



WESTON
CONSULTING

planning + urban design

SUN SHADOW STUDY

DIRECTOR INDUSTRIAL HOLDINGS LIMITED
603 - 699 KINGSTON ROAD,
CITY OF PICKERING

APRIL 2020
FILE #9737

1. INTRODUCTION



This Sun/Shadow Study has been prepared by Weston Consulting to illustrate the shadow impacts of the proposed mixed-use development. The proposed development is located at 603 – 699 Kingston Road, northwest of the intersection at Whites Road North and the Kings Highway Number 401. The proposed development consists of 6 towers and 2 mid-rise form buildings. The proposal provides 2844 residential units, 2,232 m² of retail space, 4,448 m² of office space, and 2,830 parking spaces. The heights of the proposed towers are 29, 32, 36, 29, 42, and 24 storeys. This study is in support of the applications for a Zoning By-law Amendment and Official Plan Amendment.

Within the immediate vicinity of the subject site are predominantly big-box retail stores and light industrial uses. Approximately 130 meters north of the site, across Kingston Road and behind various retail stores, is a primarily single detached dwelling neighbourhood. The subject property is also in close proximity to Steeple Hill Park to the north west, and Petticoat Creek Conservation Area to the south by Lake Ontario.

The Terms of Reference for this Study was provided by the City of Pickering and is described as a technical document that provides a visual model and written description of the impact of shadows cast by a proposed development on adjacent parks, schools, buildings and properties.

A Shadow Study is required for applications for development over 13 metres (4 storeys) in height.

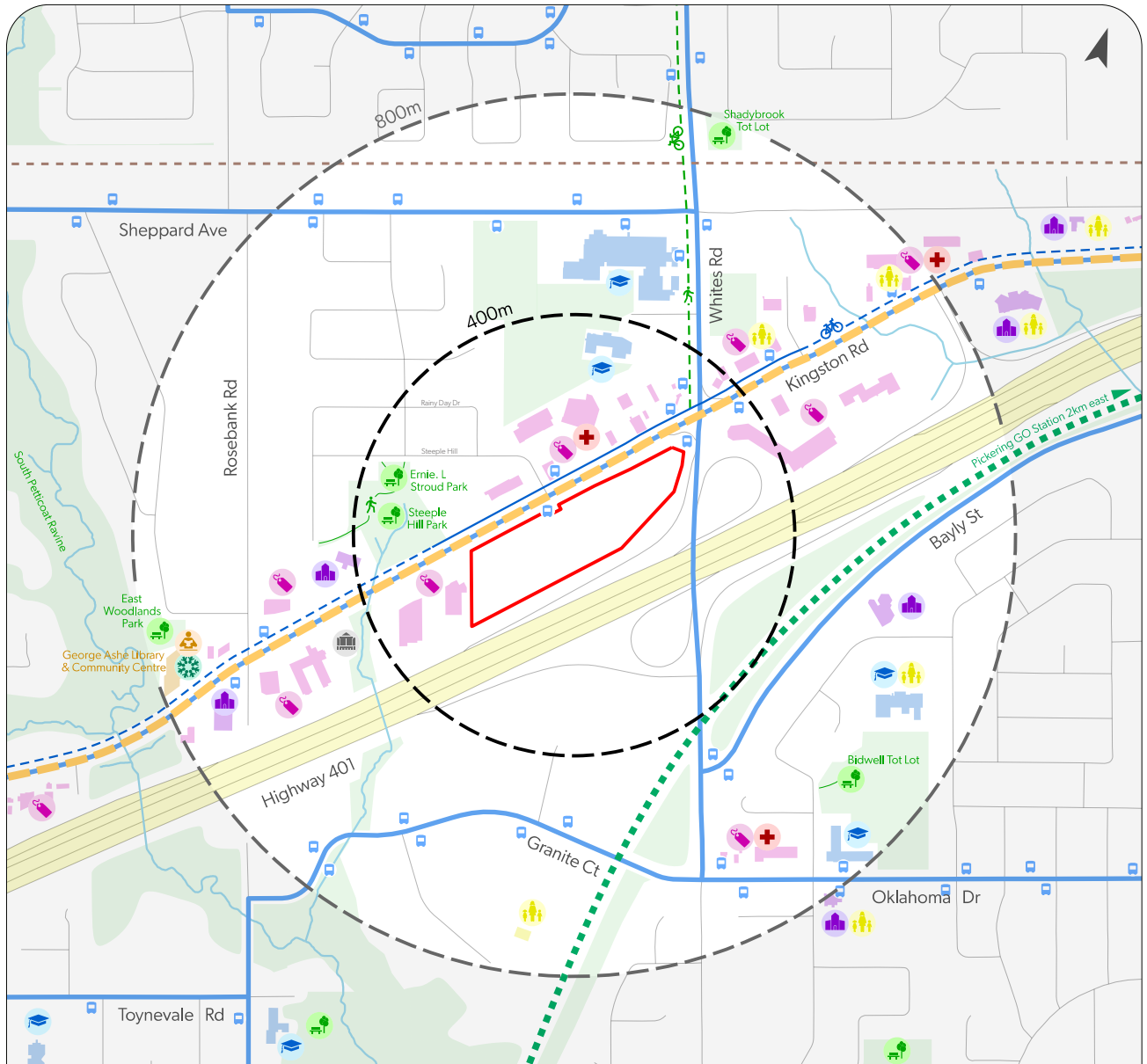
This Study has been prepared in accordance to the terms of reference.

The Study includes:

- all streets, lots, blocks, parks, schools and open spaces as well as buildings to a distance adequate to show the shadow impacts during requested times;
 - the shadow conditions from other abutting buildings; and,
 - references a base plan plotted at a standard metric scale with a bar scale on each sheet.
- Test Times include: March 21st, June 21st, September 21st and December 21st at the following hours: 9:18 am, 11:18 am, 1:18 pm, 3:18 pm, 5:18 and 7:18 pm (if before sunset).

- Format of the Study:
 - The Study was conducted using a geolocated 3d Sketch-up model that was run through shadow simulations at the required times.
 - Building heights were determined through standardized floor-to-floor heights:
 - Ground Floor: 4.5 meters
 - Podium Floor along Hwy 401 (parking): 4 meters
 - Residential Floor: 3 meters

The current development concept, as represented in the conceptual site plan drawings and development statistics prepared by Graziani + Corazza Architects, dated April 6, 2020, enclosed with this submission, is preliminary in nature and is subject to change. The current development concept, which represents a high-level master plan for a new mixed-use community, is primarily intended to form the basis of the proposed Draft Official Plan Amendment, which is required to facilitate the proposed density and Floor Space Index on the subject lands, as well as the proposed Draft Zoning By-law Amendment which is required to establish a new site-specific zoning framework that will implement the City's current land use vision for the subject lands. This proposed official plan and zoning by-law amendment framework is intended to provide flexibility in order to ensure that the development of the lands responds to market conditions and can result in implementation of plans and alternative plans to achieve principles of intensification based on good planning and urban design principles. As such, it is anticipated that the development concept as presented be considered conceptual and will be revised, as necessary, to account for new and/or evolving considerations related to the master-planned community.



<ul style="list-style-type: none"> — Subject Site 400m radius (5 min walk) 800m radius (10 min walk) ~ Trail Railway 	<p>Durham Region Transit</p> <ul style="list-style-type: none"> — Bus Route Bus Stop — PULSE BRT Route <p>Metrolinx</p> <ul style="list-style-type: none"> Lakeshore East Line 	<p>Durham Region Cycling Plan</p> <ul style="list-style-type: none"> — Buffered Cycle Lane (constructed) Buffered Cycle Lane (planned) Multi-Use Path (planned) 	<p>Amenity</p> <ul style="list-style-type: none"> 🌳 Park 🏪 Retail 🕌 Place of Worship 👶 Child Care Centre 🎓 School 🏥 Medical/Health Centre 🏛️ Government Service 📖 Library 🌳 Community Centre
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2. SHADOW IMPACT ANALYSIS

2.1 MARCH 21

At 9:18 am shadows from the proposed development impact Kingston Road and the associated retail buildings along the northern edge of the road. There is minor impact on the rear yards of residential properties 555, 557, 559, 561, 563 and 568 along Steeple Hill. Residential properties 586, 584, 582, 578, 576, 567, and 565 along Rainy Day Dr and attached dwellings just north of Kingston Road are impacted during this time. There is also shadowing at the south eastern portion of Steeple Hill Park. By 11:18 am the mentioned residential properties, park, and retail are not impacted.

At 11:18 am there is minor impact on Kingston Road and the associated retail buildings along the northern edge of the road.

From 1:18 pm to 3:18 pm there is no impact on adjacent properties, though there is minor shadowing along Kingston Road. There is also minor shadowing on Whites Road North at 3:18 pm.

At 5:18 pm shadows maintain a minor impact on Whites Road North and begin to have a minor impact on the northern edge of Highway 401.

Shadow Impacts upon the public realm are of short duration. No amenity space is critically impacted.

See Appendix 1.

2.2 JUNE 21

At 9:18 am there is minor impact on the retail property west of the subject site at 575 Kingston Road. There is also minor impact on Kingston Road, though throughout the majority of the day past 11:18 am there is no shadow impact.

From 1:18 pm to 3:18 pm there is minimal shadow outside of the subject site.

At 5:18 pm shadow begins to have a minor impact on Highway 401, though only on the northern side.

At 7:18 pm, just before the sun sets, there is shadow impact along the highway on/off ramp east of the site. There is also minor impact on the light industrial property at 1800 Ironstone Manor.

Shadow Impacts upon the public realm are minimal. No amenity space is critically impacted.

See Appendix 2.

2.3 SEPTEMBER 21

At 9:18 am shadows impact Kingston Road and the associated retail buildings on the northern edge of the road. Rear yards of residential properties 559, 561, 563, and 568 along Steeple Hill are impacted during this time. Residential properties 586, 584, 582, 578, and 576 along Rainy Day Dr and attached dwellings just north of Kingston Road are also impacted during this time. There is shadowing on the south eastern portion of Steeple Hill Park. By 11:18 am the mentioned residential properties, and park are not impacted.

At 11:18 am there is minor impact on a retail building on the northern edge of the road at 670 Kingston Road.

From 11:18am to 3:18 pm there is no impact on adjacent properties, although there is minor shadowing along Kingston Road. There is also minor shadowing on Whites Road North at 3:18 pm.

At 5:18 pm shadows maintain a minor impact on Whites Road North and begin to have a minor impact on the northern edge of Highway 401.

Shadow Impacts upon the public realm are of short duration. No amenity space is critically impacted.

See Appendix 3.

2.4 DECEMBER 21

At 9:18 am shadows briefly impact the residential community to the north and a portion of the property of the high school north of the site.

At 11:18 am the shadows have moved off of the residential community and only impact the retail stores on the north side of Kingston Road and small portion of the southern edge of the high school yard.

At 1:18 pm shadows impact Kingston Road and a portion of Whites Road North as it meets Kingston Road.

At 3:18 pm shadows impact retail stores northeast of the site across Whites Road North.

These impacts, of which are primarily on retail stores, are due to the angle of the sun throughout the winter. Shadow impacts upon public realm are minimal and no amenity space is critically impacted.

See Appendix 4.

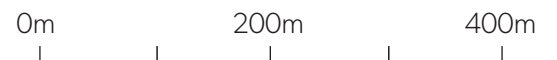
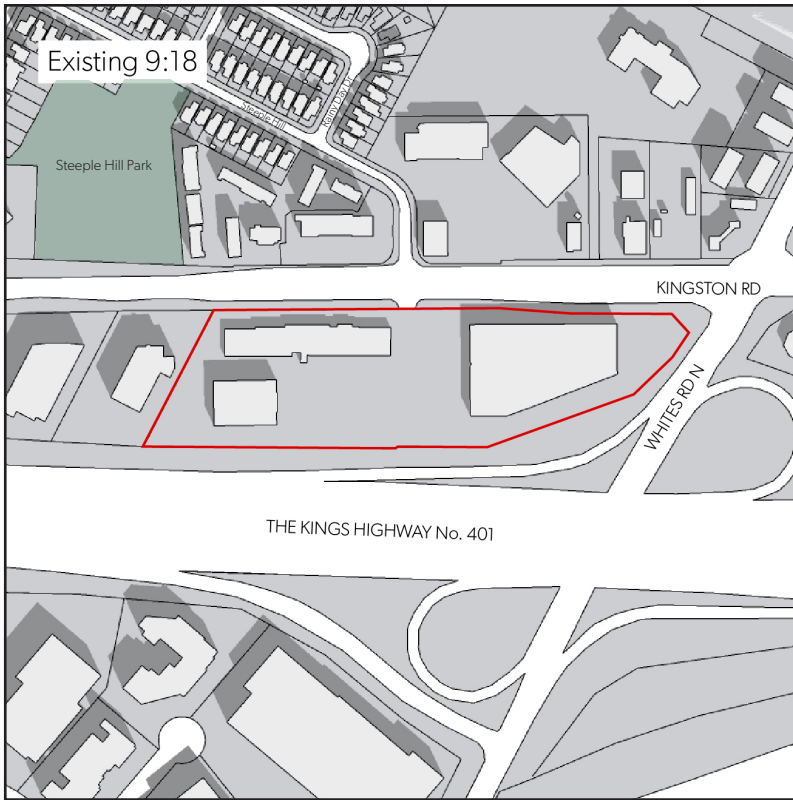
3. SUMMARY

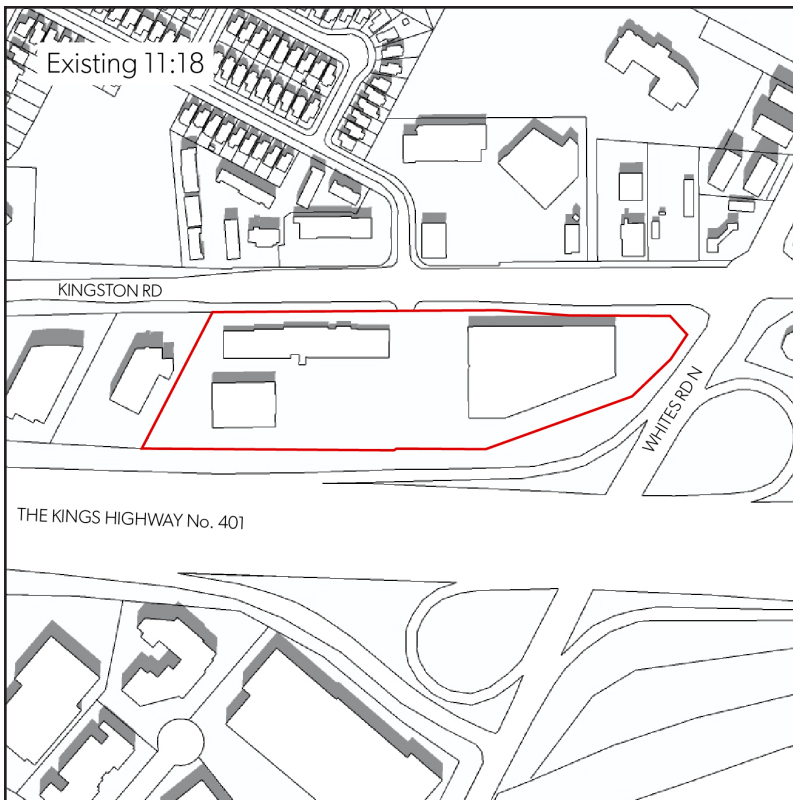
In summary, it is our opinion that the shadow impacts from the proposed development upon the neighbouring residential properties and the public realm are acceptable and short in duration. The shadows have an acceptable level of impact for the following reasons:

- The majority of cumulative shadowing impacts are moderate, with shadow impact falling primarily away from residential properties.
- Public space is minimally impacted, receiving shadowing for a short period

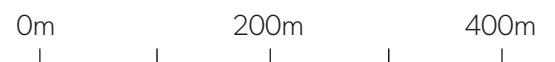
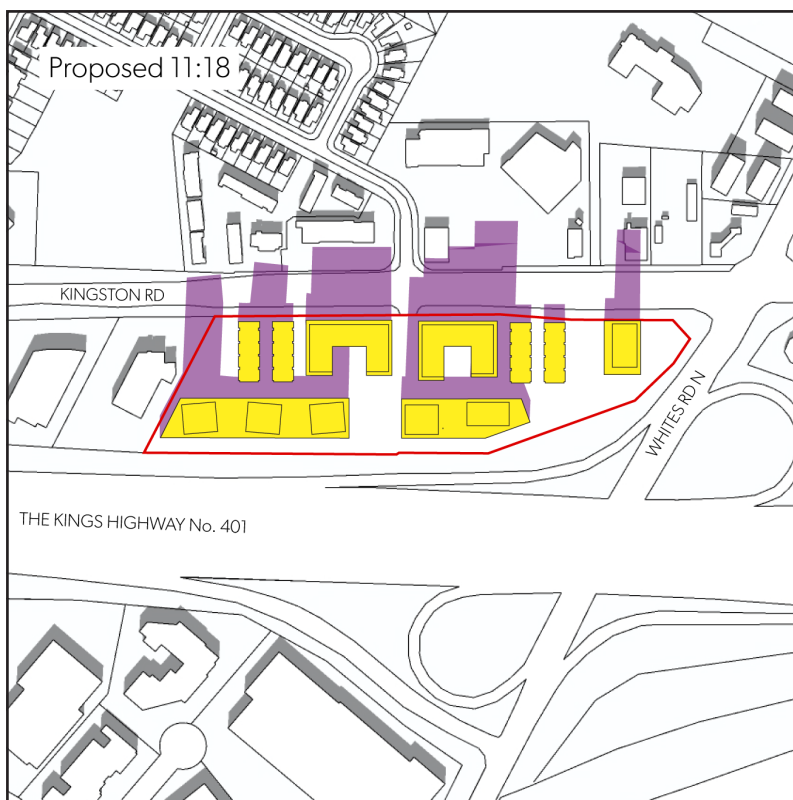
In conclusion, it is our opinion that shadow impacts from the proposed development are acceptable.

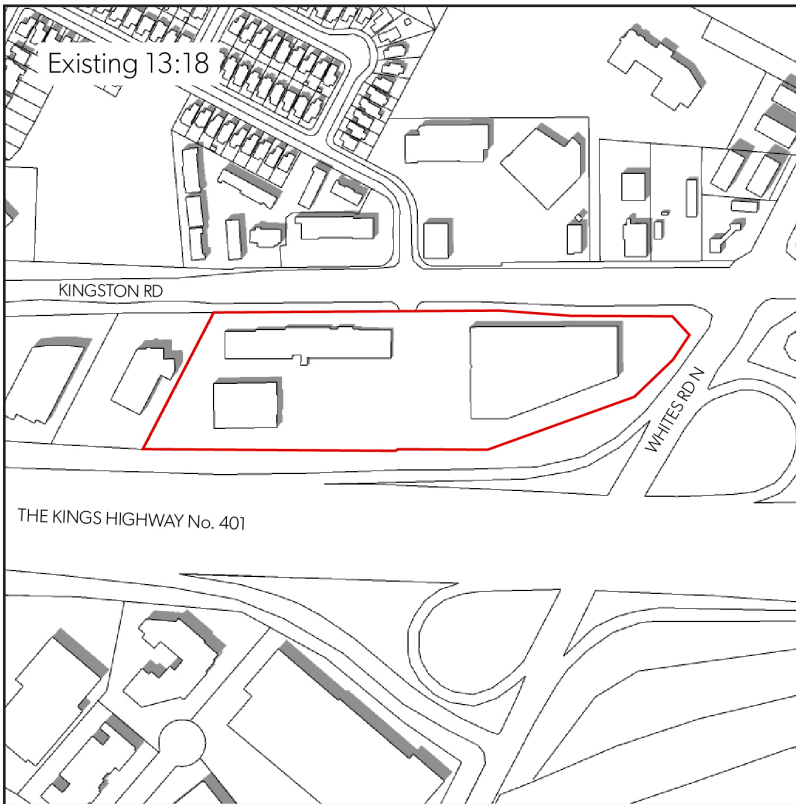
SHADOW DIAGRAMS: APPENDIX 1, MARCH 21



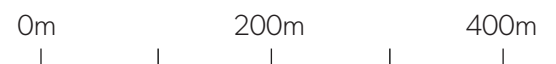


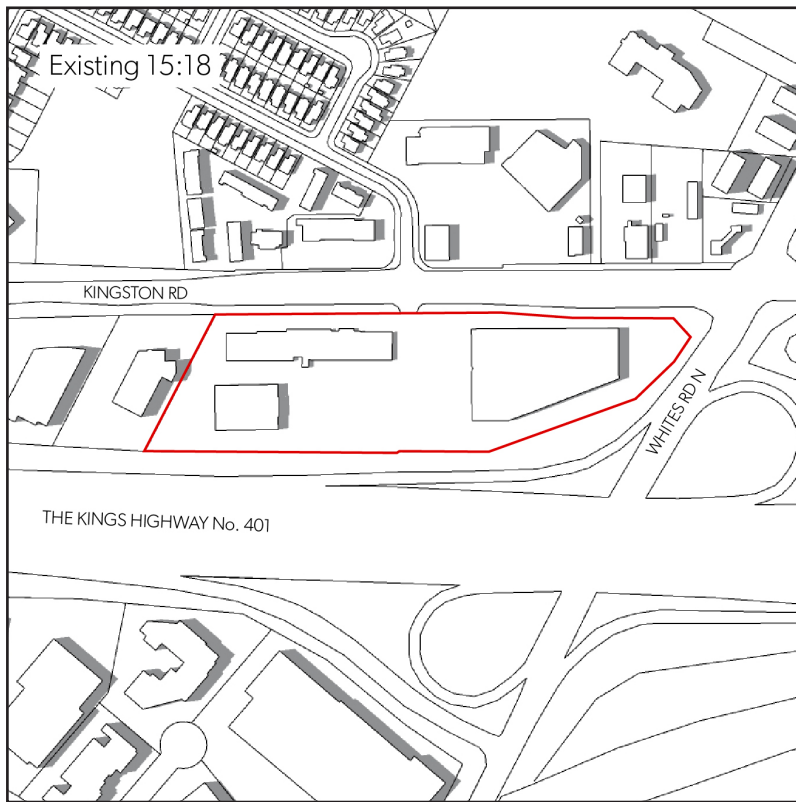
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- Existing Shadow
- Proposed Shadow



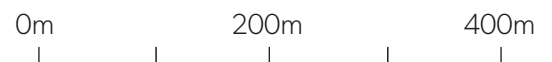


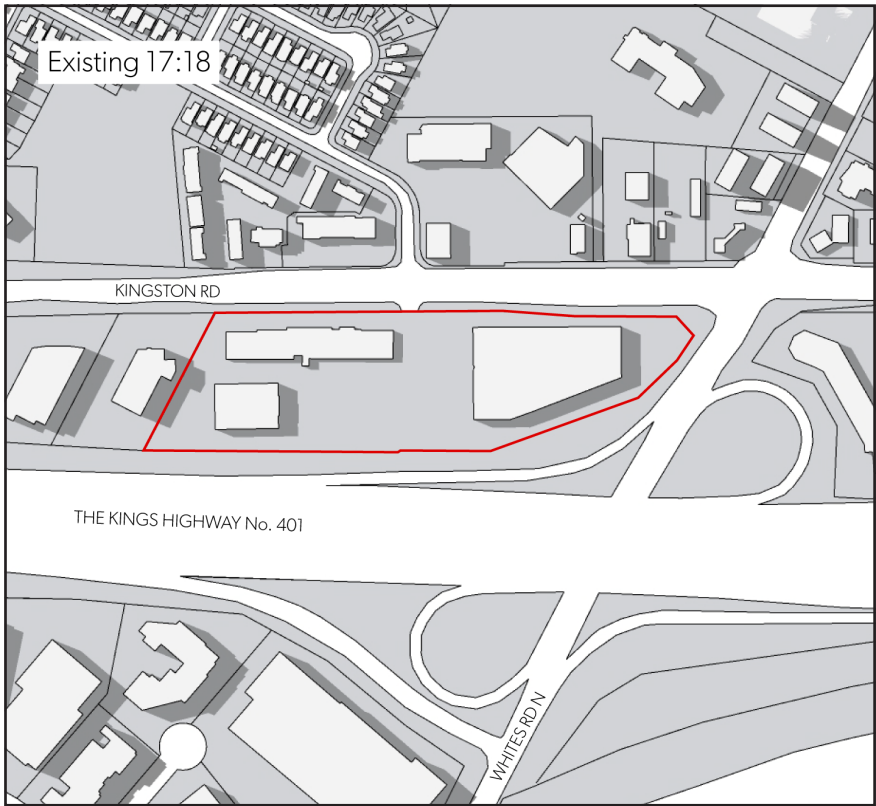
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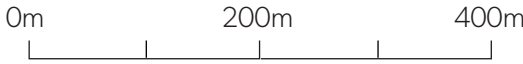
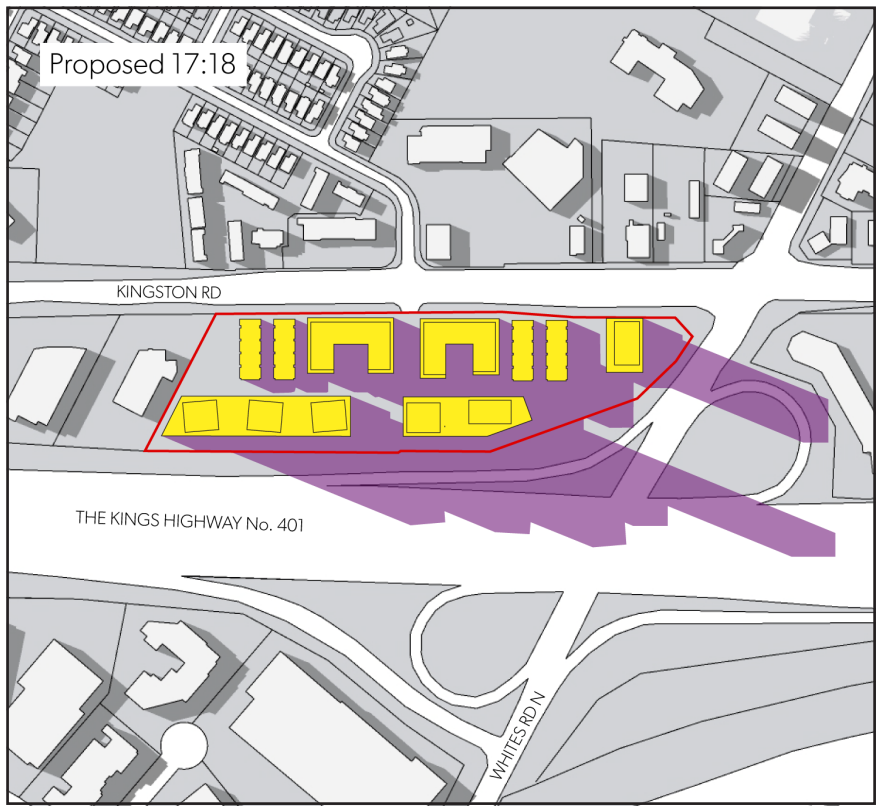


- Property Boundary
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- Existing Shadow
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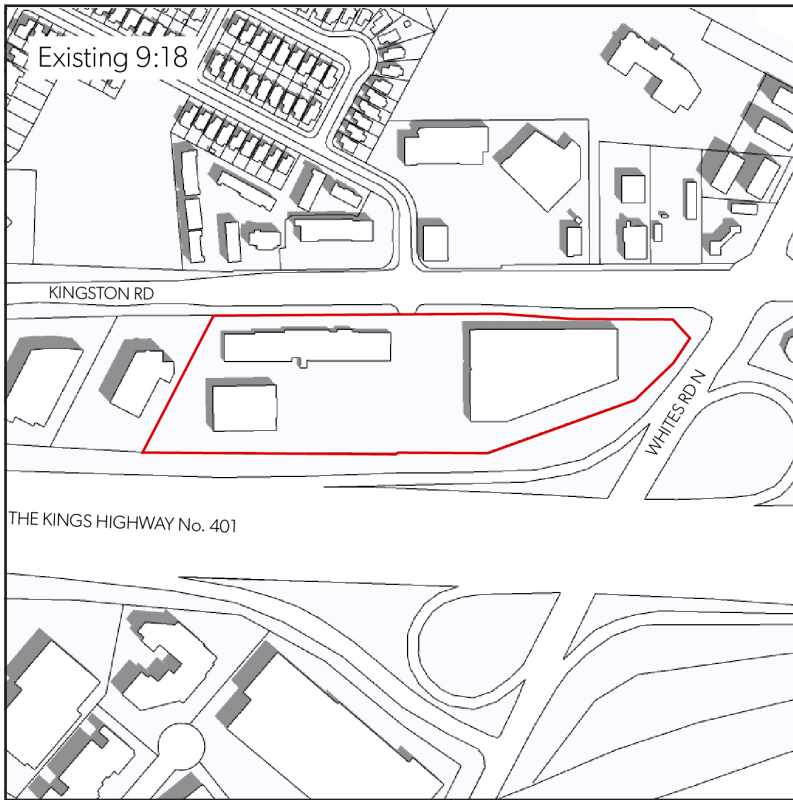




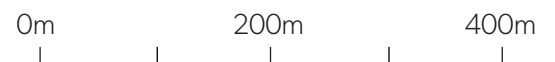
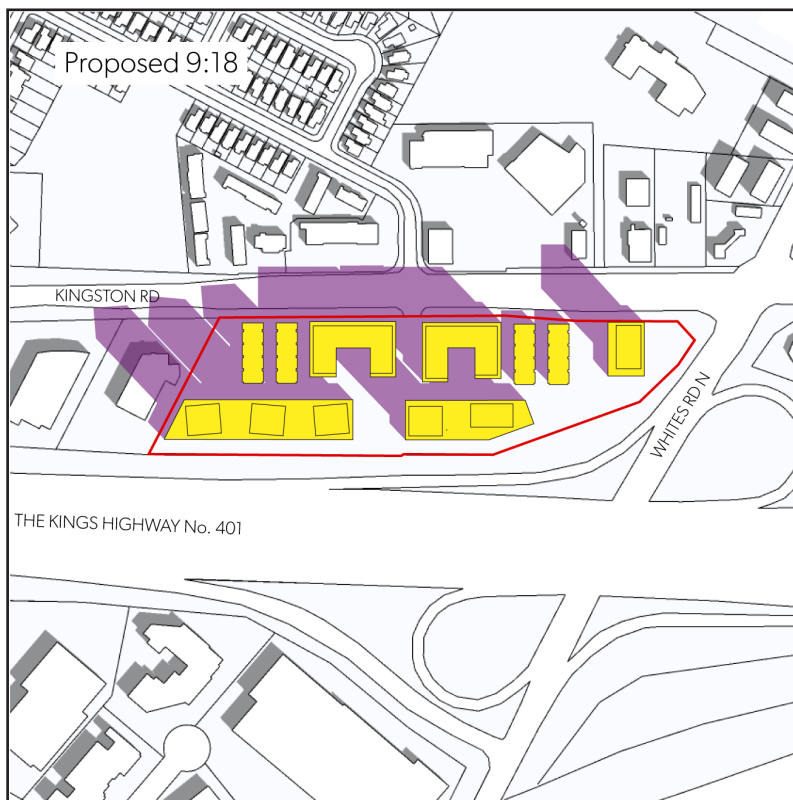
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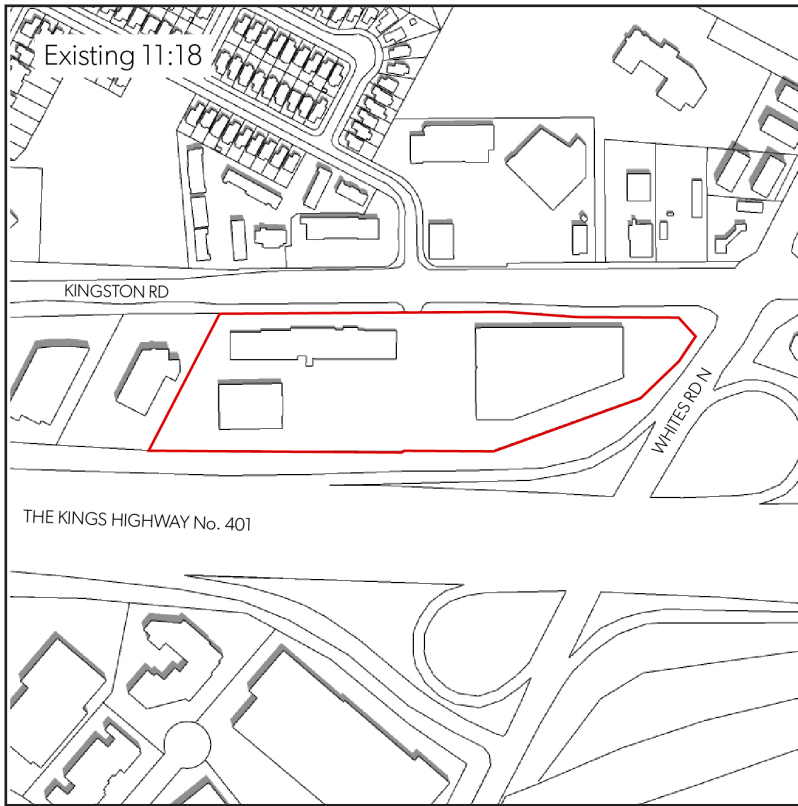


SHADOW DIAGRAMS: APPENDIX 2, JUNE 21

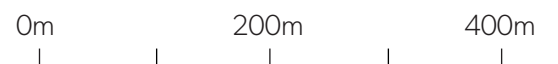
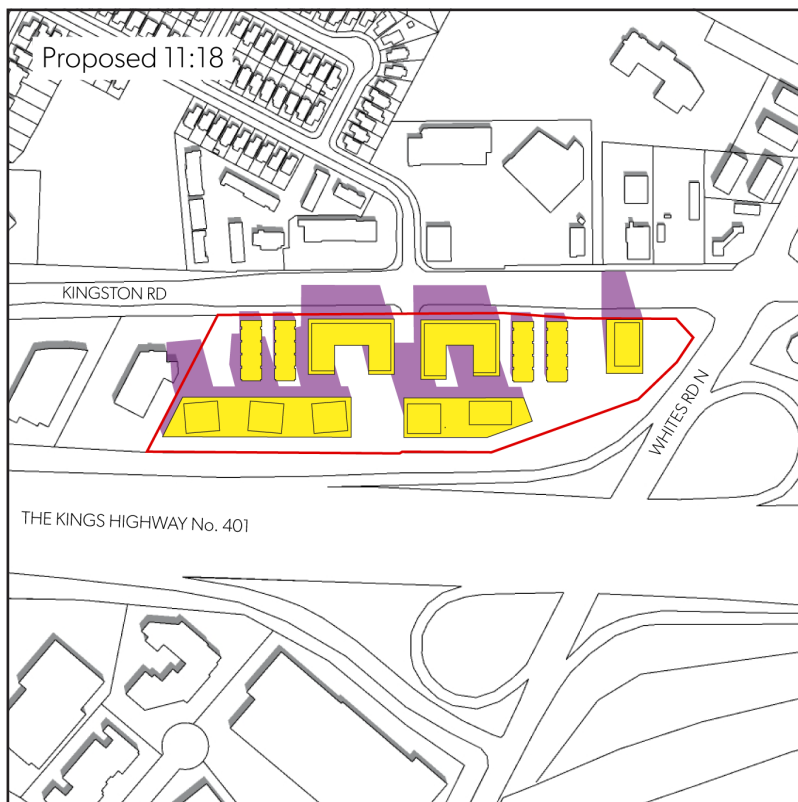


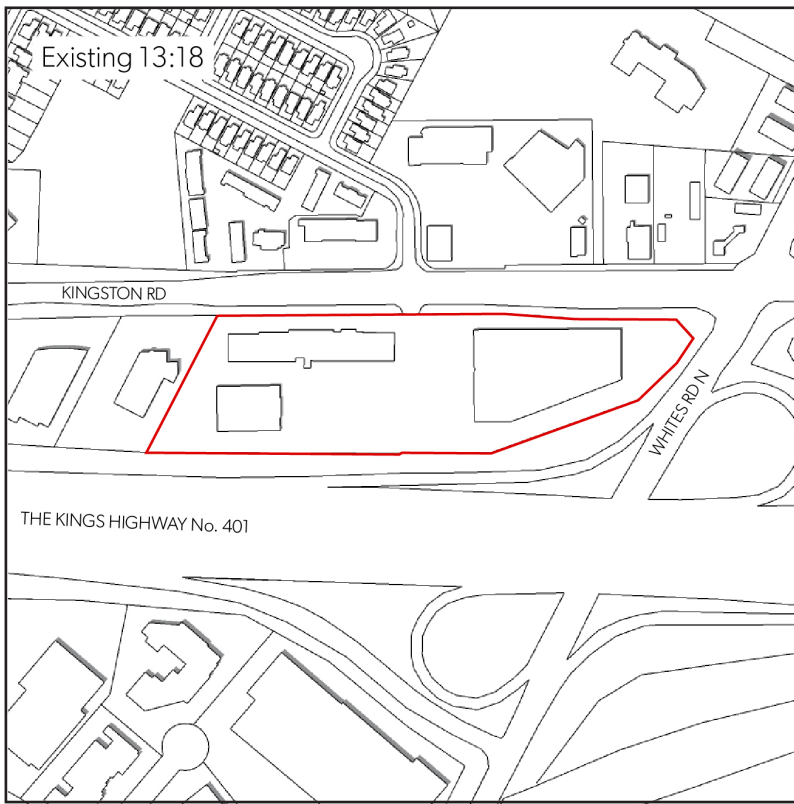
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- Proposed Shadow



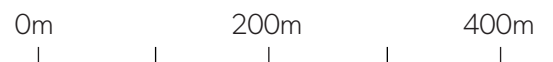


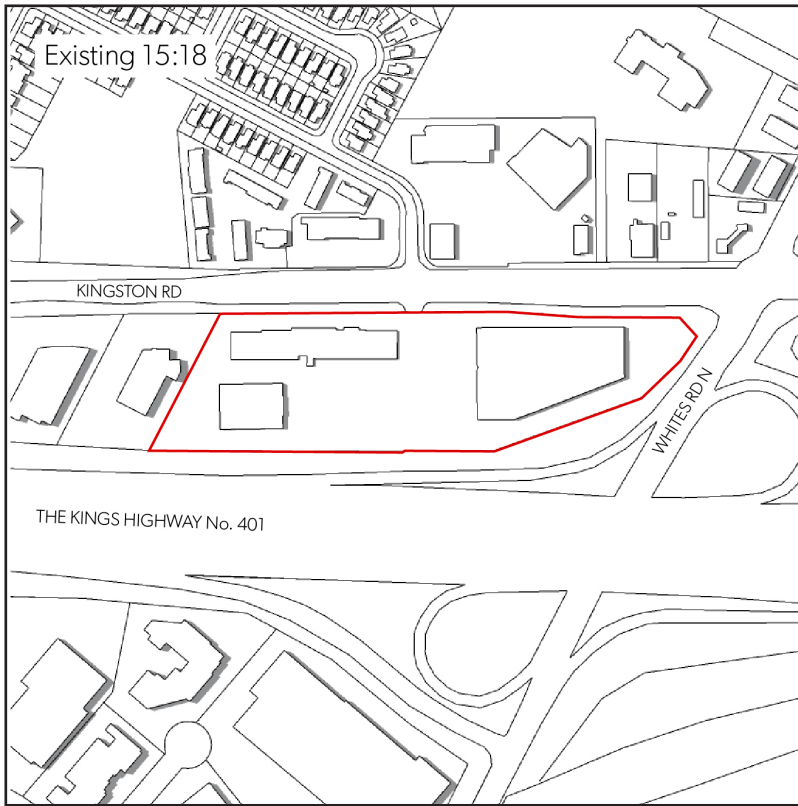
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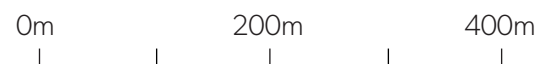
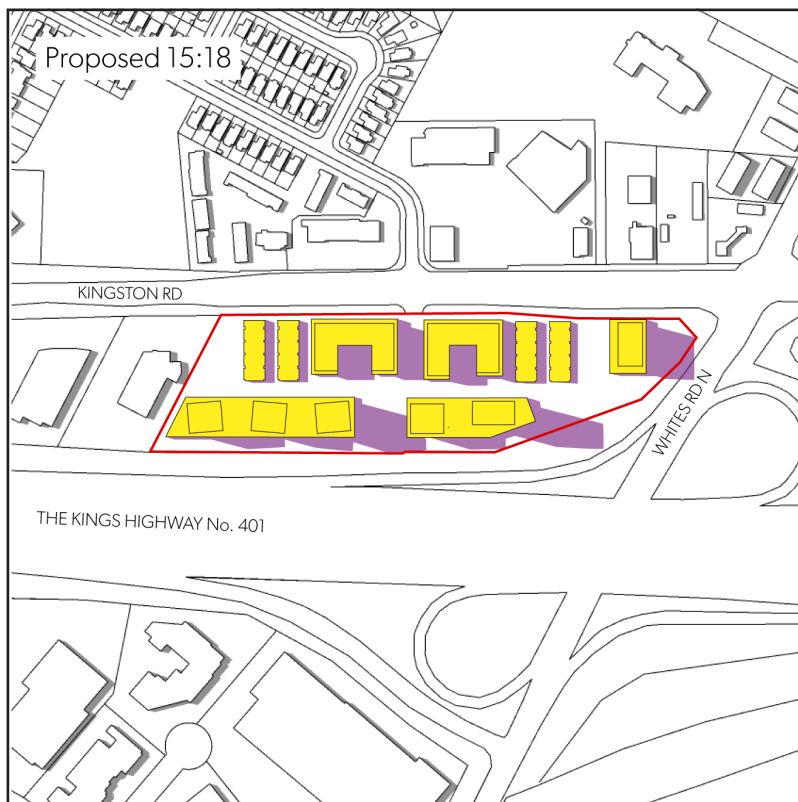


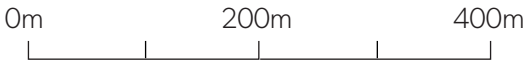
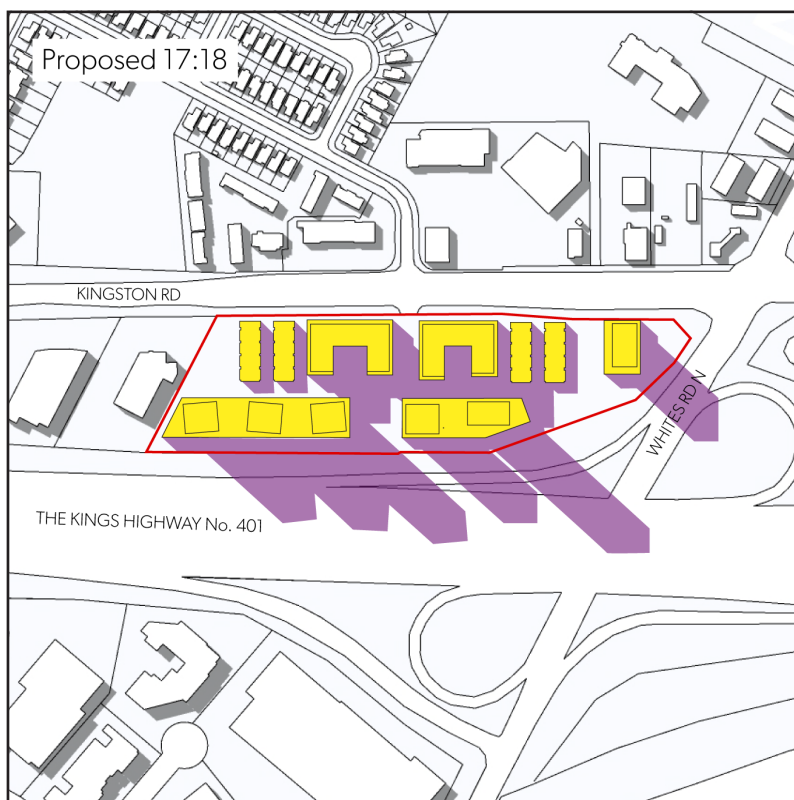
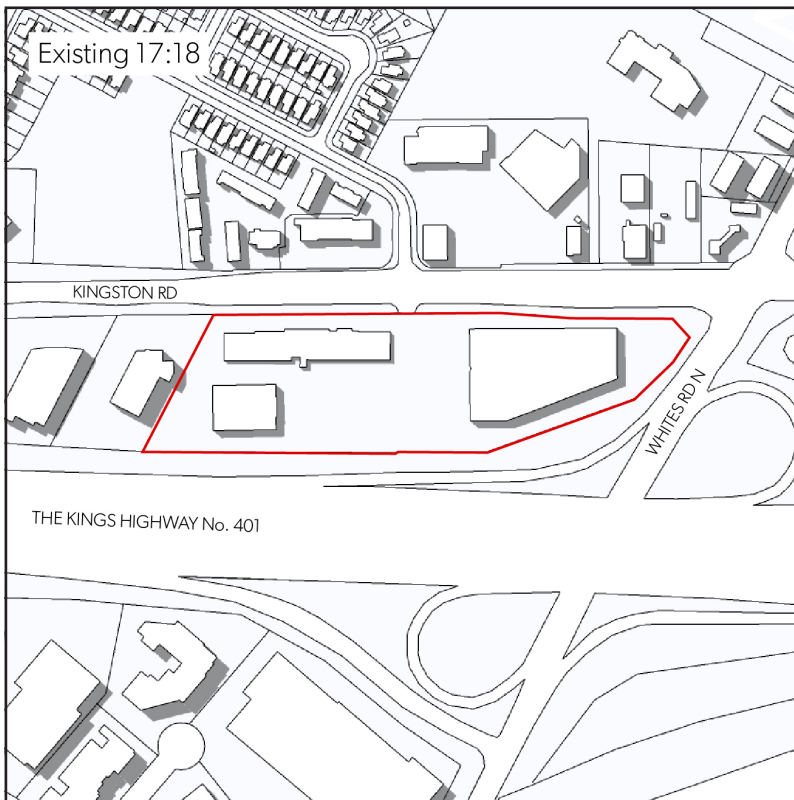
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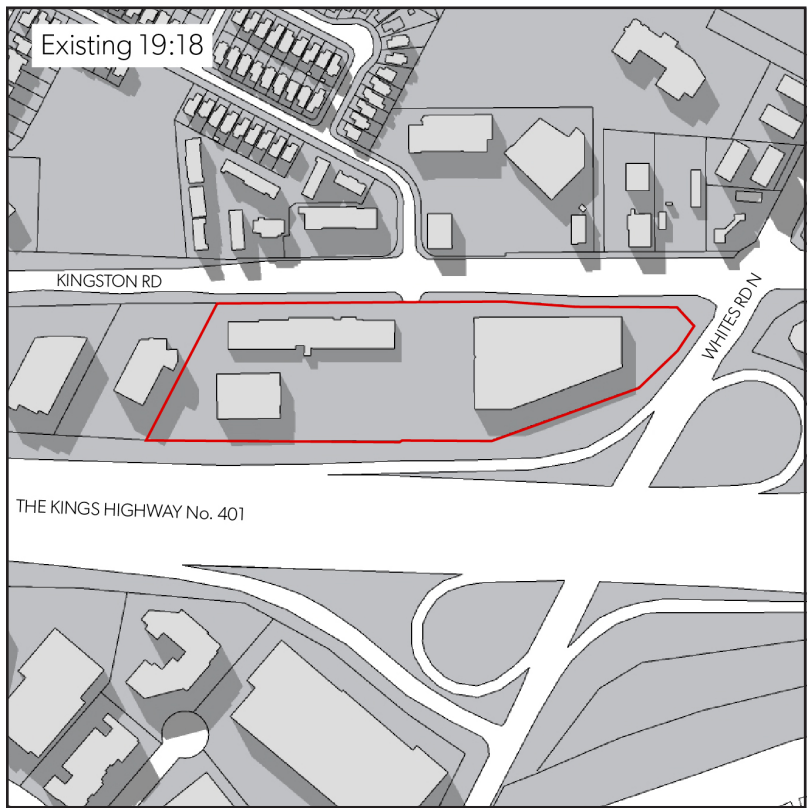




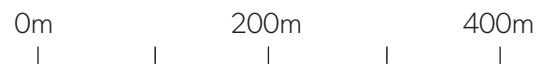
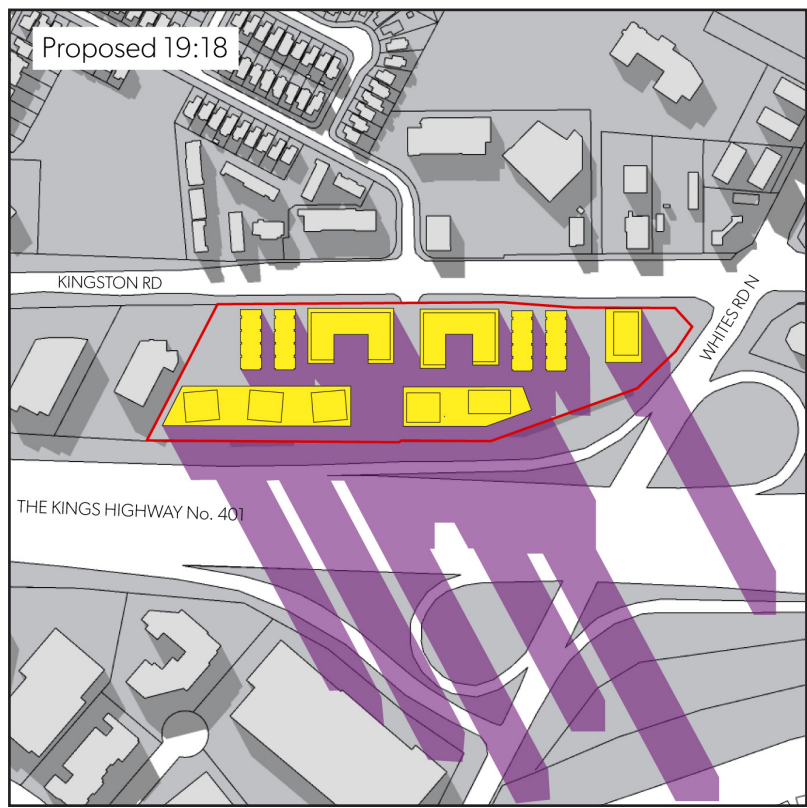
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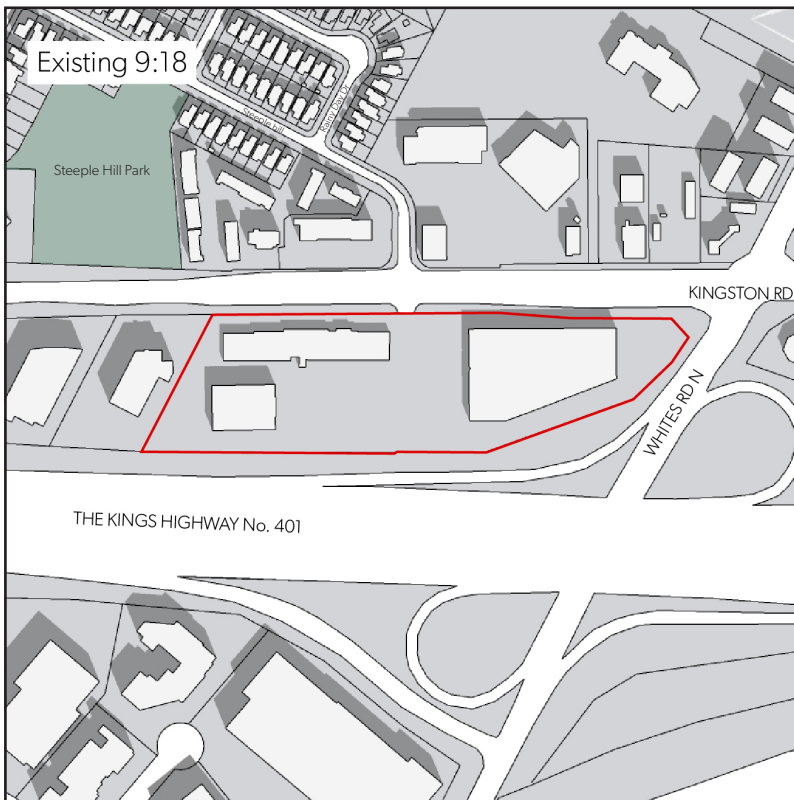




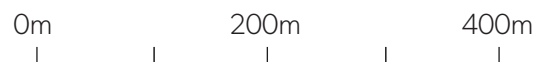
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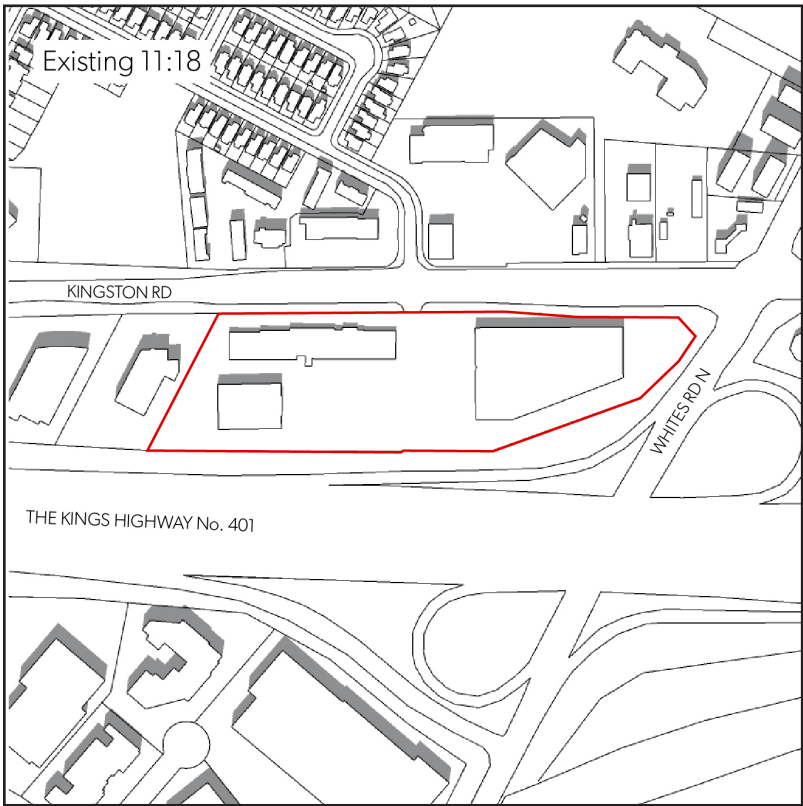


SHADOW DIAGRAMS: APPENDIX 3, SEPTEMBER 21

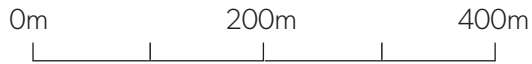


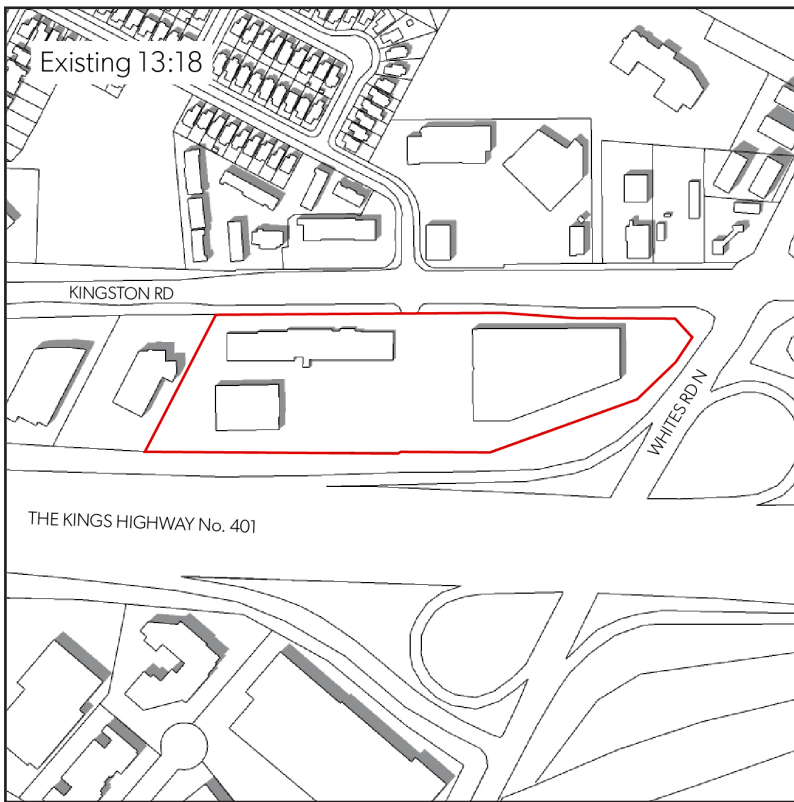
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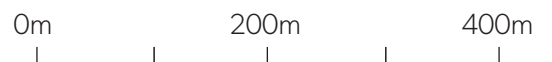


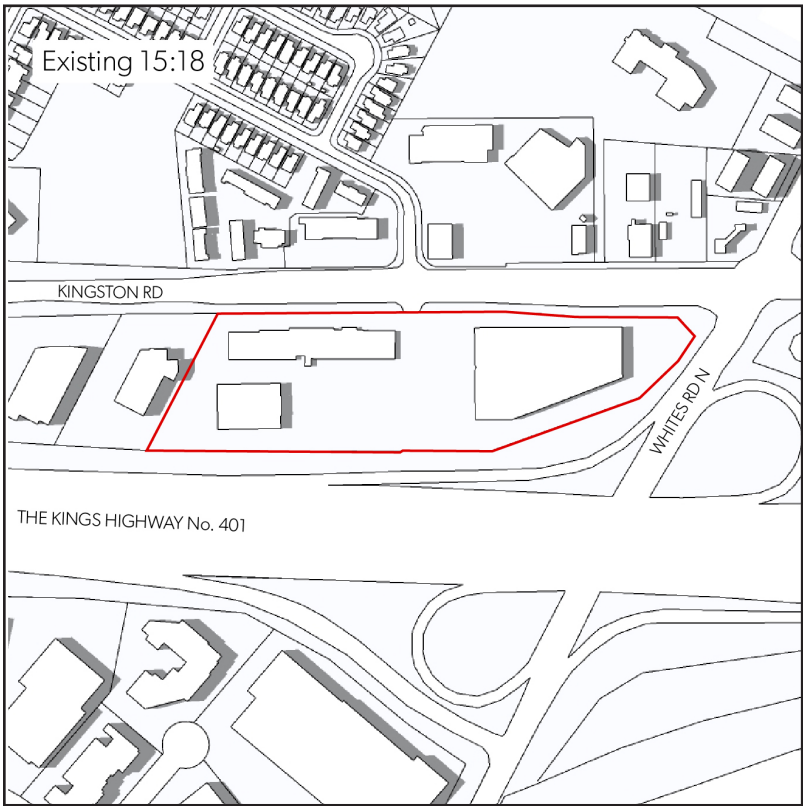
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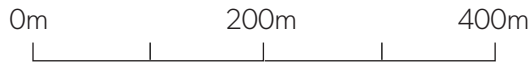
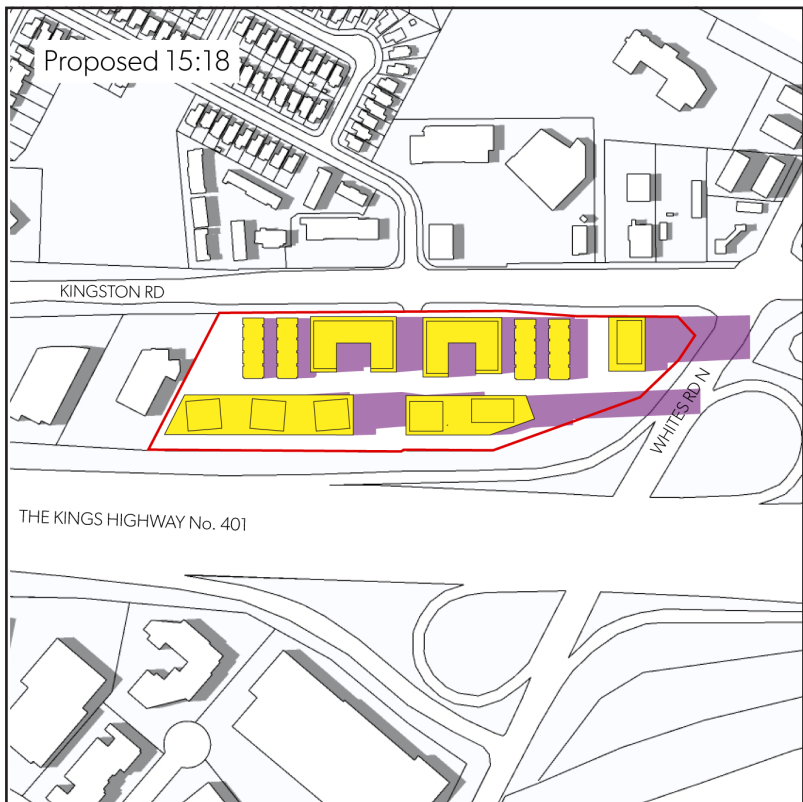


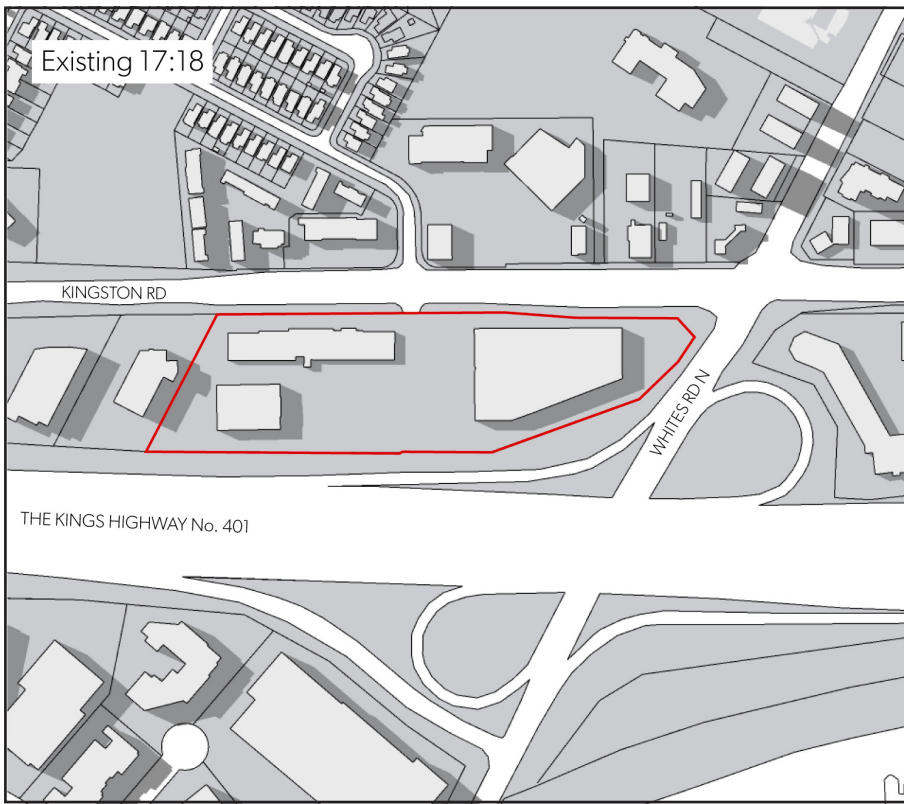
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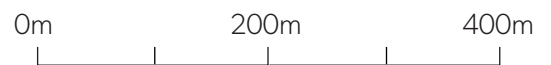
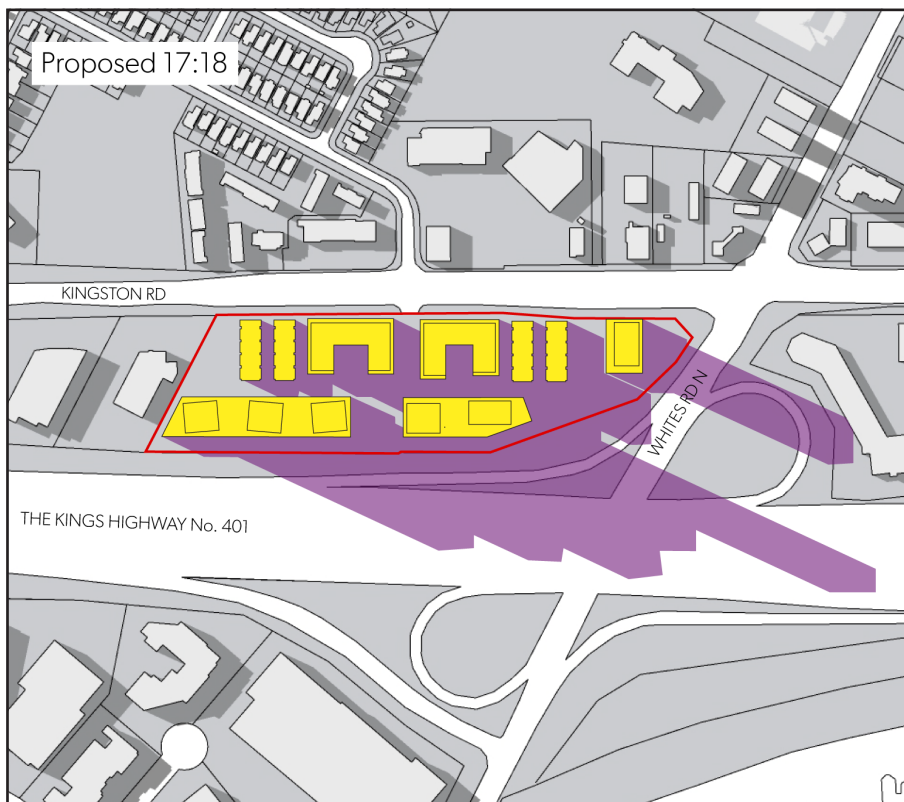


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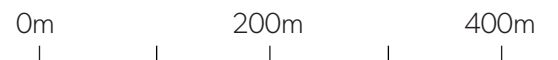
-  Property Boundary
-  Proposed Building
-  Existing Shadow
-  Proposed Shadow

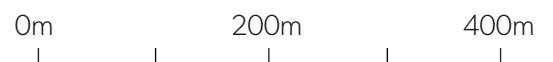
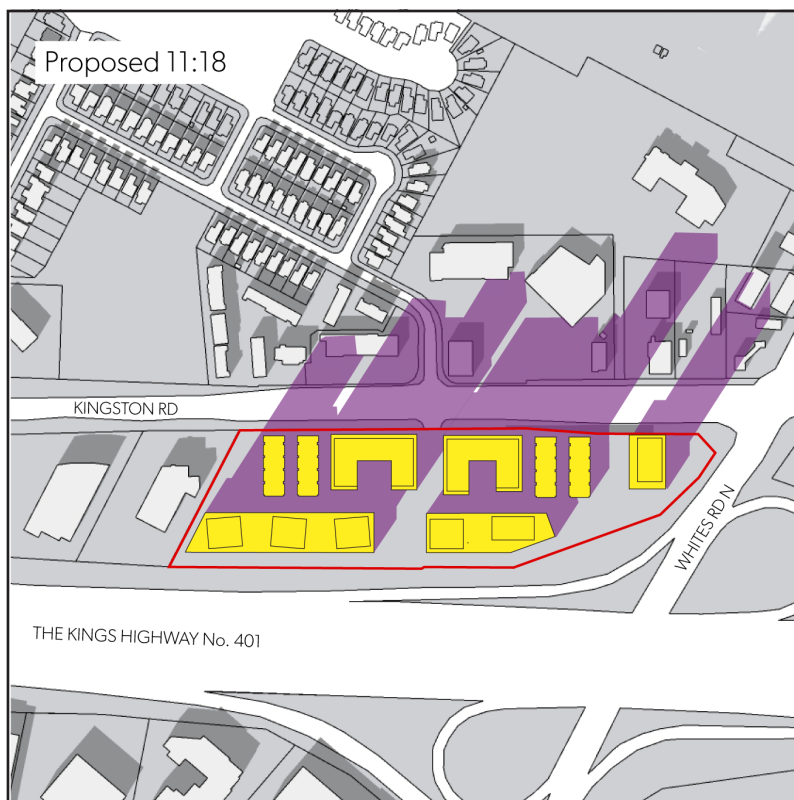
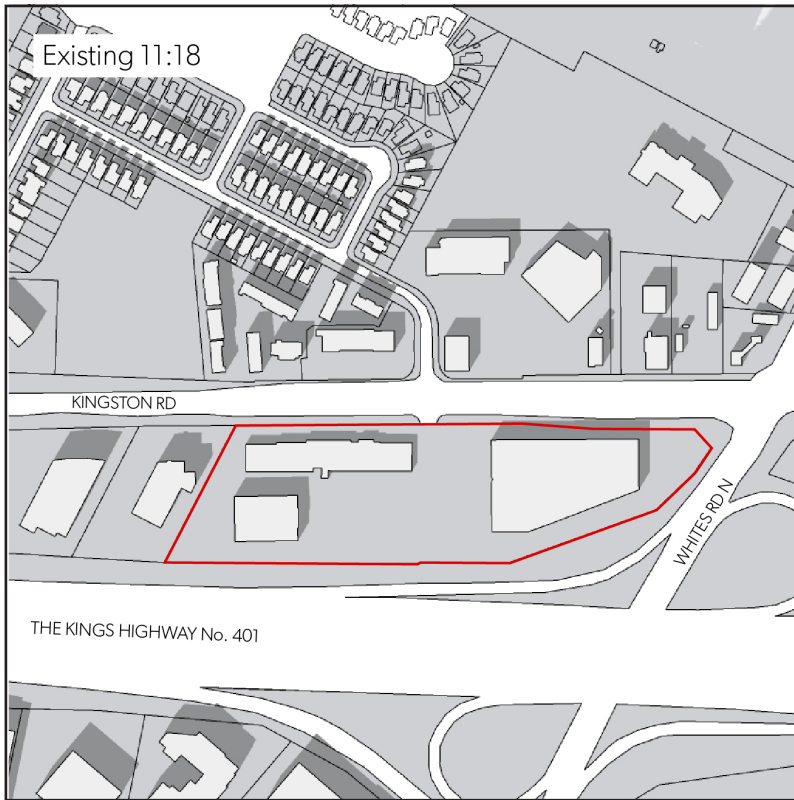


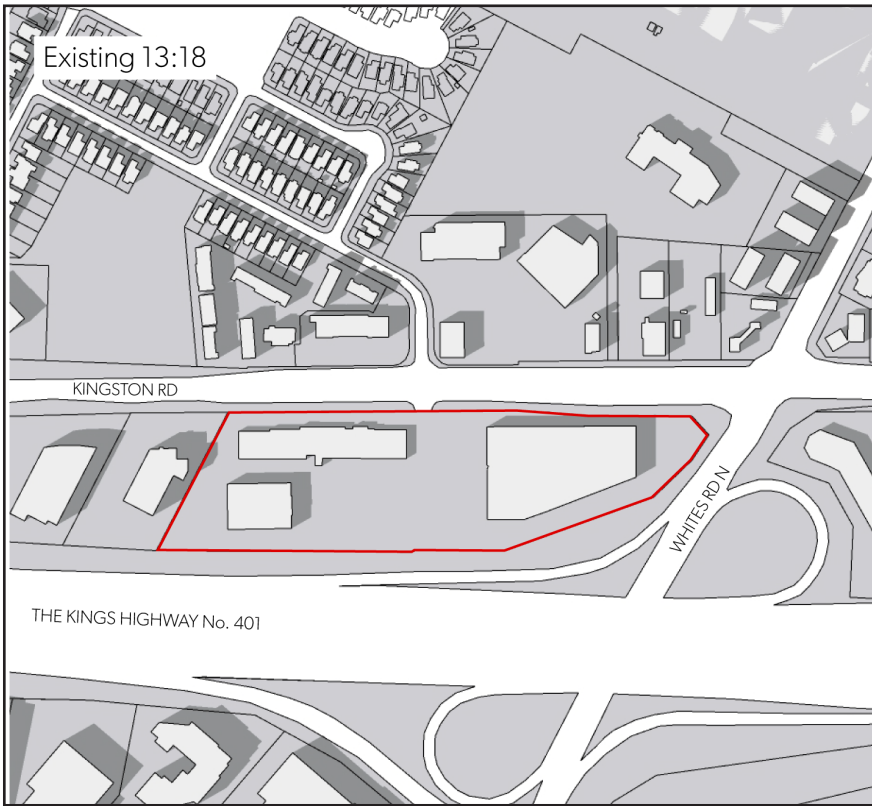
SHADOW DIAGRAMS: APPENDIX 4, DECEMBER 21



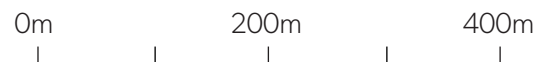
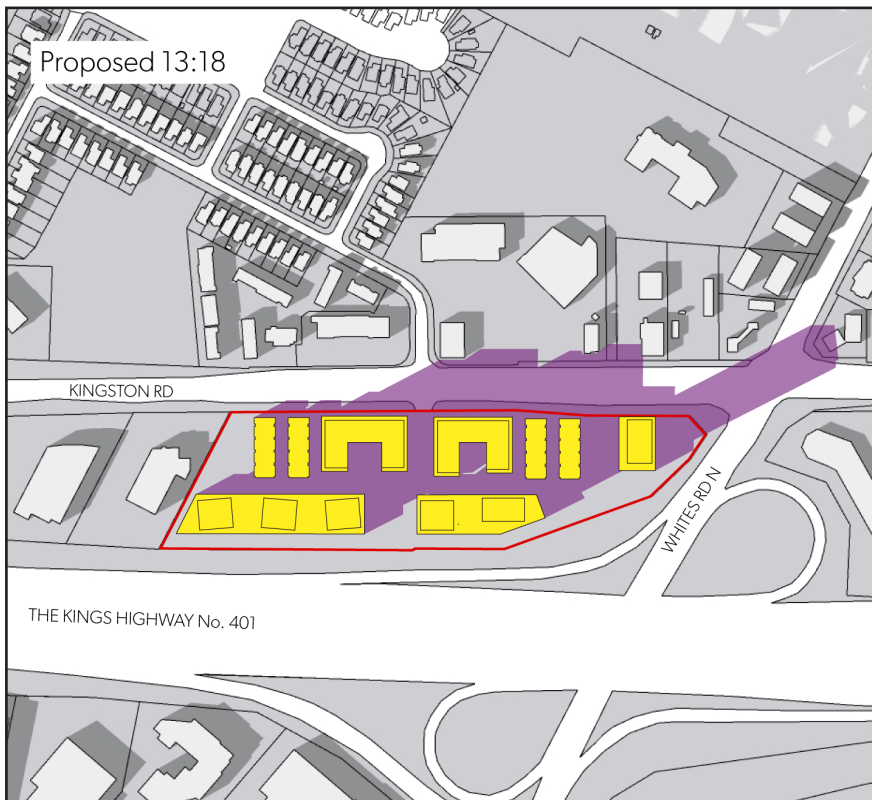
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- Existing Shadow
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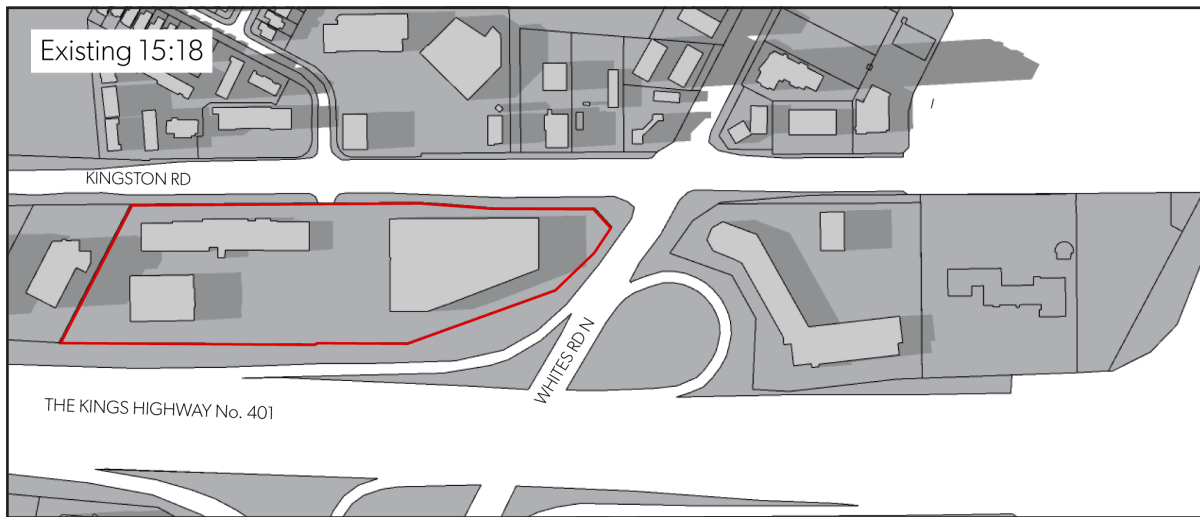






- Property Boundary
- Proposed Building
- Existing Shadow
- Proposed Shadow





- Property Boundary
- Proposed Building
- Existing Shadow
- Proposed Shadow

0m 200m 400m





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