

SHELL COVE - THE WATERFRONT

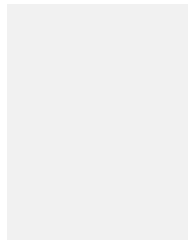
Precincts F, G and Wetland 8: Statement of Environmental Effects

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Incorporating



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AUSTRALAND CORPORATION (NSW) PTY LTD SHELL COVE – THE WATERFRONT

Precincts F, G and Wetland 8: Statement of Environmental Effects

Subtitle

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1 EXECUTIVE SUMMARY

The Minister for Planning granted approval to the Shell Cove Boat Harbour Precinct Concept Plan (MP 07_0027) on 15 February 2011 under the Part 3A provisions (now repealed) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This Statement of Environmental Effects (Statement) describes the proposed subdivision of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales of the Shell Cove Boat Harbour Precinct and makes an assessment of the proposal against the provisions of both the approved Concept Plan and an amendment to the Concept Plan Approval (MP07_0027 MOD 1) which is currently being assessed by the Department of Planning and Environment (DPE).

This application is submitted to Shellharbour City Council (Council) for determination by the Joint Regional Planning Panel (Southern Region) under Part 4 of the EP&A Act. The proposed subdivision of Precincts F&G and construction of Wetland 8 together with the Northern and Eastern Swales has been designed in accordance with the Concept Plan Approval. The total development and comprises:

- 42 Torrens Title residential allotments (18 in Precinct F and 24 in Precinct G);
- 9 super lots for future integrated housing development (6 in Precinct F and 3 in Precinct G);
- 6 lots identified as Public Reserves;
- civil infrastructure – road construction, stormwater drainage and water quality treatment devices;
- earthworks;
- public domain works including street tree planting and footpaths within the subdivision; and
- construction of Wetland 8 together with the Northern and Eastern Swales and associated landscape treatment.

This Statement provides an assessment of the proposed development in accordance with the matters for consideration in Section 4.15 of the EP&A Act. The proposed subdivision has been designed to be consistent with the Concept Plan Approval and in response to the topography and physical characteristics of the site.

Surface water flows and potential impacts have been considered with a water cycle scheme that ensures off site flood impacts are mitigated and stormwater flows treated during both construction and future operation. Runoff will be addressed during construction works through sediment and erosion controls. Once operational, a water quality treatment system involving the use of GPTs, and Jellyfish systems is proposed.

These systems will assist in achieving the stormwater quality targets of the overall Shell Cove development, which include ensuring post-development pollutant loads do not exceed pre-development loads and pollutant reduction targets are met.

The proposed road design has been designed in accordance with the requirements of Roads and Maritime Services, Council and the terms of the Concept Plan Approval. The cumulative traffic impacts from the operation of all existing and future precincts (including Precincts F&G) have been examined in the context of the revised (increased) yields currently being considered by the Department of Environment and Planning as part of a proposed modification to the Concept Plan Approval (MP07_0027 MOD1).

Based on the revised traffic volumes, the updated traffic impact assessment has determined that all intersections will operate satisfactorily without placing undue stress or pressure on the existing road system or adjoining uses. Furthermore, the pedestrian, cycle and bus networks accord with the Concept Plan Approval and will

provide connectivity both within the Shell Cove Boat Harbour Precinct and to the surrounding areas.

Based on the section 4.15 assessment of the proposal, it is concluded that the relevant statutory requirements have been satisfied. Whilst the land subdivision and associated civil works will have some environmental impacts, these have been assessed and subject to the implementation of mitigation measures identified within this Statement and the supporting specialist reports, it is considered that these impacts are within reasonable limits.

The proposed development can also be reasonably expected to have positive socio-economic impacts for the Illawarra region through job creation during the civil works associated with the subdivision and construction of future dwellings, as well as playing an important role in meeting the housing needs of the Region as identified by the Illawarra Shoalhaven Regional Plan (DP&E, 2015), which identifies the need for 35,400 new dwellings in the Region by 2036.

The completion of the Precincts F&G subdivision will progress the completion of the Boat Harbour Precinct, which will provide additional access to the harbour and assist in the achievement of the overall place making targets for the wider project.

It is therefore requested that the proposed subdivision of Precincts F&G and the construction and landscape treatment of Wetland 8 together with the Northern and Eastern Swales in the Shell Cove Boat Harbour Precinct be supported and recommended to the Joint Regional Planning Panel (Southern Region) for approval.

2 INTRODUCTION

This report has been prepared by Arcadis Design and Consultancy (Arcadis) and Helen Mulcahy Urban Planning on behalf of Australand Corporation (NSW) Pty Ltd (Australand) to accompany a development application (DA) submitted to Shellharbour City Council for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales of Shell Cove - The Waterfront (the proposal).

This application seeks approval for subdivision and civil works in Precincts F&G, together with works to create Wetland 8 together with the Northern and Eastern Swales. The proposal will facilitate the continuing development of the Shell Cove project in accordance with the Shell Cove Master Plan and the Boat Harbour Concept Plan approval.

The report constitutes a Statement of Environmental Effects and examines the proposed development in terms of its compliance with the heads of consideration under Section 4.15 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Statement:

- Provides an analysis of the existing site conditions including land ownership and title, existing and adjoining land uses, landform, geotechnical conditions, contamination, flora and fauna, heritage, hydrology and drainage, bushfire, traffic and access, and views;
- Describes the development proposal in detail including subdivision principles, proposed yield and product mix (note that this DA does not seek approval for built form), street network, open space network including overland flow channels, pedestrian and public transport, landscaping;
- Describes the current development intention for super lot sites within Precincts F&G which will be subject to subsequent development approval, noting that these are provided for consideration of traffic impact, utilities servicing and subdivision design;
- Assesses and describes the development controls that apply to the site, provide summary of key matters, provide a schedule which provides compliance verification for all conditions of approval and statement of commitment requirements;
- Provides justification for any proposed deviations from the Concept Plan Approval;
- Assesses the environmental impacts of the proposal including but not limited to geotechnical, acid sulfate soils, earthworks, contamination, flora and fauna, heritage, hydrology, drainage and flooding, bushfire, access and traffic, utilities and servicing, acoustics, CPTED, social, economic, and the public interest; and
- Describes consultation that has taken place in respect of the application.

The project area includes three separate areas (Figure 2.1):

- Precinct F is located immediately to the east of Precinct E. Its southern boundary is defined by the future Boat Harbour, while its northern boundary interfaces with existing low and medium density residential development in William Street. It is framed by public reserves to both the east and west which provide both outlook for future residential development and view corridors to the waterfront;
- Precinct G is immediately east of Precinct F and also interfaces with Boat Harbour at its southern extent. The northern extent of the Precinct interfaces with existing areas of public open space (Ron Costello Oval and Keith Hockey Oval); and

- Wetland 8 which is located to the north of Precinct G boundary.



Figure 1 – Site location plan

Precincts F&G and Wetland 8 together with the Northern and Eastern Swales covers an area in the order of 10 Ha in the northern section of the Shell Cove Boat Harbour Precinct.

The framework for the development of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales is governed by the Shell Cove Boat Harbour Precinct Concept Plan which was approved in 2011 under Part 3A (since repealed) of the EP&A Act.

2.1 Background and site context

Shell Cove is a master planned estate being developed by Shellharbour City Council and Australand Corporation (NSW) Pty Ltd (Australand), with project management by Australand. Upon completion, the development will yield approximately 3,000 dwellings and will include a range of facilities including a championship 18-hole golf course, a 300 berth Boat Harbour, commercial development including a Town Centre, a business park, associated open space, as well as a range of environmental and social facilities.

The Waterfront is part of Shell Cove and comprises the lands to the east of Harbour Boulevard and includes the Boat Harbour and Marina Precinct. It provides for short term accommodation as well as residential, retail, open spaces, commercial marina and dry berth/workshop facilities. Construction of the first residential precincts within The Waterfront (Precincts B1 and C1) commenced in 2015, and the first stage of the Town Centre retail is under construction and due for completion in 2018.

To date approximately 2,100 lots have been developed, the golf course and clubhouse completed, open space and community facilities have been delivered. Construction of Stages 2 and 3 of the Boat Harbour are in progress.

The current Shell Cove Master Plan is provided in Appendix A. Development west of Harbour Boulevard is largely complete with the focus now shifting to The Waterfront. Precincts B1 and C1 have been completed, and Precinct E is currently under construction.

Surrounding land use beyond the extent of The Waterfront and Boat Harbour is predominantly residential, with completed stages of Shell Cove approximately 400 metres to the west, the historic Shellharbour Village located approximately 550 metres to the north and the new Shell Cove Town Centre Precinct to the south.

Killalea State Park lies further to the south of the Shell Cove development, Bass Point to the south east and Shellharbour South Beach to the east.



Figure 2. Precinct F&G Locality Plan

2.2 Boat Harbour Concept Plan Approval

The Minister for Planning granted approval to the Shell Cove Boat Harbour Precinct Concept Plan (MP07_0027) on 15 February 2011. The Concept Plan Approval provides the planning framework for the future development of The Waterfront Precinct at Shell Cove, describing the arrangement and configuration of the various land uses and urban infrastructure.

The Concept Plan Approval comprises the following documents:

- The Part 3A submission prepared by LFA, including various specialist studies;
- The Preferred Project Report prepared by LFA and associated specialist studies which provides responses to public submissions and DOP assessment of the Part 3A submission; and
- Concept Approval (MP07_0027) including the Statement of Commitments, issued on 15 February 2011.

The Concept Plan Approval (MP07_0027) states that:

Pursuant to section 75P(1)(b) of the EP&A Act, approval to carry out the project or any particular stage of the project is to be subject to the provisions of Part 4 or Part 5 of the EP&A Act, except where it meets the criteria in Schedules 1 or 2 of the Statement Environmental Planning Policy (Major Development) 2005.

An amendment to the Concept Plan Approval (MP07_0027 MOD 1) was submitted to the Department of Planning and Environment (DPE) in August 2017. The application was exhibited between 15 September and 20 October 2017, with further exhibition of the Proponent's Response to Submissions conducted between 13 and 27 March 2018. The application is currently being assessed. Further details about the proposed modifications are detailed in Section 5.8 of this Statement.

The development application will be referred to the Joint Regional Planning Panel (JRPP) for determination pursuant to Clause 3 of Schedule 7 of State Environmental Planning Policy (State and Regional Development) 2011. As Council is the owner of the land upon which the proposed development is to be carried out, the capital investment value (CIV) of \$10.6M, exceeds the \$5M threshold for Council projects.

2.3 Development for which approval is sought

The proposed development comprises:

Precinct F

- 18 Torrens Title residential allotments;
- 6 Super Lots designated for future development with an anticipated yield in the order of 91 dwellings (47 medium density and 44 apartments); and
- 3 lots designated as Public Reserves with a combined total area of 8,770m², two of which will also serve as an overland flow path.

Precinct G

- 24 Torrens Title residential allotments;
- 3 Super Lots designated for future development with an anticipated yield of approximately 109 dwellings (31 medium density and 78 apartments); and
- 3 lots designated as Public Reserves with a combined total area of 1,195m², which will also function as overland flow paths.

Works across both Precincts F and G include:

- civil infrastructure – road construction (including a new intersection with Boollwarroo Parade), stormwater drainage and water quality treatment devices, installation of utility services;
- earthworks; and
- public domain works including street tree planting and footpaths within the subdivision.

Wetland 8

The works associated with Wetland 8 together with the Northern and Eastern Swales include earthworks associated with the construction of the wetland together with the Northern and Eastern Swales structure, together with landscape treatment.

The proposed subdivision of Precincts F&G will not result in the creation of any residual portions.

It is proposed that Precincts F&G will be delivered concurrently and will yield in the order of 42 single dwellings, 78 medium density dwellings and 122 apartments.

2.4 Relationship to other consents

A number of DAs have been submitted to Council for the detailed development of elements of the Concept Plan, as follows:

DA 411/2013 (approved by Council on 4 November 2013) for site preparation and servicing works for the Concept Plan site. The approval also included the creation of 88 residential lots, 14 superlots, parkland, open space links, local streets and laneways in Precincts B1 and C1.

DA 651/2015 (approved by Council on 12 January 2016) for Stages 97 and 98 in Precinct B1 comprising of the subdivision of Lots 2039 and 2040 in Lot 206 in DP 857030 to create 23 Torrens Title allotments, and the construction of a mix of attached, detached, semi-detached, and studio dwellings on each allotment with associated landscaping works.

DA 0032/2016 (approved by JRPP on 10 October 2016) for Stages 89-92 in Precinct C1 comprising the subdivision of Lots 2046, 2047, 2044, and 2049 in DP 1203745 to create 40 Torrens Title allotments, and the construction of a mix of attached, semi-detached, and studio dwellings on each allotment with associated landscaping works.

DA 0012/2016 (approved by JRPP on 10 July 2017) for the first stage of the retail component of the Shell Cove Harbour Precinct, including supermarket, liquor tenancy and approximately nine specialty tenancies; construction of retail plaza, carpark at ground and basement.

DA0100/2016 (approved by JRPP on 10 October 2016) for Stages 99-100 in Precinct B1 comprising the subdivision of Lot 1279 in DP1175512 to create 24 Torrens Title allotments, and the construction of 24 townhouses with garages and landscaping works.

DA0494/2016 (approved 7 August 2017) for subdivision to create the Stage 1 retail development lot.

DA143/2016 (approved 8 March 2018) for subdivision of the Shell Cove town centre to create the Stage 1 road network and sites for future development.

DA444/2016 (approved 6 June 2017) for bulk earthworks in residential Precinct E.

DA0118/2017 (approved by JRPP on 14 March 2018) for development of residential Precinct E, Wetland 6 and a superlot site outside the approved Concept Plan boundary (known as the 'Northern Lands'). The proposed subdivision includes 58 land lots, nine superlot sites, three residue lots.

DA0097/2017 (approved by JRPP on 10 July 2017) for Stages 93 - 94 in Precinct B1 comprising of the subdivision of Lot 2043 DP1203745 and Lot 2116 DP1203746. To create 18 Torrens Title allotments and a mix of attached and semi-attached dwellings with garages and landscaping works.

DA0619/2017 (currently being assessed by Council) for development of residential Precinct A. The proposed subdivision comprises 58 residential lots, 7 superlots and one residue lot.

Separate to the Concept Plan Approval for Boat Harbour Precinct, but integral to the wider development at Shell Cove is DA 337/2007 which was approved by Council on 27 November 2007. This consent allows for the construction of Harbour Boulevard.

2.5 Consultation

A Pre-lodgement meeting was held with Council officers on 10 July 2017 to discuss the proposed development of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales. This consultation with Council has informed the design of the proposed development as detailed in this Statement.

3 SITE ANALYSIS

3.1 Land ownership and title

The land the subject of this application is legally described as Lot 4003 DP 1235539. The registered owner of the land is Shellharbour City Council.

3.2 Existing and adjoining land use

Precincts F&G and Wetland 8 together with the Northern and Eastern Swales are bordered:

- to the north by existing low and medium density residential and areas of public open space (Ron Costello Oval);
- to the east by Keith Hockey Oval, the future Residential Precinct H and Boolwarroo Parade / Bass Point Tourist Road;
- to the south by the future Shell Cove Marina Precinct; and
- to the west by the approved Precinct E

Precincts F&G were previously open farmland, with a small area along the western boundary of Precinct F previously part of the former golf course.

The area to be occupied by Wetland 8 together with the Northern and Eastern Swales was previously swampy, low-lying farmland.

There are no current buildings or other structures on the land comprising Precincts F&G or Wetland 8 together with the Northern and Eastern Swales. However it is noted that the lands of Precincts F & G are currently subject to temporary uses associated with construction of the Shell Cove Boat Harbour.

3.3 Site analysis – Precincts F&G and Wetland 8 together with the Northern and Eastern Swales

The land comprising Precincts F&G has been modified as part of the works associated with the construction of Shell Cove Boat Harbour including surcharge mounding works.

3.3.1 Landform

Parts of the site have previously been surcharged and filled to minimise any impacts of the poor strength underlying natural soils, and mitigate any potential for exposing Acid Sulfate soils during construction. Mounds associated with surcharging have now been removed from the majority of the site and the “existing surface” is at a level and profile proposed by Advisian to be the structural fill platform.

3.3.2 Geotechnical

The geotechnical conditions associated with the subject site comprises unconsolidated Quaternary Sediments overlaying Bumbo Latite which is a basalt-like rock formed from lava flows.

The Quaternary Sediments include silt sediments of the former swamp area which extend to sandy clay alluvium in low lying areas.

The Shell Cove Boat Harbour Precincts Geotechnical Study, prepared by Coffey Geotechnics Pty Ltd in 2009 (a copy of which is included at **Appendix I**), identified the likelihood of estuarine sediments and clean fill, together with the risk of Acid Sulfate

Soil, in the north-eastern sector of the wider development area. This is confirmed in Shellharbour LEP 2013 (see extract below) which indicates that parts of Precincts F&G are subject to Class 2 and Class 3 Acid Sulfate Soils.

The Shell Cove Boat Harbour Precinct Geotechnical Study requires the preparation of a site-specific Acid Sulphate Soil Management Plan (ASSMP) for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales.

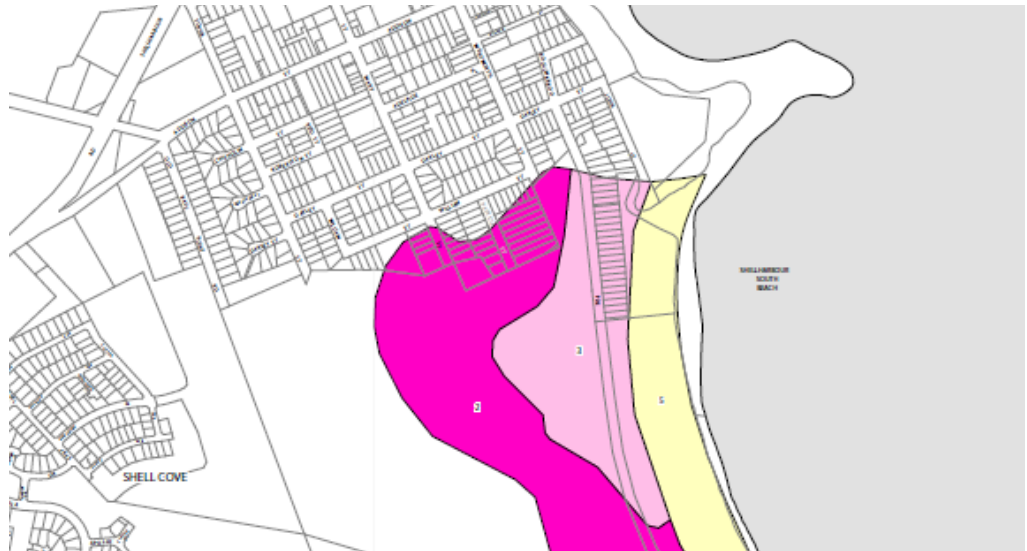


Figure 3. Extract from Shellharbour - LEP 2013 ASS Map

Coffey has prepared an ASSMP for Precincts F&G which specifically addresses mitigation and management of ASS, including Actual Acid Sulfate Soils (AASS) and Potential Acid Sulfate Soils (PASS). It is intended to act as a guide for construction planning, as ASS mitigation relies on co-operation from staff and sub-contractors in relation to ensuring preventative and treatment measures are being implemented and that awareness is maintained. A copy of the ASSMP is included at Appendix I.

3.3.3 Contamination

Contamination has been considered and assessed as part of Boat Harbour Precinct Concept Plan (MP07_0027). A Phase 2 Site Contamination Assessment of the Boat Harbour Precinct was submitted with the Preferred Planning Report for the Concept Plan application which concluded that a Remedial Action Plan (RAP) was required for the former golf course and at the location of a former farm structure.

In February 2016, Douglas Partners carried out a targeted site investigation¹ for contaminated land within the Boat Harbour Precinct (Precincts D and E and Wetland 6). This report presented the results of additional investigations of the near-surface soils within the former tees, greens and fairways of the former golf course, which were identified in the Phase 2 Site Assessment as requiring further investigation for potential heavy metals and pesticide contamination.

Douglas Partners has prepared advice in relation to Precincts F&G and Wetland 8 together with the Northern and Eastern Swales (Appendix B) to accompany the DA. The correspondence confirms that the original extent of the former golf course land

¹ *Report on Targeted Site Investigation, Former Golf Course, Boat Harbour Precinct (Precinct D and E, and Wetland 6) Shell Cove, Project 78999.10.Rev1 dated 11 February 2016*

was predominantly located to the south and west beyond the boundary of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales.

On this basis, it is concluded that further investigation or preparation of a RAP for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales is not required.

3.3.4 Flora and Fauna

Flora

Due to the previous development of a golf course on the Shell Cove site the flora is classified as disturbed. The predominant vegetation consists of non-natives such as Kikuyu grass with more dense vegetation populating drainage lines.

The Flora and Fauna Study prepared by Kevin Mills and Associates in 2009 in support of the Concept Plan found that the Shell Cove Boat Harbour Precinct, including Precincts F&G and Wetland 8 together with the Northern and Eastern Swales, contained no Critical Habitat or any Schedule 2 Koala food trees.

Fauna

The aforementioned Flora and Fauna Study found that no endangered populations or critical habitat occur in the area proposed to be developed as Precincts F&G and Wetland 8.

The investigations also found that the proposal area does not contain any important habitat nor support an ecologically important population, although some internationally protected migratory species occur on the subject land periodically.

An Endangered Ecological Community of Saltmarsh has been identified associated with the Shellharbour Swamp (outside the boundaries of Precincts F&G and Wetland 8). These communities have been addressed in the approvals associated with the Boat Harbour and off-set through construction of the compensatory wetlands at Shadforth (known as the Myimbarr wetlands).

The Flora and Fauna Study prepared as part of the Concept Plan identified that some threatened species have potential habitat in the subject lands and that the Green and Golden Bell Frog (GGBF) may be impacted by development of the Shell Cove Boat Harbour Precinct.

In accordance with the Concept Plan Approval a further Fauna Survey for the GGBF was undertaken by Kevin Mills and Associates and was submitted to Council in 2013 as part of the Subdivision DA for Precincts B1 and C1 of the Shell Cove Boat Harbour Precinct.

The Survey concluded that the Shell Cove Boat Harbour Precinct has no critical habitat for the GGBF and confirms that no specimens of the GGBF were located within the area occupied by Precincts F&G and Wetland 8 together with the Northern and Eastern Swales.

A copy of the GGBF Survey Report is included at Appendix C.

3.3.5 Heritage

The Cultural Heritage Review submitted in as part of the Concept Plan and prepared by National Heritage Consultants (2009), found that there were no European Heritage elements or Non-European (Indigenous) sites within the wider Shell Cove Boat Harbour Precinct area.

No Aboriginal or (protected) non-Aboriginal objects or structures were identified on the slopes adjacent to the Shellharbour Swamp. The study concluded that the proposal site has low archaeological sensitivity.

Registered Aboriginal objects / sites are known to occur within the wider area. However, only part of one of these sites, AHIMS 52-2-207, is assessed as having relatively high heritage value. This site is a shell midden within a foredune on the beachfront on the ocean side of Bass Point Tourist Drive and is not in proximity to Precincts F&G or Wetland 8 together with the Northern and Eastern Swales.

An Archaeological and Heritage Protection Plan has been developed for the Shell Cove boat harbour/marina and a combined Consent and Permit (No. 2534) has been granted under sections 87 / 90 of the *National Parks and Wildlife Act 1974*. A copy of these documents is included at Appendix B.

Having regard to the above, no further heritage impact assessment is considered necessary in relation to Precincts F&G and Wetland 8 together with the Northern and Eastern Swales. Notwithstanding, in the event that any significant items are found during the construction process a stop work action will be put in place until a heritage specialist is available to conduct an inspection of the site and submit an appropriate assessment.

3.3.6 Hydrology and drainage

Currently the site sheets towards temporary construction open drains and eventually collects at the site of the new Boat Harbour. A concept for erosion and sediment control measures has been developed in accordance with *Managing Urban Stormwater Soils and Construction* (Landcom, 2014). These measures will mitigate the impacts of land disturbance on soils, landforms and receiving waters during construction.

A preliminary Erosion and Sediment Control Plan (ESCP) is shown schematically in the Arcadis Earthworks strategy, Road Design, ASS, Erosion and Sediment Control report. The proposed control measures include dirty water diversions, sediment fences and sediment basins. It is expected that this plan will be updated during detailed design, prior to the commencement of the construction works to consider construction staging more closely.

3.3.7 Bushfire

The proposed development is surrounded by existing urban areas and is not identified as being bushfire prone land.

3.3.8 Traffic and access

The site of Precincts F&G is accessed by temporary roads which provide construction access for plant, haulage and earthworks associated with the Boat Harbour construction.

Primary construction access will be via Precinct E, and a potential secondary access will be provided via Boolwarroo Parade, with a new road connection proposed as part of the subdivision of Precinct G. Further discussion in this regard is provided in Section 4.5.1 of this Statement and the Traffic Impact Assessment report prepared by Arcadis (Appendix G).

The subdivision plan for Harbour Boulevard Stage 1 is registered with Land and Property Information NSW and now contains a public road. A DA for Stage 2 of Harbour Boulevard (DA337/2007) was approved by Shellharbour City Council on 28 March 2012.

The area of land to be developed as Wetland 8 together with the Northern and Eastern Swales can be accessed via the existing local road network and the adjacent Keith Hockey Oval. However it is anticipated that all construction access will be from within the Shell Cove site.

4 THE PROPOSAL

This section of the Statement should be read in conjunction with the Precinct Infrastructure - Civil Works DA Design Drawings prepared by Arcadis and included at Appendix E, together with the draft plan of subdivision prepared by CEH Surveying and included at Appendix F.

The proposal provides for the subdivision of Precincts F&G including:

- Precinct F - residential lots including
 - 18 Torrens Title standard residential allotments;
 - 6 Super Lots designated for future development with an anticipated yield of 91 dwellings; and
 - 3 lots designated as Public Reserves with a combined total area of 8,770m²

- Precinct G - residential lots including
 - 24 Torrens Title standard residential allotments;
 - 3 Super Lots designated for future development with an anticipated yield of 109 dwellings; and
 - 3 lots designated as Public Reserves with a combined total area of approximately 1,195m²

Precincts F&G are expected to yield in the order of 246 dwellings, as follows:

- 42 single dwellings
- 78 medium density dwellings
- 122 apartments

Precincts F&G are located in the north eastern part of the Boat Harbour Precinct at Shell Cove and have direct frontage to Boat Harbour.

A key north-south oriented linear open space link separates Precincts F&G. This space provides physical and visual access to Boat Harbour as well as providing a key role in the management of stormwater.

It should be noted that despite its name, Wetland 8 together with the Northern and Eastern Swales is not proposed to operate as an artificial wetland. Notwithstanding, the pond will provide some marginal stormwater treatment benefit and has therefore been included in the MUSIC model as a standard pond node. Further discussion about the role and function of Wetland 8 together with the Northern and Eastern Swales is included in the Stormwater and Water Cycle Management Plan prepared by Advisian and included at Appendix L.

Wetland 8 together with the Northern and Eastern Swales will be landscaped as detailed in the landscape drawings prepared by Group GSA and included at Appendix H.



Figure 4. Precincts F and G, showing areas for land and medium density

4.1 Subdivision principles

The proposed pattern of subdivision is based on the approved Part 3A Concept Plan and has been refined in collaboration with the specialist Project Team.

Key principles of the proposed subdivision include:

- A clear street pattern creating legible access for vehicles, cyclists and pedestrians, providing a high level of connectivity within the wider Boat Harbour Precinct between existing and future development at Shell Cove;
- Limited block lengths to increase connectivity;
- Pedestrian and cycle connections to Harbour Boulevard, bus routes and the main cycleway;
- View corridors along the proposed Public Reserves (roughly north-south) to / from the waterfront;
- A series of clear vistas along road alignments throughout Precincts F&G to increase opportunities for incidental surveillance;
- Lot orientation facilitates the construction of future dwellings that overlook the public domain to increase passive surveillance opportunities;
- A range of traditional residential lots together with a total of 9 superlots across both Precincts F&G for future medium density / apartment development, to encourage diverse housing options and opportunities for more dynamic community interactions; and
- All lots to be integrated into the mainstream lifestyle of the Shell Cove community.

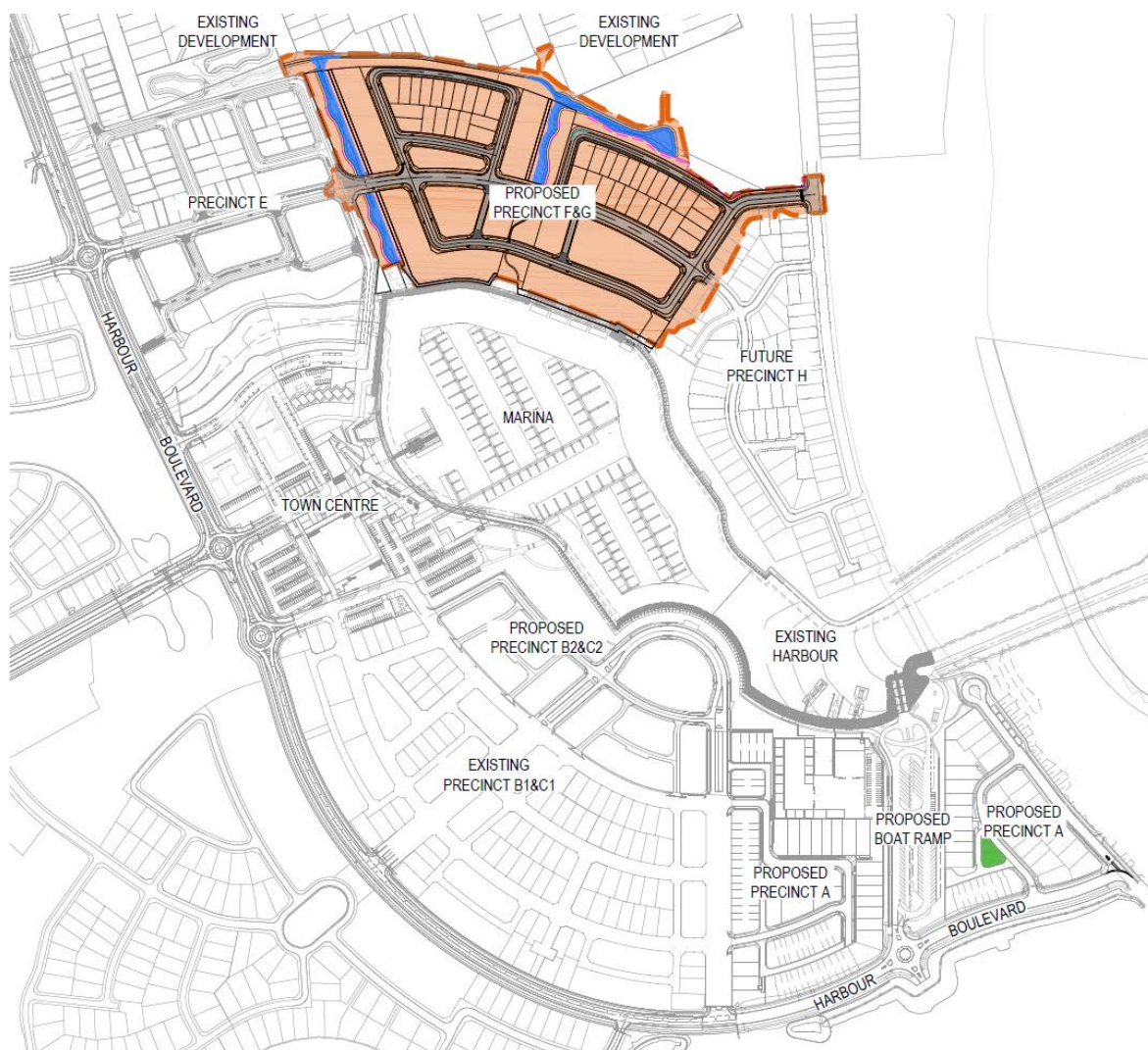


Figure 5. Precincts F&G Concept Plan

4.2 Precinct F

The draft Plan of Subdivision included at Appendix F illustrates the proposed Precinct F subdivision. The subdivision has been designed to optimise solar access to future dwellings, with the majority of allotments having a north-south or east-west orientation.

The standard residential lot sizes range between 318.6m² and 512.4m². Table 4.1 below provides a schedule of the proposed lots and their corresponding areas.

Table 4.1 Precinct F - proposed lot sizes

Lot No.	Area (m ²)	Lot No.	Area (m ²)
6101	495.1	6115	403.7
6102	378.8	6116	403.9
6103	318.6	6117	393.5
6104	377.8	6118	512.4
6105	378.9	6119 (Public Reserve)	1514.3

Lot No.	Area (m ²)	Lot No.	Area (m ²)
6106	318.9	6120	3644.5
6107	377.8	6121	2318.9
6108	376.9	6122	3053.9
6109	426.8	6123	4639.9
6110	503.1	6124	1438.6
6111	385.4	6125	2821.3
6112	498.0	6126 (Public Reserve)	3541.7
6113	396.8	6127 (Public Reserve)	3714.2
6114	341.8		

Three of the proposed lots (Lot Nos. 6119, 6126 and 6127) have been designated as public reserves. It is noted that Lots 6126 and 6127 serve a dual function as part of the overland flow path.

4.3 Precinct G

The draft Plan of Subdivision included at Appendix F illustrates the proposed Precinct G subdivision. The subdivision has been designed to optimise solar access to future dwellings, with the majority of allotments having a north-south or east-west orientation.

The standard residential lot sizes range between 319.8m² and 518.2m². Table 4.2 below provides a schedule of the proposed lots and their corresponding areas.

Table 4.2 *Precinct G - proposed lot sizes*

Lot No.	Area (m ²)	Lot No.	Area (m ²)
7101	518.2	7116	466.9
7102	431.2	7117	402.3
7103	320.1	7118	401.4
7104	379.8	7119	462.2
7105	380.5	7120	402.3
7106	321.5	7121	340.7
7107	320.8	7122	461.3
7108	380.0	7123	483.3
7109	380.8	7124	491.0
7110	319.8	7125 (Public Reserve)	2911.4
7111	435.3	7126	5552.5
7112	497.5	7127 (Public Reserve)	1420.4
7113	385.7	7128	4490.6

Lot No.	Area (m ²)	Lot No.	Area (m ²)
7114	385.7	7129 (Public Reserve)	863.1
7115	492.6	7130	1460.3

Three of the proposed lots (Lot Nos. 7125, 7127 and 7129) are designated as public reserves and also function as part of the overland flow path.

4.4 Wetland 8 together with the Northern and Eastern Swales

As described previously in this Statement, Wetland 8 together with the Northern and Eastern Swales is not proposed to operate as an artificial wetland. Notwithstanding, it will provide some marginal stormwater treatment benefit.

Wetland 8, together with the Northern and Eastern Swales (which run the length of the northern boundaries of Precincts F&G, between proposed Roads 24 and 25 and the northern Concept Plan Approval boundary) will be landscaped as detailed in the landscape drawings prepared by Group GSA and included at Appendix H. These areas provide an appropriate interface (open, landscaped space) with existing development to the north.

4.5 Street network

Precincts F&G and Wetland 8 together with the Northern and Eastern Swales are located to the east of Precinct E, to the northwest of Precinct H and northeast of Precinct D (Town Centre), as illustrated in Figure 6 below.



Figure 6. Shell Cove Master Plan - Precinct Locations

These Precincts will be accessed via Harbour Boulevard and Brigantine Drive. Future access will be available via proposed Road 23 which will connect to Boollwarroo Parade.

Five key intersections along Harbour Boulevard are expected to be impacted by the proposed development, including:

- a. Shellharbour Road / Harbour Boulevard / Wattle Road signalised intersection
- b. Addison Street / Harbour Boulevard signalised intersection
- c. Brigantine Drive / Harbour Boulevard roundabout intersection
- d. Cove Boulevard / Harbour Boulevard roundabout intersection
- e. Road A / Harbour Boulevard roundabout intersection

The traffic impacts on each of the aforementioned intersections is discussed in the Traffic Impact Assessment report prepared by Arcadis (Appendix G).

4.5.1 Access to Precincts F&G

Two new points of ingress / egress to Precincts F&G are proposed – one at the eastern boundary (Boollwarroo Parade) and one at the western boundary, at the interface with Precinct E.

4.5.1.1 Eastern Access

Precinct G will connect to the external road network via a new intersection of Road 23 with Boollwarroo Parade / Bass Point Road, which is located on the eastern boundary of the Boat Harbour Precinct.

The new intersection is located opposite the access to the existing car park located on the eastern side of Boollwarroo Parade / Bass Point Road, which is further to the north than is shown in the Concept Plan Approval. It is noted that this arrangement enables the road reserve boundary for proposed Road 23 to align with the Concept Plan boundary adjacent to Keith Hockey Oval. This aspect of the proposed was discussed at the Pre-Lodgement meeting on 10 July 2017, and Council officers were generally supportive of this arrangement.

The intersection has been designed in accordance with relevant Australian Standards, Council's design standards and Austroads design standards. Vehicle swept path and sightline analysis of this intersection has been undertaken as part of this design, as detailed in the Traffic Impact Assessment (Appendix G).

The ongoing functionality of the car park access will be taken into consideration during the detailed design of the proposed intersection.

4.5.1.2 Western Access

A new roundabout intersection is proposed within Precinct E (immediately to the west of Precinct F). The eastern arm of this roundabout will link Precincts F&G to the Precinct E subdivision. It is anticipated that this will be the primary access point to the Precinct F&G development as it provides more direct access to Harbour Boulevard and the surrounding road network.

In order to accommodate site constraints, the roundabout intersection is expected to be constructed in two stages, as follows:

- Stage 1 will involve the construction of a T-intersection during the construction of Precinct E. The entry arm that links Precincts E and F will be omitted as

this stage, as construction of this arm would impede flows within the Western Overland Flow Channel; and

- Stage 2 will be constructed as part of the Precinct F development. This will involve the construction of the fourth roundabout arm (including proposed culverts within the Western Overland Flow Channel), all roundabout splitter islands, roundabout annulus and associated roundabout line marking and signage, A traffic management plan will be required to manage traffic of any Precinct E residents residing in the vicinity of this intersection during this construction period.

4.5.2 Road hierarchy

Six street typologies are proposed to be employed in Precincts F&G to provide connectivity within the proposed subdivision and to / from the surrounding areas. All medium density land lots are proposed to be adjacent to street types that contain either segregated on-street car-parking or combined parking / travel lanes.

The proposed road hierarchy for Precincts F&G is presented in Figure 7.

A description of each of the six proposed street types along with a typical cross section is provided in Section 4.5.1.1 below.

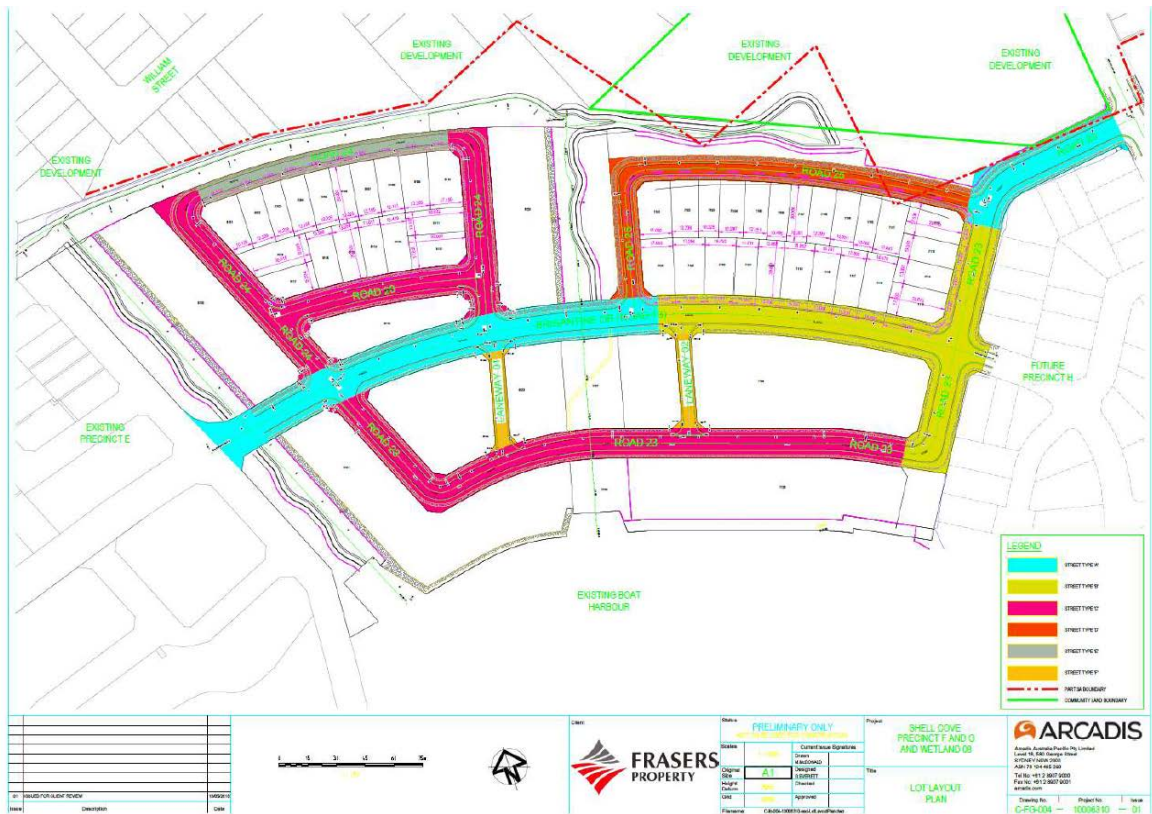


Figure 7. Precinct F & G Road Hierarchy and Lot Layout

4.5.2.1 Precinct Street Types

4.5.2.1.1 Street Type A

Street Type A is a major connecting street consisting of:

- A verge of approximately 4.45m wide on each side, configured as follows - a 2.5m shared path along one side and a 1.2m footpath and street trees; and
- 2.1m wide segregated parking on each side and two 3.2m wide traffic lanes contained within a carriageway of approximately 10.6m.

Street Type A is proposed to be applied to the western portion of Brigantine Drive (Road 13) and the northern part of Road 23 (between its intersection with Road 25 and Boollwarro Parade) which provides primary connectivity to the external road network.

Segregated parking bays will minimise vehicular conflict from parking manoeuvres and the width of the carriageway, in particular the lane widths, will accommodate buses along the proposed bus route.

A typical cross section of Street Type A is provided below in Figure 8.

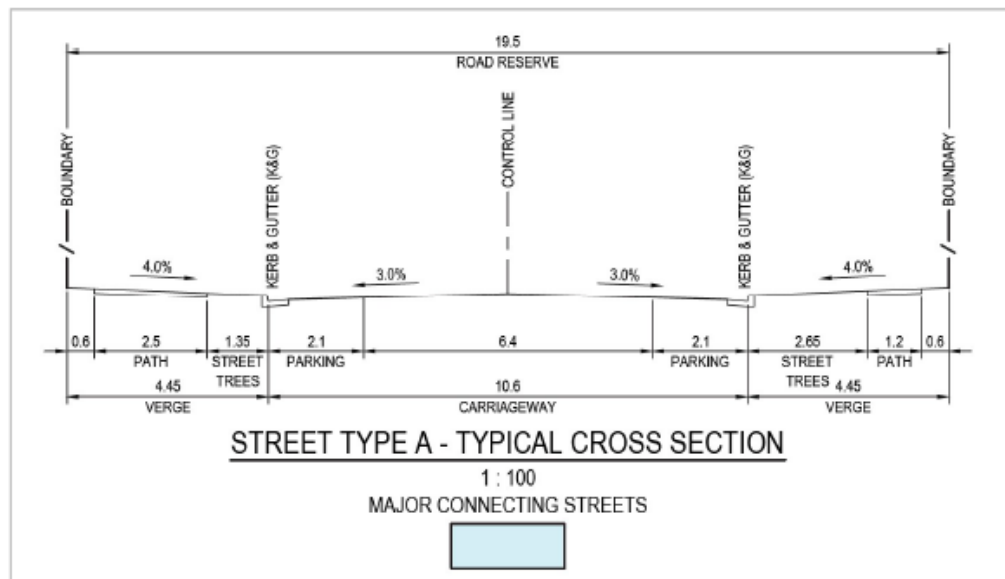


Figure 8: Street Type A typical cross section

4.5.2.1.2 Street Type B

Street Type B is a major connecting street consisting of:

- 1.2m footpaths and street trees contained within an approximate 4.45m wide verge on each side; and
- 2.1m wide segregated parking on each side and two 3.2m wide traffic lanes contained within an approximate 10.6m wide carriageway

Street Type B is proposed to be applied to the eastern part of Brigantine Drive (Road 13) and Road 23.

Segregated parking bays will reduce the potential for vehicular conflict from parking manoeuvres and the width of the carriageway, in particular the lane widths, will provide adequate space for buses.

A typical cross section of Street Type B is provided below in Figure 9.

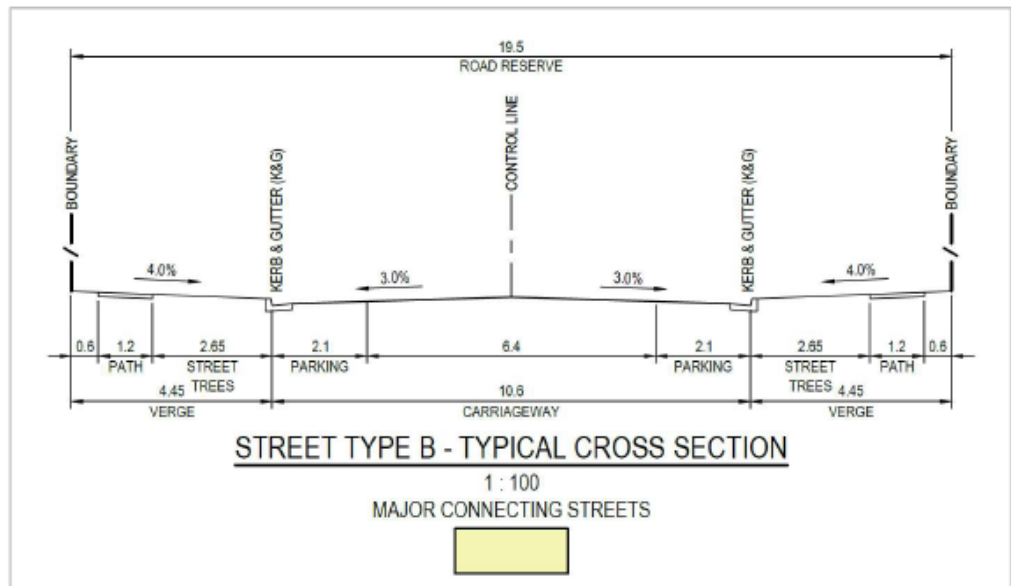


Figure 9: Street Type B typical cross section

4.5.2.1.3 Street Type C

Street Type C is a local street type consisting of:

- 1.2m wide footpaths and street trees contained within an approximate 4m wide verge on each side
- Two 3.75m wide traffic lanes contained within an approximate 7.5m wide carriageway which also includes on-road parking availability

This street typology will be applied to Road 23, and the majority of Road 24 and will primarily service medium density residential developments throughout Precincts F&G as a local street connecting to major connecting streets.

On-street parking will be provided within the travel lane and it is not considered as a major issue based on the purpose for this type of road. A passing car is able to pull into an available space to the side of the road (e.g. adjacent to a driveway) to allow a service vehicle to pass as required.

A typical cross section of Street Type C is provided below in Figure 10.

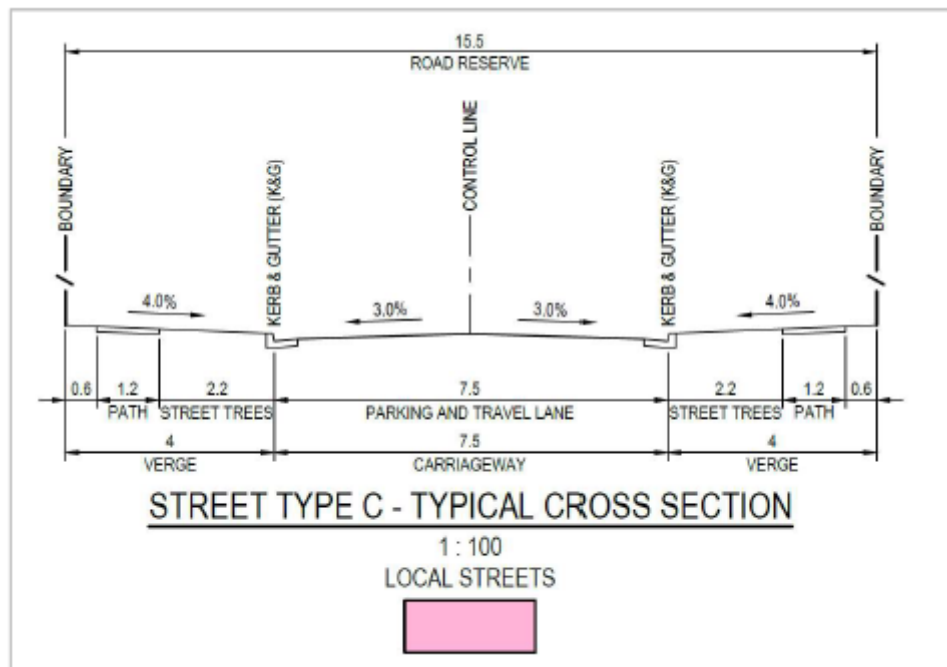


Figure 10: Street Type C typical cross section

4.5.2.1.4 Street Type D

Street Type D is a local street and comprises:

- 2.5m footpath and street trees contained within a 4m wide (approx.) verge on one side and street trees only within a 3m wide (approx.) verge on the opposite side
- Two 3m wide traffic lanes contained within a 6m wide carriageway
- No on-street parking is provided

This street type will be applied to Road 25 and will service standard lots only where on-site parking will be required as part of any future development, in accordance with Shellharbour Council DCP requirements. As such, no provision for on-street parking is made, thereby minimising the potential for vehicle conflicts, in particular for service vehicles.

A typical cross section of Street Type D is provided below in Figure 11.

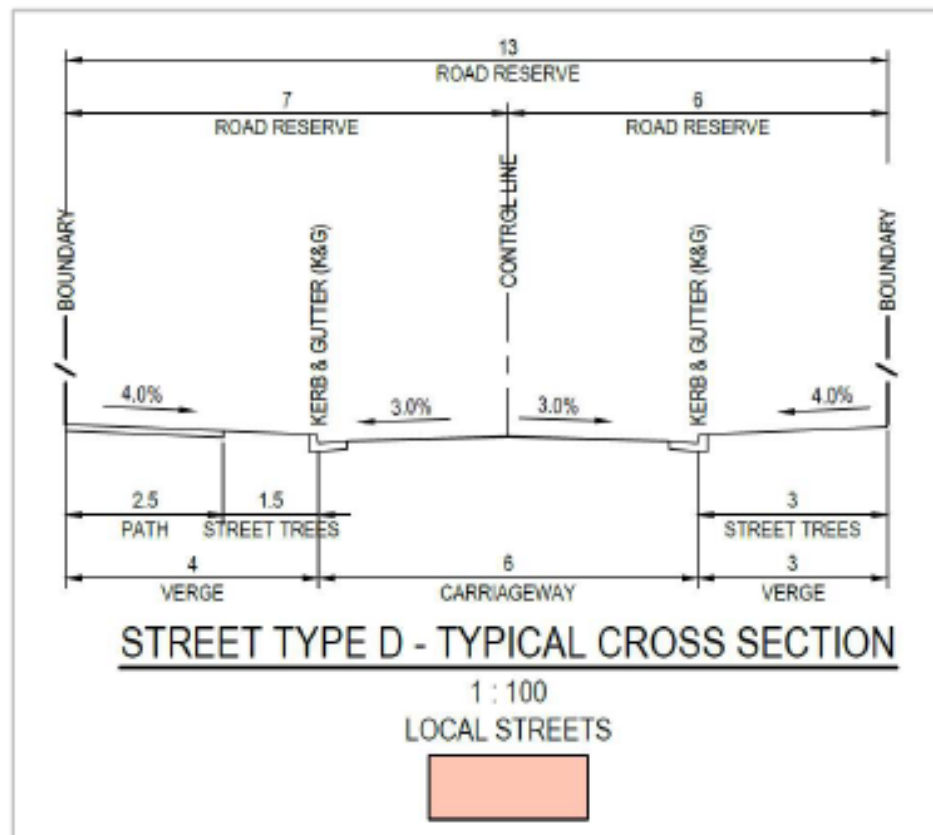


Figure 11: Street Type D typical cross section

4.5.2.1.5 Street Type E

Street Type E is a laneway and comprises:

- 1.2m footpath and street trees contained within an approximately 3m wide verge on one side and street trees only contained within a 1.5m verge (approx.) on the opposite side
- Two 3m wide traffic lanes contained within a 6m wide carriageway
- No on-street parking is provided

This typology applies to part of Road 24 and will service standard lots where on-site parking will be required as part of any future development, in accordance with the requirements set out in Shellharbour Council DCP. The elimination of any on-street parking will result in minimal vehicle conflicts, in particular for service vehicles.

The proposed lane widths for this typology are considered adequate to allow for a service vehicle and standard vehicle to pass each other without any conflict occurring.

A typical cross section of Street Type E is provided below in Figure 12.

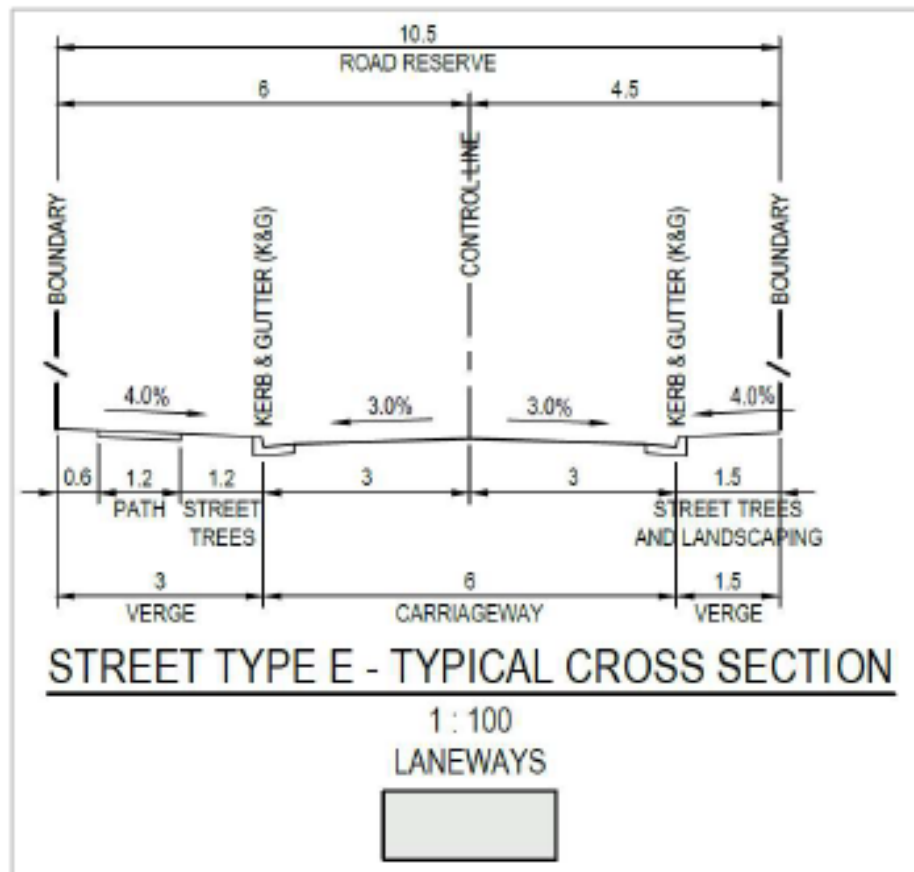


Figure 12: Street Type E typical cross section

4.5.2.1.6 Street Type F

Street Type F is a laneway consisting of:

- 1m of pavement / concrete within a 1m wide (approx.) verge on both sides of the carriageway
- Two 3m wide traffic lanes contained within a 6m wide carriageway
- No on-street parking is provided

This street typology applies to Laneway 01 and Laneway 02, which will service a small section of open space and future medium density residential. On-street parking will not be provided, thereby minimising the potential for vehicle conflicts.

The proposed 6m wide carriageway is considered adequate to allow for passenger vehicles to pass each other without any conflict. Furthermore, the swept path analysis included in the Traffic Impact Assessment prepared by Arcadis (Appendix G) demonstrates accessibility for service vehicles and garbage collection can be achieved in both Laneways 01 and 02.

A typical cross section of Street Type F is provided below in Figure 13.

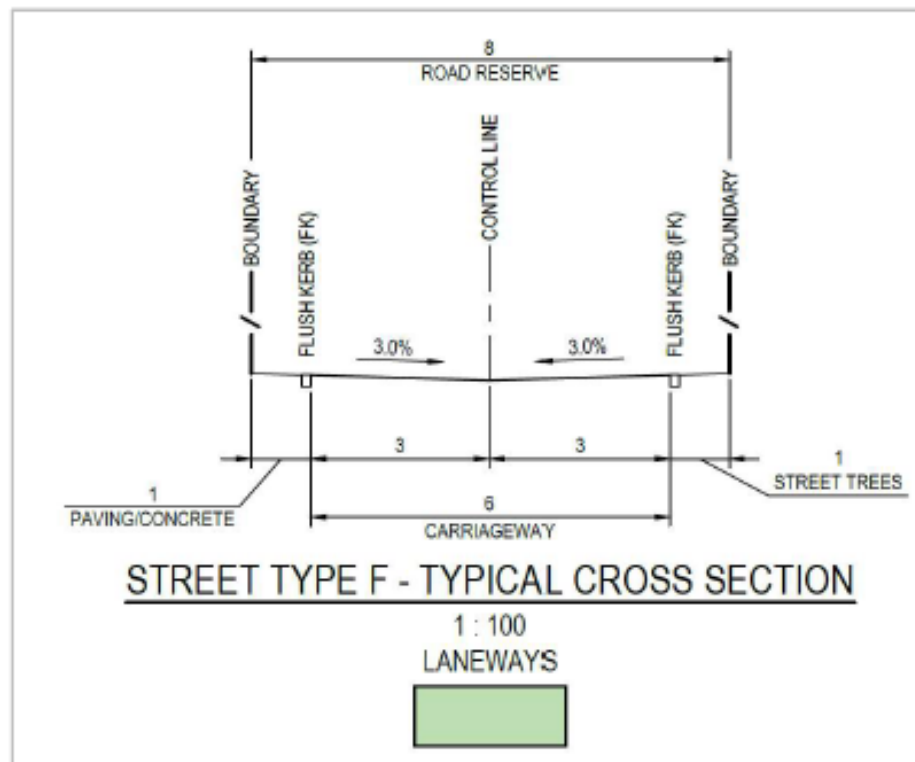


Figure 13: Street Type F typical cross section

4.5.3 Parking

On-site parking for the future built form in Precincts F&G will be provided in accordance with Section 13.1 of the Shellharbour Development Control Plan (SDCP), 2016 (subject to future DAs).

Parking estimates for future residential development in Precincts F&G (both on-site and on-street parking) is provided in the Traffic Impact Assessment prepared by Arcadis and included at Appendix G.

4.5.4 Waste Collection

The appropriate placement of waste and recycling bins on collection day is essential to ensuring accessibility to bins by waste collection vehicles. The manoeuvrability of waste collection vehicles throughout Precincts F&G has been considered to ensure that all bins are placed in a location where they can be readily accessed on collection day.

The underlying design objective is to ensure waste and recycling bins are readily accessible by waste collection vehicles on collection days.

A swept path analysis has been undertaken for a 12.5m Rigid Truck for all intersections within Precincts F&G (refer Traffic Impact Assessment prepared by Arcadis, a copy of which is included at Appendix G). The swept path analysis demonstrates that all proposed intersections will provide adequate manoeuvrability for a service vehicle on the provision that no-parking clearance is provided adjacent to the intersection, in accordance with the Figure 5 of the 'NSW Transport Roads & Traffic Authority Technical Direction – Stopping and Parking Restrictions at Intersections and Crossings' (dated October 2011). Although the swept path analysis

identifies that service vehicles would need to manoeuvre across the centre of the roads at a number of locations, it is not considered a major issue based on the low volume of the service vehicles anticipated in this area.

A sight distance assessment was also conducted which determined that all intersections within Precincts F&G will provide adequate sight distances and conform with Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections.

4.6 Open space network

Two linear corridors of open space are proposed – to the west of Precinct F (interfacing with Precinct E) and a central corridor between Precincts F&G. These areas run roughly north-south and provide view corridors and physical open space connections to the waterfront / marina precinct.

A small pocket park is also proposed in Precinct F on the northern side of Brigantine Drive.

The open space elements of the proposed subdivision provide for passive recreation and connect Precincts F&G to existing residential development and the future open space network along the harbour edge.

A summary of the proposed open space provision is set out in the table below:

Proposed Open Space Elements – Precinct F		
Lot No.	Description	Area (m ²)
6119	Pocket park between Brigantine Drive and proposed Road 24	1,514.3
6126	Part of Western Overland Flow Channel between Brigantine Drive and the Northern Swale	3,541.7
6127	Part of Western Overland Flow Channel between Brigantine Drive and the harbour	3,714.2
Proposed Open Space Elements – Precinct G		
7125	Part of Eastern Overland Flow Channel between Brigantine Drive and the Eastern Swale	2,911.4
7127	Park between Brigantine Drive and proposed Road 23 (drainage function piped) providing passive open space	1,420.4
7129	Park between proposed Road 23 and the harbour (drainage function piped) providing passive open space	863.1
Total		13,965.1

All open spaces are subject to detailed design. Concept Landscape Plans have been prepared by Group GSA, copies of which are included at Appendix H.

4.7 Pedestrian, cycle and public transport

Active Transport

The proposed pedestrian and cycle network, as illustrated in Figure 14 below, will provide connectivity both within the Shell Cove Boat Harbour Precinct and to and from the surrounding areas.

The approved Concept Plan (Figure 15) makes provision for a dedicated (off-road) pedestrian / cycle path along the northern perimeter of Precincts E, F&G.

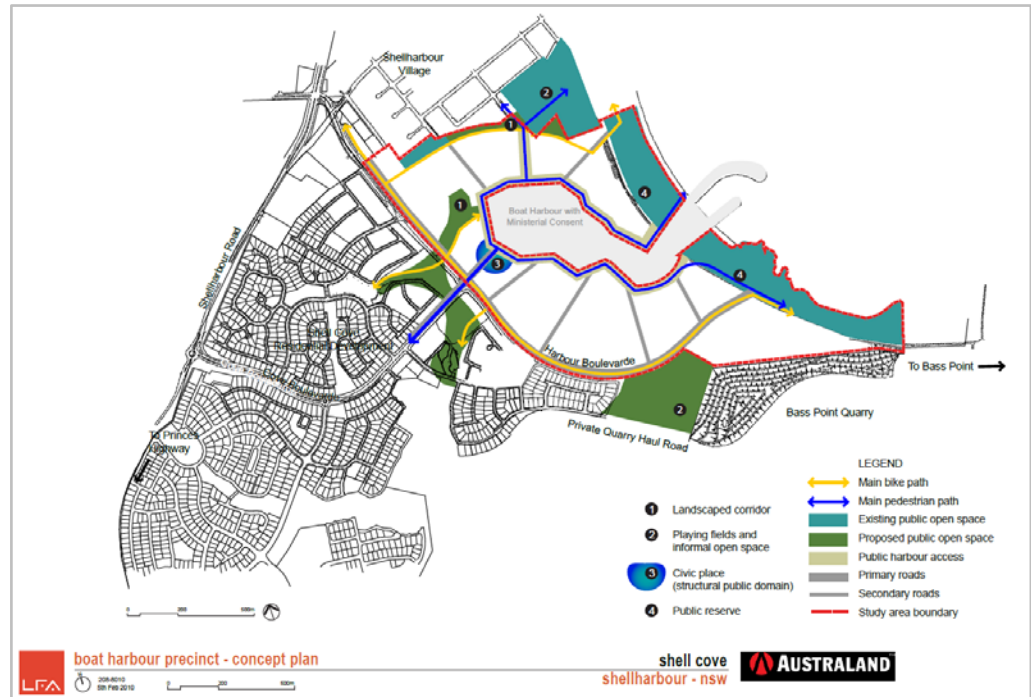


Figure 14 Concept Plan – Open space, pedestrian and bicycle network

As part of the DA for Precinct E (DA0118/2017), the off-road pedestrian / cycle shared path was proposed to be provided to the north of Brigantine Drive which is consistent with the Approved Concept Plan.

For Precincts F&G and Wetland 8 together with the Northern and Eastern Swales, the shared pathway plan (Figure 15) proposes that the shared path will be extended south along Road 11 and then continue east along Brigantine Drive to Road 25. It then continues on the northern side of Road 25 and 23 through to Boollwarroo Parade.

The proposed relocation of a portion of the shared path along Brigantine Drive will improve access to the broader pedestrian / bicycle network for future residents of the medium density residential development in Precincts F&G as well as providing improved connectivity to the proposed bus route along Brigantine Drive.

In addition, a shared path is proposed to connect the east-west shared path to the harbour promenade which will provide direct connectivity to the Shell Cove Town Centre. The proposed shared paths have been designed in accordance with Shellharbour Local Government Area Shared Use Path Strategy 2010.

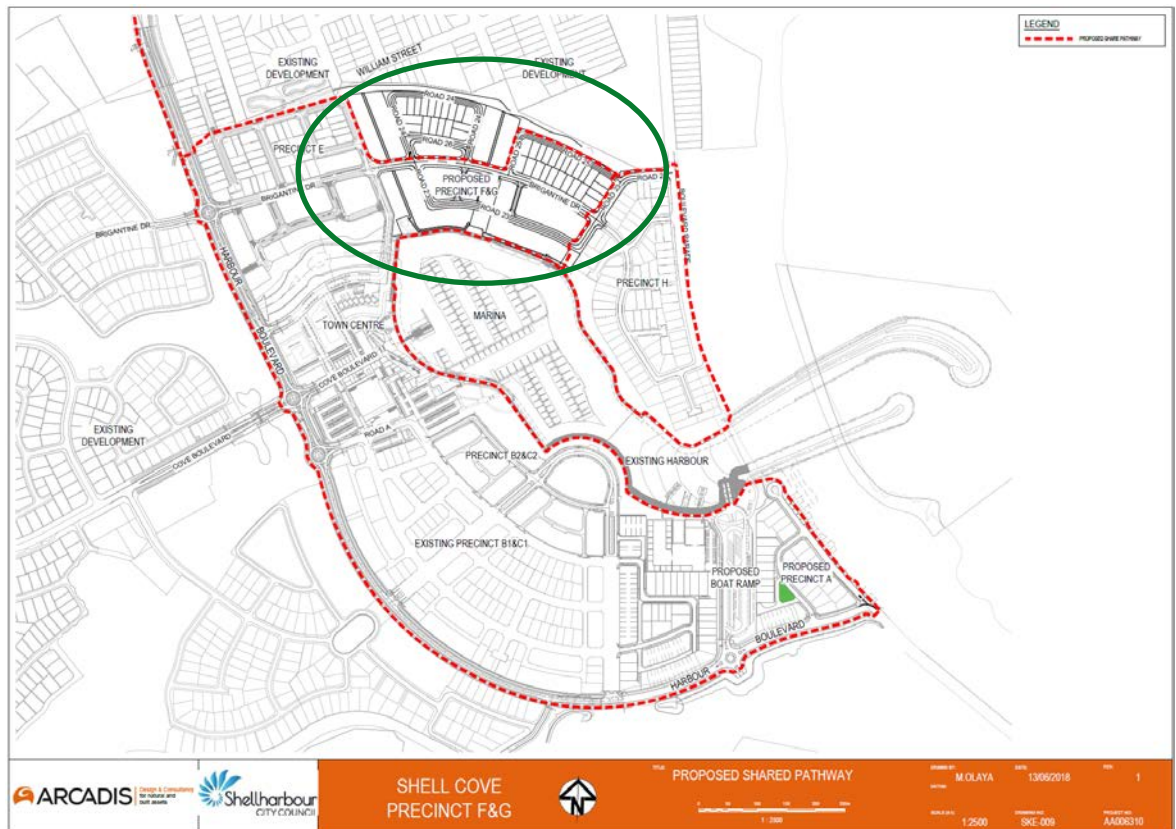


Figure 15 Proposed shared pedestrian / bicycle path network

Public Transport

The Shell Cove Boat Harbour Precinct has access to bus routes serviced by Premier Buses and the South Coast Line trains operating through the Shellharbour Junction station.

Premier Buses operates two routes within close proximity of the proposed Shell Cove Boat Harbour Precinct, as follows:

- Route 52 which provides a direct connection to Shellharbour Junction station; and
- Route 53 which provides a service to Warrawong and Wollongong.

The Shellharbour Junction train station is approximately 3km west of the Shell Cove Boat Harbour Precinct and provides connectivity to / from the Sydney CBD via the South Coast Line. The Shellharbour Junction train station was upgraded in November 2014 to include a “kiss and ride” zone, taxi and bus bays, bike racks and 105 parking spaces.

Current services operate every 25-40 minutes during the week as follows:

- 28 services to the Sydney CBD; and
- 29 services from the Sydney CBD.

4.8 Landscape treatment

This section of the Statement should be read in conjunction with the Landscape drawing package and Design Statement prepared by Group GSA, a copy of which is included at Appendix H.

The design principles adopted for proposed landscape treatment in Precincts F&G are as follows:

- Making the landscape site specific to the locality and in the context of the coastal landscape
- Provide a variety of native plant selections
- Treat level changes with walls made from sandstone feature blocks to tie in with the materials palette for the wider public domain at Shell Cove
- Maximise shade along footpaths with planting of regularly spaced native trees
- Maximise views through to the harbour from the Eastern and Western Overland Flow Channels
- Provide views from foreshore apartments
- Recognise the microclimate of the local environment by providing planting arrangements that respond to the particular environment constraints and opportunities of the area
- Provide visual and physical connections from the residential areas to the overland flow water channels

The landscape concept plans will be subject to future construction certificate applications, but demonstrate the commitment to the delivery of a high quality public realm.

There are a number of key design elements to the proposed landscape treatment within Precincts F&G, as follows:

1. Streetscape

The streetscape treatment within Precincts F&G is consistent with the master plan for the development at Shell Cove.

The main avenue connecting Precincts F&G is Brigantine Drive. The proposed landscape treatment is a continuation of that adopted in the adjacent Precinct E in terms of street tree species selection and planting mix. The remainder of the streets have been designed composed of street tree planting with turf in between, a footpath and turf planting along the boundary.

The intent is to establish a tree lined character for public streets as well as developing an integrated relationship between residential areas and open space elements. Species selection reflects the native flora of the region and enhances the landscape quality and visual amenity of the area.

2. Overland Flow Channels

The Western Overland Flow Channel forms the boundary and transition between Precinct E and Precincts F&G. The open water body is located along the eastern side of the corridor, adjacent to proposed Lots 6120 and 6121 (future medium density residential development) and provides a continuous 4m wide promenade, elevated approximately 3m above the water level to create a vantage point across the channel.

Space for seating and planting has been provided to allow residents and visitors to enjoy the raised outlook.

Water edge planting will be implemented along the western edge of the water body.

The western edge of this open space corridor (where it interfaces with Precinct E) will be planted with trees, shrubs and turf.

The Eastern Overland Flow Channel is located at the heart of Precincts F&G and is treated in a similar manner to the Western Channel in the area north of Brigantine Drive. The open water channel occupies the western side of the lineal open space corridor. Water edge planting will be implemented along the eastern edge of the wetland, with a mixture of turf, trees and shrubs in the area between the wetland and Proposed Road 25. The landscape concept also provides for some seating in this area.

Wetland 8 together with the Northern and Eastern Swales will be shaped and will incorporate for a series of trees to be planted along the northern edge of proposed Road 25, extending to turfed areas and water edge planting along the southern edge of the wetland.

Planting to the north of the wetland together with the Northern and Eastern Swales (and up to the northern Concept Plan boundary) will include a mixture of turf and trees.

The Northern Channel runs along the northern edge of Precinct F between proposed Road 24 and the Concept Plan boundary.

The Landscape Concept Plan provides for a series of trees to be planted along the northern edge of proposed Road 24, with turf extending to the northern Concept Plan boundary.

3. Parks

The pocket park is located in Precinct F and is defined by Brigantine Drive to the south, proposed Road 26 (north) and Road 24 to the east and west.

It is anticipated that the park will include childrens' play equipment, seating, tree planting and other soft landscape elements.

Two central areas of open space - between Brigantine Drive and proposed Road 23 and the area between proposed Road 23 and the waterfront will provide passive areas of open space, bisected by pedestrian paths and including casual seating areas.

A combination of turf, shade trees and shrubs will comprise the soft landscape treatment of this space. It is noted that the stormwater elements are piped under these areas.

4.9 Earthworks

The natural pre-development ground within Precincts F & G is subject to Acid Sulphate Soils (ASS). As such, bulk earthworks were undertaken in 2003 as part of the Acid Sulphate Soil Management Plan (ASSMP). These bulk earthworks involved the importation of general fill material and a bridging layer of material, upon which a surcharge layer of structural fill was placed to preload the natural ground.

The ASSMP assumed a surface design level which was similar to the master-grading design surface, after the removal of the surcharge structural fill material.

Bulk earthwork computations were undertaken for the following scenarios:

1. Cut and fill volumes between natural pre-development ground and top of surcharge level – refer to Drawing No. C-FG-200, Acid Sulfate Soils Management Plan Bulk Earthworks
2. Cut and fill volumes between top of surcharge level and proposed DA design level - refer to Drawing No. C-FG-201, Surcharge Removal Bulk Earthworks Cut and Fill Plan
3. Cut and fill between proposed DA design level and master-grading design level – refer to Drawing No. C-FG-202, Proposed Development Bulk Earthworks Cut and Fill Plan

Please refer to Appendix E for a copy of the bulk earthwork drawings.

The following bulk earthwork quantities were identified in each of the above scenarios:

1 - The volumes for the cut and fill plan (Drawing No. C-FG-200) is the difference between natural pre-development surface levels and the proposed surcharge design levels. These works were undertaken in 2003.

Cut = 11,190 cubic metres

Fill = 210,507 cubic metres

Balance = 199,318 cubic metres of fill material

2 - The volumes for the cut and fill (Drawing No. C-FG-201) is the difference between the structural fill levels and the proposed design levels, required in the removal of the structural fill surcharge material. These works will be undertaken under the Boat Harbour Development Consent.

Cut = 124,591 cubic metres

Fill = 57,983 cubic metres

Balance = 74,257 cubic metres of cut material

3 – The volumes for the cut and fill plan C-FG-202 is the difference in level following removal of the surcharge mound and the proposed design surface as outlined in this Development Application design. The ground levels following removal of the surcharge mound will be similar to that of the master-grading design levels. This surface is to be confirmed by topographical survey once the surcharge mound has been removed.

Cut = 37,092 cubic metres

Fill = 35,674 cubic metres

Balance = 1,417 cubic metres of cut material

Bulk earthworks cut and fill operations volumes are approximate only and are subject to change pending final coordination and detailed civil design. It should be noted that the aforementioned cut and fill operations volumes do not take into account of:

- Bulk earthworks bulking factors; and
- Spoil generated from utility service and stormwater drainage trenching.

4.9.1 Acid Sulfate Soils

Acid Sulphate Soil Management Plan (ASSMP) for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales has been prepared by Coffey Geotechnics Pty Ltd, to address and mitigate Acid Sulfate Soils within Precincts F&G and Wetland 8 together with the Northern and Eastern Swales.

The plan addresses the anticipated impacts associated with Acid Sulfate Soils and identifies appropriate mitigation and management measures to be implemented during the construction phase of the proposed Precincts F&G subdivision.

A copy of the ASSMP is included at Appendix I.

4.10 Utility Services

Arcadis has prepared a Proposed Utility, Sewer & Water Services Strategy in respect of Precincts F&G (Appendix K), which includes a review of existing service capacity, identification of necessary augmentation and new works to service the proposed subdivision of Precincts F&G and addresses indicative staging of the infrastructure works.

The report indicates that there are no utilities within Precincts F&G that will require diversion prior to the commencement of construction works and confirms that sewer, potable water, electricity, gas and telecommunication services can be readily provide to accommodate the development of Precincts F&G.

4.10.1 Sewer

Precincts F&G are located within the Sydney Water Corporation (SWC) service area. SWC has been consulted throughout the master planning of the Boat Harbour Precinct and the sizing / grade and level were agreed with Sydney Water, based on the current proposed subdivision yields for each precinct within the Waterfront.

The new sewer collection system shall be designed and constructed in accordance with SWC requirements, which when completed will become SWC assets.

The report proposes the construction of a gravity sewer network within the boundaries of Precincts F&G, which will be connected to a temporary sewer pump station located within the Precincts F&G development site. The pump station will connect to the sewer lead in to be constructed as part of the Precinct E development, via a new rising main.

The lead in connects to existing pump station SP1196 within Precinct B1 and C1. Pump station SP1196 pumps effluent to pump station SP1101 within the existing overall development.

The final sewer design strategy for Precincts F&G will involve in the removal of the temporary sewer pump station. The Precincts F&G sewer network will ultimately drain to the proposed sewer pump station that is required to be constructed to service Precinct H, which is located adjacent and to the east of Precinct G. A future rising main will connect this Precinct H sewer pump station to the sewer lead in located in Precinct E.

The gravity sewer network within Precincts F&G will be designed in accordance with WSA Sewerage Code of Australia, Sydney Water Edition 1 – Version 4 and will be constructed in accordance with Sydney Water requirements. Upon completion, this infrastructure will become SWC assets.

4.10.2 Water

Shell Cove is serviced by an existing trunk water main located within the cove Boulevard alignment. Sydney Water has confirmed that this infrastructure has the capacity to service the development at Shell Cove.

The Services Strategy confirms that potable water can be supplied to Precincts F&G by extending the water main that will be constructed in Brigantine Drive as part of the development of Precinct E. Branches will then be provided within Precincts F&G to service the individual housing lots.

The new reticulation pipework will be designed in accordance with Water Supply Code of Australia (WSA03) – Sydney Water edition 2014, suitable for the water loading requirements for the development.

Upon completion, the new water service reticulation will become a Sydney Water asset.

4.10.3 Electricity

Endeavour Energy (EE) had previously determined that up to two additional HV feeders will be required to service any additional precincts within the harbour precinct outside of the recently completed Precincts B1 and C1, and the soon to commence Precinct E.

EE has recently recommended that the development of the first new HV feeder commence (feeder SHD2/B) from Shellharbour Zone Substation to create sufficient capacity for Precincts south of F, G and H.

The new HV feeder will join into the existing HV feeder (feeder SHK2) currently supplying Precincts B1, B2 Hanson's Quarry and the soon to commence Precinct D. It is expected that the new HV feeder will be commissioned prior to the construction of Precinct E.

As a result of the network augmentation described above, the existing EE network in the vicinity of Precinct's E, F and G is then expected to have sufficient capacity to accommodate the demand generated by the proposed subdivision and subsequent development in Precincts F&G.

The detailed electrical design for Precincts F&G will include the following:

- 3 padmount substations (final located to be determined as part of detailed design), including appropriate easements within private land;
- reticulation of high and low voltage cabling within road reserves (including spare conduit); and
- street lighting.

4.10.4 Gas

Previous consultation with Jemena has confirmed that natural gas is available in the development area and agreements are in place with Jemena to service the development at Shell Cove.

The Strategy anticipates that the proposed gas reticulation design will generally follow the electrical reticulation design routes, and can be constructed to accommodate the delivery of Precincts F&G.

4.10.5 Telecommunications

NBN servicing was confirmed at the master planning stage of the proposed Boat Harbour development and agreements are in place with NBN co to provide telecommunications to the development of Precincts F&G.

There is an existing NBN telecommunication network located within the vicinity of Precincts F&G, which will be able to service the proposed development via new connections to the existing network, together with new infrastructure along new streets and lead-in locations within Precincts F&G to provide connection to each standard residential lot and the superlots.

It is anticipated that the proposed telecommunication reticulation designs will generally follow the electrical reticulation design routes, and can be constructed to accommodate the proposed staging of development within Precincts F&G.

Having regard to the above, it is considered that Precincts F&G can achieve access to telecommunications services.

4.11 Stormwater

The stormwater drainage system for Precincts F&G has been developed by Arcadis. Within the subdivision the 5 year ARI flow will be conveyed within the piped drainage network, and the 20 year ARI flow will be conveyed within the trunk drainage network. All excess flows during the 100 year ARI event will be conveyed within road reserves or designated reserve lots directly to the harbour or via the Western or Eastern Overland Flow Channels. This system has been developed in accordance with the

requirements of the *Shellharbour DCP 2016* and the *Development Design Specification (Shellharbour City Council, 2004)*.

A stormwater treatment strategy has been developed for Precinct F and G and adjacent catchments which will involve the use of GPTs, rainwater tanks, JellyFish treatment systems, HydroCon porous concrete pipes and sand filters. These measures will assist in achieving the stormwater quality targets of the overall Shell Cove development, which limit post-development pollutant loads to predevelopment loads and also meet the pollutant reduction targets. The strategy includes various WSUD elements, which meets the relevant Concept Approval requirements for Ecologically Sustainable Development and Infrastructure.

No on-site detention systems are required for Precincts F& G.

The existing groundwater conditions are not expected to be impacted as a result of the Precinct F and G development. The concentration of pollutants in the post-development runoff is expected to be higher than that in the pre-development scenario. However, given the significant reduction in expected infiltration across the areas most likely to contribute to any increased pollutants, the existing groundwater is unlikely to be impacted significantly.

5 STATUTORY PLANNING FRAMEWORK

5.1 Environmental Planning and Assessment Act 1979

Matters to be considered when determining development applications are set out in Section 4.15(1) of the EP&A Act. An assessment of the proposal against these matters is provided below.

Consideration and determination of a development application must be consistent with the relevant provisions of the EP&A Act, including the objects set out in Section 1.3 of the Act, as follows:

- (a) *To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*

The proposed subdivision will contribute to the proper management, development and conservation of the natural and other resources within the Shell Cove site. In particular, the Concept Plan (MP07_0027) approved by the Minister for Planning on 15 February 2011 requires a range of measures to be implemented to ensure a sustainable outcome.

The proposal will promote the social and economic welfare of the community by providing a new, high quality urban environment.

- (b) *To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*

The development at Shell Cove has been assessed (and approved) as being in accordance with the principles of Ecologically Sustainable Development as set out in Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*.

- (c) *To promote the orderly and economic use and development of land,*

The proposed subdivision facilitates the orderly and economic redevelopment of land by providing additional housing in the Illawarra Region in the context of the approved Concept Plan for the Boat Harbour Precinct at Shell Cove.

- (d) *To promote the delivery and maintenance of affordable housing,*

The wider development at Shell Cove allows for a range of housing products to provide greater housing choice. Producing smaller parcels of land and smaller dwelling sizes helps to reduce land and construction costs, and on-going running costs for dwellings, making these dwellings more affordable.

- (e) *To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*

The Flora and Fauna Study prepared by Kevin Mills and Associates in 2009 in support of the Concept Plan found that the Shell Cove Boat Harbour Precinct, including the lands comprising Precincts F and G and Wetland 8 together with the Northern and Eastern Swales, contained no Critical Habitat or any Schedule 2 Koala food trees.

- (f) *To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*

The Cultural Heritage Review submitted in as part of the Concept Plan found that there were no European Heritage elements or Non-European (Indigenous) sites within the wider Shell Cove Boat Harbour Precinct area. The study also concluded that the proposal site has low archaeological sensitivity.

Registered Aboriginal objects / sites are known to occur within the wider area. However, only part of one of these sites, AHIMS 52-2-207, is assessed as having

relatively high heritage value. This site is a shell midden within a foredune on the beachfront on the ocean side of Bass Point Tourist Drive and is not in proximity to Precincts F&G or Wetland 8 together with the Northern and Eastern Swales.

An Archaeological and Heritage Protection Plan has been developed for the Shell Cove boat harbour/marina and a combined Consent and Permit (No. 2534) has been granted under sections 87 / 90 of the *National Parks and Wildlife Act 1974*. A copy of these documents is included at Appendix D.

(g) To promote good design and amenity of the built environment,

The proposed subdivision is based on sound urban design principles to optimise amenity within the subdivision, including:

- a clear street pattern creating legible access for vehicles, cyclists and pedestrians, providing a high level of connectivity within the wider Boat Harbour Precinct between existing and future development at Shell Cove;
- limited block lengths to increase connectivity;
- pedestrian and cycle connections to Harbour Boulevard, bus routes and the main cycleway;
- a series of clear vistas along road alignments throughout Precincts F&G to increase opportunities for incidental surveillance;
- lot orientation facilitates the construction of future dwellings that overlook the public domain to increase passive surveillance opportunities; and
- All lots to be integrated into the mainstream lifestyle of the Shell Cove community.

Built form will be the subject of future development applications.

(h) To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,

Noted, however the DA seeks approval for land subdivision. Built form within Precincts F&G will be the subject of separate applications.

(i) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

Extensive consultation has been undertaken with various levels of government and government agencies during the approvals process associated with the development at Shell Cove.

(j) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

It is anticipated that Council will undertake any required notification or consultation in accordance with its policies.

Having regard to the discussion set out above, the proposed subdivision is demonstrably consistent with the objects of the EP&A Act.

5.2 Environmental planning instruments

The environmental planning instruments, policies and other documents that are relevant to the proposed development are:

- State Environmental Planning Policy No 55 – Remediation of Land
- State Environmental Planning Policy (Coastal Management) 2018
- Shellharbour Local Environmental Plan 2013
- Concept Plan Approval - MP07_0027
- S75W application to modify Concept Plan (MP07_0027 MOD1)
- Shellharbour Development Control Plan 2013
- Shellharbour City Council Section 94 Contributions Plan 2013

- Urban Design Guidelines for Precincts F&G – Medium Density Design Guidelines and Design Guidelines for Single Dwellings

5.2.1 SEPP 55 – Remediation of land

Under the provisions of SEPP 55 the consent authority must not consent to the carrying out of any development on land unless it has considered whether that land is contaminated and if so, whether it is suitable for a proposed development or requires remediation.

Contamination has been considered and assessed as part of Boat Harbour Precinct Concept Plan (MP07_0027). A Phase 2 site contamination assessment of the Boat Harbour Precinct was submitted with the preferred planning report for the Concept Plan application which concluded that a remedial action plan was required for the former golf course and at the location of a former farm structure.

In February 2016, Douglas Partners carried out a targeted site investigation² for contaminated land within the Boat Harbour Precinct (Precincts D and E and Wetland 6). This report presented the results of additional investigations of the near-surface soils within the former tees, greens and fairways of the former golf course, which were identified in the Phase 2 Site Assessment as requiring further investigation for potential heavy metals and pesticide contamination.

This report closed out the need for further investigation or the requirement for a remediation action plan (RAP) for the golf course land in adjacent areas of the Boat Harbour Precinct.

Notwithstanding, Douglas Partners has prepared advice in relation to Precincts F&G and Wetland 8 together with the Northern and Eastern Swales (Appendix B) which confirms that the original extent of the former golf course was predominantly located to the south and west of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales.

The advice concludes that the need for further investigation associated with the former golf course (and the preparation of a RAP) is not required for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales.

Having regard to the above, it is considered that the requirements of SEPP 55 have been satisfied in relation to the subject land.

5.2.2 SEPP (Coastal Management) 2018

The Coastal Management SEPP applies to land and development within the coastal zone (clause 5) as defined by the *Coastal Management Act 2016*. Shell Cove Boat Harbour Precinct, including Precincts F and G are located within the coastal zone.

The SEPP gives effect to the objects of the *Coastal Management Act 2016* and specifies how development which is proposed within the coastal zone is to be assessed.

The SEPP defines the four coastal management areas described in the Act – Coastal Wetlands and Littoral Rainforests Area, Coastal Vulnerability Area, Coastal Environment Area and Coastal Use Area. Assessment criteria are set out for each coastal management area that consent authorities are required to consider when assessing proposals for development that fall within the mapped areas.

² *Report on Targeted Site Investigation, Former Golf Course, Boat Harbour Precinct (Precinct D and E, and Wetland 6) Shell Cove, Project 78999.10.Rev1 dated 11 February 2016*

Part 2 of the SEPP sets out the development controls for the various coastal management areas. The eastern portion of Precincts F and G fall within the Coastal Use Area, which is defined as land adjacent to the coast, where development is or may be carried out.

Clause 14 of the SEPP provides that:

Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:

- (a) has considered whether the proposed development is likely to cause an adverse impact on the following:*
 - (i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,*
 - (ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,*
 - (iii) the visual amenity and scenic qualities of the coast, including coastal headlands,*
 - (iv) Aboriginal cultural heritage, practices and places,*
 - (v) cultural and built environment heritage, and*
- (b) is satisfied that:*
 - (i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or*
 - (ii) if that impact cannot reasonably be avoided – the development is designed, sited and will be managed to minimise that impact, or*
 - (iii) if that impact cannot be minimised – the development will be managed to mitigate that impact, and*
- (c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.*

Whilst the proposed Precincts F&G subdivision is not inconsistent with the provisions of clause 14 of the SEPP, the terms of the Concept Plan prevails to the extent of any inconsistency, pursuant to clause 3B(2) of Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*.

5.3 NSW Coastal Policy

The principles of the NSW Coastal Policy have informed the environmental planning and urban design undertaken in relation to the Boat Harbour Precinct and the wider development at Shell Cove.

The broad planning and design responses to the goals identified in the NSW Coastal Policy are outlined below:

1. To protect, rehabilitate and improve the natural environment

The development of the Boat Harbour Precinct, of which Precincts F&G and Wetland 8 together with the Northern and Eastern Swales are an integral part, will result in the improvement of natural environmental values on the development site and in the immediate vicinity, by virtue of the following:

- Provision of an area of constructed wetlands to be located in the open space immediately north of the Town Centre. The wetlands are an important element of the integrated approach to catchment management and the management of urban run-off.

- The development of the Shell Cove project has provided the impetus for the construction of the Myimbarr Wetlands.
- The development of the Boat Harbour Precinct will allow for the effective remediation of ASS.

2. To recognise and accommodate natural processes and climate change

The analysis undertaken as part of the Concept Plan (Worley Parsons) notes that between 2009 and 2100 the Shell Cove Boat Harbour Precinct could expect a worst case scenario increase of 0.23m in localised flood levels.

This can be readily accommodated within the 0.5m freeboard (relative to the predicted 1 in 100 year flood level) which all habitable buildings within the precinct are required to provide.

3. To protect and enhance the aesthetic qualities of the coastal zone

The Boat Harbour Precinct has been designed to be sympathetic to the coastal landscape. Precincts F&G are not located on prominent ridgelines nor in an area which has been identified in any regional or local policy as an area of visual significance or vulnerability.

The Design Guidelines have been prepared in respect of Precincts F&G, which form part of the DA documentation (Appendix M). These establish a series of design principles for both detached housing and medium density and apartment development which includes materials, colours, scale and form. The guidelines for each of the building typologies form a “manual” for design and development and are part of the approval process for future development.

Consistency of development with the Guidelines will ensure that it is complementary to the visual landscape of the Shellharbour coast and immediate hinterland.

4. To protect and conserve cultural heritage

Aboriginal heritage was investigated as part of the Concept Plan and the archaeological sensitivity of the area was considered low. The consent issued in respect of Boat Harbour (DA 411/2013) includes conditions which require appropriate management of Aboriginal objects during the excavation and construction of land surrounding the boat harbour.

5. To promote Ecologically Sustainable Development and use of resources

6. To promote ecologically sustainable human settlement

The proposed development of Precincts F&G within the Boat Harbour Precinct at Shell Cove is considered to be consistent with the principles of ecologically sustainable development in that:

- It incorporates stormwater, erosion and sedimentation controls to minimise environmental impact, particularly on the boat harbour, the dunal system and Shellharbour South Beach;
- It will provide regional economic benefits through additional housing supply and employment opportunities; and
- Water quality control measures will be implemented employing best practice WSUD principles.

7. To provide for appropriate public access and use

Public access to the new Boat Harbour and the ocean foreshore will be established, maintained and enhanced as part of the wider development at Shell Cove. A series of parks, boardwalks and streetscapes will establish opportunities for public access around the perimeter of the harbour. A number of streets are located perpendicular to the harbour and will enhance access to the harbour foreshore from surrounding, non-waterfront areas and establish visual connections to the harbour.

8. To provide information to enable effective management

9. To provide for integrated planning and management

The development of the Shell Cove Boat Harbour Precinct is being undertaken in a controlled manner, consistent with the objects of the EP&A Act and in accordance with the Concept Plan Approval (MP07_0027) and subsequent development consents for the various stages of the development.

Having regard to the above, it is considered that the proposed subdivision of Precincts F&G is consistent with the NSW Coastal Policy.

5.4 Shellharbour Local Environmental Plan 2013

5.4.1 Land Zoning / Permissibility

The majority of the land to which this application applies is zoned R3 Medium Density Residential under the provisions of Shellharbour LEP 2013 (Figure 16).

However, parts of two superlots (proposed Lot 6122 in Precinct F and proposed Lot 7128 in Precinct G), together with parts of two lots identified for public reserve (Lot 6127 in Precinct F and Lot 7129 in Precinct G) are zoned W2 Recreational Waterways.

It is also noted that the northern half of Wetland 8 together with the Northern and Eastern Swales is zoned RE1 Public Recreation.

Land subdivision is permitted with consent pursuant to clause 2.6 of SLEP 2013, regardless of the underlying zoning.

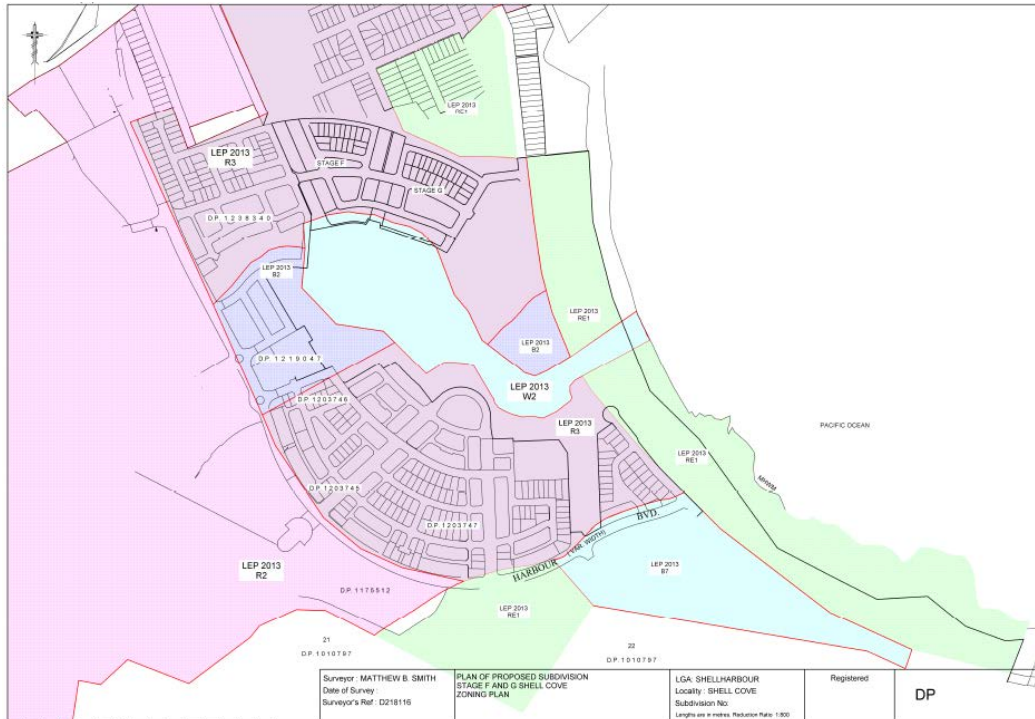


Figure 16. Plan of Proposed Subdivision for Precinct F&G – Shell Cove Zoning Plan

5.4.1.1 R3 Medium Density Zone

The R3 zone permits a range of residential uses, including dwelling houses, semi-detached dwellings and attached dwellings and secondary dwellings with consent.

The objectives of the R3 zone are as follows:

- *To provide for the housing needs of the community within a medium density residential environment.*
- *To provide a variety of housing types within a medium density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*

The proposed subdivision is consistent with the objectives of the zone by virtue of the fact that it will contribute to the range of housing types available in the Shellharbour LGA within a contemporary master planned estate.

5.4.1.2 W2 Recreational Waterways Zone

The W2 Zone is designed to allow for water-based recreation and related uses. Whilst multi-dwelling housing and residential flat buildings are specifically prohibited, subdivision is permissible with consent.

Notwithstanding the above, this proposal relies on the provisions set out in Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*. Of particular relevance is:

- Clause 3B(1) which provides that:

This clause applies to development (other than an approved project) for which a concept plan has been approved under Part 3A, before or after the repeal of Part 3A, and so applies whether or not the project or any stage of the project is or was a transitional Part 3A project.

- Clause 3B(2)(a) which provides that:
 - (2) *After the repeal of Part 3A, the following provisions apply to any such development (whether or not a determination was made under section 75P(1)(b) when the concept plan was approved):*
 - (a) *if Part 4 applies to the carrying out of the development, the development is taken to be development that may be carried out with development consent under Part 4 (despite anything to the contrary in and environmental planning instrument).*

The proposed development constitutes development under Part 4 of the EP&A Act, As a consequence and having regard to Clause 3B(2)(a), the part of the proposed subdivision (and any subsequent residential development) which is located within the W2 Zone constitutes development that may be carried out with development consent.

5.4.1.3 RE1 Public Recreation Zone

The RE1 Zone permits a limited range of land uses, which reflects the objectives of the Zone, as follows:

- *To enable land to be used for public open space or recreational purposes.*
- *To provide a range of recreational settings and activities and compatible land uses.*
- *To protect and enhance the natural environment for recreational purposes.*

Wetland 8 together with the Northern and Eastern Swales is integral to the management of stormwater and floodwater and falls within the definition of “flood mitigation works” which constitutes a permissible use in the RE1 Zone with consent.

5.4.2 Other Relevant SLEP 2013 Provisions

The development standards embodied in SLEP 2013, including floor space ratio, minimum lot size, building height, also extend to the land to which the Concept Plan Approval applies, however the Concept Approval prevails.

The Concept Plan Approval establishes indicative dwelling numbers, types and number of storeys and an assessment of the Precincts F&G proposal against the Concept Plan is included at Section 5.6 of this Statement.

5.4.2.1 Development within Coastal Zones (cl. 5.5)

Clause 5.5 details the provisions for assessing development within the coastal zone. The proposal is considered to be consistent for the following reasons:

- the proposed subdivision facilitates public access to the foreshore;
- the proposal is suitable in its relationship with the surrounding area, and does not adversely impact the natural scenic quality due to the site proximity to the foreshore, and the low rise bulk, scale and character of the design;
- the proposed subdivision facilitates views to / from the foreshore;
- the proposal does not cause any unreasonable impact on the visual amenity and sea view qualities of the coast;
- bio-diversity and ecosystems are not affected by the proposal;

- the proposed subdivision is acceptable having regard to the cumulative impact of the proposal in combination with other development on the coastal catchment; and
- the proposed subdivision is sited in a manner that ensures it is not significantly affected by coastal hazards, such as foreshore erosion, or by sea level rise, nor does it increase the risk of coastal hazards in relation to the subject land or surrounding properties.

5.4.2.2 Heritage Conservation (cl. 5.10)

As discussed in Section 3.3.5 of this Statement, the studies undertaken as part of the Concept Plan application suggests that the site of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales does not contain any items of European heritage, conservation areas or Indigenous places or objects.

Aboriginal heritage significance was also investigated as part of the Concept Plan and the archaeological sensitivity of the area was considered low.

An Archaeological and Heritage Protection Plan has been developed for the Shell Cove boat harbour/marina and a combined Consent and Permit (No. 2534) has been granted under sections 87 / 90 of the *National Parks and Wildlife Act 1974*. A copy of these documents is included at Appendix D.

Having regard to the above it is considered that clause 5.10(1) heritage conservation objectives are unlikely to be undermined by the proposal.

5.4.2.3 Acid Sulfate Soils (cl. 6.1)

The objective of clause 6.1 is to ensure that development does not disturb, expose or drain ASS and cause environmental damage.

As discussed previously in this Statement, ASS were investigated as part of the Concept Plan application and for most of the land to be developed, the risk of encountering ASS was low. However it is noted that parts of Precincts F&G are identified as being subject to Class 2 and Class 3 ASS.

Coffey Geotechnics Pty Ltd has prepared an Acid Sulfate Soil Management Plan which forms part of the DA documentation (Appendix I). The plan addresses the anticipated impacts associated with ASS on the proposed development in Precincts F&G and identifies appropriate mitigation measures.

It is considered that the implementation of these mitigation measures will satisfy the requirements of clause 6.1.

5.4.2.4 Earthworks (cl. 6.2)

The objective of this clause is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.

The proposed development involves some earthworks associated with the civil works and in order to create the required levels for future dwellings. Impacts to surrounding developments are minor in nature and will not detrimentally impact environmental functions and process.

Arcadis has prepared an Earthworks Strategy for Precincts F&G (Appendix J)

On this basis it is considered that the proposal is consistent with the objective of Clause 6.2 and the matters for consideration.

5.4.2.5 Flood Planning (cl. 6.3)

The objectives of this clause are to minimise the flood risk to life and property, allow development on land that is compatible with its flood hazard and to ensure development does not create significant adverse impacts on flood behaviour and the environment.

Consent must not be granted unless the consent authority is satisfied that the development:

- (a) is compatible with the flood hazard of the land, and*
- (b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and*
- (c) incorporates appropriate measures to manage risk to life from flood, and*
- (d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and*
- (e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.*

Advisian has prepared a Flood Assessment in respect of the proposed subdivision of Precincts F&G (Appendix O).

The flood risk assessment examines Precincts F&G in the context of the Concept Plan Approval and concludes that:

- The development is not expected to adversely affect flooding at any existing properties during the 5 year and 100 year ARI storms or the PMF.
- A sensitivity test which assessed 100 year ARI flood behaviour in the event of culvert and bridge blockage showed that floodwaters would primarily be contained within the existing/proposed watercourses and channels. An exception applies to the Northern Swale, where existing Shellharbour Village properties are affected by flooding in both the pre-development and post-development scenarios. However, the modelling results have determined that the post-development peak flood levels are reduced when compared to pre-development modelling results, even in the culvert blockage scenario.
- It has also been shown that the proposed development of Precincts F and G will not cause any additional properties to be affected by the Flood Planning Area.
- A sensitivity test which assessed the effects of sea level rise by Year 2100 was completed using the TUFLOW model for the 100 year ARI event. It showed that despite flood levels increases between 100 and 300 mm along the Northern Swale and Overland Flow Channels, the post-development flood levels at the southern edge of Shellharbour Village will still be lower than in the predevelopment case. It is also expected that sea level rise in the 5 year ARI event and PMF will not result in any additional impacts on the proposed lots.
- The flood mapping included in the above report has demonstrated that the post-development flood hazard is consistent with a flood emergency response strategy consisting of evacuation during events up to the 100 year ARI storm, with shelter-in-place being an option during more extreme events if the floodwater in streets becomes unpassable.

Having regard to the above, it is considered that the objectives of clause 6.3 are satisfied.

5.4.2.6 Stormwater Management (cl. 6.4)

The objective of this clause is to minimise the impacts of urban stormwater on the land to which the DA applies, adjoining properties, native bushland and receiving waters.

Clause 6.4(3) provides that consent must not be granted unless the consent authority is satisfied in relation to the following matters:

- (a) *is designed to maximise the use of water permeable surfaces on the land having regard to the soil characteristics affecting on-site infiltration of water, and*
- (b) *includes, if practicable, on-site stormwater retention for use as an alternative supply to mains water, groundwater or river water, and*
- (c) *avoids any significant adverse impacts of stormwater runoff on adjoining properties, native bushland and receiving waters, or if that impact cannot be reasonably avoided, minimises and mitigates the impact.*

The Stormwater and Water Cycle Management Plan prepared by Advisian (Appendix L) includes a water sensitive urban design strategy for Precincts F&G so as to achieve the stormwater quality targets of the overall Shell Cove development, as referenced in the Concept Plan Approval.

These targets include reducing post development pollutants to equal to and below pre development loads, in addition to the water quality targets identified in the Boat Harbour Development Consent.

The drainage system arrangement for Precincts F&G has been designed in accordance with *Appendix 10 (Stormwater Management) of Development Control Plan 2016* and the *Development Design Specification for Subdivision Drainage Design (Shellharbour City Council, 2004)*.

Having regard to the above it is considered that the proposed subdivision of Precincts F&G is consistent with the objective of clause 6.4 and satisfies the matters set out in sub-clause 3.

5.4.2.7 Essential Services (cl. 6.9)

This clause requires the consent authority to be satisfied that any services that are essential for the development are either available or that adequate arrangements have been made to make them available when required.

As described in Section 4.8 of this Statement, the site is able to be serviced by all utility services, and on this basis it is considered that the requirements of clause 6.9 are satisfied.

5.5 Shellharbour DCP 2013

The only provisions of the DCP relevant to the proposed subdivision of Precincts F&G are those pertaining to public notification. It is noted that Council will notify / publicly exhibit the DA in accordance with the DCP.

5.6 Consistency with the Concept Plan

Clause 3B(2)(d) of Schedule 2 of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* requires the consent

authority to be satisfied that the proposed development is generally consistent with the terms of the approval of the Concept Plan.

The planning and design of the proposed subdivision of Precincts F&G and the construction of Wetland 8 together with the Northern and Eastern Swales has been developed in cognisance of the wider concept planning for Shell Cove Boat Harbour Precinct.

The following sections of this Statement provide an assessment of the proposed development in the context of the Concept Plan.

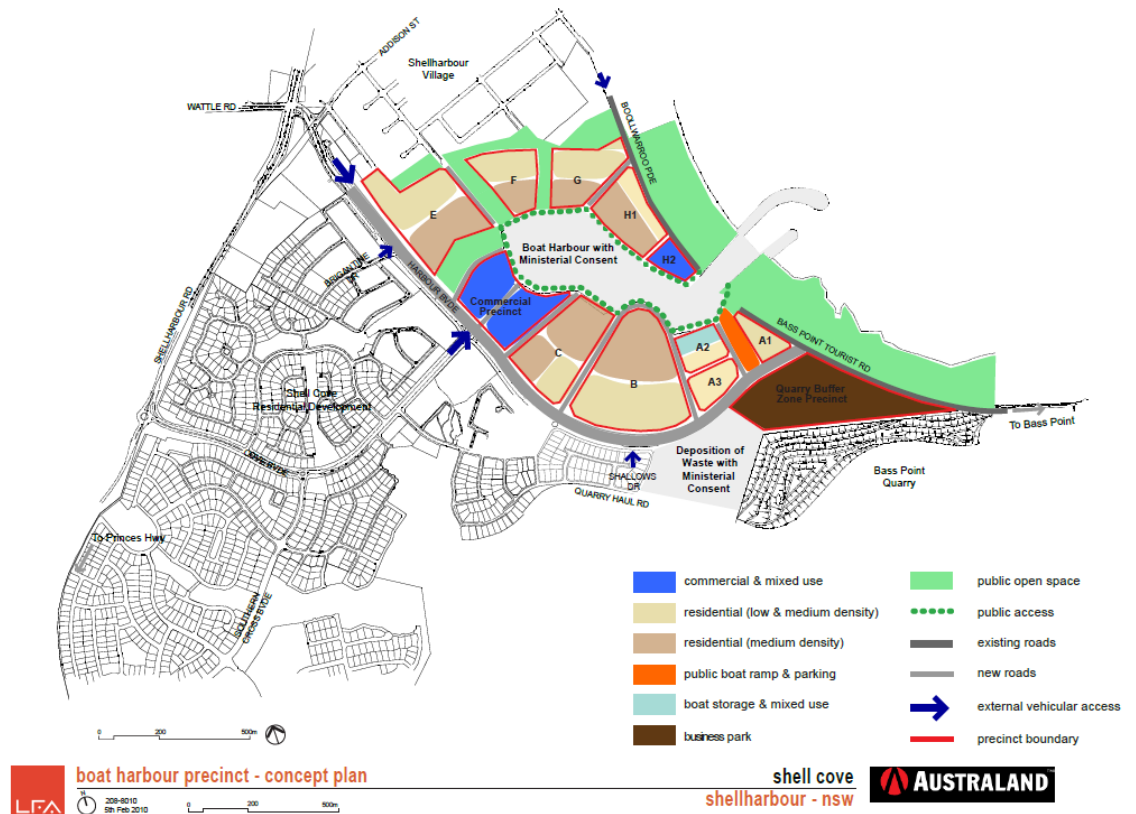


Figure 17 Boat Harbour Precinct Concept Plan

5.6.1 Concept Plan Boundary

Figure 18 illustrates the relationship of the proposal to the land to which the Concept Plan Approval applies, the SLEP 2013 Zone boundaries and the extent of Community Land (as defined under the provisions of the *Local Government Act 1993* (LG Act)).

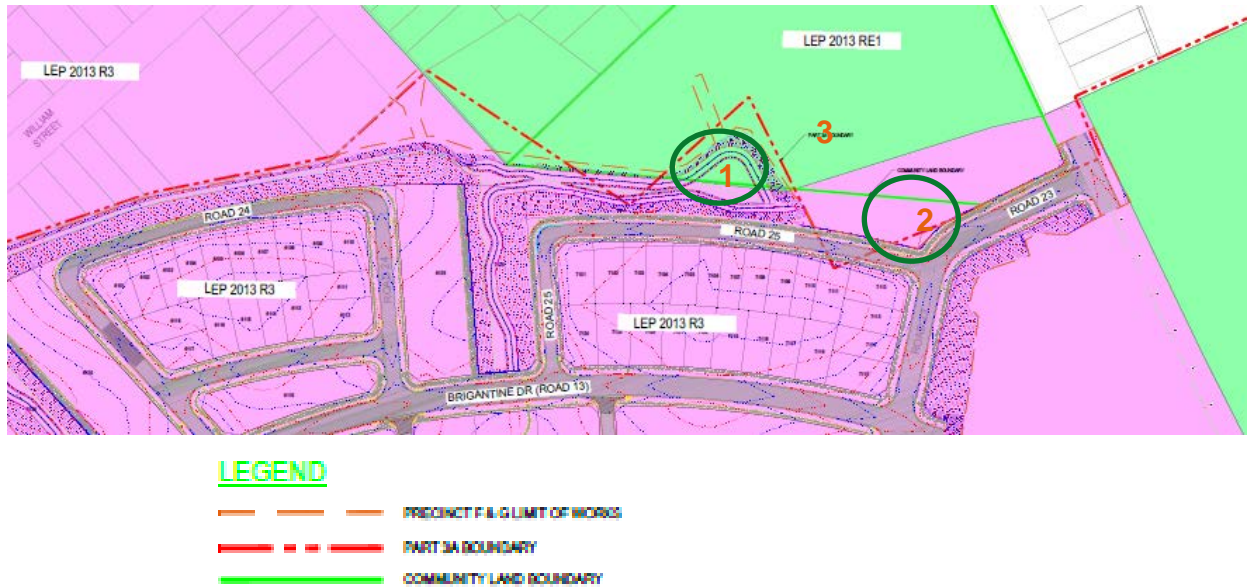


Figure 18 Relationship of proposed works to Concept Plan Approval boundary, SLEP 2013 Zone boundaries and Community Land Boundary

The northern Concept Plan boundary is irregular where it interfaces with Ron Costello and Keith Hockey Ovals. Whilst the bulk of the proposed development is within the Concept Plan Boundary, two small areas which encroach into adjoining lands, as follows:

- (i) a small section of the northern swale between the Eastern Overland Flow channel and Wetland 8 (labelled “1” on Figure 18); and
- (ii) a short section of proposed Road 25, together with a very small area in the street frontage of Proposed Lot 7111 (labelled “2” on Figure 18).

It is noted that both these areas fall within the R3 Zone under the provisions of SLEP 2013 and are in Council ownership. It is noted that both roads and flood mitigation works are permissible in the R3 Zone with consent.

It is further noted that the encroachment of the section of proposed Road 25 (which in an earlier design, terminated at the Part 3A boundary) is a direct result of Pre-Lodgement meeting on 10 July 2017. Council officers identified a preference to eliminate cul-de-sac and T-heads from the road layouts and requested a road connection to the main view corridor street (proposed Road 23) adjacent to the Keith Hockey Oval.

Community Land

The northern portion of Wetland 8 together with the Northern and Eastern Swales (area labelled “3” on Figure 18) is within the Concept Plan boundary, but encroaches on Council owned land described as Part Lot 8032 in DP 1072187 which is part of Keith Hockey Oval and is classified as Community Land by means of a resolution of Council on 20 February 1995.

Pursuant to section 35 of the LG Act Community Land is required to be used and managed in accordance with a Plan of Management. Advice from Council has been sought in this regard (copy included at Appendix P) which confirms that:

... Keith Hockey is not presently included within Council’s Community Lands Plans of Management. The land forms part of a larger landholding comprising the Shell Cove Project. At the completion of that development, the residue area comprising Keith Hockey Oval can be included as part of the Community Lands Plan of Management.

Section 44 of the LG Act provides that pending the adoption of a plan of management for community land, the nature and use of the land must not be changed.

The proposed encroachment of the northern part of Wetland 8 together with the Northern and Eastern Swales into the community land is outside the fenced area around Keith Hockey Oval will not alter the substantive nature and use of the land.

5.6.2 Land use

The proposed subdivision will facilitate the future development of a combination of low and medium density residential, interspersed with corridors of open space, consistent with the land use contemplated for Precincts F&G in the Concept Plan and PPR.

The medium density dwellings and apartments have been located primarily in the southern parts of Precincts F&G to take advantage of the high level of amenity afforded by proximity to the waterfront.

5.6.3 Landscape open space provisions

The proposed subdivision of Precincts F&G provides connectivity between existing and future residential development and a range of passive and active open spaces including the harbour edge and the beach.

Two linear corridors of open space are proposed – to the west of Precinct F (interfacing with Precinct E) and a central corridor between Precincts F&G. These areas run roughly north-south and provide view corridors and physical open space connections to the waterfront / marina precinct. It is also noted that these spaces perform a dual function, as part of the stormwater management system.

A small pocket park is also proposed in Precinct F on the northern side of Brigantine Drive.

The open space elements of the proposed subdivision provide for passive recreation and connect Precincts F&G to existing residential development and the future open space network along the harbour edge. It is noted that the proposed subdivision is consistent with the Concept Plan in terms of landscape and open space.

5.6.4 Pedestrian and bicycle network

The pedestrian movement network is linked to the pattern of open space across the Boat Harbour Precinct. Bicycle paths are located to connect into existing major networks and at the same time to take advantage of convenient open space links.

A bicycle path will run from Bass Point along the proposed Harbour Boulevard through to Shellharbour Road and also link back to South Shellharbour Beach.

The proposed route through Precincts F&G varies from that contemplated in the Concept Plan. It is proposed that the shared path will be extended south along Road 11 (in Precinct E) and then continue east along Brigantine Drive to Road 25. It then continues on the northern side of Road 25 through to Boollwarroo Parade (Figure 19).

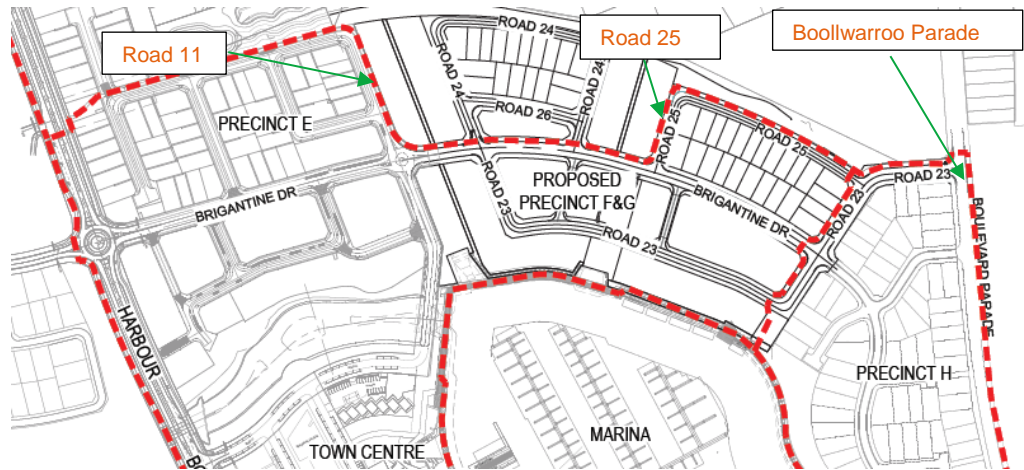


Figure 19. Proposed variation of shared pathway through Precincts F&G

The relocation of a portion of the shared path along Brigantine Drive will improve connectivity for the broader pedestrian / bicycle network for those living in medium to high density residential properties as well as providing improved connection to the future bus route along Brigantine Drive.

In addition, a shared path is proposed to connect the east-west shared path to the Harbour Promenade which will provide direct connectivity to the Shell Cove Town Centre.

The proposed shared paths have been designed in accordance with Shellharbour Local Government Area Shared Use Path Strategy 2010.

Having regard to the above, the minor variation in the route for the shared pathway from that contemplated in the Concept Plan is considered to be well-founded

5.6.5 Distribution of dwelling density

The proposed subdivision of Precincts F&G provides for a mixture of low and medium density residential development that is broadly consistent with the principles established in the Concept Plan Approval and PPR.

Predominantly low density residential (standard lots) occupy the northern parts of Precincts F&G (north of Brigantine Drive).

Superlots for medium density housing and apartments are primarily located to the south of Brigantine Drive to take advantage of the proximity to the waterfront, although two medium density superlots in Precinct F (proposed Lots 6120 and 6125) are located north of Brigantine Drive and overlook public reserves to the east and west.

5.6.6 Building heights

This proposal seeks approval for subdivision of land, no approval is sought for buildings. Future built form within Precincts F&G will be subject to detailed design in accordance with the Design Guidelines for both single dwellings and medium density / apartments (Appendix M and N) and separate development approval.

5.6.7 Indicative dwelling yields

Figure 20 illustrates the indicative dwelling numbers and floor space area for each precinct, as described in the approved Concept Plan for the Boat Harbour Precinct.

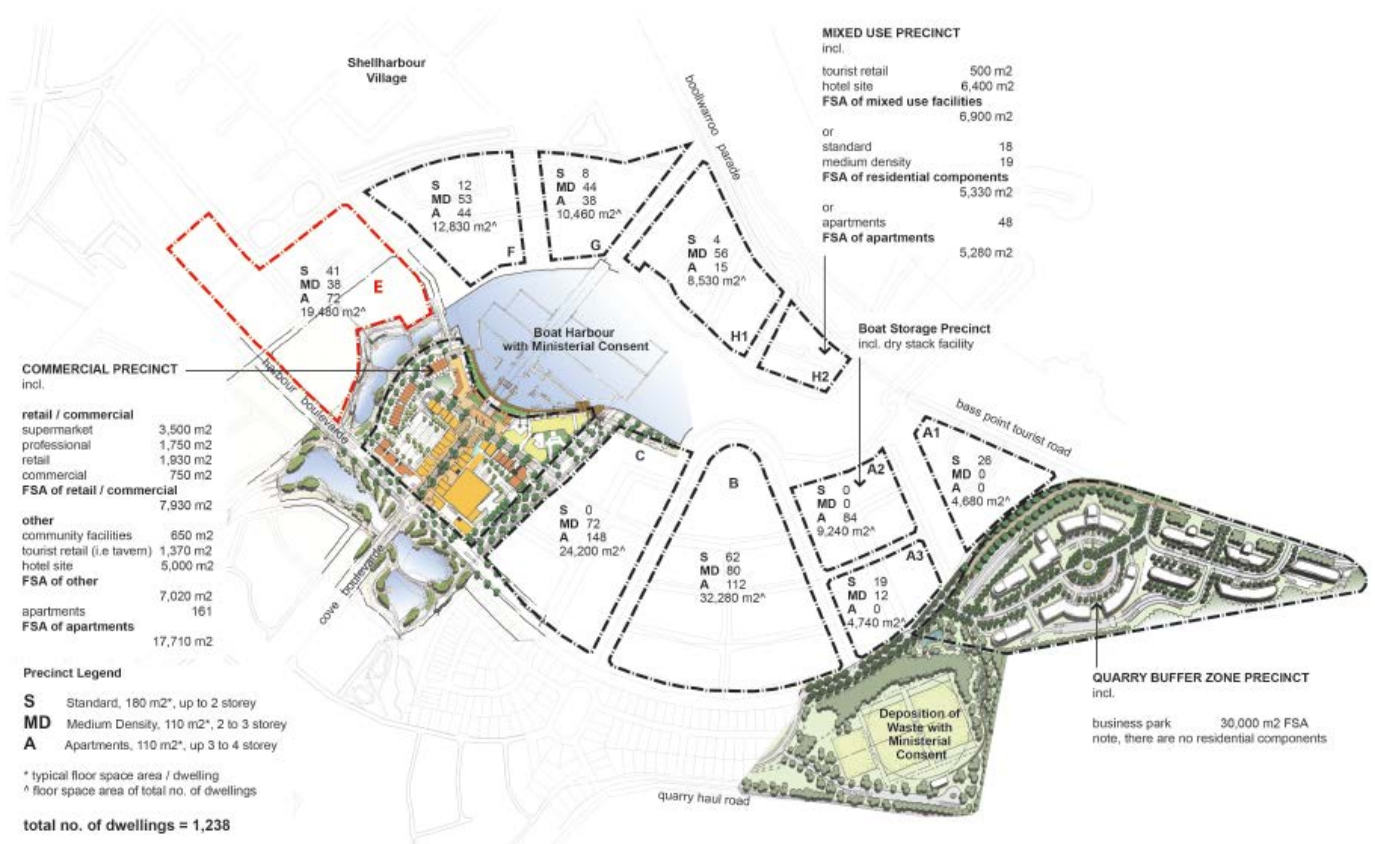


Figure 20. Indicative dwelling numbers and floor space area per precinct

A summary of the anticipated dwelling yield of the proposal together with the 'Indicative Dwelling Numbers' identified in the Concept Plan Approval is set out in table 5.1.

Table 5-1 Allowance for dwellings within Precincts F&G

Dwelling type	Precinct F		Precinct G	
	Concept Plan	Proposed	Concept Plan	Proposed
Standard	12	18	8	24
Medium density	53	47	44	31
Apartments	44	44	38	78
Indicative future total	109	109	90	133

As can be seen from the figures set out in Table 5.1 above, the proposed subdivision of Precincts F&G is expected to result in an increase in the number of dwellings in Precinct G of approximately 43).

5.7 Consistency with Concept Plan Approval (MP07_0027)

The Concept Plan Approval issued in respect of MP07_0027 under Part 3A (repealed) of the EP&A Act states:

- (c) *All future applications (under Part 3A and Part 4 of the EP&A Act) are subject to further environmental assessment requirements (as specified in Schedule 3 of this approval) in accordance with sections 75P(1)(a) and 75P(2)(c) of the EP&A Act.*

The Concept Plan Approval specifies various conditions that are required to be satisfied by future development applications within the Boat Harbour Precinct at Shell Cove. The Statement of Commitments submitted with the Concept Plan is part of that approval. The following table provides an assessment of the proposal against the Concept Plan Approval and Statement of Commitments.

The terms of the Concept Plan Approval required a number of studies to be prepared and submitted as part of the first Development Application, including:

- Coastal Hazard Study prepared by Haskoning Australia; and
- Fauna Survey for the Green and Golden Bell Frog prepared by Kevin Mills and Associates Pty Ltd.

It should be noted that these documents were included in the DA for Precincts B1 and C1, approved in November 2013 (DA 411/2013). The terms of the Concept Plan Approval and Statement of Commitments also require a range of specialist studies and urban design components to be prepared and submitted to address successive stages of the Shell Cove Boat Harbour Precinct (The Waterfront Shell Cove).

To address these requirements of the Concept Plan Approval and Statement of Commitments the following studies have been undertaken in respect of Precincts F&G:

- Coastal Hazards Report
- Precincts F&G Design Guidelines – single dwellings and medium density / apartments
- Landscape Plans
- Utilities and Services
- Earthworks Strategy
- Flood Assessment
- Stormwater and Water Cycle Management Plan
- Acid Sulfate Soils Management Plan
- Traffic Impact Assessment

The following table provides a schedule of the conditions of the Approval and Statement of Commitments and provides an assessment of the compliance of the proposed subdivision of Precincts F&G, including where relevant, a summary of relevant specialist studies.

The assessment concludes that the Consent Conditions and Statement of Commitments have been fully addressed and that the proposed subdivision is consistent with the Part 3A Consent.

The assessment concludes that the Consent Conditions and Statement of Commitments have been fully addressed and that the proposed subdivision is consistent with the Concept Plan Approval.

Shell Cove Boat Harbour Precinct Terms of Approval Schedule 2

Part A – Terms of approval	Applicability	Comments and response
<p>Approval for the Boat Harbour Precinct</p> <p><i>Except as modified by this approval, Concept Plan approval is granted only to the carrying out of development within the Concept Plan area as listed below and in more detail in Shell Cove Boat Harbour Precinct Concept Plan Application and Environmental Assessment 26 February 2010, as amended by the Preferred Project Report:</i></p> <p><i>(a) Up to 1,238 dwellings with a total gross floor area of approximately 150,000m2 comprising single dwellings, medium density and apartments;</i></p> <p><i>(b) a business park with a maximum gross floor area of 30,000m2;</i></p> <p><i>(c) retail/commercial hotel/community development with a maximum gross floor area of 22,000m2;</i></p> <p><i>(d) public open space and wetlands; and .</i></p> <p><i>(e) associated drainage, stormwater infrastructure and roads.</i></p>	<p>Applicable</p>	<p>The introduction contains a descriptions of the key elements of the approval.</p> <p>The DA for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales is consistent with the scope of development approved as part of the Concept Plan.</p>
<p>Approved Plans and Documentation</p> <p><i>The project shall be generally in accordance with the following plans and documentation:</i></p> <p><i>(a) Shell Cove Boat Harbour Precinct Concept Plan Application and Environmental Assessment, dated 26 February 2010, prepared by LFA (Pacific) Pty Ltd, Including Volumes 1 and 2 and Appendices A to P;</i></p> <p><i>(b) Shell Cove Boat Harbour Precinct Preferred Project Report, dated November 2010 prepared by LFA (Pacific) Pty Ltd, including Appendices 1 and 2; and</i></p> <p><i>(c) Statement of Commitments (Schedule 4)</i></p> <p><i>Except as otherwise provided by the terms of this approval.</i></p>	<p>Applicable</p>	<p>This schedule addresses the proposal for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales against the Terms of Approval (Schedule 2), Further Assessment Requirements (Schedule 3) and the Statement of Commitments (Schedule 4).</p> <p>Section 5.2 of this Statement provides a detailed assessment of the proposal against the Concept Plan Application, Environmental Assessment and Preferred Project Report (PPR).</p> <p>The DA for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales has been prepared in cognisance of the approved plans and documentation.</p>

Part A – Terms of approval	Applicability	Comments and response
<p>Limits on Approval</p> <p><i>This approval does not allow any components of the Concept Plan to be carried out without further approvals or consents being obtained.</i></p>	Applicable	Complies. Any consent issued in respect of this DA for the subdivision of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales will facilitate the next stage of development in the Boat Harbour Precinct.
<p>Lapsing of Approval</p> <p><i>Approval of Major Project No. 07 0027 shall lapse 5 years after the date of determination unless works the subject of any related application have been physically commenced, on or before that lapse date. The Director General may extend this lapse date if the proponent demonstrates to the satisfaction of the Director-General that the project remains current appropriate and reflective of the best use of the site at the date the approval would otherwise lapse.</i></p>	Applicable	Noted. The Concept Plan Approval issued in respect of the Shell Cove Boat Harbour Precinct is current and physical commencement has been achieved with construction commenced on Precincts B1 and C1 in October 2015.
<p>Inconsistencies</p> <p><i>In the event of any inconsistency between:</i></p> <p><i>a) the terms of this approval and the Statement of Commitments, the conditions of this approval prevail; and</i></p> <p><i>b) the terms of this approval and the documents referred to in Part A-condition 2, the conditions of this approval prevail.</i></p> <p><i>(2) If there is any Inconsistency between the terms of the approval of the concept plan and any project approval or development consent, this concept approval shall prevail to the extent of the inconsistency.</i></p>	Applicable	Noted.
Part B - Modifications to the Concept Plan	Applicability	Comments & Response
<p><i>There are no modifications required to the Concept Plan outlined in the Shell Cove Boatharbour Precincts Preferred Project Report.</i></p>	Applicable	Noted

Schedule 3 Part C – Further Environmental Assessment Requirements

The following environmental assessment requirements apply to the entire project and the requirements specified below must be submitted and approved by the relevant approval authority with the first application made under Part 3A or Part 4 of the EP&A Act.

Part C - Further Environmental Assessment Requirements	Applicability	Comments & Responses
<p>Coastal Hazards Study</p> <p><i>A detailed Coastal Hazards Study, prepared by a suitably qualified person comprising a coastal hazard risk assessment for the project taking into consideration the requirements of the Shellharbour Coastal Hazard Study (April 2010), and complying with the NSW Government's coastal risk planning benchmarks. The study must include an assessment of adequacy of height of sea wall against the predicted impacts of sea level rise, inundation and more frequent and intense storms to the year 2100; and details of dunal stabilisation works to 4.5m AHD. It must also provide details of responsibility for implementation and funding of the operational phase of the Beach Nourishment/ Rehabilitation Management Plan.</i></p>	<p>Applicable</p>	<p>A Coastal Hazards Report was undertaken by Greg Britton of Royal Haskoning DHV (RHDHV) to address Consent Condition C1. A copy of this Study was submitted to Shellharbour Council as part of the subdivision DA submitted in respect of Precincts B1 and C1 on the 4th of November 2013.</p> <p>A further study has been undertaken by Greg Britton of Royal Haskoning DHV (RHDHV) 19 April 2018 as supporting information to Precinct A.</p> <p>Coastal Hazard reports are provided in Appendix S.</p>
<p>Fauna Assessment</p> <p><i>A contemporary fauna assessment and survey for the Green and Golden Bell Frog undertaken in accordance with 'Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna - Amphibians, Department of Environment and Climate Change' (April 2009). If the assessment concludes that there will be an impact on the Green and Golden Belt Frog, appropriate mitigation measures and/or changes must be incorporated into the project as recommended by the assessment.</i></p>	<p>Applicable</p>	<p>A Green and Golden Bell Frog Habitat Survey was undertaken in 2010, together with a Fauna Survey for the Green and Golden Bell Frog (GGBF) in 2012. The surveys have been undertaken by Kevin Mills and Associates, in accordance with DECCW's 'Threatened species survey and assessment guidelines: field survey methods for fauna – Amphibians (DECCW, 2009)' for the entire Shell Cove Boat Harbour Precinct (The Waterfront Shell Cove).</p> <p>A copy of the Fauna Survey for the GGBF is included at Appendix C.</p> <p>A summary of the findings are set out below:</p> <ul style="list-style-type: none"> The Habitat Survey concluded there is no critical habitat for the GGBF in the Shell Cove Boat Harbour Precinct (The Waterfront Shell Cove) study area. The Fauna Survey of the Shell Cove Boat Harbour Precinct (The Waterfront Shell Cove) did not find any GGBF in the study area and found that frogs in general were absent or uncommon in the majority of wetlands;

Part C - Further Environmental Assessment Requirements	Applicability	Comments & Responses
		<ul style="list-style-type: none"> The surveys found that although the physical habitats appear suitable for Bell Frogs, the universal occurrence of large populations of introduced Plague Minnow (<i>Gambusia holbrooki</i>) militates against the presence of the species. <p>Having regard to the above, it is considered that the proposed subdivision of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales will have a neutral impact on the biodiversity values of species, with the potential for GGBF not likely to be impacted by the proposal.</p> <p>No specific mitigation measures are required.</p>

The following environmental assessment requirements apply, where relevant, to development of each stage/precinct of the project and must be submitted with any subsequent applications to the relevant approval authority made under Part 3A or Part 4 of the EP&A Act.

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
Urban Design		
<i>The proponent must submit detailed urban design guidelines for the project prepared by a suitably qualified architect or urban designer, for each stage. The guidelines must establish design controls which achieve the following where relevant to the particular stage:</i>	Applicable	Ethos Urban has prepared Design Guidelines for Precincts F&G, for both the single dwellings and for the medium density / apartments, copies of which are included at Appendix M and N. All applications for future built form will be required to address compliance with the controls set out in the Guidelines.
<i>Architectural diversity within all stages which complements the site's coastal context</i>	Not applicable	This application seeks approval for subdivision only and provides the framework for coastal context. Built form within Precincts F&G will be the subject of separate application(s). To guide future development, Ethos Urban has prepared Design Guidelines for Precincts F&G, a copy of which is included at Appendix M and N.
<i>A variety of detailed designs which avoid monotonous and repetition</i>	Not applicable	As above.
<i>Design of the hotel building and public square in the commercial precinct which defines street and water edges, and create visual interest</i>	Not applicable	None of these elements are located in Precincts F&G.
<i>A hotel building with tower angled to the east to maximise views to the coast the north and south and reduce impacts on the Boat Harbour and which may comprise a 3-4 storey high podium</i>	Not applicable	As above.
<i>Demonstration of a mix of dwelling types and sizes for each residential precinct, including consideration of affordable and adaptable housing</i>	Not applicable	This application seeks approval for subdivision only. The subdivision provides the framework for diversity of future housing and consideration of affordable and adaptable housing. Future residential development will be the subject of separate applications.

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
<i>Building separation, setbacks, solar access, visual and acoustic privacy, view corridors and an adequate level of environmental amenity</i>	Not applicable	As indicated above, the DA seeks approval for subdivision only. Notwithstanding, the Design Guidelines prepared for Precincts F&G, included at Appendix M and N, include provisions for future architectural character to reflect the site's coastal context, together with building setbacks, provisions for solar access, privacy and landscaping.
<i>Compliance with Crime Prevention Through Environmental Design (CPTED) principles</i>	Applicable	The draft plan of subdivision and Design Guidelines for Precincts F&G address the principles of Crime Prevention Through Environmental Design (CPTED) with the incorporation of a number of measures and provisions to enhance the security of Shell Cove. Further discussion in this regard is provided in Section 6.1.9 of this Statement.
<i>The location and distribution of public car parks</i>	Not applicable	There are no public car parks associated with the development of Precincts F&G.
<i>Where applicable, that State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development principles and the Residential Flat Design Code Guidelines can be achieved</i>	Not Applicable	The DA is for the subdivision of Precincts F& G. No built form is proposed.
<i>Appropriate density, bulk, scale, textures and colours in relation to surrounding development, topography and streetscape</i>	Applicable	The DA is for subdivision only, no built form is proposed. Notwithstanding, the Design Guidelines prepared in respect of Precincts F&G (copy included at Appendix M and N) include controls for siting, design, materials and finishes etc.
<i>Consistency with the New South Wales Coastal Policy 1997 and Coastal Design Guidelines New South Wales in terms of visual impact, bulk, scale and amenity</i>	Applicable	The Shell Cove Boat Harbour Precinct (The Waterfront Shell Cove), is located within the Coastal Zone and is consistent with the Coastal Policy and the Coastal Design Guidelines. The proposed subdivision for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales is consistent with the approved Concept Plan, the Coastal Policy and the Coastal Design Guidelines. Further discussion in this regard is provided in Section 5.2.2 of this Statement.
<i>Layout and design which satisfies the design considerations in Healthy by Design: A Planners</i>	Applicable	The Subdivision Plan and Design Guidelines for Precincts F&G incorporate a range of design considerations that can reasonably be expected to result in a positive impact on the health of the new Shell Cove community including:

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
		<i>Indicative staging plan</i>
<i>Buildings which address main avenues or boulevards and serviced by rear laneways / access ways to improve legibility and prevent gated communities</i>	Applicable	The subdivision plan includes streets and laneways to provide access to the rear of certain lots. Precincts F&G will not be a gated community.
<i>Design and layout to minimise noise impacts to sensitive residential areas near quarry boundary.</i>	Not Applicable	Precincts F&G and Wetland 8 together with the Northern and Eastern Swales are not within or near the Quarry Buffer Zone Boundary.
Landscaping		
<i>A landscape plan prepared by a suitably qualified landscape architect detailing the locations, types and treatments for landscaping and Public Domain elements with consideration of Council's requirements.</i>	Applicable	A Landscape Plan for the public domain has been prepared by Group GSA, a copy of which is included at Appendix H.
Noise Management Assessment		
<p><i>A detailed Noise Management Assessment Identifying:</i></p> <p><i>Traffic noise mitigation measures for the road design;</i></p>	Applicable	<p>An assessment of Air Quality and Noise was prepared by Wilkinson Murray Pty Ltd in 2010, as part of the Concept Plan documentation. . The report identified three key areas – traffic noise, noise associated with the future boat storage facility and quarry noise (operational and quarry haul road).</p> <p>All roads within Precincts F&G are classified as local roads and are not located within 40 metres of a collector road. As such no specific measures are required to mitigate noise associated with traffic.</p> <p>The future boat storage and maintenance facility located in Precinct A is located approximately 700m to the south east of Precincts F&G. Having regard to the physical separation, noise generated by the boat storage and maintenance facility is not expected to have any substantive noise impact on future residential development in Precincts F&G.</p> <p>Noise associated with the operation of Bass Point Quarry was predicted to meet the noise criterion at all surveyed locations within the Concept Plan area. Similarly, noise from the quarry haul road was predicted to be satisfactory at all residential lots within the Concept Plan area.</p>

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
<i>Areas which require acoustic treatments to dwelling facades to provide satisfactory Indoor noise levels; and</i>	Not applicable	This application seeks consent for subdivision only. Built form will be the subject of future applications.
<i>Appropriate mitigation measures (the use of mounds and landscape buffers, not acoustic walls) for the design and layout of stages affected by truck noise from the Quarry Haul Road, dry boat storage and marina activities.</i>	Not applicable	Precincts F&G are physically removed from the Quarry Haul Road and the future dry boat storage (approx. 700m and 800m respectively) and as such no mitigation measures are required.
Utilities		
<i>Address and document the existing capacity and requirements of the project for utilities including any necessary augmentation and staging of any infrastructure works, In consultation with relevant agencies.</i>	Applicable	<p>The Shell Cove – Precincts F&G Proposed Utility, Sewer & Water Services Strategy prepared by Arcadis (Appendix K), includes a review of existing service capacity, identification of necessary augmentation and new works to service the proposed subdivision of Precincts F&G and addresses indicative staging of the infrastructure works.</p> <p>The report indicates that there are no utilities within Precincts F&G that will require diversion prior to the commencement of construction works and that sewer, potable water, electability, gas and telecommunication services can be readily provided to accommodate the development.</p> <p>Further discussion in this regard is included at Section 4.8 of this Statement.</p>
Earthworks Strategy		
<i>Provide a detailed Earthworks Strategy, prepared by a suitably qualified person which addresses erosion and sedimentation controls and includes measures to manage acid sulfate soils and stockpiling.</i>	Applicable	Arcadis has prepared an Earthworks Strategy in respect of Precincts F&G (Appendix J) which addresses erosion and sediment controls and Acid Sulfate Soils.
Remedial Action Plan		

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
<p><i>A Remedial Action Plan is to be prepared for the former golf course area and the south-eastern area of the site at the location of the former farm structure by a suitably qualified person in accordance with Managing Land Contamination: Planning Guidelines SEPP 55 - Remediation of Land (DUAP/EPA, 1998), based on the recommendations and conclusions of the Phase 2 Contamination Assessment prepared by Douglas Partners dated October 2010 (Appendix 2D of the Preferred Project Report).</i></p>	<p>Not applicable</p>	<p>The former golf course does not extend into Precincts F&G or Wetland 8 together with the Northern and Eastern Swales.</p>
<p>Flood Assessment</p>		
<p><i>A detailed Flood Assessment prepared by a suitably qualified person identifying flood affected parts of the land and showing how the proposed project at each stage will comply with Shellharbour City Council Floodplain Risk Management Development Control Plan (April 2006), (except where it is inconsistent with NSW State Government policy and guidelines), and comply with and the government's sea level rise and climate change benchmarks, current at the time of preparation of the Flood Assessment. The findings of the Flood Assessment must inform the ultimate layout and design of each stage of the project.</i></p>	<p>Applicable</p>	<p>Advisian has prepared a detailed Flood Assessment for Precincts F&G (Appendix O) which addresses the provisions of Council's Floodplain Risk Management DCP and the NSW Coastal Planning Guideline: Adapting to Sea Level Rise.</p> <p>The proposed development is consistent with the Concept Plan Approval. The Assessment demonstrates that the proposed development of Precincts F&G will not cause any additional existing properties to become affected by the Flood Planning Area.</p> <p>The development is not expected to adversely affect flooding at any existing properties during the 5 year and 100 year ARI storms or the PMF.</p> <p>A sensitivity test which assessed 100 year ARI flood behaviour in the event of culvert and bridge blockage showed that floodwaters would primarily be contained within the existing/proposed watercourses and channels. An exception applies to the Northern Swale, where existing Shellharbour Village properties are affected by flooding in both the pre-development and post-development scenarios. However, the modelling results have determined that the post-development peak flood levels are reduced when compared to pre-development modelling results, even in the culvert blockage scenario.</p> <p>It has also been shown that the proposed development of Precincts F and G will not cause any additional properties to be affected by the Flood Planning Area.</p> <p>A sensitivity test which assessed the effects of sea level rise by Year 2100 was completed using the TUFLOW model for the 100 year ARI event. It showed that</p>

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
		<p>despite flood levels increases between 100 and 300 mm along the Northern Swale and Overland Flow Channels, the post-development flood levels at the southern edge of Shellharbour Village will still be lower than in the predevelopment case. It is also expected that sea level rise in the 5 year ARI event and PMF will not result in any additional impacts on the proposed lots.</p> <p>The flood mapping included in the above report has demonstrated that the post-development flood hazard is consistent with a flood emergency response strategy consisting of evacuation during events up to the 100 year ARI storm, with shelter-in-place being an option during more extreme events if the floodwater in streets becomes unpassable.</p>
<p><i>The assessment must include a flood planning levels map, details of flood planning levels adjacent to the boat harbour and for the major overland flow paths; and- mitigation measures to reduce Impacts on flood levels in vicinity of Ron Costello Oval.</i></p>	<p>Applicable</p>	<p>Flood level maps are provided as part of the Advisian Shell Cove Boat Harbour Precincts F&G Flood assessment report (Appendix O).</p>
<p>Stormwater and Water Cycle Management Plan</p>		
<p><i>Identify drainage, stormwater and groundwater management issues, on-site stormwater detention (if required), and drainage infrastructure to ensure achievement of the water quality targets identified In the Boat Harbour Development Consent 95/133 for each stage of the project consistent with Council's requirements.</i></p>	<p>Applicable</p>	<p>The 20 year ARI flow will be conveyed within the piped drainage network and all flows during the 100 year ARI event will be conveyed within road reserves or designated reserve lots. This has been developed in accordance with the requirements of the Shellharbour DCP 2013 and the Development Design Specification (Shellharbour City Council, 2004).</p> <p>A stormwater treatment strategy has been developed for Precincts F&G and adjacent catchments which will involve the use of GPTs, and JellyFish systems. These systems will assist in achieving the stormwater quality targets of the overall Shell Cove development, which include ensuring post-development pollutant loads do not exceed pre-development loads and pollutant reduction targets are met. The strategy includes various WSUD elements, which meets the relevant Concept Plan Approval requirements for Ecologically Sustainable Development and Infrastructure.</p> <p>No on-site detention systems are required for Precincts F&G.</p> <p>The existing groundwater conditions are not expected to be significantly impacted as a result of the development in Precincts F&G. The concentration</p>

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
		<p>of pollutants in the post-development runoff is expected to be higher than that in the pre-development scenario. However, given the significant reduction in expected infiltration across areas most likely to contribute to any increased pollutants, the existing groundwater is unlikely to be impacted significantly.</p> <p>A copy of the Stormwater and Water Cycle Management Plan is included at Appendix I.</p>
Environmental Management Plan		
<p><i>An Environmental Management Plan (EMP), prepared by a suitably qualified person demonstrating measures to mitigate potential impacts on aquatic habitats and aquatic species during the construction and operation periods. The EMP must be prepared in consultation with the Department of Environment Climate Change and Water.</i></p>	<p>Not Applicable</p>	<p>The development consent for the harbour works, granted on 26 November 1996, identified the requirement for Environmental Management Plans (EMP's) to be prepared for each of the aspects of the harbour works and required the construction of a new integrated wetland to compensate the removal of the Shellharbour Swamp wetland. This has been achieved by the completion of the Myimbarr Wetland complex.</p> <p>Under the terms of the Development consent for the harbour works the remaining aquatic habitats within the Boat Harbour Precinct area, west of Boollwaroo Parade, including the Shellharbour lagoon are to be excised under existing construction approvals.</p>
Construction Management Plan		
<p><i>A comprehensive Construction Management Plan, Including a Traffic Management Plan Identifying truck routes, vehicular frequency, hours of operation, use of equipment and measures to minimise dust, noise and vibration Impacts on surrounding areas, and ensure vehicular and pedestrian safety.</i></p>	<p>Applicable</p>	<p>A number of construction impacts have been reviewed and mitigation strategies established including the following reports:</p> <ul style="list-style-type: none"> • Erosion and Sedimentation Control Plan • Acid Sulfate Soil Management Plan (ASSMP) • Traffic Management Plan <p>The CMP will include a review of water quality impacts and develop strategies to address water quality issues during construction where appropriate.</p>
Ecologically Sustainable Development		
<p><i>Demonstrate that any future development will incorporate ESD principles in its design, construction and ongoing operation phases, including water</i></p>	<p>Applicable</p>	<p>A stormwater treatment strategy has been developed for Precincts F&G and adjacent catchments which will involve the use of GPTs, and JellyFish systems. These systems will assist in achieving the stormwater quality targets</p>

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
<p><i>sensitive urban design measures, water re-use/recycling, energy efficiency, recycling and waste disposal.</i></p>		<p>of the overall Shell Cove development, which include ensuring post-development pollutant loads do not exceed pre-development loads and pollutant reduction targets are met. The strategy includes various WSUD elements, which meets the relevant Concept Approval requirements for Ecologically Sustainable Development and Infrastructure.</p>
<p>Acid Sulfate Soils</p>		
<p><i>An Acid Sulfate Soil Management Plan (ASSMP) for each stage of the project for actual and potential acid sulphate soils prepared by a suitably qualified person in accordance with the NSW Acid Sulfate Soil Manual (NSW Acid Sulfate Soil Management Advisory Committee, August 1998). The ASSMP must examine how the pre-loading process and treatment of ASS will be staged and managed throughout the life of each stage especially regarding the Impacts of trenches (for service and drainage) on groundwater and acid leachate.</i></p>	<p>Applicable</p>	<p>Coffey Geotechnics Pty Ltd has prepared an ASS Management Plan for the Precincts F&G subdivision (Appendix I). The Plan examines how the pre-loading process and treatment of ASS will be staged and managed especially regarding the impacts of trenches (for service and drainage) on groundwater and acid leachate.</p> <p>The objective of the Plan is to reduce the potential environmental impacts associated with the disturbance of ASS within the area of the proposed works. It presents a framework for the approach and methodology of ASS management at the site to be followed by the contractor and its subcontractors.</p>
<p>Social Infrastructure</p>		
<p><i>Social infrastructure shall be provided in accordance with Council's Section 94 Contributions Plan. The details of any playground, local library and multi-purpose community centre shall be provided with each stage of the project.</i></p>	<p>Not applicable</p>	<p>The subdivision of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales does not include any social infrastructure.</p>
<p>Local Infrastructure Contributions</p>		

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
<i>Contributions towards local infrastructure in accordance with the EP&A Act 1979 must be provided.</i>	Applicable	Contributions are to be in accordance with Shellharbour Council's Section 94 Plan.
Erosion and Sedimentation Control		
<i>A detailed Erosion and Sedimentation Control Plan prepared in accordance with Managing Urban Stormwater: Soils and Construction, Landcom (March 2004) ('the Blue Book') detailing the design, construction and implementation of measures to manage stormwater, and erosion and sediment' control during the construction phases of each stage of the project.</i>	Applicable	<p>A concept for erosion and sediment control measures is included in the Earthworks Strategy report prepared by Arcadis (Appendix J) in accordance with <i>Managing Urban Stormwater Soils and Construction' (Landcom, 2014)</i>. These measures will mitigate the impacts of land disturbance on soils, landforms and receiving waters during construction.</p> <p>A preliminary Erosion and Sediment Control Plan is also included in the drawings prepared by Arcadis (Drawing No. C-FG-101 and C-FG-102 at Appendix E).</p> <p>The proposed control measures include dirty water diversions, sediment fences and sediment basins. It is expected that this plan will be updated during detailed design, prior to the commencement of the construction works to consider construction staging more closely.</p>
Traffic Assessment		
<i>An updated traffic impact assessment prepared by a suitably qualified person for each stage/precinct of the project which includes a cumulative impact assessment having regard to the status of the future construction of the intersection of Harbour Boulevard and Shellharbour Road.</i>	Applicable	<p>Arcadis has prepared a Traffic Impact Assessment for Precincts F&G (Appendix G) which considers the cumulative development scenario which is the operation of all existing and future precincts.</p> <p>Based on the revised traffic volumes the report confirms that all key intersections would operate satisfactorily with the exception of the Shellharbour Road / Harbour Boulevard / Wattle Road intersection. A proposed mitigation measure for this intersection is proposed.</p> <p>Further discussion in this regard is included in Section 5.6.7 of this Statement.</p>
Public Access <i>The detailed design and layout of the project must adopt the following principles:</i>		

Part D - Further Environmental Assessment Requirements	Applicability	Comments and Responses
<i>(a) direct, legible and inviting public pedestrian access from adjoining residential development and pedestrian connections which follow existing and proposed well-connected streets;</i>	Applicable	The subdivision plan provides for direct pedestrian and cycle networks between main roads, local roads and the harbour.
<i>(b) clear and direct access from the public walkway around the harbour to streets that meet the harbour edge;</i>	Applicable	The subdivision plan provides for connection to the future proposed public walkway around the harbour by an open pedestrian network.
<i>(c) clear, through site pedestrian links with active street frontages, direct and legible access to key points of interest, including Shell Harbour village, which are publicly accessible at all times; and</i>	Applicable	The subdivision plan provides for a pedestrian network to all future developments including the Shellharbour Village and the beach.
<i>(d) consistency with the Shellharbour Shared Use path Strategy (Shellharbour City Council, 10 August 2010) unless otherwise justified.</i>	Applicable	<p>The shared pathway plan (refer Traffic Impact Assessment at Appendix G) proposes that the shared path will be provided along the edge of Shell Cove Harbour and will extend to Bass Point Tourist Road in the east. It then proceeds south along the eastern side of Bass Point Tourist Road and then continues to the west along the southern side of Harbour Boulevard.</p> <p>The proposed shared paths have been designed in accordance with Shellharbour Local Government Area Shared Use Path Strategy 2010.</p>

Shell Cove Boat Harbour Precinct Statement of Commitments Schedule

Commitment	Comment Additional Information / Response
General commitment	
<p><i>“The Proponent undertakes to pursue the development in accordance with the Concept Plan and Preferred Project Report, which reflects the Shell Cove Masterplan, the Illawarra Regional Strategy, the Illawarra Regional Environmental Plan, the Shellharbour Local Environmental Plan, the Environment Protection and Biodiversity Conservation Act and the appropriate State Environmental Planning Policies”.</i></p> <p><i>“The Proponent undertakes to obtain all necessary approvals required by State and Commonwealth legislation prior to undertaking subsequent stages of the development</i></p>	<p>The subdivision DAs for Precincts F& G and Wetland 8 together with the Northern and Eastern Swales are in accordance with the Part 3A Concept Plan and Preferred Project Report. They reflect relevant planning controls and policies.</p> <p>As required under the Part 3A Consent the following environmental assessments were required to be undertaken as part of the part of the first application made for the development of the Shell Cove Boat Harbour Precinct:</p> <ul style="list-style-type: none"> • Coastal Hazards Report; and • Fauna Assessment <p>Both these studies have been completed and were submitted to Council on the 4November 2013 as part of the DA for subdivision of Precincts B1 and C1.</p>
Strategic Planning	
<p><i>The Proponent undertakes to respond to relevant local, regional and State planning strategies.</i></p> <p><i>The Proponent undertakes to consider the recommendations of the Shellharbour Local Government Area Retail/ Commercial Study and Employment Study, which includes:</i></p> <p><i>Enhancing public domains in support of Shell Cove as a creative and cultural hub.</i></p> <p><i>Establishing a retail centre and operating a supermarket.</i></p> <p><i>Establishing a Business Park</i></p>	<p>The Subdivision DA is consistent with the Concept Plan Approval, which responds to relevant local, regional and state planning strategies.</p> <p>Not applicable – the retail precinct and business park are located outside the boundaries of Precincts F&G.</p>

Commitment	Comment Additional Information / Response
<p><i>The Proponent undertakes to demonstrate consistency with the Sustainability Criteria set out in Appendix 1 of the Illawarra Regional Strategy, which includes:</i></p> <p><i>Providing infrastructure.</i></p> <p><i>Enhancing access to and within the Boat Harbour Precinct.</i></p> <p><i>Providing employment opportunities.</i></p> <p><i>Encouraging both conservation and enjoyment of the natural resources and coastal environment of Shell Cove.</i></p>	<p>The subdivision of Precincts F&G is consistent with the Concept Plan Approval for the Boat Harbour Precinct that demonstrates consistency with the Sustainability Criteria set out in Appendix 1 of the Illawarra Regional Strategy including:</p> <ul style="list-style-type: none"> • Provision of infrastructure to support the future residential development; • Providing physical access to and within the Boat Harbour Precinct through the construction of a new road network; • Creation of employment opportunities throughout the construction phase of the project; and <p>Inclusion of environmental safeguards (WSUD, landscape treatment and other embellishment works) which will contribute to the conservation and enjoyment of the coastal environment in this locality.</p>
<p>Urban Design, Visual Impact and Sustainability</p>	
<p><i>The Proponent undertakes to respond to the surrounding area by addressing bulk, scale, amenity (including noise) and visual amenity, with regards to the NSW Coastal Policy (1997), which includes:</i></p> <p><i>Implementing maximum building heights of 4 storeys (excluding the landmark hotel which is proposed to have a maximum height of 8 to 9 storeys).</i></p> <p><i>Adopting a contemporary coastal village materials palette.</i></p> <p><i>Providing parks and boardwalks which establish public access to the harbour perimeter</i></p> <p><i>Establishing visual connections between streets and open spaces and the harbour.</i></p> <p><i>The Proponent undertakes to respond to the surrounding area by addressing bulk, scale, amenity (including noise) and visual amenity, with regards to the Coastal Design Guidelines of NSW (2003), which includes:</i></p> <ul style="list-style-type: none"> • <i>Incorporating visual and physical links to the natural environment, such as integrating wetlands.</i> • <i>Providing an open space network.</i> 	<p>This application does not seek approval for built form.</p> <p>Notwithstanding, Ethos Urban has prepared Design Guidelines for single dwellings in Precinct F&G (Appendix M and N) which detail the materials palette, setbacks and other relevant development controls consistent with previously approved Precincts at Shell Cove.</p> <p>Site specific design guidelines for the integrated medium density housing on the superlots will be prepared and submitted as part of future DAs.</p> <p>Urban Design Guidelines have also been prepared by Ethos Urban for medium density / apartment lots (also included at Appendix M and N), which will accompany future DAs for built form on the superlots.</p>

Commitment	Comment Additional Information / Response
<ul style="list-style-type: none"> • <i>Maintaining the Shell Cove Town Centre as a visual landmark.</i> • <i>Managing increased local population and visitor access to the foreshore</i> <p><i>The Proponent undertakes to ensure that the relevant residential components of the development demonstrate compliance with SEPP 65 - Design Quality of Residential Flat Development, which includes providing:</i></p> <ul style="list-style-type: none"> • <i>Private open spaces.</i> • <i>Courtyards.</i> • <i>Useable balconies.</i> • <i>Decks.</i> 	
<p>Landscape</p>	
<p><i>The Proponent undertakes to implement street tree planting in accordance with a landscape plan to be submitted as part of each Project Application</i></p> <p><i>The Proponent undertakes to implement planting and other works in areas of public open space as designated in the landscape plan to be submitted as part of each Project Application.</i></p>	<p>Concept Landscape Plans have been prepared by Group GSA (Appendix H), which illustrate public domain works in Precincts F&G and Wetland 8 together with the Northern and Eastern Swales including indicative street planting to be undertaken by the proponent.</p>
<p>Infrastructure Provision</p>	
<p><i>The Proponent undertakes to assess existing capacity and provide infrastructure requirements for sewerage, water, electricity, telecommunications and gas.</i></p> <p><i>The Proponent undertakes to adopt Water Sensitive Urban Design principles in the provision of infrastructure requirements.</i></p> <p><i>The Proponent undertakes to obtain and maintain all necessary licences, permits and approvals for the development prior to and during construction.</i></p>	<p>Arcadis has prepared a Utilities, Sewer and Water Strategy (Appendix K).</p> <p>The proposed development adopts a water sensitive design by following Ecologically Sustainable Development principles in the design of Wetland 8 together with the Northern and Eastern Swales.</p> <p>The DA seeks consent for land subdivision and associated infrastructure and civil works.</p> <p>Sewer, potable water, electricity, gas and telecommunications utilities can be provided as part of the construction of Precincts F&G, and can be connected to the existing network.</p> <p>Further discussion in relation to utility services connections is included at Section 4.8 of this Statement.</p>

Commitment	Comment Additional Information / Response
Traffic and Access	
<p><i>The Proponent undertakes to implement a traffic management strategy- in relation to the capacity of the road network to cater for additional traffic generation including service vehicles, access to and within the site, and connectivity to existing developments –with particular emphasis on the following key intersections:</i></p> <ul style="list-style-type: none"> • <i>Shellharbour Road/Harbour Boulevard/Wattle Road - revised layout.</i> • <i>Addison Street/Harbour Boulevard- new traffic signals.</i> • <i>Brigantine Drive/Harbour Boulevard- single lane roundabout.</i> • <i>Cove Boulevard/Harbour Boulevard - single lane roundabout.</i> • <i>Road A/Harbour Boulevard - single lane roundabout</i> <p><i>The Proponent undertakes to consider the impact of the development on existing public transport provision, identify pedestrian movements and implement appropriate provisions for shared path/cycleway/public transport routes to the existing and proposed road network, including a Pedestrian Shared Zone in the Town Centre</i></p> <p><i>The Proponent undertakes to incorporate parking in accordance with the requirements as part of subsequent Project Applications</i></p> <p><i>The Proponent undertakes to protect existing public access to and along the beach and coastal foreshore and provide new opportunities for controlled public access including providing continuous public access to the perimeter of the harbour.</i></p> <p><i>The Proponent undertakes to maintain good access to the Bass Point Reserve.</i></p>	<p>Arcadis has prepared a Traffic Impact Assessment in support of the DA for Precincts F&G (Appendix G).</p> <p>A review of previous traffic generation and SIDRA modelling determined that the revised yield for the Shell Cove Boat Harbour Precinct would be 36% higher than the previously adopted traffic volumes. Based on the revised traffic volumes it was determined that all intersections would operate satisfactorily with the exception of the Shellharbour Road / Harbour Boulevard / Wattle Road intersection.</p> <p>Based on the findings of the TIA, it is considered that Consent Conditions Schedule 4 – Statement of Commitment 4.6 Point 1 has been generally satisfied.</p>
Hazard Management and Mitigation Coastal Processes	
<p><i>Under the separate Boat Harbour approval the Proponent undertook to implement a Beach Nourishment/ Rehabilitation Management Plan which</i></p>	<p>Details of coastal processes are set out in Consent Conditions Schedule - Schedule 3 - Part 1 Coastal Hazards Study.</p>

Commitment	Comment Additional Information / Response
<p><i>identifies measures to protect and rehabilitate the Shellharbour South Beach dunal system.</i></p> <p><i>The Proponent undertakes to ensure that beach behaviour is monitored to provide information which will facilitate effective management of natural coastal processes.</i></p> <p><i>The Proponent undertakes to respond to potential sea level rise as a result of climate change by ensuring that all habitable buildings within the Boat Harbour Precinct adopt a freeboard of 0.5m and providing a sea wall with a height of 2.00m AHD.</i></p>	<p>The Coastal Hazard Report prepared by Royal Haskoning DHV (Appendix S) identifies the impacts of sea level rise.</p> <p>A Flood Assessment and Stormwater Management Report for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales has been prepared by Advisian (Appendix L and N).</p>
Contamination	
<p><i>The Proponent undertakes to identify any contamination on site and apply appropriate mitigation measures in accordance with the provisions of SEPP 55 - Remediation of Land</i></p> <p><i>The Proponent undertakes to remove any residual landfill within the site associated with the Shellharbour Swamp.</i></p> <p><i>The Proponent undertakes to ensure that further investigations of the former golf course area and the south-eastern area of the site at the location of the former farm structures will be carried out based on the recommendations and conclusions of the Phase 2 Contamination Assessment prepared by Douglas Partners dated October 2010 (Appendix 2D of the Preferred Project Report), as part of the relevant Project Application investigations.</i></p>	<p>A detailed contamination assessment of the Shell Cove Boat Harbour Precinct was prepared by Douglas Partners in 2010.</p> <p>A Targeted Site Investigation (TSI) was undertaken for the lands associated with the former golf course in Precinct E and Wetland 6. Based on the analytical results the TSI found that the area associated with the former golf course is compatible with the proposed residential use, that no further assessment of the site is required from a contaminated land perspective and that the preparation of a Remediation Action plan (RAP) is not required.</p> <p>Precincts F&G and Wetland 8 together with the Northern and Eastern Swales are located outside the TSI area and therefore have been assessed to have no contamination.</p> <p>The landfill associated with the Shellharbour Swamp (the former Council refuse / tip site) is not located with the extent of Precincts F&G or Wetland 8 together with the Northern and Eastern Swales.</p>
Acid Sulfate Soils	
<p><i>The Proponent undertakes to treat any disturbed ASS material in accordance with the ASS Management Advisory Committee Guidelines</i></p>	<p>An Acid Sulfate Soil Management Plan (ASSMP) has been prepared by Coffey Geotechnics Pty Ltd in respect of the Precincts F&G subdivision and Wetland 8 together with the Northern and Eastern Swales.</p> <p>The ASSMP has been prepared in general accordance with the Acid Sulfate Soils Assessment Guidelines (Ahern et al, 1998a) and the Acid Sulfate Soils Management Guidelines (Ahern et al, 1998b) in the Acid</p>

Commitment	Comment Additional Information / Response
	Sulfate Soil Manual, published by the Acid Sulfate Soils Management Advisory Committee (ASSMAC).
Bushfire	
<p><i>The Proponent undertakes to implement an Asset Protection Zone from the revegetated dunal zone located to the east of the study area to any residential, commercial or retail buildings within the Boat Harbour Precinct in accordance with the Planning for Bushfire Prevention guidelines.</i></p>	<p>N/A</p> <p>Precincts F&G and Wetland 8 together with the Northern and Eastern Swales are not located on bushfire prone land or located in the vicinity of the revegetated dunal zone along the coastline.</p>
Geotechnical	
<p><i>The Proponent undertakes to preload areas of soft soil prior to construction in accordance with the separate Boat Harbour approval.</i></p> <p><i>The Proponent undertakes to ensure that following satisfactory preloading, the compacted preload is removed and extra compacted fill is placed, as required, to match the final design level.</i></p>	<p>N/A</p> <p>The Proponent has obtained approvals for implementing pre-loading of soft soil in the Boat Harbour Precinct under the framework of the Ministerial approval for the Boat Harbour (DA 95/133).</p>
Flooding	
<p><i>The Proponent undertakes to provide waterway corridors to be used as floodways - using Water Sensitive Urban Design principles and incorporating wetlands, natural creeklines and open space areas - to manage and contain flood hazards.</i></p> <p><i>The Proponent undertakes to implement a Flood Emergency Response which includes remaining on site during PMF events and maintaining safe pedestrian and vehicular access routes out of the Boat Harbour Precinct for events up to the 100yr ARI flood.</i></p> <p><i>The Proponent undertakes to respond to sea level rise by adopting Flood Planning Levels based upon the 100 year ARI flood level plus 0.90 m sea level rise (for the year 2100) plus 0.50 m (to comply with Council's freeboard requirement).</i></p> <p><i>The Proponent undertakes to prepare a FPL map in accordance with Figure 5 of the NSW Coastal Planning Guideline Adapting to Sea Level Rise for each Project Application when more detailed definition of final design levels</i></p>	<p>Advisian has prepared a detailed Flood Assessment for Precincts F&G (Appendix O) which addresses the provisions of Council's Floodplain Risk Management DCP and the NSW Coastal Planning Guideline: Adapting to Sea Level Rise.</p> <p>The proposed development is consistent with the Concept Plan Approval. The Assessment demonstrates that the proposed development of Precincts F&G will not cause any additional existing properties to become affected by the Flood Planning Area.</p> <p>The development is not expected to adversely affect flooding at any existing properties during the 5 year and 100 year ARI storms or the PMF.</p> <p>A sensitivity test which assessed 100 year ARI flood behaviour in the event of culvert and bridge blockage showed that floodwaters would primarily be contained within the existing/proposed watercourses and channels. An exception applies to the Northern Swale, where existing Shellharbour Village properties are affected by flooding in both the pre-development and post-</p>

Commitment	Comment Additional Information / Response
<p><i>is available. This will include localised flood modelling for each stage of the Boat Harbour Precinct to demonstrate compliance with the NSW Coastal Planning Guideline Adapting to Sea Level Rise.</i></p> <p><i>The Proponent undertakes to prepare an assessment of the impact of 0.9m sea level rise on the 5 year and 100 year ARI and PMF storm events during detailed design phases of the Boat Harbour Precinct associated with each Project Application.</i></p> <p><i>The Proponent undertakes to ensure that the development does not result in any significant increase in flood levels on adjacent properties. Flood impacts will not exceed those identified in Appendix F of the EA.</i></p> <p><i>The Proponent undertakes to ensure that flood risk will be assessed in each Project Application for consistency and compliance with the Concept Plan and compliance with the NSW Flood Plain Development Manual 2005 and Council's Flood Plain Risk Management DCP (except where inconsistent with NSW State Government Policies and Guidelines).</i></p>	<p>development scenarios. However, the modelling results have determined that the post-development peak flood levels are reduced when compared to pre-development modelling results, even in the culvert blockage scenario.</p> <p>It has also been shown that the proposed development of Precinct F&G will not cause any additional properties to be affected by the Flood Planning Area.</p> <p>A sensitivity test which assessed the effects of sea level rise by Year 2100 was completed using the TUFLOW model for the 100 year ARI event. It showed that despite flood levels increases between 100 and 300 mm along the Northern Swale and Overland Flow Channels, the post-development flood levels at the southern edge of Shellharbour Village will still be lower than in the predevelopment case. It is also expected that sea level rise in the 5 year ARI event and PMF will not result in any additional impacts on the proposed lots.</p> <p>The flood mapping included in the above report has demonstrated that the post-development flood hazard is consistent with a flood emergency response strategy consisting of evacuation during events up to the 100 year ARI storm, with shelter-in-place being an option during more extreme events if the floodwater in streets becomes unpassable.</p>
Water Cycle Management	
<p><i>The Proponent undertakes to mitigate the potential impact of the development on the environment through a Water Cycle Management Strategy which includes:</i></p> <p><i>Rainwater tanks.</i> <i>Grass swales.</i> <i>Vegetated drainage corridors.</i> <i>Bio-retention swales and basins.</i> <i>Gross pollutant traps.</i> <i>Wetlands.</i></p> <p><i>The Proponent undertakes to implement a Water Cycle Management Strategy which adopts Water Sensitive Urban Design principles and identifies measures to ensure protection of water quality within the sensitive near-shore coastal environment.</i></p>	<p>The stormwater drainage system for Precinct F and G has been developed by Arcadis. Within the subdivision the 5 year ARI flow will be conveyed within the piped drainage network, and the 20 year ARI flow will be conveyed within the trunk drainage network. All excess flows during the 100 year ARI event will be conveyed within road reserves or designated reserve lots directly to the harbour or via the Western or Eastern Overland Flow Channels. This system has been developed in accordance with the requirements of the <i>Shellharbour DCP 2016</i> and the <i>Development Design Specification (Shellharbour City Council, 2004)</i>.</p> <p>A stormwater treatment strategy has been developed for Precincts F and G and adjacent catchments which will involve the use of GPTs, rainwater tanks, JellyFish treatment systems, HydroCon porous concrete pipes and sand filters. These measures will assist in achieving the stormwater quality targets of the overall Shell Cove development, which limit post-development pollutant loads to predevelopment loads and also meet the pollutant reduction targets. The strategy includes various WSUD elements, which meets the relevant Concept</p>

Commitment	Comment Additional Information / Response
<p><i>The Proponent undertakes to provide multiple, connected freshwater wetlands to the north and west of the Town Centre in accordance with the Stormwater Quality Management Strategy.</i></p>	<p>Approval requirements for Ecologically Sustainable Development and Infrastructure.</p> <p>No on-site detention systems are required for Precincts F and G.</p>
<p>Heritage and Archaeology</p>	
<p><i>The Proponent undertakes to progress works in accordance with the approved Archaeological and Heritage Protection Plans and the ss87/90 consent and permit (No 2534) of the NP&W Act.</i></p> <p><i>The Proponent undertakes to protect the Shellharbour Aboriginal Objects (Sites) identified as being of relatively high archaeological value in accordance with the Archaeological and Heritage Protection Plan and the consent and permit granted by the Department of Environment and Climate Change.</i></p> <p><i>The Proponent undertakes to notify the National Parks and Wildlife Service immediately in the event that any previously unidentified Aboriginal relics (including human skeletal material) are discovered on the site.</i></p>	<p>The NP&W Act ss 87/90 consent and permit no. 2534 were granted by the NSW Department of Environment and Climate Change (DECC) for the Shell Cove Project Area.</p> <p>The consent was to carry out destruction of an aboriginal object / place in the following locations:</p> <ul style="list-style-type: none"> • Stone artefact scatter; (52-5-0436); • Stone artefact scatter and associated potential archaeological deposit (52-5-0437); and • Stone artefacts scatter (52-5-0438). <p>These sites have been identified by DECC as having a low or no archaeological significance.</p> <p>Permit 2534 is to collect and / or excavate for the purpose of salvage the shell midden site, together with any human skeletal material, if and where uncovered across the entire Boat Harbour Precinct.</p> <p>The works associated with this consent and have been undertaken accordance with the consent.</p> <p>The Proponent undertakes to notify the National Parks and Wildlife Service immediately in the event that any previously unidentified Aboriginal relics (including human skeletal material) are discovered on the site.</p>
<p>Flora and Fauna</p>	
<p><i>In accordance with the Boat Harbour Ministerial Consent, the Proponent has undertaken to compensate for any impact of the development on aquatic and terrestrial flora and fauna and their habitats by the construction of the Myimbarr Wetlands.</i></p>	<p>N/A</p> <p>The environmental compensation associated with the Myimbarr Wetlands formed part the ministerial approvals associated with the Shell Cove Boat Harbour. The Myimbarr Wetland and associated works have been completed.</p>

Commitment	Comment Additional Information / Response
<p><i>The Proponent undertakes to enhance the environment through the use of native flora in landscaped parklands and public spaces.</i></p> <p><i>The Proponent undertakes to mitigate the impact of construction on flora and fauna populations through erosion and sediment control measures including:</i></p> <ul style="list-style-type: none"> • <i>Diversion drains.</i> • <i>Rapid revegetation of cleared areas.</i> • <i>Silt fences.</i> • <i>Stabilising drains.</i> • <i>Use of temporary and permanent sediment traps.</i> 	<p>The Subdivision DA for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales will include a preferred planting schedule that incorporates native planting species for street trees and streetscape planting.</p> <p>A Landscape Concept Plan has been prepared by Group GSA (Appendix H).</p> <p>The erosion and sedimentation controls for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales include:</p> <ul style="list-style-type: none"> • Clean and dirty water diversion pathways; • Sediment fences; • Sedimentation basins; • Stabilised site access; and • Indicative stockpiles.
Noise Odour & Air Quality	
<p><i>The Proponent undertakes to mitigate any excessive noise impacts by implementing appropriate measures such as low noise pavements or incorporating noise reduction features on residential facades, which will be detailed in each Project Application.</i></p> <p><i>The Proponent undertakes to mitigate odour impacts by adopting odour control measures which comply with Sydney Water guidelines including the reduction in septicity levels.</i></p> <p><i>The Proponent undertakes to meet the objectives of the NSW Action for Air Plan by:</i></p> <ul style="list-style-type: none"> • <i>Minimising internal traffic generation.</i> • <i>Providing direct pedestrian and vehicle access to the harbour foreshore.</i> • <i>Providing continuous pedestrian access to the harbour edge.</i> • <i>Providing pedestrian and cycle paths that access key facilities.</i> • <i>Minimising through traffic to Bass Point and the Business Park.</i> • <i>Encouraging public transport.</i> • <i>Providing direct access to the arterial road network.</i> 	<p>This DA is for the subdivision of Precincts F, G and Wetland 8 together with the Northern and Eastern Swales only, does not seek approval for built form.</p> <p>The future detailed design of dwellings, within the area identified, are likely to require acoustic analysis, together with the incorporation of design specific mitigation measures to ensure that dwellings comply with Australian Standards (AS2107:2000).</p> <p>Acoustic mitigation measures / facade treatments will be defined as part of the future detailed design of dwellings and will be subject to future applications and approvals.</p> <p>The DA is for subdivision and does not seek approval for any odour producing infrastructure.</p> <p>The DA meets the objectives of the NSW Action Plan for Air quality by:</p> <ul style="list-style-type: none"> • Encouraging pedestrian and cycle movement through a new access network, to minimise traffic generation; • Including the first stage of three visual and access corridors that will provide for direct access to the future harbour and harbour foreshore;

Commitment	Comment Additional Information / Response
	<ul style="list-style-type: none"> • The site is bounded by Harbour Boulevard which provides for direct vehicular access to Bass Point and the future Business Park, reducing traffic moment through the Boat Harbour Precinct; • Providing for pedestrian links to the future extension of the public transportation network; and • Incorporating a road network that provides for direct access to the arterial road network.
Socio Economic Impacts	
<p><i>The Proponent undertakes to respond to social and economic impacts through increased numbers of new jobs during construction, increased local job opportunities as a result of the Business Park, increased visitor expenditure, and new expenditure and employment in retail, conferencing, restaurants and tourism.</i></p>	<p>The subdivision of Precincts F, G and Wetland 8 together with the Northern and Eastern Swales will generate economic activity, with the movement into the region of new households and the ongoing income generated by the property as an asset, including the employment opportunities created during the construction phase. It will also contribute to meeting the projected housing needs of the Illawarra region.</p> <p>The expansion of the residential community in the Shellharbour LGA will contribute towards the growth of commercial and retail services.</p>
Consultation	
<p><i>The Proponent undertakes to continue consultation with the relevant agencies, authorities and the public as pertains to each Project Application.</i></p>	<p>The Proponent has undertaken continuing consultation with the relevant agencies, authorities and the public in the preparation of the DA for Precincts F&G, including Shellharbour City Council, Sydney Water, Endeavour Energy, Telstra, Jemena.</p>
Crime Risk	
<p>The Proponent undertakes to incorporate best practice Crime Prevention Through Environmental Design principles into all detailed design development.</p>	<p>The Urban Design Guidelines for Precincts F&G (Appendix M and N) address the principles of Crime Prevention through Environmental Design (CPTED) and incorporate measures to promote safety and security of residents of and visitors to Shell Cove (refer discussion at Section 6.1.9 of this Statement).</p>

5.8 Section 75W modification to Concept Plan

An amendment to the Concept Plan Approval (MP07_0027 MOD 1) was submitted to the Department of Planning and Environment (DPE) in August 2017. The application was exhibited between 15 September and 20 October.

The key proposed modifications to the Concept Plan include:

- removing the maximum 150,000m² residential gross floor area limit;
- net increase in the overall maximum number of dwellings of 318;
- revising the housing densities and typologies across the site;
- reconfigurations to the town centre layout including relocating the landmark (hotel) building to the northern gateway;
- increasing the maximum building height in certain areas to permit:
 - a mixed use landmark (hotel) building up to 11 storeys in the town centre;
 - residential flat buildings up to six storeys in the town centre and on the promontory, and
 - residential flat buildings up to five storeys in other harbour waterfront locations;
- including 'serviced apartments' and 'residential accommodation' as permissible uses within the town centre landmark (hotel) building;
- removing the community and hotel uses from the maximum 22,000m² gross floor area cap;
- introducing an additional 5,850m² land (the northern lands) within Precinct E; and
- refinements to the road pattern and layout.

The modification also involves a minor administrative amendment to reflect the applicant's ongoing negotiations with Council to execute a VPA for the site.

5.8.1 Summary of Changes to Precincts F&G

The principles of the approved Concept Plan have been maintained. However, there are a number of changes to Precincts F&G, as summarised in the following table:

Concept Plan Approval	S75W Application	Precincts F&G Proposed
Approx. 199 dwellings	Up to approx. 250 dwellings	Estimated 242 dwellings
Single lot dwellings. Medium density dwellings. Apartments with a maximum height of up to 4 storeys. Taller buildings are located closer to the waterfront and height steps down towards the north.	Up to 250 dwellings comprising single lot low density dwellings, medium density dwellings, studios and high density apartments up to 4 storeys. Taller buildings are located adjacent to the waterfront and height steps down towards Shellharbour village to the north.	Subdivision accommodates mixture of single lot dwellings, medium density and studios and apartments up to 4 storeys in height on superlots immediately adjacent to the waterfront.
Precincts F&G have direct road connections to the surrounding precincts. Precinct G has direct access to Boollwarro Parade.	Road connections as per Concept Plan approval.	Consistent

The built form strategy in the approved Concept Plan was to provide mid-rise apartments in the Town Centre, low to mid rise apartments and / or terraces on the

waterfront, dropping back to lower density terraces and houses further away from the waterfront.

The proposed Modification seeks to amend the housing typologies and form within each Precinct to accommodate the proposed additional dwellings. However, it does not seek to alter the approved built form strategy and retains the same fundamental principles, and therefore built form character.

As described in Section 5.6.6 of this Statement, the proposed Precincts F&G subdivision is expected to result in a net increase in overall number of dwellings across the combined Precincts F&G of 43, which is within the additional yields contemplated in MOD 1 as set out above.

The modifications outlined above do not have any implications for the proposed subdivision of Precincts F&G, but will be addressed in any future DA for built form.

6 SECTION 4.15 ASSESSMENT

Section 5.0 of this Statement has provided an assessment of proposed development against the relevant legislation and statutory controls, thereby fulfilling the requirements of section 4.15 of the *Environmental Planning and Assessment Act 1979*.

The following sections provide an assessment against the other matters for consideration set out in section 4.15 of the EP&A Act.

6.1 Impacts on the Environment (S4.15(b))

6.1.1 Acid Sulfate Soils (ASS)

The recommendations from the Shell Cove Boat Harbour Precinct Geotechnical Study require the preparation of a site-specific Acid Sulfate Soil Management Plan (ASSMP) for Precincts F&G and Wetland 8 together with the Northern and Eastern Swales.

Coffey Pty Ltd has prepared an ASSMP which identifies appropriate measures to be implemented to mitigate the potential impacts of ASS in the proposed subdivision and subsequent development of Precincts F&G.

6.1.2 Construction Impacts

Construction of the proposed development will be undertaken in accordance with EPA and WorkCover Authority guidelines to ensure that impacts to nearby premises and their occupants are minimised and that the safety of workers is afforded the highest continued priority.

The building contractor engaged to undertake the project will be required to prepare a Construction Environment Management Plan (CEMP) that outlines the procedures that will need to be implemented in order to manage the possible impact of construction activities on the surrounding area.

The information contained in the Earthworks Strategy (Appendix J), Road Design (Appendix G), ASSMP (Appendix I) and Erosion and Sediment Control Plan (Appendix E) will inform the preparation of the CEMP.

The CEMP will be consistent with current industry best practice and any specific Council requirements. On this basis it is considered that any impacts associated with the construction phase of the project can be managed and mitigated to acceptable limits.

6.1.3 Hydrology, drainage and flooding

Stormwater

Advisian has prepared a stormwater quality management strategy for the proposed Shell Cove Development in Shellharbour.

The pollutant loads discharged to the Boat Harbour in catchment runoff from the ultimate development have been estimated for the purposes of predicting Boat Harbour water quality.

The management of runoff in the catchment represents industry best practice with emphasis on water sensitive urban design and a treatment train approach.

The proposed stormwater management strategy for the development will ensure the runoff water quality discharged to the ocean is maintained compared to pre-development conditions.

Flooding

The Flood Management Assessment prepared as part of the Concept Plan shows that the proposed development would not result in a significant increase in flood levels for the 5 year ARI, 100 year ARI and the PMF event on adjacent properties. The proposed development will be designed such that flooding would not have an adverse impact on the proposed development and will not be impacted by tidal inundation or sea level rise.

6.1.4 Access and traffic

The Shell Cove Boat Harbour Traffic Study, prepared by Aecom / Maunsell in 2009 as part of the Concept Plan, identified that the highest traffic volumes in the vicinity of the study area will be along Harbour Boulevard, north of Brigantine Drive, with an estimated traffic volume 15,200 vehicles / day, decreasing southward toward the intersection with Cove Boulevard.

Arcadis has prepared a Traffic Impact Assessment (Appendix G) to identify the potential traffic impact of the Precincts F&G subdivision, as required by the Concept Plan Approval.

The cumulative traffic impacts from the operation of all existing and future precincts (including Precincts F&G) have been examined in the context of the revised (increased) yields currently being considered by the Department of Environment and Planning as part of a proposed modification to the Concept Plan Approval (MP07_0027 MOD1). Based on the revised traffic volumes, the updated traffic impact assessment has determined that all intersections will operate satisfactorily without placing undue stress or pressure on the existing road system or adjoining uses.

The key findings of the assessment are as follows:

- there is an anticipated 36% increase in daily traffic generation from the residential component of the Shell Cove Boat Harbour Precinct with a 2% increase in the commercial/retail component. Based on the revised yield for each of the precincts it was determined that traffic generated from Precincts A, B and C would increase by 15%, Precinct D by 5% and Precincts E, F, G and H by 16%. The overall 36% increase was distributed accordingly between each of the zones;
- Based on the SIDRA modelling results, the proposed Shellharbour Road / Harbour Boulevard / Wattle Road intersection (as per RMS TCS2455) would not operate satisfactorily in either the AM or PM peak period, however, the proposed mitigation measure for this intersection resulted in the intersection operating satisfactorily in both the AM and PM peak periods. Improvement to the departure side storage lengths on the south approach of the Addison St / Harbour Boulevard intersection is proposed. All remaining assessed intersections are anticipated to operate satisfactorily.
- The proposed shared paths have been designed in accordance with Council's Shared Use Path Strategy 2010;
- Based on a 400m "as the crow flies" walking catchment, it is anticipated that all residents within Precincts F&G would have access to the proposed future bus route along Harbour Boulevard;

- A swept path analysis has been undertaken for a 12.5m Rigid Truck for all intersections within Precincts F&G which reveals that all provide adequate manoeuvrability for a service vehicle provided that no-parking clearance is provided adjacent to the intersection;
- A sight distance assessment was also conducted which determined that all intersections will provide adequate sight distances and conform with Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections.

Having regard to the above it is considered that the traffic impacts associated with the proposed development are within reasonable limits.

6.1.5 Urban Design

The subdivision of Precincts F&G has been designed in accordance with the design principles identified below, which are consistent with the terms of the Concept Plan Approval and the outcomes achieved in previously approved Precincts at Shell Cove.

The following Design Principles have been adopted for Precincts F&G, including:

- Maximising connectivity between residential areas, open space and amenities.
- Road layout seeks to optimise solar orientation and providing the opportunity to explore innovative house designs.
- Utilising materials relevant to the coastal location of the site.
- Providing a well-connected road network which responds to the existing and future features of the site, key open spaces, the Boat Harbour and future amenities, while minimising cut and fill where possible.
- Providing a legible road network designed to promote connectivity and ease of movement for pedestrians, bicycles and vehicles. This network also allows the opportunity for multiple routes orienting traffic to progressively higher order streets within the hierarchy.
- Landscape treatments in the public domain used to reinforce the existing natural character of the site and strengthen the visual recognition of the street hierarchy, pedestrian and cycle network.
- Create high quality streetscape and establish a strong neighbourhood character;
- Maximise north and east facing backyards;
- Provide a unified group of single dwellings with consistent alignments, articulation, material selection and architectural character (through Design Guidelines); and
- Landscape elements such as fences, walls, plants and planting which matches or complements the design, scale, massing and details of the various dwelling typologies (i.e. single dwellings, medium density and apartments).

The proposed subdivision has been designed in accordance with the Concept Plan Approval for the Boat Harbour Precinct which is a master planned estate designed to provide a high quality urban environment, commensurate with contemporary market aspirations and expectations.

Having regard to the above it is considered that the Precincts F&G subdivision will have a positive impact in terms of urban design.

6.1.6 Utilities and services

The Precinct F&G subdivision will be serviced by water, sewer, electricity and telecommunications, as described in Section 4.8 of this Statement and Appendix K.

Detailed design of the utility infrastructure will be undertaken in the construction certificate stages of the proposal.

6.1.7 Noise

The Assessment of Air Quality and Noise prepared by Wilkinson Murray as part of the approved Part 3A Concept Plan in 2009 concluded that:

- Noise from Haul Road to the Bass Point Quarry will not impact on any residential lots in the Boat Harbour Precinct
- Residences within 40 metres of Harbour Boulevard road pavement will require acoustic façade treatment to meet the relevant internal acoustic criteria for residential dwellings. This may be reduced to 20m with the inclusion of low noise pavement along Harbour Boulevard.

The assessment also identified a range of appropriate noise mitigation measures for facades to residences within 40m of Harbour Boulevard (refer Consent Condition Schedule - Schedule 3 Part D 3. Noise Management Assessment).

No acoustic measures are proposed for the application of the subdivision of Precincts F&G and Wetland 8 together with the Northern and Eastern Swales. Detailed design of dwellings will be subject to future DAs and approvals and will incorporate acoustic treatment where appropriate.

The Assessment of Air Quality and Noise from the Bass Point Quarry was predicted to exceed night time noise criteria levels at some of the residential areas closest to the quarry during adverse weather conditions. As Precincts F&G are in excess of 1.5km of the quarry no noise impacts are expected for future development in this area.

6.1.8 Waste Management

6.1.8.1 Construction Waste

Opportunities to minimise waste generation and maximise the use of existing resources on site will be implemented where possible.

Waste comprising scrap metal, timber, masonry, packaging materials and plastics generated during the construction phase would be collected in sorted skip bins on-site and would be removed by a licensed contractor. General waste generated by contractors working on site will be collected and recycled where possible or disposed at a licensed waste facility.

A Site Waste Minimisation and Management Plan (SWMMP) will be developed as part of the contractor's CEMP, designed to minimise waste generation and maximise reuse and recycling where possible during the limited demolition and subsequent construction works. The SWMMP will ensure that the appropriate measures are employed throughout the project to guide the disposal of waste.

6.1.8.2 Operational Waste

The proposed Precincts F&G subdivision has been designed to facilitate council collection service from the kerb, Swept Path analysis of all proposed intersections within the subdivision is included in the Traffic Impact Assessment prepared by Arcadis (Appendix G) and demonstrates manoeuvrability of service vehicles.

6.1.9 Crime prevention through environmental design

Safety and security were key principles used for the design guidelines in the subdivision of Precincts F&G. The Subdivision Plan and Design Guidelines address

the principles of Crime Prevention through Environmental Design (CPTED) and incorporate measures to promote the security of Shell Cove.

The road and pedestrian network will provide a clearly defined path of travel with clear sightlines between public and private places. Appropriate lighting of the public streets will be provided and will comply with relevant Australian Standards.

The subdivision design provides opportunities for future housing to provide for natural surveillance of public spaces. Landscaping and street planting will be designed and provided to minimise the opportunities for concealment, while providing for a high level of amenity.

The proposed subdivision provides for;

- A clear grid of clear, legible access for vehicles, cyclists and pedestrians, providing a high level of connectivity within the wider Boat Harbour Precinct between existing and future development;
- Limited block lengths to increase connectivity;
- A series of linked public open spaces that provide for pedestrian movement across Precincts F&G, access to the major pedestrian cycle network along Harbour Boulevard, proposed extension to the public transportation network and the future harbour edge open space network;
- View corridor along proposed Road 23 to the harbour, together with vistas achieved along the north-south aligned open space corridors;
- A series of clear vistas along road alignments across both Precincts F&G to increase opportunities for incidental surveillance;
- Lot orientation facilitates the construction of future dwellings that overlook public open spaces and open space links to increase passive surveillance opportunities of the public domain;
- Threshold treatments to the entrances to the laneways are incorporated to reinforce the primacy of pedestrian movement, slow traffic and increase opportunities for surveillance;
- A range of traditional residential lots together with superlot sites for future medium density housing and apartment development, to encourage diverse housing options and opportunities for more dynamic community interactions;
- Integrated and attractive public open spaces that encourage community interaction and cater for the needs of different community and visiting groups encouraging community guardianship of the development and public assets;
- Linear open space, pedestrian and cycle links that provide clear sight lines along road alignments; and
- All lots to be integrated into the mainstream lifestyle of the Shell Cove community.

The future built form will be subject to the controls set out in the Design Guidelines for Medium Density Housing and Apartments in Precincts F&G (Appendix M and N). In general terms the Guidelines provide for:

- A strong street address to the public domain and fronting public streets, reinforcing the movement patterns within the Precinct;
- Living spaces overlooking streets, lanes and open spaces;
- Windows, balconies and openings overlooking public open space and open space links;
- Fencing to all streets, lanes, footpaths and open space elements to include open and permeable fence designs to ensure surveillance of the streetscape;
- Consistent fencing treatments to lots surrounding open space elements to provide for reinforcement of territorial boundaries between public and private domain;
- Clearly defined building entries to dwellings, including verandas, portico's, awnings or overhangs that provide for shelter, lighting and natural surveillance;

- Visible street numbers and letter boxes to provide clarity of building identification.

Design Guidelines have also been prepared for single dwelling houses in Precincts F&G (Appendix N) which also incorporate a series of controls designed to promote safety and security. These include:

- Separate entries from the street for pedestrians and vehicles are encouraged;
- Provide visible primary entry to dwellings from the main street frontage;
- Entries are to be visible, generous and safe;
- Front doors should be contemporary in design and incorporate a glass side panel or glass insert view panels;
- Any security doors are to be simple and contemporary in design;
- Where dwellings have both primary and secondary street frontages, windows are required to the secondary frontage to provide for passive surveillance to the secondary street frontage;
- Boundaries between private and public spaces are to be clearly defined;
- Provide sight lines to the street and public domain to allow passive surveillance and increase safety.

6.1.10 Social and economic impacts

The future development of the wider Shell Cove Boat Harbour Precinct is being undertaken in a manner sympathetic to the character of the locality and will result in a positive social and economic benefit through the provision of residential and community facilities as well as business opportunities.

The development of Precincts F&G will generate economic activity, with the movement into the region of new households and the ongoing income generated by the property as an asset, including the employment opportunities created during the construction phase. It will also contribute to meeting the projected housing needs of the Illawarra region.

The expansion of the residential community in the Shellharbour LGA will contribute towards the growth of commercial and retail services.

It is considered that the proposed residential subdivision will have a positive economic benefit to the Shellharbour LGA and the wider Illawarra Region.

6.2 Suitability of the site (s4.15(c))

The NSW Government, through the approval of the Boat Harbour Concept Plan (MP07_0027) and the more recent preparation of the Illawarra Shoalhaven Regional Plan has supported the development at Shell Cove and has identified the area as a regionally significant development area to achieve the dwelling targets for population growth in the Illawarra.

Having regard to the characteristics of the site and its location, the proposed subdivision of Precincts F&G is considered suitable as it:

- is generally consistent with the Concept Plan approval and Statement of Commitments (MP07_0027). It is also consistent with the proposed modifications to the Concept Plan (MP07_0027 MOD 1) currently being assessed by the Department of Environment and Planning;
- includes detailed Urban Design Guidelines prepared to in accordance with the terms of the Concept Plan Approval (Schedule 3, Part D);
- will provide a range of housing opportunities for the community in reasonable proximity to employment, regional transport networks, schools, retail and sporting / community facilities;

- the site has access to all utility services, which are being augmented / extended as required and in consultation with relevant utility authorities; and
- will not result in any unacceptable or material adverse environmental impacts.

6.3 Submissions (s4.15(d))

In accordance with Section 2.2 of Shellharbour DCP 2016, the application will be placed on public exhibition and submissions invited from any interested parties.

As part of the assessment process, Council will take into consideration any matters raised in any submissions received in response to the public exhibition period.

6.4 The public interest (s4.15(e))

Public interest is considered to be inherent in the design as it is consistent with the Concept Plan approval for the Shell Cove Boat Harbour Precinct. The proposal provides the framework for future development of the proposal site and will contribute the growth of local communities.

The proposed development:

- will provide additional residential land to meet the demands of the growing population in the Illawarra;
- will contribute to the achievement of regional housing construction targets as set out in the Illawarra Shoalhaven Regional Plan (DPE, 2015), which identifies the need for 35,400 new dwellings in the region by 2036; and
- can also reasonably be expected to have a positive impact on housing affordability in the region.

On this basis, it is considered that the subdivision of Precincts F&G of the Shell Cove master planned estate is in the wider public interest.

7 CONCLUSION

Approval is sought for subdivision of land legally described as Lot 4003 DP 1235539 known as Precincts F&G and Wetland 8 together with the Northern and Eastern Swales as part of the Shell Cove master planned estate. The proposed development represents the next stage of the development approved under the Shell Cove Boat Harbour Concept Plan (MP 07_0027).

The proposed development comprises:

- 42 Torrens Title residential allotments (18 in Precinct F and 24 in Precinct G);
- 9 super lots for future integrated housing development (6 in Precinct F and 3 in Precinct G);
- 6 lots identified as Public Reserves;
- civil infrastructure – road construction, stormwater drainage and water quality treatment devices;
- earthworks;
- public domain works including street tree planting and footpaths within the subdivision; and
- construction of Wetland 8 together with the Northern and Eastern Swales and associated landscape treatment.

The aim of this Statement has been to:

- describe the proposal and the prevailing site conditions;
- illustrate compliance of the proposed development with relevant statutory considerations; and
- provide an assessment of the likely environmental effects of the proposal.

The development has been designed to address the physical characteristics of the site, with lot orientation and road network designed to optimise solar access for future residential development as well as providing legible access, high levels of connectivity and visual connectivity to Boat Harbour.

A range of specialist reports has been prepared to address the potential impacts of the proposed development including traffic, noise, coastal hazards, acid sulfate soils management plan, geotechnical, flood management and water cycle management. Urban Design Guidelines have also been prepared to establish controls over future single dwellings in Precincts F&G, as required by the Concept Plan Approval.

The proposal has been assessed with reference to the matters for consideration set out in section 4.15 of the EP&A Act. It is concluded that the proposal satisfies the relevant statutory requirements. Whilst the land subdivision and associated civil works will have some environmental impacts, these have been assessed and subject to the implementation of mitigation measures identified within this Statement and the supporting specialist reports, it is considered that these impacts are within reasonable limits.

The proposed development can also be reasonably be expected to have positive socio economic impacts for the Illawarra region through job creation during construction of the subdivision and future dwellings, as well as playing an important role in meeting the housing needs of the Region as identified by the Illawarra Shoalhaven Regional Plan (DP&E, 2015), which identifies the need for 35,400 new dwellings in the Region by 2036.

The design of the subdivision for Precincts F and G is consistent with the Concept Plan Approval and Statement of Commitments.

It is therefore requested that the proposed Precincts F&G and Wetland 8 together with the Northern and Eastern Swales subdivision be supported and recommended to the Joint Regional Planning Panel (Southern Region) for approval.

8 GLOSSARY

AHD	Australian Height Datum
ASS	Acid Sulphate Soils
CHL	Commonwealth Heritage List
CO	Carbon monoxide
DO	Dissolved Oxygen
EC	Electrical Conductivity
EDR	Environmental Design Report
EPBC Act	Environmental Protection and Biodiversity Conservation Act
ERA	Environmentally Relevant Activities
ESCP	Erosion and Sediment Control Plan
EVNT	Endangered, Vulnerable and/or Near Threatened (EVNT)
National Heritage List	NHL
NEPM	National Environment Protection Measures
NO2	Nitrogen Dioxide
PM	Particular Matter
RE	Regional Ecosystems
REF	Review of Environmental Factors
TSP	Total Suspended Particles
VC	Vegetation Communities
WMP	Waste Management Plan

APPENDIX A

SHELL COVE MASTERPLAN

APPENDIX B
CONTAMINATION

APPENDIX C

ECOLOGY

APPENDIX D

CULTURAL HERITAGE PROTECTION AND AHIP

APPENDIX E
DESIGN DRAWINGS

APPENDIX F
PLAN OF SUBDIVISION

APPENDIX G

TRAFFIC IMPACT ASSESSMENT

APPENDIX H

LANDSCAPE INTENT AND PLANNING

APPENDIX I

ACID SULFATE SOIL ASSESSMENT AND MANAGEMENT

APPENDIX J

EARTHWORKS STRATEGY, ROAD DESIGN, ASS, EROSION AND SEDIMENT CONTROL

APPENDIX K

UTILITY, SEWER AND WATER SERVICES STRATEGY

APPENDIX L

STORMWATER AND WATER CYCLE MANAGEMENT PLAN

APPENDIX M

PRECINCTS F AND G URBAN DESIGN GUIDELINES - LAND

APPENDIX N

**PRECINCTS F AND G URBAN DESIGN GUIDELINES –
MEDIUM DENSITY AND APPARTMENTS**

FLOOD ASSESSMENT

APPENDIX O

COASTAL HAZARDS

APPENDIX P
NOISE AND AIR ASSESSMENT

APPENDIX Q

LEP OVERLAY WITH ZONING

APPENDIX R
COMMUNITY LAND BOUNDARY

APPENDIX S

COASTAL HAZARDS REPORT

