

Huia Water Treatment Plant

Shortlist Options Analysis: Landscape and Visual Effects Evaluation Report
Prepared for Watercare Ltd

8 May 2017

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1.0 Introduction

Boffa Miskell ecologists (led by Sarah Flynn) and landscape architects (Rachel de Lambert) have formed part of the wider project team for the options assessment in respect of the proposed Huia Water Treatment Plant (WTP) replacement project since the stage of evaluation of the longlist site options. Boffa Miskell personnel were not involved in initial site identification / selection, as the long list sites were identified primarily on technical performance and engineering / operational criteria.

This assessment report addresses the landscape and visual factors associated with the four shortlisted WTP sites being:

- i. The existing treatment plant Woodlands Park Road;
- ii. Manukau Road;
- iii. Parker Road South, Oratia; and
- iv. Parker Road North, Oratia.

The assessment is based on the now proposed 160 MLD capacity facility proposed and the related drawing sets prepared and provide by GHD. The assessment is further informed by the “Watercare Services Limited, Huia WTP Site Selection Study, Draft Shortlist Site Development Report” (July 2016) prepared by GHD.

This report expands upon an earlier summary report dated January 2017 “Options Evaluation Summary Report: Landscape and Visual Factors” by way of further background, a copy of this report is appended at **Appendix 1**.

It is noted that the GHD design layouts are preliminary and are intended as indicative layouts to test the potential configuration of a water treatment plant with a capacity of 160 MLD with room for future expansion on each shortlisted site. The process to secure a new site for the Huia WTP, on land not already owned by Watercare, would require a Notice of Requirement (NOR) which rather than specifying a particular treatment plant layout would establish the development parameters for a future treatment plant – such as maximum building heights, extent of site coverage, buffer areas and the like. The GHD potential layouts are therefore indicative.

This report is structured to address the sites in order as listed above. It is noted that landscape and visual effects both during construction and operation will be generated in respect of all options. Whilst it may be considered that the redevelopment of the existing Woodlands Park Road site would result in the least effects - given the already established nature of that site – further effects would be generated due to the expansion of the facility beyond the current extent of the site with the two reservoirs proposed across Woodlands Park Road in an area of existing indigenous vegetation.

The evaluation of each site is tabulated with a consistent set of criteria with scores between 1 and 5 where 1 = worst / significant adverse effects and 5 = best / limited or benign / neutral effects, both landscape and visual effects are identified and scored.

i. The Existing Treatment Plant Site: Woodlands Park Road

The existing WTP facility on Woodlands Park Road, Titirangi is long established and includes a scheduled heritage building addressing Woodlands Park Road behind which lies the main plant. The existing street frontage is well treed. There is a small reservoir

across the road to the north set in amongst second growth native vegetation which screens the reservoir from view.

This area of Titirangi, which is just west of the Titirangi town centre has a highly varied topography typical of the Waitakere Ranges with a substantial bush residential population. Woodlands Park Road splits from Scenic Drive with Scenic Drive accessing the high land to the north. Houses in the surrounding area are accessed by Woodlands Park Road, Scenic Drive, Manuka Road, Taraire Road (down slope to the south) and on Waima Crescent which extends from Woodlands Park Road to the west.

Figure 1 attached illustrates the indicative footprint for the 160 MLD layout in the context of the site and surrounding area.

The vegetation surrounding the existing WTP is contiguous with and forms part of a wider Significant Ecological Area (SEA) as identified in the Auckland Unitary Plan (AUP) (part operative). A further area of SEA is located across Woodlands Park Road in the area proposed for the two reservoirs. A small part of this adjacent site is not included in the SEA.

The site is not included in an identified Outstanding Natural Landscape (ONL) or Feature (ONF) nor is it covered by a significant ridgeline notation in the AUP.

The site has the advantage of having an existing character that is already strongly influenced by the industrial scale and character of an historically long established water treatment plant. However, the required expansion will impact on secondary native vegetation that has been identified as an SEA. In the context of the Waitakere Ranges clearance of indigenous vegetation is considered to generate an elevated level of adverse landscape effects.

The summary of landscape and visual effects in respect of the Woodlands Park Road WPT site is set out below:

Existing WTP Site: Woodlands Park Road	
Landscape Effects	
Identified Features	Site not identified ONL / ONF or sensitive ridgeline
	Site in part identified as SEA, terrestrial vegetation
Landscape Character	Existing modification as WTP site – established industrial character but with context of surrounding established indigenous vegetation
	Site of proposed reservoirs comprises relatively intact indigenous vegetation
Earthworks	Existing terracing and platforms extended. New landform modification required to accommodate reservoirs
Vegetation	WTP expansion will impact identified SEA. Reservoirs will impact identified SEA.
Summary Landscape Effects	
Moderate adverse landscape effects generated	
Score: 3	

Visual Effects	
Residential Catchment	Titirangi bush residential location. Properties in surrounding area both overlook and look away from WTP.
Public Visibility Roads	Woodlands Park Road connects Huia Road with Scenic Drive retention of scheduled heritage building will maintain primary frontage views.
Summary Visual Effects	
Moderate adverse visual effects reduced buffers	
Score: 3	

ii. Manuka Road Site

The Manuka Road site is owned by Watercare, it lies directly across Manuka Road from the existing WTP site (Woodlands Road) and is defined in the west by Manuka Road, north by Woodlands Park Road and east by Scenic Drive. The site was previously occupied in part by houses associated with the operation / management of the adjacent water treatment plant, however these became redundant and were eventually removed, the regeneration of the site therefore includes some areas of more recent modification. This entire site, other than a small pocket in the north, is presently covered by secondary native regrowth vegetation which is identified in the AUP as an SEA.

The extent of the 160 MLD indicative plant layout is shown on Figure 2 attached. This layout also requires the two reservoirs across Woodlands Park Road as for the Woodlands Park option above. This component of the proposal requires further vegetation removal and modification of an SEA. The subject site is not located within an identified ONL or ONF and is not overlaid by any significant ridgeline notation.

Manuka Road WTP	
Landscape Effects	
Identified Features	Site not identified as ONL / ONF nor within sensitive ridgeline
	Site almost entirely identified as terrestrial vegetation SEA and comprises intact secondary native vegetation.
Landscape Character	Both main WTP site and site for reservoirs largely intact and mature secondary regrowth native bush cover (refer ecology report) contiguous with extensive bush areas in Waitakere Ranges / Scenic Reserves
Earthworks	Land has the appearance of highly unmodified 'natural' landscape, will require significant modification / earthworks and levelling / retaining structures
Vegetation	Intact cover of indigenous (secondary regrowth but mature) vegetation will be largely cleared with impact of construction zone and operational plant.

Summary Landscape Effects		Score: 2
Moderate high / high adverse landscape effects generated		
Visual Effects		
Residential Catchment	Titirangi bush residential location properties in surrounding area both overlook and are oriented away from / screened by vegetation from site	
Public Visibility Roads	Site has presence in respect of Manuka, Woodlands Park and Scenic Drive roads adjacent dramatic scale of vegetation clearance and new industrial scale activity will be apparent	
Summary Visual Effects		Score: 2
Initially high potentially reducing to moderate / high visual effects		
Potential for cumulative effects in respect of decommissioned existing WTP		

iii. Parker Road Sites

Parker Road is a 'no exit' road extending from West Coast Road in Oratia. The road is a school bus route and has an associated turning area towards the upper end of the road formation. The road follows a ridgeline accessing a range of generally large lots, although increasingly subdivided, horticultural and bush lot residential development. Houses have historically been located close to the road with pockets of development extending along shared rights of way deeper into the valleys either side of the ridge.

Carter Road has a similar bush residential character, it extends from West Coast Road slightly to the north east of Parker Road and follows the adjacent ridge connecting eventually to Shaw Road and thereby to Scenic Drive west of Titirangi village centre.

Whilst Parker Road does not connect in terms of vehicular access to Scenic Drive there is a walking track extending from the end of the road up into the Scenic Reserve and accessing the Arataki Visitor Centre. This walkway generates a level of pedestrian activity on Parker Road beyond that of its immediate residents.

The Parker Road ridgeline identified as a significant ridgeline in the AUP however the two potential sites identified, Parker Road south and Parker Road north, whilst connected to the road are located in the valley to the east of the ridgeline.

There are significant ideas identified as SEA in the locality including on parts of both sites although there are also extensive areas without intact native vegetation that have a more fragmented pattern of residential and horticultural land use.

This part of Oratia has a long history of horticultural land use in West Auckland with some remnant associated (residential and farm) buildings and horticultural plantings, it is not, however, so intact as to read as a cultural landscape associated with these activities.

iv. Parker Road South: Oratia

The south site is located further up Parker Road in the valley to the east of the ridge. As illustrated in Figure 3 the proposed WTP site is set well back from the road in an area of more recent lifestyle residential development with some intact indigenous vegetation primarily along the stream / wetland / gully areas much of which are identified as SEA.

In addition to the houses in the immediate context of the site on the east side of the ridge there is a cluster of elevated residential properties on the west side of Parker Road that have the potential to overlook the east side of the valley and potential WTP. Carter / Cochran Roads away to the west are relatively well buffered although some properties are more elevated and generally in a surrounding bush context.

The summary of landscape and visual effects in respect of the Parker Road south WTP site are set out below:

Parker Road South WTP: Oratia					
Landscape Effects					
Identified Features	The site is not an ONL or ONF. There is a significant ridgeline notation on Parker Road but not affecting the site which is in the valley to the east.				
	There is an area of SEA in the east of the site and a fringe along a gully / stream within the site. These can potentially be largely avoided although some impact will occur which would be significant in the context of the ecological values.				
Landscape Character	The site has a large lot residential character and amenity framed by significant indigenous vegetation and within a Waitakere Ranges environment. Being on a no exit road the valley has an exclusive community character with a level of seclusion.				
Earthworks	There is a level of existing modification associated with the low level of residential development however, more earthworks would be required including modification of some waterways / wetlands / overland flow areas.				
Vegetation	The pattern of vegetation is fragmented and includes relatively intact, high quality indigenous vegetation in the east of the site and along a creek corridor. The majority of these areas can be avoided although adverse ecological / vegetation impacts would occur.				
<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Summary Landscape Effects</td> <td style="text-align: right;">Score: 2</td> </tr> <tr> <td colspan="2">Some impact on identified SEA and landform modification moderate / high adverse landscape effects</td> </tr> </table>		Summary Landscape Effects	Score: 2	Some impact on identified SEA and landform modification moderate / high adverse landscape effects	
Summary Landscape Effects	Score: 2				
Some impact on identified SEA and landform modification moderate / high adverse landscape effects					
Visual Effects					
Residential Catchment	Limited surrounding catchment at distance – Cochran / Carter and Parker Roads, small concentration of elevated residential properties on west side of Parker Road.				

Public Visibility Roads	Relatively small volumes of local / destination traffic and site well separated from road.
Summary Visual Effects	
Score: 3	
Small catchment but potentially high impact and existence value effects. Moderate / and some limited high visual effects although with potential for mitigation.	

v. Parker Road North: Oratia

The north site is located further down Parker Road also on the east side of the ridge with Carter Road away to the east. The eastern third of the site is covered with intact second growth native vegetation, an identified SEA, however the potential WTP footprint does not extend into this area as illustrated in Figure 4 attached.

Like the Parker Road South site, this site comprises an existing pattern of large – and some smaller – lot residential subdivision with part of the area in an established feijoa orchard. The local topography means that properties to the immediate south of the site are largely screened from view by that topography reinforced by existing vegetation. There are some more distant elevated houses across the valley to the north east (on Carter Road) that have the potential to look up the valley (Scenic Road ridgeline) to the site.

The summary of landscape and visual effects in respect of the Parker Road north WTP site is set out below:

Parker Road North WTP: Oratia	
Landscape Effects	
Identified Features	The site is not an ONL or ONF. There is a significant ridgeline notation on Parker Road but not affecting the site, which lies to the east.
	There is a large block of identified SEA in the east of the site across the stream which will remain untouched by the WTP footprint and can be covenanted.
Landscape Character	The site has a large lot (and some smaller lot) residential character with some long established productive horticultural land use – feijoa orchard. The wider context has a Waitakere Ranges bush character / amenity. Being on a no exit road the locality has a secluded character and amenity.
Earthworks	The site has a level of past and more recent existing modification. The main stream lies to the east and can be avoided in terms of the WTP footprint. Further earthworks will be required but set down into the valley.
Vegetation	The pattern of vegetation is fragmented with rural shelter as well as orchard activities. There is limited indigenous vegetation in the

	area of the WTP footprint and a large area of SEA can be avoided and protected.
Summary Landscape Effects Score: 3 Some landform modification required but limited effect on indigenous vegetation, moderate adverse landscape effects	
Visual Effects	
Residential Catchment	Limited surrounding catchment and largely well screened by landform and topography, some distant views.
Public Visibility Roads	Relatively small volumes of local / destination traffic and site able to be separated / screened from road.
Summary Visual Effects Score: 3 Small catchment but potentially high impact and existence value effects. Opportunity for mitigation. Moderate adverse visual effects.	

2.0 Subsequent Works

In addition to the main WTP site ancillary works are required to connect the proposed plant with the water supply contained in the Waitakere catchment dams. The majority of these works involve tunnelled pipe networks. At Mackie's Rest, an existing above ground pump location, an additional shaft will be required for the construction and operation of the pipe network. Very limited vegetation clearance, comprising recent predominantly Manuka / Kanuka regrowth, or excavation beyond the shaft itself will be required in this location. Given the remote location of Mackie's Rest and the small scale of works any potential adverse landscape or visual effects are considered to be negligible.

3.0 Summary and Conclusions

The four shortlisted WTP sites identified to replace the existing Huia WTP all have the potential to generate adverse landscape effects – ranging from moderate to moderate / high and high. Similarly, adverse visual effects ranging from moderate to high have the potential to be generated albeit also with the potential for some reduction in the level of impact over time as mitigation planting comprising substantial buffers is achieved.

On balance the existing site has the advantage of avoiding the disruption of a new locality through the introduction of an industrially scaled activity. However, that site requires the extension of works to multiple sites in a more intensively inhabited location. The Manuka Road site would result in the greatest adverse effects, both landscape and visual, primarily due to the substantial clearance of significant indigenous vegetation.

Boffa Miskell

Rachel de Lambert

8 May 2017

Appendix 1: Options Evaluation Summary Report: Landscape and Visual Factors

Options evaluation summary report:

Landscape and Visual Factors

Prepared by Boffa Miskell
January 2017

Introduction

This report provides a brief summary of the rationale for the evaluation of the four short listed option sites being:

- i) The existing site – Woodlands Park Road'
- ii) Manuka Road'
- iii) Parker Road North, and
- iv) Parker Road South.

It is informed by and relies upon information regarding the four options set out in the "Watercare Services Ltd, Huia WTP Site Selection Study, Draft Shortlist Site Development Report", dated July 2016 prepared by GHD and the associated set of GHD drawings.

Boffa Miskell has provided landscape/visual and ecological inputs to the long and shortlisting process for the proposed replacement Huia Water Treatment Plan (WTP) since the early stages of the project but following the selection of the initial site options for consideration.

Review of the longlist sites included consideration of identified landscape values such as Outstanding Natural Landscape, Outstanding Natural Feature and Significant Ridgeline identification. The four shortlisted sites do not lie in or include areas identified for such landscape values. It is, however, noted that Significant Ecological Areas (SEA) are present in respect of the shortlisted sites as noted below.

The following sets out a brief rationale in respect of the evaluation of the four shortlisted site options, which include redevelopment of the existing Woodlands Park Road site, in respect of their relative landscape and visual effects attributes.

The scores are as recorded in the full factor evaluation schedule where 1 = the lowest or worst score and 5 = the highest or best score.

i) Existing Site Option

Score: 3

Advantages

- The site has the distinct advantage of being designated for the subject activity and having the existing landscape character and amenity of a long established water treatment plant facility including an existing interface with residential neighbours.
- Heritage buildings within the existing WTP site would be retained / adapted and in particular the key heritage listed building fronting the road – Woodlands Park Road – would be retained and incorporated into the new facility.

Disadvantages

- The proposal requires new water reservoirs on the opposite side of Woodlands Park Road involving vegetation disturbance and additional structures. (Initially one reservoir will be required but in the longer term two are expected to be needed and both are included in the proposal).
- The site is 'tight' in terms of physical area with limited potential / opportunity to introduce planting or design features that enhance the amenity or provide mitigation of an industrial scaled infrastructure activity.
- The site is very proximate to a busy road with a significant – in numerical terms – viewing audience.
- There is potential for some residential overlooking of the site and close existing residential neighbours.

ii) Manuka Road

Score: 2

Advantages

- Site is designated for the subject infrastructure purposes and has been so for some time.
- The site is proximate to the existing WPT facility therefore not entirely an unfamiliar activity in the locality.

Disadvantages

- Significant vegetation clearance of a fully vegetated site including part of a SEA will be required. Associated potentially significant landscape and visual effects.
- Small / tight site with limited options for layout / mitigation, level changes further limit flexibility.
- The option also requires part of the land within the existing WTP site for the lagoon element of the facility.
- Option also involves water reservoirs on north side of Woodlands Park Road (as for the 'Existing Site' option above) with the same potential for adverse landscape / visual impacts.
- Proximity to Woodlands Park Road and Scenic Drive (SH24) with associated viewing audiences - high numbers of potential viewers.

iii) Parker Road South

Score: 2

Advantages

- Large site provides design flexibility and opportunities for visual mitigation.
- Site set back from road and able to be screened from visual catchment of road.

Disadvantages

- Introduction of new industrial type activity into rural / bush lifestyle locality in Waitakere Ranges.
- Site lies toward upper end of no exit rural / Waitakere Ranges roadway.
- Topography provides opportunities for low to middle level of overlooking by established residential properties in adjacent surrounds including from elevated land on west side of Parker Road.
- Some vegetation clearance required and modification to natural topography / waterways.

iv) Parker Road North

Score: 3

(note: may reach 4 dependant on design / layout)

Advantages

- Large site with area for proposal set low in the landscape, potential design flexibility and opportunities for visual mitigation.
- Some earlier modification to topography (including for horticulture) hence not unmodified site.
- Limited vegetation removal and not significant indigenous vegetation.
- Large area of intact bush to east within site can be protected and maintained as indigenous forest/succession.
- Can be set back from Road to avoid visual catchment from road corridor.
- Land to west of Parker Road slopes away with houses oriented west not east toward site.

Disadvantages

- Scale of landscape change with introduction of new industrial scaled activity into relatively secluded rural / bush lifestyle area in Waitakere Ranges.
- Site lies toward upper middle of no exit rural / Waitakere Ranges roadway.
- Some – low level - of proximate rural / bush lifestyle neighbours in relative close and some slightly more distant proximity.
- Careful consideration / design required at boundary interfaces to avoid potential adverse effects, however potential for land to be available to provide good levels of visual mitigation.

Figures 1-4

Figure 1: Huia Water Treatment Plant – Existing Site Option 160MLD

Figure 2: Huia Water Treatment Plant – Manukau Road Option 60MLD

Figure 3: Parker Road South Overall Site Plan

Figure 4: Parker Road North Overall Site Plan

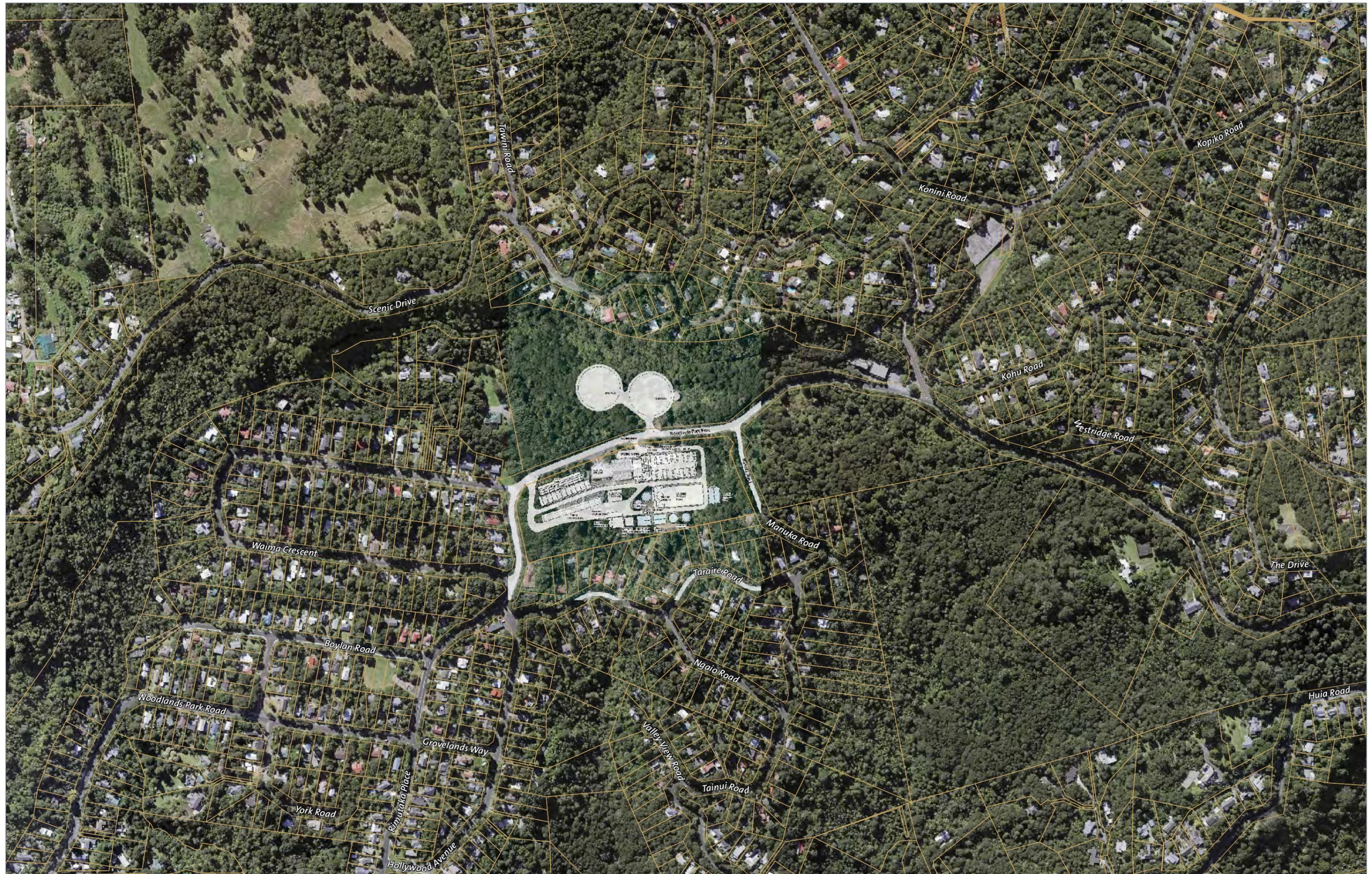


Figure 1: HUIA Water Treatment Plant - Existing Site Option 160MLD



Figure 2: HUIA Water Treatment Plant - Manuka Road Option 160MLD



