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VIEWPOINT LOCATIONS

1. Wellsford Convention Centre
2. Port Albert Road
3. Davies Road
4. Wayby Station Road
5. Wayby Valley Road
6. Dome Summit
7. State Highway 1
8. Port Albert Road
9. Davies Road
10. Wayby Station Road
11. Wayby Valley Road
12. Dome Summit
13. State Highway 1
14. Dome Summit
15. State Highway 1
16. State Highway 1

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AL8038 AUCKLAND REGIONAL LANDFILL

Figure V1: Viewpoint Location Plan
Date: 10 May 2019 | Revision: A
Plan prepared by Boffa Miskell Limited
Project Manager: Tony Lines | Drawn: SGa | Checked: TLi

Legend:
- WMNZ Landholding
- Proposed Fill Valley
- Clay Borrow Pit
- Stockpile Areas
- Topsoil Stockpile
- Proposed Road Extent
- Te Araroa Trail
- Warkworth to Wellsford Indicative Alignment
- Visual Simulations

Projection: NZGD 2000 New Zealand Transverse Mercator
Projection: 1:50,000 @ A3
Projection: NZGD 2000 New Zealand Transverse Mercator

Date Source: LINZ Aerials, Tonkin + Taylor, BML

Visual Simulations

Clay Borrow Pit

Stockpile Areas

Topsoil Stockpile

Proposed Road Extent

Te Araroa Trail

Warkworth to Wellsford Indicative Alignment

Legend:
SITE VISIT & PHOTOGRAPHY

Site photographs were taken with a Canon digital SLR camera fitted with a 50mm focal length lens, mounted on a tripod and panoramic head. A series of photos were taken at predetermined viewpoints, situated on public land. The locations of each viewpoint were fixed by either hand held GPS or GPS units built in to the cameras.

NZILA GUIDELINES & PANORAMA PREPARATION

The visualisations have been produced in accordance with the NZILA Best Practice Guidelines for Visual Simulations (BPG 10.2) and also adhere to Boffa Miskell’s internal Visualisation Guidelines.

As can be seen below (derived from Figure 9 of the NZILA BPG), a photo taken with a 28mm lens will provide a horizontal field of view of 65°. Using a 50mm lens will provide a “cropped” (40°) version of the same view. The same effect can also be achieved by taking multiple 50mm photos in portrait mode, and using digital stitching software to merge and crop to 90°, 65° or 40°.

COMPOSITING

Virtual camera views were then created in 3D modelling software, and a combination of 3D contour data and 3D engineering drawings turned on in each of these views. These were then matched to the corresponding photographic panorama, using identifiable features in the landscape and the characteristics of the camera to match the two together. The visualisations were then assembled using graphic design software.

VIEWING

Views which have a field of view of 40° should be viewed from a distance of 55 cm when printed at A3. Views which have a field of view of 65° should be viewed from a distance of 31.5 cm when printed at A3. Views which have a field of view of 90° should be viewed from a distance of 20 cm when printed at A3.

This will ensure that each simulation is viewed as if standing on-site at the actual camera location, and is in accordance with Section 7.11 of the NZILA BPG (reproduced below). Users are encouraged to print these pages on A3 transparency, go to the viewpoint and hold at the specified reading distance, in order to verify the methodology.

![Field of View (FoV) diagram](image)

### Table: Geometry of Image Reading Distance

<table>
<thead>
<tr>
<th>LENS</th>
<th>HORIZ FoV</th>
<th>PAPER SIZE</th>
<th>ACTUAL IMAGE SIZE</th>
<th>READING DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>28mm</td>
<td>65°</td>
<td>A4</td>
<td>277mm W x 185mm H</td>
<td>215mm</td>
</tr>
<tr>
<td>28mm</td>
<td>65°</td>
<td>A3</td>
<td>400mm W x 267mm H</td>
<td>315mm</td>
</tr>
<tr>
<td>28mm</td>
<td>65°</td>
<td>A2</td>
<td>574mm W x 383mm H</td>
<td>450mm</td>
</tr>
<tr>
<td>50mm</td>
<td>40°</td>
<td>A4</td>
<td>277mm W x 185mm H</td>
<td>380mm</td>
</tr>
<tr>
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<td>40°</td>
<td>A3</td>
<td>400mm W x 267mm H</td>
<td>550mm</td>
</tr>
<tr>
<td>50mm</td>
<td>40°</td>
<td>A2</td>
<td>574mm W x 383mm H</td>
<td>730mm</td>
</tr>
</tbody>
</table>

![Figure 9 of NZILA BPG](image)
Existing View

Visible extent of proposal (approx)

Post Closure

Viewpoint Details

Data sources: Photography - BML/ Contours ACC Rural 1m/ 5m 2008; 3D/ CAD

Data - Tonkin & Taylor

Horizontal Field of View: 90°

Optimum viewing distance @ A3: 20cm

Projection: Rectilinear

These images have been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Client’s use and is supplied with this express condition that responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.

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Checked: T Li

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AUCKLAND REGIONAL LANDFILL - VISUAL SIMULATIONS

Figure V3

Viewpoint 1 - Wellsford Convention Centre

Date: May 2019 | Revision: 3

Plan prepared by Boffa Miskell Limited

Viewpoint Details

NZTM Easting : 1 736 939 mE

NZTM Northing : 5 982 573 mN

Elevation/Eye Height : 86m / 1.6m

Date of Photography : 3:18pm 27/08/2018 NZST

Horizontal Field of View: 90°

Optimum viewing distance @ A3: 20cm

Projection: Rectilinear

Data sources: Photography - BML/ Contours ACC Rural 1m/ 5m 2008; 3D/ CAD

Date - Jenkins & Taylor
Existing View (Single Frame)

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Viewpoint Details

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Existing View

Post Closure

Viewpoint Details

Data sources: Photography - BML/Contours ACC Rural 1m/5m 2008; 3D/CAD

Data - Tonkin & Taylor

Horizontal Field of View: 90°

Optimum viewing distance @ A3: 20cm

Projection: Rectilinear

Visible extent of proposal (approx)

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Plan prepared by Boffa Miskell Limited

AUCKLAND REGIONAL LANDFILL - VISUAL SIMULATIONS

Viewpoint 4 - Port Albert Road

Date: May 2019 | Revision: 3

Date: 27/08/2018 3:43pm

NZTM Easting: 1735513 mE
NZTM Northing: 5981704 mN
Elevation/Eye Height: 90m / 1.6m
Date of Photography: 3:43pm 27/08/2018 NZST

Horizontal Field of View: 90°
Optimum viewing distance @ A3: 20cm
Projection: Rectilinear
Existing View (Single Frame)

NZTM Easting : 1 735 513 mE
NZTM Northing : 5 981 704 mN
Elevation/Eye Height : 90m / 1.6m
Date of Photography : 3:43pm 27/08/2018 NZST

Horizontal Field of View: 40°
Optimum viewing distance: 55cm

Viewpoint Details
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AUCKLAND REGIONAL LANDFILL - VISUAL SIMULATIONS

Viewpoint 4 - Port Albert Road
Date: May 2019 | Revision: 2

Plan prepared by Boffa Miskell Limited
Project Manager: tom.lines@boffamiskell.co.nz | Drawn: JMa | Checked: TLi

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Data sources: Photography - BML/Contours ACC Rural 1m/5m 2008; 3D/CAD
Date: 2019-05-27 15:43:20

FIGURE V7