Porter
Consulting Engineers

SERVICING AND CAPACITY CONSTRAINT REPORT

LOTS 177, 1 AND 180-184 HAY ROAD, ASCOT

Porter

REPORT PREPARED FOR

PHB01 Pty Ltd

Prepared by	**Porter Consulting Engineers**
Postal address	PO Box 1036 Canning Bridge WA 6153
Phone	(08) 9315 9955
Email	office@portereng.com.au

Date	4 March 2020
Our reference	R08.20
Job Number	20-01-015
Checked	

HISTORY AND STATUS OF THE DOCUMENT

Revision	Date issued	Author	Issued to	Revision type
Rev A	4/03/2020	S Highman	PHB01 Pty Ltd	Draft
Rev B	13/3/20	S Highman	PHB01 Pty Ltd	Final

CONTENTS

1.0 INTRODUCTION

Porter Consulting Engineers has been engaged by PHB01 Pty Ltd to complete a desktop servicing investigation and capacity constraint report for the land holdings at the corner of Hay Road and Fauntleroy Avenue in Ascot.

The site, being Lots 177, 1 and 180-184 Hay Road has an approved structure plan however due to legislative changes in 2015, a scheme amendment is required to re-establish the R60 density coding. The purpose of this report is to demonstrate that the site is suitable for the proposed density.

2.0 SITE LOCATION

The site is located to the east of the Hay Road and Fauntleroy Avenue intersection. Refer to **Figure 1** below for the site location. There are existing commercial premises to the south of the site that front Great Eastern Highway.

Figure 1: Site Location

3.0 LANDFORM

The site is made up of seven properties totalling approximately 1.2 hectares. Two of the lots are vacant with the others having single residential properties.

There is limited vegetation across site except for a few larger trees at the rear.

The site is generally level with a fall from the rear down to the front varying in elevation from RL 7.0m to RL 5.0m.

Based on the Perth Metropolitan Region Environmental Geology Series Mapping, it is expected the ground will consist of a thin layer of Bassendean Sand over the Guildford Formation. Sandy silt may be present as is typical in river foreshore areas. A geotechnical investigation will be required during the detailed design phase.

The Perth Groundwater Atlas confirms groundwater will be perched on top of the Guildford formation. Shallow groundwater is expected and will need to be managed accordingly.

The Swan River is located to the north side of Hay Road. Hay Road is elevated above the Swan River and it is not anticipated that these development works will impact on the river foreshore.

Department of Water Environment Regulation's (DWER) online mapping indicates the 1% AEP flooding along the Swan River is around RL 4.0m. Separation to this flooding level will need to be considered as part of the assessment of finished lot levels.

The Acid Sulphate Soil Online Risk Mapping confirms the site is adjacent to a high risk area. A management plan will be required as part of the construction activities.

A search of the online contaminated sites database did not identify any known contamination on the site.

3.1 Earthworks and Siteworks

As with all development projects, site clearing including demolition, will be required. Pending the level and extent of earthworks, the existing trees to the rear may also need to be removed. It is recommended these be removed as a forward works activity to ensure groundwater levels stabilise prior to civil works commencing.

It is expected filling will be required to establish building pads for all subsequent lots. The extent of filling will need to consider groundwater separation, site classification requirements and Swan River flood clearances. It is probable groundwater separation or site classification requirements will govern the extent of filling for the site. It is expected the rear of the site will be elevated higher than the front.

Due to the expected ground conditions, it would be prudent to schedule any earthworks or installation of deep services during the latter parts of Summer and Autumn. This will assist in managing the extent of dewatering as well as minimise the potential for sediment wash off.

Pending outcomes of the geotechnical investigation, engineered retaining walls may be required around the perimeter of the site to manage any level differences.

3.2 Wastewater

The Water Corporation have an existing sewer near the corner of Hay Road and Fauntleroy Avenue as shown in red in **Figure 2** below. This sewer is approximately 4m deep and has a short IO heading north east along Hay Road.

Figure 2 – Existing Water Corporation Infrastructure

The Corporation have confirmed a sewer mains extension along Hay Road will be required from the existing to service the future development.

3.3 Drainage

Perth Airport has a large DN1500 stormwater drain that runs through site and discharges at the Swan River. The DN1500 pipe enters the site at the southern tip on Fauntleroy Avenue and traverses the western two properties before crossing Hay Road. This is shown in light blue in **Figure 3** below.

Figure 3 – Perth Airport DN1500 Drainage Line

It is understood the second, and larger lot is federal land and the Perth Airport has a 50 year lease over this. Due to its size and anticipated elevation, it would be problematic to realign DN1500 along Fauntleroy and Hay. It is recommended that the developments over these two lots are tailored specifically to protect the existing drainage pipe.

The existing Hay Road is kerbed and drained and it appears existing dwellings have direct lot connections. Based on the anticipated ground conditions, it is likely the street drainage network will need to be extended to provide a point of connection for each new lot.

It is expected the local authority will require on site detention prior to discharge. Depending on the specifics of each development, it is likely this can be established by the installation of below ground buffer tanks.

It is likely a subsoil network will need to be established to manage groundwater levels. Due to the fall of the site and anticipated levels, it is expected the subsoil will free drain to discharge.

3.4 Water

The Water Corporation have an existing water main that runs the full frontage of Hay Road as shown in blue in **Figure 2**. Their network also extends through the balance of the existing streets to the west.

The Corporation have advised the existing network will require an upgrade to ensure sufficient supply can be provided to the ultimate development.

The Corporation have acknowledged that due to the segmented land ownership, it is likely the development of this site will proceed on a staged basis. The Corporation have confirmed it is probable their existing network has sufficient spare capacity to service the earlier stages without the need for an upgrade. The Corporation will confirm at what point their network will require the upgrade upon each specific application at detailed design stage.

3.5 Power

Western Power have existing overhead and underground infrastructure in the surrounding street network. These consists of both high voltage and low voltage assets.

Western Power mapping for 2021 confirms the region has approximately 30MVA spare capacity which is more than sufficient to service this site.

An application to connect onto the Western Power network will be made at detailed design stage and follow the standard development process.

3.6 Gas

ATCO Gas have an existing medium pressure main that runs along Fauntleroy Avenue. It is expected this main can be extended along Hay Road to service the site if required.

3.7 Communications

Hay Road and Fauntleroy Avenue have existing communications infrastructure in their reserves. It is expected these can be connected onto and reticulated throughout the site as part of any development.

3.8 Roads

The existing Hay Road is sealed and kerbed as shown in **Figure 5.** Hay Road appears to be in reasonable condition with no obvious deterioration. It appears unlikely Hay Road will require an upgrade as part of any development works.

Figure 4: Looking south west along Hay Road

It is understood that a Traffic Impact Statement (TIS) has been prepared as part of this scheme amendment application. Please refer to the TIS for further details.

Depending on the specifics of each development it is likely a road network will need to be established. IPWEA guidelines and local authority requirements will govern the minimum design standards for any new roads.

4.0 CONCLUSION

It appears from an engineering perspective that the site can be developed and is relatively constraint free.

Specifics relating to existing ground conditions and the extent of filling will be resolved during the detailed design stage. Consideration to ground water separation, flood clearance and site classifications will need to be made when setting lot levels. Due to the expected ground conditions, it would be prudent to schedule any earthworks or installation of deep services during the latter parts of Summer and Autumn.

The development layout of the western two lots will need to consider the location and elevation of the existing DN1500 drainage line. Any future lots will need to be positioned clear of this drain.

Points of supply can be established for the majority of services, the specifics of these will be resolved at detailed design stage.

The Water Corporation have confirmed the existing water network will require an upgrade as part of the development of the site. As land ownership is segmented, it is likely the site will be developed across several stages. The Corporation have confirmed their network will have spare capacity for the earlier stages with the upgrade occurring as part of the development of the latter stages. The timing and extent of the upgrades will be resolved during the standard detailed design process.

Porter
Consulting Engineers

Level 2 Kishorn Court
58 Kishorn Road
Mount Pleasant 6153
Western Australia

PO Box 1036
Canning Bridge 6153
Western Australia

Tel: (08) 9315 9955
Email: office@portereng.com.au

www.portereng.com.au