PSP1202 Lindum Vale Precinct Structure Plan

Victorian Planning Authority

Background Report

August 2017

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1 INTRODUCTION

The Victorian Planning Authority (VPA), in consultation with the Hume City Council, is preparing a Precinct Structure Plan (PSP) to facilitate the future development of the Lindum Vale precinct.

A PSP is a 'big picture' plan that sets the vision for developing new neighbourhoods and is the primary plan for guiding urban development in the growth areas of Melbourne. It defines the overall urban structure of new communities, including the services and facilities required to support the community. The Lindum Vale PSP will apply to approximately 144 hectares of land, in Mickleham. This precinct will be planned to ultimately accommodate approximately 1,500 homes for an expected population of 4,200.

The precinct is included in the Northern Growth Corridor Plan which is a strategy for long term development in the northern corridor of Melbourne. The Northern Growth Corridor Plan identifies population growth over this time to increase by 260,000 – 300,000 residents and employment to increase by approximately 83,000 – 105,000 jobs. The VPA has completed a number of background technical studies for the precinct. The purpose of this document is to provide a summary of the findings of these reports and to highlight issues and opportunities to be considered in the preparation of the PSP.

Whilst Lindum Vale is comparatively a small PSP area it is spatially important in the context of the future growth of Mickleham and surrounds. The Lindum Vale PSP area connects the existing residents of Mickleham, the approved Merrifield West PSP area and the planned Craigieburn West PSP area.

1.1 Metropolitan Context

The Lindum Vale Precinct is located in the City of Hume. The precinct is situated approximately 28 kilometres north of Melbourne's CBD. The PSP area is bound bounded by Mount Ridley Road to the south, Mickleham Road to the west, the Merrifield West PSP area to the north and an existing rural living residential estate to the east.. The Northern Growth Corridor Plan identifies the PSP area to be a residential community that is on the western perimeter of the Urban Growth Boundary (see plan on following page).

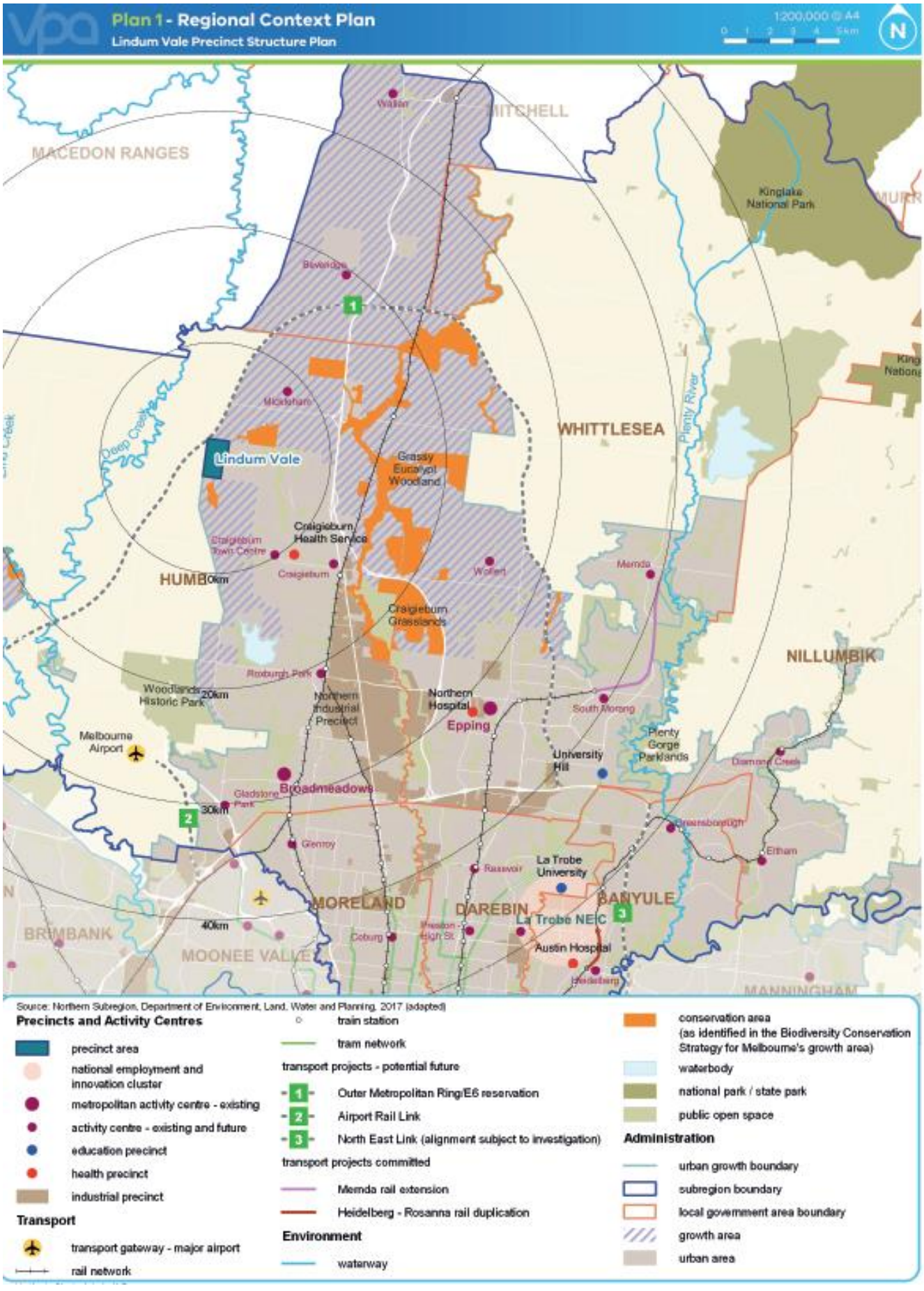

Figure 1 - Regional Context Plan

1.2 Current Planning Provisions

The PSP area is currently zoned Farming Zone.

Schedule 8 of the Development Plan Overlay applies to the entirety of the site. Schedule 11 of the Environmental Significance Overlay applies to 1960 Mickleham Road and 1920 Mickleham Road, Mickleham. 2040 Mickleham Road, Mickleham is partially subject to Schedule 5 of the Environmental Significance Overlay.

1920 Mickleham Road is subject to Schedule 36 of the Heritage Overlay relating to 'Parnell's Inn'.

1960 Mickleham Road is subject to Schedule 2 to the Public Acquisition Overlay (PAO) which relates to the future widening of Mount Ridley Road. 2040 Mickleham Road, Mickleham is subject to Schedule 3 of the PAO. This PAO is for the planned Outer Metropolitan Ring (E6).

2 TRAFFIC AND TRANSPORT

There is no existing road network within the precinct. There is a previous subdivision layout for the precinct however, it was never enacted upon and subsequently expired. Cardno has undertaken the traffic and transport assessment for the Lindum Vale PSP. The report assessed the anticipated traffic and transport implications of the proposal. It considered the existing and proposed road, bicycle and pedestrian provisions in the area, traffic growth and the implications from the development to the adjacent precinct structure plan areas (particularly that of Merrifield West PSP).

2.1 Cardno Report Overview

The assessment assumed that the subject site would achieve approximately 1,600 residential lots with a small local activity centre. It adopted a peak hour traffic generation rate of 0.85 vehicle movements per hour for standard residential lots, or approximately 8.5 vehicle movements per day per lot (as per the traffic assessment undertaken for Merrifield West PSP). From this assumption, it is assumed that the proposed development would generate 13,600 vehicle movements per day, inclusive of 1,360 vehicle movements in each peak hour. Of these movements, it is assumed that in the AM peak hour 20% of movements are arrivals and 80% departures and in the PM peak hour these figures are reversed.

To determine the impacts of the additional traffic associated with the development to the surrounding road network the external signalised intersections were assessed using the SIDRA intersection modelling software package. The SIDRA analysis was undertaken for future proposed intersections for the Lindum Vale PSP for the interim (2031) and ultimate (2046) design periods for the following intersections:

- Mt Ridley Road / Mickleham Road
- Mt Ridley Road / Connector Boulevard (Site Access)
- Mickleham Road / Connector Road (Site Access)

A SIDRA assessment was also undertaken for the Merrifield West Intersections for the interim (2031) and ultimate (2046) design periods:

- Donnybrook Road / Connector Boulevard (IT06)
- Donnybrook Road / Collector Road (IT05)
- Donnybrook Road / Collector Road (IT04)

2.2 Outcomes and Recommendations

The SIDRA assessment confirmed that both the interim and ultimate post development scenarios will satisfactorily accommodate the additional traffic and motorists will experience manageable queues and delays.

As a result the report confirmed that the proposed development will add a relatively low level of traffic to that already considered as part of the Merrifield West PSP and will not create adverse traffic effects on the surrounding roadwork, and already approved road infrastructure.

3 TREE ASSESSMENT AND ABORICULTURAL REPORT

Biosis has undertaken a tree assessment and arboricultural report in 2014. It should be noted that this report is separate from a biodiversity assessment. A tree assessment inspects the trees in the precinct and determines their age, condition, health, structure, retention value and useful life expectancy. The retention value does not consider the biodiversity values of the tree which includes the rarity of the tree species and its potential to provide habitat to native fauna.

3.1 Biosis Report Overview

Biosis was able to access all properties in the Lindum Vale precinct and 273 individual tress and 14 tree groups were assessed. The sites were initially aboriculturally assessed in March 2014 with a follow-up assessment carried out in December 2014. Prior to the March 2014 assessment, a fire had affected the majority of trees on the site.

3.2 Outcomes and Recommendations

The majority of trees assessed were assigned retention values of Low or None due to fire damage and/or poor structure. Trees with poor structure typically displayed multiple past limb failures. The likelihood of trees surviving which were severely fire affected was estimated at the time of the first assessment and were reassessed nine months later. While some of the trees received an improved health score after the second assessment, many other trees health score declined.

The report also provided guidance regarding the trees which are to be retained. These included:

- All trees retained should be provided appropriate arboricultural management including dead wood pruning. Dead wood pruning reduces the risk associated with limb failures.
- The Tree Protection Zones (TPZ) need to be established prior to the commencement of works within the site. The report has provided guidelines which related to determining the TPZ, activities which are prohibited in the TPZ and tree protection fencing.
- All trees which are to be retained should be provided an appropriate TPZ.

4 BIODIVERSITY

A biodiversity assessment has been undertaken by Biosis which included flora and fauna. This assessment is aimed at identifying flora and fauna that is protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), establishing the ecological values of the site and determining which vegetation may be removed to facilitate development on the site. This assessment is also the basis for the Native Vegetation Precinct Plan which identifies which native vegetation may be removed without a planning permit.

4.1 Report Overview

The scope of the biodiversity assessment is as follows:

- Review databases relating to flora and terrestrial fauna issues for areas within a 5 km radius of the study area;
- Conduct a field assessment of the flora and fauna values present within the site;
- Identify and map any patches of native vegetation or scattered trees within the site;
- Classify these patches of native vegetation into the appropriate Ecological Vegetation Classes and conduct a Vegetation Quality Assessment as prescribed by the relevant DELWP guidelines;
- Document any rare or threatened flora and fauna species observed or the potential for such species to occur based on the habitat present and records for rare or threatened species identified by the database searches;
- Identify the implications of state and federal biodiversity legislation, the Hume Planning Scheme (including local policies) relevant to the project including the EPBC Act, *Flora and Fauna Guarantee Act 1988* (FFG Act), Hume Planning Scheme and particularly the objectives and decision guidelines of the Environmental Significance Overlay schedule 5 and 11;
- Assess the potential impacts of the proposed subdivision in the context of the loss of native vegetation, fauna habitat and broader habitat connectivity and discuss mitigation options relevant to the proposal. Habitat connectivity should be assessed in relation to local networks of native vegetation and habitat, and in particular nearby reserves identified by the Biodiversity Conservation Strategy (BCS);
- Provide DELWP with the relevant information, as specified in the Guidelines, to produce a Biodiversity Impact and Offset Requirements Report (BIOR)
- Provide a draft report outlining the findings of the investigations, the impact of the proposed development design and the offset prescription identified by DELWP for that impact.

4.2 Outcomes and Recommendations

The biodiversity assessment identified that the site contains 16.959 ha of native vegetation with four patches that have a relatively intact cover of understorey species rather than the presence of canopy trees alone. These remnants are of the Plains Grassy Woodland which is considered endangered. One of the remnants located in the south east corner meets the classification as Grassy Eucalypt Woodland of the Victorian Volcanic Plain Community which is EPBC Act listed. The site also contains 61 scattered trees many of which are large hollow bearing trees. There are also populations of Golden Sun Moth *Synemon plana* (critically endangered in Australia) and Austral Crane's-bill (vulnerable in Victoria). The site contributes to surrounding ecological values by providing a degree of habitat continuity for more mobile fauna such as birds and bats.

The assessment identified that the development will require the removal of 6.181 hectares of native vegetation and 48 scattered trees based on the current design of the PSP. This removal of native vegetation comprises a total of 2.795 habitat hectares which is includes of 2.403ha of Plains Grassy Woodland habitat and 0.673ha of scattered trees habitat. The offset required would be 1.456 general biodiversity equivalence units. The general offset must have a minimum strategic biodiversity score of 0.274 and be located within the Port Phillip and Westernport catchment management authority area of the Hume municipal district.

5 CULTURAL HERITAGE

5.1 Cultural Heritage Management Plan Overview

A Cultural Heritage Management Plan (CHMP) has been prepared for 1960-2090 Mickleham Road, Mickleham in the Lindum Vale Precinct Structure Plan (PSP). The CHMP has been prepared in accordance with Part 4 of the Victorian *Aboriginal Heritage Act 2006* and the Wurundjeri Tribe Land and Compensation Cultural Heritage Council has considered and approved the plan in June 2015.

5.2 Outcomes and Recommendations

The CHMP has undertaken a desktop, standard and complex assessment for the subdivision of land. The following describe each assessment and the results:

Desktop Assessment

The desktop assessment involved researching and analysing the known Aboriginal archaeology of the region and local setting; a description of the ethno-history applicable to the activity area; description of the environment, geology and geomorphology of the activity area and its surrounding landscape; and a review of the land use history of the activity area, and implications for the cultural heritage sensitivity of the activity area. The assessment found that there has been no previous survey conducted in the activity area although a previously identified Aboriginal Place (a scarred tree) has been recorded. The assessment found that the geology, landform, climate, the flora and fauna resources available indicates the region would have been an area where Aboriginal people thrived**.** The research was able to conclude that artefact scatters, isolated artefacts and scarred trees are likely to be encountered in the area.

Standard Assessment

A standard assessment involved a surface survey across the site and was undertaken in October 2012. The survey examined all native trees for evidence of cultural scarring. The survey resulted in identifying 5 additional scarred trees which were placed on the Victorian Aboriginal Heritage Register. The survey also attempted to locate the previously identified scarred tree which could not be located. No surface cultural heritage material was identified during the survey, however this is likely due to poor ground visibility as opposed to a lack of cultural heritage material. As ground surface visibility was poor, the assessment was unable to determine if subsurface Aboriginal cultural heritage material was present in a subsurface context. As a result evident that a complex assessment was required.

Complex Assessment

The complex assessment consisted of a small excavation of selected areas. These small excavations found one artefact scatter which comprised of 60 artefacts and one low density artefact distribution of one artefact. The complex assessment was able to determine that Aboriginal people were actively exploiting additional resources in the area.

From these assessments, the Cultural Heritage Management Plan has provided recommendations as to who is to protect and retain the cultural heritage sites in the area.

6 POST-CONTACT HERITAGE – DRYSTONE WALLS

6.1 Drystone Wall Historic Heritage Assessment Report Overview

The assessment undertaken by the Cultural Heritage Management Group in accordance with Heritage Victoria guidelines, and referenced the Australian ICOMOS Charter for the Conservation of Places of Cultural Heritage Significance (the Burra Charter) and its guidelines. The assessment identified places of potential historic heritage significance by using criteria adopted by the Victorian Heritage Council. All drystone walls were visually inspected and were given a rating.

6.2 Outcomes and Recommendations

The report assessed all drystone walls in the area and provided ratings. The majority of the existing drystone walls have been determined to have a condition rating of Rating 1.

Rating 1 refers to wall remnants and single course walls. These were either never intended as drystone walls but are a result from the landholders piling stone from their paddocks or where a wall once existed but has been removed although the foundation stones remain. There were approximately 3804 metres of Rating 1 linear stones within the PSP.

The Rating 2 drystone walls were concentrated around Parnell's Inn and reflect property demarcation which was common in the late 19th Century. Rating 2 drystone walls are at half height but have more than 20% intact. They were highly degraded and should be rebuilt in areas of open space. There were approximately 281 metres of Rating 2 drystone walls within the PSP.

Rating 3 drystone walls are located east of Parnell's Inn and are at full height with more than 60% of it intact.

The report made the following recommendations regarding the retention of the drystone walls:

- All rating 1 stone occurrences may be removed from the PSP area. They are a product of land clearance practices and are not associated with Drystone Wall development.
- Rating 2 and Rating 3 drystone walls while intact are in a degraded state of preservation. It is critical that they are managed effectively in the future so they do not compromise public safety. It is recommended that options for removal and reconstruction of the drystone walls is considered for areas of open space.

7 ENVIRONMENAL SITE ASSESSMENT

7.1 Environmental Site Assessment Overview

Parsons Brinckerhoff undertook an Environmental Site Assessment (ESA) which involved two parts. Phase 1 was a desktop reviews and Phase 2 was a limited soil investigation. The purpose of the assessment was to assess the potential suitability of the land for residential use. In order to determine suitability the potential of near surface soil contamination from historical activities was examined as was the potential risks to site users and/or ecosystems by collecting soil samples from 32 tests pits in the precinct.

7.2 Outcomes and Recommendations

The ESA was able to determine that the history of the site indicates that it has been used for cattle grazing and agricultural activities from at least 1966. A site inspection confirmed these findings. The preliminary findings of the site investigation found the following:

- the soil profile typically comprised 0.0m to 0.4m of topsoil overlying clayey silt/silty clay overlying basalt;
- no visual and/or olfactory evidence of contamination occurred at any test pit locations;
- concentrations of contaminants at all grid and target locations were below adopted Health Investigation Level 'A' criteria (which is commonly used for soil assessment of low density residential land use);
- no asbestos was identified from samples collected; and
- the single perched water sample measured high concentrations of heavier end hydrocarbons, which may partially be attributed to organic matter noted during sampling.

In regards to determining the sites suitability, the following assessment was made:

In accordance with Ministerial Direction No 1 - Potentially Contaminated Land and with Department of Sustainability and Environment the potential contamination of the site was determined by land uses and activities. With the exception of the storage and dairy infrastructure located at 2040 Mickleham Road, Mickleham, the site has a low contamination risk.

The infrastructure associated with the dairy buildings restricted access to test the soil. Once this infrastructure has been removed, it is recommended that testing occurs. This will determine if an audit is appropriate and/or required.

2040 Mickleham Road also contains an outbuilding which is used for storage of fuel and chemicals. The report has conducted a preliminary site assessment for this and there were no contaminants of concern that would trigger requirements for an environmental audit or suggest that the site would be unsuitable for residential development. As result it is reasonable to conclude that the land will not require the inclusion of an Environmental Audit Overlay.

8 SERVICING STRATEGY

8.1 Servicing Strategy Report Overview

The Servicing Strategy for Lindum Vale PSP was completed by Dalton Consulting Engineers Pty Ltd in June 2013.The plans shown in the strategy are out of date and reflect a street layout which is not relevant to the PSP, however it does confirm that Lindum Vale will have access to all necessary infrastructure. The location of trunk services shown in the PSP are based on correspondence with the service providers. The following list outlines the services assessed in the report and the responsible authorities;

- **Sewer reticulation, Potable and Recycled water reticulation** (Yarra Valley Water)
- **Stormwater** (Melbourne Water, Hume City Council)
- **Electricity** (Jemena)
- **Gas supply** (SP AusNet)
- **Telecommunications** (NBN Co)

8.2 Outcomes and Recommendations

Sewer – Two sewer catchments are found within Lindum Vale with the majority of the site grading to the eastern catchment, and a smaller sub-catchment located on the southern boundary. The site will be served by internal gravity sewers that will discharge to a pump station constructed at the low point on the eastern boundary of the site. A rising main will be required to pump sewerage north to an outlet to a proposed gravity sewer within the Merrifield development.

Potable Water – Potable water will be supplied via a booster pump station and connection to the 375 mm main in Donnybrook Road. A secondary connection will be required to connect via another booster pump station to the water main located in Mount Ridley Road. This will link Lindum Vale to potable water tanks further west on Mount Ridley Road.

Recycled Water – Class A recycled water will be distributed to the development via a third pipe reticulation network. The external augmentation will be similar to the potable water upgrades.

Stormwater – The majority of the site grades to a low point on the eastern boundary of Lindum Vale. A constructed waterway will convey flows west to east both from the development and from external catchments to the outlet. Currently only the southern portion of the area (11.6Ha) is included the Aitken Creek Drainage Scheme. The northern catchment is not currently part of a drainage scheme.

There will be a constructed wetland required to treat the runoff and double up as a retarding basin located partially on site and partially in the neighbouring drainage reserve. Outfall augmentation works may extend up to 1 km to the east.

Electricity – An existing 22 kV electricity supply is present along Mickleham Road and Mount Ridley Road. This will require augmentation to meet the demands of the Lindum Vale development.

Natural Gas – Gas mains within the Mt Ridley road reserve will provide sufficient capacity to service the Lindum Vale development, but will need extending approximately 4km.

Telecommunications – 'Pit and Pipe' infrastructure will be constructed within the Lindum Vale development to National Broadband Network (NBN Co) standards. External trunk infrastructure and the installation of fibre infrastructure will be the responsibility of NBN Co.

9 STORMWATER STRATEGY

9.1 Stormwater Strategy Report Overview

The stormwater management strategy was prepared by Dalton Consulting Engineers Pty Ltd for the Lindum Vale development. Three stormwater strategies were assessed in the 'Lindum Vale Stormwater Strategy, Version 3' (DCE June 2015), however only one strategy was selected for this report. The strategy will require works to occur within the drainage reserve on the eastern boundary of the PSP and will be confined to a 70m wide area.

9.2 Outcomes and recommendations

The site consists of two defined catchment areas in the north (130Ha) and south (12Ha). The northern area grades east and outlets to a reserve east of the site within an existing drainage scheme; whereas the southern area grades south-east and outlets at Mount Ridley Road.

Of the three design options investigated for the retention basin in a previous report, one was selected which incorporated the following elements:

- A retention basin located below existing surface requires an embankment up to 3.4m high (0.4m above existing surface);
- Inundation levels for downstream properties to be lowered;
- Fill required to grade internal roads to the retention basin, with the exception of the north-east corner of the site; and
- The north-east corner will drain overland via existing and future roads through the neighbouring development, minimising fill.

Minor event pit-and-pipe networks will be designed for 5 year ARI events where flows from the northern catchment will drain to the stormwater treatment wetlands and the southern catchment draining to an existing discharge point at Mount Ridley Road.

Runoff treated from the northern catchment (up to the three-month ARI event) will be through a system of sediment basins and wetlands. These assets will be located within the drainage reserve to the east of the site.

Initial MUSIC modelling suggests that these assets combined will need to be approximately 3.1ha to meet BPEMG. This will be refined following investigations of WSUD during the design stages of subdivision.

DCE recommends that payment of stormwater quality contributions for the southern catchment as part of Melbourne Water's Aitken Creek Drainage Scheme will be more economical than providing on-site treatment for this portion of the site.

10 INFRASTRUCTURE COSTING STUDY

10.1 Report overview

The report prepared by Parsons Brinckerhoff, is titled 'Lindum Vale Infrastructure Costing Study,' and the consultants were engaged to develop concept designs for the intersections and road projects with the PSP as well as cost estimates for these elements. However, the report produced has not provided the costings for the infrastructure at the request of the VPA. Costings were required under Development Contributions Plans (DCP) which were payments or works in kind, facilities or services provided by developers towards the supply of infrastructure required to meet the needs to the future community. DCPs were replaced by Infrastructure Contribution Plans (ICP) in October 2016. ICPs are a new system based on standard levies that are set for particular development setting and land uses to ensure the provision of infrastructure to support the new communities. As the levies are set, the cost of the proposed infrastructure is no longer required. As a result the report only provides the designs of the road and infrastructure projects.

10.2 Outcomes and Recommendations

The report has used previous planning studies and concept designs for streets to determine the interim and ultimate designs for the following:

- Intersection 1 (Mickleham Road/Connector Road – Interim Design)

As Mickleham Road is a declared road, VicRoads have determined the ultimate design in 2015. As a result, the interim layout was required. The interim intersection has two lanes in each direction on Mickleham Road and a right and left running pocket for access into the connection street.

- Intersection 2 (Mickleham Road/Mount Ridley Road – Interim and Ultimate Design)

The ultimate intersection arrangement ties into the ultimate intersection for Mickleham Road and was provided by the VPA and Parsons Brinckerhoff have tested the layout. It required two right turn lanes from Mickleham Road northbound into Mount Ridley Road and a single right turn lane for the other legs. Left slip turning lanes were required for all approaches.

The interim intersection arrangement uses the left slip lanes which will be required in the ultimate design. Two through lanes are provided along Mickleham Road and single lanes through Mount Ridley Road. Single right turning lanes are used on all intersection legs.

- Intersection 3 – Mount Ridley Road/Connector Boulevard – Interim and Ultimate Design

The ultimate design of Mount Ridley Road was created by adapting the Mount Ridley Road Corridor Planning Study design for the intersection. The arrangement includes a through lane with right and left turning lanes along the boulevard connector.

The interim intersection has a single through lane with right and left turning lanes along Mount Ridley Road in either direction.

Each of the intersections as well as the road widths are shown in the appendix of the report and includes the interim and ultimate layouts.

11 REFERENCES

The following reports have been used to inform this report. Plans have not been included in this report and reference should be made to the original documents when reading this report. The original documents are located on our website at www.vpa.vic.gov.au:

- *Lindum Vale PSP 1202: Biodiversity Assessment*, Prepared for the MPA (now VPA), Biosis, September 2016
- *Tree Assessment and Arboricultural Report: Lindum Vale, Mickleham*, Prepared for MAB Corporation, Biosis, December 2014
- *Cultural Heritage Management Plan: 1960-2090 Mickleham Road, Mickleham*, Prepared for MAB Corporation, Urban Colours, June 2015
- *Stormwater Strategy Lindum Vale*, Prepared for MAB Corporation, GPC and the Cocking Family, Dalton Consulting Engineers, August 2015
- *PSP 1202 – Lindum Vale: Infrastructure Costing Study*, Prepared for the MPA (now VPA), Parsons Brinckerhoff, June 2016
- *Traffic and Transport Assessment*, Prepared for the MPA (now VPA), Cardno, November 2014
- *Residential Development Servicing Strategy*, Prepared for MAB Corporation, GPC and the Cocking family, Dalton Consulting Engineers, June 2013
- *Phase 1 and Preliminary Phase 2 Environmental Site Assessment – Lindum Vale PSP Area*, Prepared for MAB Corporation, Parsons Brinckerhoff, April 2013
- *Lindum Vale Dry Stone Wall Historic Heritage Assessment*, Prepared for MAB Corporation, Cultural Heritage Management Group, April 2016

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