

VicUrban

**Werribee Employment
Precinct**

Primary Services
Infrastructure

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Appendix A

Primary Services Infrastructure Drawings CS01 - CS08

List of Acronyms

RC – Reinforced Concrete

VC – Vitrified Clay

MS-FBPE- Fusion Bonded Polyethylene

AC- Asbestos Cement

MPVC- Modified Polyvinylchloride

UPVC-T Unplasticised Polyvinylchloride

1 Introduction

VicUrban has engaged Arup to undertake a services infrastructure desktop study for the Werribee Employment Precinct (WEP). The aim of the study is to investigate and describe the existing primary services within and adjacent to the study area.

1.1 Study Scope

Key tasks undertaken as part of the study investigation include:

- A Dial Before You Dig (DBYD) application to relevant service providers and Council
- A review of DBYD information, and electronic CAD files of services layout (when provided)
- A review of any other relevant information on site services infrastructure supplied by VicUrban.
- A site inspection to assist the correlation of DBYD information with available base plans
- Mapping and description of the existing services infrastructure, including: sewerage, water supply, telecommunications, gas, electricity, storm water drainage and flood management (including drainage structures). The mapping undertaken for this report can be made available in both ArcGIS and CAD format for co-ordination purposes.
- Production of this report that briefly outlines the scope of work undertaken, documenting any key assumptions and qualifications applying to the data given the processes employed, and key issues likely to be relevant to further infrastructure services investigation.

No detailed existing conditions feature survey of the site is available. Mapping of the services uses the base map already prepared for the site, which is also being made available for use by other consultants in the project team. In this way the services infrastructure can be fully co-ordinated with other plans produced in the masterplanning process.

This services report is provided to assist with the strategic planning for the site. The study reports on primary infrastructure only, that is, mains or trunk services and assets. At this stage the work is directed towards identification and location of existing trunk services, and not addressing the condition of the assets or their capacity to support the possible future development proposal.

1.2 Key Assumptions & Qualifications

The following report and its subsequent use is based on the following key assumptions:

- Mapping is based on information supplied by the relevant service providers in response to the DBYD request and not upon a feature survey or services proving.
- Any asset location information received electronically (CAD or GIS format) is assumed to be spatially correct.
- The locations and alignments of the services assets shown on the plans are to be taken as indicative only.
- Only flood management infrastructure has been recorded. Flooding limits have not been recorded.

2 Primary Services Infrastructure

The primary services infrastructure found within the study area include:

- Sewer
- Potable Water
- Recycled Water
- Telecommunications
- Oil Transfer
- Natural gas
- Electricity
- Stormwater Drainage and Flood Management

The assets associated with the above services have been mapped onto a single drawing, CS01, with an aerial photo background. This plan is intended for general reference only and to highlight to VicUrban those areas of the proposed development that do not contain major services infrastructure.

Each primary service has also been mapped individually on drawings CS02 to CS08 to compliment the descriptions below. The plans have been produced with only a cadastre background for clarity.

2.1 Sewer

Sewer systems within the study area are owned/managed by two providers:

- City West Water (CWW)
- Melbourne Water (MW)

The sewer systems are shown on plan CS02.

2.1.1 City West Water

CWW sewer assets are found throughout the study area in varying sizes:

- The larger section of sewer Infrastructure runs through the site alongside North Road – South Road on the western side of the site. (750mm RC to 925mm RC)
- Aligned north - south to the north east of the site between the Princes Freeway and Sneydes Road. (660mm MS-FBPE - Point Cook Rising Main Section 1)
- Alongside Hoppers Lane adjacent to Victoria University and between Victoria University and Werribee Mercy Hospital (225mm VC). Note that this infrastructure is locally connected to the Melbourne Water mains sewer system.
- Adjacent to the police station on the Princes Freeway (600mm VC)
- Smaller infrastructure servicing local sewer connections for existing dwellings exist to the north of the proposed site (225mm VC), and on the tip of the western boundary (375mm RC).

2.1.2 Melbourne Water

The Melbourne Water sewer main (Western Trunk Sewer) runs through the centre of the site from the north-east corner to the centre of the south-west boundary. The diameter of this pipe is 4500mm. Within the southern part of the study area the sewer is only partly buried with a bund of earth formed over the top. This bund forms part of a retarding basin boundary (refer section 2.8.2 and plan CS08).

The sewer passes through a pump station to the north of the study area (refer Photo 1). The sewer is raised approximately 7.0m in level at the station. Note that a standard easement width does not exist and future planning should be undertaken in consultation with Melbourne Water. However, as a guide only, the width of the land owned by Melbourne Water containing the Western Trunk Sewer is in the order of 40m.



Photo 1

Melbourne Water also manages an abandoned, heritage listed, brick lined sewer that runs adjacent to the western side of the Princes Freeway (refer Photo 2). This sewer is referred to as the Main Outfall Sewer and has a diameter of approximately 3500 mm. The sewer is either open, closed or buried depending on its depth and location. The closed part of the sewer appears as mounds in the landscape. This abandoned sewer is located within the road reserve, situated between the Federation Trail cycle path and the freeway. VicRoads currently controls this land as part of the road reserve.



Photo 2

2.2 Potable Water

Potable water infrastructure within the study area is owned/managed by City West Water. The potable water systems are shown on plan CS03.

There are several water mains within the vicinity of the study area:

- Along the Princes Highway adjacent to the project area (300mm UPVC-T)
- Along the entire length of the Princes Freeway in the project area. Note that this main is shut due to a leak located under the freeway. The main is shut at Old Geelong Road and at the Main Outfall Sewer pending zone boundary changes.
- Along the entire length of Hoppers lane (150mm AC)
- South of the project area connecting local housing (150mm UPVC-T)

2.3 Recycled Water

Recycled water infrastructure within the study area is owned/managed by City West Water. The recycled water system is shown on plan CS03.

A recycled water main (225mm MPVC) enters the site near the intersection of Princes Freeway and Duncans Road, originating from a treatment facility located to the south of the study area. The main parallels the alignment of the Western Trunk Sewer as far as Hoppers Lane, where it turns north to the Princes Highway. The main crosses the highway at this point to service residences to the north of the study area. One part of the main does branch into the sewer pumping station for future use.

2.4 Telecommunications

Telecommunication systems within the study area are owned/managed by the following providers:

- Telstra
- Optus
- VerNet
- Local Radio

The existing telecommunications infrastructure is shown on plan CS04

2.4.1 Telstra

Primary Telstra infrastructure comprises of existing underground optic fibre cabling along the northern boundary of the site, running on both sides of the Princes Highway. This section of cabling extends approximately 1Km into Sneydes Road from the west, the same length into Hoppers Lane from the north, and extends into the sewerage pump station from the north. Optic fibre cabling also enters the development site from the south along Hoppers Lane, connecting to the telecommunications tower near the Princes Freeway (refer to Photo 3).



Photo 3

2.4.2 Optus

Optus underground optic fibre cabling exists along the northern boundary of the site, running on the north side of the Princes Highway. The cable crosses the highway away from the study area at Old Geelong Road

2.4.3 VerNet

Vernet underground optic fibre cabling is present on the site and forms a triangular shaped network bounded by Hoppers Lane, Sneydes Road and the Princes Highway.

2.4.4 Local Telecommunications

A local radio station building and two transmission masts are located near the northern end of Hoppers Lane. The site is accessed from the road leading to the Melbourne water Pumping Station.

2.5 Oil Transfer – Shell Australia Pty Ltd

Shell Oil owns/manages a number of transfer pipelines within the study area as shown on drawing CS05. There are multiple oil pipelines both along the boundary and within the study area.

Along the eastern side of the Princes Freeway exists an 8" WOPL (White Oil Pipeline) and a 16" ALT-GEE (Altona – Geelong) pipeline. In addition, along the northern boundary of the site exists a second 8" WOPL pipeline. Signs warning of the pipeline presence is evident on site (refer Photo 4). There is no defined easement in place for the pipeline but 3m clearance each side of the pipe is the standard (minimum) regulatory width for any construction. However Shell Oil advise that greater width is desirable for ease of access.



Photo 4

2.6 Natural Gas

Natural gas infrastructure within the study area is owned/managed by the following providers:

- APA GasNet
- Tenix

Gas asset information is shown on drawing CS06.

2.6.1 APA GasNet

A major gas transmission pipeline exists within the site along the western fringe of the Princes Freeway, with an established easement width of between 24.38 to 19.82 m. The pipeline is 400mm in diameter and is under very high pressure (in excess of 2760kPa). The transmission pipeline is generally not considered for commercial use. The Werribee City Gate (Old Sneydes Road Gate – refer Photo 5) is located to the west side of the Princes Freeway, opposite the Western Melbourne Institute of TAFE. The city gate functions to reduce the transmission pressure for suburban distribution.



Photo 5

2.6.2 Tenix

Tenix owns/manages the high pressure gas distribution network within the study area. The high pressure mains vary in size and pressures from 140kPa to 515kPa. Existing Tenix gas mains are found at the following locations:

- Adjacent to the study area, along the northern boundary - 150mm underground main.
- Along Hoppers lane. Two underground high pressure mains run parallel to the road - 50mm and 100mm diameter. The 100mm diameter main terminates at Victoria University of Technology while the 50mm continues further along the road.
- Along Sneydes Rd in the form of an underground 50mm diameter high pressure main
- 150mm diameter main between the Werribee City Gate and Hacketts Road.

2.7 Electricity

Powercor is the only service provider supplying electricity within the study area. Asset information is shown on drawing CS07.

Powercor have several high voltage overhead and underground electricity assets on each of the roads adjacent to the site. There is also a number of pole and ground mounted sub-stations, which are highlighted on the services drawing. Electricity assets are located as follows:

Overhead Cables – 22kV and 66kV

- Along the frontage of the Princes Highway
- Part way along Sneydes road - from the Princess Highway to past the North Road-South road intersection
- Along the length of North Road and part way along South Road
- Along the length of Hoppers Lane

Underground Cables – 22kV

- Relatively short lengths of underground cable supplying electricity from the overhead lines to the major facilities within the site - Victoria University, Victoria University Sports Complex, Mercy Hospital, and DPI Werribee.

2.8 Stormwater Drainage and Flood Management

2.8.1 Wyndham Council

Wyndham Council has advised that their stormwater infrastructure assets within the study area are minor in nature. This includes infrastructure such as shallow, unlined swales and pits at the roadside, and small diameter culvert crossing below property access points. These features have not been reported on, in accordance with the scope of this study.

2.8.2 Melbourne Water

The major stormwater and flood management infrastructure within the study area is owned/managed by Melbourne Water. The principle waterway runs centrally through the site from north-west to south-east and comprises of an open channel that is concrete lined for part of its length. Two piped drains connect to this channel along its northern reach. The waterway acts as the primary discharge point for adjacent land and minor drainage systems.

The primary Melbourne Water stormwater assets are shown on drawing CS08.

The major flood management feature within the study area is the Sneydes Road Retarding Basin. The boundary of the basin is shown on drawing CS08. It should be noted that south-eastern boundary is formed by a bund over a large sewer main (refer to section 2.1.2).

The following section provides basic details of the structures associated with the main waterway channel - the numbers are directly referenced to drawing CS08.

1



Headwall structure on south side of the Princes Highway. Discharge point for a 1.2m diameter underground pipe and a 1.8m diameter overflow pipe.

2



Culvert structure at Sneydes Road. Twin box culverts 3.0m wide x 1.8m deep. Discharge point for 1.2m diameter Melbourne Water drain (lower right of image).

3



Culvert structure below cycle path adjacent to Princes Freeway. Twin box culverts 1.8m wide x 2.0m deep. The culverts are constructed across the abandoned Main Outfall Sewer.

4



Twin bridge structures below the Princes Freeway. Clear span approximately 4.8m.

5



Single bridge structure below Hoppers Lane. Clear span approximately 8.7m.

6



Single bridge structure below Hacketts Road at study area boundary. Clear span approximately 8.7m.

7



Irrigation channel at boundary of study area.

8

No image – large boundary

Sneydes Road retarding basin.

9

No image – within private property

Siphon arrangement for continuity of the waterway below the main trunk sewer, comprising twin 1.8m diameter RC pipes.

10



Concrete floodway, 30.0m wide. Bund over trunk sewer forming part of the Sneydes Road retarding basin shown to each side.

3 Conclusion

Based on the initial services investigation there appears to be provision of all major services adjacent to, or within the study area. It should be noted that there are several key assets within the development area. These are unlikely to be easily relocated or modified and may require further investigation. These key assets include:

- APA GasNet high pressure transmission main
- Abandoned Main Outfall Sewer – heritage listed
- Pumping Station
- Melbourne Water main sewer – 4500mm in size that indirectly forms part of a flood control system.
- Shell Oil pipelines
- Open channel (waterway) running through the site
- Sneydes Road retarding basin

Investigation work should also determine the capacity of the existing services infrastructure, any planned upgrades to the system, and what additional augmentation may be required to service the proposed development.

This investigation work should be undertaken further into the planning process through liaison with the relevant service providers when the development footprint and types of property use have been established.

Stormwater mitigation should be given serious consideration since the site development is likely to significantly increase hardstand (impervious) areas, and hence the peak flow and volume of water generated from the catchment. There is likely to be a significant impact on the existing Sneydes Road retarding basin.