



**Lucas Consulting Engineers**  
Pty Limited

## **249, 259 and 271 RAILWAY TERRACE SCHOFIELDS**

### **Residential Development**

## **INFRASTRUCTURE AND SERVICES REPORT**

**Prepared for** Provincial Investments (NSW) Pty Limited

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## 1 INTRODUCTION

Lucas Consulting Engineers Pty Limited has been engaged by Provincial Investments (NSW) Pty Limited to investigate the availability of services and requirement for civil works associated with a proposed 1800 residential unit development at No 249, 259 and 271 Railway Terrace, Schofields. The civil works comprise the provision of utility services to the site, stormwater issues, access roads for future residents and environmental safeguards during the construction phase.

The development will feature a number of buildings on 6 super lots with a maximum height of 10 stories. The buildings will accommodate some 1800 apartments and ground floor commercial tenancies with 2 to 3 levels of basement for parking.

Issues relating to the internal access roads, public utility services and stormwater are the subject of this investigation. It should be noted that civil plans have been prepared for the site on the basis of 900 units being developed on the property. This review addresses the impact of increasing the number of units to 1800.

## 2 ACCESS ROADS

Access to the site is currently obtained from Railway Terrace and Pelican Road. Railway Terrace is a main road servicing the area including Schofields Railway Station, the recently completed shopping centres including a Coles and Woolworths Supermarkets. Railway Terrace is fully constructed with 2 traffic lanes and roadside parking and kerb and gutter adjoining the development site. Railway Terrace immediately adjacent to the site does not have kerb and gutter. These works will need to be completed as part of any development of the site.

The proposal is to create new internal access roads as part of the subdivision to create the 6 super lots. These roads will connect Railway Terrace through to Pelican Road and Jacqui Avenue and provide street access to each of the proposed buildings.

The proposed streets will have a reserve width of 18m comprising generally 11.0m carriageway, 2.5m wide parking lanes, footpaths and landscape strips. The carriageway is to comprise of a flexible pavement with barrier kerb on either side. The footpath will have a concrete path and an allocation for underground services. The landscape strip will act as a buffer between the kerb and site boundaries.

Driveways to the basement car parks will be accessed from the internal access roads and constructed in reinforced concrete and will have minimum widths to facilitate two-way movement.

There will be no change to the layout or configuration of the road pattern as a result of the increase in the number of units. Traffic control features such as traffic lights may be required to cater for an increase in the number of road users. This is subject to traffic modelling by a Traffic Engineer.

## 3 SERVICES

Utility services are available to the site from Railway Terrace.

### 3.1 *Water*

There are existing water mains in Railway Terrace servicing the area. These comprise a 250mm DICL, 500mm CICL and 250mm CICL main owned and maintained by Sydney Water.

New water mains will need to be constructed off the existing DN250 DICL main in Railway Terrace. These will be located in the footpath verge of the new internal roads.

In accordance with the Water Supply Code of Australia (WSA 03), Sydney Water Edition, Table SW 3.0, it will be necessary to provide 200mm mains for buildings exceeding 8 storeys in height within the new internal roads.

The extent of works associated with the water mains will be the subject of the Section 73 Notice of Requirements (NOR) from Sydney Water for the proposed development. An application for this has been submitted to Sydney Water under Case 208163. It is currently under review by Sydney Water with the NOR expected to be issued in 6 to 8 weeks time.

### 3.2 *Sewer*

A 225mm diameter gravity sewer main exists at the front of the site adjacent to Railway Terrace. The sewer then drains towards the southeast to a DN300 main in Burdekin Road approximately 230m away.

New sewer mains will need to be constructed off the existing DN225 main in Railway Terrace. The new sewer lines for the internal roads will be a 225mm gravity sewer. There will be 3 connection points to the existing sewer along Railway Terrace.

As a result of the proposed increase in the number of units from 900 to 1800 it may be necessary to amplify the existing DN225 sewer in Railway Terrace to a DN300 sewer. This will need to be provided from the subject site to the existing DN300 main located in Burdekin Road 230m away.

The extent of these works will also be the subject of the Section 73 Notice of Requirements (NOR) from Sydney Water for the proposed development. As advised above an application for this has been submitted to Sydney Water under Case 208163. It is currently under review by Sydney Water with the NOR expected to be issued in 6 to 8 weeks time.

### 3.3 *Gas*

There is an existing 110mm PE 210kPa gas main located in Railway Terrace which will service the as required. Jemena typically requires a 32mm PE main to service the new developments however given the size of the development this may need to be 50mm.

Jemena's requirements will be detailed when a formal application is made to them for the development however gas is available to the site.

### 3.4 *Electricity*

Electricity is available in the area and will be extended to the site. Details of the proposed electrical services have been investigated with Endeavour Energy who confirm that:

*Our preliminary network assessment determines that the required load of the proposed apartment development at above location will be 7.3 MVA (ADMD 3.5kVA/unit x 1,800units + 1.0MVA for other loads).*

*At present, there is sufficient capacity at Schofields ZS to supply this development.*

### 3.5 *Telecommunications*

Telstra currently has underground conduits and cables in the footpath area of Railway Terrace passing along the frontage of the site. The conduits also contain Optic Fibre cables belonging to AARNet. Plans indicate that services are available to the site and will be extended as underground services along the proposed access roads to facilitate distribution to the proposed buildings.

### 3.6 *Stormwater*

Stormwater infrastructure associated with the buildings and internal open space areas will be collected by a piped system and connected through to the nearest available pit in the new roads. Street drainage in the internal roads will be provided to collect the stormwater from the buildings and the internal roads in accordance with Blacktown Council's guidelines and requirements.

Council has previously advised that on-site detention will not be required for the site; however it is proposed to implement stormwater reuse and quality improvement devices for each building. This will be carried out by providing underground storage tanks under the external paved areas. Stormwater will be collected from the roof of the buildings and other 'clean' areas where no pre-treatment will be required for reused in the irrigation systems.

Street water will be collected and directed through a gross pollutant trap prior to discharging into Council's proposed detention basin known as 'Basin SP2'. The street system and reuse scheme will be sized to cater for the 20-year ARI flow. Provision for flows more than the 20year ARI and up to the 100year ARI will be treated as overland flow and contained within the street kerb and gutter. Overflow pipes will be provided from the storage tanks to the nearest street pipe if the tanks are full and cannot take anymore water.

The civil design for the stormwater is currently with Council for review. The increase in the number of units from 900 to 1800 will not impact on the current designs as there is no increase in paved areas, hence no change to the volume of water leaving the site.

## 4 **SOIL AND WATER MANAGEMENT**

Soil and Water management practices will be undertaken in accordance with the NSW Department of Housing publication "Managing Urban Stormwater – Soils and Construction" 1998, which is the industry standard. The basic principles to be adopted are to divert clean water from undisturbed

area around the construction works, minimise the extent of disturbed areas to areas affected by the construction works, direct all runoff from disturbed areas to storage basins for treatment prior to discharge and staging of the project to limit the extent of disturbed areas exposed at any given time. A regular inspection, maintenance and testing program will also be implemented.

Given the nature of the construction, it is expected that runoff from disturbed areas will generally be captured on the downhill slope from the fill areas by sediment barriers.

There will be no impact on the management of stormwater runoff from the site as a result of increasing the number of units from 900 to 1800.

#### **4.1**      *Site Environmental Management Plan*

An EMP is a document developed to help ensure that commitments made in the Environmental Assessment (SEE) are implemented, reported on and validated, and that the environmental impacts of the project are managed. EMPs are dynamic documents, which are prepared before or during the detailed design phase and updated over the life of the project.

The EMP for this proposal will include the following main documents:

- **Waste/Sediment disposal Management plan**
- **Soil and Water Management Plan during the construction phase**

The Council, prior to construction, will approve these documents. Additionally, the EMP will include, but not be limited to:

- statutory requirements relevant to each impact,
- proposed actions to manage those impacts,
- allocation of responsibility for those actions, and
- a method of reporting actions.

#### **4.2**      *Implementation of Environmental Safeguards*

The EMP will be a key mechanism in the implementation of safeguards. Written into the special conditions of contract there will be a requirement for the successful contractor to submit a detailed EMP as outlined above. The EMP will cover the construction phases and will be vetted by the project manager.

The works required to implement the Environmental safeguards for the site will not be impacted by the increase in the number of units.