

ECONOMY

ITEM NUMBER	7.4
SUBJECT	Planning proposal for land at 241 Pennant Hills Road, Carlingford
REFERENCE	RZ/13/2016 - D04286622
REPORT OF	Project Officer Land Use
APPLICANT	Triple Eight Pty Ltd

PURPOSE:

The purpose of this report is to seek endorsement of a submission to the Department of Planning and Environment in response to a pre-gateway review application submitted by the applicant for the planning proposal on land at 241-245 Pennant Hills Road, Carlingford. The site was located within the former local government area of The Hills Shire Council and is now located in the City of Parramatta Local Government Area. The City of Parramatta is now responsible for the planning controls that apply to this site.

RECOMMENDATION

- a) **That** Council advise the Department of Planning and Environment that:
 - i. Council is supportive of some increase in density on the site.
 - ii. A maximum height of 28m (8 storeys) is recommended for the site.
 - iii. A lower and reduced building envelope that makes an appropriate transition and has lesser adverse visual and amenity impact to the surrounding low rise context should be considered. A more detailed urban design analysis should be undertaken to determine an appropriate FSR for the site. Council estimates an FSR of 1.5:1 can be accommodated. This process must be undertaken prior to public exhibition.
 - iv. A site specific DCP be informed by the detailed urban design analysis required in (iii) and be exhibited concurrently.
 - v. A revised traffic report be submitted that includes an intersection analysis of the Baker Street and Pennant Hills Road intersection.
- b) **That** this report form the submission to the pre-gateway review and be forwarded to the Department of Planning and Environment.
- c) **Further, that** the Department of Planning and Environment be advised that Council is willing to perform the function of Relevant Planning Authority for this planning proposal if the gateway determination is consistent with Council's recommended height and FSR controls.

EXECUTIVE SUMMARY

1. On 12 May 2016 the State Government made a proclamation announcing the new City of Parramatta. As part of this announcement the boundaries of many councils in the Sydney Metropolitan area were adjusted and amalgamation of some councils took place. However, the planning controls that applied to land prior to the proclamation remain in force regardless of whether sites are now located in a new council area.
2. The subject site at 241-245 Pennant Hills Road, Carlingford is now located within the City of Parramatta local government area as a result of the

amalgamation process. The City of Parramatta is now responsible for the planning controls that apply to this site, even though the controls are contained within The Hills Local Environmental Plan (LEP) 2012.

3. The applicant is seeking to amend The Hills Local Environmental Plan 2012 to increase the maximum height of buildings from 9 metres (3 storeys) to a height range of between 15 metres (5 storeys) and 57 metres (18 storeys); and increase the maximum floor space ratio from 1:1 to 2.8:1 for the subject site. No change is proposed to the existing B2 Local Centre zone and SP2 Infrastructure (Classified Road) zone of the site.
4. The applicant submitted a pre-gateway review to the Department of Planning and Environment before The Hills Council formally considered the proposal.
5. The City of Parramatta has been invited to provide comments to the Department of Planning and Environment to inform the pre-gateway review.
6. Council officers consider a maximum height of 28m (8 storeys) to be appropriate for the site. It is recommended a more detailed urban design analysis be undertaken to determine an appropriate FSR for the site, Council officers estimate the FSR will be approximately 1.5:1 but further testing should inform the exact FSR. This process should inform a site specific DCP. The urban design analysis and DCP should be exhibited alongside the planning proposal.

THE SITE AND LOCALITY

7. The site (Figure 1) is triangular in shape and has a total area of 6,330m² (of which 5,765m² is zoned B2 Local Centre with the remaining 565m² zoned SP2 Infrastructure, reserved for road widening). The site is located on the corner of Pennant Hills Road and Felton Road, approximately 300 metres south-west of Carlingford Railway Station.

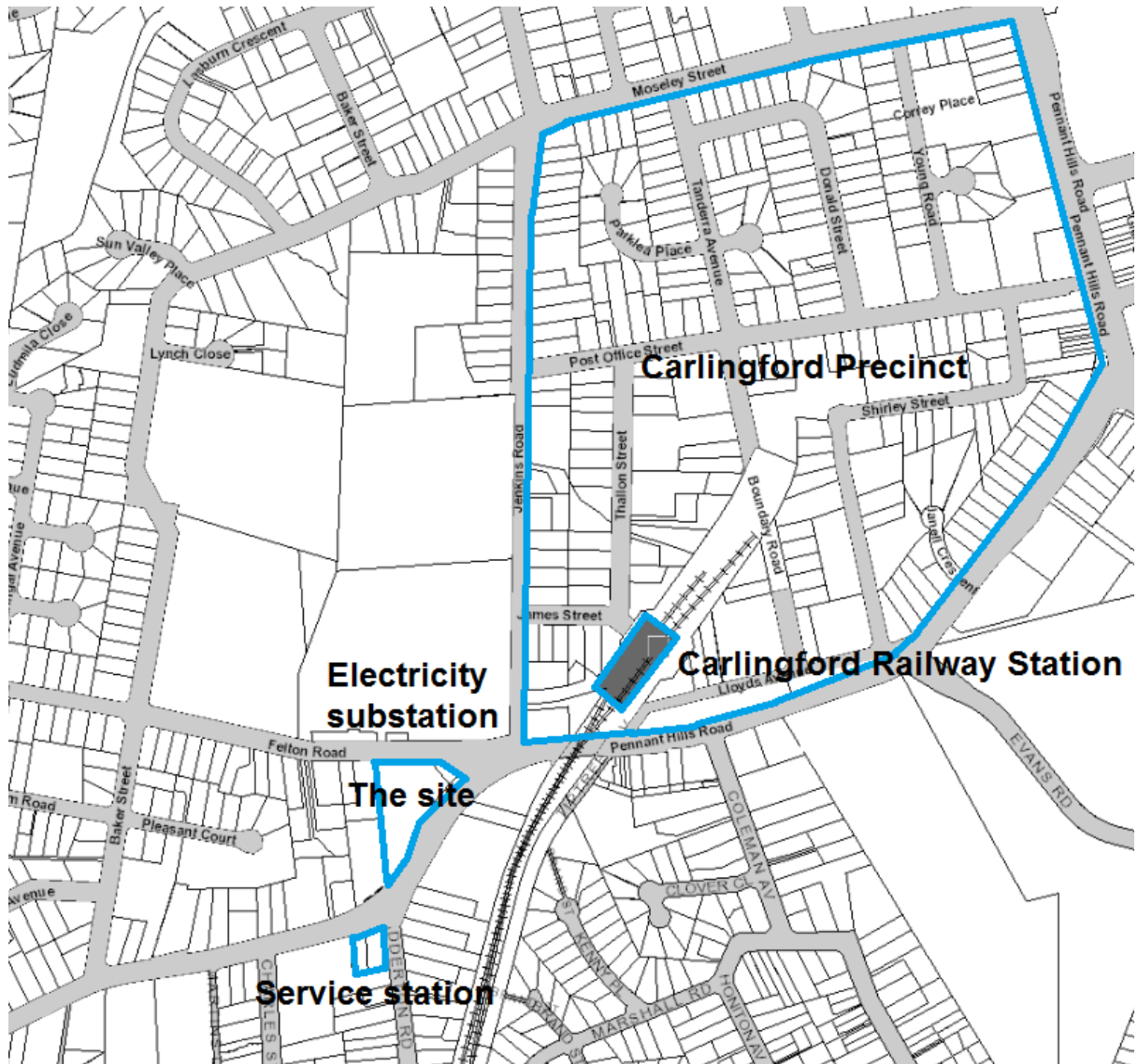


Figure 1: Location map (Source: Council's GIS)

8. The site is currently occupied by a 1-2 storey commercial building with associated car parking. The site is adjacent to an Endeavour Energy transmission substation to the north, service station to the south and low to medium density residential development to the east and west. Carlingford Railway Station and the Carlingford Precinct are located to the north-east.

Development of Surrounding Sites

9. The Carlingford Precinct is bounded by Pennant Hills Road, Moseley Street and Jenkins Road and as a result of the Council amalgamations is now located in the City of Parramatta Local Government Area. Site specific planning controls will allow for a significant increase in dwellings within the precinct in mostly mixed use and residential flat building forms. The precinct currently contains some commercial uses but is dominated by a range of housing typologies including dwellings houses, town houses and residential flat

buildings. Mixed use developments up to 18 storeys at 2-8 James Street and 7-13 Jenkins Road, Carlingford are also currently under construction.

10. Opposite the subject site 4 storey buildings are under construction at 114-16 Adderton Road, 118 Adderton Road and 290-292 Pennant Hills Road and 294-302 Pennant Hills Road, Carlingford (see Figure 2).
11. A planning proposal located at 264-268 Pennant Hills Road and preliminary planning proposal at 258-262 Pennant Hills and 17 & 20 Azile Court were submitted to Council seeking an increase in density (see Figure 2). On 14 June 2016 Council resolved that these proposals not proceed until further planning analysis of the broader area is undertaken.

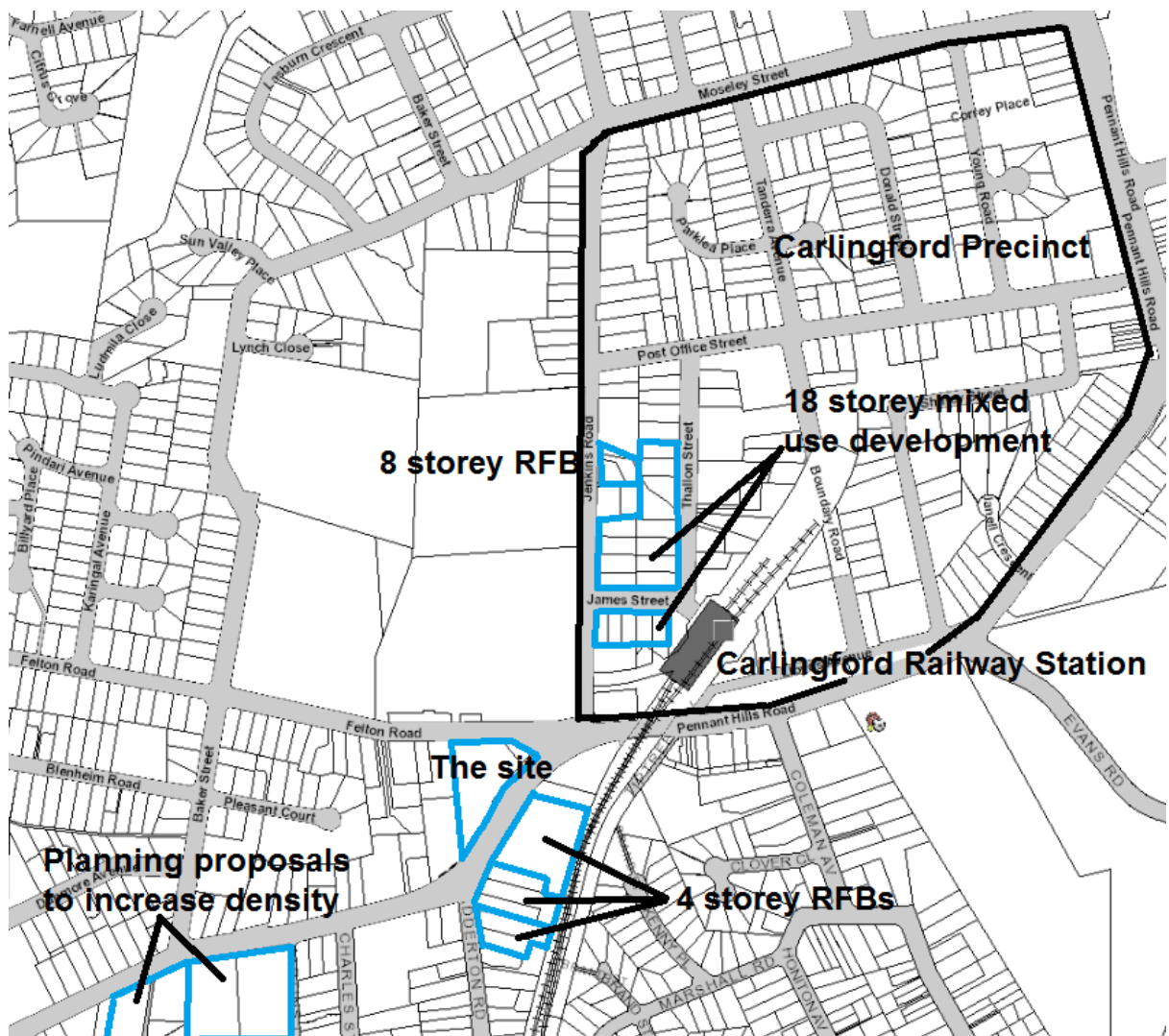


Figure 2: Recent developments in Parramatta and The Hills LGA (Source: Council's GIS)

Light Rail

12. The site is located approximately 300 metres from the existing Carlingford Railway Station. The State Government recently announced an intention to build a new light rail corridor linking Carlingford to Parramatta. Whilst the exact route has not been confirmed, it is expected that the new light rail would sit within the existing heavy rail corridor between Camellia and Carlingford. The exact location of future light rail stops is yet to be determined.

BACKGROUND

13. A previous planning proposal for the site was lodged in August 2014 with The Hills Council which sought to facilitate redevelopment for a mixed use commercial and residential development consisting of three (3) buildings ranging in height from three (3) to nine (9) storeys with 119 residential units. The applicant was advised during the assessment that The Hills Council were unlikely to support the proposal. The planning proposal was later withdrawn in January 2015.
14. On 23 December 2015, a new planning proposal was submitted to The Hills Council which sought to allow for a more intense development outcome on the site (up to 18 storeys and 132 units).
15. On 12 April 2016, the applicant lodged a pre-gateway review with the Department of Planning and Environment. The applicant is able to do this because The Hills Council had not made a decision on the planning proposal within 90 days of lodgement.
16. On 10 May 2016, The Hills Council considered a report on the planning proposal and resolved to adopt the recommendation that the planning proposal not proceed to gateway determination.
17. On 12 May 2016, the new City of Parramatta Council was created by the NSW State Government and the subject site is now within the City of Parramatta Local Government Area boundary.
18. On 17 May 2016, staff from The Hills Council briefed staff from the City of Parramatta Council on the planning proposal.
19. On 19 May 2016, The Hills Council sent a letter to the Department of Planning and Environment advising of The Hills Council resolution from its meeting on 10 May 2016 and that the planning proposal had now been handed over to the City of Parramatta.
20. On 23 May 2016, the City of Parramatta Council received a letter from the Department of Planning and Environment inviting comments on the planning proposal to inform the pre-gateway review lodged by the applicant. The Department requested comments by 13 June 2016.
21. On 27 May 2016, the applicant briefed staff from the City of Parramatta Council on the planning proposal.
22. A letter dated 31 May 2016 was issued to the City of Parramatta Council by the Department of Planning and Environment granting an extension of time to provide a submission to the pre-gateway review request. The submission must be submitted by 28 July 2016.
23. On 4 July 2016, the applicant met with staff from the City of Parramatta Council to discuss the details of the planning proposal. Following this meeting Council officers formally invited the applicant on 5 July 2016 to submit additional information. No response was received and given the deadline for submission to the Department of Planning and Environment, Council is moving forward in the assessment of the planning proposal.

PRE-GATEWAY REVIEW

24. Where a pre-gateway review is lodged the Department of Planning and Environment makes the final decision on the pre-gateway review request. This decision is informed by:
- material submitted from the applicant;
 - a council assessment report and/or any submission made during the review;
 - a report by the Department identifying whether the planning proposal has strategic merit;
 - independent advice from the Joint Regional Planning Panel on the strategic merit and site-specific merit of the proposal.
25. Where a pre-gateway review recommends that a proposal should proceed (ie a gateway determination is issued), either the council or the JRPP can be appointed as the relevant planning authority. The Department offers councils the opportunity to be the relevant planning authority for the planning proposal that arises out of a successful pre-gateway review request unless a council has expressly indicated a preference not to undertake this role.
26. The gateway determination usually specifies the level of community consultation including the length of time a proposal is to be publicly exhibited, relevant public authorities to be consulted and whether a public hearing is to be undertaken.

PLANNING PROPOSAL

27. The applicant's planning proposal seeks to amend The Hills Local Environmental Plan (LEP) 2012 to increase the maximum height of buildings planning control from 9m (3 storeys) to 15m (5 storeys) in the north-western portion of the site, 21m (7 storeys) in the southern portion and 57m (18 storeys) in the north-eastern portion (see Figure 3); and increase the maximum floor space ratio from 1:1 to 2.8:1. No change is proposed to the existing B2 Local Centre zone and SP2 Infrastructure (Classified Road) zone of the site.



Figure 3: Proposed Height of Buildings map (Source: Applicant's Planning Proposal)

28. In support of the planning proposal, the applicant has submitted a development concept illustrating a mixed use development outcome on the site comprising retail/commercial and high density residential land uses. The reference design provided in the applicant's Urban Design Report includes the following features:
- Three buildings ranging in height from partly three (3) storeys (western side of the site) to 18 storeys (eastern side of the site)
 - 1,659m² of commercial floor space on the ground floor including a child care centre and gym, and 135 residential apartments above
 - Vehicular access for the residential portion of the site is proposed via Felton Road and commercial traffic access from Pennant Hills Road utilising a 'slip lane, subject to the approval of Roads and Maritime Services (RMS).

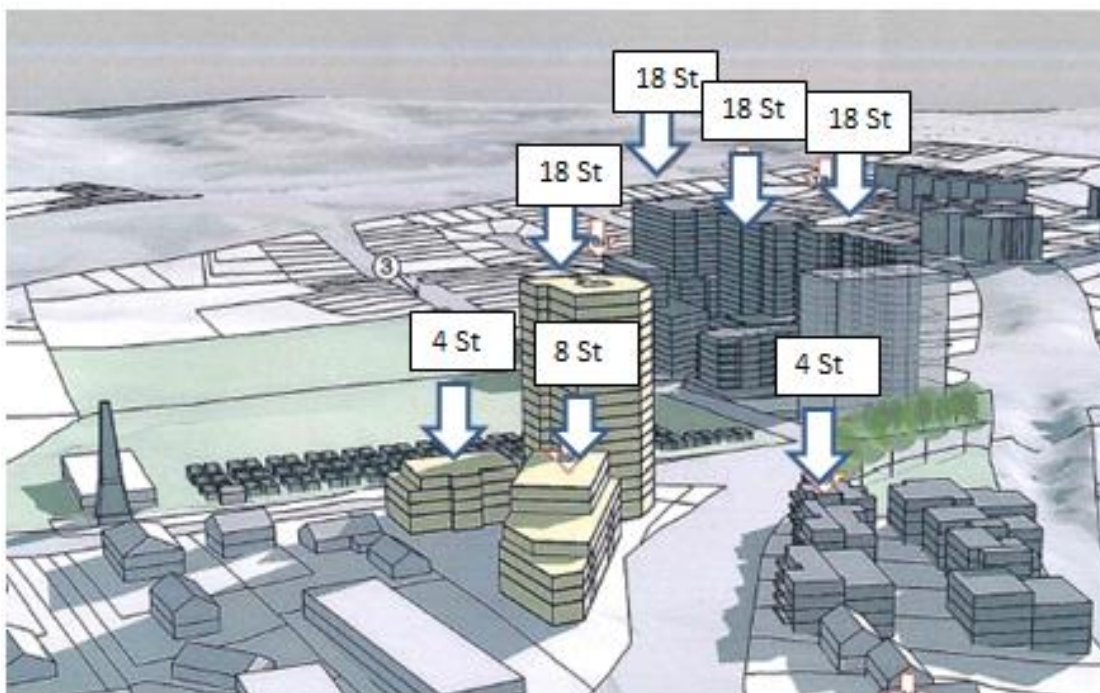


Figure 4: Applicant's design option, viewed from south west (Source: Applicant's Urban Design Report)

THE HILLS SHIRE COUNCIL'S ASSESSMENT OF THE PLANNING PROPOSAL

29. On 10 May 2013, The Hills Council resolved that the planning proposal for land at 241-245 Pennant Hills Road, Carlingford not proceed to gateway determination for the following reasons:
- *It is inconsistent with the objectives of the Local Strategy, and mixed use development generally, in respect to employment.*
 - *Represents a missed opportunity to retain and intensify the commercial use of the site to provide jobs close to homes within this business zone.*
 - *It is isolated from the Carlingford Precinct and does not represent the same opportunity for such a high development yield.*
 - *The proposed maximum building heights would be out of character for the site and is likely to negatively impact upon the privacy, amenity and solar access of properties to the west of the site.*
 - *The vehicle movements generated and connections proposed would put unacceptable levels of traffic on local roads which are already over capacity during peak periods*
30. The following comments are made in relation to the issues raised by The Hills Council.

Commercial floor space

31. The reference design included as part of the planning proposal reduces the existing commercial floor space located on the site from 2,940sqm to 1,659m² which includes a gym, child care centre and retail uses. While the reduction in commercial floor space may represent a missed opportunity to intensify the commercial use of a site zoned B2 Local Centre, the proposal does provide some job opportunities close to homes. There is no proposed change to the zoning of the site. Further, residential flat buildings and multi dwelling housing are all permitted uses in the B2 zone under The Hills LEP 2012 and these land use types do not require the provision of commercial floor space.

Isolation

32. It is noted that the subject site was not included in strategic planning works to determine the impact of the additional dwellings from the Carlingford Precinct and is disconnected from the Carlingford Precinct/primary town centre. However, due to the location of the site in close proximity to public transport and changing character of Carlingford, there is merit in a measured increase in density on the subject site.

Amenity impacts on neighbouring sites

33. Insufficient detail has been provided to justify that the FSR and height increases sought in the applicant's planning proposal can be achieved on a relatively small site, in close proximity to low density development. Within 100m the height as outlined in the Urban Design Report will drop from a 57m (18 storey) tower to a 9m (2 storey) town house or dwelling house.

Traffic impacts

34. City of Parramatta's traffic officers support the comments of The Hills Shire Council. This is further discussed in the traffic section of this report.

ISSUES**Traffic**

35. The site is located adjacent to Pennant Hills Road, which forms a major arterial road linking Parramatta to Wahroonga. The road is an RMS controlled roadway, and until recently (12 May 2016) formed the local government area boundary between the City of Parramatta and The Hills.
36. The planning proposal is informed by a traffic report dated 21 December 2015 prepared by Traffic Solutions and additional traffic information dated 30 March 2016 by Traffic Solutions. Traffic Solutions endorsed the planning proposal concluding that;
- *The vehicle access points proposed to serve the development are suitably located and will provide satisfactory sight distance.*
 - *The proposed intersection of Pennant Hills Road and the driveway to 241 with a left turn slip lane (and left in and left out only) will operate at a very good level of service with minimal delays and spare capacity.*
 - *The very good Level of Service at the intersection of Felton Road and Baker Street will not change with the estimated additional traffic generation of the indicative development scheme.*
 - *The additional traffic demand on the intersections of Felton Road and Baker Street, as a consequence of the indicative development scheme will only alter the Degree of Saturation and Total Average Delay minutely at each intersection.*
37. The RMS has advised the applicant in a letter dated 4 April 2014 that it may consider a left in/left out driveway for the commercial premises on Pennant Hills Road subject to conditions. Council's traffic officers have reviewed the planning proposal and correspondence with the RMS noting that the driveway may have disadvantages such as encouraging U-turns, longer travel distances for motorists, urban design impacts and conflict with pedestrian movements. It has

been determined this matter can be assessed in more detail as part of the preparation of the site specific DCP.

38. Council's traffic officers have expressed concerns that the intersection analysis that forms part of the traffic report does not extend beyond the intersection of Felton Road and Baker Street. Therefore it does not include the intersection of Pennant Hills Road and Baker Street which, as was raised in The Hills Council's assessment of the planning proposal is the critical intersection that the proposed development would impact upon.
39. Additional traffic analysis was prepared by Traffic Solutions dated 30 March 2016. Contrary to Council's position, Traffic Solutions noted modelling of the intersection performance was not considered necessary due to the low number of vehicle trips that would result from the proposed development. A thorough analysis is required that further considers the cumulative impact of increasing the density to a number of sites in the area on the intersection at Pennant Hills Road and Baker Street.
40. Land at 258-262 Pennant Hills Road, Carlingford (see Figure 2) currently has a planning proposal to increase the density on the site and is in close proximity to the subject site. Whilst the planning proposals are different, the RMS in their letter dated 24 March 2015 requested demonstration that signalisation of Pennant Hills Rd/Baker St intersection can be achieved should the planning proposal for 258-262 Pennant Hills Road be endorsed.
41. The RMS requested that these works be fully funded and constructed by developer/proponent, including maintenance of traffic control signals for first 10 years. The RMS also requested that the developer/proponent be required to submit detailed civil signal design plans to meet RMS requirements, and enter into a Works Authorisation Deed (WAD) with the RMS.
42. The planning proposal for the subject site (241-245 Pennant Hills Road) proposes that access to the site for residential traffic will be via Felton Road only which connects with Pennant Hills Road via Baker Street. It is therefore reasonable to expect a traffic increase at the Baker Street/Pennant Hills Road intersection as a result of this planning proposal and the applicant to contribute to the upgrade of this intersection through the Voluntary Planning Agreement (VPA) process. The applicant's planning proposal demonstrates a willingness to enter into a Voluntary Planning Agreement. These matters can be considered further following gateway determination.

Urban Design

43. The Planning Proposal is informed by an Urban Design Report prepared by Architectus. The applicant's report includes an analysis of the site and its context, density testing and design investigations, and based on this considers that the proposed built form is a good development outcome for the subject site for the following reasons:
 - *Provides appropriate density in a strategically well-situated site, under single ownership, close to public transport services and the amenities of the Town Centre.*
 - *Ability to provide a good mix of well designed, high amenity apartment types that will exceed solar access standards under the Apartment Design Guide and cater for wider demographic including families.*
 - *Have minimal overshadowing impact on neighbouring residential properties.*

- *Provide an appropriate height transition between Carlingford Town Centre and lower density development west of the subject site.*
- *Retain employment uses on site by allowing non-residential use of ground level spaces for a potential childcare centre, gym, retail uses.*

44. Council's urban designers have raised a number of concerns with the proposal as follows:

- **Precinct based corridor study:**

In light of any future light rail corridor incorporating Carlingford as a transport node/ terminus, the question of potential uplift within the area around the train station requires a strategic investigation. Preparation of this work by the City of Parramatta and/or NSW Government would allow for acknowledgement of a Centres hierarchy and plan for improved infrastructure and services. A strategic investigation of the area would also allow a form and typology led urban design analysis.

- **Walking Catchment:**

In the absence of such a strategic investigation of the area, preliminary isochrone walking catchment analysis (see explanation below) around the Carlingford Railway Station provides an argument for an appropriate height and FSR on the subject site. Given the maximum scale of development immediately next to the station is about 18 storeys, the distance from the station to the centre of the site (using existing footpaths) is approximately 400m. Any increase in density (FSR) should be commensurate with the ease of access to the station. The low frequency of the existing rail service, which averages an hour between trips, should also be kept in mind in arriving at any increase of residential density. Although the light rail is at the planning stage, it will in future significantly improve access and frequency. The timetable for the light rail line is yet to be released.

- **Surrounding Context:**

The adjoining low scale residential development to the west (1 to 2 storeys) and open areas to the north-west, associated with the electricity substation and school grounds, supports consideration for lower and reduced building envelopes on the subject site. Any increase of FSR and height on the subject site should achieve appropriate transition and have lesser adverse visual and amenity impacts to the surrounding low rise context than the option(s) proposed.

- **FSR and height:**

Based on preliminary testing, the FSR and height of building should be no more than 1.5:1 and 28m (8 storeys) whichever is greater (up to 2 levels of non-residential uses and 6 floors of residential) based on the context and ease of walking to public transport. However the proponent would be required to provide further testing at these reduced parameters to proceed.

- **Corner site:**

While it is noted the site occupies a corner location, it is also on a busy road corridor. Therefore issues of traffic noise and air quality on an increased number of residents must also be kept in consideration.

- **Ground floor use:**

Retail uses consistent with the B2 zoning of the site can be determined at a later stage and governed by DCP controls. Ground floor retail fronting Pennant Hills Road may be appropriate given the road conditions with residential fronting Felton Road.

- **Street Frontage condition:**

The street edge along Pennant Hills Road and Felton Road as well as the building edge to the west should present no higher than 2-3 storeys (8-11m) when viewed from the surrounding public domain and adjacent sites. Further buildings should be setback at least 6m from the boundary with deep soil zones that allow large canopy tree planting along shared boundaries and street edges.

45. An 'isochrone walking catchment' in this circumstance measures the distance based on actual walking routes from the Carlingford Railway Station to the affected site, rather than straight line distances. This is a more realistic method of measuring the distance of a site to public transport assuming residents will walk. The walking distance of the subject site to Carlingford Railway Station is approximately 400m, whilst the lots in the Carlingford Precinct with comparable heights and FSRs to that proposed in the planning proposal, are in immediate proximity (less than 200m) of the station. The distance of the subject site to the Carlingford Railway Station based on walking catchment is greater and therefore the density should be less.
46. In summary, the preference of Council's urban designers is for a precinct based corridor study to inform any future uplift within the area. This will allow for a strategic approach to this centre in its entirety and avoid the contextual issues spot rezoning tend to create. However, if the proposal was to proceed in the absence of this type of study an FSR of no more than 1.5:1 and height of 8 storeys/ 28m should be considered for the subject site. These numbers require further refinement which can be informed by a detailed urban design analysis to be submitted prior to the exhibition of the planning proposal.

Prominent Location

47. The applicant's Urban Design Report includes a topographic map that demonstrates the natural ground level of the subject site is approximately 10 metres higher than the most dense area located at the south west quadrant of the Carlingford Precinct. The topography enhances the visual prominence of the subject site. If the subject site were to achieve a comparable height to the Carlingford Precinct (up to 18 storeys around the railway station) the resulting built form would stand taller in the skyline than that in the Precinct.
48. The permissible heights and FSRs in the Carlingford Precinct peak around the railway station. There are a number of physical barriers such as roads between the densest areas around the train station and the nearby low to medium density residential development. The subject site does not have any physical barriers that form a transition to the lower density neighbouring residential forms to the west and south-east.

Summary of issues

49. The applicant's planning proposal seeks a density that will have a significant impact on the Carlingford locality. The cumulative impacts of the increasing density, due to this planning proposal along with a number of other planning proposals and development applications lodged in this locality will likely impact on the function of the road network, including the intersection of Baker Street and Pennant Hills Road.
50. Council previously resolved on 14 June 2016 that the planning proposals located at 264-268 Pennant Hills Road; and 258-262 Pennant Hills and 17 & 20 Azile Court not proceed until further planning analysis of the broader area is undertaken. It was also noted in the report that the planning proposals had not adequately resolved issues relating to impacts on the road network, vehicle access from the site and building density and form.
51. Ideally a precinct based study looking at the future catchment for the light rail would capture the above sites, as well the planning controls for this site but it is not considered appropriate to make these three potential developments wait for that light rail related process which may take some time.
52. In the case of 258-262 Pennant Hills Road Council Officers considered that the opportunity to provide a four way intersection at Baker Street and Pennant Hills Road was strategically a significant issue. If the development of these two sites proceeded without this being resolved the opportunity might be lost forever. Therefore Council officers recommended in that case that if the applicants wanted to proceed ahead of a corridor strategy that dealt with the entire corridor that a more localised precinct study to deal with this key strategic issue should proceed.
53. However, the circumstances for 241 Pennant Hills Road are different. This planning proposal could proceed and as long as the built form transition issues are dealt with as recommended in this report and some consideration is given (as part of the proposed VPA) to some funding for improvements at the intersection of Baker Street and Pennant Hills Road, there are no key strategic issues that would require this site to be subject to a more detailed precinct based study.
54. It is therefore recommended that the applicant revise the traffic and urban design reports to more effectively inform the scale of the development proposed in the planning proposal. The traffic report should include an intersection analysis of Baker Street and Pennant Hills Road. The urban design report should investigate a more appropriate FSR for the site, at a maximum FSR of up to 1.5:1 and height of up to 28m being considered. A DCP and VPA should be prepared to resolve the impacts of the planning proposal including (but not limited to) setbacks, street frontage conditions and active edges, deep soil zones, vehicular entry and basement car parking, road and intersection upgrades, street tree planting/ public domain upgrades and transition to adjacent sites.

OTHER CONSIDERATIONS

55. The subject site does not contain a heritage item. However, heritage item number 28 listed under Schedule 5 of PLEP 2011 is located at 304 Pennant Hills Road, Carlingford (see Figure 5). The K13 Memorial is of local significance and separated from the subject site by Pennant Hills Road, a major arterial road. Council's heritage officer has assessed the planning proposal and raised no objections to the proposed development.

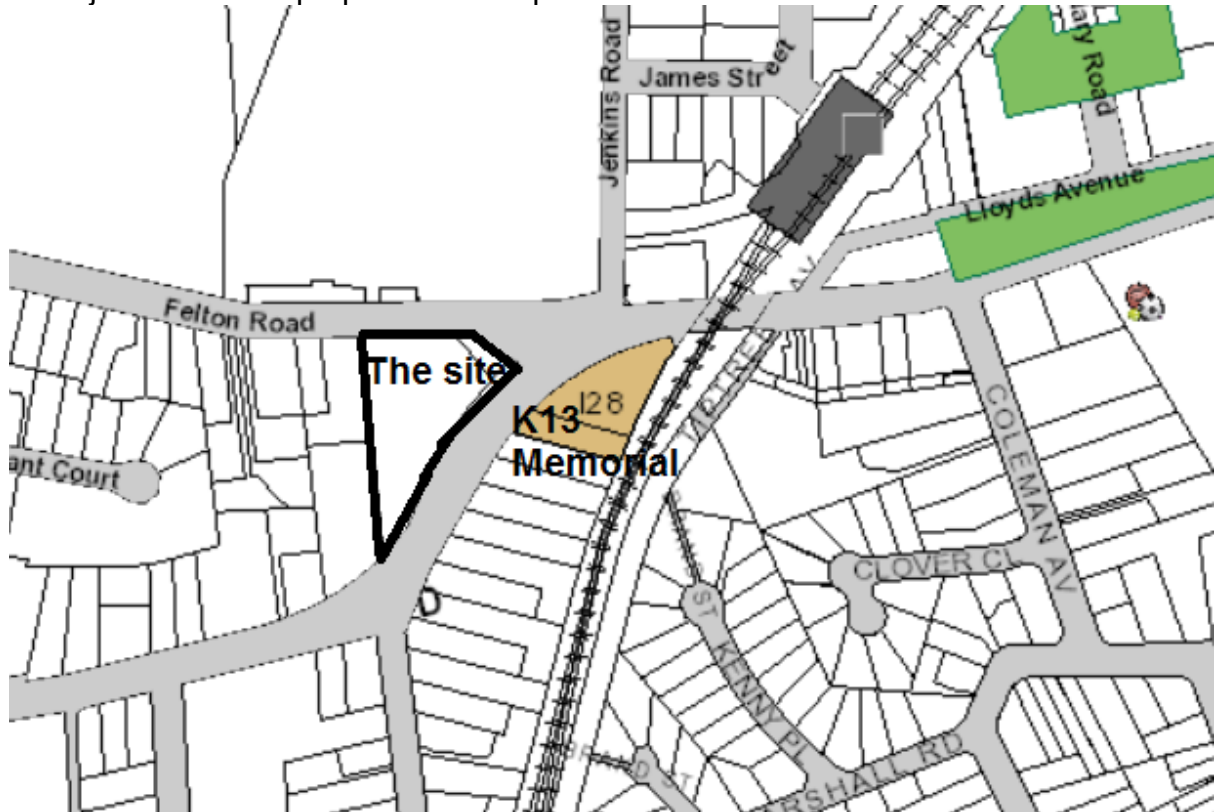


Figure 5: Heritage map (Source: City of Parramatta's GIS)

CONCLUSION

56. The City of Parramatta Council has been invited to provide comments to the Department of Planning and Environment in response to a pre-gateway application for the planning proposal on land at 241-245 Pennant Hills Road, Carlingford. This planning proposal was previously assessed by The Hills Shire Council with the Council resolving not to support the planning proposal.
57. The City of Parramatta's assessment of the planning proposal is that some increase in density on the site is appropriate, with the exact amount being informed by a precinct based study that takes into account the future light rail corridor. This study will inform any future uplift within the broader area and allow for a strategic approach to this centre in its entirety.
58. Should the planning proposal proceed ahead of the strategic study, an FSR of no more than 1.5:1 and height of 8 storeys/ 28m should be considered for the subject site subject to further testing to be undertaken by the applicant and further assessed by the City of Parramatta. The planning proposal should be accompanied by a site specific DCP and VPA to be exhibited concurrently with the planning proposal.

NEXT STEPS

59. The Department of Planning and Environment be advised that:

- a. A lower and reduced building envelope that makes an appropriate transition and has lesser adverse visual and amenity impact to the surrounding low rise context should be considered.
- b. Based on preliminary testing, an FSR of no more than 1.5:1 and height of 8 storeys/ 28m should be considered for the subject site. The proponent however should be required to provide further testing at these reduced parameters to determine the exact FSR and height that can be accommodated on the site. This should include an updated reference design.
- c. It is also recommended that if the Planning Proposal is to precede, a site specific DCP be prepared to support the planning proposal and exhibited concurrently. The site specific DCP should be prepared in conjunction with the applicant and should include (but not limited to) setbacks, street frontage conditions and active edges, deep soil zones, vehicular entry and basement car parking, street tree planting/ public domain upgrades and well as transition to adjacent sites.

Janelle Scully

Project Officer Land Use

ATTACHMENTS:

There are no attachments for this report.

REFERENCE MATERIAL