3.5 General Residential Lot Testing

Reference Plan

Figure 150. Standard Residential Lot testing reference plan

The proposed standard residential lots within the plan will enable permitted residential development of one dwelling and accessory building per lot. These lots will form the majority of the lots within the site. All future dwellings established on these sites will comply with the General Residential Zone Standards (GRZ).

The following section presents a series of illustrative lot designs to test masterplan feasibility. They demonstrate how the various housing types can be delivered on representative lots, which are distributed across the Site.

These lot layouts and building envelopes demonstrate how a reasonable dwelling can comply with the District Plan standards and deliver good outcomes.

The designs show how lots measuring 400-600m2 provide private open space, on-site parking and opportunities for planting.

- **Western Dunes** detached dwellings on larger sites, carefully positioned to protect natural topography and maintain landscape character.
- **Dune Foothills** irregular detached lots tested near green corridors and connector streets, confirming flexibility of block layout.
- **Eastern Flats** standard detached lots tested in relation to expressway and noise buffer zone.

The study tests a typical lot from each of the three areas. In all cases, designs confirm compliance with Council standards for setbacks, frontage, outlook space, access and service provision.

A selection of lot testing studies are included in this chapter of the report, with the full range of testing can be found in Appendix B.

Eastern Flats

Lot Reference: 607

Single Detached Dwelling
3 - 4 bed, 2 Storey
External car parking

Conceptual Layout

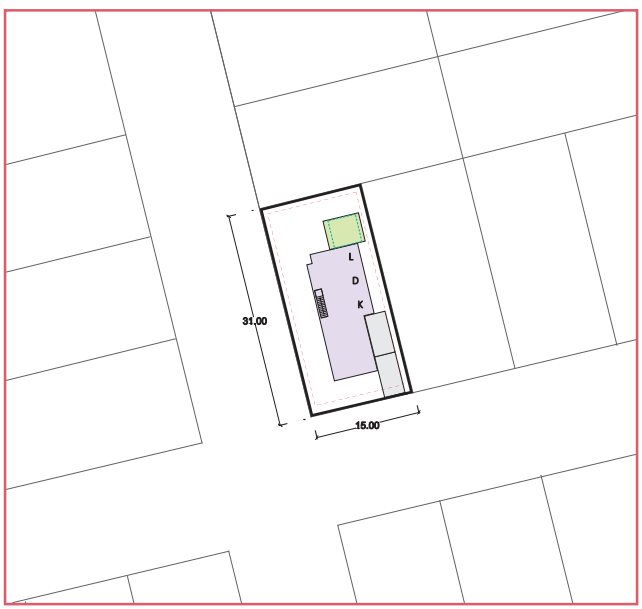


Figure 151. Lot 607 layout plan

Dwelling
Garage
Vehicle Accessway/ Parking
20sqm Open Space (3m min dim)
4m x 4m Outlook space

Built Form

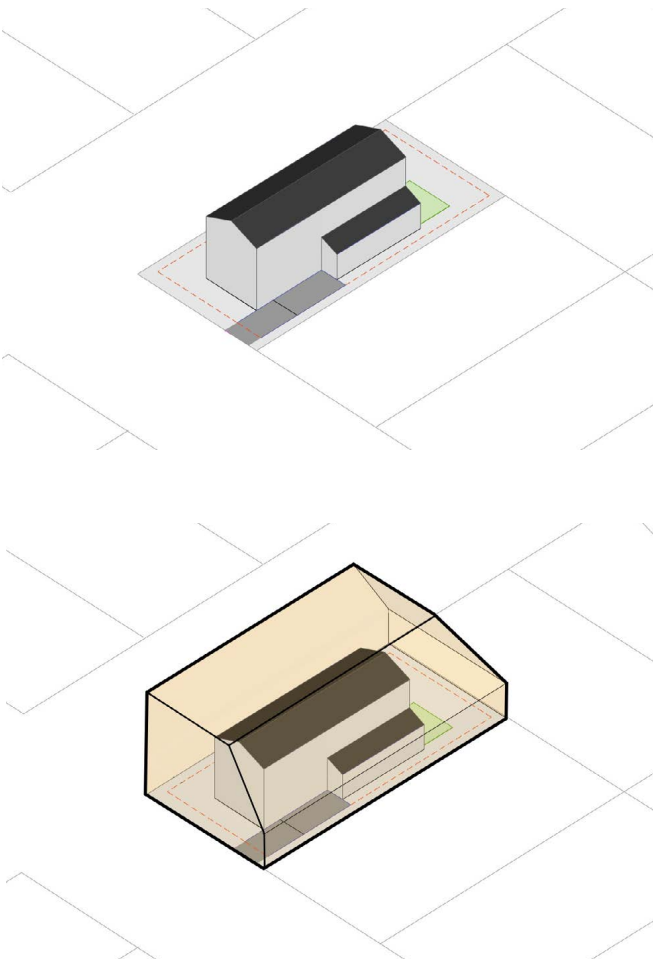


Figure 152. Lot 607 built form and envelope

Typical Lot area	465 m^2
Typical Lot dims	15 m x 31m
Car Parking	External Parking 2x
Standards	KCDC GRZ
GFA	244 m^2
Footprint	130 m^2
Site Coverage	28%

Located in the centre of the Eastern Flats. This lot is a corner site oriented north-south to front the east-west road.

Outdoor space is located to the north of the dwelling, to the rear of the site.

A double storey dwelling of 244m2 is shown, allowing for a generous 3 or 4 bed, 2 bath house with 2 external parking spaces. This dwelling is well within the massing controls set out under the General Residential Zone rules.

Dune Foothills

Lot Reference: 196

Single Detached Dwelling
3 - 4 bed, 1 Storey
Internal Garage

Conceptual Layout

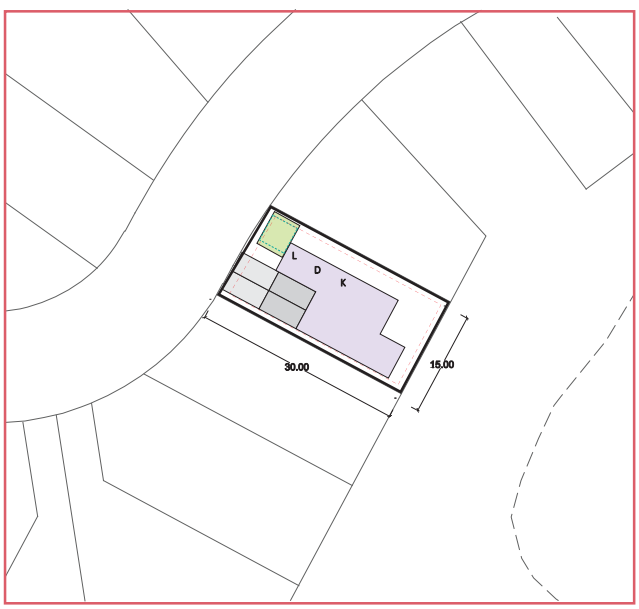


Figure 153. Lot 196 layout plan

Dwelling
Garage
Vehicle Accessway/ Parking
20sqm Open Space (3m min dim)
4m x 4m Outlook space

Built Form

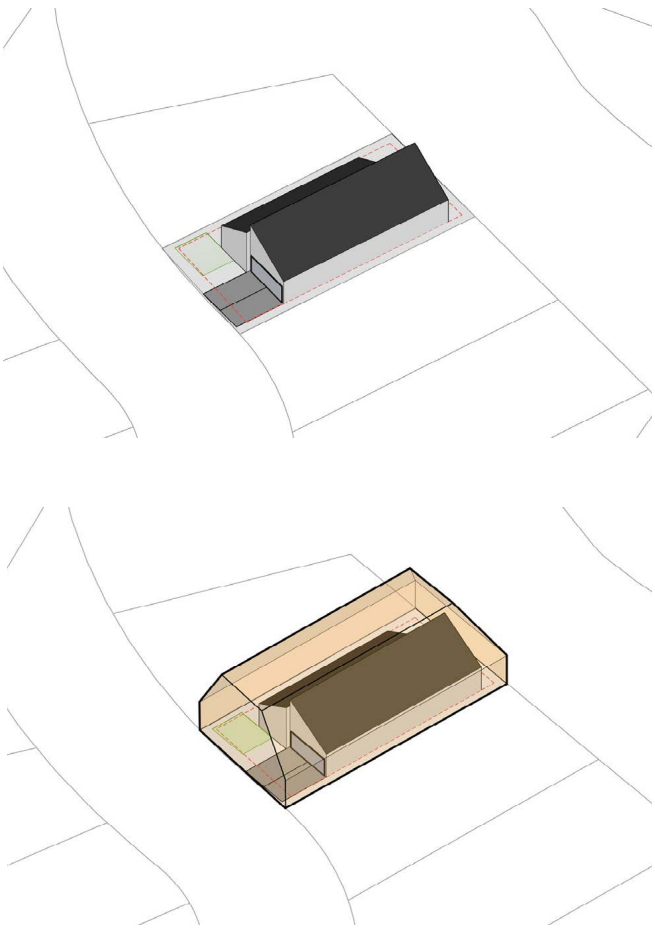


Figure 154. Lot 196 built form and envelope

Typical Lot size	450m2
Typical Lot dims	15m x 30m
Car Parking	2x Internal Garage + 2x driveway space
Standards	KCDC GRZ
GFA	165m^2
Footprint	165m^2 (incl. garage)
Site Coverage	37%

Located to the southern edge of the Dune Foothills area. This lot is oriented between e-w and n-s. It has a frontage to the street to the north-west and towards the wetland restoration area to the south-east. Outdoor space is located to the north of the dwelling, in the front of the site. However the dwelling has a good aspect to the east over the open space wetland restoration area.

A single storey dwelling of 129m2 + 36m2 garage is shown, allowing for a generous 3bed 2 bath house with a double garage and 2 external parking spaces. This dwelling is well within the massing controls set out under the General Residential Zone rules.

Western Dunes

Lot Reference: 520

Single Detached Dwelling
3 - 4 bed, 2 Storey
External car parking

Conceptual Layout

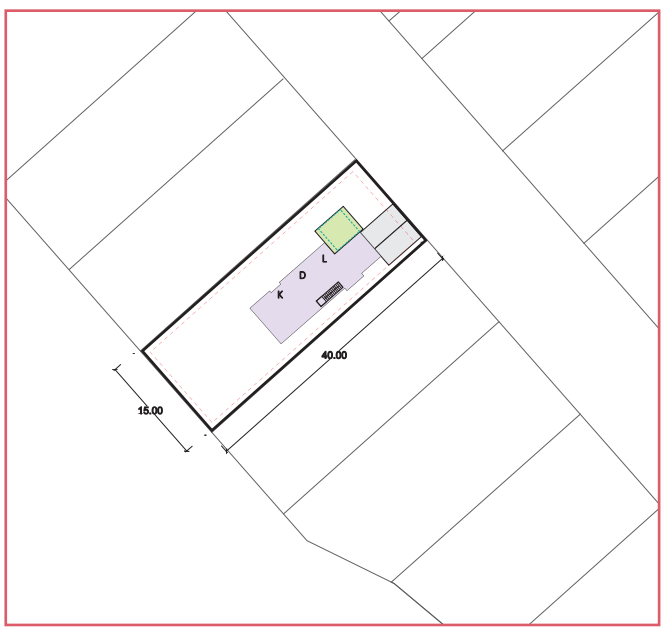


Figure 155. Lot 520 layout plan

Built Form

- Dwelling
- Vehicle Accessway/ Parking
- 20sqm Open Space (3m min dim)
- 4m x 4m Outlook space

Typical Lot size	600m^2
Typical Lot dims	15 m x 40m
Car Parking	External Parking 2x
Standards	KCDC GRZ
GFA	198 m^2
Footprint	114 m^2
Site Coverage	19%

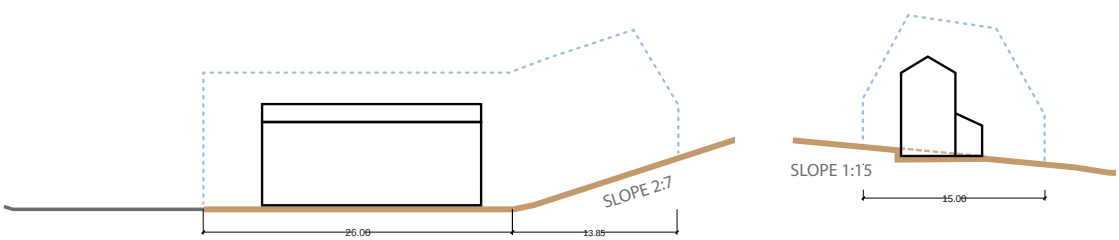


Figure 156. Lot 520 section study

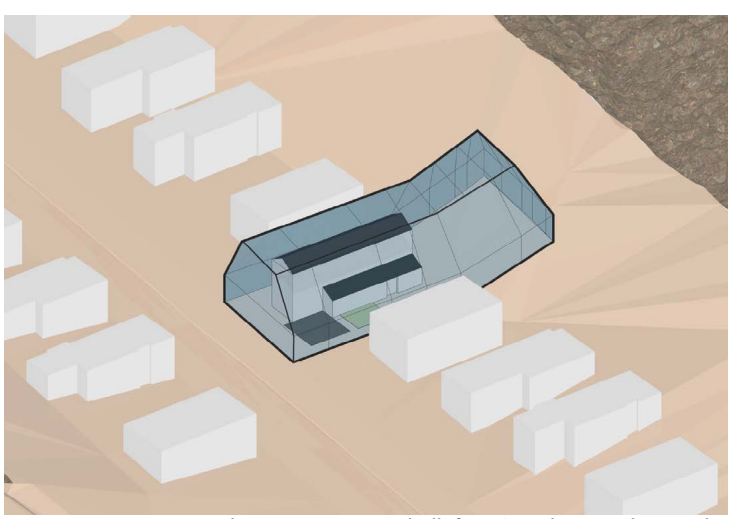


Figure 157. Lot 520 built form/envelope testing on site

Located on one of the 'fingers' of development in the western dunes (road #L_WD03). This lot is oriented at a 45°. It has a frontage to the street to the north-east.

Outdoor space is located to the north of the dwelling, in the front of the site. In the rear of the site, the land slopes upwards towards the dune ridge top. Bulk earthworks allows for a relatively flat front section of the lot with the rear yard sloping up.

A double storey dwelling of 198m^2 is shown, allowing for a generous 4 bed 2 bath house with potential 2 external parking spaces. This dwelling is well within the massing controls set out under the General Residential Zone rules.

Western Dunes

Lot Reference: 509

Single Detached Dwelling
3 - 4 bed, 2 Storey
Internal car parking

Conceptual Layout

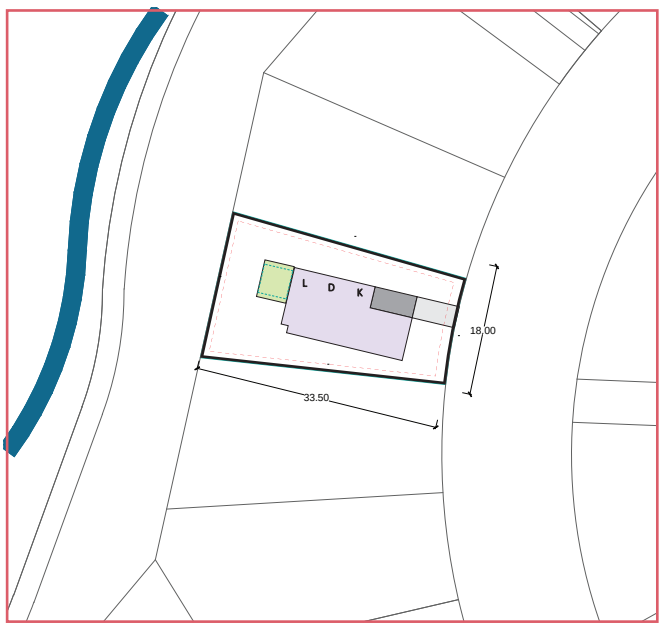


Figure 158. Lot 509 layout plan

Built Form

- Dwelling
- Vehicle Accessway/ Parking
- Garage
- 20sqm Open Space (3m min dim)
- 4m x 4m Outlook space

Typical Lot size	726m²
Typical Lot dims	18 m x 33.5m
Car Parking	Internal Garage + 1x driveway space
Standards	KCDC GRZ
GFA	238 m²
Footprint	158 m²
Site Coverage	22%

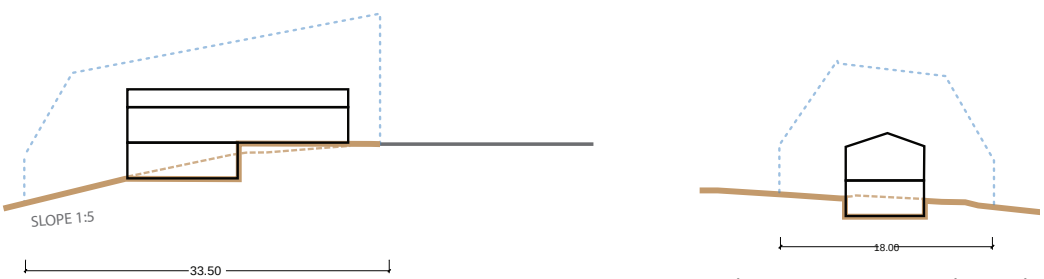


Figure 159. Lot 509 section study

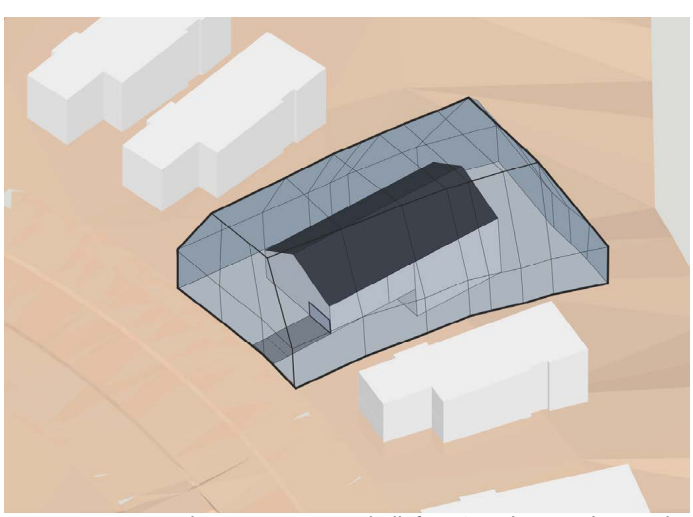


Figure 160. Lot 509 built form/envelope testing on site

Located at the edge of the Te Harakeke Wetland on the down side of the western dune connector road. This lot is oriented east west. It has a frontage to the street to the east and views over the wetland at the rear of the lot.

Outdoor space is located to the west of the dwelling, in the rear of the site. To the rear of the site, the land slopes downwards towards the wetland. Bulk earthworks allows for a small flat front section of the lot. Housing types here will need to accommodate for the topography, through split level design as shown here, or other means such as shorter footprint of stilt construction.

A single split level dwelling of 220m² + 18m² internal garage is shown, allowing for a generous 5bed 2 bath house with an internal garage and 1 external parking space.

Rural Interface

Lot Reference: 204

Single Detached Dwelling
3 - 4 bed, 2 Storey
Internal Garage

Conceptual Layout

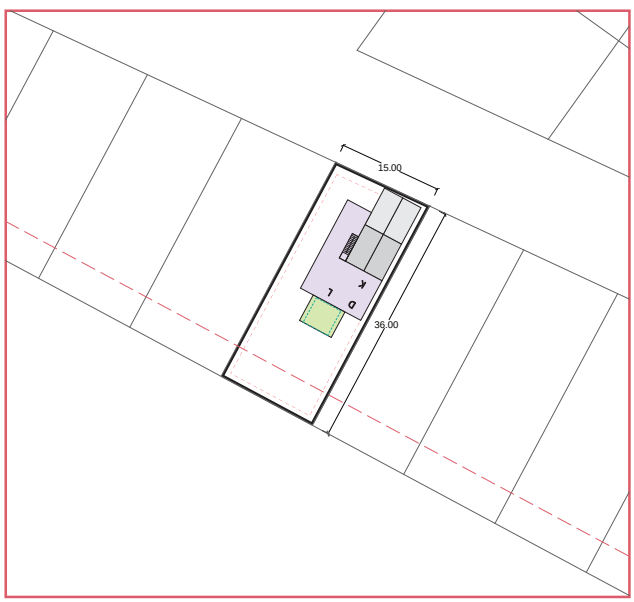


Figure 161. Lot 204 layout plan

- Dwelling
- Garage
- Vehicle Accessway/ Parking
- 20sqm Open Space (3m min dim)
- 4m x 4m Outlook space

Typical Lot size	540m²
Typical Lot dims	15m x 36m
Car Parking	2x Internal Garage + 2x driveway space
GFA	217m²
Footprint	131.5m² (incl. garage)
Site Coverage	25%

Standards KCDC GRZ

Additional standards

1. 8m maximum building height for proposed lots at the rural interface rather than 11m.
2. 2.1m + 45deg HIRB for proposed lot boundaries at the rural interface rather than 4m + 60deg.
3. 5m minimum setback from a rural boundary rather than 1m (GRZ-Table 1).
4. Boundary buffer planting, min 50% of boundary to height of 4m and depth of 2m with species from the approved landscape plan.
5. Fencing at the rural interface to be maximum 1.5m post and rail or post and wire.

Built Form

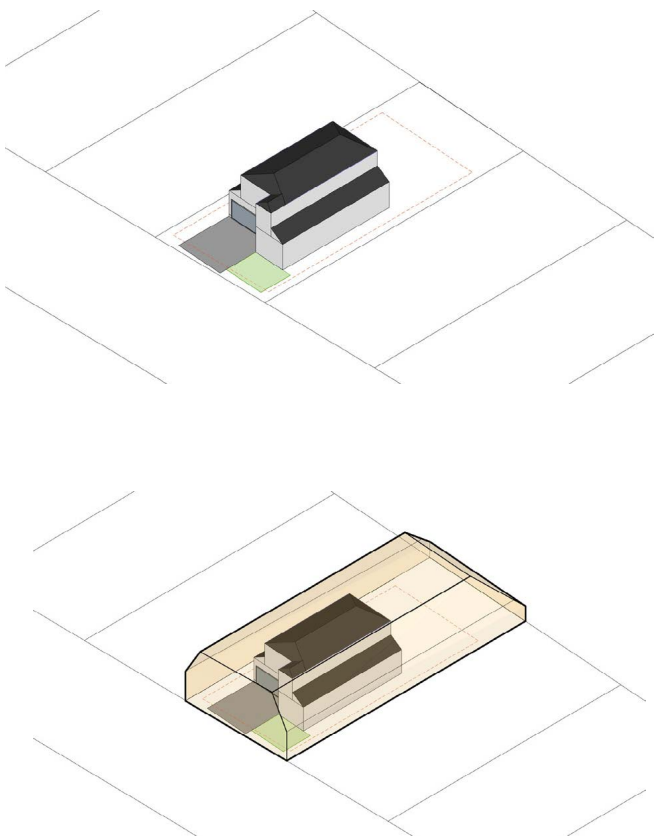


Figure 162. Lot 204 built form and envelope

Located along the south-western boundary of the site adjacent to 55 End Farm Road. This lot is oriented predominantly n-s. It has a frontage to the street to the north and adjoins the rural boundary to the south.

District Plan Outdoor space is located to the north of the dwelling in the front of the site. However a larger area of open space is available in the rear of the lot.

A two storey dwelling of 181m² + 36m² internal garage is shown, allowing for a generous 4bed 2 bath house with internal double garage and 2 external parking spaces. At the boundary, the General Rural Zone HIRB and setback applies, as well as the 8m height limit.

3.6 Shading Analysis

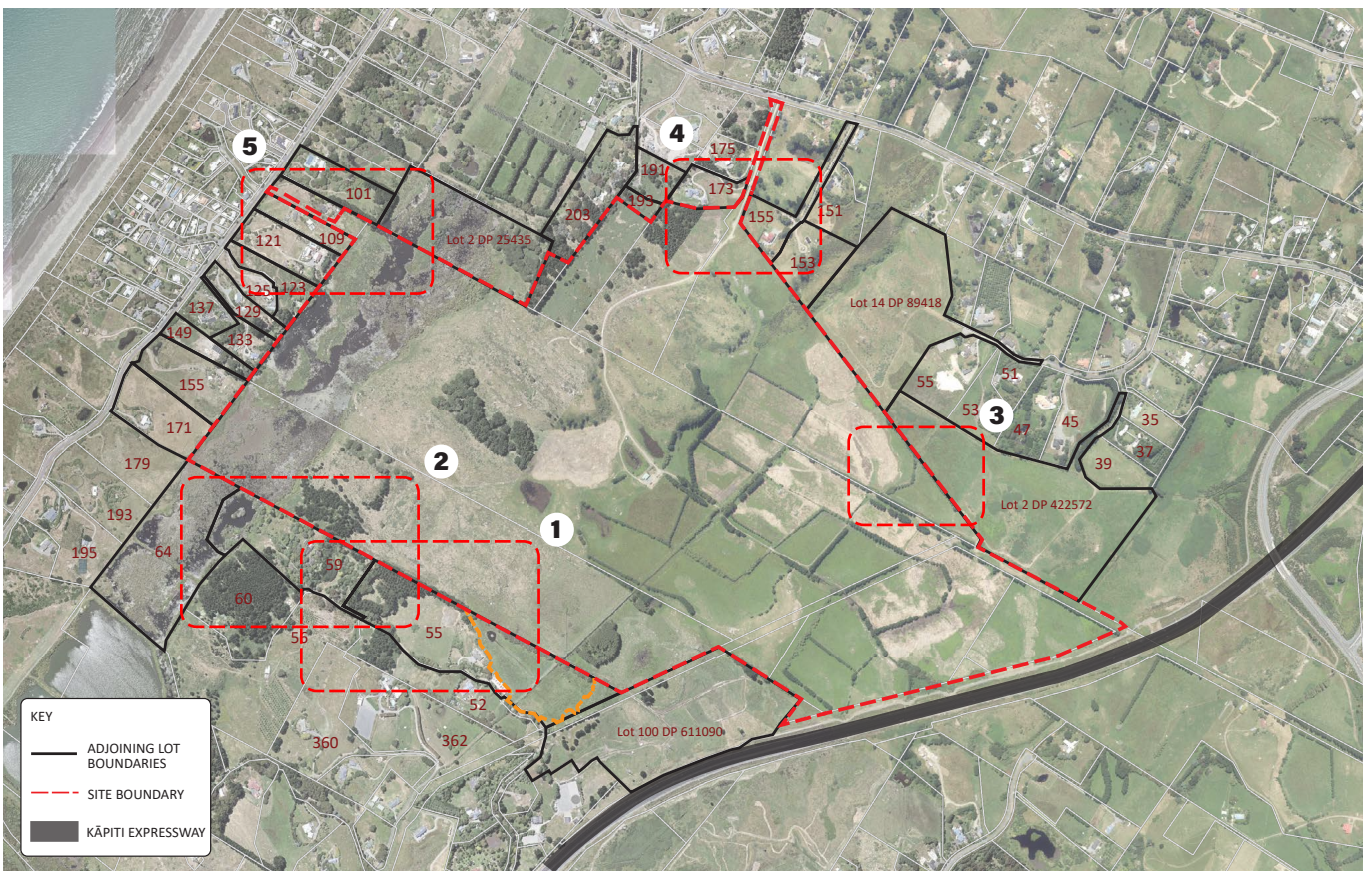


Figure 163. Shading Study areas

The following section provides aselection of shading studies undertaken to determine potential effects on neighbouring properties. Assessment of shading effects on neighbouring properties is provided in the UDA (separate document). Full shading studies for neighbouring lots can be found at Appendix C.

These shading studies are produced using the same model as the Landscape and Visual Assessment. The model uses proposed earthworks surface model for the topography. Building footprints are an indicative footprint that is extruded to the maximum height for the lot. In the cases where lots adjoin a rurally zoned neighbour the buildings are modelled at 8m height.

The resulting shade cast from this model will be slightly greater than reality as roof forms will reduce the built form at the upper level.

Five areas are investigated in detail in this section. Areas 1 and 2 are along the southern boundary of the site adjacent to lots 55 and 59 End Farm Road. Area 3 is adjacent to the rural land Lot 2 DP 422572. This area is indicative of the north-eastern boundary of the site. Area 4 is adjacent to lots 153, 155 & 173 Peka Peka Road. Area 5 illustrates the pocket of development adjacent to 101, 107, 109, 121, & 123 Paetawa Road.

Two scenarios are modelled, the first of which is a 'most likely' layout / building position, with buildings set back from the street by ~5m to allow for parking and garage. This means that lots have a larger rear yard, with greater separation from the rural boundary.

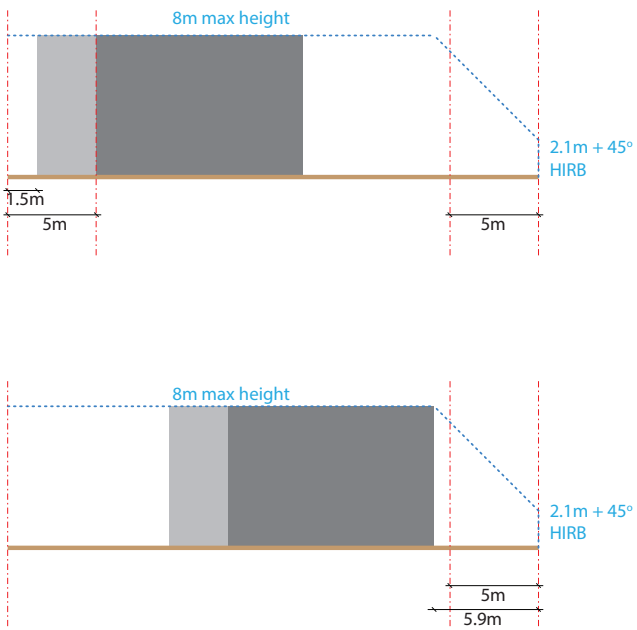


Figure 164. 8m high building with 5m boundary setback & 2.1m + 45° HIRB

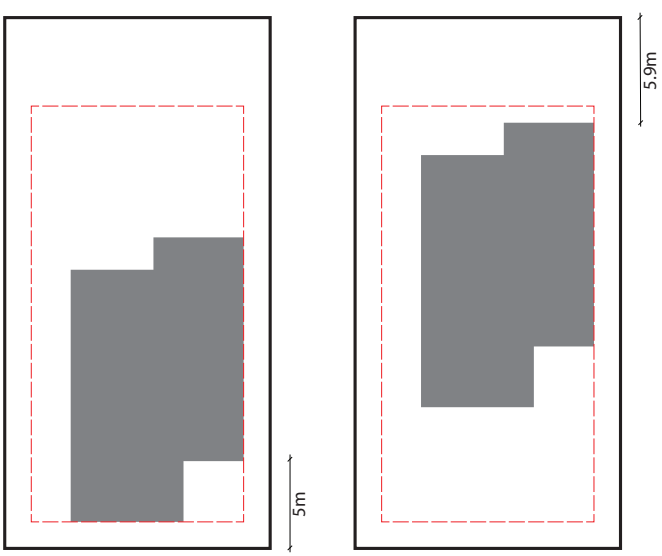


Figure 165. Permitted vs realistic building footprint on site

The second scenario locates buildings closer to the boundary such that they present a 'worst case outcome' that the proposed standards will allow. A 5m setback and 2.1m + 45deg HIRB envelope results in an 8m tall building set 5.9m from the boundary. While this would be permitted, it is unlikely that development would occur in this manner as the building would be pushed relatively close to the required planting buffer.

Area 5 has little appreciable difference between scenarios 1 & 2 in regards to shading. For simplicity we have only included one scenario for this testing area.

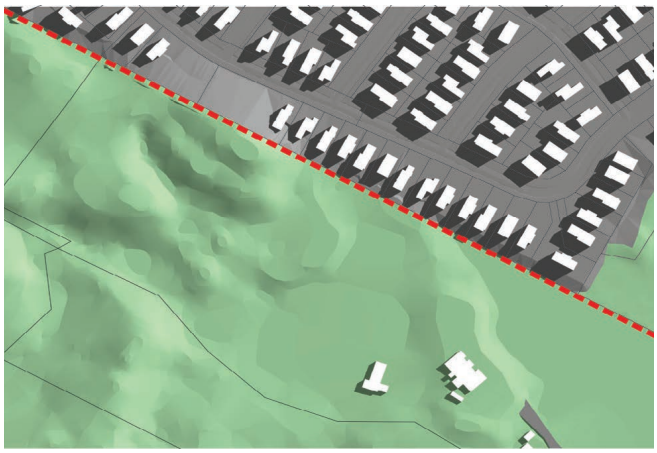
Figures 163 and 164 illustrate the two shading scenarios modelled. The first is a most likely outcome, with the building modelled towards the front of the lot. This model generally follows a pattern of the dwelling set back 1.5m at the frontage, with an integrated garage set back 5m from the frontage.

The second scenario is that of the building pushed towards the rear of the lot, as close as possible to the rural boundary. This represents a worst case with the 8m height building set at the intersection of the HIRB and max height.

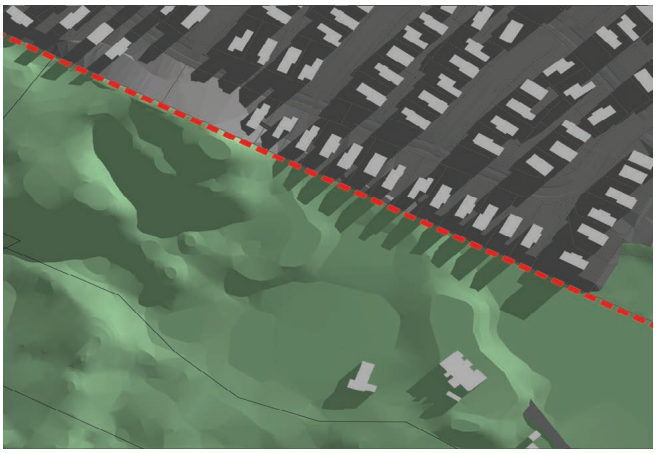
Shade analysis

Study Area 1

Buildings at 'predicted' location based on LVA Model



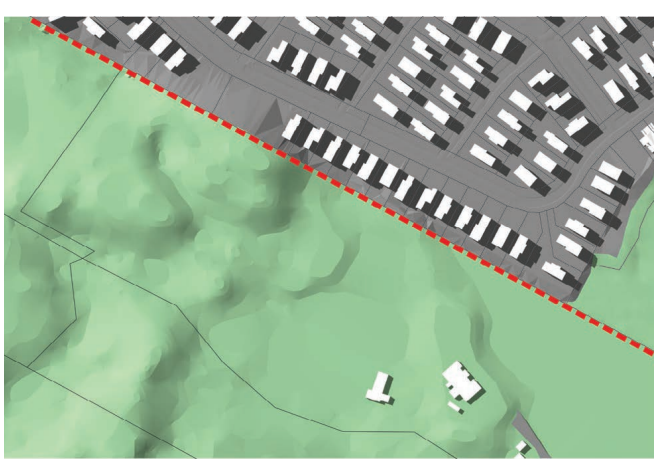
Spring Equinox 9am



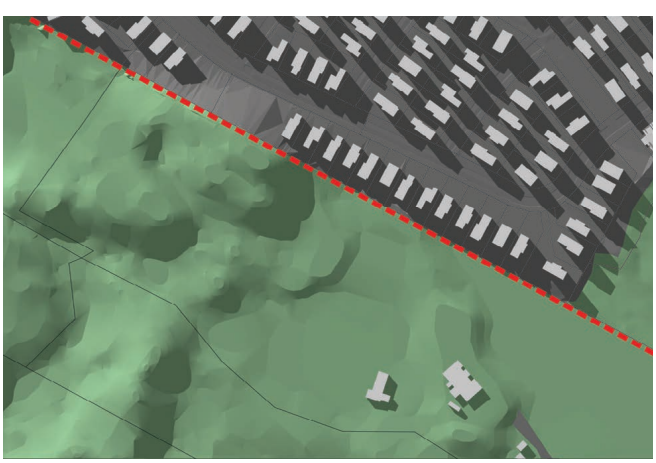
Winter Solstice 9am

Spring Equinox 12pm

Winter Solstice 12pm



Spring Equinox 3pm



Winter Solstice 3pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

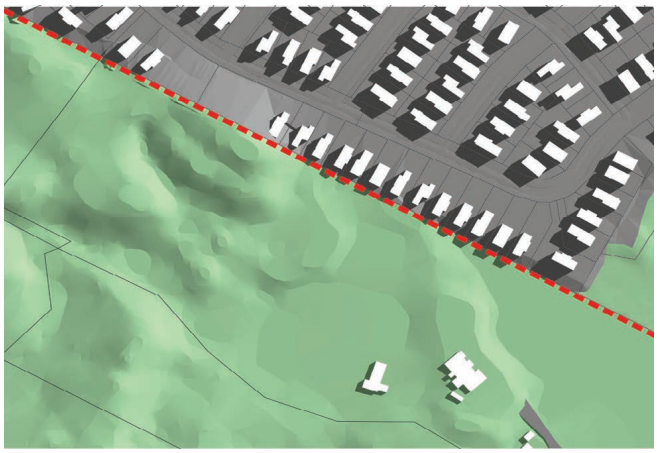
Winter Solstice: 21st Jun 2025
Sunrise at 07:46
Sunset at 16:58

Figure 166. Spring and winter shade testing with built form at predicted position

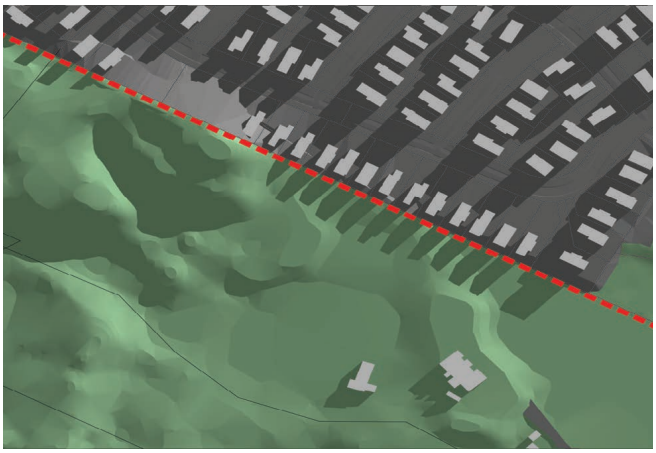
Shade analysis

Study Area 1

Buildings at minimum allowable setback from rural boundary

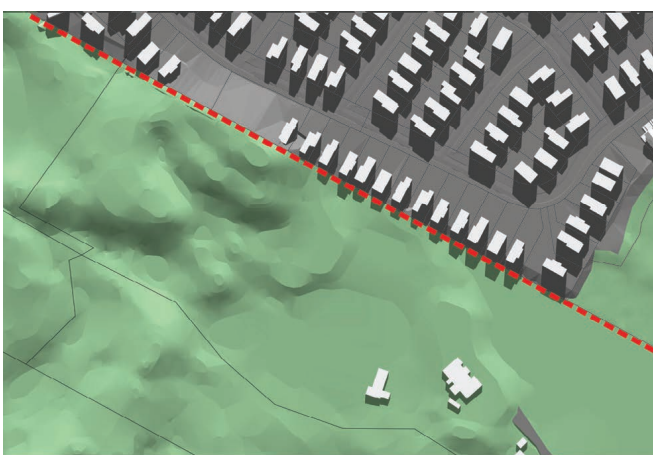


Spring Equinox 9am

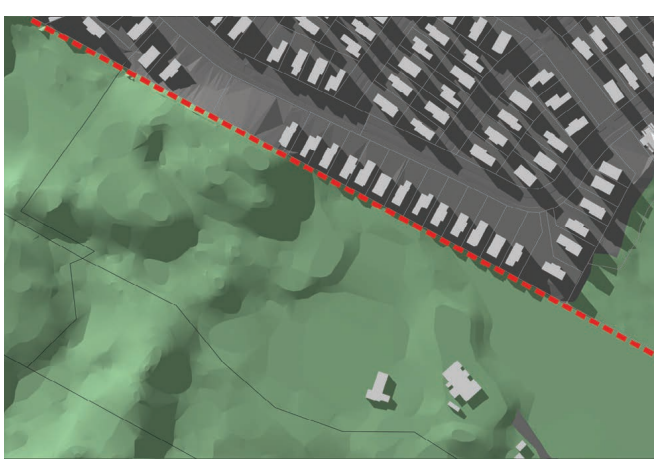


Winter Solstice 9am

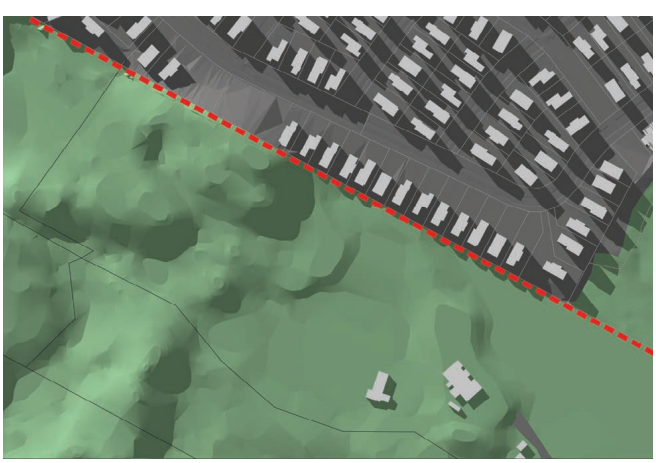
Spring Equinox 12pm



Winter Solstice 12pm



Spring Equinox 3pm



Winter Solstice 3pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

Winter Solstice: 21st Jun 2025
Sunrise at 07:46
Sunset at 16:58

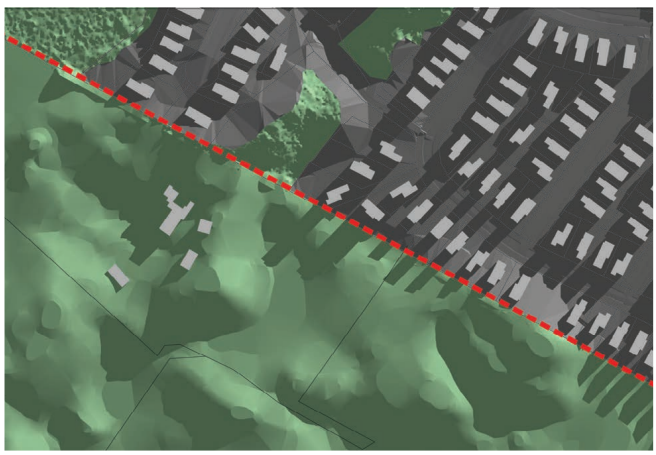
Figure 167. Spring and winter shade testing with built form at minimum permissible setback

Shade analysis

Study Area 2

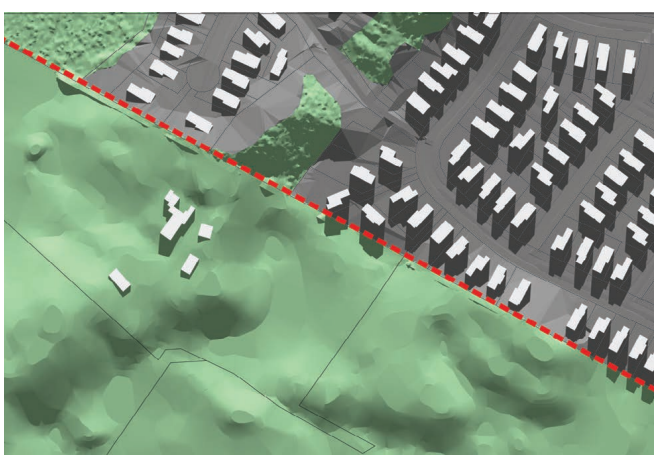
Buildings at 'predicted' location based on LVA Model

Spring Equinox 9 am



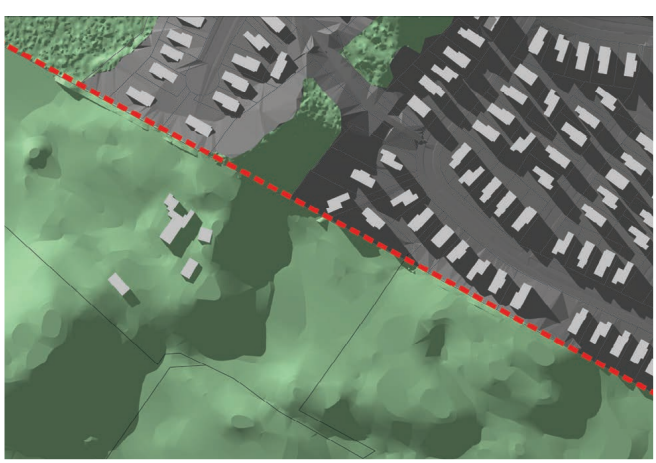
Winter Solstice 9 am

Spring Equinox 12 pm



Winter Solstice 12 pm

Spring Equinox 3 pm



Winter Solstice 3 pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

Winter Solstice: 21st Jun 2025
Sunrise at 07:46
Sunset at 16:58

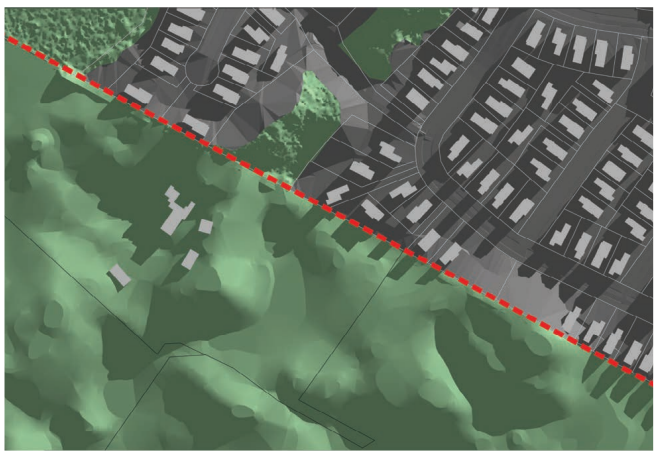
Figure 168. Spring and winter shade testing with built form at predicted position

Shade analysis

Study Area 2

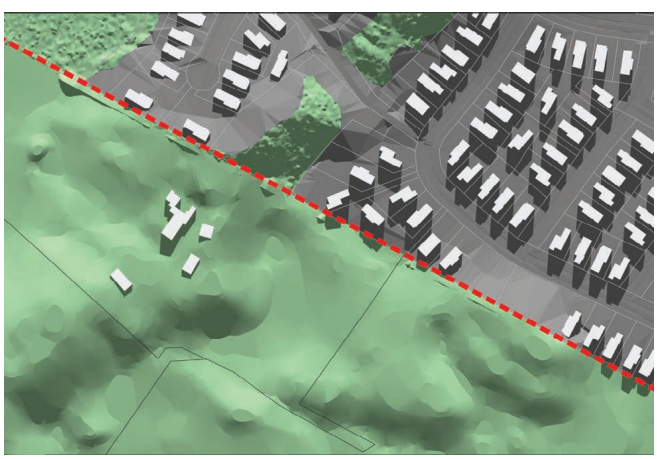
Buildings at minimum allowable setback from rural boundary

Spring Equinox 9 am



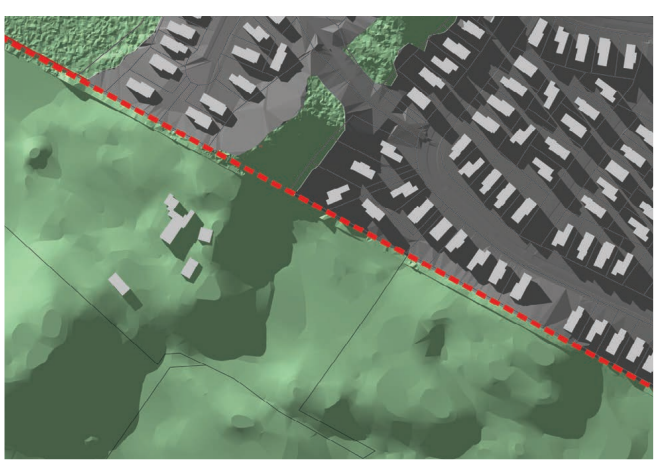
Winter Solstice 9 am

Spring Equinox 12 pm



Winter Solstice 12 pm

Spring Equinox 3 pm



Winter Solstice 3 pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

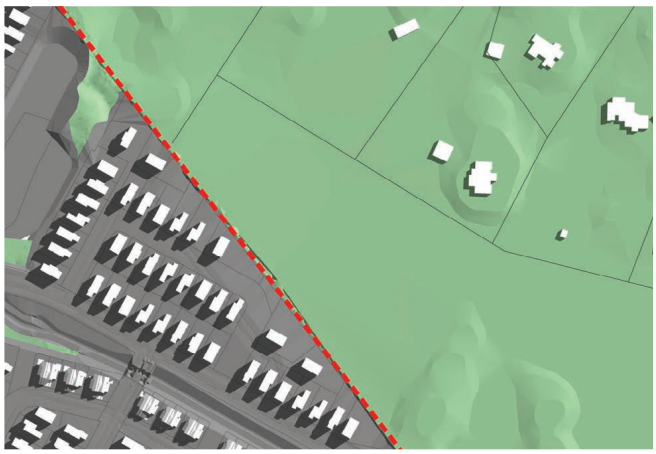
Winter Solstice: 21st Jun 2025
Sunrise at 07:46
Sunset at 16:58

Figure 169. Spring and winter shade testing with built form at minimum permissible setback

Shade analysis

Study Area 3

Buildings at 'predicted' location based on LVA Model

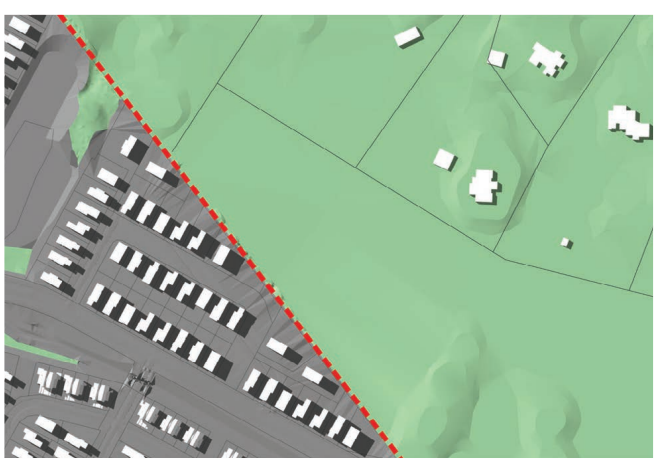


Spring Equinox 9 am

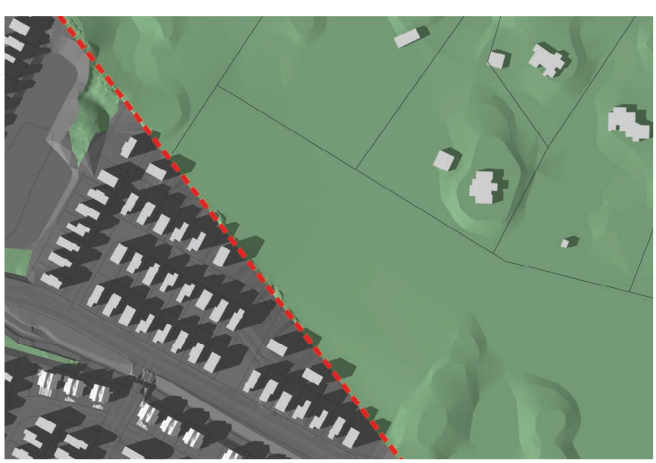
Summer Solstice 12 pm

Spring Equinox 12 pm

Summer Solstice 3 pm



Spring Equinox 3 pm



Summer Solstice 6 pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

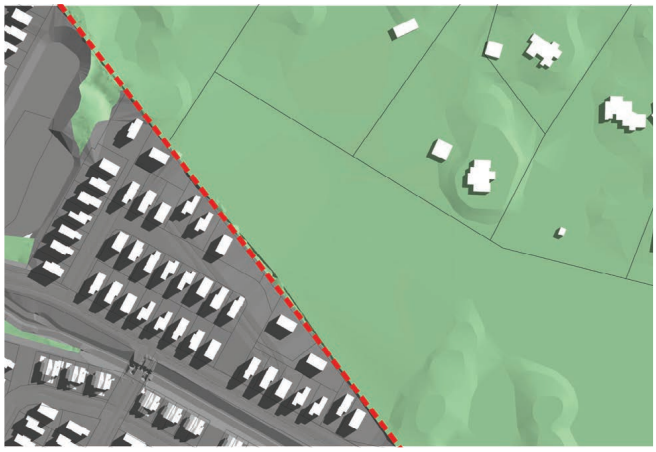
Summer Solstice: 22nd Dec 2025
Sunrise at 05:44
Sunset at 20:54

Figure 170. Spring and summer shade testing with built form at predicted position

Shade analysis

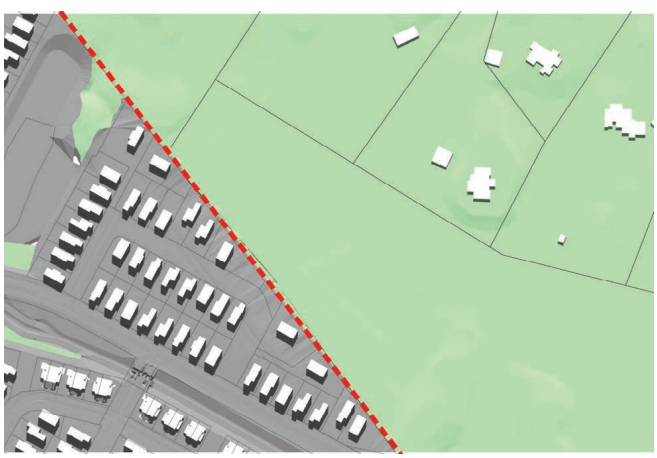
Study Area 3

Buildings at minimum allowable setback from rural boundary



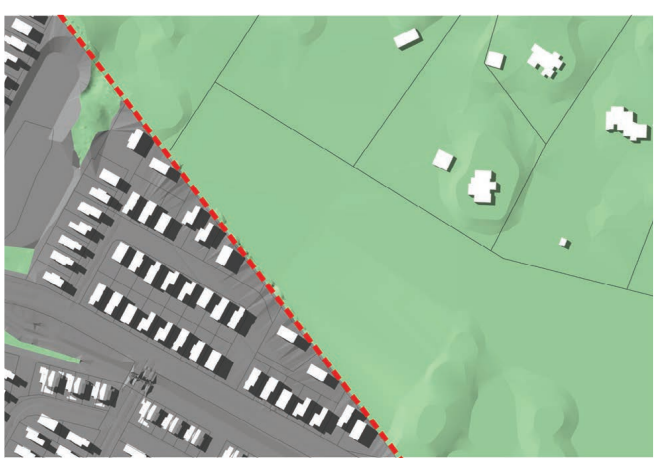
Spring Equinox 9 am

Summer Solstice 12 pm

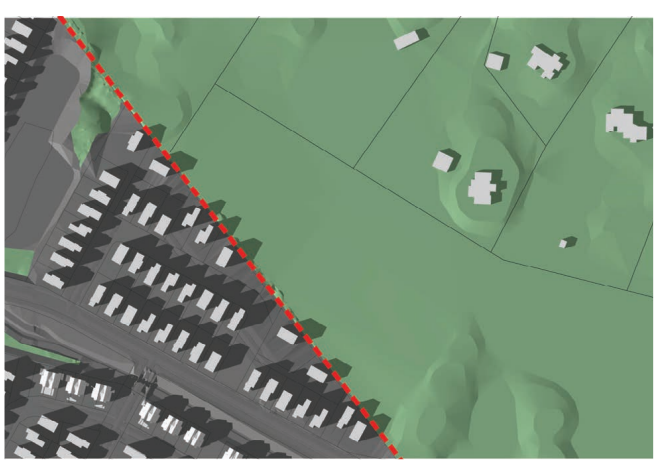


Spring Equinox 12 pm

Summer Solstice 3 pm



Spring Equinox 3 pm



Summer Solstice 6 pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

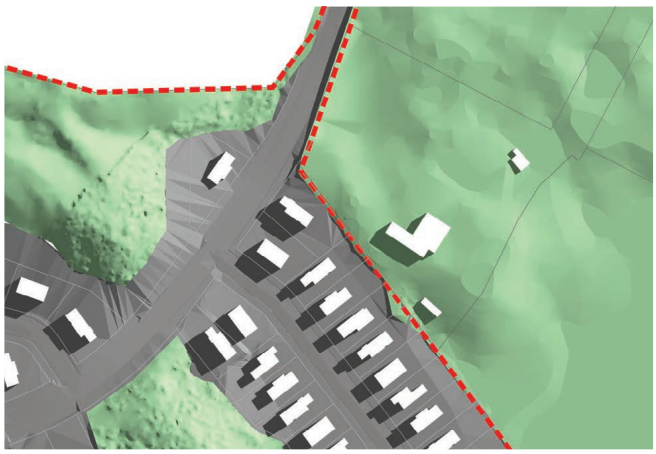
Summer Solstice: 22nd Dec 2025
Sunrise at 05:44
Sunset at 20:54

Figure 171. Spring and summer shade testing with built form at minimum permissible setback

Shade analysis

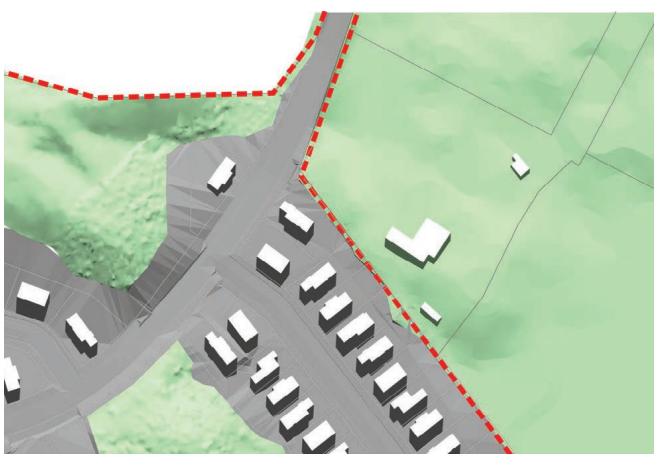
Study Area 4

Buildings at 'predicted' location based on LVA Model



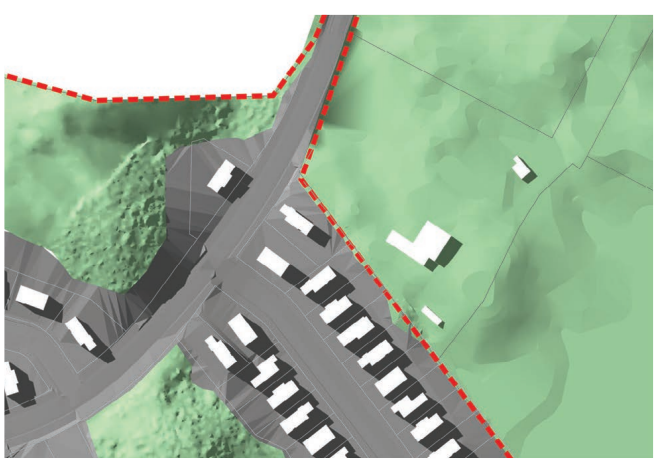
Spring Equinox 9 am

Summer Solstice 12 pm



Spring Equinox 12 pm

Summer Solstice 3 pm



Spring Equinox 3 pm

Summer Solstice 6 pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

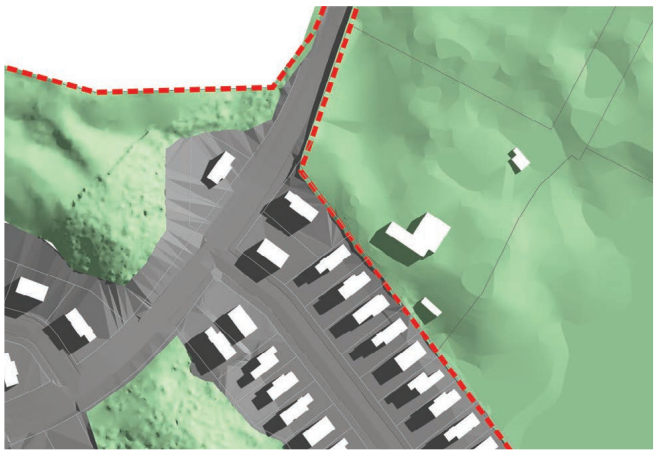
Summer Solstice: 22nd Dec 2025
Sunrise at 05:44
Sunset at 20:54

Figure 172. Spring and summer shade testing with built form at predicted position

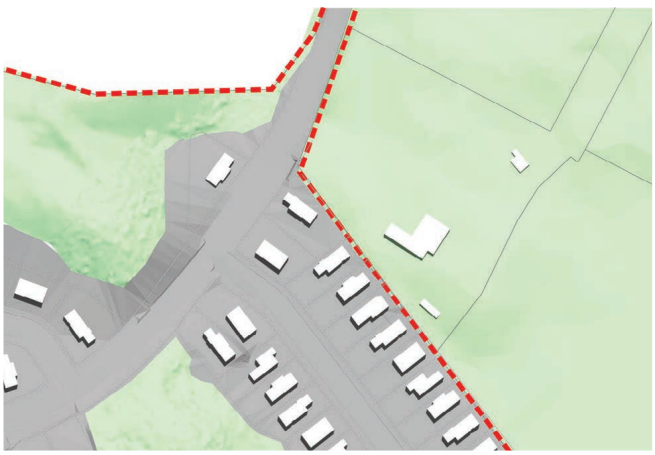
Shade analysis

Study Area 4

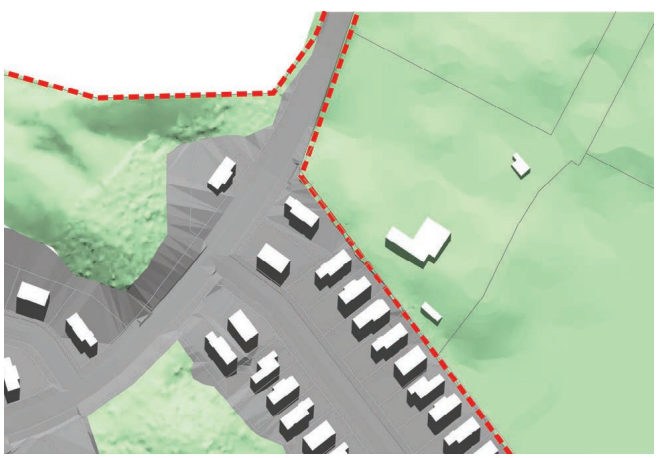
Buildings at minimum allowable setback from rural boundary



Spring Equinox 9 am

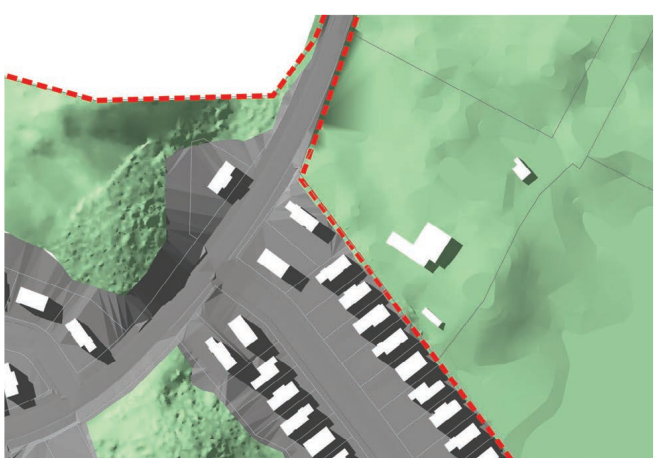


Summer Solstice 12 pm

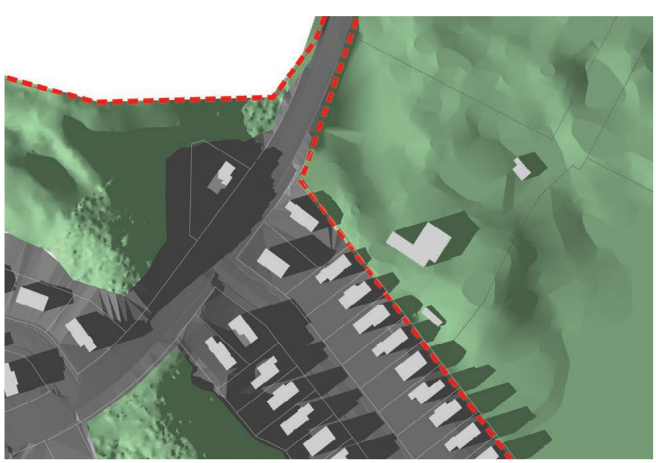


Spring Equinox 12 pm

Summer Solstice 3 pm



Spring Equinox 3 pm



Summer Solstice 6 pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

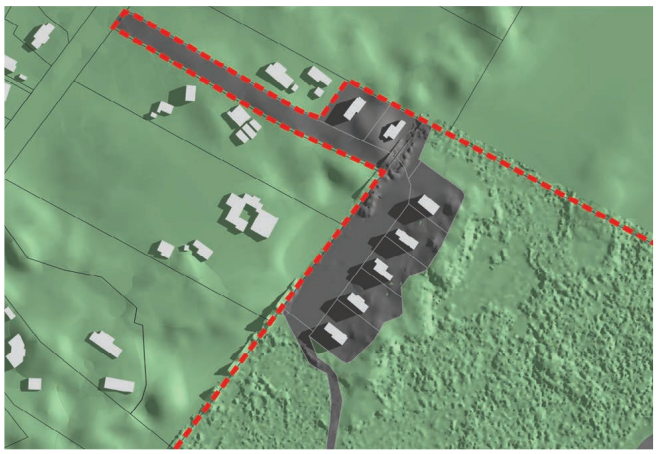
Summer Solstice: 22nd Dec 2025
Sunrise at 05:44
Sunset at 20:54

Figure 173. Spring and summer shade testing with built form at minimum permissible setback

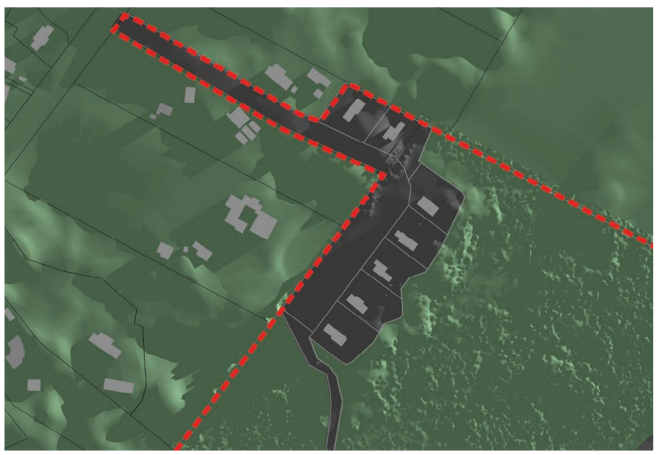
Shade analysis

Study Area 5

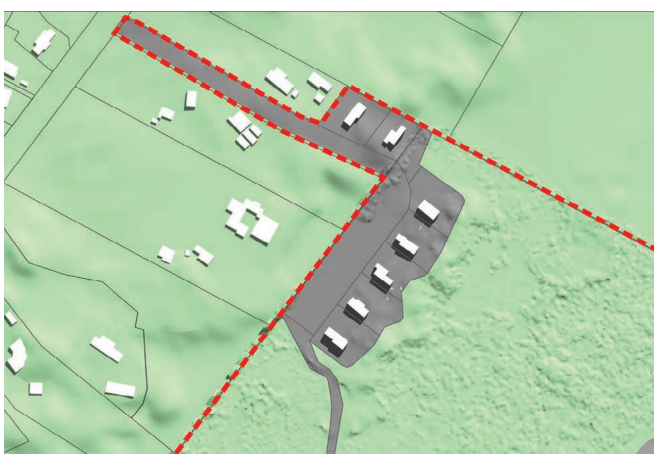
Buildings at minimum allowable setback from rural boundary



Spring Equinox 9 am



Winter Solstice 9 am



Spring Equinox 12 pm

Winter Solstice 12 pm

Spring Equinox 3 pm

Winter Solstice 3 pm

Spring/Vernal Equinox: 23rd Sep 2025
Sunrise at 06:08
Sunset at 18:18

Winter Solstice: 21st Jun 2025
Sunrise at 07:46
Sunset at 16:58

Figure 174. Spring and summer shade testing with built form at predicted position

PAGE INTENTIONALLY LEFT BLANK

3.7 Indicative Staging

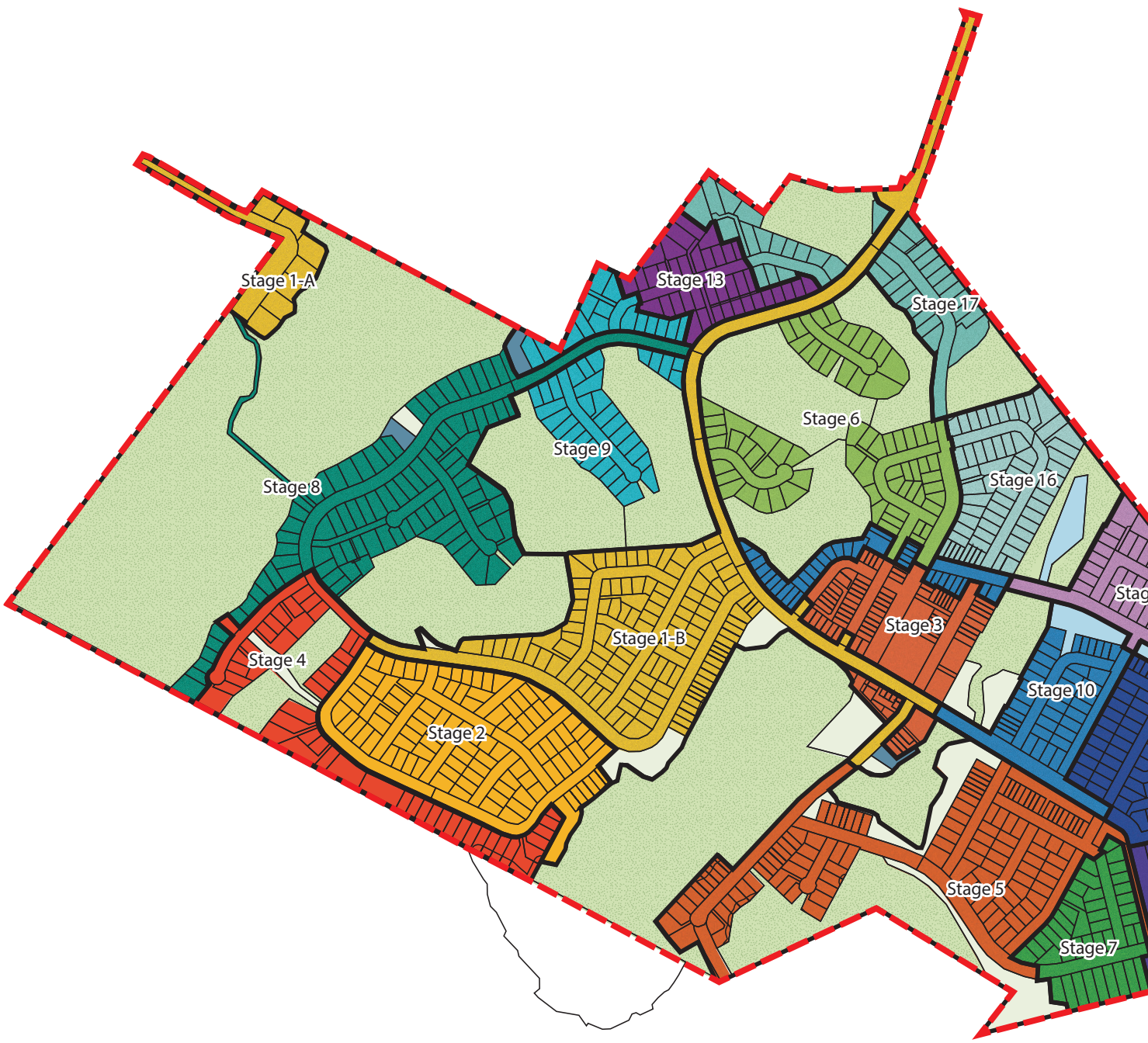


Figure 175. Indicative staging diagram

Staging of the development is informed by several factors. These are:

- The need to establish the Local Centre at an appropriate time related to residential build-out (catchment) and the desire to provide local services to new residents;
- To ensure each stage results in coherent clusters of development that have sense of completeness; and,
- Earthwork and civils requirements.

The indicative staging, while subject to change, demonstrates the intention to develop in such a way as to provide a good living environment throughout the development and construction process. For more detail on construction access and sediment control, see infrastructure reports.

Stage 1 of development establishes the Primary Connector road from Peka Peka Road and associated residential development at the eastern base of the dunes system. The connector road continues southeast to provide access to the future local centre that may contain a marketing suite.

Stage 2 consolidates, and logically extends Stage 1, providing critical mass to support the Stage 3 centre.

Stage 3 establishes the the local centre and the majority of the medium density housing. Medium density is critical to support a walkable catchment for the centre, introducing housing choice early-on.

Subsequent stages of development complete the 'eastern flats' as well as progressively developing the western dunes. Each stage generally works outwards from the local centre, with the eastern-most extents of the site staged towards the end of the development.

Staging could be further refined to enable loop roads to form. For example at the eastern flats, small areas of development are not connected by a loop until later phases. Stages 5 and 7 are less well-connected to the centre until stage 10 is complete. However this area will have good pedestrian and vehicular access as the shared path can be developed alongside Stage 5.

4. Conclusion

The WNDL Site will create a high-amenity residential area of 1,181-1,201 residential dwellings supported by a Local Centre. This scale of development is considered compatible with the Site's landform, landscape and ecological constraints

The Site presents unique settings for residential neighbourhoods. Natural features divide the area into zones - each with a distinctive character that responds to local landscape. This variation contributes to 'sense of place', housing diversity and choice.

The Western Dunes are characterised by long-range views west to the moana and east the Tararua ranges. Sensitively placed residential development retains the natural profile of the dune tops. The subdivision pattern and proposed building controls ensures visual integration of buildings and landscape.

In the Dune Foothills East and Eastern Flats, residential streets are configured around a large, central wetland reserve and Local Centre. The reserve provides ecological restoration and flood management. It also provides visual amenity and recreation opportunities. Physical and visual access to the reserve benefits residents' lifestyles and reinforces local identity.

Proposed waterways, flood retention areas and wetlands present a significant opportunity to restore ecosystems, enhance biodiversity and support mana whenua values.

These areas and the dunes are publicly accessible and contribute to a network of off-road trails. The character of the trails varies in response to landscape. Recreation opportunities and aesthetic responses are correspondingly diverse supported by specific landscape strategies.

Trails and joined-up streets help to connect locations identified in the draft Toitū Kāpiti - Kāpiti Coast Open Space Strategy. A new shared pathway traverses the Site, linking the Expressway CWB to Peka Peka Road. Active mode connections are formed across Te Harakeke wetland to Paetawa Road and the beach.

The masterplan's approach to medium density housing is based on a range of types that can accommodate adjustment as market demands shift.

When detailed design occurs, the design review panel process will ensure consented dwellings align with Council guidelines.

Finally, the masterplan allows for additional connections to the south and north-east, anticipating future growth.