NOTE: For Policy Areas See MAP Adel/51

CiL City Living Zone
I3 Institutional (University/Hospital) Zone
CC Capital City Zone
PL Park Lands Zone

ADELAIDE (CITY) ZONES
MAP Adel/20

Consolidated - 24 September 2015
NOTE: For Policy Areas See MAP Adel/46
PL Park Lands Zone

ADELAIDE (CITY) ZONES
MAP Adel/15
Consolidated - 24 September 2015
NOTE: For Policy Areas See MAP Adel/41

- **MS(ME)**: Main Street (Melbourne East) Zone
- **NAH(C)**: North Adelaide Historic (Conservation) Zone
- **PL**: Park Lands Zone

ZONE BOUNDARY

Development Plan Boundary

---

ZONEad/10

ADJOINs

MAP Adel/9

Consolidated - 24 September 2015

ADELAIDE (CITY)

ZONES

MAP Adel/10

Consolidated - 24 September 2015

Zone Boundary

Development Plan Boundary

0metres 100 200 300 Scale 1:4150
Areas of Significance

1. Hindmarsh (Karra(K)undunga) Kaurna Burial Site
2. Adelaide Gaol and Bonython Park (initial site for Native Location 1837)
3. Native Location (1837)
4. Major Camping Area near Colony Store
5. Major Living Area (1840s)
6. Major Camping Area (1840s – 1900)
7. Tennyson Bridge Burial Ground (Major Burial ground after Colonisation)
8. Proposed Aboriginal Reserve with Identifying Tags (1846)
9. Campsite used on the way to and from Glenelg
10. Cemetery and Campsite
11. West End, many Indigenous Families lived in this part of the City (1930 – 1960)
12. Victoria Square Major Meeting Area, Aboriginal Flag first flown 1971
13. Frequent (1930s – 1940s)
14. Meeting Area
15. Meeting Area

Derived from Tarndanyungga Kaurna Yerta, a report on indigenous cultural significance of the Adelaide Park Lands
Steve Hemming & Rhonda Harris 1998

ADELAIDE (CITY) INDIGENOUS CULTURAL SIGNIFICANCE MAP Adel/1 (Overlay 14)
Consolidated - 24 September 2015
SECTION 49 & 49A – CROWN DEVELOPMENT
DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS
COUNCIL: CITY OF NORWOOD, WAINDJARRA,
AND ST PETERS
DEPARTMENT OF PLANNING,
TRANSPORT AND INFRASTRUCTURE
APPLICANT: TRANSPORT AND INFRASTRUCTURE
ADDRESS: 77 GRENfell STREET, ADELAIDE
PREVIOUS DEVELOPMENT No.:
DEVELOPMENT No: 155/V009/15
DATE RECEIVED: 02 OCT 2015

CONTACT PERSON FOR FURTHER INFORMATION
Name: BRENTON BURMAN, ACCOR AUSTRALIA, PTY LTD
Telephone: 08 7223 5412 (work) 0404 032 705 (Ah)
Fax: ____________________________ [work] ____________________________ [Ah]
Email: brento.burman@accor.com

NOTE TO APPLICANTS:
(1) All sections of this form must be completed. The site of the development must be accurately identified and the nature of the proposal adequately described. If the expected development cost of this Section 49 or Section 49A application exceeds $100,000 (excl. fit-out) or the development involves the division of land (with the creation of additional allotments) it will be subject to those fees as outlined in Item 1 of Schedule 6 of the Development Regulations 2008. Proposals over $4 million (excl. fit-out) will be subject to public notification and advertising fees.
(2) Three copies of the application should also be provided.

EXISTING USE: ROAD CORRIDOR

DESCRIPTION OF PROPOSED DEVELOPMENT: O-Bahn Tunnel Portal, consideration of impacts on surrounding State Heritage items and ancillary structures associated with the O-Bahn City Access Project.

LOCATION OF PROPOSED DEVELOPMENT: ROAD CORRIDOR, HACKNEY ROAD

House No: N/A Lot No: N/A Street: HACKNEY ROAD Town/Suburb: HACKNEY
Section No [full/part] N/A Hundred: ADELAIDE Volume: N/A Folio: N/A
Section No [full/part] N/A Hundred: Volume: Folio:

LAND DIVISION:
Site Area [m²] _______ Reserve Area [m²] _______ No of existing allotments _______
Number of additional allotments [excluding road and reserve]: _______ Lease: YES ☐ NO ☐

DEVELOPMENT COST [do not include any fit-out costs]: $ 3 million

POWERLINE SETBACKS: Pursuant to Schedule 5 (2a)(1) of the Development Regulations 2008, if this application is for a building it will be forwarded to the Office of the Technical Regulator for comment unless the applicant provides a declaration to confirm that the building meets the required setback distances from existing powerlines. The declaration form and further information on electricity infrastructure and clearance distances can be downloaded from the DPLG website (www.dac.sa.gov.au).

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the Development Act 1993.

SIGNATURE: [Signature]
Dated: 21/10/2015
To: DEVELOPMENT ASSESSMENT COMMISSION
From: AECOM AUSTRALIA PTY. LTD (ON BEHALF OF DTI)

Date of Application: 30/09/15

Location of Proposed Development: HACKNEY ROAD, ROAD ...CORRIDOR
House No: N/A, Lot No: N/A, Street: HACKNEY RD, Town/Suburb: HACKNEY...
Section No (full/part): N/A, Hundred: ORENDE N/A.
Volume: N/A, Folio: N/A.....

Nature of Proposed Development:
O-Bahn Tunnel Portal, Consideration of Impacts on Surrounding State Heritage Items and Ancillary Buildings & Structures Associated with the O-Bahn City Access Project.

I (BRENTON BIRMAN, (ON BEHALF OF DTI)) being the applicant, a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the Electricity Act 1996. I make this declaration under clause 2A(1) of Schedule 5 of the Development Regulations 1993.

Date: 1/10/15

Signed: BRENTON BIRMAN, TECHNICAL DIRECTOR, AECOM
ON BEHALF OF DTI

Note 1
This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of ‘building’ contained in section 4(1) of the Development Act 1993), other than where the development is limited to—

a) an internal alteration of a building; or
b) an alteration to the walls of a building but not so as to alter the shape of the building.
2 October 2015

Attn: Robert Kleeman
Development Assessment Commission
Level 5, Roma Mitchell House
136 North Terrace,
Adelaide SA 5000

Dear Robert,

RE: Development Application – O-Bahn City Access Project
Section 49 Crown Development Application within the City of Norwood, Payneham & St Peters

AECOM Australia Pty Ltd. (AECOM) is acting on behalf of the Department of Planning, Transport and Infrastructure (DPTI) in relation to Development Approval requirements for the O-Bahn City Access Project pursuant to the Development Act 1993.

The O-Bahn City Access Project is a priority transport improvement project, as highlighted in the State Government’s 30-Year Plan for Greater Adelaide (2010) and the Integrated Transport and Land Use Plan (ITLUP) (2015). This project seeks to establish dedicated bus lanes along Hackney Road and a dedicated O-Bahn bus tunnel under the Adelaide Park Lands adjoining East Terrace to exit directly onto Grenfell Street, Adelaide.

This application, for development within the City of Norwood, Payneham & St Peters, is made pursuant to Division 3 – Crown development and public infrastructure, section 49 – Crown Development and Public Infrastructure of the Development Act 1993.

Specifically, the application involves the following:
- O-Bahn Tunnel Portal on Hackney Road;
- Consideration of impacts on surrounding State heritage items; and
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel (tunnel services buildings) and stormwater infrastructure.

Please find enclosed three (3) copies of the Development Application Report, including a planning assessment, application plans and supporting material, along with the Development Application and Power Line Clearance Declaration Form. An electronic copy of all such documents is included on the attached USB.

The overall project value for the O-Bahn City Access Project is $160 million. However, the elements requiring approval pursuant to the Development Act 1993 which form the basis of this application have an overall cost of $3 million.

The Department will continue to consult with the City of Norwood, Payneham & St Peters and adjacent land owners as part of the development process. Whilst recognising that this application will be formally referred to the City of Norwood, Payneham & St Peters, we have forwarded a copy of the application package to Council for its early consideration.

If you require any additional information or would like to discuss this further, please contact me on 0404 033 705, or the DPTI O-Bahn City Access Project Manager, Dariusz Fanok on 0401 124 028.

Yours faithfully,

Brenton Burman
Technical Director, Transport Planning & Urban Development
brenton.burman@aecom.com

Mobile: +61 404 033 705
Direct Dial: +61 8 7223 5412
Direct Fax: +61 8 7223 5499

cc: Development Application Package

Dariusz Fanok, DPTI
Amendments to Current Development Applications for the O-Bahn City Access Project
Development Applications 020/L073/15 and 155/V009/15

AECOM Australia Pty. Ltd. (AECOM), on behalf of the Department of Planning, Transport and Infrastructure (DPTI) has recently submitted various development applications for approval of the O-Bahn City Access Project pursuant to the Development Act 1993.

Due to the differing assessment processes prescribed under the Development Act 1993, three separate development applications were lodged with the Development Assessment Commission on 7 October 2015. These being:

- Development Application 020/L073/15 – Section 33 Development Application – Development within the Park Lands
- Development Application 155/V008/15 – Section 49 Crown Development Application - Tree Damaging Activities – Development within the City of Norwood, Payneham & St Peters and Town of
- Development Application 155/V009/15 – Section 49 Crown Development Application - Development outside of the Park Lands

Since lodging these three development applications, we have undertaken a review of the extent of works requiring approval pursuant to the Development Act 1993. The application plans and supporting documentation remain unchanged. However, there is greater clarity as to the elements of the project that require approval pursuant to the Development Act 1993. This is included in the updated Development Assessment Reports for Development Applications 020/L073/15 and 155/V009/15 (as amended on 15 October 2015).

Please replace the Development Assessment Reports for Development Applications 020/L073/15 and 155/V009/15 with the latest versions attached (dated 15 October 2015).

The application plans and supporting documentation for each of these development applications remain unchanged and form the detail of the amended development applications.

To clarify, the following elements of the O-Bahn City Access Project require approval pursuant to the Development Act 1993. Details of the development costs and public notification requirements for each application are also provided:

<table>
<thead>
<tr>
<th>Development Application 020/L073/15</th>
<th>Components</th>
<th>Development costs &amp; public notification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elements requiring Approval pursuant to the Development Act 1993</strong></td>
<td><strong>Development costs &amp; public notification</strong></td>
<td><strong>Elements of the project requiring approval pursuant to the Development Act 1993</strong></td>
</tr>
<tr>
<td>• O-Bahn Tunnel, Tunnel Ramp and Tunnel Portal within the Adelaide Park Lands</td>
<td>• Total cost $38.27 million</td>
<td></td>
</tr>
<tr>
<td>• Excavation works associated with the tunnel within the Adelaide Park Lands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Significant and Regulated Tree-damaging activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Consideration of impacts on surrounding State Heritage items</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Shared use path bridge (for pedestrians and cyclists) over the River Torrens within the Adelaide Park Lands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Expansion of existing car park associated with the Botanic Gardens (adjacent Hackney Road)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
Within the Adelaide Park Lands Zone all development, except that classified as non-complying, is assigned Category 1 development. As the proposed development is not listed as a non-complying form of development within the Park Lands Zone, no public notification of this application is required.
**Development Application 155/V009/15**  
Section 49 Crown Development Application - Development outside of the Park Lands

<table>
<thead>
<tr>
<th>Elements requiring Approval pursuant to the Development Act 1993</th>
<th>Development costs &amp; public notification</th>
</tr>
</thead>
<tbody>
<tr>
<td>• O-Bahn Tunnel Ramp and Tunnel Portal on Hackney Road</td>
<td>Elements of the project requiring approval pursuant to the Development Act 1993</td>
</tr>
<tr>
<td>• Consideration of impacts on surrounding State Heritage items</td>
<td>• Total cost $3.15 million</td>
</tr>
<tr>
<td>• Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure</td>
<td>Note:</td>
</tr>
<tr>
<td></td>
<td>Development that involves construction work requiring approval pursuant to the Development Act 1993 for the Section 49 Crown Development Application, including all stages of development, does not exceed $4 million, and therefore no public notification of this application is required pursuant to section 49(7d) of the Development Act 1993.</td>
</tr>
</tbody>
</table>

We apologise for any inconvenience that such amendments may have caused.

Should you require any further information, please do not hesitate to contact myself or Dariusz Fanok (Ph: 0401 124 028).

Yours faithfully

Brenton Burman  
Technical Director, Transport Planning & Urban Development  
brenton.burman@aecom.com  
Mobile: +61 404 033 705  
Direct Dial: +61 8 7223 5412  
Direct Fax: +61 8 7223 5499

encl: Revised DA 020/L073/15 – Section 33 Development Application Report – Development within the Park Lands  
Revised DA 155/V009/15 – Section 49 Crown Development Application Report - Development outside of the Park Lands  
cc: Dariusz Fanok, DPTI
6 November 2015

Attn: Simon Neldner
Development Assessment Commission
Roma Mitchell House
136 North Terrace
ADELAIDE SA 5000

Dear Simon,

Response to Request for Further Information for Development Application No. 020/L073/15 - Development within the Adelaide Park Lands

Further to your letter dated 23 October 2015, the following response is provided in relation to the request for further information from the Development Assessment Commission for the above Development Application relating to the O-Bahn City Access Project development within the Adelaide Park Lands.

It should be noted that the application plans lodged with the development application are based on the Reference Design contained in the Project Impact Report, released in August 2015. Since this time, the South Australian Government has announced the preferred tender design, meaning that more detailed information is now available in response to the matters raised in your letter.

The detailed design of the O-Bahn City Access Project will continue to be refined through ongoing consultation with the affected councils and key stakeholders.

We provide the following response:

PART 1 Further detail in regards to the appearance, design, materiality, scale and situational context of the development within and adjacent to the Adelaide Park Lands

1) Pedestrian and cycle bridge – requirement for elevations, perspectives, materials / finishes, method of riverbank connection etc.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional concept design plans of the shared path bridge over the River Torrens are been provided. Concept details of the urban design elements under consideration and development are also included. These design concepts will be further developed by the contractor and DPTI in consultation with Adelaide City Council and key stakeholders throughout the detailed design phase of the project. Thus, we request that the detailed design and materials associated with the shared path bridge over the River Torrens be included as a RESERVED MATTER on the Planning Consent.</td>
<td>Attachment 1. Concept structural design and concept urban design of Shared Path Bridge over the River Torrens</td>
</tr>
</tbody>
</table>

2) Tunnel portals + portal canopy – requirement for perspectives, detailed elevation, materials / finishes etc.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept plans that are under consideration for the tunnel portal in</td>
<td>Attachment 2.</td>
</tr>
</tbody>
</table>
Rymill Park are included in Attachment 2.

These design concepts will be further developed by the contractor and DPTI in consultation with Adelaide City Council and key stakeholders throughout the detailed design phase of the project.

Thus, we request that the detailed design and materials associated with the tunnel portals be included as a RESERVED MATTER on the Planning Consent.

### 3) Ancillary buildings, emergency exits, ventilation stacks and structures – requirement to identify their location, height, dimensions, materials/finishes etc.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
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</thead>
<tbody>
<tr>
<td>The Tunnel Services Building is the key ‘ancillary building’ that will house mechanical and electrical equipment and controls for the tunnel. The building is proposed to be constructed largely underground, with an above-ground access point within Rundle Park (approximate location indicated on the development application plans). The Tunnel Service Building will also provide an emergency access point and incorporate air conditioning inlet and outlets for regulating the building temperature (i.e. not tunnel ventilation). Some concepts plans that are under consideration for the Tunnel Services Building are included in Attachment 3. This includes both the below-ground concept floor plans and above-ground architectural concepts. These design concepts will be further developed by the contractor and DPTI in consultation with key stakeholders throughout the detailed design phase of the project. Thus, we request that the detailed design and materials associated with the Tunnel Service Building and associated above-ground structures be included as a RESERVED MATTER on the Planning Consent.</td>
<td>Attachment 3. Tunnel Services Building - Concept floor plans and architectural concepts</td>
</tr>
</tbody>
</table>

### 4) Botanic Gardens Carpark expansion – requirement for detailed site and layout plan with heritage buildings and curtilage identified

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>A concept plan under consideration for the car park layout and landscaping is included in Attachment 4. A more detailed version of this concept is provided in Attachment 5 which shows approximate distances to heritage buildings. The concept plan presented is the preferred option of the Board of the Botanic Garden to improve the landscape character for users of Botanic Park and to make the eastern entry of the Adelaide Botanic Gardens safer for pedestrians. These design concepts will be further developed by the contractor and DPTI in consultation with key stakeholders throughout the detailed design phase of the project.</td>
<td>Attachment 4. Botanic Gardens Car Park – landscape concept plan Attachment 5. Botanic Gardens Car Park – concept plan showing approximate clearances to heritage buildings</td>
</tr>
</tbody>
</table>
5) Engineered site works plan – identification of contours, site levels (pre and post development), details of supporting infrastructure – including retaining walls.

### Response

In relation to the site contours and levels (pre and post development), the concept designs provided in Attachments 6a and 6b provide further information of the existing versus post-construction ground levels and contours that can be expected as a result of the works.

There will be minimal to no change to the existing ground levels for the majority of the Adelaide Park Lands except adjacent to Rymill Lake as the tunnel exits the ground, to match in to Grenfell Street. The approximate size and shape of the fill batters in this area can be seen in the plans and cross sections.

Retaining walls – concept design details of the concrete retaining walls to be provided at the tunnel portal are provided in Attachment 6c.

### Additional Information

- **Attachment 6 a.** Overall Site Construction concept (plan view and long-sections)
- **Attachment 6 b.** Tunnel Cross-Section plans
- **Attachment 6 c.** Park Lands Retaining Wall Details

### PART 2 Further information and/or clarification is also required on other matters

6) Location of site compounds and storage areas. Additional information should also be provided detailing the extent of the proposed earthworks and stockpiling locations.

### Response

DPTI is required to obtain a licence from Adelaide City Council to occupy the Park Lands for works associated with the O-Bahn City Access Project, including:

- works associated with the construction of the O-Bahn City Access Project tunnel, tunnel portal, and associated pathways, roadworks, earthworks, services, bridgeworks, landscaping and urban design
- construction of tracks and other temporary hard-stand areas for use by construction plant, trucks and construction vehicles
- temporary stockpiling of materials including surplus spoil from earthworks activities within the project site
- storage of construction plant, equipment and materials necessary for construction works and site management
- establishment of temporary site compounds and amenities (i.e. office spaces, lunch room, toilets, etc.)
- establishing, maintaining and modifying safety fencing/hoarding as required to separate public spaces from the construction zone
- access to and egress from the construction works area

Such matters will be addressed in the Construction Environmental Management Plan which will be prepared in collaboration with the successful contractor. Such facilities will be located within the Adelaide City Council Licence Area, as shown on Attachment 7.

### Additional Information

- **Attachment 7.** Adelaide City Council Licence Area
7) Approximate position of guided busway (start + end points).

<table>
<thead>
<tr>
<th>Response</th>
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</tr>
</thead>
<tbody>
<tr>
<td>The guideway busway system at Hackney Road extends beyond the tunnel portal and also extends beyond the ramp. The guideway busway system at Rymill Park extends beyond the tunnel portal approximately 40 to 60 metres. The approximate extent of the guideway system is shown in the concept plans in Attachment 8.</td>
<td>Attachment 8. Extent of Guideway Busway Tracks</td>
</tr>
</tbody>
</table>

8) Specification (style, height and material etc.) of any pedestrian safety fencing adjacent the bus way entry and exit points.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
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</thead>
<tbody>
<tr>
<td>Some concepts under consideration for fencing are included in Attachment 9. These design concepts will be further developed by the contractor and DPTI in consultation with key stakeholders throughout the detailed design phase of the project. Thus, we request that the detailed fencing design and associated materials be included as a RESERVED MATTER on the Planning Consent.</td>
<td>Attachment 9. Fencing/balustrade architectural concepts</td>
</tr>
</tbody>
</table>

9) Vehicle access / haulage routes during construction – including site access.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to Item 6 above.</td>
<td>Attachment 7. Adelaide City Council Licence Area</td>
</tr>
</tbody>
</table>

10) Confirmation of temporary pedestrian and cycle paths during construction.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian and cycling routes will be managed during construction to minimise impacts on path users. Detailed management measures will be included in the Construction Environmental Management Plan and other work instructions. Suggested permanent changes and improvements to pedestrian and cyclist movements within the Park Lands are indicated in Attachment 10.</td>
<td>Attachment 10. Concept Pedestrian and Cycling routes (post-construction).</td>
</tr>
</tbody>
</table>

11) Provision of the Soil investigations report.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>A soil investigation report has been prepared by Golders, which summarises the contamination classification of the materials within the project area. A copy of the report (excluding the attachments) is provided in Attachment 11. Attachments to this report can be provided upon request.</td>
<td>Attachment 11. Contamination Investigation Report – Golders Associates (report – excluding attachments)</td>
</tr>
</tbody>
</table>
12) **Preliminary Concept Landscape Plan - can this be provided in A1?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall landscaping design concept has not yet been finalised. A concept planting palette has been developed and is provided in Attachment 12. Such landscaping design concepts will be developed by the contractor and DPTI in consultation with Adelaide City Council and key stakeholders throughout the detailed design phase of the project. Thus, we request that the detailed landscaping design be included as a RESERVED MATTER on the Planning Consent. When further detail regarding the landscaping design for the project is prepared, we will provide this to DAC in A1 size as requested.</td>
<td>Attachment 12. Landscaping planting palette concepts</td>
</tr>
</tbody>
</table>

13) **Clarification of any additional regulated / significant tree impacts within the footprint of the Botanic Gardens carpark extension and pedestrian bridge (Note – this includes any previous approval for tree removal on land adjacent the pedestrian bridge)**

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Significant and Regulated Tree impacts required for the project are included in the Development Applications that have been submitted to DAC for this project. No additional information is required.</td>
<td>No additional information is required</td>
</tr>
</tbody>
</table>

14) **If mechanical ventilation systems and emission stacks are proposed for the tunnel, did the air quality assessment consider these new (concentrated) point sources?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>No emission stacks are required for ventilation of the tunnel. Tunnel ventilation will be managed by mechanical fans within the tunnel that will push the air to either end of the tunnel as required. This has been considered in the air quality assessment. There will also be ventilation required from and to the Tunnel Service Building located within the Park Lands (Rymill Park) which will consist of a fresh-air intake and outlet to accommodate air conditioning required for regulating the temperature of the electronic equipment. This will be clean air and vents will be incorporated discreetly in the design as indicated in Attachment 3.</td>
<td>Attachment 3. Tunnel Services Building - Concept floor plans and architectural concepts.</td>
</tr>
</tbody>
</table>

15) **Will a temporary concrete batching plant be installed on the site?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>No temporary concrete batching plant is required to be installed on the site as part of this project. No additional information is required.</td>
<td>No additional information is required</td>
</tr>
</tbody>
</table>
16) **What level of groundwater analysis has been undertaken? (i.e. potential interruption to water table or requirement for on-going de-watering from tunnel construction)**

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant Groundwater analysis has been undertaken for the project by industry specialists, including:</td>
<td>Attachment 13. Groundwater Dewatering Methodology</td>
</tr>
<tr>
<td>• A three-staged geotechnical investigation to sample, test and analyse the soil and ground water properties, topography, geology etc.</td>
<td></td>
</tr>
<tr>
<td>• The contractor has completed further analysis of the groundwater to understand the construction methodology and long-term effects of the works on ground water.</td>
<td></td>
</tr>
</tbody>
</table>

To summarise the effects during construction:

- The effect of groundwater drawdown can result in settlement and possible damage to services or sensitive structures in certain circumstances
- Based on the groundwater modelling, the temporary drawdown prior to base slab construction on either side of the tunnel in Hackney Road and Dequetteville Terrace is quite small (approximately 0.5m at about 20m from the tunnel alignment). This variation in groundwater level is within the natural seasonal groundwater fluctuation range
- Based on the small groundwater drawdown and the stiffness of the soils in this area, the potential for settlement is expected to be very small
- To manage the risks of settlement, and potential impacts to adjacent landscape or structures, the contractor will conduct monitoring during the dewatering process. If settlement appears, reinjection of water into the ground water will be completed

To summarise the effects of the permanent tunnel structure on the groundwater table:

- In the sheet-piled section of tunnel (from Hackney Road to Dequetteville Terrace, outside of the Park Lands), it is important to note that the proposed sheet-piling method minimises any impact to existing groundwater on the outside of the tunnel walls
- It is proposed to insert the sheet piles into the ground and then dewater the soil between the tunnel walls. This will create an impermeable barrier to minimise any groundwater ingress.
- By minimising the groundwater ingress from outside it is expected that the existing water table will be maintained within its seasonal range. This will be monitored during construction.
- The remainder of the tunnel within the Park Lands uses a ‘bottom up’ construction technique (i.e. the construction of a base slab, tunnel walls and roof).
- The water table is close to the tunnel base slab level and therefore is not expected to be affected by construction or the permanent structure.
17) Clarification on proposed signage – is any third party signage proposed, or is the signage limited to statutory traffic displays / warning signs etc.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is no third-party signage proposed as part of the O-Bahn City Access Project. Safety signage, statutory traffic displays and warning/directional signs will be required.</td>
<td>No additional information is required</td>
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**Indicative Project Staging**

Furthermore, McConnell Dowell (the appointed contractor for the O-Bahn City Access Project) has prepared an indicative staging plan for the O-Bahn City Access Project, which is provided for information only and is subject to change. This is included as Attachment 14 – Indicative Approval Stages.

**Summary**

Additionally, we note that in your letter, you have identified that if Planning Consent was to be granted on the Development Application that additional plans and technical documents may be conditionally required or included as Reserved Matters to be addressed prior to the commencement of construction. We confirm that this is acceptable and have identified which documents may need to be provided at later stages of the project development.

I trust that this letter and the enclosed documentation addresses all outstanding queries on Development Application No. 020/L073/15.

Please do not hesitate to contact me on 0404 033 705 should you wish to discuss this further.

Yours faithfully,

Brenton Burman  
Technical Director - Transport  
brenton.burman@aecom.com

Mobile: +61 404 033 705  
Direct Dial: +61 8 7223 5412  
Direct Fax: +61 8 7223 5499

cc: Dariusz Fanok, DPTI
List of Attachments:

- Attachment 1. Shared Path Bridge over the River Torrens - Concept structural design and concept urban design
- Attachment 2. Rymill Park Tunnel Portal – Concept design artist’s impressions
- Attachment 3. Tunnel Services Building - Concept floor plans and architectural concepts
- Attachment 4. Botanic Gardens Car Park – landscape concept plan
- Attachment 5. Botanic Gardens Car Park – concept plan showing approximate clearances to heritage buildings
- Attachment 6 a. Overall Site Construction concept (plan view and long-sections)
- Attachment 6 b. Tunnel Cross-section plans
- Attachment 6 c. Parklands Retaining Wall Details
- Attachment 7. Adelaide City Council Licence Area
- Attachment 8. Extent of Guideway Tracks
- Attachment 9. Fencing balustrade architectural concepts
- Attachment 12. Landscaping planting palette concepts
- Attachment 13. Groundwater Dewatering Methodology
This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department of Environment, Water and Natural Resources.

Crown Record - Volume 5943 Folio 443

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**Estate Type**

CROWN LAND (ALIENATED)

**Owner**

THE CROWN

**Custodian**

GOVERNORS OF THE BOTANIC GARDEN OF NORTH TERRACE ADELAIDE SA 5000

**Description of Land**

ALLOTMENT 102 DEPOSITED PLAN 66751 IN THE AREA NAMED ADELAIDE HUNDRED OF ADELAIDE

TOTAL AREA: 4.574HA (CALCULATED)

**Easements**

NIL

**Schedule of Dealings**

NIL

**Schedule of Interests**

LAND DEDICATED FOR BOTANIC PARK AND GARDEN PURPOSES PURSUANT TO THE CROWN LANDS ACT, 1929 BY GAZETTE 21/01/1993

**Notations**

Dealings Affecting Title

NIL

Priority Notices

NIL
Registrar-General's Notes
APPROVED G127/2006

Administrative Interests
CONFIRMED IN SA HERITAGE REGISTER 05/04/1984
CONFIRMED IN SA HERITAGE REGISTER 12/12/2014
PROVISIONAL IN SA HERITAGE REGISTER 07/05/2014

* Denotes the dealing has been re-lodged.
Crown Record - Volume 6043 Folio 262

Parent Title(s)  
CR 5756/651

Dealing(s)  
RLG 11238081

Creating Title  

Title Issued  
17/09/2009

Edition  
1

Edition Issued  
17/09/2009

Estate Type  
CROWN LAND (ALIENATED)

Owner  
THE CROWN

Custodian  
GOVERNORS OF THE BOTANIC GARDEN  
OF ADELAIDE SA 5000

Description of Land  
SECTION 574  
HUNDRED OF ADELAIDE  
IN THE AREA NAMED ADELAIDE  
TOTAL AREA: 26.6HA (APPROXIMATE)

Easements  
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A ON FP 52585 (RLG 11238081)

Schedule of Dealings  
NIL

Schedule of Interests  
LAND DEDICATED FOR BOTANIC GARDENS PURPOSES PURSUANT TO THE CROWN LANDS ACT, 1929 BY GAZETTE 24/11/1977

Notations  
Dealings Affecting Title  
NIL

Priority Notices  
NIL
Registrar-General's Notes
APPROVED G127/2006

Administrative Interests
NIL

* Denotes the dealing has been re-lodged.
This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department of Environment, Water and Natural Resources.

**Crown Record - Volume 6074 Folio 282**

Parent Title(s)  
CR 5943/441

Dealing(s)  
RTD 11531428

Creating Title

Title Issued  
22/03/2011

Edition  
1

Edition Issued  
22/03/2011

**Estate Type**  
CROWN LAND (ALIENATED)

**Owner**  
THE CROWN

**Custodian**  
TREASURER  
OF ADELAIDE SA 5000

**Description of Land**  
ALLOTMENT 200 DEPOSITED PLAN 86132  
IN THE AREA NAMED ADELAIDE  
HUNDRED OF ADELAIDE  
TOTAL AREA: 1.735HA (CALCULATED)

**Easements**  
NIL

**Schedule of Dealings**  
NIL

**Schedule of Interests**  
LAND DEDICATED FOR WINE CENTRE PURPOSES PURSUANT TO THE CROWN LANDS ACT, 1929 BY GAZETTE 14/03/2002

**Notations**  
Dealings Affecting Title  
NIL

Priority Notices  
NIL
Registrar-General's Notes
APPROVED G127/2006

Administrative Interests
CONFIRMED IN SA HERITAGE REGISTER 11/09/1986

* Denotes the dealing has been re-lodged.
This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department of Environment, Water and Natural Resources.

Crown Record - Volume 6102 Folio 712

Parent Title(s)  CR 5744/257, CR 5744/258, CR 6074/515
Dealing(s)  RTD 11788229
Creating Title
Title Issued  13/11/2012
Edition  1
Edition Issued  13/11/2012

Estate Type
CROWN LAND (ALIENATED)

Owner
THE CROWN

Custodian
THE CORPORATION OF THE CITY OF ADELAIDE
OF GPO BOX 2252 ADELAIDE SA 5001

Description of Land
ALLOTMENTS 114, 115 AND 116 DEPOSITED PLAN 81642
IN THE AREA NAMED NORTH ADELAIDE
HUNDREDS OF ADELAIDE AND YATALA
TOTAL AREA: 9.30HA (APPROXIMATE)

Easements
NIL

Schedule of Dealings
NIL

Schedule of Interests
LAND SET ASIDE BEFORE DECEMBER 24TH 1858 FOR PARKLAND PURPOSES

Notations
Dealings Affecting Title
NIL
Priority Notices
NIL
Registrar-General's Notes
NIL

Administrative Interests

NIL

* Denotes the dealing has been re-lodged.
This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department of Environment, Water and Natural Resources.

Crown Record - Volume 6102 Folio 715

Parent Title(s)    CR 5689/969, CR 5999/492
Dealing(s)        RTD 11788230, TG 11788231, TG 11788232, TG 11788233
Creating Title   
Title Issued      13/11/2012
Edition           1
Edition Issued    13/11/2012

Estate Type
CROWN LAND (ALIENATED)

Owner
THE CROWN

Custodian
THE CORPORATION OF THE CITY OF ADELAIDE
OF GPO BOX 2252 ADELAIDE SA 5001

Description of Land
ALLOTMENT 10 DEPOSITED PLAN 74256
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

TOTAL AREA: 8361M² (CALCULATED)

Easements
SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A ON DP 74256 (TG 11788231 TG 11788232 AND TG 11788233)

Schedule of Dealings
NIL

Schedule of Interests
LAND SET ASIDE BEFORE DECEMBER 24TH 1858 FOR PARKLAND PURPOSES

Licence Number   Description
OL022555          ANNUAL LICENCE TO ELECTRANET PTY. LTD. (ACN: 094 482 416) FOR COMMERCIAL OR INDUSTRIAL PURPOSES COMMENCING ON 30/06/2003 AND EXPIRING ON 29/06/2016

Notations
Dealings Affecting Title
NIL
Priority Notices
NIL

Registrar-General's Notes
NIL

Administrative Interests
NIL

* Denotes the dealing has been re-lodged.
This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department of Environment, Water and Natural Resources.

Crown Record - Volume 6102 Folio 716

Parent Title(s)  CR 5999/492
Dealing(s)  RTD 11788230
Creating Title
Title Issued  13/11/2012
Edition  1
Edition Issued  13/11/2012

Estate Type
CROWN LAND (ALIENATED)

Owner
THE CROWN

Custodian
THE CORPORATION OF THE CITY OF ADELAIDE
OF GPO BOX 2252 ADELAIDE SA 5001

Description of Land
ALLEOTMENT 11 DEPOSITED PLAN 74256
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE
TOTAL AREA: 13.7HA (APPROXIMATE)

Easements
NIL

Schedule of Dealings
NIL

Schedule of Interests
LAND SET ASIDE BEFORE DECEMBER 24TH 1858 FOR PARKLAND PURPOSES

Notations
Dealings Affecting Title
NIL
Priority Notices
NIL

Registrar-General's Notes
APPROVED FX59796

Administrative Interests

NIL

* Denotes the dealing has been re-lodged.
This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department of Environment, Water and Natural Resources.

Crown Record - Volume 6132 Folio 227

Parent Title(s)  CR 6102/708
Dealing(s)  RTD 12046813
Creating Title
Title Issued  26/02/2014
Edition  1
Edition Issued  26/02/2014

Estate Type
CROWN LAND (ALIENATED)

Owner
THE CROWN

Custodian
THE CORPORATION OF THE CITY OF ADELAIDE
OF GPO BOX 2252 ADELAIDE SA 5001

Description of Land
ALLOCMENTS 117 AND 119 DEPOSITED PLAN 81642
IN THE AREA NAMED ADELAIDE
HUNDREDS OF ADELAIDE AND YATALA
TOTAL AREA: 76.7HA (APPROXIMATE)

Easements
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED M AND N ON DP 81642 TO DISTRIBUTION LESSOR CORPORATION (SUBJECT TO LEASE 8890000) (RLG 8525750)

Schedule of Dealings
Dealing Number  Description
11801359  AGREEMENT PURSUANT TO SECTION 205 OF NATURAL RESOURCES MANAGEMENT ACT 2004 OF PORTION (A IN GP 1/2012)

Schedule of Interests
LAND SET ASIDE BEFORE DECEMBER 24TH 1858 FOR PARKLAND PURPOSES

Notations
Dealings Affecting Title
NIL

Priority Notices
NIL

Registrar-General's Notes

APPROVED G1/2012
APPROVED FX250169
APPROVED FX59796

Administrative Interests

CONFIRMED IN SA HERITAGE REGISTER 11/09/1986
CONFIRMED IN SA HERITAGE REGISTER 17/06/2015
PROVISIONALLY IN SA HERITAGE REGISTER 08/10/2014
PROVISIONALLY IN SA HERITAGE REGISTER 12/09/1985

* Denotes the dealing has been re-lodged.
PLAN OF DIVISION AND EASEMENT
PIECE 1, 2 & 3 IN FP 19233
AND ALLOTMENT 12 IN FP 19754
AND CLOSED ROAD

POSITION OF ALLOTMENT 10 MARKED A IS TO BE
SUBJECT TO A RIGHT OF WAY APPURTENANT TO
CT 544/97, CT 584/91, CT 584/91/07 &
CT 584/91B

EASEMENT A DOES NOT FORM PART OF
THIS DIVISION.

CLOSED ROAD IS INCORPORATED INTO THE
PARKLANDS ALLOTMENT 10 UNDER THE
ADELAIDE PARK LANDS ACT, 2005 AND

ALLOTMENT 12 IS PUBLIC ROAD UNDER THE
ADELAIDE PARK LANDS ACT, 2005 AND
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**ANNOTATIONS:**

AMENDMENT TO ABUTTALS (SHEET 8) AND ADDITION OF HERB NOTATION (SHEET 16) VIDE DDP 12/37298. PRE. R.G. 13-3-2014. V.D.L.

---

**ANNOTATIONS:**

ADLADE PARK LANDS PLAN

AUTHORITY FOR DATA AND PLOTTING VIDE GP 127/2006, DBP YATALA 67-620, ADELAIDE PARKLANDS 18.101, F22072, FX45275, FX37709, D33772, D36096, F39233, FX48818, D34345, D38136, D42172, D64426, D59055 AND DCDB.

PORTIONS MARKED (PUBLIC ROAD) ARE PUBLIC ROADS PURSUANT TO CLAUSE 28 (11) (B) OF SCHEDULE 1 OF THE ADELAIDE PARKLANDS ACT 2005

PORTIONS MARKED CLOSED ROAD ARE INCORPORATED INTO THE ADELAIDE PARKLANDS PURSUANT TO CLAUSE 28 (10) (A) OF SCHEDULE 1 OF THE ADELAIDE PARKLANDS ACT 2005

ALLOTMENTS 118, 120-129, 111.14, PT (D604740), 116.100 (PT CR 5799/192), 121.122 (CR 5799/244), 126 (PT CR 5799/246) AND 128 (PT CR 5799/246) DO NOT FORM PART OF THE AMALGAMATION PROCESS

AMENDMENT TO PUBLIC ROAD AND ABUTTALS (ENTR'L E.2.EDG) VIDE DDP 1156129. PRO. KG. 23-4-2013

PORTION OF ALLOTMENT 118 OPENED AS WAKEFIELD (PUBLIC) ROAD VIDE DP 32735. PRO. R.G. 23-1-2014. V.D.L.
### Purpose
Division pursuant to Section 3A of the National Wine Centre Act 2002

### Area Name
Adelaide

### Council
City of Adelaide

### Map Ref.
6628 - 42-H

### Last Plan

### Development No.

### Agent Details
- **Agent Code:** SISK
- **Reference:** 2010/184/14/01
- **Agent Details:** Land Services Group
  - Department for Transport, Energy and Infrastructure
  - Land Boundaries Branch
  - Survey Investigation Section

### Surveyors Certification
I, Trevor John Gee Smith, licensed surveyor of South Australia do hereby certify:
1. That this plan has been made from surveys carried out by me or under my personal supervision and in accordance with the Survey Act, 1992.
2. That the field work was completed on the 11th day of November 2010.

### Subject Title Details

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### Other Titles Affected

### Easement Details

### Status
- Land Burdened
- Form
- Category

### Identifier
- Purpose
- In Favour Of
- Creation

### Annotations
Field Book 4266
**PURPOSE:** EASEMENT

**AREA NAME:** ADELAIDE

**MAP REF:** 6628/42/H, 6628/42/A

**COUNCIL:** THE CORPORATION OF THE CITY OF ADELAIDE

**AGENT DETAILS:** ETTA UTILITIES - CADAstral TEAM
1 ANZAC HIGHWAY
KESWICK SA 5035
PH: (08) 84044252
FAX: (08) 84045234
AGENT CODE: ECAD
REFERENCE: J20060122

**SURVEYORS CERTIFICATION:**

**SUBJECT TITLE DETAILS:**

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**OTHER TITLES AFFECTED:**

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**ANNOTATIONS:**

AUTHORITY FOR DATA DB PAGES 82, 76, 87, 88 AND 100
CENTRE-LINE OF RIVER TORRENS PLOTTED FROM F41835
O-Bahn City Access Project

Section 33 Development Application - Development within the Park Lands
O-Bahn City Access Project

Section 33 Development Application - Development within the Park Lands

Client: Department of Planning, Transport and Infrastructure
ABN: 92366288135

Prepared by

AECOM Australia Pty Ltd
Level 28, 91 King William Street, Adelaide SA 5000, Australia
T +61 8 7223 5400  F +61 8 7223 5499  www.aecom.com
ABN 20 093 846 925

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Job No.: 60329190

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Prepared by: Brenton Burman, Olivia Franco, Molly Gifford

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Acronyms

ACC    Adelaide City Council
CBD    Central Business District
CEMP   Contractor's Environmental Management Plan
CLMP   Park Lands Community Land Management Plan
CPTED  Crime Prevention through Environmental Design
DAC    Development Assessment Commission
DPA    Development Plan Amendment
DPTI   Department of Planning, Transport and Infrastructure
EIA    Environmental Impact Assessment
GRO    General Registrar's Office
ITLUP  Integrated Transport and Land Use Strategy
PDC    Principle/s of Development Control
PIR    Project Impact Report
RTNG   Road traffic noise guidelines
1.0 Introduction

AECOM Australia Pty. Ltd. (AECOM) has been commissioned by the Department of Planning, Transport and Infrastructure (DPTI) to prepare a Development Assessment Report to accompany the Development Application for the O-Bahn City Access Project.

The O-Bahn City Access Project is a priority transport improvement project, as highlighted in the State Government's 30-Year Plan for Greater Adelaide (2010) and the Integrated Transport and Land Use Plan (ITLUP) (2015). This project seeks to establish dedicated bus lanes along Hackney Road and a dedicated O-Bahn bus tunnel under the Park Lands adjoining East Terrace to exit adjacent to the East Terrace and Grenfell Street intersection, Adelaide.

When complete, the project will significantly improve travel times on Adelaide’s most popular public transport corridor and speed up what is currently the slowest part of the journey, while also improving traffic flow on Adelaide’s Inner Ring Route. The Development Application plans are attached to this report, which depict the baseline concept design for the O-Bahn City Access Project.

The O-Bahn City Access Project is a critical investment in improving our public transport and road infrastructure. The primary objective of the project is:

- Improved travel times and reliability, and reduce on-road delays for users of the O-Bahn service between the end of the busway at Gilberton and Grenfell Street over the next 30 years.

Other key objectives of the project include:

- Improve safety and travel time, and reduce congestion for traffic on the Inner Ring Route;
- Allow for potential long term transport initiatives;
- Minimise impacts to the travelling public, business operations and the wider community during construction;
- Minimise impacts upon the environment and heritage, including the Park Lands; and
- Complete the project within the $160 million allocated budget by the second half of 2017.

The main features of the O-Bahn City Access Project include:

- **Hackney Road at-grade priority bus lanes:** from the current O-Bahn exit point at Gilberton, buses will continue via two (one in each direction) centrally aligned priority bus lanes along Hackney Road. The inbound bus lanes would commence after Richmond Street and continue all the way to the tunnel entry ramp approach to the Botanic Road/North Terrace intersection. The outbound bus lane extends from the tunnel exit ramp north of the Botanic Road/North Terrace intersection to the O-Bahn’s dedicated corridor entry chute on Mann Road. Provision of this lane requires an upgrade of the western bridge structure over the River Torrens, as well as a modification to the layout of the Bundey’s Road signalised intersection.

- **Bus only tunnel:** grade separation of key intersections has been determined to be the most efficient means of addressing capacity issues through the most congested section of the O-Bahn corridor. After entering the tunnel via the entry ramp on Hackney Road’s northern approach to the Botanic Road/North Terrace intersection, buses will travel in a tunnel for approximately 650 metres beneath that intersection and Dequetteville Terrace, following the old tramway embankment south of Rundle Park and Rundle Road, before returning to grade within Rymill Park approximately 40 metres east of the East Terrace/Grenfell Street intersection.

- **Rundle Road and East Terrace layout modifications:** modifications to the layout of East Terrace and Rundle Road, between existing kerb lines, to improve pedestrian and cycling facilities along Rundle Road and to provide a net increase in on-street parking capacity by over 50 spaces.

- **A new off-road shared-use pedestrian/cycle path:** The Botanic Gardens preferred option is to provide a tree lined shared pedestrian - cycle path along Botanic Park and to improving the landscape character for users of Botanic Park, and making the eastern entry of the Adelaide Botanic Gardens safer for pedestrians. This option requires reconfiguration and expansion of existing car parking at the Gardens eastern entry.

- **Bridgeworks:** a new pedestrian/cycling bridge structure constructed adjacent to the existing western Hackney Road Bridge to accommodate a shared-use path crossing the River Torrens.
There are two separate and distinct planning assessment processes associated with the O-Bahn City Access Project; relating to development within and outside of the Adelaide Park Lands. Specifically, these works are proposed under two separate Development Applications:

- Development within the Park Lands (this report) – pursuant to Division 1 – General Scheme, Subdivision 1 – Approvals, Section 33(1)(a) within the Adelaide City Council
- Development outside of the Park Lands (separate application) – pursuant to Division 3 – Crown development and public infrastructure, Section 49 – Crown Development and Public Infrastructure within the City of Norwood Payneham & St Peters

Further development applications are also proposed in relation to tree-damaging activity outside of the Adelaide Park Lands and relocation of the 66kv electricity infrastructure (both within and outside of the Adelaide Park Lands).

The following elements of the project within the Adelaide City Council do not require Development Approval and make up the remaining elements/aspects of the O-Bahn City Access Project.

- parking amendments;
- roadway improvements, including an additional lane over the Hackney Road bridge;
- dedicated bus lanes; and
- pedestrian footpath along Hackney Road.

Under section 26 of the Highways Act 1926, the Commissioner of Highways is permitted to carry out roadwork in a district subject to meeting the Act requirements relating to notification of the proposed works.

Further, the definition of ‘development’ under the Development Act 1993 excludes certain aspects of the project from approval under the Act.

The following aspects of the O-Bahn City Access project within the Adelaide City Council will require Development Act 1993 approval and form the basis of this Development Application:

- O-Bahn Tunnel, Tunnel Ramp and Tunnel Portal within the Adelaide Park Lands;
- Excavation works associated with the tunnel within the Adelaide Park Lands;
- Significant and Regulated Tree-damaging activities;
- Consideration of impacts on surrounding State Heritage items;
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure;
- Shared use path bridge (for pedestrians and cyclists) over the River Torrens within the Adelaide Park Lands; and
- Expansion of existing car park associated with the Botanic Gardens (adjacent Hackney Road).
2.0 The O-Bahn City Access Project Background

DPTI has prioritised improving travel times and reliability of bus services for O-Bahn users by directing buses more directly into Grenfell Street, as well as improving traffic outcomes on the city ring route for other road users. The proposed design also seeks to provide improved land use outcomes for the wider community within the Park Lands and East Terrace precincts of the Adelaide CBD.

This project will involve the extension of the O-Bahn track from Hackney Road into the Grenfell Street priority bus lanes with the introduction of a dedicated bus tunnel under North Terrace, Rymill Park and Rundle Park. The O-Bahn City Access Project aims to improve connections between Hackney Road and the existing bus network on Grenfell Street. The project as a whole includes the following:

- Hackney Road at-grade priority bus lanes;
- A bus-only tunnel and at-grade bus lanes within the Adelaide Park Lands;
- Rundle Road and East Terrace layout modifications;
- Redevelopment of East Terrace between Grenfell and Pirie Streets;
- A shared use bridge structure adjacent to the existing Hackney Road Bridge across the River Torrens;
- A new off-road shared-use pedestrian/cycle path within Botanic Park;
- Impacts and removal to Regulated and Significant Trees to accommodate the works; and
- Expansion of the existing car park associated with Botanic Gardens (along Hackney Road).

Components of the O-Bahn City Access Project require Development Approval under the Development Act 1993 and Development Regulations 2008 which form the basis of three separate Development Applications and are assessed in this report where applicable.

This application relates to the project elements within the Adelaide Park Lands, within the City of Adelaide.

2.1 Project Objectives

The primary objective of the O-Bahn City Access Project is to:

*Improve travel times and reliability, and reduce on-road delays for users of the O-Bahn service between the end of the busway at Gilberton and Grenfell Street over the next 30 years.*

Further, the objectives of the O-Bahn City Access Project seek to address the improvement of travel times and reliability of service between the end section of the guided bus track at Gilberton and the City centre at Grenfell Street. The benefits are expected to be realised over the next 30-year period, and reduce congestion on the Inner Ring Route for freight and commuter traffic. Other project objectives are to:

- Improve safety and travel time, and reduce congestion for traffic on the Inner Ring Route;
- Allow for potential long term transport initiatives;
- Minimise impacts to the travelling public, business operations and the wider community during construction;
- Minimise impacts upon the environment and heritage, including the Park Lands; and
- Complete the project within the $160 million allocated budget by the second half of 2017.

Additionally, the O-Bahn City Access Project will further promote the O-Bahn as a more favourable travel option than private motor vehicles for accessing the City; leading to a predicted travel mode shift for these journeys over time. The key benefits that will be delivered by the project include:

- **Improved travel time and reliability for bus services** will enable O-Bahn timetables to be optimised, allowing for up to a 7-minute average daily saving as well as improved service reliability. For those people living in the North East suburbs who commute to and from work in the CBD, the benefit is exponentially greater during peak times when traffic is at its heaviest;
- **Reducing traffic congestion on the Inner Ring Route** by grade-separating the bus corridor from key signalised intersections along Hackney Road and Dequetteville Terrace, thereby improving functionality for commuters and freight traffic traversing the City fringe;
- **Improvements to traffic safety** through the proposed restrictions to various right turn movements, and replacement with alternative U-turn facilities to retain access to the local road network, whilst addressing the significant existing safety issues associated with these movements, and reinforcing Hackney Road’s functional role as part of the Inner Ring Route;

- **Improvements to pedestrian and cycling access and safety** to provide safer links to the existing City pedestrian/cycling network, and improve their attractiveness as a means of accessing the City including:
  - a new shared-use path alongside the Botanic Gardens on the western side of Hackney Road (including a new bridge over the River Torrens); and
  - improved pedestrian and cycling facilities along Rundle Road;

- **Improving the East End business precinct** by providing improved customer access with a quicker and more reliable public transport system, including increased parking capacity for those travelling by car; and

- **Improved amenity**, along East Terrace and Frome Road by re-routing O-Bahn buses into the realigned O-Bahn corridor.

The benefits obtained by the successful delivery of this project will contribute to achieving the goals contained within the State Government’s Integrated Transport and Land Use Plan (ITLUP), which identified the need “to improve O-Bahn access to the Adelaide City Centre” as a priority. This improvement to public transport infrastructure also aligns with the State Government’s South Australian Strategic Plan targets, in particular to increase the use of public transport to 10% of metropolitan weekday passenger vehicle kilometres travelled by 2018.

### 2.2 Current Issues and Need for the Project

At 12 kilometres in length, the Adelaide O-Bahn is the longest and fastest guided bus service in the world. It is the most highly patronised public transport corridor in South Australia. The on-road section of the O-Bahn corridor between Gilberton and the Adelaide CBD currently has limited measures to protect public transport services from the effects of road congestion. Between the guided busway corridor exit and entry point at Gilberton and the CBD, O-Bahn buses operate within the roadway, either sharing the carriageway with other vehicles, or running within short sections of priority bus lanes. Between Hackney Road and Grenfell Street, the efficiency of bus services are significantly compromised by the current heavily congested traffic conditions.

This congestion negatively impacts upon bus services by increasing travel times and increasing the variability of on-time running. During peak periods, it takes almost double the time to travel 1.45 kilometres from Gilberton to Grenfell Street when compared to the 12 kilometre trip along the guided busway from Tea Tree Plaza to Park Terrace. Average bus speeds can be as low as 20 km/h and 25% of travel time can be due to delays at intersections.

Additionally, it is important to note that Hackney Road and Dequetteville Terrace form part of Adelaide’s Inner Ring Route. These roads cater for multiple functions, including a high frequency public transport route, major cycling route, major traffic route, and freight route as defined in *A Functional Hierarchy for South Australia’s Land Transport Network*.

Vehicle movements at the Hackney Road/Botanic Road intersection are currently at or approaching capacity, with around 79,000 vehicle movements on an average weekday. Delays currently experienced on this section of the O-Bahn bus route would increase over time without an infrastructure solution, and would be further exacerbated by the additional buses and services which are proposed to operate along the O-Bahn corridor over the next decade.

Following a review of the 2014 O-Bahn scheme, a revised design was announced on 25 February 2015. Community consultation on the initial project plans was undertaken following the February 2015 announcement where a number of issues were raised by the broader community, and as a result the O-Bahn City Access Project concept plans were amended to address key concerns raised through this process.

The following figure depicts the existing O-Bahn route from Hackney Road to Grenfell Street.
2.3 Subject Land and Locality

The subject land where the proposed O-Bahn route is to be located extends from the River Torrens Linear Park to the north, extending to the south-west to the East Terrace/Grenfell Street intersection. The O-Bahn bus route will then travel along and adjacent to the Hackney Road/Dequetteville Terrace road corridor; bisecting the Adelaide Park Lands (through Rundle and Rymill Parks) of the City of Adelaide. The dedicated bus route and Hackney Road tunnel ramp and portal will be contained within the Hackney Road carriageway, with the other tunnel ramp and portal located within Rymill Park.

Specifically, for this application, the area of the proposed development is located within the Park Lands Zone of the Adelaide City Council. The following two figures depict the proposed Reference Design for the O-Bahn City Access Project, and are attached in Appendix A of this report.
Figure 2 Overview of the key aspects of the O-Bahn City Access Project (Bundey's Road to Botanic Park)
Figure 3 Overview of the key aspects of the O-Bahn City Access Project (Dequetteville Terrace to Grenfell Street)
Rundle and Rymill Parks are bounded by Botanic Road to the north, Bartels Road on the south, East Terrace on the west and Dequetteville Terrace on the east. The Parks are separated by Rundle Road, which currently supports two lanes of traffic in each direction with a marked bike lane. Rundle and Rymill Parks also provide parking on the western side of each Park. During the Adelaide Fringe Festival, which is the height of activity in these Park Lands, parking is restricted on each western side to provide taxi ranks and to limit traffic around major pedestrian entrances.

The land adjacent to the site on Hackney Road and Dequetteville Terrace is a mix of residential, retail commercial, utilities/industry, education (St Peter’s College and Prince Alfred College) and other public institutions and land uses.

Adelaide’s East End forms the north-east part of the Adelaide CBD and is a popular office, retail and residential precinct. The centre of this area is Rundle Street, with a variety of restaurants, bars and retailing in this location. Adelaide’s East End is host to a number of events throughout the year including the Adelaide Fringe Festival, the preliminary stage of the Tour Down Under, the cross country stage of the Adelaide International Three Day Event and the Clipsal 500 Adelaide, mainly focused within Rundle and Rymill Parks.

The subject land is depicted in the figure below, and formally identified in the following table:

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Copies of the Certificates of Title for the subject land are included as part of this report (see Appendix B).
Additionally, the General Registry Office (GRO) Plans for the Adelaide Park Lands are also included in Appendix B of this report. The GRO Plans identify the tenure and care, control and management of land parcels within the Adelaide Park Lands.

2.4 Project History

Peak hour congestion has been steadily increasing in Adelaide. While private car trips and therefore car dependence has been increasing over the past decade, the share of public transport trips has also been increasing at a much faster rate in absolute terms. Some of that increase can be attributed to cultural change supported by improved train and bus services and improved priority for bus transport, such as the bus lanes in Grenfell Street.

Accordingly, the South Australian Government has identified the need to improve this crucial element of public transport infrastructure to improve peak hour congestion. This was originally identified as a key project in 2009, with initial concept plans prepared at that time.

The O-Bahn City Access Project supports and encourages further transition to public transport by improving the service through reduced travel time and improved reliability of O-Bahn bus services.

Figure 4 Location of Certificates of Title relevant to this Development Application
2.4.1  Design assumptions and features

The road design for the O-Bahn City Access Project is based on the following operational assumptions and features, which have been considered and incorporated into the latest concept design (Appendix A):

- The Inner Ring Route functionality and capacity is to be maximised;
- Hackney Road will have a continuous, dedicated bus lane northbound from the tunnel portal to the existing chute;
- Hackney Road will have a continuous dedicated bus lane southbound from south of Richmond Street to the tunnel entrance;
- The historic Hackney Road Bridge (East Carriageway) over the River Torrens is to be retained;
- The existing (1965) Hackney Road Bridge (West Carriageway) over the River Torrens is to be modified to enable an additional bus lane and a new shared path bridge to be constructed to provide pedestrian and cyclists facilities;
- Access to side streets adjacent to Hackney Road shall be modified to balance improvements to safety whilst providing appropriate access to key stakeholders and residents. U-turn facilities will be provided at a number of locations and alternative access routes are also available;
- Where practical, bicycle facilities will be separated from the Inner Ring Route traffic;
- Existing pedestrian crossings on Hackney Road are to be retained and where practical enhanced;
- Historic buildings on the north-east, north-west and south-west corners of the Hackney Road / Botanic Road intersection are to be retained;
- The road design shall minimise the impact on the Park Lands and improve the amenity of both East Terrace and Rundle Road while encouraging cycling and walking in the precinct;
- Improved pedestrian and cyclist facilities will be developed along Rundle Road;
- Parking will be increased by more than 50 car parks through reconfiguring East Terrace and Rundle Road;
- East Terrace is to be re-aligned between Hutt Street and Grenfell Street;
- Landscaping opportunities within the medians and verges of Hackney Road, Rundle Road and East Terrace shall be maximised; and
- The project design shall consider and allow for a future transport initiatives as identified in the ITLUP.

2.4.2  Site History

Originally designed in 1837 by Colonel William Light, the Adelaide Park Lands cover 760 hectares of land surrounding the City of Adelaide. The Park Lands serve as the largest urban park system in Australia, with much of the Park Lands being held under the care, control and management of the Adelaide City Council since 1852.

The Eastern Park Lands previously accommodated the Kensington Gardens tramline which followed the path of the proposed O-Bahn trail in the Park Lands, through Kent Town and along The Parade to Kensington with a double track (Figure 5, Figure 6). This was Adelaide’s first Horse-Tram network, completed in 1878; however these services were closed in 1957 due to a larger focus on car and bus transit within Adelaide.

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1 Lewis H. (1985), p.139
The O-Bahn was introduced into Adelaide’s north-eastern suburb of Paradise in 1986 and to Modbury (Tea Tree Plaza) in 1989 following a demand for light rail or bus transit into the Adelaide Central Business District. Currently, the O-Bahn is the most highly patronised public transport corridor in the metropolitan area with an average of approximately 32,000 to 35,000 boardings per weekday, and a total patronage of 9.274 million in 2013/2014.

2.5 Community Engagement

Following the February 2015 project announcement, extensive public consultation on the project was undertaken to engage with a wide range of stakeholders, including government agencies, local government, emergency services, business and industry groups, O-Bahn users and the wider community. This process included community information sessions and open days, in addition to several key stakeholder forums and briefings, to ensure South Australians had the opportunity to put forward their views on the revised proposal.
The key issues identified during this consultation period included:
- Impacts on the character and amenity of the Park Lands, in particular, the potential impacts on Rymill Park;
- Impacts on businesses due to the loss of on-street parking, in particular, the loss of Rundle Road car parking spaces;
- Hackney Road traffic conditions, including impacts on local access such as right-hand turning movements restrictions;
- Traffic congestion on the Inner Ring Route and through key intersections; and
- Provision for pedestrians and cyclists.

As a result, the current concept for the O-Bahn City Access Project was announced 10 June 2015 following extensive community consultation and improvements to the concept design due to concerns raised. The following table summarises the resultant changes now captured in the current concept design (which form the current application details):

<table>
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<th>Key issues</th>
<th>Responses</th>
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| **Character and amenity of the Park Lands - In particular, impact on Rymill Park:** | The project has established urban design principles which will guide high quality design responses for progressing the O-Bahn City Access Project, while respecting and enhancing the existing cultural and heritage aspects. DPTI has worked collaboratively with the Adelaide City Council in the development of a “Rundle Road Retained” option, which contained the following features:  
  - An extension of the tunnel by an additional 140 metres (to a total length of 650 metres), with the entry/exit portal located much closer to Grenfell Street, to reduce the impact on the amenity of Rymill Park.  
  - Lowering of the grade line of the busway in Rymill Park as it ramps back to ground level in the vicinity of the old tram embankment.  
  - Better use made of the embankment to aid in the provision of screening between the Rymill Park Lake recreational area and the busway.  
  - Retention of existing vegetation on the southern side of the old tramway embankment.  
  All of these elements will increase the physical separation, and reduce the visual and noise impacts from buses in the vicinity of Rymill Park Lake. |
| **Parking impacts:** Comments were received that the loss of existing on-street parking facilities on Rundle Road would impact on business operations within the East End Precinct. | Modification to the layout of Rundle Road and East Terrace were undertaken to provide a net increase of over 50 additional car parking spaces; the majority of which are located closer to East End businesses and eateries. |
### Key Issues

| Hackney Road traffic and local access: Concerns were raised about the local traffic access for the suburbs of College Park and Hackney. | Accident statistics over the last decade indicate there is a significant safety issue associated with existing access arrangements to/from Hackney Road from the adjacent local road network. In particular, greater than 60% of accidents recorded along Hackney Road have involved vehicles attempting a right-turn manoeuvre. Irrespective of this project, there is a need to address this existing safety issue. Accordingly, DPTI has endeavoured to develop a practical solution to this problem, whilst balancing the requirement to maintain reasonable access for the local residents of Hackney and College Park, with the need to address the significant existing safety concerns associated with these movements. The proposed solution involves the use of U-turn slots within the central median at various locations. Following the community consultation process, the following refinements to the design were made:
- Provision of an additional U-turn/right-turn facility at Vailima Court;
- Provision of an additional U-turn facility on Dequetteville Terrace, opposite King William Street.
- Modifications to the “Bus Lane” and red “Bus Only Lane” pavement markings to facilitate easier access to the proposed U-turn lanes.
This treatment, including the proposed right-turn restrictions, reinforces the function of Hackney Road as part of the Inner Ring Route. Typically, to maintain the high level function of this road (i.e. the safe and efficient movement of all types of vehicles around the City); these roads should have minimal disruption to traffic flow, with minimal direct side road or property access (potentially using service roads). |

| Pedestrians and Cyclist access – in particular safe crossing of Hackney Road and connections with pedestrian/cyclist infrastructure. | The following design responses have been provided in relation to this issue:
- Extension of the off-road shared-use pedestrian/cycle path along the Botanic Gardens side of Hackney Road (including a new shared-use path bridge crossing of the River Torrens), increasing the safety and accessibility of those links into the City. The Botanic Gardens preferred option is to provide a tree lined shared pedestrian/cycle path along Botanic Park and to improve the landscape character for users of Botanic Park and to make the eastern entry of the Adelaide Botanic Gardens safer for pedestrians. This option requires relocation of car parking to the Gardens eastern entry.
- Retention of the existing Rundle Road alignment, including modifications to improve cyclist and pedestrian safety.
- Retention of and minor modifications to three existing pedestrian refuge crossings on Hackney Road – each remaining in close proximity to their existing locations.
- Additional off-road cycling facilities in the Park Lands to connect with existing cycling infrastructure (such as the Norwood Bikeway and Adelaide Park Lands Trails).
Further development of Park Land trails is proposed in consultation with the Adelaide City Council. |

| Traffic Congestion – Inner Ring Route and through Key Intersections: Concerns that the closure of existing Rundle Road with impact on traffic flows along Inner Ring Route and through major intersections in the East End precinct. | Increased capacity achieved by:
- Rundle Road existing alignment retained.
- Provision of second right turn lane from Hackney into Botanic Road (i.e. replacing existing bus only lane) and tunnel providing grade separation of bus movements.
- Re-routing of O-Bahn buses from North Terrace – Frome Road – Grenfell Street route (35 buses in peak hour).
- Introduction of free flow left turn slip lane Dequetteville Terrace into Botanic Road. |
2.6 Project Challenges

A major challenge in delivering the O-Bahn City Access Project is associated with ensuring that the impacts on the environment, business operations, residents and the hosting of major events during the construction phase of the project are sensitively and effectively managed in consultation with the relevant stakeholders.

The project was assessed under the DPTI Environment Impact Assessment process in line with State and Federal legislation. The EIA focuses on flora and fauna, hydrology, soil characterisation and contamination, non-indigenous and indigenous heritage values, noise, vibration and air quality. A number of technical specialists have been engaged to provide assessments and recommendations which will be used to manage the range of environmental issues encountered.

The successful contractor for this project has not yet been appointed as this is still pending the obtainment of Development Approval for the project, who will need to develop a range of management plans and strategies to minimise the impacts of construction on businesses, residents and event coordinators in close consultation with DPTI and relevant stakeholders. This includes the management of traffic congestion and bus operations, minimising the impacts of noise, dust and visual impacts, and facilitating accesses where required.

The DPTI Project team will establish a number of working groups with the relevant Councils and other key stakeholders impacted by the proposed construction works. As project planning and concept design progresses, the Project team will continue to work with stakeholders to ensure the best overall outcomes are achieved.

2.7 Overview of Project Environmental Impacts

The following section provides a high level overview of the impacts to the biological, physical and social environments within the O-Bahn City Access Project study area. Specific detail relating to the proposed development within the Park Lands is discussed in further detail within Appendix C, and assessed in Section 6 of this report.

Impacts on the Biological Environment

- **Flora:** The land affected by the Project includes areas of the Adelaide Park Lands, though has been progressively cleared and re-landsced over time. The project works will require removal and major pruning to amenity landscaping and Regulated and Significant Trees. Vegetation within the project area is exempt from the *Native Vegetation Act 1991*. Every effort will be made to reduce the impact on the landscape, amenity planting/trees and Significant and Regulated Trees. The Arborist Report is included as Appendix D within this report.

Vegetation impacts have been assessed based on DPTI’s reference design and include allowances to facilitate flexibility in further development of concept designs. Application numbers are therefore greater than ultimate removals and are greater than the numbers provided in the Project Impact Report. Impacts will be reassessed during the detailed design and construction phase with the intention of minimising impacts where possible this will be communicated to DAC. DPTI will consult with the relevant council areas regarding the offset (including possible replacement landscaping) of amenity vegetation.

- **Fauna:** The River Torrens Linear Park and Adelaide Park Lands provide habitat for a number of bird species and small mammals, which may be impacted through the removal of vegetation associated with the project works. Specifically, several ‘Rare’ and ‘Vulnerable’ species have been recorded in this area that could be impacted. However, every effort will be made to minimise the potential impact to fauna within the project area during construction works.

Impacts on the Physical Environment

- **Water:** The project area is located within the Torrens Catchment area, and the project footprint – specifically the O-Bahn tunnel – will intercept the First Creek crossing and will be constructed adjacent the Botanic Creek. Potential impacts to the groundwater table largely associated with the excavation and construction of the tunnel will be appropriately managed both during construction and operation. Additionally, stormwater resulting from the impermeable structures will be appropriately captured and managed through the project works.

- **Air Quality:** The key impact to air quality is through road traffic congestion, though it should be noted that there will be some minor air quality impacts during construction in the short-term. Through the O-Bahn City Access Project, it is anticipated that idling and acceleration points on the major intersection on Hackney
Road will be reduced, and will actually result in improved local air quality within the vicinity of the project area. The Air Quality Impact Assessment is included as Appendix E within this report.

- **Soil Characteristics and Site Contamination:** The surface soil beneath the project site includes red brown earths that underlat most of the Adelaide City area and Park Lands. The soil types within the vicinity of the project footprint are largely alluvial in nature, though have been modified to varying degrees. Soil drainage is generally quite rapid though subject to waterlogging due to surface flooding. The project site has been classified against SA EPA Waste Derived Fill Standard to accommodate offsite disposal and on site re-use, as well in accordance with National Environment Protection (Assessment of Site Contamination) Measure for human health and ecological investigation levels. Site contamination assessments within the project area have identified that some areas of fill material across the site is currently classified as ‘exceeding Low Level Contaminated Waste’ whilst natural layers are classified as Waste Fill. Accordingly, a Contamination Management Plan will be prepared to appropriately manage and dispose of contaminated soil during construction works to minimise and manage the potential risks to the community.

- **Sustainability:** The project objectives are committed to sustainability; namely through the improvement of efficiency and reliability of public transport services, and to reduce the reliance on private motor vehicle transport in an effort to reduce carbon emissions. A Sustainability Management Plan has been prepared for the project which is attached in Appendix F.

**Impacts on the Social Environment**

- **Noise and Vibration:** A noise assessment was undertaken to understand the existing noise conditions within the project area, which identified that there were no sensitive receivers within the project area Construction works will be appropriately managed to minimise impacts to adjoining sensitive receivers. Additionally, vibration impacts on adjoining structures, particularly the Heritage Listed Hackney Road Bridge will need to be monitored during construction works to minimise potential impacts. The Preliminary Noise Mitigation Plan and Construction Vibration Assessment Reports are included as Appendix G and Appendix H, respectively.

- **Aboriginal Heritage:** A number of Aboriginal Heritage sites are located in proximity of the project area, including the River Torrens which is known to have strong connections with the Aboriginal community. The Kaurna and Ramindjeri Aboriginal Communities have been consulted on the project concept plans, and further consultation will occur during construction works. Additionally, a Cultural Heritage Management Plan is being prepared to manage and mitigate any potential impacts to places of Aboriginal Heritage significance. There are no registered Native Title sites within the project footprint.

- **Cultural Heritage:** Cultural heritage impacts relate to National, State and Local Heritage listing, and are briefly discussed below.

  - **National Heritage:** A preliminary assessment of the proposed works has been undertaken by a heritage architect, with the initial findings being that the project design, in principle, is consistent with the National Heritage values of Adelaide Parkland and City Grid Layout; specifically; the City grid layout; · views and vistas; Park Lands layout; and aesthetic qualities / landscape / use. Heritage experts will continue to be engaged at various stages of the planning and design process to ensure that further design development maintains the environmental, cultural, recreational and social heritage status of the Park Lands.

  - **State Heritage:** There are a number of places entered in the South Australian Heritage Register as having state significance within the vicinity of the project area; however the proposed works do not physically impact on any State Heritage places. Further assessments will be undertaken to ascertain the level of management required to ensure that the construction activities do not have an adverse effect on the State Heritage structures.

  - **Local Heritage:** The Adelaide City Council Development Plan lists a number of places of local heritage that sit within or adjacent to the project area. The O-Bahn City Access Project does not propose any physical works to the Carriage Entrance Gates, nor any works that would adversely impact on their setting or ongoing use. Proposed works may encroach on the War Horse Memorial, specifically the plaque and as such the plaque may need to be relocated.
2.8 Timing of Works

DPTI will continue to refine the O-Bahn City Access Project concept design through the detailed design phase of the project. A procurement process is currently being undertaken to appoint a contractor that will undertake the detailed design and construction of the project.

Prior to awarding the contract for construction, the project was presented to the Parliamentary Public Works Committee on the 21st of September 2015. It is anticipated that the main contract will be awarded in late 2015, with construction works likely to commence in late 2015/early 2016, and expected project completion in the second half of 2017.

2.9 Application Plans and Reports

This section lists the plans and reports associated with the Development Application for clarity purposes. The plans and reports are for the whole of the O-Bahn City Access Project. Of relevance for this development application are those plans/details associated with development within the Adelaide City Council only.

2.9.1 Application Plans (Appendix A)

- O-Bahn City Access Project – PLAN - HACKNEY ROAD, DPTI-SKT-7304-01-1001
- O-Bahn City Access Project – PLAN - TUNNEL, DPTI-SKT-7304-01-1002
- O-Bahn Tunnel – TYPICAL CROSS SECTION – PARK LANDS
- O-Bahn Tunnel Portal – TYPICAL CROSS SECTION – PARK LANDS
- Hackney Road Bridge – TYPICAL CROSS SECTION
- Rundle Road – TYPICAL CROSS SECTION
- Hackney Road – TYPICAL CROSS SECTION
- Hackney Road Intersection – TYPICAL CROSS SECTION

2.9.2 Application Reports and Documentation:

- Certificates of Title and General Registry Office Plans (Appendix B)
- Environment Impact Report (Appendix C)
- Arborist Report (Appendix D)
- Air Quality Impact Assessment (Appendix E)
- Sustainability Management Plan (Appendix F)
- Preliminary Noise Mitigation Plan (Appendix G)
- Construction Vibration Assessment (Appendix H)
- Non-Aboriginal Heritage Impact Assessment Report (Appendix I)
- Urban Design Report (Appendix J)
- Proposed DAC Impacts - Regulated and Significant Trees (Appendix K)

2.9.3 Project Impact Report

The Project Impact Report describes the O-Bahn City Access Project, summarises investigations and planning work to date and presents environmental, social and economic effects and opportunities of the Project. Although investigations have already been undertaken, further assessment is required during the detailed planning and design phase of the project. The Project Impact Report has been prepared to help interested groups, individual businesses, government agencies and local government understand the project. It also addresses DPTI’s response to issues raised during the formal community consultation stage. It aims to:

- Introduce and explain the need for the project;
- Describe the development of the project;
- Describe the existing environment in the project area; and
- Outline the effects and opportunities associated with the project.

2.9.3.1 Content and Structure of Project Impact Report

The Project Impact Report identifies the key issues, impacts and changes associated with the project, as well as presenting key mitigation measures to minimise these impacts and maximise opportunities.

It contains the following key sections:
- Section A: Project Overview, Planning and Development
- Section B: Transport Demand, Traffic Access and Parking
- Section C: Urban Design, Park Lands and Social and Environmental Impacts
- Section D: Construction and Staging, Concept Design Guidelines
- Section E: Appendices, Glossary, General Abbreviations, References

A link to the report is provided below:

2.9.4 Project Visual Fly-Through

Additionally, a ‘fly-through’ of the proposed O-Bahn alignment is provided below:
3.0 Development Application Elements

3.1 Procedural Matters

A project of this nature would typically fall under Division 3 – Crown Development and Public Infrastructure, Section 49 – Crown Development and Public Infrastructure of the Development Act 1993 as it is development to be undertaken by a State agency for the purpose of public infrastructure. However, as a result of the Adelaide Park Lands Act 2005, this section of the Development Act 1993 cannot be used for works within the Adelaide Park Lands.

Therefore, the proposed development will be the subject of two separate Development Approval processes. This is distinguished by development within the Adelaide Park Lands from development outside of the Adelaide Park Lands which are assessed pursuant to separate sections of the Development Act 1993 as outlined below.

Project Elements Excluded from the Definition of ‘Development’ under the Development Act 1993

Section 4 of the Development Act 1993 defines what activities or actions constitute ‘development’. There are a number of elements of the O-Bahn City Access Project that are excluded from the definition of development and thus do not require assessment and approval within this application, though have been discussed previously to provide context for the project.

Specifically, these elements include the following:
- parking amendments (excluding expansion of the Botanic Gardens car parking off Hackney Road);
- roadway improvements, including an additional lane over the Hackney Road bridge;
- dedicated bus lanes;
- excavation works (where being undertaken by the Crown); and
- pedestrian footpath along the Hackney Road.

Further, section 4(d) of the Development Act 1993 provides a definition of ‘development’ within the meaning of the Act, excluding the development of a “…road, street or thoroughfare on land (including excavation or other preliminary or associated work) when undertaken by the Crown, Council or other public authority.

The exception to this is when such development would materially affect the heritage value of a State Heritage Place.

Certain aspects of the project do not require Development Act Approval. These elements are shown on the application plans for information only, to assist with providing an overall understanding of the project.

Highways Act for Development on Roads

Under section 26 of the Highways Act 1926, the Commissioner of Highways (subject to the approval of the Minister for Transport) is permitted to carry out roadwork in a district provided that the Commissioner first gives the council notice in writing of the proposed roadwork and of the date on which it is proposed to such work. Accordingly, this is a separate process and does not form part of the current development application.

The definition of ‘roadwork’ under the Act covers:

a) the construction of a road; or
b) the maintenance or repair of a road; or
c) the alteration of a road; or
d) the construction of drains and other structures for the drainage of water from a road; or
e) the installation of fences, railings, barriers or gates; or
f) the installation of traffic control devices, traffic islands or parking bays; or
g) the improvement of a road including (for example)—
   i. landscaping and beautification; or
   ii. installation of road lighting; or
h) the installation of amenities or equipment on or adjacent to a road for the use, enjoyment or protection of the public; or

i) the installation of signs on or adjacent to a road for the use or benefit of the public; or

j) any work in connection with a road.

Development outside of the Adelaide Park Lands (Separate Application)

The proposed development associated with the O-Bahn City Access Project located outside of the Adelaide Park Lands is lodged with the Development Assessment Commission pursuant to section 49 of the Development Act 1993. This area of the project is located within the Norwood Payneham & St Peters Council who will receive a referral for the development during the assessment process with a two-month period to provide comments on the proposed development.

Further, as the project value for this section of the project within the City of Norwood, Paynehem & St Peters requiring Development Approval is less than $4 million, the development application will not require public consultation.

Accordingly, the Minister for Planning is the relevant authority in the consideration of a section 49 Crown Development Application, and must have regard to the relevant provisions of the Development Plan in its decision on the proposal.

Development within the Adelaide Park Lands (This Application)

As mentioned previously, the proposed development associated with the O-Bahn City Access Project would typically fall under Section 49 – Crown Development and Public Infrastructure of the Development Act 1993 as it is development to be undertaken by a State agency (Section 49(2) (a)). However, under Section 49(18), this section does not apply to any development within the Adelaide Park Lands as noted above.

Accordingly, the aspects of the project requiring approval that are located within the Adelaide Park Lands are assessed pursuant to Division 1 – General Scheme, Subdivision 1—Approvals of the Act, with Schedule 10 Part 4A of the Development Regulations 2008 prescribing that the Development Assessment Commission (DAC) is the relevant authority and must assess the proposal against the relevant provisions of the Development Plan.

For such an application, a referral of the application to the Adelaide City Council is required, with Council having up to six (6) weeks to provide comments to DAC on the proposed development.

3.2 Staged Development Plan Consent

Section 33 of the Development Act 1993 states that a development is approved if, and only if, all relevant consents have been granted. In this instance, Development Plan Consent and Building Rules Consent will be required.

Compliance with the Building Code of Australia 2013 is a requirement of the O-Bahn City Access Project. Such compliance will be ensured through the administration of the contractual requirements with the successful Design and Construct Contractor, and will be checked and confirmed the a Proof Engineer and Independent Verifier who are privately certified and authorised to exercise the functions pursuant to Division 2 of the Development Regulations 2008.

Due to the finalisation of the detailed design through the current tender process, the need to minimise disruption within the Rundle and Rymill Parks, and the need to commence early works associated with the project, a staged Development Approval will be required. We request that such staged consent be noted as part of the current Development Plan Consent application process.

3.3 Adelaide City Council Final Project Approval

As the body responsible for the care, control and management of the Adelaide Park Lands, the Adelaide City Council is the final approval authority for elements of the O-Bahn City Access Project within the City of Adelaide. The Adelaide City Council has a separate process to review the proposed activity as the caretaker and manager of the Adelaide Park Lands and ultimately have the final decision on the proposed development.
Figure 7 Legislation Reference Applicable within and outside of the Adelaide Park Lands (Concept Plan 1)
Figure 8 Legislation Reference Applicable within and outside of the Adelaide Park Lands (Concept Plan 2)
3.4 Adelaide Park Lands Act 2005

The Adelaide Park Lands Act 2005 establishes a legislative framework that promotes the special status, attributes and character of the Adelaide Park Lands, and provides for their protection and management as a globally important asset to be preserved as an urban park for the benefit of present and future generations.

The Act, supported by the Regulations, establishes an advisory group, the Adelaide Park Lands Authority, to aid in the management of the Park Lands. This body, with representation from the state government, Adelaide City Council and the community, is set up under the guidance of the Adelaide City Council.

3.5 Project Elements Requiring Development Approval

In consideration of the above, the following aspects of the O-Bahn City Access project will require Development Act approval and form the basis of this application:

- O-Bahn Tunnel, Tunnel Ramp and Tunnel Portal within the Adelaide Park Lands;
- Excavation works associated with the tunnel within the Adelaide Park Lands;
- Significant and Regulated Tree-damaging activities;
- Consideration of impacts on surrounding State Heritage items;
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure;
- Shared use path bridge (for pedestrians and cyclists) over the River Torrens within the Adelaide Park Lands; and
- Expansion of existing car park associated with the Botanic Gardens (adjacent Hackney Road).

These elements are discussed in further detail in this report.

It should be noted that service relocation associated with the O-Bahn City Access Project, such as the 66kV electricity line, will form part of a separate Development Application.

Aspects of the development proposed as part of this O-Bahn City Access Project, but not requiring Development Approval are discussed in Section 3.5 of this report.

Appendix A includes the application plans for the redevelopment, including specific designs and cross-sections for the O-Bahn City Access Project.

3.5.1 O-Bahn bus tunnel, ramp and portal within the Adelaide Park Lands

This application includes the O-Bahn bus tunnel within the Adelaide Park Lands, and the ramp and portal to the tunnel located within Rymill Park. The tunnel portal has been designed to have an unobtrusive yet attractive appearance that will result in a safe and functional access point.

The overall length of the O-Bahn bus tunnel is 650 metres, and approximately 10 metres in width to accommodate two-way bus movements and an emergency access/services corridor for stormwater infrastructure and mechanical and electrical equipment.

The buses enter and exit the tunnel portal via the ramp just east of Grenfell Street via a ramp accommodating the rise of the buses from the tunnel network. This enables each bus lane to align with the existing bus lanes along Grenfell Street, meeting at street level before the intersection of East Terrace.

Tunnel Design and Layout

Australian Standard AS 4825 Tunnel Fire Safety, Clause 1.6.32 defines a tunnel as “A substantially enclosed roadway or track-way greater than 80m in length”. Clause 1.4 Tunnel Classification, subclause (a) (i) states “Long Tunnel (L) where the length is greater than 120m in the case of road and Bus tunnels and 250m in the cast of rail tunnel.”

The proposed O-Bahn bus tunnel concept is in excess of 250 metres. Therefore based on AS 4825, and the Austroads Guide to Road Tunnels, the concept design for the O-Bahn grade separation has been considered to be a tunnel.
The busway tunnel will incorporate ramps in both directions to accommodate the O-Bahn buses. The design of the road ramp includes traffic barriers and approach slabs as the grades separate. These entry stages of the underground tunnel will be approximately 10.0 metres wide and up to 4.5 metres high within the tunnel.

Under the Botanic Road and Hackney Road intersection, the busway will be completely underground. The underground design of the tunnel incorporates sub-surface draining, structural floor slabs and room for services corridor and emergency exits and evacuation strips at regular intervals. Lighting and ventilation will be appropriately located through the tunnel.

Landscaping will be continued over the tunnel at Rundle and Rymill Parks, with a varied depth to the surface. As detailed previously, services corridors are provided along the length of the tunnel with emergency egresses and exits placed where appropriate.

Figure 9 Preliminary tunnel concept design, DPTI

3.5.2 Excavation works associated with the tunnel

The proposed development incorporates significant excavation works up to approximately 60,000 cubic metres to accommodate the tunnel works which are being undertaken by the Crown, but are not exempt from the definition of ‘development’ as the development is located within the Adelaide Park Lands. Additionally, a Contamination Management Plan will be prepared for the construction works to ensure that any contamination discovered during excavation is appropriately contained and removed.

3.5.3 Tree damaging activities

A comprehensive tree survey assessment has been undertaken for the entire project area. Within the Adelaide City Council area, 40 Regulated and Significant trees have been identified for major impact or removal as part of the O-Bahn City Access Project concept design (as shown in Appendix K). To facilitate flexibility in development of concept design, herein a greater number of Regulated and Significant Trees has been identified to that stated within Project Impact Report (PIR).

However, as stated in the Project Impact Report, it should be noted that a maximum of 17 of the trees will be removed identified within Rymill and Rundle Parks. The specific trees will be confirmed at the conclusion of the tender assessment process.

The following table identifies the total number of Regulated and Significant Trees that require Development Approval and could be impacted or removed for the Project within Rundle and Rymill Parks.

Table 3 Summary of the Significant/Regulated Trees that are likely to be impacted by O-Bahn project works within Rundle and Rymill Parks

<table>
<thead>
<tr>
<th>Removal</th>
<th>Major Impacts</th>
</tr>
</thead>
</table>
Approval is being sought for the following trees where reference numbers correlate to the attached map and the Arborist Report (Appendix D):


- **Major impact to Regulated tree/s**: 209 - *Ulmus procera*, 211 - *Ulmus procera*, 222 - *Pinus halepensis*

- **Major impact to Significant tree/s**: 126 - *Eucalyptus camaldulensis*, 173 - *Eucalyptus cladocalyx*

Additionally, the following table identifies the total number of Regulated and Significant Trees that potentially could be impacted or removed for the Project outside of Rundle and Rymill Parks, with the total potential trees requiring Development Approval.

<table>
<thead>
<tr>
<th>Trees</th>
<th>Removal</th>
<th>Major Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Regulated</td>
<td>19</td>
<td>3</td>
</tr>
</tbody>
</table>

Approval is being sought for the following trees where reference numbers correlate to the attached map (Appendix K) and the Arborist report (Appendix D):


- **Removal of Significant tree/s**: 518a - *Pinus halepensis*

- **Major impact to Regulated tree/s**: 277 - *Citharexylum quadrangulare*, 282 - *Quercus ilex*

Additionally, there are a number of amenity trees and other vegetation that may be impacted by the proposed works. However these do not form part of the Development Applications. DPTI are working closely with the Adelaide City Council to ensure that any tree impacts are minimised.

The location of the trees identified in this application is included in Appendix K, and the Arborist Report is included in Appendix D.

### 3.5.4 Impacts on State and Local Heritage Items

A Heritage Assessment Report was prepared by Dash Architects which identified the following State Heritage listed items within the Adelaide City Council boundaries. The State and Local Heritage items within the vicinity of the project area and considered in the report include:

- Bicentennial Conservatory, Botanic Gardens (State)
- Hackney Bridge (former New Company Bridge) – eastern half of the bridge (State)
- Carriageway entrance gates, Hackney Road, Botanic Park (Local)
- War Horse Memorial Trough and Obelisk, corner of East Terrace and Botanic Park, Rundle Park Adelaide (Local)
The concept design and the project footprint do not affect or pose to have an impact on these items. A copy of the Non-Aboriginal Heritage Assessment Report is included in Appendix I of this report to assist with the assessment of potential impacts to heritage items against the Adelaide City Council Development Plan.

3.5.5 Landscaping and urban design

The O-Bahn City Access Project will result in both landscape and urban design changes for the Park Lands and surrounding urban areas. Landscaping will be installed to remediate and enhance areas impacted by construction of the project. The project also has the opportunity to contribute to the Park Lands and surrounding areas in consultation with the community and the Adelaide City Council to enhance event spaces and the vibrancy of the East End precinct.

Landscaping and urban design has been an integral component in developing the O-Bahn City Access Project’s concept design and aims to recognise not only those using the transport network but also those who live within its vicinity, Park Land users and City visitors. A Concept Landscape Master Plan has been prepared for Rundle and Rymill Parks which provides a visual representation of how these Park Lands could be ultimately landscaped, though this plan is not yet finalised. This is depicted on Figure 10. The Project may contribute to some elements of this master plan, in consultation with Adelaide City Council.

The O-Bahn City Access Project’s urban design framework and concepts have been developed with consideration and evaluation of existing overarching urban design strategies and guidelines; the project area’s existing condition; design assessment workshops; and opportunities to enhance the aesthetic and social elements within the project area. The final urban design elements associated with the Project will be finalised by DPTI in consultation with Adelaide City Council.

The Landscape Architecture and Urban Design Assessment, Master Planning Report (Urban Design Report) is included in Appendix J of this report.

A key Urban Design objective for the project, as stated in the Project Impact Report is:

- **Create a vibrant public realm for East Terrace**: Develop a high quality public realm for East Terrace and the East End precinct with additional car parking, landscape treatments and improved pedestrian and cycling facilities. Consider East Terrace as an urban design stitch between the City and the Park Lands that encourages use of Rundle Park/Kadlitpina and activation of the East End. Harmonising and integrating the design of the tunnel portal within the Park Lands will also be a key objective.

Specific urban design principles have also been developed to shape the project design. These being:

- Contribute to the landscape context of the Park Lands;
- Respect the Park Lands (heritage and amenity values);
- Enhance opportunities for the community and visitor access and use of the Park Lands;
- Support opportunities for events and festival spaces;
- Improve safety and security;
- Limit infrastructure impacts on the Park Lands;
- Improve sustainable transport connections (pedestrian and cycle);
- Limit impacts on existing trees, vegetation and associated fauna;
- Deliver a net increase in open space to the Park Lands;
- Limit physical and visual impacts on existing landscape features;
- Improve the public realm of the streets and urban edges to the Park Lands; and
- Encourage high quality design responses.

DPTI will continue to work with the Adelaide City Council and the community so that landscaping and urban design works will be undertaken to ensure that any amenity sites disturbed during construction are restored. A detailed landscaping plan is to be prepared upon development of the final project design.

Also, there should be a focus on greening the transit corridors to tie in with the Park Lands and be used for amenity and tree offsets.
3.5.6 Shared use path bridge over the River Torrens within the Park Lands
A new pedestrian/cycling bridge structure will be constructed adjacent to the existing western Hackney Road Bridge to accommodate a shared-use path crossing the River Torrens. This structure is proposed to connect with a new shared use path alongside the Botanic Gardens on the western side of Hackney Road.

The bridge is proposed to be approximately 3.56 metres in width, and located approximately 10.3 metres to the west of the expanded Hackney Bridge carriageway.

3.5.7 Expansion of existing car park associated with the Botanic Gardens (adjacent Hackney Road)
The proposed scheme for off-street parking south of Plane Tree Drive at the Goodman Building was developed by TCL in conjunction with Adelaide Botanic Gardens. The existing car parks are proposed to be reconfigured and expanded from 123 spaces to 200 spaces, with the area will proposed to be landscaped in conjunction with the Botanic Gardens. All car parks will be designed in accordance with the relevant Australian Standards including the provision of car parking designed and designated for persons with a disability.
1. O-Bahn corridor extension (single busway portal alignment) and grass median
2. Bus tunnel portals
3. Refurbished footbridges making modified landscaped area, event space or amphitheatre
4. Additional landscape treatments adjacent to Rymill Lake to improve screening
5. Relocate testing and barbecue
6. Existing play space retained
7. Existing lagoons
8. Retain water feature pinch
9. Rundle Road retained
10. Realignment of East Terrace
11. Reinstatement of Park Lands
12. Small East Terrace park and recreation of existing fountain
13. Upgrade of East Terrace including reduced traffic lanes, central landscaped median, WSDO, increased lighting and improved pedestrian crossing
14. Tree planting to 3-Bahn tunnel construction corridor to reinvigorate Park Lands setting
15. Shared use path to Rundle Park
16. Protect existing White Cedar avenue
17. Park Lands Trail retained
18. Improved footpath connections
19. Alignment of O-Bahn tunnel
20. Retain Botanic Creek
21. New bike path on Rundle Road

Figure 10  O-Bahn City Access Project – Concept Landscape Plan
3.6 Project Elements Not Requiring Development Approval

The following elements of the project do not require Development Approval and make up the remaining elements/aspects of the O-Bahn City Access Project. They are shown on the application plans provided for information to assist with giving an overall understanding of the project. These elements include:

- parking amendments along Hackney Road;
- roadway improvements, including an additional lane over the Hackney Road bridge;
- dedicated bus lanes; and
- pedestrian footpath along Hackney Road.

As discussed previously, under section 26 of the *Highways Act 1926*, the Commissioner of Highways is permitted to carry out roadwork in a district subject to meeting the Act requirements relating to notification of the proposed works.

In association with the development, the Commissioner may also erect and maintain fences, walls, posts or barriers across any road for the purpose of preventing access to or egress from any controlled-access road as per Section 35(D)(1).

Modifications to the layout of East Terrace and Rundle Road, between the existing kerb-lines, are proposed to improve pedestrian and cycling facilities along Rundle Road and result in a net increase of on-street car parking capacity by approximately 50 spaces.

3.6.1 Introduction of dedicated bus lanes along Hackney Road

New dedicated bus lanes will be introduced within the Hackney Road corridor, which is contained within the City of Norwood Paynesham & St Peters.

From the current O-Bahn exit point at Gilbernon, buses will continue via two (one in each direction) centrally aligned priority bus lanes along Hackney Road. The inbound bus lanes would commence after Richmond Street and continue all the way to the tunnel entry ramp approach to the Botanic Road/North Terrace intersection.

The outbound bus lane extends from the tunnel exit ramp north of the Botanic Road/North Terrace intersection to the O-Bahn’s dedicated corridor entry chute on Mann Road. Provision of this lane requires an upgrade of the western bridge structure over the River Torrens, as well as a modification to the layout of the Bundeys Road signalised intersection.

3.6.2 Rundle Road and East Terrace Road Design

Modifications to the layout of Rundle Road and East Terrace are proposed to increase on-street parking capacity and result in a net increase of over 50 additional spaces.

3.6.3 Hackney Road Design

Hackney Road will have continuous dedicated bus lanes leading to and from the tunnel ramp and portal to the existing chute.

Access to side streets adjacent to Hackney Road will be modified to balance improvements to safety whilst providing access and U-turn facilities.

The Botanic Gardens preferred option is to provide a tree lined shared pedestrian and bike path along Botanic Park and to improve the landscape character for users of Botanic Park and to make the eastern entry of the Adelaide Botanic Gardens safer for pedestrians. This option requires relocation of car parking to the Gardens eastern entry.

3.7 Contractor's Environmental Management Plan (CEMP)

Once selected, the Design and Construction Contractor for the project will be responsible for developing a Contractor’s Environmental Management Plan (CEMP) for the works prior to commencing construction.

The CEMP will be developed in accordance with the DPTI’s *Environmental Code of Practice for Construction - Road, Rail, and Marine Facilities; Contractor’s Environmental Management Plan Guidelines* and the Contract Specification Environmental Requirements. The CEMP would detail how the environmental management requirements, as identified in the DPTI construction contract specification, would be implemented and managed.
on-site. The CEMP must also detail how the contractor would mitigate construction impacts and must document the contractor’s response to inspecting, monitoring, verifying, internal auditing, and correcting or improving environmental performance based on their design and construction methodology.

The main elements of the CEMP would include:

- A brief description of the project and the environmental objectives.
- Details of the contractor’s Environmental Management System including environmental management schedules (such as a Soil Erosion and Drainage Management Plan) specifically related to the requirements of environmental legislation, the Environmental Management Plan and the construction contract specification.
- Environmental aspects - a pre-construction assessment of all environmental aspects that could impact on the environment (e.g. vegetation, noise, vibration, air quality, water quality, contamination, heritage).
- Operational control - environmental procedures to manage all identified impacts and environmental protection requirements. These procedures shall include inspection and test plans and checklists.

The CEMP will be prepared during the detailed design phase of the project.
4.0 Strategic Context

The South Australian Planning System operates under a number of strategic plans and policy documents that seek to guide the future development of the State of the whole. To support the requirements of Section 49 of the Development Act 1993 for aspects of the each of the relevant State and Local strategic planning schemes have been reviewed in relation to the proposed O-Bahn City Access Project.

4.1 State Strategies

South Australia’s Strategic Plan

A number of key strategic documents guide the decision making process in South Australia. South Australia’s Strategic Plan (SASP 2011) is the overarching strategic planning document for the state, which reflects South Australia’s aspirations for 2014 and beyond. It also provides the framework for the development and implementation of other planning strategies and policy initiatives, such as the Planning Strategy for South Australia which incorporates The 30-Year Plan for Greater Adelaide, the Strategic Infrastructure Plan for South Australia and the Integrated Transport and Land Use Plan.

South Australia’s Strategic Plan contains the following targets that are relevant to the proposed development:

<table>
<thead>
<tr>
<th>Table 5 O-Bahn City Access Project contribution to South Australia’s Strategic Plan objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
</tr>
<tr>
<td>OUR PROSPERITY</td>
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<tr>
<td></td>
</tr>
<tr>
<td>OUR COMMUNITY</td>
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<tr>
<td></td>
</tr>
<tr>
<td>OUR ENVIRONMENT</td>
</tr>
</tbody>
</table>

The proposed development supports the Strategic Plan by enabling the improvement of quality and travel time of the O-Bahn busway and encouraging more of the population to use public transport and reduce reliance on cars.
The 30-Year Plan for Greater Adelaide

The 30-Year Plan for Greater Adelaide (the Plan) is a volume of the Planning Strategy for South Australia and applies to areas affected by the proposed development. The Plan has been prepared by the Government to guide the community, local government, business and industry.

The main aim of the Plan is to outline how the South Australian Government proposes to balance population and economic growth with the need to preserve the environment and protect the heritage, history and character of Greater Adelaide. The Plan seeks to create inclusive, vibrant and liveable communities, while protecting the regional hinterlands and primary production lands and sustaining natural resources. The Plan is one of the key tools to assist the State Government, local government and the entire community in building resilience to the risks and impacts of climate change. It seeks to provide a set of practical and achievable policies and targets to manage the forecast changes that will confront Greater Adelaide during the next 30 years.

An extension of the O-Bahn corridor is identified in the 30-Year Plan for Greater Adelaide as one of the key public transport investments for this major transit corridor.

The O-Bahn City Access Project will contribute to encourage broader mixed use development in the City through its contribution to connecting the north-eastern region of metro Adelaide to the CBD. Key transport improvements such as the O-Bahn City Access Project and CityLINK, in combination with the recent Capital City Development Plan Amendment (DPA) are intended to unlock development potential of the CBD for mixed use, including significant residential uplift.

The rezoning through the Capital City DPA has encouraged a growing residential market offering in the City, while other initiatives as part of the Vibrant City agenda will improve the attractiveness of a City based lifestyle for prospective residents. The update to the 30-Year Plan will build upon these initiatives and re- emphasise the importance of the City to meeting our population and dwelling targets.

Future planned residential development along the mass transit corridors, particularly at major interchanges, will be supported by an improved performance of the O-Bahn corridor. The planned development of a higher density mixed use hub around Modbury Interchange will be facilitated by improved O-Bahn public transport services as people choose to locate in the North East Region close to the O-Bahn corridor encouraging a more compact, transit-focused City.

Integrated Transport and Land Use Plan 2015

The ITLUP guides private, Federal, State and local government investment in the transport system for the next 30 years, with a focus on integrating land-use, strategic infrastructure and transport investment planning. It focuses on connecting people between places of residence, work and recreation, and connecting business to markets to support economic growth.

Of particular note, the ITLUP identifies the need to “Improve O-Bahn access to the Adelaide City Centre” as one of the short term priorities (i.e. within the next 5 years).

The Plan identifies a comprehensive suite of solutions to address the current and future transport challenges facing the state, with particular focus on:

- Growing the role of public transport in servicing our City and urban and regional centres;
- Providing efficient connections to export/import gateways;
- Prioritising transport infrastructure and services to encourage mixed use development in central and inner Adelaide;
- Supporting vibrant communities by encouraging active travel modes in Greater Adelaide and regional centres;
- Fine-tuning, maintaining and making better use of existing assets; and
- Developing and maintaining a planning system that ensures integrated transport and land use.

The Plan aims to support and assist an emerging trend that more people now want to live in or near the City by continuing with strategic investments into public transport that will create a lively, creative, dynamic and safe district that appeals to residents and businesses. To do this, the transport system needs to not only support medium density, vibrant communities and business growth across inner-Adelaide but to actively encourage and drive these developments. An expanded network of trams in the inner areas and the CBD, combined with a
redesigned bus network, and greater investment into our cycling and walking routes, integrated with land development, will greatly increase choice of travel.

The Plan provides a strong vision to improve public transport into and within the City in line with corridor growth. It also proposes to address the problems associated with Adelaide’s Inner Ring Route around the outer-edge of the Park Lands and supports more cycling, buses and trams into the City.

The Plan recognises that the bus network is the core of the public transport system carrying approximately 80% of passengers in Adelaide. Buses, through their inherent flexibility, have a unique role in the future that other public transport modes cannot meet.

The Plan proposes a future public transport network that builds upon the previous and proposed investment in rail, tram and the O-Bahn bus infrastructure and services, to create an integrated network that is more stable, easy to use for all times of the day and with a focus on transit connections to major activity centres, employment and residential growth areas. The long term stability of a public transport network of high quality, high capacity and more frequently connected services is likely to influence urban development and create more sustainable transport patterns in a growing and more compact urban area.

Key improvements to the public transport system within the ITLUP include:
- Improved O-Bahn access into the CBD;
- Continued improvements to the train network, including electrification;
- Bringing a network of trams, called AdeLINK, back to the CBD and inner Adelaide to the northwest, east, west, north, south and a loop in the CBD; and
- A redesigned and modernised bus network.

The ITLUP also highlights the need to improve the efficiency and safety of the Inner Ring Route, including intersection and mid-block upgrades. This will provide an alternative, efficient connection for traffic travelling around the central City, thereby removing traffic from the CBD, improved pedestrian amenity and connectivity, opportunities for improved cycling facilities, and improved travel times and reliability for public transport.

The contribution of the O-Bahn City Access Project to the ITLUP goals and objectives are listed in the table below.

<table>
<thead>
<tr>
<th>ITLUP Goals</th>
<th>ITLUP Objectives</th>
<th>Project Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Healthy, safe, affordable and connected communities</td>
<td>Liveability Connected, vibrant, safe and attractive places throughout South Australia. A land use and transport system in Greater Adelaide that delivers connectivity, safety and choice of travel for people at a level that maintains Adelaide as one of the world’s most liveable cities while increasing densities in central Adelaide to support the knowledge and services economy. Public transport, walking and cycling become a desired choice of travel for residents, reducing reliance on the car.</td>
<td>The Project would: Deliver more efficient and reliable public transport linkages into the City from the north-eastern suburbs.</td>
</tr>
<tr>
<td>2. A strong, diverse and growing economy</td>
<td>Prosperity A transport network which connects people and businesses to jobs, markets and services in a safe, reliable and timely manner. An efficient and effective freight</td>
<td>The Project would: Increase capacity on the Inner Ring Route, improving traffic flow on these roads and allowing for better use and public transport priority. Improve intersection performance for</td>
</tr>
<tr>
<td>ITLUP Goals</td>
<td>ITLUP Objectives</td>
<td>Project Contribution</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>transport system that adds to the competitiveness of South Australia.</td>
<td>vehicles entering from the eastern suburbs into the City. Reduce vehicle conflicts by grade separation of bus/traffic streams, fewer intersections movements and improved intersection operation to minimise the risk of differing users.</td>
<td></td>
</tr>
</tbody>
</table>

3. **Thriving, natural and built environment**

**Sustainability**
Significant reduction in transport emissions, including greenhouse gases and other harmful emissions.

**The Project would:**
Allow greater efficiency in bus movement and reduce ‘idle’ time at intersections which is likely to reduce greenhouse gas emissions compared to the existing situation.

### 4.2 Adelaide City Council

**Smart Move: The City of Adelaide’s Transport and Movement Strategy 2012-22**

One of the key features of the Transport and Movement Strategy (released by the Adelaide City Council) is the focus on linking walking, cycling and public transport routes across the Park Lands while reducing the reliance on car travel.

The Strategy summarises the importance of achieving a balanced transport network and states ‘If we only plan for cars, all we will get is a City with cars. If more people used public transport, changed to bikes and carpooled, there would be less traffic on the roads and that makes your driving experience better. It’s a logical transition...’ This is a transition that will require measured and professional implementation, and not unconsidered reaction to individual projects or policies. Car parking supply and pricing, bus services and bike lanes, traffic controls and speed limits can be better managed and targeted to achieve the objectives outlined.

The Transport and Movement Strategy aims to significantly increase the tram and bus share of total trips to the City for all trip purposes as shown below. Another key consideration is the intended day and night time use of the City tram corridors including the urban design context within which the tram network will sit.

**City of Adelaide Strategic Plan 2012-2016**

The City of Adelaide Strategic Plan 2012-2016 outlines the council’s vision for the Council area and the projects and services it will deliver by 2016. This Plan outlines the main goals for the City of Adelaide as being accessible, creative, liveable, prosperous, environmentaly sustainable and a city of great places.

The outcome to include readily available public transport systems which link City destinations and beyond, both day and night, is most relevant to the proposed development. However the O-Bahn City Access Project will also encourage greater environmental sustainability, accessibility and liveability by promoting improved and reliable access into Adelaide Central Business District from north-eastern suburbs through public transport rather than private car use.

**Adelaide: One City, Many Places – A Spatial Vision for the Future of the City 2014**

The One City, Many Places document by Adelaide City Council provides a spatial vision for land use, built form and movement outcomes envisaged for the City over the next three decades. This plan also includes a structure plan to be prepared in the Governance and Implementation Section of the 30-Year Plan for Greater Adelaide.

The vision includes direction towards co-creation and the strengthening of relationships with State Government and the community through projects, the co-ordination of planning for infrastructure, transport and community facilities with hard and soft infrastructure and the review of buildings in the City by the Capital City Design Review Panel and against the Spatial Vision.

By working with DPTI, the City of Adelaide and the community, the proposed development supports the spatial vision of the City of Adelaide through the development process and implementing high levels of architectural design and amenity through the development of the detailed design, and highlighting the importance of the Park Lands by amending policy to allow the expansion of critical public infrastructure.
Adelaide Park Lands Management Strategy – Towards 2020

The Adelaide Park Lands Management Strategy ‘Towards 2020’ guides the directions and priorities relating to the Park Lands in accordance with the Adelaide Park Lands Act 2005. The strategy aims to increase the community’s formal and informal use of the Park Lands; protect the National Heritage Values; ensure the Park Lands are widely accessible to the public; safeguard the natural, cultural and heritage values; improve the quality of the landscape and facilities; ensure environmental and financial sustainability; and improve community awareness of the natural and cultural heritage.

Specifically, the priorities relevant to Rymill Park are water management initiatives and increased recognition and incorporation of Aboriginal Management principles and protocols. Rymill Park is also identified as a key area for ‘Recreation and Event Space Upgrade’. Rundle Park is identified as a ‘major recreation and event space’, and that future cycling and walking links to Botanic Park are considered as part of the review of the existing Royal Adelaide Hospital site.

Relevant to the Botanic Park Land region, the aims are to strengthen connections between the River Torrens (Karrawirra Parri), the Adelaide Zoo and Botanic Park, and investigate a potential ‘tree walk’ along the river.

The proposed development supported the principles within the Adelaide Park Lands Management Strategy through the proposed amendments to join Rundle Park and Rymill Park and ultimately increase opportunity for recreation activities and events within the east Park Lands and by enhancing the understanding and awareness of the Cultural and Natural Heritage of the Park Lands through minor improvement works and the additional area of Park Land.

The Park Lands Community Land Management Plan

The Park Lands Community Land Management Plan (CLMP) provides management direction for the Adelaide Park Lands, as required by the Adelaide Park Lands Act 2005 and the Local Government Act 1999. The CLMP highlights the importance of the eastern Park Lands in terms of their recreational use, history and heritage items to be preserved.

Chapter 11: Tidlangga (Park 9), Warnpangga (Park 10), Tainmuntilla (Park 11)

The CLMP Desired Future Character Statement for the Park Lands states:

“Providing space and facilities for organised recreation and sport, while meeting the wider recreational needs of the community and enhancing the biodiversity within the River Torrens / Karrawirra Parri corridor.”

Chapter 14: Rundle Park/Kadlitpina, Rymill Park/Murlawirrapurka and Ityamai-itpina (Park 15)

The CLMP Desired Future Character Statement for the eastern parklands promotes the picnic and event spaces of Rundle Park and Rymill Park and contrasts the natural sporting uses of Ityamai-itpina (Park 15). Challenges and opportunities mentioned within the plan include:

- Strengthening the quality and appeal of the Park Lands to attract park users.
- Contributing to the open space needs and expectation of the growing residential communities in and around the City.
- Minimising impacts on the parks associated with high usage and a wide range of events.
- Maintaining and enhancing the formal garden settings in Rundle Park/Kadlitpina and Rymill Park/Ityamai-itpina.
- Maintaining important views and vistas across the Adelaide Plains to the Adelaide Hills.
- Ensuring tree avenues are conserved and strengthened.
- Meeting demand for improved pedestrian and cyclist access for recreation and commuter purposes.
- Managing flood mitigation measures in the Parks.

In addition to these desired character statements, challenges and opportunities, the CLMP also highlights the importance of the eastern Park Lands in terms of history and specific heritage items to be preserves in the area. Of note is the Valve House, the last remaining structure from the Kent Town Waterworks, the Alice in Wonderland and Picanniny statues and the overall 1961 design of footbridges and rose gardens of Rymill Park.
5.0 Overview of the Elements of Development Requiring Approval

As discussed, there are a number of elements of the proposed development which are located within the Adelaide Park Lands and are to be assessed against the Adelaide (City) Development Plan (consolidated 24 September 2015). Elements of the proposed development to be assessed in this Development Application include:

**Development within the Park Lands – Adelaide (City) Development Plan:**
- O-Bahn Tunnel, Tunnel Ramp and Tunnel Portal within the Adelaide Park Lands;
- Excavation works associated with the tunnel within the Adelaide Park Lands;
- Significant and Regulated Tree-damaging activities;
- Consideration of impacts on surrounding State Heritage items;
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure;
- Shared use path bridge (for pedestrians and cyclists) over the River Torrens within the Adelaide Park Lands; and
- Expansion of existing car park associated with the Botanic Gardens (adjacent Hackney Road).

In essence, the O-Bahn City Access Project is considered to be ‘public infrastructure’ as it involves the State Government establishing further public transport infrastructure for the benefit and use of the community of South Australia.

Furthermore, the following table identifies all of the Certificates of Title for the allotments located within this portion of the project area.

**Table 6 Project Area Allotments within the City of Adelaide**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Plan</th>
<th>Allotment No.</th>
<th>Owner</th>
<th>Area</th>
<th>Hundred</th>
<th>Title Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>81642</td>
<td>116</td>
<td>The Crown</td>
<td>1.8 Ha</td>
<td>Adelaide</td>
<td>CR6102/712</td>
</tr>
<tr>
<td>B</td>
<td>H105100</td>
<td>Sec 574</td>
<td>The Crown</td>
<td>26.6 Ha</td>
<td>Adelaide</td>
<td>CR6043/262</td>
</tr>
<tr>
<td>C</td>
<td>66751</td>
<td>102</td>
<td>The Crown</td>
<td>4.574 Ha</td>
<td>Adelaide</td>
<td>CR5943/443</td>
</tr>
<tr>
<td>D</td>
<td>86132</td>
<td>200</td>
<td>The Crown</td>
<td>1.735 Ha</td>
<td>Adelaide</td>
<td>CR6074/282</td>
</tr>
<tr>
<td>E</td>
<td>81642</td>
<td>117</td>
<td>The Crown</td>
<td>6.4 Ha</td>
<td>Adelaide</td>
<td>CR6132/227</td>
</tr>
<tr>
<td>F</td>
<td>74256</td>
<td>11</td>
<td>The Crown</td>
<td>13.7 Ha</td>
<td>Adelaide</td>
<td>CR6102/716</td>
</tr>
<tr>
<td>G</td>
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<td>10</td>
<td>The Crown</td>
<td>0.836 Ha</td>
<td>Adelaide</td>
<td>CR6102/715</td>
</tr>
</tbody>
</table>

5.1 Legislative Context

Proposed development within the Adelaide Park Lands will follow an approval process in accordance with Part 4—Development Assessment, Division 1—General scheme, Subdivision 1—Approvals of the *Development Act 1993*.

The relevant authority for this application as per Schedule 10 Part 4A – Development within the Park Lands of the *Development Regulations 2008* is the Development Assessment Commission (DAC). The application is to be assessed against the relevant provisions of the Development Plan, involve a six (6) week referral process period with the Adelaide City Council and as a Category 1 form of development which will have no requirements for public consultation.
6.0 Development Plan Assessment

The elements of the O-Bahn City Access Project within the City of Adelaide will be assessed against the Adelaide (City) Development Plan, Consolidated 24 September 2015, which is the current Development Plan. The Project will largely cover the Park Lands Zone and, more specifically, the Rundle and Rymill Parks Policy Area 20, the River Torrens East Policy Area 18 and the Botanic Park Policy Area 19.

The approach taken is to summarise the key intent of the Zone and Council Wide provisions with reference to the proposed development.

6.1 Zone and Policy Area Assessment

Within the Park Lands Zone, all forms of development are considered to be ‘non-complying’, except where specifically excluded. Principle of Development Control (PDC) 18 relating to exclusions to ‘non-complying’ forms of development includes the following:

- Development undertaken for the purpose of public infrastructure within the Golf Links Policy Area 16, River Torrens East Policy Area 18, Botanic Park Policy Area 19, Rundle and Rymill Parks Policy Area 20 and River Torrens West Policy Area 24:
  - (a) the infrastructure, equipment, structures, works and other facilities used in or in connection with the supply of water or electricity, gas or other forms of energy, or the drainage of waste water or sewage;
  - (b) roads and their supporting structures and works;
  - (c) railways, tramways and busways;
  - (d) school (only in Botanic Park Policy Area 19);
  - (e) all other facilities that have traditionally been provided by the State (but not necessarily only by the State) as community or public facilities;

and development undertaken:

- (a) by a State agency (whether or not in partnership or joint venture with a person or body that is not a State agency); and/or
- (b) by a person or body (that is not a State agency) where the development is specifically endorsed by a State agency.

The proposed development is located entirely within the Park Lands Zone, within the River Torrens East Policy Area 18, Botanic Park Policy Area 19 and the Rundle and Rymill Parks Policy Area 20. As noted above, the project as a whole is considered to be ‘public infrastructure’ being undertaken by a State Agency and thus falls under this list of exclusions from being considered ‘non-complying’. Thus the proposed development as described above is considered to be a ‘merit’ form of development.

6.1.1 Park Lands Zone

<table>
<thead>
<tr>
<th>Park Lands Zone</th>
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</thead>
<tbody>
<tr>
<td>Desired Character</td>
<td>1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Objectives</td>
<td>1, 2, 3, 5, 6, 7, 8, 9, 16, 17, 18</td>
</tr>
</tbody>
</table>

Desired Character

The Desired Character for the Zone reinforces the Park Lands as a highly valued aspect of the city landscape, an essential part of relaxation, recreation and enjoyment for residents and visitors and a setting for a variety of special events and festivals, whilst enabling a well-connected pedestrian and cycle network.

The proposed design of the O-Bahn City Access Project will have minimal impact on the unique open space systems of Rundle and Rymill Parks and will enable the continued use of the existing surrounding Park Lands for
the relaxation, enjoyment and leisure of the City’s workers, residents and students, the metropolitan population and visitors.

Objectives

The intent of the Park Lands Zone is to promote a sustainable, integrated and diverse environment and open space which is respectful to its indigenous and European heritage. This is supported by the desire for all new development to establish landscape design, planting, management and maintenance regimes that reflect the Character and intent of each Policy Area.

Principles of Development Control

Form of Development

PDC 7 specifically encourages development for the purpose of public infrastructure undertaken by a State Agency stating:

Development may include for the purpose of public infrastructure within the Golf Links Policy Area 16, River Torrens East Policy Area 18, Botanic Park Policy Area 19, Rundle and Rymill Parks Policy Area 20 and River Torrens West Policy Area 24:

(a) the infrastructure, equipment, structures, works and other facilities used in or in connection with the supply of water or electricity, gas or other forms of energy, or the drainage of waste water or sewage;
(b) roads and their supporting structures and works;
(c) railways, tramways and busways;
(d) school (only within Botanic Park Policy Area 19);
(e) all other facilities that have traditionally been provided by the State (but not necessarily only by the State) as community or public facilities;

where undertaken:

(i) by a State agency (whether or not in partnership or joint venture with a person or body that is not a State agency); and/or
(ii) by a person or body (that is not a State agency) where the development is specifically endorsed by a State agency.

The proposed development meets PDC 7 by contributing further integral public infrastructure for the enhancement of public transport services in South Australia. The buildings and structures associated with this development, such as the O-Bahn tunnel, ramp and portals, will be sensitive to the natural surroundings, and be designed to be as unobtrusive as possible and suitably screened by landscaping. Similarly, the reconfigured and expanded car parking area associated with the Botanic Gardens (fronting Hackney Road) will be landscaped and designed in accordance with the plans prepared by TCL, in conjunction with the Botanic Gardens.

The Park Lands Zone provisions support buildings which deliver public benefit, respond to the surroundings and incorporate the highest quality of design and materials. The public infrastructure involved with the O-Bahn City Access Project aims to deliver public benefit for those within and outside of the surrounding area. As shown in the Application Plans, the highest quality of design and materials will be utilised to create an aesthetically pleasing and robust design of this critical infrastructure.

It is acknowledged that the proposed development works will result in excavation and clearing of parts of the Park Lands, however every effort will be made to protect the vegetation that contributes to habitat corridors within the Park Lands during construction works, and will be managed through a CEMP.

Built form and Public Environment

It is noted that although the proposed development does not specifically include provisions for outdoor recreation uses, the proposed busway will not have significant impact on the activities within Rymill Park and will not affect the current outdoor activities performed in each space. Care will be taken during the timing of construction as to not impact upon the special events and formal recreation uses of the Park Lands.

The proposed design of the development has sought not to diminish the Aboriginal heritage value of the locality and Park Lands, in particular respecting the land as a major camping area from the 1840’s to 1900 of the
indigenous population. As discussed in Section 2.7 - Project Environmental Impacts of this report, the Kaurna and Ramindjeri Aboriginal communities have been consulted regarding the development of the O-Bahn City Access Project. An Aboriginal Heritage Consultant has conducted a site survey with the Aboriginal groups and DPTI will continue to facilitate meetings with the communities to provide feedback and comment throughout the design phase of the Project.

Additional consultation, including with the Minister for Aboriginal Affairs and Reconciliation and the Kaurna and Ramindjeri Aboriginal communities, will be organised as part of a Section 23 process under the Aboriginal Heritage Act 1988. The Section 23 process involves seeking an authorisation to damage, disturb or interfere with an Aboriginal site or object, should any be encountered during construction of the O-Bahn City Access Project.

6.1.2 River Torrens East Policy Area 18

Development proposed within this Policy Area includes the shared use bridge structure over the River Torrens, Regulated and Significant Tree-damaging activities and associated infrastructure.

<table>
<thead>
<tr>
<th>Desired Character Policy Area 18</th>
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</tr>
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<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Principles of Development Control</strong></td>
<td>1, 2, 3, 5, 6, 7,</td>
</tr>
</tbody>
</table>

Desired Character and Objectives

The Desired Character of the River Torrens East Policy Area 18 recognises the importance of informal and formal outdoor recreation and areas of open grassed playing fields. The Policy Area has a perimeter of significant woodland plantings adjacent to the corridor of indigenous plantings on the banks of the River Torrens/Karrawirra Parri and the area as a viable habitat for native wildlife. New development in Policy Area 18 should encourage informal and formal recreation activities.

The Desired Character also recognises the need for improvements to pedestrian linkages and the public realm, to enhance the use and enjoyment of the Park Lands. Additionally, public infrastructure, such as busways and their supporting structures and works are envisaged in this Policy Area.

Principles of Development Control

Envisaged development within Policy Area 18 includes a range of informal and formal recreational areas, with supporting facilities and limited support additional structures or replacement buildings.

The Policy Area seeks to ensure that any new recreation areas are enclosed by a perimeter of mixed exotic and woodland plantings. Any future development should respect the existing native vegetation and be sensitive to the natural surroundings.

A number of Regulated and Significant Trees will be impacted by the proposed development, requiring either removal or pruning to accommodate the construction works. DPTI will ensure that an Arborist will be present during all pruning and removal works to ensure that this is undertaken in an appropriate manner.

6.1.3 There is no specific reference to Regulated or Significant Tree-damaging activities in the Policy Area provisions however the project design and construction has sought to minimise potential impact to trees wherever possible. Botanic Park Policy Area 19

Development within this Policy Area includes the shared use bridge structure over the River Torrens, expansion of existing car park associated with the Botanic Gardens (adjacent Hackney Road), Regulated and Significant Tree-damaging activities and associated infrastructure.

<table>
<thead>
<tr>
<th>Botanic Park Policy Area 19</th>
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<tbody>
<tr>
<td><strong>Desired Character</strong></td>
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</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>1</td>
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<tr>
<td><strong>Principles of Development Control</strong></td>
<td>1, 2, 5, 6, 8, 10, 11, 12, 13</td>
</tr>
</tbody>
</table>
Desired Character and Objectives

The Botanic Park Policy Area 19 Desired Character seeks to maintain the open garden theme of Botanic Park, whilst providing a diversity of uses such as the Zoological Gardens, Botanic Gardens and the National Wine Centre. Development that further alienates Park Lands from public usage is not encouraged within the Policy Area.

The Desired Character also recognises the need for improvements to pedestrian linkages and the public realm, to enhance the use and enjoyment of the Park Lands. Additionally, public infrastructure, such as busways and their supporting structures and works are envisaged in this Policy Area.

Principles of Development Control

The proposed bus portal development on Hackney Road adjacent to the Policy Area (within the City of Norwood Payneham & St Peters) will be sensitive to the existing environment and construction works will seek to minimise the impact on surrounding vegetation and the landscape as much as possible. Landscaping associated with the proposed car parking reconfiguration and expansion will be sensitive to the existing mix of exotic and Australia native plantings, lawns and garden beds and where possible, will continue and contribute to the natural landscape in consultation with the Botanic Gardens.

Again, there is no specific reference to Regulated or Significant Tree-damaging activities in the Policy Area provisions, however the project design and construction has sought to minimise potential impact to trees wherever possible.

6.1.4 Rundle and Rymill Parks Policy Area 20

Development within this Policy Area includes Regulated and Significant Tree-damaging activities, potential impacts to State and Local Heritage items, the O-Bahn tunnel, ramp and portal exiting adjacent to Grenfell Street and associated infrastructure.

<table>
<thead>
<tr>
<th>Rundle and Rymill Parks Policy Area 20</th>
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<tbody>
<tr>
<td>Desired Character</td>
</tr>
<tr>
<td>Objectives</td>
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<tr>
<td>Principles of Development Control</td>
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</table>

Desired Character and Objectives

The Desired Character of Rundle and Rymill Parks seeks to maintain the East Park Lands as open parks and gardens, with continued recreational use of the lake. Policy Area 20 encourages informal recreational enjoyment within a setting that is representative of an English Park Land with a mix of Australian landscaping features. Improvements to transport links and public infrastructure are desired within the Policy Area, however development that alienates Park Lands from public usage is not desired within the Policy Area.

The proposed development will seek to achieve the Desired Character of Policy Area 20 by extending a vital piece of public transport infrastructure, being the O-Bahn dedicated busway, and will enable further activation of the Park Lands and improvements to the public realm through the land available above the O-Bahn tunnel within Rundle and Rymill Parks. The O-Bahn tunnel portal will ramp up towards Grenfell Street so that it plateaus out to the same level as the existing road carriageway to then connect to the dedicated bus lanes on Grenfell Street.

The proposed development is for public infrastructure and supporting works within this Policy Area, and will seek to improve the O-Bahn route to the Adelaide CBD to meet current and future commuter demand, whilst seeking to reduce traffic congestion and encourage public transport as a more sustainable and reliable form of transport. New landscaping, following the construction of the tunnel, will be undertaken in consultation with the Adelaide City Council, and existing landscaping and urban design frameworks.

Principles of Development Control

The Principles of Development Control seek to achieve the Desired Character for the Policy Area by seeking development that predominately encourages formal and informal recreation activities. PDC 5 also seeks improvements to transport links through the policy area that result in further activation and enjoyment of the Park Lands and improvements to the public realm.
The tunnel portal itself will be designed to have an attractive yet unobtrusive appearance that will complement the Park Land setting whilst clearly and safely identifying the O-Bahn tunnel exit. The land above the tunnel structure will remain as Park Lands and will be landscaped in a manner complementary to the existing English Park Land setting, as is currently existing.

A number of Regulated and Significant Trees will be impacted by the proposed development, requiring either removal or pruning to accommodate the construction works. DPTI will ensure that an Arborist will be present during all pruning and removal works to ensure that this is undertaken in an appropriate manner.

Additionally, the Regulated and Significant Trees that are removed will be replaced on a 2:1 and 3:1 basis respectively, in accordance with the Development Act 1993 requirements. The location and species of replacement plantings will be confirmed with the Adelaide City Council.

6.2 Council Wide Assessment

The following section provides an assessment of the project elements requiring approval against the Council Wide provisions of the Development Plan. The following Council Wide provisions have been identified as relevant to the proposed development and are discussed in order of reference below:

- Living Culture
- Environment
- Heritage and Conservation
- Built form and Townscape
- Squares and Public Spaces
- Transportation and Access
- Economic Growth and Land Use
- Park Lands
- Regulated and Significant Trees

6.2.1 Living Culture

The proposed development satisfies many of the criteria with regard to the promotion of Living Culture within the City of Adelaide. By improving the access to the City from the north-eastern suburbs, Adelaide is reinforced as a key accessible destination. Specifically, the City is highlighted as the prime meeting place and cultural focus for the State and a major focus for tourism, conventions, leisure, entertainment, sports and recreation, education, cultural development and the arts.

6.2.2 Environmental

The following section is an assessment of the proposed development against the specific environmental aspects listed in the Council Wide provisions of the Development Plan. Further details regarding the Environmental Impacts of the O-Bahn City Access Project are included in Appendix C.

Crime Prevention Through Environmental Design (CPTED)

The overall design of the project elements, specifically the tunnel, tunnel portal and external structures, have sought to incorporate appropriate lighting, emergency communication facilities and emergency escape access through the bus tunnel itself, whilst creating an open landscape above the tunnel encouraging natural surveillance of the public realm. The design of the tunnel portals and all physical infrastructure will incorporate urban design elements that discourage vandalism and enable efficient long-term maintenance and will be easily identifiable to ensure the safety of Park Land users.

The proposed tunnel portal and structures will ensure that public space areas are kept open to maintain sight lines and allow passive observation. Lighting will be incorporated into the external walls of the structures and around the tunnel portal to enhance the safety for Park Land Users.

Permeable fencing that is sensitive to the surrounding environment will be utilised to ensure sight lines are maintained and to enhance the safety of both O-Bahn users and Park Land visitors.

Noise Emissions
The noise assessment boundary for the O-Bahn City Access Project June 2015 concept was determined in accordance with DPTI’s Road Traffic Noise Guideline (RNTG), which found that there were not any noise sensitive receivers within the noise assessment boundary of the project area. As discussed in Section 2.7 - Project Environmental Impacts, and in further detail in Appendices G (Preliminary Noise Mitigation Plan) and H (Construction Vibration Assessment), it is considered that there will be minor noise and vibration impacts to surrounding land uses (such as dwellings) at the commencement of operation. Construction noise and vibration mitigation will be undertaken as outlined in appendices.

Night works and weekend works are also likely to be undertaken for the project. Any works occurring outside of the project construction hours will be undertaken by the Contractor in accordance with DPTI Operational Instruction 21.7 (OI 21.7) “Management of Noise and Vibration: Construction and Maintenance Activities” and include the development of a Night Works Management Plan and a high level of Community Engagement.

Furthermore, the CEMP will detail how noise is to be appropriately managed and mitigated during project construction works.

Stormwater Management

The proposed structures associated with the O-Bahn City Access Project are not expected to have a significant impact on the volume of stormwater runoff into the River Torrens Catchment or create challenges to the capacity of existing stormwater infrastructure.

The new tunnel portal and realigned East Terrace will require some changes to stormwater infrastructure that will maintain the existing capacity of the stormwater network. These will be designed to prevent and minimise the risk of downstream flooding, erosion and to protect and enhance the environmental values of all receiving watercourses.

Through the design, the visual impact of the O-Bahn tunnel and associated infrastructure will be minimised and largely secured from view through new landscaping along the diverted road to minimise the visual impact of the tunnel portal on the Park Lands. Within the tunnel, spaces are allocated for utilities and servicing and stormwater management.

6.2.3 Heritage and Conservation

As outlined in Section 2.7 of this report, the proposed development may impact upon specific heritage sites within the locality. Both Aboriginal and European heritage has been assessed in relation to potential impacts as a result of the proposed project. The findings of the heritage assessments suggest that the project as a whole, and specifically the elements that require Development Approval, will not detrimentally impact the surrounding State and Local Heritage items.

Where possible, the detailed design shall acknowledge and reflect Adelaide’s cultural heritage and recognise the Park Lands importance in Australia’s Aboriginal history and the preservation of existing sites. Through ongoing liaison with the Heritage Branch of the Department of Environment, Water and Natural Resources regarding requirements for State Heritage sites, DPTI will obtain any necessary approvals and implement recommendations/requirements and Local Government in relation to local heritage listed items/places and contributory places and if necessary obtain any approvals and implement recommendations for the proposed development.

The O-Bahn City Access Project will incorporate materials, finishes, setbacks and be of a scale to complement the existing heritage items, sensitive to the environment within the Adelaide Park Lands.

Due to the National Heritage Listing of the Adelaide Park Lands and the City Grid layout, the Contractor is required to submit approval documentation to the Federal Department of the Environment, with respect to the requirements of the Environmental Protection and Biodiversity Conservation Act 1999 and implement recommendations/requirements in consultation with DPTI.

6.2.4 Built form and Townscape

Landscaped open space will be maintained and enhanced in areas surrounding the public infrastructure development components, using materials and finishes that aim to contribute to the local landscape character. Landscaping will incorporate local indigenous species where appropriate. Screening of the tunnel portal at the edge of Rymill Park will be sympathetic to the landscaping and setting within the Park Lands.
6.2.5 Squares and Public Spaces
During construction, care will be taken to minimise the temporary impact on Rundle and Rymill Parks and to ensure that development does not endanger public safety or undue inconvenience to pedestrians or vehicle drivers. The land above the O-Bahn tunnel will be landscaped after construction to complement the existing park settings in consultation with the Adelaide City Council, and within the existing landscaping and urban design frameworks.

6.2.6 Transport and Access
The O-Bahn City Access Project will seek to enhance public transport patronage to and from the City from the north-eastern suburbs, and importantly will significantly reduce traffic congestion experienced on Hackney Road and the Inner Ring Route by remaining high volumes of buses off these roads. The project is anticipated to result in improvements to the extent of carbon emissions omitted due to vehicle idling at the intersections on these key roads and will seek to reduce private motor vehicle patronage by encouraging more people to take up public transport.

6.2.7 Economic Growth and Land Use
Similar to the Living Culture objectives, the project overall will enhance Adelaide CBD as the community, civic and cultural heart of South Australia by increasing efficiency in transport from the north-eastern suburbs. This will provide people living in the north-eastern suburbs with greater opportunities to participate in employment, retail and tourism within the CBD and to support the local South Australian economy.

One of the primary aims of the project is to create a more efficient and less congested transport network, therefore improving accessibility and movement for all modes of transport including cars seeking to park in the East End of the City. Whilst the project will generate jobs and supporting activities over the course of its construction, it is provision of greater public transport and associated road configurations that will enable economic benefits to accrue beyond the construction phase.

The ‘flow on’ economic and social benefits of the project (including improved transport network efficiency) will result at the completion of the project through both transport network improvements but also improved land use integration, urban design improvements and precinct enhancement.

6.2.8 Park Lands
The Park Lands Council Wide provisions reinforce the importance of the Adelaide Park Lands as a unique open space system which creates a distinct image for the City and supports the economic and social life of Adelaide and South Australia.

Replacement landscaping along the current Rundle Road area will be consistent with the existing character of the eastern Park Lands, and will be developed in consultation with the Adelaide City Council, and within the existing landscaping and urban design frameworks.

6.2.9 Regulated and Significant Trees
Overall, the conservation of Regulated and Significant trees is paramount to the project design and as discussed in the Development Plan provisions, thus the design of the bus tunnel, ramp, exit portal, extent of excavation and associated structures has sought to ensure the protection of as many natural features of the land as possible.

A detailed vegetation survey for trees and the proposed O-Bahn City Access Project has been undertaken and details of the specific number of trees that are potentially to be impacted by the proposed development is outlined in Section 2.7. In summary, the project design has sought to minimise the potential impact on all trees within the Park Lands wherever possible, however due to the nature of work proposed and location of the proposed O-Bahn tunnel, some impacts to Regulated and Significant Trees is unavoidable. The project is currently in the detailed tender phase, and thus the final trees to be impacted will be determined at the end of this phase, and is likely to be less than the potential impacts discussed in Section 2.7 of this report.

The Adelaide Park Lands (Park 13 and 14)
No trees within the project area are individually listed on the Significant Tree Register within Adelaide City Council Development Plan, however the following vegetation is stated of conservation importance within the ‘Community Land Management Plan Chapter 14’, by the Adelaide City Council in 2013, and ‘Adelaide Park Land and Squares Cultural Assessment Study’, by David Jones in 2007):

- White Cedar Avenues dating back to the mid-1870s,
Camphor Laurel circle planting by the Lions Club dating back to the mid-1990s,

- Moreton Bay Fig dating from 1880s,

- Peace and Friendship – Two garden Memorial stones dating from 1980 and 1996.

Other vegetation in the project area that may have high community value includes large Elm Trees (*Ulmus procera*) which line Rundle Road.

Some impacts to vegetation will occur through Rymill Park and along the south eastern corner of Rundle Park. In addition, an area of Park Lands south of Grenfell Street and west of East Terrace will also be impacted as a result of the realignment of East Terrace. Through the project design and alignment, DPTI has sought to minimise the number of trees impacted wherever possible, and it is likely that the number of trees identified in this report will be reduced pending confirmation of detailed design.
7.0 Summary and Conclusions

To summarise, the proposed development includes the following aspects which require approval pursuant to the Development Act 1993:

- O-Bahn Tunnel, Tunnel Ramp and Tunnel Portal within the Adelaide Park Lands;
- Excavation works associated with the tunnel within the Adelaide Park Lands;
- Significant and Regulated Tree-damaging activities;
- Consideration of impacts on surrounding State Heritage items;
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure;
- Shared use path bridge (for pedestrians and cyclists) over the River Torrens within the Adelaide Park Lands; and
- Expansion of existing car park associated with the Botanic Gardens (adjacent Hackney Road).

The concept design and the project footprint do not affect or pose to have an impact on State and Local Heritage Items.

Assessment of the overarching State and Local strategic planning documents reveal that the development of the O-Bahn City Access Project will assist in servicing wider public transport and access networks, and will provide much-needed supporting infrastructure for a transit corridor of regional significance.

The public infrastructure involved with the O-Bahn City Access Project will deliver public benefit. The highest quality of design and materials will be utilised to create an aesthetically pleasing and robust design of this critical infrastructure.

The current proposal is for development under Section 33(1)(a) of the Development Act 1993. This report has identified that this application is essential strategic public infrastructure that is to be provided by DPTI to support both public transport services in Metropolitan Adelaide for our current and future populations.

It is acknowledged that the O-Bahn already services a significant number of commuters each day, and this is predicted to significantly rise in the coming years. In consideration of this, the proposed development will assist in catering for the commuter demand likely to be generated in future by residents and visitors from the north-eastern suburbs of Adelaide.

Furthermore, the proposed development is not seriously at variance with the Adelaide (City) Development Plan, and is supported by a number of provisions within the Development Plan. Specifically, the Park Lands Zone Desired Character, Objectives and Principles of Development Control encourage development for the purpose of public infrastructure undertaken by a State Agency. This is further reflected in the Rundle and Rymill Parks Policy Area 20.

The proposed development has been designed to enable further activation of the Park Lands and improvements to the public realm within Rundle and Rymill Parks. Additionally, the shared use bridge over the River Torrens has been designed to complement the character of the local area and improve public access within this section of the Park Lands. Such work will be undertaken in close collaboration with Adelaide City Council.

The reconfiguration and expansion of the car park associated with the Botanic Gardens (adjacent Hackney Road) has been designed to complement the character and amenity of the Botanic Gardens, and will be constructed in close collaboration with the Botanic Gardens.

The proposed development warrants the favourable support of the Planning Authority.
We apologise for any inconvenience that such amendments may have caused.
Should you require any further information, please do not hesitate to contact myself or Dariusz Fanok (Ph: 0401 124 028).

Yours faithfully,

[Signature]

Brenton Burman
Technical Director, Transport Planning & Urban Development
brenton.burman@aecom.com

Mobile: +61 404 033 705
Direct Dial: +61 8 7223 5412
Direct Fax: +61 8 7223 5499

cc: Dariusz Fanok, DPTI
SECTION 49 & 49A – CROWN DEVELOPMENT
DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: CITY OF NORWOOD, PHOENIX
AND ST PETERS

APPLICANT: DEPARTMENT OF PLANNING,
TRANSPORT AND INFRASTRUCTURE

ADDRESS: 77 GREENFELL STREET, ADELAIDE
DEPARTMENT OF PLANNING,
1800
CROWN AGENCY: DEPARTMENT OF PLANNING,
TRANSPORT AND INFRASTRUCTURE

CONTACT PERSON FOR FURTHER INFORMATION

Name: BRENTON BURMAN, AGCAM AUSTRALIA, PTY LTD
Telephone: 08 7223 5412 [work] 0404 033 761 [Ah]
Fax: __________________________ [work] __________________________ [Ah]
Email: brentou.burman@agcam.com

NOTE TO APPLICANTS:

(1) All sections of this form must be completed. The site of the development must be accurately identified and the nature of the proposal adequately described. If the expected development cost of this Section 49 or Section 49A application exceeds $100,000 (excl. fit-out) or the development involves the division of land (with the creation of additional allotments) it will be subject to those fees as outlined in Item 1 of Schedule 6 of the Development Regulations 2008. Proposals over $4 million (excl. fit-out) will be subject to public notification and advertising fees.

(2) Three copies of the application should also be provided.

EXISTING USE:

ROAD CORRIDOR

DESCRIPTION OF PROPOSED DEVELOPMENT:

---

O-Bahn Tunnel Portal, consideration of impacts on surrounding state heritage items and ancillary structures associated with the O-Bahn City Access Project.

LOCATION OF PROPOSED DEVELOPMENT:

ROAD CORRIDOR, HACKNEY ROAD

House No: M/A Lot No: M/A Street: HACKNEY ROAD Town/Suburb: HACKNEY

Section No [full/part] M/A Hundred: ADELAIDE Volume: M/A Folio: M/A

Section No [full/part] M/A Hundred: Volume: Folio:

LAND DIVISION:

Site Area [m²] Reserve Area [m²] No of existing allotments Number of additional allotments [excluding road and reserve]:

Lease: YES ☐ NO ☐

DEVELOPMENT COST [do not include any fit-out costs]: $ 3 million

POWERLINE SETBACKS: Pursuant to Schedule 5 (2a)(1) of the Development Regulations 2008, if this application is for a building it will be forwarded to the Office of the Technical Regulator for comment unless the applicant provides a declaration to confirm that the building meets the required setback distances from existing powerlines. The declaration form and further information on electricity infrastructure and clearance distances can be downloaded from the DPLG website (www.dac.sa.gov.au).

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the Development Act 1993.

SIGNATURE: Dated: 21/10/2015
2 October 2015

Attn: Robert Kleeman
Development Assessment Commission
Level 5, Roma Mitchell House
136 North Terrace,
Adelaide SA 5000

Dear Robert,

RE: Development Application – O-Bahn City Access Project
Section 49 Crown Development Application within the City of Norwood, Payneham & St Peters

AECOM Australia Pty. Ltd. (AECOM) is acting on behalf of the Department of Planning, Transport and Infrastructure (DPTI) in relation to Development Approval requirements for the O-Bahn City Access Project pursuant to the Development Act 1993.

The O-Bahn City Access Project is a priority transport improvement project, as highlighted in the State Government’s 30-Year Plan for Greater Adelaide (2010) and the Integrated Transport and Land Use Plan (ITLUP) (2015). This project seeks to establish dedicated bus lanes along Hackney Road and a dedicated O-Bahn bus tunnel under the Adelaide Park Lands adjoining East Terrace to exit directly onto Grenfell Street, Adelaide.

This application, for development within the City of Norwood, Payneham & St Peters, is made pursuant to Division 3 – Crown development and public infrastructure, section 49 – Crown Development and Public Infrastructure of the Development Act 1993.

Specifically, the application involves the following:
- O-Bahn Tunnel Portal on Hackney Road;
- Consideration of impacts on surrounding State heritage items; and
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel (tunnel services buildings) and stormwater infrastructure.

Please find enclosed three (3) copies of the Development Application Report, including a planning assessment, application plans and supporting material, along with the Development Application and Power Line Clearance Declaration Form. An electronic copy of all such documents is included on the attached USB.

The overall project value for the O-Bahn City Access Project is $160 million. However, the elements requiring approval pursuant to the Development Act 1993 which form the basis of this application have an overall cost of $3 million.

The Department will continue to consult with the City of Norwood, Payneham & St Peters and adjacent land owners as part of the development process. Whilst recognising that this application will be formally referred to the City of Norwood, Payneham & St Peters, we have forwarded a copy of the application package to Council for its early consideration.

If you require any additional information or would like to discuss this further, please contact me on 0404 033 705, or the DPTI O-Bahn City Access Project Manager, Dariusz Fanok on 0401 124 028.

Yours faithfully

Brenton Burman
Technical Director, Transport Planning & Urban Development
brenton.burman@aecom.com
Mobile: +61 404 033 705
Direct Dial: +61 8 7223 5412
Direct Fax: +61 8 7223 5499

enc: Development Application Package
cc: Dariusz Fanok, DPTI
DEVELOPMENT REGULATIONS 1993
Form of Declaration
(Schedule 5 clause 2A)

To: DEVELOPMENT ASSESSMENT COMMISSION

From: AECOM AUSTRALIA PTY LTD (ON BEHALF OF DTI)

Date of Application: 30/09/15

Location of Proposed Development: HACKNEY ROAD, ROAD, ROAD, COORDINATE

House No: N/A, Lot No: N/A, Street: HACKNEY RD, TOWN/Suburb: HACKNEY

Section No (full/part): N/A, Hundred: CHANCE N/A

Volume: N/A, Folio: N/A

Nature of Proposed Development:
O-BAHN TUNNEL PORTAL, CONSIDERATION OF IMPACTS ON SURROUNDING STATE HERITAGE ITEMS AND ANCIENNITY BUILDINGS & STRUCTURES ASSOCIATED WITH THE O-BAHN CITY ACCESS PROJECT.

I, RONNIE BURMAN, (ON BEHALF OF DTI), being the applicant, a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the Electricity Act 1996. I make this declaration under clause 2A(1) of Schedule 5 of the Development Regulations 1993.

Date: 1/10/15

Signed: ____________________________

Note 1
This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 4(1) of the Development Act 1993), other than where the development is limited to –

a) an internal alteration of a building; or

b) an alteration to the walls of a building but not so as to alter the shape of the building.
15 October 2015

Atttn: Mario Barone
Chief Executive Officer
City of Norwood, Payneham and St Peters
175 The Parade,
Norwood SA 5067

Dear Mario,

**O-Bahn City Access Project – Section 49 Crown Development Application within the City of Norwood, Payneham & St Peters**

AECOM Australia Pty. Ltd. (AECOM), on behalf of the Department of Planning, Transport and Infrastructure (DPTI) has recently submitted various development applications for approval of the O-Bahn City Access Project pursuant to the *Development Act 1993*.

Due to the differing assessment processes prescribed under the *Development Act 1993*, three separate development applications were lodged with the Development Assessment Commission on 7 October 2015. These being:

- Development Application 020/L073/15 – Section 33 Development Application – Development within the Park Lands
- Development Application 155/V008/15 – Section 49 Crown Development Application - Tree Damaging Activities – Development within the City of Norwood, Payneham & St Peters and Town of
- Development Application 155/V009/15 – Section 49 Crown Development Application - Development outside of the Park Lands

Since lodging these three development applications, we have undertaken a review of the extent of works requiring approval pursuant to the *Development Act 1993*. The application plans and supporting documentation remain unchanged. However, there is greater clarity as to the elements of the project that require approval pursuant to the *Development Act 1993*. This is included in the updated Development Assessment Reports for Development Applications 020/L073/15 and 155/V009/15 (as amended on 15 October 2015).


The application plans and supporting documentation remain unchanged and form the detail of the amended development application.

To clarify, the following elements of the O-Bahn City Access Project require approval pursuant to the *Development Act 1993* within the City of Norwood, Payneham & St Peters associated with Development Application 155/V009/15 Section 49 Crown Development Application - Development outside of the Park Lands, are as follows:

- O-Bahn Tunnel Ramp and Tunnel Portal on Hackney Road
- Consideration of impacts on surrounding State Heritage items
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure

Under section 26 of the *Highways Act 1926*, the Commissioner of Highways is permitted to carry out roadwork subject to meeting the Act requirements relating to notification of the proposed works. The bus tunnel infrastructure where located wholly underground outside of the Adelaide Park Lands does not require Development Approval pursuant to Schedule 14 Clause 1(1)(b)(vi) of the *Development Regulations 2008*. In association with the development, the Commissioner may also erect and maintain fences, walls, posts or barriers
across any road for the purpose of preventing access to or egress from any controlled-access road as per Section 35(D)(1) of the Highways Act 1926.

We apologise for any inconvenience that such amendments may have caused.

Should you require any further information, please do not hesitate to contact myself or Dariusz Fanok (Ph: 0401 124 028).

Yours faithfully

Brenton Burman
Technical Director, Transport Planning & Urban Development
brenton.burman@aecom.com
Mobile: +61 404 033 705
Direct Dial: +61 8 7223 5412
Direct Fax: +61 8 7223 5499

cc: Dariusz Fanok, DPTI
O-Bahn City Access Project

Section 49 Crown Development Application - Development outside of the Park Lands
O-Bahn City Access Project

Section 49 Crown Development Application - Development outside of the Park Lands

Client: Department of Planning, Transport and Infrastructure
ABN: 92366288135

Prepared by
AECOM Australia Pty Ltd
Level 28, 91 King William Street, Adelaide SA 5000, Australia
T +61 8 7223 5400  F +61 8 7223 5499  www.aecom.com
ABN 20 093 846 925

15-Oct-2015

Job No.: 60329190

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# Quality Information

**Document**  
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**Date**  
15-Oct-2015

**Prepared by**  
Brenton Burman, Olivia Franco, Molly Gifford

**Reviewed by**  
Brenton Burman

## Revision History

<table>
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<th>Revision</th>
<th>Revision Date</th>
<th>Details</th>
<th>Authorised</th>
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| A        | 21-Sep-2015   | Initial draft for Client review | Brenton Burman  
Technical Director - Transport Planning and Urban Development |
| B        | 23-Sep-2015   | Revised draft for Client review | Brenton Burman  
Technical Director - Transport Planning and Urban Development |
| C        | 28-Sep-2015   | Draft for Client Review | Brenton Burman  
Technical Director - Transport Planning and Urban Development |
| D        | 01-Oct-2015   | Final | Brenton Burman  
Technical Director - Transport Planning and Urban Development |
| E        | 15-Oct-2015   | Revised Final | Brenton Burman  
Technical Director - Transport Planning and Urban Development |
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Prepared for – Department of Planning, Transport and Infrastructure – ABN: 92366288135
Acronyms

CBD  Central Business District
CEMP  Contractor’s Environmental Management Plan
CLMP  Park Lands Community Land Management Plan
CPTED  Crime Prevention through Environmental Design
DAC  Development Assessment Commission
DPA  Development Plan Amendment
DPTI  Department of Planning, Transport and Infrastructure
EIA  Environmental Impact Assessment
GRO  General Registry’s Office
ITLUP  Integrated Transport and Land Use Strategy
PDC  Principle/s of Development Control
PIR  Project Impact Report
RTNG  Road traffic noise guidelines
1.0 Introduction

AECOM Australia Pty. Ltd. (AECOM) has been commissioned by the Department of Planning, Transport and Infrastructure (DPTI) to prepare a Development Assessment Report to accompany the Development Application for the O-Bahn City Access Project.

The O-Bahn City Access Project is a priority transport improvement project, as highlighted in the State Government’s 30-Year Plan for Greater Adelaide (2010) and the Integrated Transport and Land Use Plan (ITLUP) (2015). This project seeks to establish dedicated bus lanes along Hackney Road and a dedicated O-Bahn bus tunnel under the Park Lands adjoining East Terrace to exit adjacent to Grenfell Street, Adelaide.

When complete, the project will significantly improve travel times on Adelaide’s most popular public transport corridor and speed up what is currently the slowest part of the journey, while also improving traffic flow on Adelaide’s Inner Ring Route. The Development Application plans are attached to this report, which depicts the baseline concept design for the O-Bahn City Access Project.

The O-Bahn City Access Project is a critical investment in improving our public transport and road infrastructure. The primary objective of the Project is:

Improved travel times and reliability, and reduce on-road delays for users of the O-Bahn service between the end of the busway at Gilberton and Grenfell Street over the next 30 years.

Other key objectives of the project include:
- Improve safety and travel time, and reduce congestion for traffic on the Inner Ring Route;
- Allow for potential long term transport initiatives;
- Minimise impacts to the travelling public, business operations and the wider community during construction;
- Minimise impacts upon the environment and heritage, including the Park Lands; and
- Complete the project within the $160 million allocated budget by the second half of 2017.

The main features of the O-Bahn City Access Project include:
- Hackney Road at-grade priority bus lanes: Provision of two (one in each direction) centrally aligned bus-only lanes along Hackney Road, providing priority access for buses between the end section of guided O-Bahn track at Gilberton and just north of the signalised Hackney Road/Botanic Road/North Terrace intersection;
- Bus-only Tunnel: A tunnel commencing on Hackney Road, taking O-Bahn buses below the Botanic Road intersection, Dequetteville Terrace, Rundle Park and Rundle Road, before returning to grade within Rymill Park on an alignment which lines up with the existing priority bus lanes on Grenfell Street;
- Realignment of Rundle Road: Provision of a road link that effectively realigns Rundle Road so that it ties into Grenfell Street at its western end. The existing Rundle Road carriageway would be closed, enabling the net return of approximately 3,000 square metres of current road reserve back to Park Lands, effectively consolidating the north western portion of Rymill Park with Rundle Park;
- Bridgeworks: A new bridge structure constructed adjacent to the existing western Hackney Road Bridge to accommodate a shared use pedestrian/cycling path crossing the River Torrens.

There are two separate and distinct planning assessment processes associated with the O-Bahn City Access Project; relating to development within and outside of the Adelaide Park Lands. Specifically, these works are proposed under two separate Development Applications:
- Development within the Park Lands (separate application) – pursuant to Division 1 – General Scheme, Subdivision 1 – Approvals, Section 33(1)(a) within the Adelaide City Council
- Development outside of the Park Lands (this report) – pursuant to Division 3 – Crown development and public infrastructure, Section 49 – Crown Development and Public Infrastructure within the City of Norwood Payneham & St Peters
Further development applications are also proposed in relation to tree-damaging activity outside of the Adelaide Park Lands and relocation of the 66kv electricity infrastructure (both within and outside of the Adelaide Park Lands).

The following elements of the project within the City of Norwood Payneham & St Peters do not require Development Approval and make up the remaining elements/aspects of the O-Bahn City Access Project.
- parking amendments along Hackney Road;
- roadway improvements;
- dedicated bus lanes; and
- pedestrian footpath along Hackney Road.

These elements are shown on the application plans provided for information to assist with giving an overall understanding of the project.

Under section 26 of the Highways Act 1926, the Commissioner of Highways is permitted to carry out roadwork subject to meeting the Act requirements relating to notification of the proposed works.

The following aspects of the O-Bahn City Access project within the City of Norwood Payneham & St Peters will require Development Act 1993 approval and form the basis of this Development Application:
- O-Bahn Tunnel Ramp and Tunnel Portal on Hackney Road;
- Consideration of impacts on surrounding State Heritage items; and
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure.

It should be noted that impacts on surrounding State and Local heritage items must be considered as part of any assessment of the project.

As part of the project works, there will be some impacts to and removal of Regulated and Significant Trees within the City of Norwood Payneham & St Peters and Walkerville Council. These will form part of a separate Section 49 Crown Development Application that will be lodged with Development Assessment Commission.
2.0 The O-Bahn City Access Project Background

DPTI has prioritised improving travel times and reliability of bus services for O-Bahn users by directing buses more directly into Grenfell Street, as well as improving traffic outcomes on the Inner Ring Route for other road users. The proposed design also seeks to provide improved land use outcomes for the wider community within the Park Lands and East Terrace precincts of the Adelaide CBD.

This project will involve the extension of the O-Bahn track from Hackney Road into the Grenfell Street priority bus lanes with the introduction of a dedicated bus tunnel under North Terrace, Rymill Park and Rundle Park. The O-Bahn City Access Project aims to improve connections between Hackney Road and the existing bus network on Grenfell Street. The project as a whole includes the following:

- Hackney Road at-grade priority bus lanes;
- A bus-only tunnel and at-grade bus lanes within the Adelaide Park Lands;
- Rundle Road and East Terrace layout modifications;
- A new shared use bridge adjacent to the existing Hackney Road Bridge across the River Torrens;
- A new off-road shared-use pedestrian/cycle path within Botanic Park;
- Impacts to and removal of Regulated and Significant Trees to accommodate the works; and
- Expansion of the existing car park associated with Botanic Gardens (along Hackney Road).

Components of the O-Bahn City Access Project require Development Approval under the Development Act 1993 and Development Regulations 2008 which form the basis of the three separate Development Applications and are assessed in this report where applicable.

This application relates to the project elements outside of the Adelaide Park Lands, within the City of Norwood Payneham & St Peters Council.

2.1 Project Objectives

The primary objective of the O-Bahn City Access Project is to:

*Improve travel times and reliability, and reduce on-road delays for users of the O-Bahn service between the end of the busway at Gilberton and Grenfell Street over the next 30 years.*

Further, the objectives of the O-Bahn City Access Project seek to address the improvement of travel times and reliability of service between the end section of the guided bus track at Gilberton and the City centre at Grenfell Street. The benefits are expected to be realised over the next 30-year period, and reduce congestion on the Inner Ring Route for freight and commuter traffic. Other project objectives are to:

- Improve safety and travel time, and reduce congestion for traffic on the Inner Ring Route;
- Allow for potential long term transport initiatives;
- Minimise impacts to the travelling public, business operations and the wider community during construction;
- Minimise impacts upon the environment and heritage, including the Park Lands; and
- Complete the project within the $160 million allocated budget by the second half of 2017.

Additionally, the O-Bahn City Access Project will further promote the O-Bahn as a more favourable travel option than private motor vehicles for accessing the City; leading to a predicted travel mode shift for these journeys over time. The key benefits that will be delivered by the Project include:

- **Improved travel time and reliability for bus services** will enable O-Bahn timetables to be optimised, allowing for up to a 7-minute average daily saving as well as improved service reliability. For those people living in the north-eastern suburbs who commute to and from work in the CBD, the benefit is exponentially greater during peak times when traffic is at its heaviest;
- **Reducing traffic congestion on the Inner Ring Route** by grade-separating the bus corridor from key signalised intersections along Hackney Road and Dequetteville Terrace, thereby improving functionality for commuters and freight traffic traversing the City fringe;
- **Improvements to traffic safety** through the proposed restrictions to various right turn movements, and replacement with alternative U-turn facilities to retain access to the local road network, whilst addressing the significant existing safety issues associated with these movements, and reinforcing Hackney Road’s functional role as part of the Inner Ring Route;

- **Improvements to pedestrian and cycling access and safety** to provide safer links to the existing City pedestrian/cycling network, and improve their attractiveness as a means of accessing the City including:
  - a new shared-use path alongside the Botanic Gardens on the western side of Hackney Road (including a new bridge over the River Torrens); and
  - improved pedestrian and cycling facilities along Rundle Road;

- **Improving the East End business precinct** by providing improved customer access with a quicker and more reliable public transport system, including increased parking capacity for those travelling by car; and

- **Improved amenity**, along East Terrace and Frome Road by re-routing O-Bahn buses into the realigned O-Bahn corridor.

The benefits obtained by the successful delivery of this project will contribute to achieving the goals contained within the State Government’s Integrated Transport and Land Use Plan (ITLUP), which identified the need “to improve O-Bahn access to the Adelaide City Centre” as a priority. This improvement to public transport infrastructure also aligns with the State Government’s South Australian Strategic Plan targets, in particular to increase the use of public transport to 10% of metropolitan weekday passenger vehicle kilometres travelled by 2018.

### 2.2 Current Issues and Need for the Project

At 12 kilometres in length, the Adelaide O-Bahn is the longest and fastest guided bus service in the world. It is the most highly patronised public transport corridor in South Australia. The on-road section of the O-Bahn corridor between Gilberton and the Adelaide CBD currently has limited measures to protect public transport services from the effects of road congestion. Between the guided busway corridor exit and entry point at Gilberton and the CBD, O-Bahn buses operate within the roadway, either sharing the carriageway with other vehicles, or running within short sections of priority bus lanes. Between Hackney Road and Grenfell Street, the efficiency of bus services are significantly compromised by the current heavily congested traffic conditions.

This congestion negatively impacts upon bus services by increasing travel times and increasing the variability of on-time running. During peak periods, it takes almost double the time to travel 1.45 kilometres from Gilberton to Grenfell Street when compared to the 12 kilometre trip along the guided busway from Tea Tree Plaza to Park Terrace. Average bus speeds can be as low as 20 km/h and 25% of travel time can be due to delays at intersections.

Additionally, it is important to note that Hackney Road and Dequetteville Terrace form part of Adelaide’s Inner Ring Route. These roads cater for multiple functions, including a high frequency public transport route, major cycling route, major traffic route, and freight route as defined in *A Functional Hierarchy for South Australia’s Land Transport Network*.

Vehicle movements at the Hackney Road/Botanic Road intersection are currently at or approaching capacity, with around 79,000 vehicle movements on an average weekday. Delays currently experienced on this section of the O-Bahn bus route would increase over time without an infrastructure solution, and would be further exacerbated by the additional buses and services which are proposed to operate along the O-Bahn corridor over the next decade.

Following a review of the 2014 O-Bahn scheme, a revised design was announced on 25 February 2015. Community consultation on the initial project plans was undertaken following the February 2015 announcement where a number of issues were raised by the broader community, and as a result the O-Bahn City Access concept plans were amended to address key concerns raised through this process.

The following figure depicts the existing O-Bahn route from Hackney Road to Grenfell Street.
2.3 **Subject Land and Locality**

The subject land where the proposed O-Bahn route is to be located extends from the end section of guided O-Bahn track at Gilberton, extending to the south-west to the East Terrace/Grenfell Street intersection. The O-Bahn bus route travels along the Hackney Road/Dequetteville Terrace road corridor before bisecting the Adelaide Park Lands (through Rundle and Rymill Parks) of the City of Adelaide. The dedicated bus route and Hackney Road tunnel, ramp and portal will be contained within the Hackney Road carriageway and the southern tunnel ramp and portal will be located within Rymill Park.

Specifically, for this application, the area of the proposed development is primarily located within the Residential 2 and Special Uses Zones of the Norwood Paynemham & St Peters Council. The following two figures depict the proposed Reference Design for the O-Bahn City Access Project, and are attached in Appendix A of this report.
Figure 2 Overview of the key aspects of the O-Bahn City Access Project (Bundeys Road to Botanic Park)
Figure 3 Overview of the key aspects of the O-Bahn City Access Project (Dequetteville Terrace to Grenfell Street)
Rundle Park and Rymill Park are bounded by Botanic Road to the north, Bartels Road on the south, East Terrace on the west and Dequetteville Terrace on the east. The Parks are separated by Rundle Road, which currently supports two lanes of traffic in each direction with a marked bike lane and Rundle and Rymill Parks also provide parking on the western side of each Park.

The land adjacent to the site on Hackney Road and Dequetteville Terrace is a mix of residential, retail commercial, utilities/industry, education (St Peter’s College and Prince Alfred College) and other public institutions and land uses.

Adelaide’s East End forms the north-east part of the Adelaide CBD and is a popular office, retail and residential precinct. The centre of this area is Rundle Street, with a variety of restaurants, bars and retailing in this location. Adelaide’s East End is host to a number of events throughout the year including the Adelaide Fringe Festival, the preliminary stage of the Tour Down Under, the cross country stage of the Adelaide International Three Day Event and the Clipsal 500 Adelaide, mainly focused within Rundle and Rymill Parks.

The subject land within the City of Norwood Payneham & St Peters falls within the road reserve of Hackney Road, and is therefore not contained within a specific Certificate of Title.

2.4 Project History

Peak hour congestion has been steadily increasing in Adelaide. While private car trips and therefore car dependence has been increasing over the past decade, the share of public transport trips has also been increasing at a much faster rate in absolute terms. Some of that increase can be attributed to cultural change supported by improved train and bus services and improved priority for bus transport, such as the bus lanes in Grenfell Street.

Accordingly, the South Australian Government has identified the need to improve this crucial element of public transport infrastructure to improve peak hour congestion. This was originally identified as a key project in 2009, with initial concept plans prepared at that time.

The O-Bahn City Access Project supports and encourages further transition to public transport by improving the service through reduced travel time and improved reliability of O-Bahn bus services.

2.4.1 Design assumptions and features

The road design for the O-Bahn City Access Project is based on the following operational assumptions and features, which have been considered and incorporated into the latest concept design (Appendix A):

- The Inner Ring Route functionality and capacity is to be maximised;
- Hackney Road will have a continuous, dedicated bus lane northbound from the tunnel portal to the existing chute;
- Hackney Road will have a continuous dedicated bus lane southbound from south of Richmond Street to the tunnel entrance;
- The historic Hackney Road Bridge (East Carriageway) over the River Torrens is to be retained;
- The existing (1965) Hackney Road Bridge (West Carriageway) over the River Torrens is to be modified to enable an additional bus lane and a new shared path bridge to be constructed to provide pedestrian and cyclists facilities;
- Access to side streets adjacent to Hackney Road shall be modified to balance improvements to safety whilst providing appropriate access to key stakeholders and residents. U-turn facilities will be provided at a number of locations and alternative access routes are also available;
- Where practical, bicycle facilities will be separated from the Inner Ring Route traffic;
- Existing pedestrian crossings on Hackney Road are to be retained and where practical enhanced;
- Historic buildings on the north-east, north-west and south-west corners of the Hackney Road / Botanic Road intersection are to be retained;
- The road design shall minimise the impact on the Park Lands and improve the amenity of both East Terrace and Rundle Road while encouraging cycling and walking in the precinct;
- Improved pedestrian and cyclist facilities will be developed along Rundle Road;
- Parking will be increased by more than 50 car parks through reconfiguring East Terrace and Rundle Road;
- East Terrace is to be re-aligned between Hutt Street and Grenfell Street;
- Landscaping opportunities within the medians and verges of Hackney Road, Rundle Road and East Terrace shall be maximised; and
- The project design shall consider and allow for a future transport initiatives as identified in the ITLUP.

2.4.2 Site History

Originally designed in 1837 by Colonel William Light, the Adelaide Park Lands cover 760 hectares of land surrounding the City of Adelaide. The Park Lands serve as the largest urban park system in Australia, and under the care, control and management of the Adelaide City Council since 1852.

The Eastern Park Lands previously accommodated the Kensington Gardens tramline which followed the path of the proposed O-Bahn trail in the Park Lands, through Kent Town and along The Parade to Kensington with a double track (Figure 4, Figure 5). This was Adelaide's first Horse-Tram network, completed in 1878\(^1\); however these services were closed in 1957 due to a larger focus on car and bus transit within Adelaide.

\(^1\) Lewis H. (1985), p.139
The O-Bahn was introduced into Adelaide’s north-eastern suburb of Paradise in 1986 and to Modbury (Tea Tree Plaza) in 1989 following a demand for light rail or bus transit into the Adelaide Central Business District. Currently, the O-Bahn is the most highly patronised public transport corridor in the metropolitan area with an average of approximately 32,000 to 35,000 boardings per weekday, and a total patronage of 9.274 million in 2013/2014.

2.5 Community Engagement

Following the February 2015 project announcement, extensive public consultation on the Project was undertaken to engage with a wide range of stakeholders, including government agencies, local government, emergency services, business and industry groups, O-Bahn users and the wider community. This process included community information sessions and open days, in addition to several key stakeholder forums and briefings, to ensure South Australians had the opportunity to put forward their views on the revised proposal.

The key issues identified during this consultation period included:

- Impacts on the character and amenity of the Park Lands, in particular, the potential impacts on Rymill Park;
- Impacts on businesses due to the loss of on-street parking, in particular, the loss of Rundle Road car parking spaces;
- Hackney Road traffic conditions, including impacts on local access such as right-hand turning movements restrictions;
- Traffic congestion on the Inner Ring Route and through key intersections; and
- Provision for pedestrians and cyclists.

As a result, the current concept for the O-Bahn City Access Project was announced on 10 June 2015 following an extensive community consultation and improvements to the concept design due to concerns raised. The following table summarises the resultant changes now captured in the current concept design (which forms the current application details):
### Table 1 O-Bahn City Access Project Community Consultation Issues and Responses

<table>
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<th>Key issues</th>
<th>Responses</th>
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| Character and amenity of the Park Lands - In particular, impact on Rymill Park: | The project has established urban design principles which will guide high quality design responses for progressing the O-Bahn City Access Project, while respecting and enhancing the existing cultural and heritage aspects. DPTI has worked collaboratively with the Adelaide City Council in the development of a “Rundle Road Retained” option, which contained the following features:  
  - An extension of the tunnel by an additional 140 metres (to a total length of 650 metres), with the entry/exit portal located much closer to Grenfell Street, to reduce the impact on the amenity of Rymill Park;  
  - Lowering of the grade line of the busway in Rymill Park as it ramps back to ground level in the vicinity of the old tram embankment.  
  - Better use made of the embankment to aid in the provision of screening between the Rymill Park Lake recreational area and the busway.  
  -Retention of existing vegetation on the southern side of the old tramway embankment.  
  All of these elements will increase the physical separation, and reduce the visual and noise impacts from buses in the vicinity of Rymill Park Lake. |
| Parking impacts: Comments were received that the loss of existing on-street parking facilities on Rundle Road would impact on business operations within the East End Precinct. | Modification to the layout of Rundle Road and East Terrace were undertaken to provide a net increase of over 50 additional car parking spaces; the majority of which are located closer to East End businesses and eateries. |
| Hackney Road traffic and local access: Concerns were raised about the local traffic access for the suburbs of College Park and Hackney. | Accident statistics over the last decade indicate there is a significant safety issue associated with existing access arrangements to/from Hackney Road from the adjacent local road network. In particular, greater than 60% of accidents recorded along Hackney Road have involved vehicles attempting a right-turn manoeuvre. Irrespective of this project, there is a need to address this existing safety issue. Accordingly, DPTI has endeavoured to develop a practical solution to this problem, whilst balancing the requirement to maintain reasonable access for the local residents of Hackney and College Park, with the need to address the significant existing safety concerns associated with these movements. The proposed solution involves the use of U-turn slots within the central median at various locations. Following the community consultation process, the following refinements to the design were made:  
  - Provision of an additional U-turn/right-turn facility at Vailima Court;  
  - Provision of an additional U-turn facility on Dequetteville Terrace, opposite King William Street.  
  - Modifications to the “Bus Lane” and red “Bus Only Lane” pavement markings to facilitate easier access to the proposed U-turn lanes.  
  This treatment, including the proposed right-turn restrictions, reinforces the function of Hackney Road as part of the Inner Ring Route. Typically, to maintain the high level function of this road (i.e. the safe and efficient movement of all types of vehicles around the City); these roads should have minimal disruption to traffic flow, with minimal direct side road or property access (potentially using service roads). |
Key issues | Responses
--- | ---
**Pedestrians and Cyclist access** – in particular safe crossing of Hackney Road and connections with pedestrian/cyclist infrastructure. | The following design responses have been provided in relation to this issue:
- Extension of the off-road shared-use pedestrian/cycle path along the Botanic Gardens side of Hackney Road (including a new shared-use path bridge crossing of the River Torrens), increasing the safety and accessibility of those links into the City. The Botanic Gardens preferred option is to provide a tree lined shared pedestrian / cycle path along Botanic Park and to improve the landscape character for users of Botanic Park and to make the eastern entry of the Adelaide Botanic Gardens safer for pedestrians. This option requires relocation of car parking to the Gardens eastern entry.
- Retention of the existing Rundle Road alignment, including modifications to improve cyclist and pedestrian safety.
- Retention of and minor modifications to three existing pedestrian refuge crossings on Hackney Road – each remaining in close proximity to their existing locations. Additional off-road cycling facilities in the Park Lands to connect with existing cycling infrastructure (such as the Norwood Bikeway and Adelaide Park Lands Trails).
Further development of Park Land trails is proposed in consultation with the Adelaide City Council.

**Traffic Congestion – Inner Ring Route and through Key Intersections:** Concerns that the closure of existing Rundle Road with impact on traffic flows along Inner Ring Route and through major intersections in the East End precinct. | Increased capacity achieved by:
- Rundle Road existing alignment retained.
- Provision of second right turn lane from Hackney into Botanic Road (i.e. replacing existing bus only lane) and tunnel providing grade separation of bus movements.
- Re-routing of O-Bahn buses from North Terrace – Frome Road – Grenfell Street route (35 buses in peak hour).
- Introduction of free flow left turn slip lane Dequetteville Terrace into Botanic Road.

### 2.6 Project Challenges

A major challenge in delivering the O-Bahn City Access Project is associated with ensuring that the impacts on the environment, business operations, residents and the hosting of major events during the construction phase of the project are sensitively and effectively managed in consultation with the relevant stakeholders.

The project was assessed under the DPTI Environment Impact Assessment process in line with State and Federal legislation. The EIA focuses on flora and fauna, hydrology, soil characterisation and contamination, non-indigenous and indigenous heritage values, noise, vibration and air quality. A number of technical specialists have been engaged to provide assessments and recommendations which will be used to manage the range of environmental issues encountered.

The successful contractor for this project has not yet been appointed as this is still pending the obtainment of Development Approval for the project, who will need to develop a range of management plans and strategies to minimise the impacts of construction on businesses, residents and event coordinators in close consultation with DPTI and relevant stakeholders. This includes the management of traffic congestion and bus operations, minimising the impacts of noise, dust and visual impacts, and facilitating accesses where required.

The DPTI Project team will establish a number of working groups with the relevant Councils and other key stakeholders impacted by the proposed construction works. As project planning and concept design progresses, the Project team will continue to work with stakeholders to ensure the best overall outcomes are achieved.

### 2.7 Overview of Project Environmental Impacts

The following section provides a high level overview of the impacts to the biological, physical and social environments within the O-Bahn City Access Project study area. Specific detail relating to the proposed development within the Park Lands is discussed in further detail within Appendix C, and assessed in Section 6 of this report.

**Impacts on the Biological Environment**

15-Oct-2015
Prepared for – Department of Planning, Transport and Infrastructure – ABN: 92366288135
- **Flora:** The land affected by the Project includes areas of the Adelaide Park Lands, though has been progressively cleared and re-landscaped over time. The project works will require removal and major pruning to amenity landscaping and Regulated and Significant Trees. Vegetation within the project area is exempt from the *Native Vegetation Act 1991*. Every effort will be made to reduce the impact on the landscape, amenity planting/trees and Significant and Regulated Trees. The Arborist Report is included as Appendix D within this report.

Vegetation impacts have been assessed based on DPTI’s reference design and include allowances to facilitate flexibility in further development of concept designs. Application numbers are therefore greater than ultimate removals and are greater than the numbers provided in the Project Impact Report. Impacts will be reassessed during the detailed design and construction phase with the intention of minimising impacts where possible this will be communicated to DAC. DPTI will consult with the relevant council areas regarding the offset (including possible replacement landscaping) of amenity vegetation.

- **Fauna:** The River Torrens Linear Park and Adelaide Park Lands provide habitat for a number of bird species and small mammals, which may be impacted through the removal of vegetation associated with the project works. Specifically, several ‘Rare’ and ‘Vulnerable’ species have been recorded in this area that could be impacted. However, every effort will be made to minimise the potential impact to fauna within the project area during construction works.

**Impacts on the Physical Environment**

- **Water:** The project area is located within the Torrens Catchment area, and the project footprint – specifically the O-Bahn tunnel – will intercept the First Creek crossing and will be constructed adjacent the Botanic Creek. Potential impacts to the groundwater table largely associated with the excavation and construction of the tunnel will be appropriately managed both during construction and operation. Additionally, stormwater resulting from the impermeable structures will be appropriately captured and managed through the project works.

- **Air Quality:** The key impact to air quality is through road traffic congestion, though it should be noted that there will be some minor air quality impacts during construction in the short-term. Through the O-Bahn City Access Project, it is anticipated that idling and acceleration points on the major intersection on Hackney Road will be reduced, and will actually result in improved local air quality within the vicinity of the project area. The Air Quality Impact Assessment is included as Appendix E within this report.

- **Soil Characteristics and Site Contamination:** The surface soil beneath the project site includes red brown earths that underlay most of the Adelaide City area and Park Lands. The soil types within the vicinity of the project footprint are largely alluvial in nature, though have been modified to varying degrees. Soil drainage is generally quite rapid though subject to waterlogging due to surface flooding. The project site has been classified against SA EPA Waste Derived Fill Standard to accommodate offsite disposal and on site re-use, as well in accordance with National Environment Protection (Assessment of Site Contamination) Measure for human health and ecological investigation levels. Site contamination assessments within the project area have identified that some areas of fill material across the site is currently classified as ‘exceeding Low Level Contaminated Waste’ whilst natural layers are classified as Waste Fill. Accordingly, a Contamination Management Plan will be prepared to appropriately manage and dispose of contaminated soil during construction works to minimise and manage the potential risks to the community.

- **Sustainability:** The project objectives are committed to sustainability; namely through the improvement of efficiency and reliability of public transport services, and to reduce the reliance on private motor vehicle transport in an effort to reduce carbon emissions. A Sustainability Management Plan has been prepared for the project which is attached in Appendix F.

**Impacts on the Social Environment**

- **Noise and Vibration:** A noise assessment was undertaken to understand the existing noise conditions within the project area, which identified that there were no sensitive receivers within the project area Construction works will be appropriately managed to minimise impacts to adjoining sensitive receivers. Additionally, vibration impacts on adjoining structures, particularly the Heritage Listed Hackney Road Bridge will need to be monitored during construction works to minimise potential impacts. The Preliminary Noise Mitigation Plan and Construction Vibration Assessment Reports are included as Appendix G and Appendix H, respectively.

- **Aboriginal Heritage:** A number of Aboriginal Heritage sites are located in proximity of the project area, including the River Torrens which is known to have strong connections with the Aboriginal community. The
Kuurna and Ramindjeri Aboriginal Communities have been consulted on the project concept plans, and further consultation will occur during construction works. Additionally, a Cultural Heritage Management Plan is being prepared to manage and mitigate any potential impacts to places of Aboriginal Heritage significance. There are no registered Native Title sites within the project footprint.

- Cultural Heritage: Cultural heritage impacts relate to National, State and Local Heritage listing, and are briefly discussed below.

  - National Heritage: A preliminary assessment of the proposed works has been undertaken by a heritage architect, with the initial findings being that the project design, in principle, is consistent with the National Heritage values of Adelaide Parkland and City Grid Layout, specifically; the City grid layout; views and vistas; Park Lands layout; and aesthetic qualities / landscape / use. Heritage experts will continue to be engaged at various stages of the planning and design process to ensure that further design development maintains the environmental, cultural, recreational and social heritage status of the Park Lands.

  - State Heritage: There are a number of places entered in the South Australian Heritage Register as having state significance within the vicinity of the project area; however the proposed works do not physically impact on any State Heritage places. Further assessments will be undertaken to ascertain the level of management required to ensure that the construction activities do not have an adverse effect on the State Heritage structures.

  - Local Heritage: The Adelaide City Council Development Plan list a number of places of local heritage that sit within or adjacent to the project area. The O-Bahn City Access Project does not propose any physical works to the Carriage Entrance Gates, nor any works that would adversely impact on their setting or ongoing use. Proposed works may encroach on the War Horse Memorial, specifically the plaque and as such the plaque may need to be relocated.

2.8 Timing of Works

DPTI will continue to refine the O-Bahn City Access Project concept design through the detailed design phase of the project. A procurement process is currently being undertaken to appoint a contractor that will undertake the detailed design and construction of the project.

Prior to awarding the contract for construction, the project was presented to the Parliamentary Public Works Committee on the 21st of September 2015. It is anticipated that the main contract will be awarded in late 2015, with construction works likely to commence in late 2015/early 2016, and expected project completion in the second half of 2017.

2.9 Application Plans and Reports

This section lists the plans and reports associated with the Development Application for clarity purposes. The plans and reports are for the whole of the O-Bahn City Access Project. Of relevance for this development application are those plans/details associated with development within the City of Norwood Payneham & St Peters only.

2.9.1 Application Plans (Appendix A)

- O-Bahn City Access Project – PLAN - HACKNEY ROAD, DPTI-SKT-7304-01-1001
- O-Bahn City Access Project – PLAN - TUNNEL, DPTI-SKT-7304-01-1002
- O-Bahn Tunnel – TYPICAL CROSS SECTION –PARK LANDS
- O-Bahn Tunnel Portal – TYPICAL CROSS SECTION –PARK LANDS
- Hackney Road Bridge – TYPICAL CROSS SECTION
- Rundle Road – TYPICAL CROSS SECTION
- Hackney Road – TYPICAL CROSS SECTION
- Hackney Road Intersection – TYPICAL CROSS SECTION
2.9.2 Application Reports and Documentation:
- Environmental Impact Report (Appendix B)
- Air Quality Impact Assessment (Appendix C)
- Sustainability Management Plan (Appendix D)
- Preliminary Noise Mitigation Plan (Appendix E)
- Construction Vibration Assessment (Appendix F)
- Non-Aboriginal Heritage Impact Report (Appendix G)
- Urban Design Report (Appendix H)

2.9.3 Project Impact Report
This Project Impact Report (PIR) describes the O-Bahn City Access Project, summarises investigations and planning work to date and presents environmental, social and economic effects and opportunities of the Project. Although investigations have already been undertaken, further assessment is required during the detailed planning and design phase of the project. The PIR has been prepared to help interested groups, individual businesses, government agencies and local government understand the project. It also addresses DPTI’s response to issues raised during the formal community consultation stage. It aims to:
- Introduce and explain the need for the project;
- Describe the development of the project;
- Describe the existing environment in the project area; and
- Outline the effects and opportunities associated with the project.

2.9.3.1 Content and Structure of Project Impact Report
The Project Impact Report identifies the key issues, impacts and changes associated with the Project, as well as presenting key mitigation measures to minimise these impacts and maximise opportunities.

It contains the following key sections:
- Section A: Project Overview, Planning and Development
- Section B: Transport Demand, Traffic Access and Parking
- Section C: Urban Design, Park Lands and Social and Environmental Impacts
- Section D: Construction and Staging, Concept Design Guidelines
- Section E: Appendices, Glossary, General Abbreviations, References

A link to the report is provided below:

2.9.4 Project Visual Fly-Through
Additionally, a ‘fly-through’ of the proposed O-Bahn alignment is provided below:
3.0 Development Application Elements

3.1 Procedural Matters

A project of this nature would typically fall under, Division 3 – Crown Development and Public Infrastructure, Section 49 – Crown Development and Public Infrastructure of the Development Act 1993 as it is development to be undertaken by a State agency for the purpose of public infrastructure. However, as a result of the Adelaide Park Lands Act 2005, this section of the Development Act 1993 cannot be used for works within the Adelaide Park Lands.

Therefore, the proposed development will be the subject of two separate Development Approval processes. This is distinguished by development within the Adelaide Park Lands from development outside of the Adelaide Park Lands which are assessed pursuant to separate sections of the Development Act 1993 as outlined below.

Project Elements Excluded from the Definition of ‘Development’ under the Development Act 1993

Section 4(d) of the Development Act 1993 provides a definition of ‘development’ within the meaning of the Act, excluding the development of a “…road, street or thoroughfare on land (including excavation or other preliminary or associated work)” when undertaken by the Crown, Council or other public authority.

- Specifically, these elements include the following: parking amendments (excluding expansion of the Botanic Gardens car parking off Hackney Road);
- roadway improvements;
- dedicated bus lanes;
- excavation works (where being undertaken by the Crown); and
- pedestrian footpath along Hackney Road.

The exception to this is when such development would materially affect the heritage value of a State Heritage Place.

Highways Act for Development on Roads

Certain aspects of the project do not require Development Act Approval. These elements are shown on the application plans for information only, to assist with providing an overall understanding of the project.

Under section 26 of the Highways Act 1926, the Commissioner of Highways (subject to the approval of the Minister for Transport) is permitted to carry out roadwork in a district provided that the Commissioner first gives the council notice in writing of the proposed roadwork and of the date on which it is proposed to such work.

The definition of ‘roadwork’ under the Act covers:

a) the construction of a road; or
b) the maintenance or repair of a road; or
c) the alteration of a road; or
d) the construction of drains and other structures for the drainage of water from a road; or
e) the installation of fences, railings, barriers or gates; or
f) the installation of traffic control devices, traffic islands or parking bays; or
g) the improvement of a road including (for example)—
   i. landscaping and beautification; or
   ii. installation of road lighting; or
h) the installation of amenities or equipment on or adjacent to a road for the use, enjoyment or protection of the public; or
i) the installation of signs on or adjacent to a road for the use or benefit of the public; or
j) any work in connection with a road.
Accordingly, this is a separate process and does not form part of the current development application.

Development within the Adelaide Park Lands (Separate Application)

As mentioned previously, the proposed development associated with the O-Bahn City Access Project would typically fall under Section 49 – Crown Development and Public Infrastructure of the Development Act 1993 as it is development to be undertaken by a State agency (Section 49(2)(a)). However, under Section 49(18), this section does not apply to any development within the Adelaide Park Lands as noted above.

Accordingly, the aspects of the project requiring approval that are located within the Adelaide Park Lands are assessed pursuant to Division 1 – General Scheme, Subdivision 1— Approvals of the Act, with Schedule 10 Part 4A of the Development Regulations 2008 prescribing that the Development Assessment Commission (DAC) is the relevant authority and must assess the proposal against the relevant provisions of the Development Plan.

For such an application, a separate referral of the application to the Adelaide City Council is required, with Council having up to six (6) weeks to provide comments to DAC on the proposed development.

Development outside of the Adelaide Park Lands (This Application)

The proposed development associated with the O-Bahn City Access Project located outside of the Adelaide Park Lands is lodged with the Development Assessment Commission pursuant to Section 49 of the Development Act 1993. This area of the project is located within the Norwood Payneham & St Peters Council who will receive a referral for the development during the assessment process with a two-month period to provide comments on the proposed development.

Further, as the project value is in excess of $4 million, the development application will be the subject of a public advertisement. This advertisement will invite interested persons to make written submissions on the proposal within a period of at least 15 business days, and to appear personally or by representative before the Development Assessment Commission to be heard in support of their submission.

Accordingly, the Minister for Planning is the relevant authority in the consideration of a section 49 Crown Development Application, and must have regard to the relevant provisions of the Development Plan in its decision on the proposal.
Figure 6 Legislation Reference Applicable within and outside of the Adelaide Park Lands (Concept Plan A)
Figure 7 Legislation Reference Applicable within and outside of the Adelaide Park Lands (Concept Plan B)
3.2  Adelaide Park Lands Act 2005

The Adelaide Park Lands Act 2005 establishes a legislative framework that promotes the special status, attributes and character of the Adelaide Park Lands, and provides for their protection and management as a globally-important asset to be preserved as an urban park for the benefit of present and future generations.

The Act, supported by the Regulations, establishes an advisory group, the Adelaide Park Lands Authority, to aid in the management of the Park Lands. This body, with representation from the state government, Adelaide City Council and the community, is set up under the guidance of the Adelaide City Council.

3.3  Project Elements Requiring Development Approval

In consideration of the above, the following aspects of the O-Bahn City Access project will require Development Act approval and form the basis of this application:

- O-Bahn Tunnel Ramp and Tunnel Portal on Hackney Road;
- Consideration of impacts on surrounding State Heritage items; and

Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure. These elements are discussed in further detail in this report.

It should be noted that impacts on surrounding State and Local heritage items must be considered as part of any assessment of the project. It should be noted that service relocation associated with the O-Bahn City Access Project, such as the 66kV electricity line, will form part of a separate Development Application.

Aspects of the development proposed as part of this O-Bahn City Access Project, but not requiring Development Approval are discussed in Section 3.5 of this report.

Appendix A includes the application plans for the redevelopment, including specific designs and cross sections for the O-Bahn City Access Project.

3.3.1  O-Bahn Tunnel Entry Ramp and Tunnel Portal

Only the tunnel entry ramp and tunnel portal located within the City of Norwood Payneham & St Peters on Hackney Road falls within the scope of this Development Application as the portal within Rymill Park falls within the Park Lands (within the City of Adelaide).

Whilst the O-Bahn tunnel itself does not require Development Approval where located wholly underground (as discussed in Section 3.5 of this report), it is discussed here in reference to the above-ground portion of the tunnel ramps and portal.

The bus-only tunnel entry ramp and tunnel portal within the City of Norwood Payneham & St Peters will be located on Hackney Road in front of the National Wine Centre before the North Terrace intersection. Within the entry ramp leading to the tunnel on Hackney Road there will be raised curbing to guide O-Bahn buses to the tunnel.

The tunnel portal has been designed to have an unobtrusive yet attractive appearance that will result in a safe and functional access point. The tunnel will then travel from Hackney Road, under North Terrace, Rundle Park and Rymill Park to reach the southern portal just east of Grenfell Street.

The overall length of the O-Bahn bus tunnel is approximately 650 metres, and approximately 10 metres in width to accommodate two-way bus movements and an emergency access/services corridor for stormwater infrastructure and mechanical and electrical equipment (see Appendix A for the Application Plans).

The other tunnel portal and entry ramp is located just east of Grenfell Street. This enables each bus lane to align with the existing bus lanes along Grenfell Street, meeting at street level before the intersection of East Terrace.

The busway tunnel will begin on Hackney Road, incorporating a ramp in both directions to accommodate the O-Bahn buses. The designs of the road ramps include traffic barriers and approach slabs as the grades separate.

This entry stage of the underground tunnel will be approximately 10.0 metres wide and 4.9 metres high.

3.3.2  Norwood Payneham & St Peters Impacts on State and Local Heritage Items

A Heritage Assessment Report was prepared by Dash Architects which identified the following State Heritage Listed items within close proximity to the section of the O-Bahn City Access Project along Hackney Road. The State Heritage items within the vicinity of the project area include:
- Bicentennial Conservatory, Botanic Gardens (State)
- Hackney Bridge (former New Company Bridge) – eastern half of the bridge (State)

The concept design and the project footprint do not affect or pose to have an impact on State and Local Heritage Items.

A copy of the Non-Aboriginal Heritage Impact Report is included in Appendix G of this report to assist with the assessment of potential impacts against the Norwood Payneham & St Peters Development Plan.

### 3.3.3 Landscaping and urban design

The O-Bahn City Access Project will result in both landscape and urban design changes for Hackney Road, the Park Lands and surrounding urban areas. Landscaping will be installed that will seek to remediate and enhance areas impacted by construction of the project. The Project also has the opportunity to contribute to the surrounding area in consultation with the community and City of Norwood Payneham & St Peters and Adelaide City Council.

Landscaping and urban design has been an integral component in developing the O-Bahn City Access Project’s concept design and aims to recognise not only those using the transport network but also those who live within its vicinity, Park Land users and City visitors.

The O-Bahn City Access Project’s urban design framework and concepts have been developed with consideration and evaluation of existing overarching urban design strategies and guidelines; the project area’s existing condition; design assessment workshops; and opportunities to enhance the aesthetic and social elements within the project area. The final urban design elements associated with the Project will be finalised by DPTI in discussion with City of Norwood Payneham & St Peters and Adelaide City Council.

DPTI will continue to work with the City of Norwood Payneham & St Peters, Adelaide City Council and the community so that landscaping and on-ground works are conducted to improve the amenity of impacted areas. The design will be developed in consultation with the relevant Councils and key stakeholders.

The O-Bahn Hackney Road Strategy: Bundeyys Road to Rundle Road (Urban Design Report) is included in Appendix H of this report and provides further detail.

### 3.4 Project Elements Not Requiring Development Approval

The following elements of the project do not require Development Approval and make up the remaining elements/aspects of the O-Bahn City Access Project. They are shown on the application plans provided for information to assist with giving an overall understanding of the project. These elements include:

- O-Bahn Bus Tunnel along Hackney Road (where located wholly underground);
- parking amendments;
- roadway improvements;
- dedicated bus lanes;
- excavation works (as being undertaken by the Crown); and
- pedestrian footpath along Hackney Road.

As discussed previously, under section 26 of the Highways Act 1926, the Commissioner of Highways is permitted to carry out roadwork in a district subject to meeting the Act requirements relating to notification of the proposed works. Additionally, the bus tunnel infrastructure where located wholly underground does not require Development Approval pursuant to Schedule 14 Clause 1(1)(b)(vi) of the Development Regulations 2008.

In association with the development, the Commissioner may also erect and maintain fences, walls, posts or barriers across any road for the purpose of preventing access to or egress from any controlled-access road as per Section 35(D)(1) of the Highways Act 1926.

#### 3.4.1 Introduction of dedicated bus lanes along Hackney Road

From the current O-Bahn exit point at Gilberton, buses will continue via two (one in each direction) centrally aligned priority bus lanes along Hackney Road. The inbound bus lanes would commence after Richmond Street and continue all the way to the tunnel entry ramp approach to the Botanic Road/North Terrace intersection.
The outbound bus lane extends from the tunnel exit ramp north of the Botanic Road/North Terrace intersection to the O-Bahn’s dedicated corridor entry chute on Mann Road. Provision of this lane requires an upgrade of the western bridge structure over the River Torrens, as well as a modification to the layout of the Bundeys Road signalised intersection.

3.4.2 Tunnel Design and Layout

Australian Standard AS 4825 Tunnel Fire Safety, Clause 1.6.32 defines a tunnel as “A substantially enclosed roadway or track-way greater than 80m in length”. Clause 1.4 Tunnel Classification, subclause (a) (i) states “Long Tunnel (L) where the length is greater than 120m in the case of road and Bus tunnels and 250m in the case of rail tunnel.”

The proposed O-Bahn bus tunnel concept is in excess of 250 metres. Therefore, based on AS 4825, and the Austroads Guide to Road Tunnels, the concept design for the O-Bahn grade separation has been considered to be a tunnel. Under the Botanic Road and Hackney Road intersection, the busway will be completely underground. The underground design of the tunnels incorporates sub-surface draining, structural floor slabs and room for services corridor and emergency exits at regular intervals and an emergency egress corridor. Lighting and ventilation will be appropriately allocated through the tunnels. The underground design for the tunnels is a width of 10 metres and a height of 4.5 metres to allocate space for appropriate ventilation throughout the tunnel.

Landscaping will be continued over the tunnel at Rundle and Rymill Parks, with a varied depth to the surface. As detailed previously, services corridors are provided along the length of the tunnel with emergency egresses and exits placed where appropriate. The final stage of the design includes a tunnel portal, with a ramp accommodating the rise of the buses from the tunnel network.

3.4.3 Excavation Works Associated with the Tunnel

The definition of ‘development’ pursuant to section 4 of the Development Act 1993, excludes ‘excavation’ works undertaken by the Crown.

The proposed development incorporates significant excavation works up to approximately 60,000 cubic metres to accommodate the tunnel works. Additionally, a Contamination Management Plan will be prepared for the construction works to ensure that any contamination discovered during excavation is appropriately contained and removed.

3.4.4 Hackney Road Design

Hackney Road will have continuous dedicated bus lanes leading to and from the tunnel portal to the existing chute.

Access to side streets adjacent to Hackney Road will be modified to balance improvements to safety whilst providing access and U-turn facilities.

The Botanic Gardens preferred option is to provide a tree lined shared pedestrian-bike path along Botanic Park and to improve the landscape character for users of Botanic Park and to make the eastern entry of the Adelaide Botanic Gardens safer for pedestrians. This option requires relocation of car parking to the Gardens eastern entry.

3.5 Contractor’s Environmental Management Plan (CEMP)

Once selected, the Design and Construction Contractor for the project will be responsible for developing a Contractor’s Environmental Management Plan (CEMP) for the works prior to commencing construction.

The CEMP will be developed in accordance with the DPTI’s Environmental Code of Practice for Construction - Road, Rail, and Marine Facilities; Contractor’s Environmental Management Plan Guidelines and the Contract Specification Environmental Requirements. The CEMP would detail how the environmental management requirements, as identified in the DPTI construction contract specification, would be implemented and managed on-site. The CEMP must also detail how the contractor would mitigate construction impacts and must document the contractor’s response to inspecting, monitoring, verifying, internal auditing, and correcting or improving environmental performance based on their design and construction methodology.

The main elements of the CEMP would include:

- A brief description of the project and the environmental objectives
Details of the contractor’s Environmental Management System including environmental management schedules (such as a Soil Erosion and Drainage Management Plan) specifically related to the requirements of environmental legislation, the Environmental Management Plan and the construction contract specification.

- Environmental aspects - a pre-construction assessment of all environmental aspects that could impact on the environment (e.g. vegetation, noise, vibration, air quality, water quality, contamination, heritage).

- Operational control - environmental procedures to manage all identified impacts and environmental protection requirements. These procedures shall include inspection and test plans and checklists.

The CEMP will be prepared during the detailed design phase of the project.
4.0 Strategic Context

The South Australian Planning System operates under a number of strategic plans and policy documents that seek to guide the future development of the State of the whole. To support the requirements of Section 49 of the Development Act 1993 for aspects of the development proposed in Part C of this report and for support of the remainder of the development for approval, each of the relevant State and Local strategic planning schemes have been reviewed in relation to the proposed O-Bahn City Access Project.

4.1 State Strategies

South Australia’s Strategic Plan

A number of key strategic documents guide the decision making process in South Australia. South Australia’s Strategic Plan (SASP 2011) is the overarching strategic planning document for the state, which reflects South Australia’s aspirations for 2014 and beyond. It also provides the framework for the development and implementation of other planning strategies and policy initiatives, such as the Planning Strategy for South Australia which incorporates The 30-Year Plan for Greater Adelaide, the Strategic Infrastructure Plan for South Australia and the Integrated Transport and Land Use Plan.

South Australia’s Strategic Plan contains the following targets that are relevant to the proposed development:

<table>
<thead>
<tr>
<th>Objective</th>
<th>SASP Target</th>
<th>Project Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUR PROSPERITY</td>
<td>Target 39: Competitive Business Climate: maintain Adelaide’s rating as the least costly place to set up and do business in Australia and continue to improve our position internationally.</td>
<td>Reduce operating costs for transport (i.e. reduced travel delay at intersections) Provide efficient and reliable movement and access to key industry and business hubs within Adelaide, specifically the CBD.</td>
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<td></td>
<td>Target 56: Strategic infrastructure Ensure the provision of key economic and social infrastructure accommodates population growth (baseline: 2010-11).</td>
<td>Contribute to investment in important infrastructure for South Australia.</td>
</tr>
<tr>
<td>OUR COMMUNITY</td>
<td>Target 22 – Road Safety: by 2020, reduce road fatalities and serious injuries by at least 30%.</td>
<td>Reduce vehicle crashes through grade separation of traffic streams and improved transport network to minimise the risk of differing user conflicts.</td>
</tr>
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<td>Target 59 – Greenhouse Gas Emissions reduction: achieve the Kyoto target by limiting the state’s greenhouse gas emissions to 108% of 1990 level during 2008-2012, as a first step towards reducing emissions by 60% (to 40% of 1990 levels) by 2050.</td>
<td>Lower congestion levels along the Inner Ring Route can reduce total greenhouse gas emissions attributed to the north–south transportation of people and goods.</td>
</tr>
<tr>
<td>OUR ENVIRONMENT</td>
<td>Target 63: Use of public transport - Increase the use of public transport to 10% of metropolitan weekday passenger vehicle kilometres travelled by 2018 (baseline: 2002-03).</td>
<td>Improved routes for public transport, provide improved safer access, minimise travel time and contribute to improved travel time reliability.</td>
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</tbody>
</table>

The proposed development supports the Strategic Plan by enabling the improvement of quality and travel time of the O-Bahn busway and encouraging more of the population to use public transport and reduce reliance on cars.
The 30-Year Plan for Greater Adelaide

An extension of the O-Bahn corridor is identified in the *30 Year Plan for Greater Adelaide* as one of the key public transport investments for this major transit corridor.

The O-Bahn City Access Project will contribute to encourage broader mixed use development in the City through its contribution to connecting the north-eastern region of metro Adelaide to the CBD. Key transport improvements such as the O-Bahn City Access Project and CityLINK, in combination with the recent Capital City Development Plan Amendment (DPA) are intended to unlock development potential of the CBD for mixed use, including significant residential uplift.

The rezoning through the Capital City DPA has encouraged a growing residential market offering in the City, while other initiatives as part of the Vibrant City agenda will improve the attractiveness of a City based lifestyle for prospective residents. The update to the *30-Year Plan* will build upon these initiatives and re-emphasise the importance of the City to meeting our population and dwelling targets.

Future planned residential development along the mass transit corridors, particularly at major interchanges, will be supported by an improved performance of the O-Bahn corridor. The planned development of a higher density mixed use hub around Modbury Interchange will be facilitated by improved O-Bahn public transport services as people choose to locate in the North East Region close to the O-Bahn corridor encouraging a more compact, transit-focused City.

Integrated Transport and Land Use Plan 2015

The ITLUP guides private, Federal, State and local government investment in the transport system for the next 30 years, with a focus on integrating land-use, strategic infrastructure and transport investment planning. It focuses on connecting people between places of residence, work and recreation, and connecting business to markets to support economic growth.

Of particular note, the ITLUP identifies the need to “Improve O-Bahn access to the Adelaide City Centre” as one of the short term priorities (i.e. within the next 5 years).

The Plan identifies a comprehensive suite of solutions to address the current and future transport challenges facing the state, with particular focus on:

- Growing the role of public transport in servicing our City and urban and regional centres;
- Providing efficient connections to export/import gateways;
- Prioritising transport infrastructure and services to encourage mixed use development in central and inner Adelaide;
- Supporting vibrant communities by encouraging active travel modes in Greater Adelaide and regional centres;
- Fine-tuning, maintaining and making better use of existing assets; and
- Developing and maintaining a planning system that ensures integrated transport and land use.

The Plan aims to support and assist an emerging trend that more people now want to live in or near the City by continuing with strategic investments into public transport that will create a lively, creative, dynamic and safe district that appeals to residents and businesses. To do this, the transport system needs to not only support medium density, vibrant communities and business growth across inner-Adelaide but to actively encourage and drive these developments. An expanded network of trams in the inner areas and the CBD, combined with a redesigned bus network, and greater investment into our cycling and walking routes, integrated with land development, will greatly increase choice of travel.

The Plan provides a strong vision to improve public transport into and within the City in line with corridor growth. It also proposes to address the problems associated with Adelaide’s Inner Ring Route around the outer-edge of the Park Lands and supports more cycling, buses and trams into the City.

The Plan recognises that the bus network is the core of the public transport system carrying approximately 80% of passengers in Adelaide. Buses, through their inherent flexibility, have a unique role in the future that other public transport modes cannot meet.
The Plan proposes a future public transport network that builds upon the previous and proposed investment in rail, tram and the O-Bahn bus infrastructure and services, to create an integrated network that is more stable, easy to use for all times of the day and with a focus on transit connections to major activity centres, employment and residential growth areas. The long term stability of a public transport network of high quality, high capacity and more frequently connected services is likely to influence urban development and create more sustainable transport patterns in a growing and more compact urban area. Key improvements to the public transport system within the ITLUP include:

- Improved O-Bahn access into the CBD;
- Continued improvements to the train network, including electrification;
- Bringing a network of trams, called AdeLINK, back to the CBD and inner Adelaide to the northwest, east, west, north, south and a loop in the CBD; and
- A redesigned and modernised bus network.

The ITLUP also highlights the need to improve the efficiency and safety of the Inner Ring Route, including intersection and mid-block upgrades. This will provide an alternative, efficient connection for traffic travelling around the central City, thereby removing traffic from the CBD, improved pedestrian amenity and connectivity, opportunities for improved cycling facilities, and improved travel times and reliability for public transport.

The contribution of the O-Bahn City Access Project to the ITLUP goals and objectives are listed in the table below.

<table>
<thead>
<tr>
<th>ITLUP Goals</th>
<th>ITLUP Objectives</th>
<th>Project Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Healthy, safe, affordable and connected communities</td>
<td>Liveability</td>
<td>The Project would: Deliver more efficient and reliable public transport linkages into the City from the north-eastern suburbs.</td>
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<td></td>
<td>Connected, vibrant, safe and attractive places throughout South Australia. A land use and transport system in Greater Adelaide that delivers connectivity, safety and choice of travel for people at a level that maintains Adelaide as one of the world’s most liveable cities while increasing densities in central Adelaide to support the knowledge and services economy. Public transport, walking and cycling become a desired choice of travel for residents, reducing reliance on the car.</td>
</tr>
<tr>
<td>2. A strong, diverse and growing economy</td>
<td>Prosperity</td>
<td>The Project would: Increase capacity on the Inner Ring Route, improving traffic flow on these roads and allowing for better use and public transport priority. Improve intersection performance for vehicles entering from the eastern suburbs into the City. Reduce vehicle conflicts by grade separation of bus/traffic streams, fewer intersections movements and improved intersection operation to minimise the risk of differing users.</td>
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<tr>
<td></td>
<td></td>
<td>A transport network which connects people and businesses to jobs, markets and services in a safe, reliable and timely manner. An efficient and effective freight transport system that adds to the competitiveness of South Australia.</td>
</tr>
<tr>
<td>3. Thriving, natural and built environment</td>
<td>Sustainability</td>
<td>The Project would:</td>
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<tr>
<td>ITLUP Goals</td>
<td>ITLUP Objectives</td>
<td>Project Contribution</td>
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<td>Significant reduction in transport emissions, including greenhouse gases and other harmful emissions.</td>
<td>Allow greater efficiency in bus movement and reduce ‘idle’ time at intersections which is likely to reduce greenhouse gas emissions compared to the existing situation.</td>
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### 4.2 City of Norwood, Payneham and St. Peters

**CityPlan 2030: Shaping Our Future 2012**

*CityPlan 2030: Shaping Our Future* is the long-term Strategic Plan for the City of Norwood Payneham & St Peters. Endorsed by Council in 2008, the document identifies the community’s vision and aspirations for 20 years and establishes the broad directions shaping the region’s future. The general focus of *CityPlan 2030* is retaining the things the community loves, changing the things they don’t and creating the things they want for the preferred future of the City of Norwood Payneham & St Peters.

One of the objectives for the plan identifies ‘a people-friendly, integrated, sustainable and active transport network’ as a high priority for the next 20 years. The plan encourages less reliance on private cars and more people walking, cycling and using public transport. The O-Bahn City Access Project will promote public transport use and improve walking and cycling access provisions within the locality.

The overall aim of the O-Bahn City Access Project directly correlates to the City of Norwood Payneham & St Peters’ strategy to promote the improvement, provision and use of public transport networks to and from the City and within the Council area.

### 4.3 Adelaide City Council

**Smart Move: The City of Adelaide’s Transport and Movement Strategy 2012-22**

One of the key features of the Integrated Transport and Movement Strategy (released by the Adelaide City Council) is the focus on linking walking, cycling and public transport routes across the Park Lands while reducing the reliance on car travel.

The Strategy summarises the importance of achieving a balanced transport network and states ‘if we only plan for cars, all we will get is a City with cars. If more people used public transport, changed to bikes and carpooled, there would be less traffic on the roads and that makes your driving experience better. It’s a logical transition…’ This is a transition that will require measured and professional implementation, and not unconsidered reaction to individual projects or policies. Car parking supply and pricing, bus services and bike lanes, traffic controls and speed limits can be better managed and targeted to achieve the objectives outlined.

The Transport and Movement Strategy aims to significantly increase the tram and bus share of total trips to the City for all trip purposes as shown below. Another key consideration is the intended day and night time use of the City tram corridors including the urban design context within which the tram network will sit.

**City of Adelaide Strategic Plan 2012-2016**

The City of Adelaide Strategic Plan 2012-2016 outlines the council’s vision for the Council area and the projects and services it will deliver by 2016. This Plan outlines the main goals for the City of Adelaide as being accessible, creative, liveable, prosperous, environmentally sustainable and a city of great places.

The outcome to include readily available public transport systems which link City destinations and beyond, both day and night, is most relevant to the proposed development. However the O-Bahn City Access Project will also encourage greater environmental sustainability, accessibility and liveability by promoting improved and reliable access into Adelaide Central Business District from north-eastern suburbs through public transport rather than private car use.

**Adelaide: One City, Many Places – A Spatial Vision for the Future of the City 2014**

The *One City, Many Places* document by Adelaide City Council provides a spatial vision for land use, built form and movement outcomes envisaged for the City over the next three decades. This plan also includes a structure plan to be prepared in the Governance and Implementation Section of the 30-Year Plan for Greater Adelaide.
The vision includes direction towards co-creation and the strengthening of relationships with State Government and the community through projects, the co-ordination of planning for infrastructure, transport and community facilities with hard and soft infrastructure and the review of buildings in the city by the Capital City Design Review Panel and against the Spatial Vision.

By working with DPTI, the City of Adelaide and the community, the proposed development supports the spatial vision of the City of Adelaide through the development process and implementing high levels of architectural design and amenity through the development of the detailed design, and highlighting the importance of the Park Lands by amending policy to allow the expansion of critical public infrastructure.

Adelaide Park Lands Management Strategy – Towards 2020

The Adelaide Park Lands Management Strategy ‘Towards 2020’ guides the directions and priorities relating to the Park Lands in accordance with the Adelaide Park Lands Act 2005. The strategy aims to increase the community’s formal and informal use of the Park Lands; protect the National Heritage Values; ensure the Park Lands are widely accessible to the public; safeguard the natural, cultural and heritage values; improve the quality of the landscape and facilities; ensure environmental and financial sustainability; and improve community awareness of the natural and cultural heritage.

Specifically, the priorities relevant to Rymill Park are water management initiatives and increased recognition and incorporation of Aboriginal Management principles and protocols. Rymill Park is also identified as a key area for ‘Recreation and Event Space Upgrade’. Rundle Park is identified as a ‘major recreation and event space’, and that future cycling and walking links to Botanic Park are considered as part of the review of the existing Royal Adelaide Hospital site.

Relevant to the Botanic Park Land region, the aims are to strengthen connections between the River Torrens (Karrawirra Parri), the Adelaide Zoo and Botanic Park, and investigate a potential ‘tree walk’ along the river.

The proposed development supported the principles within the Adelaide Park Lands Management Strategy through the proposed amendments to join Rundle Park and Rymill Park and ultimately increase opportunity for recreation activities and events within the east Park Lands and by enhancing the understanding and awareness of the Cultural and Natural Heritage of the Park Lands through minor improvement works and the additional area of Park Land.

The Park Lands Community Land Management Plan

The Park Lands Community Land Management Plan (CLMP) provides management direction for the Adelaide Park Lands, as required by the Adelaide Park Lands Act 2005 and the Local Government Act 1999. The CLMP highlights the importance of the eastern Park Lands in terms of their recreational use, history and heritage items to be preserved. The key elements of the CLMP relevant to the proposed development are listed below.

Chapter 11: Tidlangga (Park 9), Warnpangga (Park 10), Tainmuntilla (Park 11)

The CLMP Desired Future Character Statement for the Park Lands states:

“Providing space and facilities for organised recreation and sport, while meeting the wider recreational needs of the community and enhancing the biodiversity within the River Torrens / Karrawirra Parri corridor.”

Chapter 14: Rundle Park/Kadlittpina, Rymill Park/Murlawirrapurka and Ityamai-itpina (Park 15)

The CLMP Desired Future Character Statement for the eastern Park Lands promotes the picnic and event spaces of Rundle Park and Rymill Park and contrasts the natural sporting uses of Ityamai-itpina (Park 15). Challenges and opportunities mentioned within the plan include:

- Strengthening the quality and appeal of the Park Lands to attract park users.
- Contributing to the open space needs and expectation of the growing residential communities in and around the City.
- Minimising impacts on the parks associated with high usage and a wide range of events.
- Maintaining and enhancing the formal garden settings in Rundle Park/Kadlittpina and Rymill Park/Ityamai-itpina.
- Maintaining important views and vistas across the Adelaide Plains to the Adelaide Hills.
- Ensuring tree avenues are conserved and strengthened.
- Meeting demand for improved pedestrian and cyclist access for recreation and commuter purposes.
- Managing flood mitigation measures in the Parks.

In addition to these desired character statements, challenges and opportunities, the CLMP also highlights the importance of the eastern Park Lands in terms of history and specific heritage items to be preserved in the area. Of note is the Valve House, the last remaining structure from the Kent Town Waterworks, the Alice in Wonderland and Picanniny statues and the overall 1961 design of footbridges and rose gardens of Rymill Park.
5.0 Development Plan Assessment

The western boundary of the City of Norwood Payneham & St Peters is primarily the western side of the Hackney Road carriageway.

As this application relates to development outside of the Adelaide Park Lands, the application is for Crown Development Public Infrastructure pursuant to section 49 of the Development Act 1993. As such, the Minister for Planning, in his consideration of the proposal, must have regard to the relevant provisions of the Norwood Payneham & St Peters Council Development Plan, consolidated on 2 July 2015.

The following elements of the O-Bahn City Access project within the City of Norwood Payneham & St Peters will require Development Act approval and form the basis of this application:

- O-Bahn Tunnel Ramp and Tunnel Portal on Hackney Road;
- Consideration of impacts on surrounding State Heritage items; and
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure.

An assessment of such elements against the relevant Zone, Policy Area and Council wide provisions is provided below.

It should be noted that, where such development materially affects a State or Local Heritage Place, such impacts must be considered. Based upon the Heritage Assessment Report prepared by Dash Architects (Appendix G), the concept design and project footprint do not affect or pose to have a detrimental impact on State and Local Heritage Places within the locality of the Project.

5.1 Zone and Policy Area Assessment

The elements of the O-Bahn City Access Project within the City of Norwood Payneham & St Peters requiring approval under the Development Act 1993 fall within a number of Zones and Policy Areas. Such Zones/Policy Areas apply to a variety of areas along the length of this section of Hackney Road. As the Council boundary is the western side of the Hackney Road carriageway, the elements of the project requiring Approval under the Development Act 1993 bisects the following Zones and Policy Areas:

- Residential Character Zone – Residential Character Policy Area 15.2 Hackney
- Special Uses Zone
- Residential Historic (Conservation) Zone – Policy Area 12.12 Hackney South
- Local Commercial Zone
- Urban Corridor Zone – Policy Area 14.1 Boulevard

Overall, the Development Plan provisions do not provide detailed guidance in relation to major road and public transport infrastructure projects. Accordingly, the approach taken is to summarise the key intent of the relevant Zones and Council Wide provisions with reference to the proposed development.

5.1.1 Residential Character Zone – Residential Character Policy Area 15.2 Hackney

Objectives

The Residential Character Zone aims to maintain and preserve the existing development patterns and built form, while encouraging infill development and affordable housing where appropriate.

Desired Character Statement

The Desired Character Statement for the Residential Character Zone seeks to maintain and enhance the quality of the existing streetscape, with particular reference to the scale, form and siting of the pre-1940s dwellings and the original land division patterns.

Principles of Development Control

The Principles of Development Control for the Residential Character Zone primarily relate to the land use, form and character, design and appearance, landscaping and advertisements within the established urban environment on the eastern side of Hackney Road and adjacent residential streets.
In relation to the Procedural Matters – Principles of Development Control 17 and 18, the O-Bahn bus tunnel ramp, tunnel portal and associated infrastructure, on Hackney Road, are neither listed as Complying Development or Non-Complying Development, and therefore such development is a Merit Use within the Residential Character Zone.

Residential Character Policy Area 15.2 Hackney

The Objectives, Desired Character Statement and Principles of Development Control (PDC) for Residential Character Policy Area 15.2 Hackney relates to a Policy Area comprising small areas of Hackney, located along the southern side of Richmond Street and between Hackney Road and St Peters College. Existing development in this Policy Area comprises a mix of compact and large allotments with a number of Local Heritage Places, pre-1940s dwellings and multi-unit sites.

The Principles of Development Control for the Policy Area relate primarily to the form and scale of residential development and associated land divisions envisaged within the area.

Planning Commentary

The Residential Character Zone and Policy Area 15.2 Hackney do not provide specific planning policy guidance in relation to the proposed O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road and associated ancillary buildings and structures. Such development is a Merit Use form of development within the Zone.

Located primarily within the Hackney Road carriageway, development associated with the O-Bahn City Access Project will not adversely impact upon the existing development pattern within the Residential Character Zone.

The O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures have been designed to be sympathetic to the surrounding locality, incorporating appropriate architectural and urban design features to provide an attractive appearance.

The proposed development will not impact on the achievement of the relevant Zone and Policy Area provisions.

5.1.2 Special Uses Zone

Objective

The Objective of the Special Uses Zone is to accommodate special public or private development of an institutional or open character.

Specifically, this Zone covers the whole of the St Peter's College, located on the eastern side of Hackney Road.

Principles of Development Control

PDC 1 states that development undertaken in the Special Uses Zone should be special public and private development of an institutional or open character. Principles of Development Control 3 and 4 relate to kinds of development which are Complying and Non-Complying within the Zone. The O-Bahn bus tunnel entry ramp and tunnel portal on Hackney Road and associated ancillary buildings and structures, are neither listed as Complying Development or Non-Complying Development, and therefore such development is a Merit Use within the Special Uses Zone.

Planning Commentary

The Special Uses Zone does not provide specific planning policy guidance in relation to the proposed O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure and associated ancillary buildings and structures. Such development is a Merit Use form of development within the Zone.

The Zone services the current St Peter's College.

The concept designs for the O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure and associated ancillary buildings and structures are sympathetic to the surrounding locality, incorporating appropriate architectural and urban design features to provide an attractive appearance.

The proposed development will not impact on the achievement of the relevant Zone and Policy Area provisions.
5.1.3 Residential Historic (Conservation) Zone – Policy Area 12.12 Hackney South

Objectives
The Objectives of the Residential Historic (Conservation) Zone seek to conserve the heritage value and historic character of the Zone, preserving areas of historical significance and retaining, enhancing and conserving land, buildings and their settings, structures and landscape elements.

Further, Objective 5 seeks development that is sympathetic and compatible with the heritage value and historic character of the Zone, but is also subordinate to the local historic character in terms of streetscape impact.

Desired Character Statement
The Desired Character Statement for the Residential Historic (Conservation) Zone primarily relates to the protection of the large proportion of dwelling stock which dates back from the mid-1800s through to the early 1900s. The Desired Character Statement also encourages development which will preserve and enhance the historic character and ambience of localities, with the focus being on providing a range of high-quality residential accommodation which reinforces the historic character and residential amenity of the relevant policy area.

Principles of Development Control
The Principles of Development Control for the Residential Character Zone primarily relate to the land use, form and character, design and appearance, demolition, land division, garages, carports and outbuildings, access and car parking, landscaping and advertisements and signage within the established historic character areas on the eastern side of Hackney Road and adjacent residential streets.

In relation to the Procedural Matters – Principles of Development Control 39 and 40, the O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure, on Hackney Road, and associated ancillary buildings and structures, are neither listed as Complying Development or Non-Complying Development, and therefore such development is a Merit Use within the Residential Character Zone.

Policy Area 12.12 Hackney South
The Hackney South Policy Area is centred around Botanic Street, Westbury Street and Osborne Street.

The Desired Character Statement for the Policy Area seeks development that will preserve and enhance the historic streetscape character created by a consistent pattern of narrow streets, rear service lanes and an array of small, mainly single-fronted, single-storey dwellings, in detached, semi-detached and row dwelling configuration.

The Objective and PDCs for Policy Area relate primarily to the form and scale of residential development within the area.

Planning Commentary
The Residential Historic (Conservation) Zone and Policy Area 12.12 Hackney South do not provide specific planning policy guidance in relation to the proposed O-Bahn bus tunnel entry ramp and tunnel portal on Hackney Road and associated ancillary buildings and structures. Such development is a Merit Use form of development within the Zone.

Located primarily within the Hackney Road carriageway, development associated with the O-Bahn City Access Project will not adversely impact upon the existing development pattern within the Residential Character Zone.

The concept design for the O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure and associated ancillary buildings and structures is sympathetic to the surrounding locality, incorporating appropriate architectural and urban design features to provide an attractive appearance.

The proposed development will not impact on the achievement of the relevant Zone and Policy Area provisions.

5.1.4 Local Commercial Zone

Objective
The Objective of the Local Commercial Zone is primarily to accommodate local service activities which are compatible with the amenity of the locality.

Principles of Development Control
PDC 1 states that development undertaken in the Local Commercial Zone should be primarily local service activities which are compatible with the amenity of the locality. Principles of Development Control 2 and 3 relate to kinds of development which are Complying and Non-Complying within the Zone. The O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures, are neither listed as Complying Development or Non-Complying Development, and therefore such development is a Merit Use within the Special Uses Zone.

<table>
<thead>
<tr>
<th>Planning Commentary</th>
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<tbody>
<tr>
<td>The Local Commercial Zone does not provide specific planning policy guidance in relation to the proposed O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures. Such development is a Merit Use form of development within the Zone.</td>
</tr>
<tr>
<td>The Zone relates to development to the north of intersection of Hackney Road with North Terrace.</td>
</tr>
<tr>
<td>The concept design for the O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures is sympathetic to the surrounding locality, incorporating appropriate architectural and urban design features to provide an attractive appearance.</td>
</tr>
<tr>
<td>The proposed development will not impact on the achievement of the relevant Zone provisions.</td>
</tr>
</tbody>
</table>

5.1.5 Urban Corridor Zone – Urban Corridor Policy Area 14.1 Boulevard

Objective
The primary Objective of the Urban Corridor Zone seeks to develop a mixed use zone accommodating a range of compatible non-residential and medium and high density residential land uses orientated towards a high frequency public transport corridor.

Objective 6 relates to the ‘street environment, stating:

“A safe, comfortable and appealing street environment for pedestrians that is sheltered from weather extremes, is of a pedestrian scale and optimises views or any outlook onto spaces of interest.”

Further, Objective 7 states that noise and air quality impacts should be mitigated through appropriate building design and orientation.

Desired Character Statement
The Desired Character Statement for the Urban Corridor Zone supports a mix of compatible non-residential and residential uses at densities which reflect its close proximity to the City of Adelaide and the Adelaide Park Lands, as well as its location around Primary Road Corridors and public transport infrastructure.

The Desired Character Statement also recognises the importance of transport function of Dequetteville Terrace [and Hackney Road] as ‘Primary Freight Routes, North Terrace as a ‘secondary Freight Route’, and the importance of maintaining the efficient movement of commercial vehicles around the City of Adelaide and the Inner Metropolitan Area.

Although not specifically addressing the Hackney Road corridor, the Desired Character Statement encourages new development to exhibit architectural merit, which favours contemporary leading edge design, particularly along the prominent Boulevard Policy Area frontages and in gateway locations.

Principles of Development Control
The provisions for the Urban Corridor Zone primarily relate to the land use, form and character, design and appearance, demolition and land division, with a focus on a mix of non-residential and residential uses which respect the Primary Road Corridors.

Principle of Development Control 4 seeks development which is in accordance with Concept Plan Fig UrC/1.

In relation to the Procedural Matters – Principles of Development Control 18 and 19, the O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures, are neither listed as Complying Development or Non-Complying Development, and therefore such development is a Merit Use within the Residential Character Zone.

Urban Corridor Policy Area 14.1 Boulevard
The Boulevard Policy Area is focussed on both sides of North Terrace (Hackney Road to the north and Dequetteville Terrace to the south).

The Objectives of the Policy Area seek to encourage medium to high rise development framing the street and a uniform streetscape edge established through a largely consistent front setback and tall, articulated building facades.

Objective 3 specifically encourages development that does not compromise the transport functions of the road corridor.

The Desired Character Statement for the Policy Area reinforces this Objective, stating:

"The transport function of Dequetteville Terrace and North Terrace as Primary and Secondary Freight Routes will be maintained and provide for the efficient movement of vehicles (public, private and freight) around the City and the Inner Metropolitan Rim."

Principles of Development Control for the Policy Area relate to land use and the form and character of development envisaged within the Policy Area.

<table>
<thead>
<tr>
<th>Planning Commentary</th>
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<tbody>
<tr>
<td>The Urban Corridor Zone and Policy Area does not provide specific planning policy guidance in relation to the proposed O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures. Such development is a Merit Use form of development within the Zone.</td>
</tr>
<tr>
<td>The Zone and Policy Area reflects the importance of the North Terrace and Dequetteville Terrace as ‘Primary Freight Routes, and the importance of maintaining and provide for the efficient movement of vehicles (public, private and freight) around the City and the Inner Metropolitan Rim.</td>
</tr>
<tr>
<td>The concept design for the O-Bahn bus tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures is designed to be sympathetic to the surrounding locality, incorporating appropriate architectural and urban design features to provide an attractive appearance.</td>
</tr>
<tr>
<td>The proposed public infrastructure improvements are generally consistent with the intent of the Concept Plan (Fig UrC/1), with significant improvements planned for the Primary Road Corridors and the Bikeways within the region. The pedestrian environment will also be improved as a result of these changes, enhancing the links to the Park Lands by moving busses underground.</td>
</tr>
<tr>
<td>Changes to the local traffic environment will consider the existing access arrangements within the Urban Corridor Zone at the intersection of Hackney Road.</td>
</tr>
<tr>
<td>The proposed development will not impact on the achievement of the relevant Zone and Policy Area provisions.</td>
</tr>
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</table>

5.2 Council Wide Assessment

The following section provides an assessment of the project elements requiring approval against the Council Wide Section of the Development Plan. Details regarding the Environmental Impacts of the O-Bahn City Access Project are included in Appendix B.

Orderly and Sustainable Development

The proposed O-Bahn City Access Project development will be undertaken in a logical and orderly manner to maintain a safe, convenient and pleasant environment in which to live. The development will be well coordinated with the adjoining Council areas.

The proposed public infrastructure development will result in a high quality, modern, coordinated development in accordance with the relevant Development Plan provisions that will enhance the continuance of the adjoining activities, operations and efficient multi-modal transport movements, without jeopardising the continuance of adjoining land uses.
Design and Appearance of Land and Buildings

The amenity of the City of Norwood Payneham & St Peters will not be impaired by the elements constituting the O-Bahn City Access Project. The design will exemplify a high architectural standard and appearance which reinforces the positive aspects of the heritage locality.

The proposed public infrastructure development will promote a safe, secure and crime resistant environment for pedestrians and members of the local community. The Hackney Road tunnel entry ramp and tunnel portal will be designed to maintain sight lines as required and facilitate passive community surveillance.

Specifically, the portal on Hackney Road provides an opportunity for an innovative and contemporary design solution, whilst maintaining sensitivity to the surrounding historic character. The final design will maintain and enhance the visual attractiveness of the locality.

Landscaping, Fences and Walls

The portion of the O-Bahn City Access Project within the City of Norwood Payneham & St Peters, where appropriate, will be enhanced with appropriate planting and landscaping.

The landscaping relevant to the City of Norwood Payneham & St Peters Council area will occur within the Hackney Road median strip as part of this Development Application. This will involve a combination of indigenous and non-indigenous plant species where appropriate to increase visual amenity of the roadway and to support the existing nature of the locality.

Any fencing or walls associated with the development will be designed to enhance the attractiveness of development, minimising the use of hard paved surfaces in order to complement the existing built form.

Should any fencing be required during the construction phase, care will be taken to ensure that visibility is maintained and it does not detract significantly from the surrounding character.

Movement, Transport and Car Parking

The main objectives for the O-Bahn City Access Project align closely with the objectives of the Norwood Payneham & St Peters Development Plan, promoting an integrated and efficient public and private transport system which will effectively support the economic development of metropolitan Adelaide and the State, ensure a high level of safety, maintain options for suitable new transport technologies and provide access to adequate transport services for all people.

The focus for this project is to improve public transport accessibility into the City from the north-eastern suburbs, and to improve the flow of traffic along the Inner Ring Route.

Thus, the improvements to the O-Bahn system and the Inner Ring Route support the achievement of Objective 35 relating to public transport improvements, and Principles of Development Control 93 and 94 relating to Movement Systems.

The design of the Hackney Road tunnel entry ramp and tunnel portal will improve the networks for vehicular, cycle and pedestrian traffic by implementing safe, convenient and clearly defined networks of roads, paths and the busway. The development will ensure noise and air quality impacts are minimised, provide adequate access and ensure maximum safety for all road and transport users.

The proposed amendments to Hackney Road include safety improvements to the street and path network to encourage walking and cycling within the local area and to and from the City centre. Pedestrians and cyclists are encouraged to utilise the off-road walking and cycling path on the western side of Hackney Road.

Whilst recognising that there will be some access changes on the eastern side of Hackney Road the road design for Hackney Road, including the operation of the local access roadway needs to balance safety for road users, access to key stakeholders, facilities and residents and convenience whilst importantly ensuring safety for all.

Infrastructure

The O-Bahn City Access Project involves the improvement of public transport infrastructure. As discussed in Sections 2.1 and 2.2, the O-Bahn system is acknowledged as an efficient and cost-effective option for the improvement of private transport along Hackney Road and public transport from Adelaide’s north-eastern suburbs to the CBD.

Infrastructure, such as the 66 kv electricity network that may need to be relocated as part the O-Bahn City Access Project, will be the subject of separate development applications.
Stormwater Management

As discussed in Section 2.7, aspects associated with the O-Bahn City Access Project are not expected to have a significant impact on the volume or quality of stormwater runoff to the River Torrens or First Creek or challenge the capacity of existing stormwater infrastructure.

The existing stormwater along Hackney Road runs directly into the River Torrens and First Creek, therefore there is a potential that minor adjustments to existing stormwater drainage infrastructure is required.

The new tunnel will require the development of new stormwater infrastructure to pump out stormwater from the tunnel to a sump before being discharged to First Creek near the National Wine Centre. Final details of the stormwater infrastructure design will be developed in close consultation with Norwood Payneham & St Peters and other relevant drainage authorities where applicable.

The application plans have been developed to ensure minimal run-off and to maximise the harvest of stormwater through the preservation of natural drainage systems and other forms of appropriate stormwater management.

Hazards

A site contamination and soil characterisation has been undertaken for the site. A Contamination Management Plan in accordance with relevant legislation, policies and guidelines will be implemented during construction works to minimise and manage risks to workers and the adjacent community. The Management Plan will include requirements for management of contaminated materials on site, dust management, transportation and off-site disposal as well as controls for impacted soils/groundwater, not previously identified, that may be encountered during excavation works.

Environment and Conservation

An overview of the O-Bahn City Access Project Environmental Impacts and Mitigation Measures are provided in Section 2.7 of this Development Assessment Report, with further detail in Appendix B.

Specifically within the City of Norwood Payneham & St Peters, the project design has sought to minimise the potential impact upon the existing natural environment, including the open space and heritage items within the project locality. As discussed previously, careful planning including alternatives, mitigation measures and construction contract management measures have been addressed through background studies to support this development application.

All efforts will be made during construction to protect areas minimise vegetation and tree impacts, protect both surface water and ground water, minimise air quality impacts, manage contamination materials appropriately, and to protect biological systems to maintain the natural ecological processes.

Regulated Trees and Significant Trees

The project will impact on up to four (4) Regulated and Significant Trees within the City of Norwood Payneham & St Peters. Such tree-damaging activities will be the subject of a separate development application (and do not form part of the current application).

Heritage

It is acknowledged that there are a number of heritage listed items within the City of Norwood Payneham & St Peters area that contribute to the historic character of the locality. Figure 8 identifies the heritage sites listed in Tables NPSP/5 and 6 within the Development Plan, identifying State, Local and Contributory Heritage Items within the locality of the project area.

The concept design for the Hackney Road tunnel ramp, tunnel portal, associated infrastructure on Hackney Road, and associated ancillary buildings and structures is sympathetic to the character of the locality, and will seek to contribute to a pleasant and functional living environment within this key arterial road intersection.

It should be noted that the Non-Aboriginal Heritage Impact Assessment Report assessment states that the project elements are unlikely to detrimentally impact upon the surrounding State and Local Heritage Places.
Figure 8 Heritage items within the project locality (Source: LocationSA MapViewer)
6.0 Summary and Conclusions

This proposal is for development under Section 49 of the Development Act 1993. This report has identifies that this application is for essential strategic infrastructure for the improvement of public transport and for the improvement to the flow of traffic on the Inner Ring Route.

The key elements of the development the subject of this application are:

- O-Bahn Tunnel Ramp and Tunnel Portal on Hackney Road;
- Consideration of impacts on surrounding State Heritage items; and
- Ancillary buildings and structures, such as access and ventilation outlets from the tunnel, tunnel services buildings, busway kerbing and stormwater infrastructure.

The concept design and the project footprint do not affect or pose to have an impact on State and Local Heritage Items.

Assessment of other overarching strategic planning documents at both State and Local level support the O-Bahn City Access Project, assisting in servicing wider public transport and access networks and will providing supporting for such transport infrastructure improvements.

As the Norwood Payneham & St Peters Council boundary is the western side of the Hackney Road carriageway, the elements of the project requiring Approval under the Development Act 1993 bisect a number of Zones and Policy Areas.

The proposed development is not considered to be substantially at variance with the relevant provisions of the Norwood Payneham & St Peters Development Plan.

Such Zones and Policy Areas do not provide specific planning policy guidance in relation to the proposed O-Bahn bus tunnel entry ramp and tunnel portal on Hackney Road and associated ancillary buildings and structures. However, such development is a Merit Use form of development within all Zones and Policy Areas.

Further, the concept designs for the O-Bahn bus tunnel ramp, tunnel portal on Hackney Road, associated infrastructure and associated ancillary buildings and structures are sympathetic to the surrounding locality, incorporating appropriate architectural and urban design features to provide an attractive appearance.

Finally, the O-Bahn City Access Project is consistent with the provisions of the Development Plan relating to movement and access, ensuring that the transport function of Hackney Road, Dequetteville Terrace and North Terrace will be maintained, providing for the efficient movement of vehicles (public, private and freight) around the City and the Inner Metropolitan Rim.

The proposed development warrants the favourable support of the Planning Authority.
6 November 2015

Attn: Simon Neldner
Development Assessment Commission
Roma Mitchell House
136 North Terrace
ADELAIDE SA 5000

Dear Simon,

Response to Request for Further Information for Development Application No. 155/V009/15 - Development outside of the Adelaide Park Lands

Further to your letter dated 23 October 2015, the following response is provided in relation to the request for further information from the Development Assessment Commission for the above Development Application relating to the O-Bahn City Access Project development outside of the Adelaide Park Lands.

It should be noted that the application plans lodged with the development application are based on the Reference Design contained in the Project Impact Report, released in August 2015. Since this time, the South Australian Government has announced the preferred tender design, meaning that more detailed information is now available in response to the matters raised in your letter.

The detailed design of the O-Bahn City Access Project will continue to be refined through ongoing consultation with the affected councils and key stakeholders.

We provide the following response:

**PART 1 Further detail in regards to the appearance, design, materiality, scale and situational context of the development within and adjacent to the Adelaide Park Lands**

1) Pedestrian and cycle bridge – requirement for elevations, perspectives, materials / finishes, method of riverbank connection etc.

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td>No response to this Item is required for this application. See Development Application No. 020/L073/15 in relation to this information.</td>
<td>No additional information provided.</td>
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2) Tunnel portals + portal canopy – requirement for perspectives, detailed elevation, materials / finishes etc.

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<tr>
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<tbody>
<tr>
<td>Concepts plans that are under consideration and development of the tunnel portal at Hackney Road are included in Attachment 1. These design concepts will be further developed by the contractor and DPTI in consultation with key stakeholders throughout the detailed design phase of the project. Thus, we request that the detailed design and materials associated with the tunnel portals be included as a RESERVED MATTER on the Development Approval.</td>
<td>Attachment 1. Hackney Road Tunnel Portal – Concept design artist’s impressions</td>
</tr>
</tbody>
</table>
3) Ancillary buildings, emergency exits, ventilation stacks and structures – requirement to identify their location, height, dimensions, materials/finishes etc.

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<tr>
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<tbody>
<tr>
<td>No response to this Item is required for this application. See Development Application No. 020/L073/15 in relation to this information.</td>
<td>No additional information provided.</td>
</tr>
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</table>

4) Botanic Gardens Carpark expansion – requirement for detailed site and layout plan with heritage buildings and curtilage identified

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<tr>
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</thead>
<tbody>
<tr>
<td>No response to this Item is required for this application. See Development Application No. 020/L073/15 in relation to this information.</td>
<td>No additional information provided.</td>
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</table>

5) Engineered site works plan – identification of contours, site levels (pre and post development), details of supporting infrastructure – including retaining walls.

<table>
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<tr>
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<tr>
<td>In relation to the site contours and levels (pre and post development), the concept designs provided in Attachment 2a and 2b provide further information of the existing versus post-construction ground levels and contours that can be expected as a result of the works. There will be minimal to no change to the existing ground levels for the majority of the Park Lands except adjacent to Rymill Lake as the tunnel exits the ground, to match-in to Grenfell Street. The approximate size and shape of the fill batters in this area can be seen in the plans and cross-sections. Retaining walls – concept design details of the sheetpiled retaining walls to be provided at the tunnel portal are provided in Attachment 2c.</td>
<td>Attachment 2 a. Overall Site Construction concept (plan view and long-sections) Attachment 2 b. Tunnel Cross-Section plans Attachment 2 c. Hackney Road Retaining Wall Details</td>
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PART 2 Further information and/or clarification is also required on other matters

6) Location of site compounds and storage areas. Additional information should also be provided detailing the extent of the proposed earthworks and stockpiling locations.

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<tr>
<td>DPTI is liaising with the Board of the Botanic Gardens regarding utilising areas along Hackney Road for works associated with the O-Bahn City Access Project, including:  * works associated with the construction of the O-Bahn City Access Project tunnel, tunnel portal, and associated pathways, roadworks, earthworks, services, bridgeworks, landscaping and urban design  * construction of tracks and other temporary hard-stand areas for use by construction plant, trucks and construction vehicles</td>
<td>Attachment 3. Botanic Gardens Construction Areas</td>
</tr>
</tbody>
</table>
- temporary stockpiling of materials including surplus spoil from earthworks activities within the project site
- storage of construction plant, equipment and materials necessary for construction works and site management
- establishment of temporary site compounds and amenities (i.e. office spaces, lunch room, toilets, etc)
- establishing, maintaining and modifying safety fencing/hoarding as required to separate public spaces from the construction zone
- access to and egress from the construction works area

Such matters will be addressed in the Construction Environmental Management Plan which will be prepared in collaboration with the successful contractor. Such facilities will be located within the Adelaide City Council Licence Area.

7) **Approximate position of guided bus way (start + end points).**

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<th>Additional Information</th>
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<tr>
<td>The guideway system at Hackney Road extends beyond the tunnel portal and extends beyond the ramp. The guideway system at Rymill Park extends beyond the tunnel portal approximately 40 to 60 metres. Approximate extents of the guideway system are shown in the concept plans in Attachment 4.</td>
<td>Attachment 4. Extent of Guideway Tracks</td>
</tr>
</tbody>
</table>

8) **Specification (style, height and material etc.) of any pedestrian safety fencing adjacent the bus way entry and exit points.**

<table>
<thead>
<tr>
<th>Response</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td>Some concepts under consideration for fencing are included in Attachment 5, though it should be noted that this primarily relates to development within the Park Lands (Development Application No. 020/L073/15). These design concepts will be further developed by the contractor and DPTI in consultation with key stakeholders throughout the detailed design phase of the project. Thus, we request that the detailed fencing design and associated materials be included as a RESERVED MATTER on the Development Approval.</td>
<td>Attachment 5. Fencing/balustrade architectural concepts</td>
</tr>
</tbody>
</table>

9) **Vehicle access / haulage routes during construction – including site access.**

<table>
<thead>
<tr>
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<th>Additional Information</th>
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<tbody>
<tr>
<td>Refer to Item 6 above.</td>
<td>Attachment 3. Botanic Gardens Construction Areas</td>
</tr>
</tbody>
</table>

10) **Confirmation of temporary pedestrian and cycle paths during construction.**

<table>
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<tr>
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<tbody>
<tr>
<td>Pedestrian and cycling routes will be managed during construction to minimise impacts on path users. Detailed management measures will</td>
<td>Attachment 6.</td>
</tr>
</tbody>
</table>
be included in the Construction Environmental Management Plan and other work instructions etc.

Suggested permanent changes and improvements to pedestrian and cyclist movements within the Park Lands are indicated in Attachment 6. This Concept Plan is provided for information purposes in relation to this Development Application.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>A soil investigation report has been prepared by Golders, which summarise the contamination classification of the materials within the project area. A copy of the report (excluding the attachments) is provided in Attachment 7. Attachments can be provided upon request.</td>
<td>Attachment 7. Contamination Investigation Report – Golders Associates (report – excluding attachments)</td>
</tr>
</tbody>
</table>

12) Preliminary Concept Landscape Plan - can this be provided in A1?

<table>
<thead>
<tr>
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<th>Additional Information</th>
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<tbody>
<tr>
<td>The overall landscaping design concept has not yet been developed. A concept planting palette has been developed and is provided in Attachment 8. Such landscaping design concepts will be developed by the contractor and DPTI in consultation with key stakeholders throughout the detailed design phase of the project. Thus, we request that the detailed landscaping design be included as a RESERVED MATTER on the Development Approval. When further detail regarding the landscaping design for the project is prepared, we will provide this to DAC in A1 size as requested.</td>
<td>Attachment 8. Landscaping planting palette concepts</td>
</tr>
</tbody>
</table>

13) Clarification of any additional regulated / significant tree impacts within the footprint of the Botanic Gardens carpark extension and pedestrian bridge (Note – this includes any previous approval for tree removal on land adjacent the pedestrian bridge)

<table>
<thead>
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<tbody>
<tr>
<td>All Significant and Regulated Tree impacts required for the project are included in Development Application No. 155/V008/15 – Section 49 Crown Development Application – Tree Damaging Activities.</td>
<td>No additional information is required</td>
</tr>
</tbody>
</table>

14) If mechanical ventilation systems and emission stacks are proposed for the tunnel, did the air quality assessment consider these new (concentrated) point sources?

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>No emission stacks are required for ventilation of the tunnel. Tunnel ventilation will be managed by mechanical fans within the tunnel that will push the air to either end of the tunnel as required. This has been considered in the air quality assessment. There will also be ventilation required from and to the Tunnel Service Building located within the Park Lands (Rymill Park) which will consist of a fresh-air intake and outlet to accommodate air conditioning required for regulating the temperature of the electronic equipment.</td>
<td>No additional information is required</td>
</tr>
</tbody>
</table>
This will be clean air and vents will be incorporated discreetly in the design. See Development Application No. 020/L073/15 in relation to this information.

15) Will a temporary concrete batching plant be installed on the site?

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>No temporary concrete batching plant is required to be installed on the site as part of this project.</td>
<td>No additional information is required</td>
</tr>
</tbody>
</table>

16) What level of groundwater analysis has been undertaken? (i.e. potential interruption to water table or requirement for on-going de-watering from tunnel construction)

<table>
<thead>
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<tbody>
<tr>
<td>Significant Groundwater analysis has been undertaken for the project by industry specialists, including:</td>
<td>Attachment 9. Groundwater Dewatering Method</td>
</tr>
<tr>
<td>• A three-staged geotechnical investigation to sample, test and analyse the soil and ground water properties, topography, geology etc.</td>
<td></td>
</tr>
<tr>
<td>• The contractor has completed further analysis of the groundwater to understand the construction methodology and long-term effects of the works on ground water.</td>
<td></td>
</tr>
<tr>
<td>To summarise the effects during construction:</td>
<td></td>
</tr>
<tr>
<td>• The effect of groundwater drawdown can result in settlement and possible damage to services or sensitive structures in certain circumstances</td>
<td></td>
</tr>
<tr>
<td>• Based on the groundwater modelling, the temporary drawdown prior to base slab construction on either side of the tunnel in Hackney Road and Dequetteville Terrace is quite small (approximately 0.5m at about 20m from the tunnel alignment). This variation in groundwater level is within the natural seasonal groundwater fluctuation range</td>
<td></td>
</tr>
<tr>
<td>• Based on the small groundwater drawdown and the stiffness of the soils in this area, the potential for settlement is expected to be very small</td>
<td></td>
</tr>
<tr>
<td>• To manage the risks of settlement, and potential impacts to adjacent landscape or structures, the contractor will conduct monitoring during the dewatering process. If settlement appears, reinjection of water into the ground water will be completed</td>
<td></td>
</tr>
<tr>
<td>To summarise the effects of the permanent tunnel structure on the groundwater table:</td>
<td></td>
</tr>
<tr>
<td>• In the sheet-piled section of tunnel (from Hackney Road to Dequetteville Terrace, outside of the Park Lands), it is important to note that the proposed sheet-piling method minimises any impact to existing groundwater on the outside of the tunnel walls</td>
<td></td>
</tr>
<tr>
<td>• It is proposed to insert the sheet piles into the ground and then dewater the soil between the tunnel walls. This will create an impermeable barrier to minimise any groundwater</td>
<td></td>
</tr>
</tbody>
</table>
By minimising the groundwater ingress from outside it is expected that the existing water table will be maintained within its seasonal range. This will be monitored during construction.

The remainder of the tunnel within the Park Lands uses a 'bottom up' construction technique (i.e the construction of a base slab, tunnel walls and roof).

The water table is close to the tunnel base slab level and therefore is not expected to be affected by construction or the permanent structure.

17) Clarification on proposed signage – is any third party signage proposed, or is the signage limited to statutory traffic displays / warning signs etc.

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<thead>
<tr>
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<tbody>
<tr>
<td>There is no third party signage proposed as part of the O-Bahn City Access Project. Safety signage, statutory traffic displays and warning/directional signs will be required.</td>
<td>No additional information is required</td>
</tr>
</tbody>
</table>

Indicative Project Staging

Furthermore, McConnell Dowell (the appointed contractor for the O-Bahn City Access Project) has prepared an indicative staging plan for the O-Bahn City Access Project, which is provided for information only and is subject to change. This is included as Attachment 10 – Indicative Approval Stages.

Summary

Additionally, we note that in your letter, you have identified that if Development Approval was to be granted on this Development Application that additional plans and technical documents may be conditionally required or included as Reserved Matters to be addressed prior to the commencement of construction. We confirm that this is acceptable and have identified which documents may need to be provided at later stages of the project development.

I trust that this letter and the enclosed documentation addresses all outstanding queries on the Development Application No. 155/V009/15.

Please do not hesitate to contact me on 0404 033 705 should you wish to discuss this further.

Yours faithfully,

Brenton Burman
Technical Director - Transport
brenton.burman@aecom.com

Mobile: +61 404 033 705
Direct Dial: +61 8 7223 5412
Direct Fax: +61 8 7223 5499

cc: Dariusz Fanok, DPTI
List of Attachments:

- Attachment 1. Hackney Road Tunnel Portal – Concept design artist’s impressions
- Attachment 2a. Overall Site Construction concept (plan view and long-sections)
- Attachment 2b. Tunnel Cross-Section plans
- Attachment 2c. Hackney Road Retaining Wall Details
- Attachment 3. Botanic Gardens Construction Areas
- Attachment 4. Extent of Guideway Tracks
- Attachment 5. Fencing balustrade architectural concepts
- Attachment 8. Landscaping planting palette concepts
- Attachment 9. Groundwater Dewatering Methodology
- Attachment 10. Indicative Approval Stages.