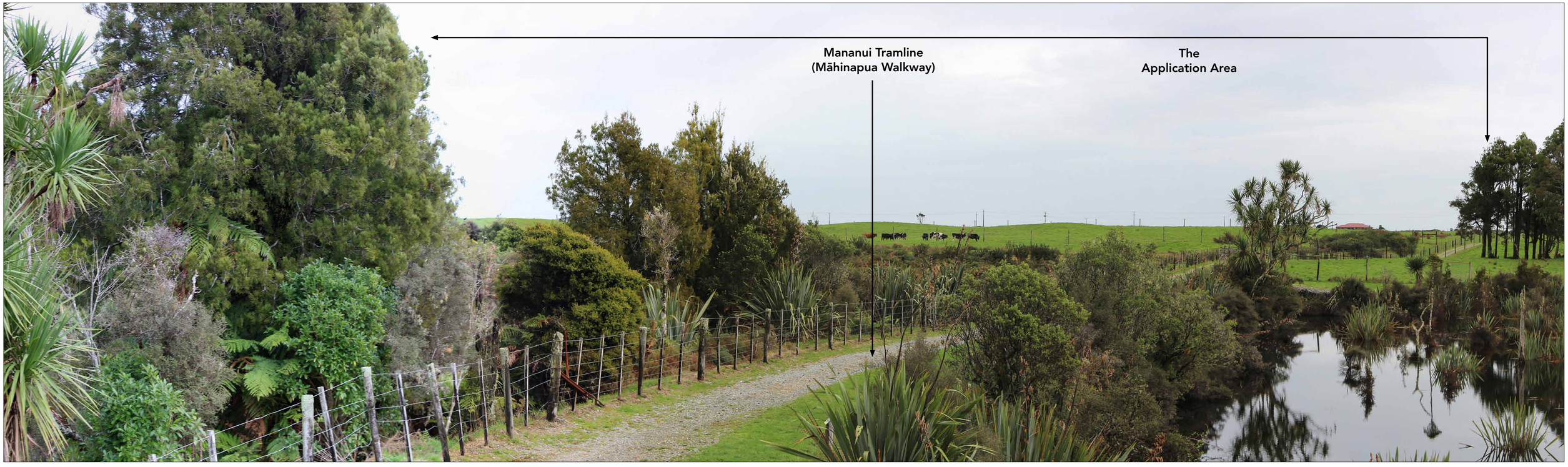
VIEWPOINT 8: LOOKING FROM THE MANANUI TRAMLINE (MĀHINAPUA WALKWAY) TOWARDS THE APPLICATION AREA

Viewpoint 8: Panoramic view from the Mananui Tramline (Māhinapua Walkway). This viewpoint is looking south-east towards the Application Area.
Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 9: LOOKING FROM THE MANANUI TRAMLINE (MĀHINAPUA WALKWAY) TOWARDS THE APPLICATION AREA

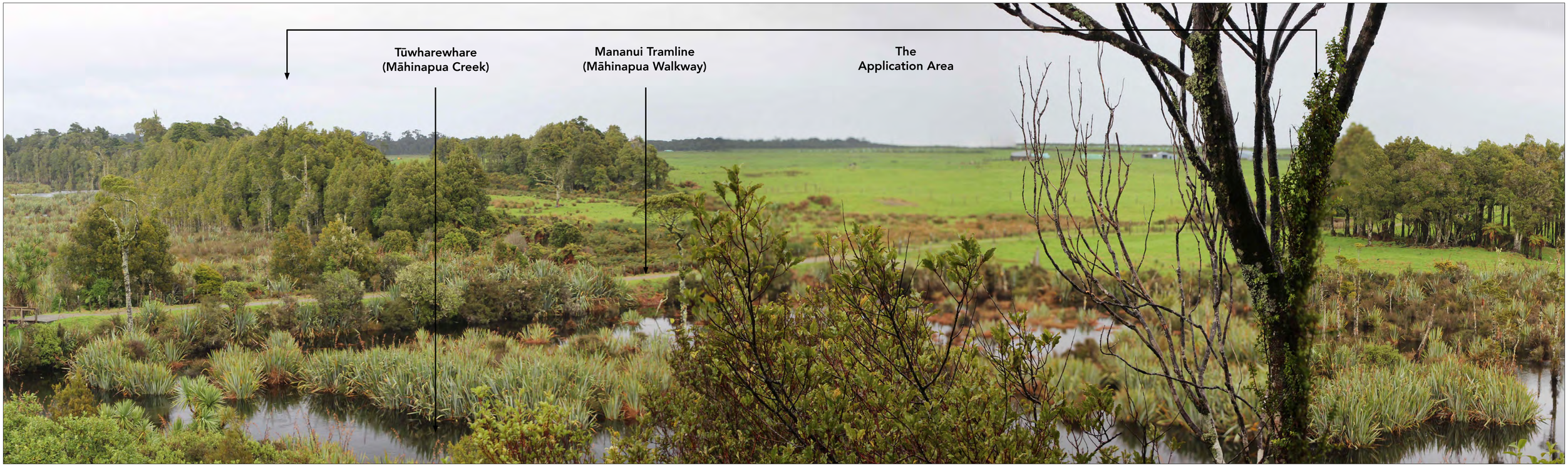
Viewpoint 9: Panoramic view from the Mananui Tramline (Māhinapua Walkway) towards vegetation on the north-eastern border of the Application Area. This viewpoint is looking south-east towards the Application Area.
Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 10: LOOKING FROM THE MANANUI TRAMLINE (MĀHINAPUA WALKWAY) TOWARDS THE APPLICATION AREA



Viewpoint 10: Panoramic view from shortly before the historic bridge on the Mananui Tramline (Māhinapua Walkway). This viewpoint is looking west towards the Application Area.
Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 11: LOOKING FROM THE HIGH WATER TRACK TOWARDS THE APPLICATION AREA

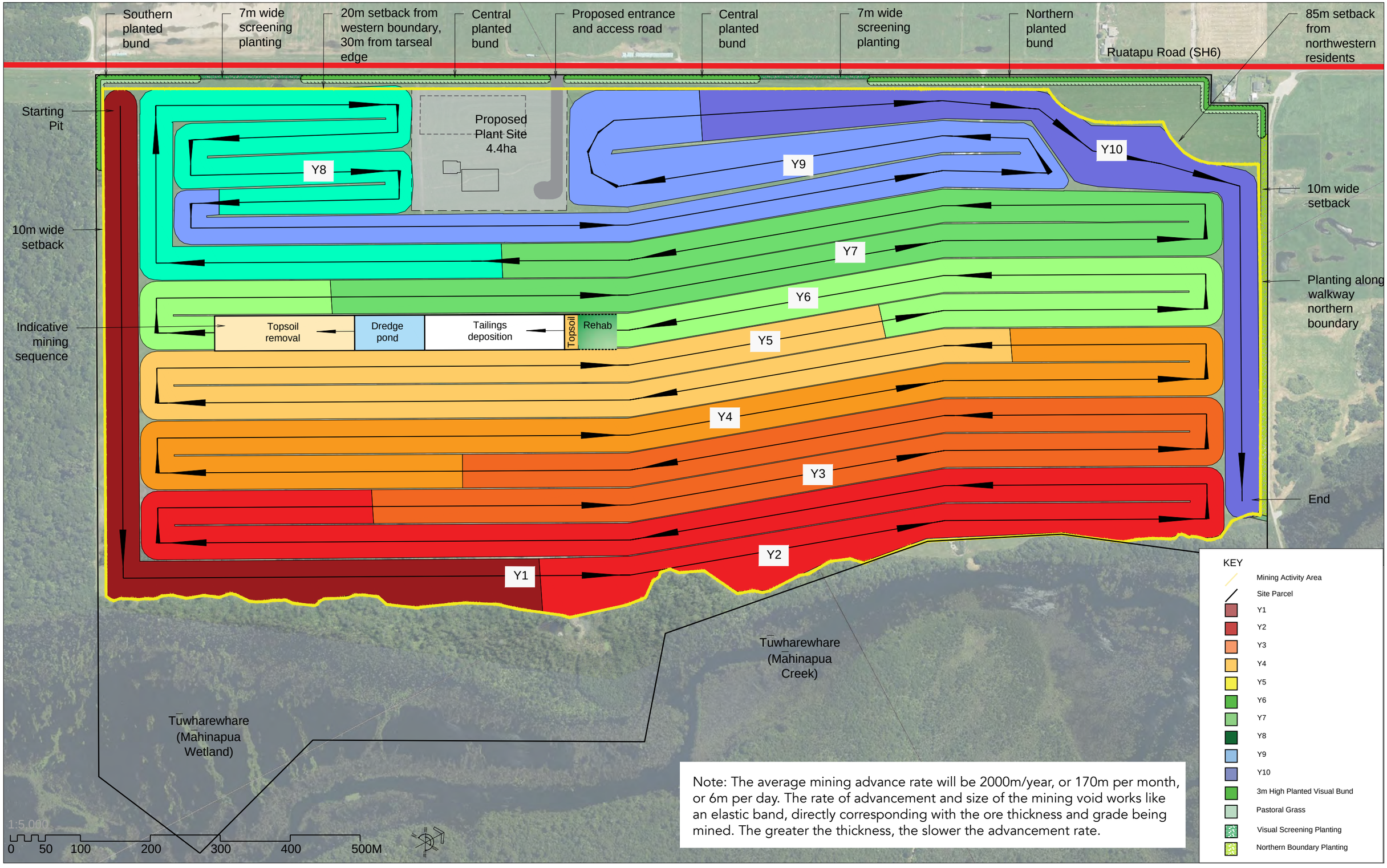


Viewpoint 11: Panoramic view taken from the High Water Track off the Mananui Tramline (Māhinapua Walkway) towards the Application Area. This viewpoint is looking south-west towards the Application Area.
Taken on the 30th of May 2023 with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 12: LOOKING FROM THE WEST COAST TREE TOP WALK TOWARDS THE APPLICATION AREA

Viewpoint 12: Panoramic view taken from the highest point of the West Coast Tree Top Walk, at a distance of approximately 2.6km from the Application Area. This viewpoint is looking north-west towards the Application Area.
Taken on the 31st of May 2023 with a Canon 600D camera with a 50mm lens. This is a private viewpoint available from a tourist facility. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

10.0 MINING APPLICATION PLAN



Note: The average mining advance rate will be 2000m/year, or 170m per month, or 6m per day. The rate of advancement and size of the mining void works like an elastic band, directly corresponding with the ore thickness and grade being mined. The greater the thickness, the slower the advancement rate.

MANANUI MINERAL SANDS PROJECT	Mining Application Plan	PROJECT NUMBER 2309	REVISION Final	SCALE 1:5000@A3 1:2500@A1	DESIGN: GHLA,WMS,HP DRAWN: EM APPVD: NC	DATE 07/10/2023

11.0 THE PROCESSING PLANT AREA

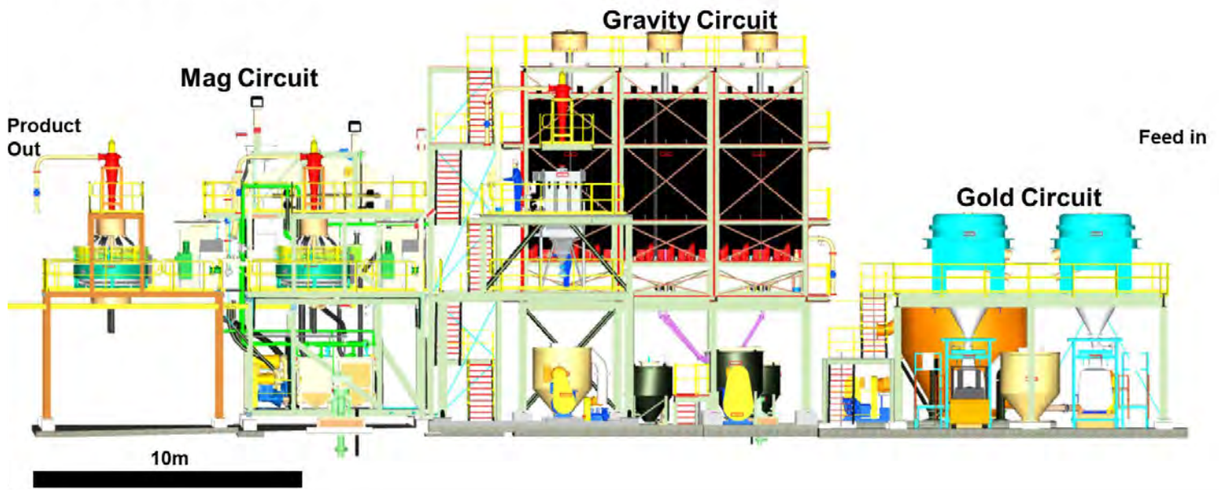
MINE STAGING DETAILS (REFER TO PLAN ON PREVIOUS PAGE)

- A starter pit will be established in the southwest corner and be 50x150-200m in size.
- The first 6 months of mining will occur from the west to the east.
- The mine path will be 70m wide.
- There is proposed to be a 10 year mine sequence.
- The average mining advance rate is 2000m/year, or 170m/month, or 6m/day.
- Years 1 and 2 will have slower advancement rates due to thicker ore and the ramp up period.
- The final mine strip travels along the northern boundary, leaving a void in the north-eastern corner to be rehabilitated into a wetland.

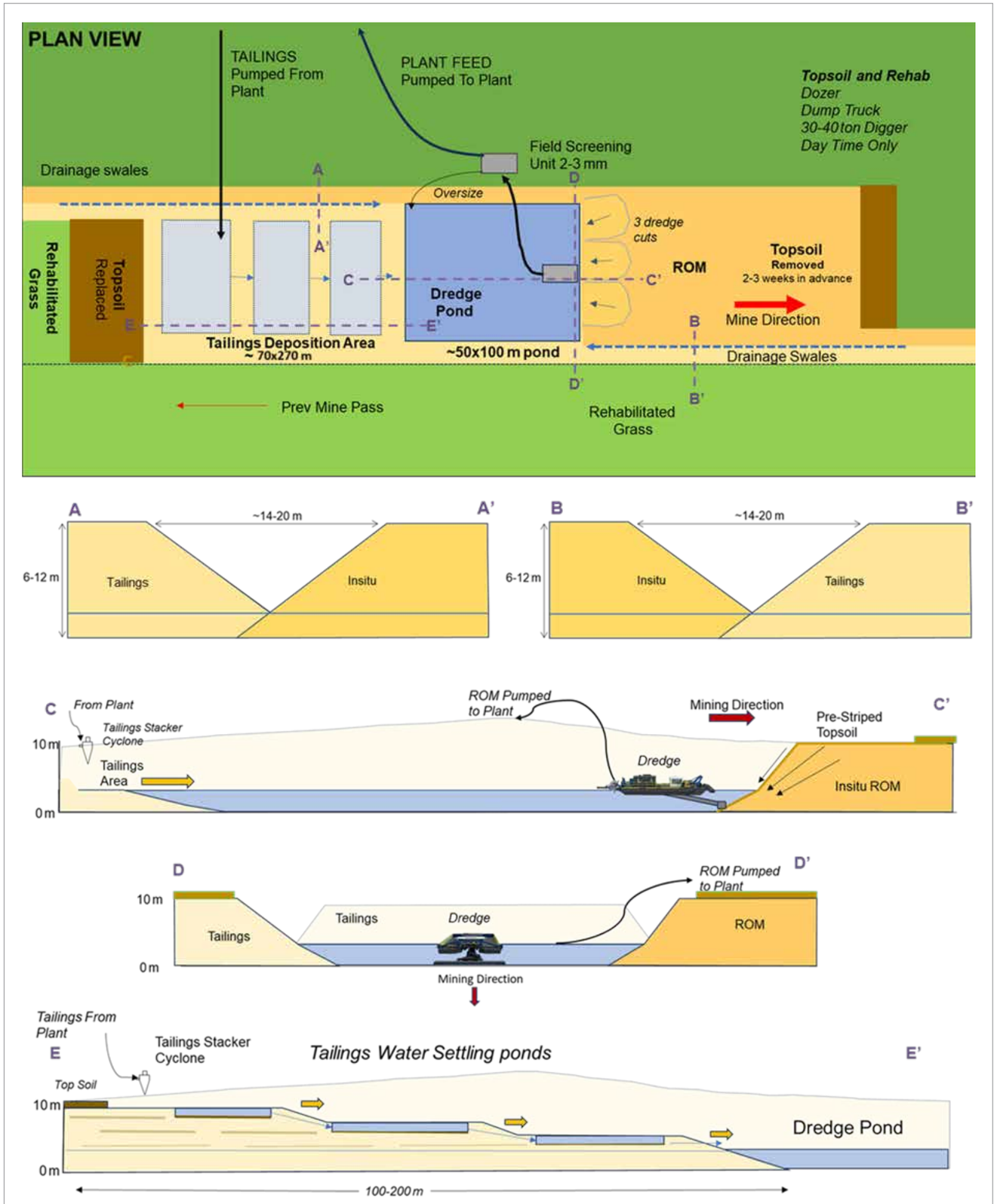
PROCESSING PLANT AREA DETAILS

- The plant area covers 4.4Ha of the Application Area.
- The new access way to the Application Area will be located 640m from the southern boundary.
- The total footprint of all buildings is approximately 3860m^2.
- The tallest part of the plant is the Wet Concentrator Plant (WCP) which is 17m tall.
- A 3m high, 12m wide planted bund is proposed along SH6 for visual screening.

WCP PLANT CROSS SECTION



12.0 MINING SEQUENCE AND PIT DETAILS



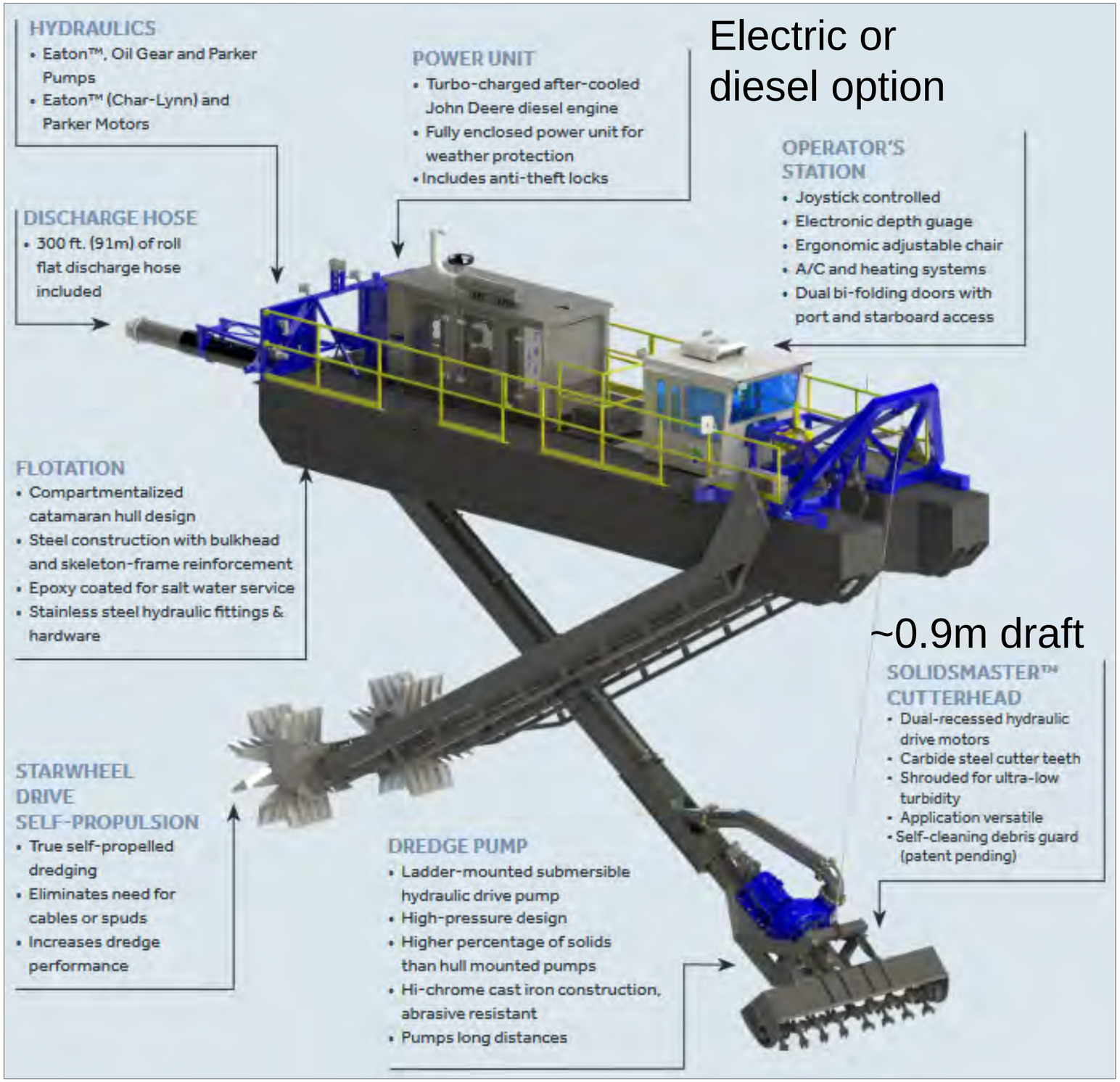
MINING SEQUENCE DETAILS

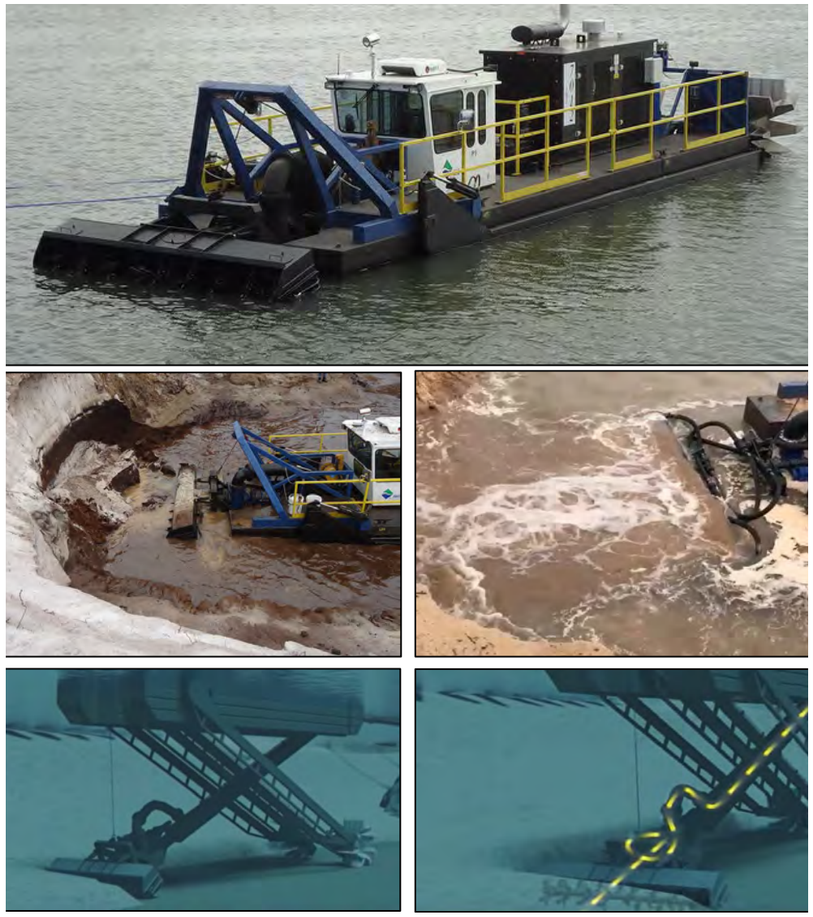
- Topsoil and vegetation are striped 2-3 weeks ahead of the mining area. Operates between 0700 - 1900.
- Dredge sits in the pond on the water table. Operates 24hrs.
- Dredge material is pumped to the Mine Screening Unit (outside the mining pit) for the sand and gravel to be screened. Oversized +2-3mm gravel is returned to the pond.
- Smaller material is slurry pumped to the plant area for processing. Heavy mineral concentrate is removed to be exported off site.
- Tailings, quartz sand and slimes are pumped back into mining void.
- Tailings are used to build cascading water settling ponds
- The tailings deposition will progress at a similar rate to the advancing dredge.

MINING PIT GEOMETRY

- Mining pit walls are designed with a 22 to 27 degree slope.
- The mining void will fluctuate in size depending on the thickness and grade of material available.
- Average topsoil stripping size at any one time: 70x286m.
- Average dredge pond size: 70x100m.
- Average tailings disposal area size: 70x570m.

13.0 MINING DREDGE

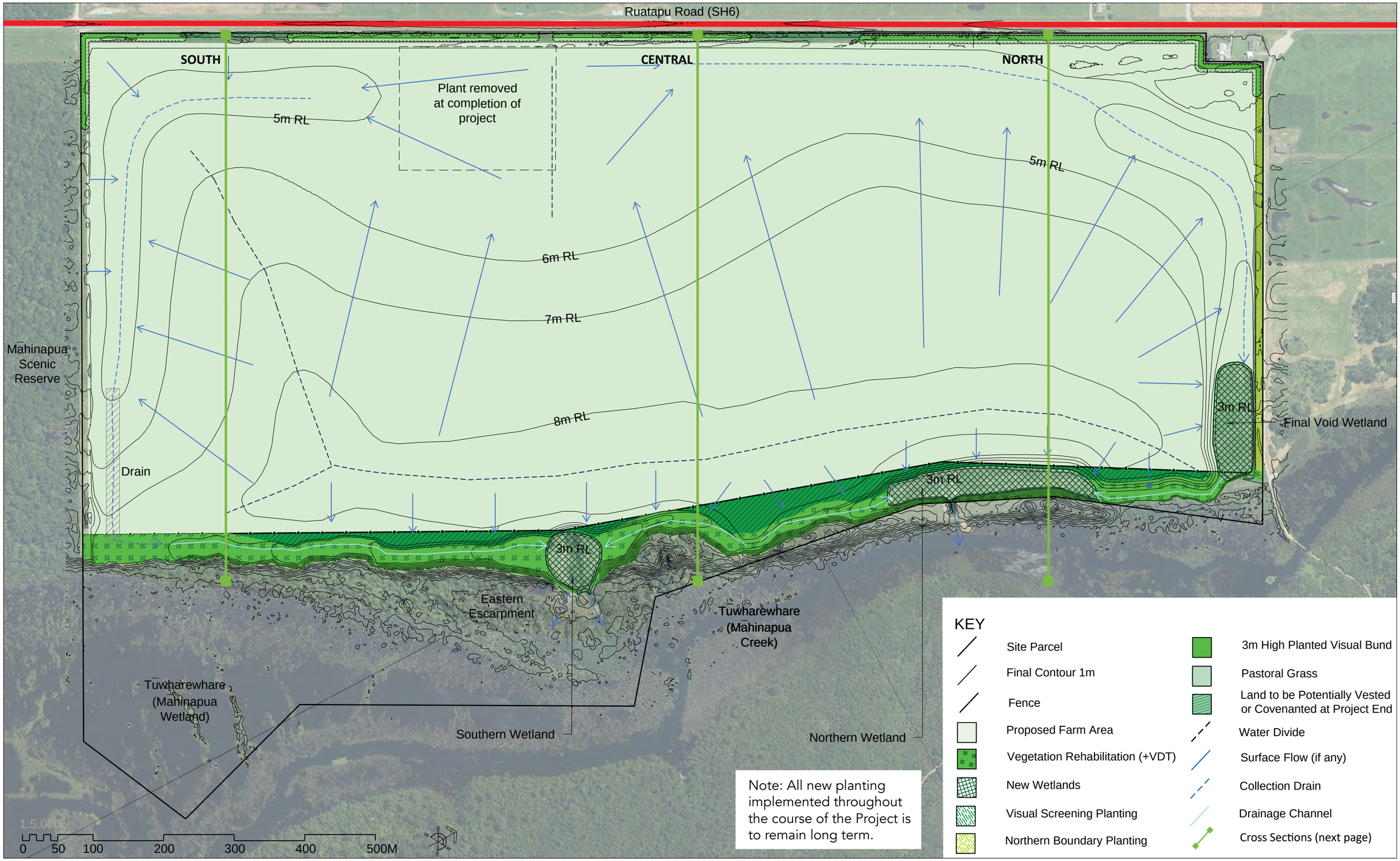




ELECTRIC DREDGE DETAILS

- Mining will be carried out by a self-propelled dredge.
- The dredge is able to float in shallow water. It's position and depth is controlled by GPS.
- The dredge uses a cutter arm to cut the base of the advancing mine face.
- The material continuously collapses down the slope into the dredge path.
- It is then pumped to the Mine Screening Unit (outside the mining pit) for the sand and gravel to be screened.

14.0 FINAL LANDFORM AND REHABILITATION PLAN



MANANUI MINERAL SANDS PROJECT	Final Landform and Rehabilitation Plan	PROJECT NUMBER 2309	REVISION Final	SCALE 1:5000@A3 1:2500@A1	DESIGN: GHLA,WMS,HP DRAWN: EM APPVD: NC	DATE 07/10/2023	22

15.0 FINAL LANDFORM DETAILS

FINAL LANDFORM DETAILS

- The plant and ancillary buildings will be removed at the completion of mining activity. This area will also be re-contoured back to pasture.
- The final dredge pond will be converted into a wetland in the north-eastern corner.
- New fencing and farm infrastructure will be established through progressive rehabilitation during mining.
- The rehabilitated pasture gently slopes east to west (9mRL to 6mRL).
- The final landform requires re-contouring 6.95 million cubic metres of material.

FINAL LANDFORM CROSS SECTIONS