PRECINCT STRUCTURE PLANS 53 AND 54

Service Feasibility Report

January 2013
Title: Servicing Feasibility Report – Precinct Structure Plan areas 53 and 54

Author: Mark Fleming

Checked: Mark Walker

Project Manager: Mark Fleming

Synopsis: Report into the serviceability of the proposed Precinct Structure Plans 53 (Thompsons Road) and 54 (Clyde Creek).

Reference: 1200602

Client: GAA

Revision Table

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<tr>
<td>A</td>
<td>Service Feasibility Report</td>
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<td>B</td>
<td>Report revised following client review</td>
<td>18/01/2013</td>
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1 EXECUTIVE SUMMARY

This report discusses the availability of services to the proposed Precinct Structure Plan areas 53 and 54.

1.1 Findings

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads (Council/VicRoads)</td>
<td>Available</td>
<td>The arterial road network will be upgraded in a 1.6km grid pattern with collector roads located within that network. Intersections will be signalised where required.</td>
</tr>
<tr>
<td>Sewer (South East Water)</td>
<td>Available</td>
<td>The area will be serviced by an interim strategy of gravity sewers, pump stations and rising mains. The system can be designed such that it caters for options for the ultimate case, such as a treatment plant or continued pumping.</td>
</tr>
<tr>
<td>Electricity (SP Ausnet)</td>
<td>Available</td>
<td>Electricity is available to this area, SP Ausnet will need to develop a plan to support increased demand due to development.</td>
</tr>
<tr>
<td>Gas (Envestra/APA Group)</td>
<td>Available</td>
<td>Gas supply is available to this area with the extension of existing infrastructure.</td>
</tr>
<tr>
<td>Telecommunications (NBN)</td>
<td>Available</td>
<td>The subject site is within the NBN Co footprint.</td>
</tr>
<tr>
<td>Potable Water (South East Water)</td>
<td>Available</td>
<td>SEW indicate that the area can be served with extension of existing mains or augmenting supply from the Melbourne Water Main in South Gippsland Highway.</td>
</tr>
<tr>
<td>Re-use Water (South East Water)</td>
<td>Unknown</td>
<td>South East Water is yet to make a determination on whether the area will be supplied with re-use water.</td>
</tr>
<tr>
<td>Main Drainage (Melbourne Water)</td>
<td>Available</td>
<td>The GAA/Melbourne Water drainage strategy needs to be progressed to form into a drainage scheme to fund proposed works.</td>
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</table>
2 INTRODUCTION

2.1 Introduction

Beveridge Williams has been engaged by GAA to provide preliminary advice with respect to the provision of the necessary infrastructure required to service the proposed PSP areas 53 and 54, respectively known as Thompsons Road and Clyde Creek.

An aerial photograph of the site is shown in Figure 1.

2.2 Site Location and Description

The area consists of numerous large properties, bounded by Ballarto Road to the south, Thompsons Road to the north, Berwick-Cranbourne Road to the west and Smiths Lane/Bells Road to the east. The site is located approximately 50 kilometres south-east of the Melbourne CBD.

The area is being transformed from agricultural/rural uses to a range of urban uses. The subject area borders the completed and approved Cranbourne East PSP to the west and the Clyde North PSP to the north.

The combined PSP areas are approximately 1,848 ha in size. The land is currently used for agricultural purposes and encompasses a number of farming residences and associated farm infrastructure including sheds and dams. A former quarry also exists within PSP 53.

The topography of the site would be described as flat to gently rolling with a number of formalised drainage channels running diagonally through the area, from the north-west to the south-east. The main drainage channel is known as Clyde Creek. Clyde Creek discharges to the Westernport Catchment. The northern part of the site falls toward the north and into the Port Phillip catchment.

Figure 1 - Site location plan
2.3 Assumptions and Limitations

This project has been scoped and undertaken as a desktop study to provide preliminary advice on the servicing requirements for the new growth area. There are limitations to the level of detail provided given the nature of this review. Desktop studies are reliant upon information made available from service authorities; with assumptions of the accuracy and completeness of the information provided. Further assessment and confirmation of details provided will be necessary during the planning and design stages.

The GAA has already released a discussion paper on the proposed land uses for the area, and has released some preliminary advice regarding land use locations and development densities. Some of the service authorities have made their own assumptions on development densities which differ from those of the GAA. If figures different to the GAA figures are used, they will be identified as such.
3 SERVICES

3.1 Investigation

Our investigation into the availability of services included obtaining information relating to existing services in the area along with requirements to service the area. A number of service authority responses have been received (see Appendix A for copies of the service authority responses) however due to the status of the proposed PSPs the advice received has been of a preliminary nature. Our servicing advice is based on our own research and advice, knowledge of the region and likely requirements of authorities.

3.2 Roads

The road network will consist of a north-south, east-west grid utilising the existing road grid as closely as possible, but departure from that is required at some locations due to the existing road network within the PSP areas, and to link to the proposed road network within the Clyde North PSP area.

The East-West road network will be formed by two primary and two secondary arterials. Thompsons Road and Pattersons Road are proposed to be the primary arterial roads, each a 6 lane divided carriageway road requiring an ultimate road reserve width of 41 metres. Hardys Road and Ballarto Road are the secondary arterial roads, each a 4 lane divided carriageway requiring a road reserve width of 34 metres.

The north-south road network will be formed by two primary arterial roads, and one secondary arterial road. Berwick-Cranbourne Road and Soldiers Road are the primary arterial roads, each a 6 lane divided carriageway road requiring an ultimate road reserve width of 41 metres. Tuckers Road is the secondary arterial road, it will be a 4 lane divided carriageway requiring a road reserve width of 34 metres.

The lower order of road network will be made up of a series of collector roads generally located midway between the collector roads, forming and 800 metre grid pattern throughout the PSP areas.

As the arterial roads are substantially located on existing road reserves, widening of the reserves is required. The existing Road reserves are based on a width of approximately 20.12 metres (1 chain). As a general rule, widening will occur to the South and the East of the road reserve. There will be some exceptions to this, including Pattersons Road at the existing sports oval.

3.3 Sewer

South East Water (SEW) is the responsible authority for sewer services in the area.

The ultimate strategy for servicing the area is not yet finalised but may include the development of a sewerage treatment plant to the south east of the growth area. A decision on that cannot be made until a decision is made on the use of recycled water for the area (see below), however, South East Water does have a strategy for servicing the area in a timely manner. The interim sewer provision strategy proposed is to transfer sewage from the subject area to existing infrastructure in the surrounding regions, ultimately returning to the Eastern Treatment Plant in Carrum. South East Water advised that the construction of these interim assets would be considered as reimbursable works.
The key constraints relating to sewerage options arise due to topography, locality and existing sewer capacity. No effluent discharge is permitted south of the natural ridge line separating the Port Philip and Western Port catchments into waterways which eventually discharge into Western Port. If the wastewater is not reused, the effluent must be transferred to the Port Phillip catchment.

The existing sewers in the adjacent developed areas have substantial, but not unlimited, spare capacity to cater for flows from areas outside their initial design catchments. The main issue in this regard is the location of the appropriately sized sewers. The Hallam Valley Main Sewer to the north has a suitable connection point 12km from PSP 53, and the Cranbourne Main Sewer to the West has a suitable connection point approximately 18km from the Western boundary of PSP 54.

A network of gravity sewers will be required to convey sewage to a substantial series of pump stations and rising mains, allowing waste to be transferred into the existing sewers. The cost to construct this must be met by developers initially, although they will ultimately be reimbursable works.

Clyde Township is situated within PSP 54, and it is anticipated that sewerage reticulation for the township will progress along with the development of sewer infrastructure for PSP 54.

Refer to Appendix B for the indicative sewer outfall layout.

### 3.4 Potable Water

South East Water is the responsible authority for water assets in the area. The water supply available from existing South East Water services in Cranbourne East and Clyde North is limited and will not allow for significant development of the PSP areas.

Augmentation of the water supply will be required prior to any substantial development. From the north, a water main connection could be extended from Thompsons Road PRV, 900m West of Berwick-Cranbourne Road, or depending on timing, a suitable connection from Grices Road PRV, through a number of future Clyde North developments to Thompsons Road may be available.

To the West, a water main could be extended from Craig Road, Junction Village, along Ballarto Road to the area, a distance of approximately 2km.

It is anticipated that reticulated potable water mains will be extended along with the extension of the road infrastructure ensuring individual developments are serviced in a timely manner.

The Victorian desalination pipeline runs through PSP 53 along Pound Road to the north of PSP 54. There are no plans for connection of the PSP areas to the desalination pipeline at this stage. Refer to Appendix C (Existing Infrastructure Plan) for the desalination pipeline location.

### 3.5 Recycled Water

South East Water is currently working with Melbourne Water on an integrated water management plan for the area. The primary question to be resolved is whether the area will be serviced with recycled water. South East Water is due to finalise a report on this issue by January 2013.

### 3.6 Stormwater Drainage

Melbourne Water is the catchment management authority for the subject site. The GAA and Melbourne Water have been developing a drainage strategy for the area which gives consideration to many complex issues such as water quality treatment and retention, habitat creation and
protection and discharge to Western Port. The Casey Growth Area Thompsons Road PSP 53 and the Clyde Creek PSP 54 SWMS (draft) by Neil Craigie P/L should be considered for more detailed information.

Once finalised, work will need to begin on estimating and apportioning costs for the infrastructure, and a number of drainage schemes may be appropriate.

Refer to Appendix D for the Major Drainage Layout indicating the various treatments and conveyance within the area.

### 3.7 Electricity

Main electrical transmission lines and an electrical substation are located in PSP 53, refer to Appendix E (SP Ausnet Electrical Asset Plans).

SP Ausnet is the electrical authority for the area. Electrical supply is available throughout the PSP areas via light duty conductors (power lines). Planning will need to be completed to determine the extent of additional conductors required to support demand.

Under SP Ausnet’s supply policy guidelines, the Developer will be required to pay for the cost of extending/upgrading the power supply if required. SP Ausnet currently rebate the developer contribution for low voltage (LV) works at a rate of $980 per lot while the rebate available for high voltage (HV) works correlates directly to the construction costs incurred. There are existing assets on the properties that will need to be removed at the Developers expense.

To develop the site, SP Ausnet would require the developer to provide a number of electrical substations requiring reserves to accommodate the infrastructure. The cost of the sub stations and internal high voltage works will be reimbursable, within the HV rebate, but the provision of land for sub-station reserves is not.

### 3.8 Gas

An existing 450mm gas main runs parallel to Thompsons Road, approximately 800m to the north of PSP 53. Gas supply for Clyde township is provided from the gas main via Tuckers Road. Refer to Appendix F (APA Group Gas Asset Plans) for details of the existing gas reticulation services in the area.

Envestra/APA Group has advised that gas supply is available to this area but will be subject to an evaluation once a formal application has been received. The servicing strategy for Envestra/APA Group will be dependent upon where development starts. There are no expected delays to development caused by gas supply.

### 3.9 Telecommunications (Fibre Optic)

Telecommunications could be provided by NBN Co. The site is within the NBN Co servicing footprint but works have not yet commenced for connection to the NBN.

Alternatively, the developers may wish to supply telecommunications via another provider. That is a feasible option for the developer, which will require a commercial decision to be made at the time of development.
4 CONCLUSION

The PSP areas 53 and 54, known as Thompsons Road and Clyde Creek are currently progressing. The service authorities are aware of progress within the area and are planning to address the upcoming demand for services.

The extension of all services can be achieved through known and proven techniques. The area is suitable for development as proposed and there is little concern about the ability for services to be constructed in a timely manner.

The major concern is the ability to fund the required infrastructure. Through traditional delivery models, developers are required to fund the infrastructure up front and be reimbursed at a later time. Road, drainage and sewerage infrastructure will require very large investments, and the demand for the services will exist from the outset, while the collection of funds from traditional means such as DCP levies and drainage scheme levies will mean that funds will not be able to be collected and distributed quickly. Service authorities are currently considering this issue now to avoid blockages to efficient development of the area.

Beveridge Williams & Co.

January 2013
APPENDIX A.  Advice from Service Authorities
Mark Walker

From: Giannone, Luciano <Luciano.Giannone@sew.com.au>
Sent: Monday, 14 January 2013 3:08 PM
To: Mark Walker
Cc: Mark Fleming; Chapman, Andrew; Aidonopoulos, Nick; Westcott, James; Gava, Giuliano; Balette, Charles
Subject: RE: Clyde North - Preliminary Servicing Strategy
Attachments: Appendix A - 1200602 Sewer Strategy Catchments_REV P2.pdf

Mark,

Please note our response in red below.

Regards

Lou

Luciano Giannone - Land Development Major Project Coordinator
20 Corporate Drive, Heatherton VIC 3202  www.southeastwater.com.au
Telephone: 9552 3251 Facsimile: 9552 3410

Go paperless and manage your account online at mysoutheastwater.com.au

From: Mark Walker [mailto:walkerm@bevwill.com.au]
Sent: Wednesday, 9 January 2013 3:01 PM
To: Giannone, Luciano
Subject: Clyde North - Preliminary Servicing Strategy

Hi Luciano,

As discussed, I am finalising our report for the Growth Areas Authority on the servicing strategy for Clyde North PSP areas 1053 and 1054. A plan of the areas is attached.

With reference to discussions to date regarding this area, could you please confirm the following?

1. The most suitable connection points for sewerage are Hallam Valley Main Sewer 12km to the north, and Cranbourne Main Sewer 18km to the west.
   - That is correct & was discussed with Mark Fleming in our December meeting.

2. A network of pump stations and rising mains will allow waste to be transferred to the main sewers. These will initially be constructed by the developer, but will ultimately be reimbursable works.
   - The sewer infrastructure works will be developer driven. Any assets that are defined as “Shared” will be reimbursable in accordance with the policy at the time of application/ construction of the asset.

3. Clyde township does not currently have sewer reticulation. Would this be incorporated as urban development in this area progresses?
   - This would be considered part of the Urban development once the PSP’s have been approved. Again the construction of the sewer reticulation works would be developer driven.

4. The most suitable connection points for water supply are Thompsons Road or Grices Road in the north, and Craig Road in the west.
   - The initial supply for the northern portion of the growth area is to be sourced from Thompsons Rd PRS &/or Grices Rd PRS. The supply from the west is to be sourced from Sth Gippsland Hwy/Cameron St.
Mark Walker

Subject: FW: Preliminary Servicing Advice
Attachments: clyde.pdf; clydetwo.pdf

From: Harry Iliadis [mailto:Harry.Iliadis@sp-ausnet.com.au]
Sent: Wednesday, 9 January 2013 6:20 PM
To: Mark Walker
Cc: LDL Design; Shane Carr
Subject: RE: Preliminary Servicing Advice

Mark

We have sent your office advise on a portion of the same area and I will forward that on to you. As well as that I am sending you the asset information, you can zoom in and out and see what assets we have.

Generally we have light conductor and you will need to advise us on the specific areas that you wish to develop so that we can give you more accurate information.

Harry Iliadis
Design Engineer
SP AusNet – Lilydale
PO Box 202 Lilydale Vic 3140
Phone: 03 9237 4467
Mobile: 0407 254 758
Fax: 03 92374533
Email: harry.iliadis@sp-ausnet.com.au

mission zero
zero injuries, zero compromise, zero tolerance, zero impacts
Mark Walker

Subject: FW: Preliminary Servicing Advice
Attachments: img-109140218-0001.pdf

From: Koedijk, Paul [mailto:paul.koedijk@apa.com.au]
Sent: Wednesday, 9 January 2013 1:57 PM
To: Mark Walker
Cc: Free, Julieanne
Subject: RE: Preliminary Servicing Advice

Mark

Thank you for your inquiry.

As per previous advice on past subdivision proposals, Natural Gas reticulation would be available to the proposed area and as APA Group is always happy to assist with a detailed evaluation when an formal application is received with a proposed staging plan.

For you records attached is a district plan showing existing natural gas reticulation for the area.

Note: While there may be existing natural gas assets in the area, it does not infer that these assets will support the proposed development and it is essential that any proposed residential development plans be referred to APA Group for evaluation prior to works commencing.

Regards

Paul Koedijk
Project Manager

APA Group
Planning & Engineering
1 Wood St Thomastown Vic 3074
PO Box 111 Thomastown Vic 3074

Direct: 03 9463 8275
Mobile: 0417 088 649
Fax: 03 9463 8219
Email: paul.koedijk@apa.com.au
www.apa.com.au
APPENDIX B. Indicative Sewer Outfall Layout
APPENDIX C. Existing Infrastructure Plan
APPENDIX D. Main Drainage Assets Plan
APPENDIX E.       SP Ausnet Electrical Asset Plans
APPENDIX F. APA Group Gas Asset Plans
USERS OF THIS PLAN PLEASE NOTE
APA GROUP has taken care to ensure that the location of the gas mains shown on this plan/document are accurate. However, some variations from records do exist and complete accuracy cannot be guaranteed. APA GROUP shall not be liable to pay any damages or answer any claim where there exists any error on this plan.
In all instances it is essential that the position of the pipes be verified by hand excavation.
Please destroy plan/document on completion of job so they will become obsolete.
Records of gas mains and services are continually updated and it is recommended that copies of this plan contain:

Name: [Redacted]
Date of Issue: 9/1/13
Telephone: [Redacted]

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(Gas Industry Act 2001)