

8.2.1 Bokarina Bch Master Plans App A Conditions Amended

APPENDIX A – DETAILED PLANNING AREA PLAN CONDITIONS OF APPROVAL

1. APPLICATION DETAILS

Application No:	MPC11/0003
Street Address:	Wurley Drive, BOKARINA QLD 4575
Real Property Description:	21 CP891254
Planning Scheme:	Sunshine Coast Planning Scheme 2014

2. DECISION DETAILS

The following type of approval has been issued:

- Detailed Planning Area Plan

3. ASSESSMENT MANAGER CONDITIONS

Amendments to the Detailed Planning Area Plan

Maps

1. Amend Map 5 to include an additional two pedestrian cross street connections through the boulevard median.
2. Amend Map 8 to identify the Public Access Domain Mall as having an area of 5,000m², and the Public Access Club Facility as having an area of 10,000m².
3. Amend Map 12 to state “Up to 8 storeys (refer to Map 13C and 13D for detailed height controls)”.
4. Amend Map 12 to require a maximum two storey height limit for residences adjacent Beach Drive and Wurley Drive.
5. Amend Map 12 ‘Building Heights Plan’ to reduce the permitted building height for Precinct 11 to ‘Up to four Storeys’
6. Amend Map 12 to use greater differentiation in colours so that the difference in height limits is more readily discernible.
7. Amend Maps 13A and Map 13B – Precincts 5 to 10 so that the percentage of built form projecting to the primary and secondary active frontages (tower level) is a “*maximum*”.
8. Amend the legend of Map 13D to “Low Rise Residential – Maximum Height 3 Storeys”.
9. Amend all relevant maps within the Detailed Planning Area Plan to remove the three metre north-south pedestrian pathway located within the eastern boundary of the Surf Lifesaving Club Facility site. The Surf Lifesaving Club Facility site, community facility site and public access domain mall should be shifted to the west to ensure that this pathway does not encumber the Surf Lifesaving Club Facility land.

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10. Amend the Detailed Planning Area Plan to include a Map for the Public Access Club Facility clearly defining the maximum building envelope. The building envelope is to ensure the preservation of sight lines from Nicklin Way to the Village Park.
11. Amend Map 40 (Materials Palette) as follows:
 - (a) Stone set pavements shall not be used in public road carriageways.
 - (b) Unit paving is to be minimised in favour of in-situ poured concrete slabs.
 - (c) Amend text to ensure that shelters provide solid sheet roofing as opposed to “filtered light”.
 - (d) Proposed stainless steel cable in-fills indicated shall be removed from the materials palette.
12. Amend Map 41 (Planting Palette) as follows:
 - (a) Remove *Pennisetum alopecuroides*
 - (b) Include *Alectryon Coriaceous*
 - (c) *Hibiscus tiliaceous* is to be used in park areas as opposed to Streetscapes
 - (d) *Elaeocarpus obovatus* to be included in Streetscapes
 - (e) *Melaleuca quinquenervia* to be included in Streetscapes
 - (f) *Melaleuca leucadendron* to be removed from streetscape and used in parks.
13. Amend “Map 30 Linear Park 03 (Wurley Drive) Cross Section” to show a kerb and channel (as opposed to flush kerb).
14. Amend all relevant maps to change proposed ‘dead-end’ laneways providing access to Precincts 5 and 6, and Precincts 7 to 9, to ‘Access Easements’ (within privately owned lots).
15. Amend all relevant maps to show a 10 metre wide linear park on the southern side of Beach Drive between Nicklin Way and the proposed roundabout at the Beach Drive/Glentree Street intersection.
16. Amend all relevant maps within the Detailed Planning Area Plan to remove Precinct 12 from the development.

Table of Development

17. Amend Table 1 as follows:
 - a) Include ‘Food Outlet’ and ‘Outdoor Entertainment’ as Defined Uses within Precinct 14.
 - b) Amend the Defined Uses for Precincts 5,6,7 & 8 to break down the defined residential land uses as follows:

Residential uses where located above ground level of a mixed use development and fronting a Primary, Pedestrian Laneway or Secondary Frontage Limited to:

- Accommodation Building
- Caretakers Residence
- Display Home (where located in a multiple dwelling unit)
- Home Occupation
- Motel
- Multiple Dwelling

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Residential uses where fronting a Residential Access Street limited to:

- Accommodation Building
- Caretakers Residence
- Display Home (where located in a multiple dwelling unit)
- Home Occupation
- Motel
- Multiple Dwelling

c) Delete Precinct 12 and reallocate yield to Precincts 5 to 10 of the Detailed Planning Area Plan.

Development Criteria and Urban Design Performance Criteria

18. Include as a 'General Development Criteria' in Section 4.2 the following:

To minimise increases in ambient lighting impacts on the beach and foreshore areas, all streetlighting must utilise luminaires which emit no light above the horizontal plane (e.g. 'aeroscreen' luminaires).

19. Amend the Detailed Planning Area Plan – Section 5.3 – Urban Design Performance Criteria to include S2.1 as a Specific Outcome.
20. Amend the Detailed Planning Area Plan – Section 5.3 – Urban Design Performance Criteria to include S11.1 as a Specific Outcome.
21. Amend the Detailed Planning Area Plan – Section 5.3 – Urban Design Performance Criteria to include S16.1, S16.2 and S16.3 as Specific Outcomes.
22. Amend the Detailed Planning Area Plan – Section 5.3 – Urban Design Performance Criteria to include S18.1 as a Specific Outcome. S18.1. Item (B) is be amended to require 80% of the frontage to comprise windows and openings.
23. Amend the Detailed Planning Area Plan – Section 5.3 – Urban Design Performance Criteria to include S19.1 and S19.2 as Specific Outcomes.
24. Amend O30 of Section 5.3 and O10 of Section 5.4 (specific to Precincts 9 and 10) of the Detailed Planning Area Plan follows:

Specific Outcome	Probable Solution
<p>Lighting and signage adjacent to the dune area is designed to minimise disruption to adjacent turtle breeding grounds as follows:</p> <p>a) External feature lighting is positioned below 10 metres in height;</p> <p>b) Smart lighting technology (including dimming control) is incorporated in levels above 10 metres in height, in order to allow Council the ability to reduce light emissions during critical turtle breeding periods;</p> <p>c) The use of illuminated external signage on the eastern (seaward) sides of buildings is restricted;</p> <p>d) Be accompanied by a substantial</p>	<p>No probable solution prescribed.</p>

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<p>vertical shielding to reduce sky glow;</p> <p>e) Avoid the use of halogen, metal halide, or fluorescent lights, and use only white lights contained areas where colour rendition is required;</p> <p>f) The number and wattage of lights is minimised, and lights are recessed into structures wherever possible;</p> <p>g) The use of timers or motion activated light sensors is maximised;</p> <p>h) Low Pressure Sodium lighting is used as a first choice light source, and high pressure sodium lights where low pressure is not practical; and</p> <p>i) Reflective materials are used to delineate pathways, and embedded lighting is used wherever possible.</p>	
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25. Include the following provision in Section 5.4 Urban Design Performance Criteria, Probable Solution 17.1:

“The Acoustic Quality Objectives specified in Schedule 1 of the Environmental Protection (Noise) Policy 2008 are achieved”

26. Amend Table 6: Noise Impact Assessment Criteria, 10pm – 7am for Noise Sensitive Places as follows:

$$L_{Amax,adj} \leq L_{Abg} + 3 \text{ dB}$$

27. Delete Specific Outcome O8 and Probable Solution S8.1 in Section 5.1 (in relation to dual-key units).
28. Include a Specific Outcome within Land Use Areas 2 and 3 which restricts the number of dual key units in a precinct to 20% of the allocated dwelling yield for that precinct.

Required Approvals

29. Prior to the approval of any subsequent Site Development Plan within Detailed Planning Area 2, approval from the Department of Environment and Heritage Protection must be provided which demonstrates the State’s approval of the location of the beach access as shown on Map 5 of the Detailed Planning Area.
30. Prior to the approval of any Site Development Plan within Detailed Planning Area 2, detailed information must be provided to council to demonstrate:-
- a) that all works required to satisfy the Department of Transport and Main Roads’ conditions relating to Nicklin Way works (including the new intersection) can be accommodated within the road reserve areas proposed in the Detailed Planning Area Plan, and
 - b) that the width of linear park as proposed in the Detailed Planning Area Plan is adequate to satisfy any requirements of the Department of Transport and Main Roads in relation to flooding and drainage impacts on Nicklin Way.

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Timing of Deliverables

31. The Nicklin Way pedestrian/cycle underpass must be delivered prior to the registration of the first development lot within the Detailed Planning Area. The underpass must be constructed using reinforced concrete box culverts with minimum dimensions of 3.6 metres wide by 2.7 metres high as nominated in the submitted Engineering Services Report. 'Disabled access compliant' pathway connections must be provided between the underpass and the pathway along the Nicklin Way verge.
32. Land nominated as Village Park (West) is to be fully embellished in accordance with an Operational Works approval and transferred to the State with Council as trustee prior to the registration of the first development lot in the Detailed Planning Area 2.
33. Land nominated as Village Park (East) must be fully embellished in accordance with an Operational Works approval and transferred to the State with Council as trustee prior to the registration of the 200th development lot in Detailed Planning Area 2.
34. Land nominated as the Public Access Domain Mall (Precinct 14) must be fully embellished in accordance with an Operational Works approval and transferred to Council prior to the registration of the 200th development lot in Detailed Planning Area 2.
35. Land nominated as the Community Facility site (Precinct 15) must be fully developed and transferred to Council prior to the registration of the 200th development lot in Detailed Planning Area 2.
36. Land nominated as the Surf Lifesaving Club facility site (Precinct 16) is to be transferred to the State of Queensland prior to the registration of the 200th development lot in Detailed Planning Area 2.
37. Land nominated as Public Access Club Facility (Precinct 17) is to be transferred to Council if triggered by the requirements as set out within the Kawana Waters Community Development Strategy.
38. The north-south pedestrian/cycle pathway link must be provided at the timing of the registration of the last residential lot within Precincts 1-4 of the Detailed Planning Area.
39. The beach access as indicated on Map 5 of the Detailed Planning Area Plan is to be provided prior to the registration of the 200th lot in Detailed Planning Area 2.
40. In accordance with the Kawana Waters Community Development Strategy, the Master Developer must provide lifeguard facilities to service the development. Foreshore infrastructure including lifeguard towers are to be provided by the Master Developer within 6 months of the completion of the beach access, unless as agreed in writing with Council.
41. In accordance with the Kawana Waters Community Development Strategy, the sale of the nominated Childcare Centre site (Precinct 13) is to be actively pursued by the Master Developer for a period of 5 years after the commencement of uses within the stage of development relevant to the Childcare Centre site.

Within 6 months of the completion of this five (5) year period, an independent assessment is to be prepared specifically to determine the future need for the site to be used for a Childcare Centre or respite centre use. The consultant determined to undertake this assessment will be agreed to by the Master Developer and Council.

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If the assessment supports the future need for Childcare facilities or respite centre in Bokarina Beach, then the site will continue to be identified as such through the appropriate Master Plans.

If the assessment determines that there is no future need for a specific site for childcare or respite services in Bokarina Beach, then the land may revert to the same or similar use to adjoining parcels and the relevant Master Plans will be amended at that time to reflect this assessment.

42. Prior to the approval of any subsequent Design Plan within Detailed Planning Area 2, a Public Art Strategy for Detailed Planning Area 2 must be prepared and approved by Council.

Street Network and Traffic

43. The local street network within the Detailed Planning Area, including intersections, indented parking bays, and cycle lanes, must be provided generally in accordance with the details in the Master Plan and the supporting Local Area Traffic Network Study, except where varied as follows:
 - a) The intersection where the proposed 'Beach Frontage' street connects to the existing Wurley Drive/Oceanic Drive South corner must be designed so that the priority movement is along Wurley Drive/Oceanic Drive, with the 'Beach Frontage' leg of the T-intersection being a single lane carriageway which provides for one-way vehicle movement out of the proposed development only.
 - b) The proposed new roundabout in Beach Drive must be designed to achieve an appropriate amount of 'deflection' at each approach to manage the speed of approaching vehicles. The existing kerb and channel on the northern side of Beach Drive at the eastern approach must be realigned as necessary to achieve this, and if necessary the road reserve in this area must be widened (by re-aligning the northern boundary of DPA2) to provide an appropriate verge width on the southern side of Beach Drive. Threshold treatments and signage must be provided on the northern (Glentree Street) and eastern (Beach Drive) legs of the roundabout to highlight the 'local access' functions of those streets, and to discourage use by non-local traffic.
 - c) Road reserve widths for internal streets within the Detailed Planning Area must be increased if necessary (as determined at the time of operational works design) so that the verges to be able to accommodate all infrastructure (pathways, underground services, street light poles, etc) in addition to streetscape plantings as required by the Master Plan.
 - d) At the existing Baroona Street and Orringa Street intersections with Wurley Drive, threshold treatments must be installed, in addition to signage, to highlight the 'local access' function of those streets and to discourage their use by other than local traffic. These works must be completed in conjunction with the earliest stage of the development which includes a street connection to Wurley Drive.
44. Vehicular access to the development via the 'Main Access Street' connection to the Nicklin Way/Lake Kawana Boulevard intersection must be constructed prior to the registration of the first development lot within the Detailed Planning Area, to mitigate any potential adverse traffic impacts on existing neighbourhoods.

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45. In accordance with Condition 12(4) of the Kawana Waters Structure Plan, a bus queue bypass lane must be provided in Lake Kawana Boulevard at the approach to the Nicklin Way intersection, in conjunction with the proposed works at that intersection.
46. Except where shown on Map 7, direct driveway accesses are not permitted to:
 - a) Main Access Street
 - b) Trunk Collector Streets
 - c) Boulevard Street
 - d) Beach Frontage Street.
47. Driveway access to Precinct 11 (proposed Hotel site) must be restricted to the access street on the eastern frontage of the Precinct – no vehicular access is permitted to the access place on the southern frontage of the Precinct.

Active Transport

48. Pathways must be provided in accordance with the details shown on Map 5 of the Detailed Planning Area, or as amended by conditions of this Notice of Determination.
49. Lighting, for pedestrian/public safety and wayfinding, must be provided to an appropriate standard along the length of proposed pathways, with additional feature lighting at key nodes and locations. The lighting must be designed to minimise adverse amenity impacts to adjoining private property.

Wetland

50. The Detailed Planning Area Plan is to be amended to expand the area of wetland to be retained. Attachment 1 illustrates the changes which are required, which include:
 - a) The proposed wetland area to be retained must be extended to include optimal foraging areas as indicated on Attachment 1.
 - b) The wetland buffer must be extended to be 15 metres in width.
 - c) The wetland buffer on the eastern side of the wetland must be extended to provide a continuous vegetated link between the dune and wetland.
 - d) The wetland buffer extension must incorporate:
 - i. functional open space design elements; and
 - ii. the inclusion of the north-south pedestrian cycle link via a raised boardwalk.
51. A revegetation/rehabilitation plan must be developed and implemented for the wetland enhancement and wetland extension areas. The plan must:
 - a) deliver improved wetland habitat functionality and connectivity;
 - b) undertake a condition assessment of the impacted site and the proposed receiving site to inform receiving site preparation, species composition, and planting regimes;
 - c) reflect and be guided by the South East Queensland Ecological Restoration Framework: Code of Practice, Guideline and Manual; and
 - d) incorporate a rehabilitation management plan including a comprehensive revegetation monitoring program with measurable and achievable performance criteria.
52. All design and construction work in the vicinity of the wetland must minimise any adverse impact on the wetland.
53. The interface between the expanded wetland and buffer area and the adjacent community facility site and surf club facility site is to provide for a level of connectivity

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between the eastern and western sides of the wetland, and a vegetated buffer that separates the wetland from the adjacent land use to minimise potential impacts. This area is to incorporate a combination of a 1 metre boulder wall and a 1:4 batter over 4.5m down into the wetland. Further detail is to be submitted with an Operational Works application.

54. The configuration of the outlet for the existing wetland must be designed and constructed to replicate the existing hydrological regime of the wetland as closely as possible. In conjunction with an Operational Works approval a report on the hydrological regime of the existing wetland must be prepared by a suitably qualified person to determine the optimum outlet configuration for the long term health of the wetland.
*(Refer to Advisory Note)

North-South Pedestrian/Cycle Link

55. The north-south pedestrian cycle link must be provided to the following requirements as per Attachment 1:
- a) A three metre pathway from Beach Access 247 to the northern boundary of the Surf Life Saving Club facility land (refer to condition 8 which requires this pathway not to encumber the Surf Life Saving Club facility land), and
 - b) A three metre pathway is provided in a north-west direction from the surf club, crossing over the ephemeral wetland via raised boardwalk which then runs parallel with the western side of the wetland.

Map 5 of the Detailed Planning Area is required to be amended to incorporate the above.

Power lines

56. Existing overhead power lines along the eastern side of Nicklin Way must be relocated to underground installations, extending from the southern side of the new intersection with Nicklin Way to the northern boundary of Village Park West.

Turtles

57. The developer is to prepare a pre- and post- construction Light Survey to determine changes to light emissions from the development to the adjacent turtle nesting beach. These Light Surveys are considered essential to enable council officers to adequately determine and identify any impacts created by the development on turtle nesting habitat. It is recommended that Digital Horizon Imaging be used for these surveys as this technology measures light between 400nm and 700nm, as well as photopic light.

The pre- construction Light Survey is to be undertaken prior to any site works commencing on site.

The post- construction Light Survey is to be undertaken by the Master Developer's on completion of Site Development Plan Precincts 1-4.

The Light Surveys are to be submitted to Council officers for their review and assessment. Should the post construction 'as built' audit identify that correctional actions are required, these are to be undertaken by the Master Developer.

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58. To minimise the impact of development of the Detailed Planning Area on turtle nesting sites, the following actions are required to be undertaken in the construction and operational phases of the development:

Construction Phase

- a) Construction works are to be restricted to daylight hours during the turtle nesting and hatching season (October to April).
- b) Restrict the use of flood lighting from October to April (turtle nesting and hatching season).
- c) For the construction of the coastal pathway connections, delineation of a works area to be surveyed by an appropriately qualified and experienced fauna spotter/catcher for the presence of active turtle nests prior to works within that area commencing.
- d) Where the works area cannot avoid the identified nest, all eggs within identified nests are to be relocated by the fauna spotter/catcher to a suitable habitat.

Operational Phase

- a) Maintain directional light shades on street lights within 100m of the western boundary of the foreshore reserve and replace faulty directional lighting shades accordingly.
- b) Provide interpretive signage within the Bokarina Beach development to inform visitors to the foreshore that the beach is an active nesting and hatching site for turtles. The signage should advise visitors not to deviate from pathways, to minimise disturbance to the dunes, and to ensure domestic pets are kept under effective control.
- c) Provide interpretive signage throughout the residential areas, including the Tourist Node and Residential B precincts, outlining measures to mitigate the impacts of lighting on the active turtle nesting and hatching sites. The signage should include months of the year when external light emissions should be minimised and mitigation measures (e.g. turning off lights when not in use and closing blinds/curtains after dark).

Beach access requirements

59. The beach access track for the Detailed Planning Area is to be a meandering design and not a straight or direct route that would allow light created by and associated with the development to filter to the beach.
60. Beach access (vehicle and pedestrian) must be limited to one point of access and designed to avoid or minimise interference with coastal resources and processes, including wind and sea erosion and accretion.
61. The location of the Beach access must ensure that synergies between the Surf Life Saving Club site and beach facilities (lifeguard tower) are optimised.
62. The design of the Beach Access must reduce impacts on the dune to the greatest extent practicable. It must be demonstrated that:
 - a) The width of the beach access is designed to a maximum of 5m width;
 - b) The design minimises the need for cutting through the dune, including consideration of alternative surface treatments; and
 - c) The design of the beach entrance has considered and minimised the impacts of the prevailing south easterly winds.

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63. All batters associated with the beach access are to be rehabilitated and planted with dunal species.

Landscaping

64. The open space areas as identified on Map 6 – Open Space Plan are to be embellished with the minimum requirements as set out within Appendix 1 of Development Control Plan 1.
65. The location of the pad mount transformer and ring unit located at the southern end of the Public Access Club Facility is not approved. This infrastructure is to be located outside of the main view corridor. All other infrastructure is to be located in accordance with Map 9D of the Detailed Planning Area Plan.
66. The development site must be landscaped. The works must be undertaken in accordance with an Operational Works approval and must include in particular:
- (a) embellishment works to the Village Park System is to be in accordance with Council's Open Space Strategy including, and the following:
 - (i) All items identified in section 4.2.3.3 Open Space Network, Master Plan No. 44
 - (ii) The design for all open space areas, including Finger Parks and WSUD devices shall include provision of access by maintenance equipment, service vehicles.
 - (iii) Appropriate provision for maintenance and emergency vehicle access to lake edges must be provided via finger parks, open space areas and adjacent road reserves. Lockable bollards or similar must be installed at designated access points to prevent unauthorised access.
 - (b) integration of the following values with regard to the wetland and associated open space:
 - (i) Amenity, e.g. appropriate plantings, shade and viewing decks etc.)
 - (ii) Ecological values, i.e. maximised retention of existing wetland, preservation and improvement of degraded areas,
 - (iii) Educational values, e.g. signage
 - (iv) Recreational values. e.g. viewing decks, boardwalks, passive areas for sitting and contemplation.

(Note: No stormwater generated as a result of the development shall be directed towards the protected wetland.)
 - (c) The species list throughout the development shall include a mix of species native to the following Regional Ecosystems:
 - (i) 12.2.7
 - (ii) 12.2.9
 - (iii) 12.2.12
 - (iv) 12.2.15 (Wetland areas only)
 - (d) Provide a 15m wide buffer surrounding the wetland. The buffer shall be limited to species from Regional ecosystem 12.2.15 for foraging and habitat suited to the preservation of the wetland species, in particular the Acid Frogs. Detail shall be provided as part of a future Landscape Operational Works application.

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- (e) The linear parks addressing the Nicklin Way, Beach and Wurley Drive shall include:
 - (i) A mix of trees at 6 to 8m centres,
 - (ii) Shrubs at 1m centres to screen acoustic fences
 - (iii) Groundcovers to ensure full coverage of the beds at maturity
 - (iv) Appropriate surface treatments to ensure the hydraulic requirements are maintained.
 - (f) Where street trees are to be provided on verges (including indented parking areas), a minimum clearance of 1.2m between the back of the kerb and any verge pathway must be provided to accommodate the street trees.
 - (g) Landscape screening and buffering of acoustic fences addressing Nicklin Way are to be a minimum 4m width, with the provision of trees at 6m centres, screening shrubs at 1m centres, and groundcovers capable of ensuring coverage of beds.
 - (h) All footpaths are to be set an appropriate distance from the adjacent property boundary to ensure adequate clearance is provided to service pillars and pits (e.g. Green Boys)
 - (i) Street trees are to be provided at 6 – 8m centres to all road frontages (including internal and external road) and at the rate detailed within the Detailed Planning Area Plan.
 - (j) Ensure all awnings are setback an appropriate distance (minimum 1.5m) from the kerb alignment to allow for the provision of street trees on the standard alignment.
67. Art Contributions within the public realm are subject to assessment under the provisions of Council's Public Art Policy and Guidelines, and the adopted Public Art Strategy for Detailed Planning Area 2.

Stormwater Drainage

68. The development must be provided with a stormwater drainage system connecting to a lawful point of discharge. The works must be undertaken in accordance with an Operational Works approval, Council's Planning Scheme Policy for Development Works and the Queensland Urban Drainage Manual, and must include in particular:
- (a) the works described in Flooding Investigation Report referenced in this Notice of Determination with the exception of the following:
 - (i) no discharge of minor system stormwater from the urban area to the existing wetland with the exception of the village park.
 - (ii) diversion of runoff from the entire frontage of the dune area to the existing wetland
 - (b) the provision of inlet screens to proposed culverts with a minimum additional 90% capacity than the peak 1% AEP flow in the culvert.
 - (c) the provision of kerb adapters for all new lots discharging to crowned roads with no lots discharging roofwater to laneways.
 - (d) the use of gravity stormwater drainage and not surcharge pits except when no other option is feasible as determined by Council.

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Entrance Lake

69. The development must be provided with a constructed waterbody (Entrance Lake). The works must be undertaken in accordance with an Operational Works approval, Council's Planning Scheme Policy for Development Works and the Queensland Urban Drainage Manual, and must include in particular:
- (a) the works described in the Engineering Services Report referenced in this Notice of Determination
 - (b) a concrete boat ramp to provide access for Council equipment to maintain the lake including de-silting, debris removal.
 - (c) the base of the lake with a minimum elevation of -3.0m AHD.
70. The Entrance Lake must be provided with a circulation pumping system which discharges to Tokara Canal. The works must be undertaken in accordance with an Operational Works approval, Council's Planning Scheme Policy for Development Works and the Queensland Urban Drainage Manual, and must include in particular:
- (a) the works described in the Concept Stormwater Quality Management Plan referenced in this Notice of Determination
 - (b) an automatic system designed to cut off the pumps prior to the stormwater pipe system being required to convey stormwater so that the existing standard of service does not reduce. A drainage study must be undertaken to determine at what intensity/depth of rainfall within the local catchment triggers the pump system being cut off in order to maintain the existing standard of service.
71. The Entrance Lake and the associated culverts under Nicklin Way to connect the Entrance Lake to Lake Kawana must be delivered with the first stage of development, as these works are integral to ensuring flooding immunity for the development.
72. Concrete revetment walls are required around the entire perimeter of the Entrance Lake (no boulder walls). The walkable waterfront pathway must abut the concrete revetment wall, with a bollard and chain barrier (similar to Lake Kawana).
73. Lighting, for pedestrian/public safety and wayfinding, must be provided to an appropriate standard along the length of the walkable waterfront, with additional feature lighting at key nodes and locations. The lighting must be designed to minimise adverse amenity impacts to adjoining private property.
74. Maintenance and emergency vehicle access to the walkable waterfront must be provided via adjoining Open Space areas at least one location. Lockable bollards or similar must be installed at this access to prevent use by unauthorised vehicles.

Stormwater Quality Management

75. A stormwater quality treatment system must be provided for the development. The works must be undertaken in accordance with an Operational Works approval, Council's Planning Scheme Policy for Development Works and the latest version of the *Bioretention Technical Design Guidelines* and must include in particular:
- (a) stormwater quality treatment devices of a size and location generally in accordance with the Concept Stormwater Quality Management Plan referenced in this Notice of Determination with the exception of the following:
 - (i) no discharge of minor system stormwater from the urban area to the existing wetland with the exception of the village park.
 - (ii) diversion of runoff from the entire frontage of the dune area to the existing wetland

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- (b) Field inlet pits only permitted within end of line bioretention devices and bioretention devices within road reserve driveway and park areas. Where feasible all other bioretention devices to function by filling up with stormwater then above design flows bypassing the device and entering the stormwater pipe system through a kerb inlet.

- 76. Permanent educational signage* must be erected to educate the residents of the development about the function of the bioretention devices. The dimensions, standard, presentation and location of the educational signage must be in accordance with an Operational Works approval.

*(Refer to Advisory Note)

Flood Immunity

- 77. The development must be undertaken in accordance with an Operational Works approval and must include in particular
 - (a) the works in accordance with the Flooding Investigation Report referenced in this Notice of Determination as optimised to reduce flood levels external to the site through detailed design and specifically
 - (i) For the 1% AEP event undertake works such that there is no increase in flood levels in the highest eastbound lane of Beach Drive between the Nicklin Way and the proposed roundabout OR
 - (ii) For the 1% AEP event undertake works such that the highest eastbound lane of Beach Drive is trafficable in accordance with QUDM.
 - (b) The size of the proposed pipes/culverts under the Nicklin Way and Entrance Road and the size of the proposed pedestrian underpass must not be reduced from those shown in the Flooding Investigation Report referenced in this Notice of Determination.

Prior to the approval of any subsequent Site Development Plan within Detailed Planning Area 2, detailed information must be provided to demonstrate that the works required to address part (a) of this condition can be accommodated without impacting on the proposed development layout.

- 78. The surface levels of all lots (excluding park and reserves) must be constructed to provide flood immunity. The works must be undertaken in accordance with an Operational Works approval and must include in particular minimum finished surface levels for the development in accordance with the Flooding Investigation Report referenced in this Notice of Determination.
- 79. A table listing the applicable 1 in 100 year ARI flood levels applicable to each lot must be provided for Council's records. The table must be accompanied by certification from a qualified person* which certifies that the levels are based on the latest study referenced by Council's relevant Development Permits and incorporates all amendments.
*(Refer Advisory Notes)

Acid Sulfate Soils

- 80. All works must be carried out in accordance with an Acid Sulfate Soil and Groundwater Management Plan for the development prepared by a qualified person* and referenced in a Development Permit for Operational Works. *(Refer to Advisory Note)

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Unitywater

The following Unitywater conditions are applied in accordance with the *South East Queensland (Distribution and Retail) Restructuring Act 2009* and Unitywater's Interim Connections Policy. The conditions below form part of a water connection aspect which are taken to be a water approval for a staged connection. Any future applications must be made to Unitywater under *South East Queensland (Distribution and Retail) Restructuring Act 2009*. Unitywater can be contacted as follows:

Phone: 1300 0 Unity (1300 086 489)

Email: Development.Services@unitywater.com

Web: www.unitywater.com

81. Reticulated water supply and sewerage must be provided to the development, generally in accordance with the "Water & Wastewater Network Investigation" (B14403.W-01B) prepared by Calibre Consulting and dated 17 November 2015 with the inclusion of the following plans:
 - a) Drawing N14055-SK110A "Bokarina Beach Sewerage Pump Station Lot and Access Details" prepared by Calibre Consulting and dated 17/11/2015; and
 - b) Drawing N14055-SK110 "Bokarina Beach Proposed Sewerage Concept Layout Plan" prepared by Calibre Consulting and dated 27/11/2015, and
 - c) Drawing N14055-SK111 "Bokarina Beach Proposed Water Concept Layout Plan" prepared by Calibre Consulting and dated 18/11/2015.
82. Construction activities must not impede the access of Unitywater or Fire Brigade personnel to vital infrastructure (eg. valves, fire hydrants and sewer access chambers).
83. Water meters must be located on alternative boundaries to electrical pillars.
84. Easements of between 3 and 10 metres must be provided over all Unitywater sewers located within property boundaries in accordance with the SEQ standards. Easements shall be centred over the pipe. Easement terms shall be the most current registered dealing held by the Department of Natural Resources & Mines and shall not be altered or amended.
85. Buildings and other structures must maintain a minimum clearance of 1.5 metres from Unitywater sewer mains, and 1.0 metre from a sewer manhole chamber or sewer inspection opening.
86. Storm water retention systems and gross pollutant traps must maintain a minimum clearance of 1.0 metres from Unitywater water supply and sewerage infrastructure.
87. Tree plantings must maintain a minimum horizontal clearance of 1.0 metre from Unitywater water mains and 1.5 metres from Unitywater sewerage mains. Landscaping plants within these clearances must be low growing when mature, and suitable approved varieties.
88. Construction works undertaken in the vicinity of Unitywater water supply or sewerage infrastructure must not adversely affect the integrity of the infrastructure. All costs associated with repair, replacement or alteration of infrastructure must be met by the applicant.

8.2.1 Bokarina Bch Master Plans App A Conditions Amended

ADVISORY NOTES:

Qualified Person

1. For the purpose of preparing an Acid Sulfate Soil and Groundwater Management Plan, a qualified person is considered to be either:
 - (a) a Registered Professional Engineer of Queensland (RPEQ); or
 - (b) a soil scientist with a minimum of 5 years experience in the field of acid sulfate soils.
2. For the purpose of certifying flood levels for the development a qualified person is considered to be a Registered Professional Engineer of Queensland (RPEQ) experienced in hydraulics and hydrology.
3. For the purpose of preparing a report on the hydrological regime of the existing wetland a qualified person is considered to be an aquatic ecologist experienced in coastal wetlands with input provided by a Registered Professional Engineer of Queensland (RPEQ) experienced in hydraulics and hydrology.

Bioretention Basin Educational Signage

4. Suggested wording for the permanent educational signage required by this Decision Notice is as follows:

“BIORETENTION BASIN - This bioretention basin reduces the pollution of our waterways by reducing the amount of heavy metals, litter, suspended solids, and nutrients discharged to Lake Kawana”.

Unitywater

5. Connection to Unitywater live water mains and the Unitywater live sewer system must be undertaken by Unitywater at the applicant's cost.

REFERENCED DOCUMENTS:

Document No.	Rev.	Document Name	Date
B14403.W-03D	D	<i>Flood Investigation Report Bokarina Beach Development</i> prepared by Calibre Consulting	20/11/2015
B14403.W-02C	C	<i>Bokarina Beach Concept Stormwater Quality Management Plan</i> prepared by Calibre Consulting	29/09/2015
N14055CER01C	C	<i>DPA2 - Bokarina Beach Engineering Services Report</i> prepared by Calibre Consulting	Report dated 01/10/2015, and submitted to Council on 20/11/2015
B14403.W-01B	C	<i>Water & Wastewater Network Investigation</i> prepared by Calibre Consulting, with the	17/11/2015

8.2.1 Bokarina Bch Master Plans App A Conditions Amended

Document No.	Rev.	Document Name	Date
		<p>inclusion of:</p> <ul style="list-style-type: none">• Drawing N14055-SK110A “Bokarina Beach Sewerage Pump Station Lot and Access Details” prepared by Calibre Consulting and dated 17/11/2015.• Drawing N14055-SK110 “Bokarina Beach Proposed Sewerage Concept Layout Plan” prepared by Calibre Consulting and dated 27/11/2015.• Drawing N14055-SK111 “Bokarina Beach Proposed Water Concept Layout Plan” prepared by Calibre Consulting and dated 18/11/2015.	

8.2.1 Bokarina Bch Master Plans App A Conditions Amended

Attachment 1: Expansion to Retained Area of Wetland, Buffer Areas & North-South Pedestrian Cycle Link Alignment

